APPENDIX A - PROPOSAL COVER SHEET
COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
RFP 6100032526

Enclosed in three separately sealed submittals is the proposal of the Offeror identified below for the above-referenced RFP:

Offeror Information:	
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Offeror Federal ID Number	41-1810970
Offeror SAP/SRM Vendor Number	164344

Submittals Enclosed and Separately Sealed:	
X	Technical Submittal
	Small Diverse Business Participation Submittal
	Cost Submittal

Signature	
Signature of an official authorized to bind the Offeror to the provisions contained in the Offeror's proposal:	Susan S. Engeleiter
Printed Name	Susan S. Engeleiter
Title	Chief Executive Officer and President

FAILURE TO COMPLETE, SIGN AND RETURN THIS FORM WITH THE OFFEROR'S PROPOSAL MAY RESULT IN THE REJECTION OF THE OFFEROR'S PROPOSAL

Appendix V: Technical Reports

TECHNICAL REPORT

for the
2014 Pennsylvania
System of School Assessment

Provided by
Data Recognition Corporation

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Glossary of Common Terms

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals. A glossary of accommodation terms as applied to the PSSA is provided in Chapter Ten.

Table G–1. Glossary of Terms

Term	Common Definition
Ability	In Rasch scaling, ability is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the PSSA, a student's reading ability is measured by how the student performed on the PSSA Reading test. A student who answered more items correctly has a higher ability than a student who answered fewer items correctly.
Adjacent Agreement	A score/rating difference of one (1) point in value usually assigned by two different raters under the same conditions (e.g., two independent raters give the same paper scores that differ by one point).
Alternate Forms	Two or more versions of a test that are considered exchangeable, i.e., they measure the same constructs in the same ways, are intended for the same purposes, and are administered using the same directions. More specific terminology applies depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, and comparable forms) where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	A measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Bias	In a statistical context, bias refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity, etc.). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to the development of the final operational form of the test (see also Differential Item Functioning).
Constructed-Response Item	See Open-Ended Item.
Content Validity Evidence	Evidence regarding the extent to which a test provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's Grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Core-Linking Item	Items that are utilized during the linking process (see also Linking). They are a subset of the PSSA operational items and so they 1) are the same on all test forms for any grade/subject-area test and 2) contribute to student total raw scores and scaled scores.
Criterion-Referenced Interpretation	When a score is interpreted as a measure of a student's performance with respect to an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do with respect to a given content area.
Cut Score	A specified point on a score scale such that scores at or above that point are interpreted or acted upon differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). One or more cut scores can be set for a test that results in dividing the score range into various proficiency level ranges. Methods for establishing cut scores vary. For the PSSA, three cut scores are used to place students into one of four performance levels (see also Performance Level Setting).
Decision Consistency	The extent to which classifications based on test scores would match the decisions based on scores from a second, parallel form of the same test. It is often expressed as the proportion of examinees who are classified the same way from the two test administrations.
Differential Item Functioning (DIF)	A statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also Bias).
Distractor	An incorrect option in a multiple-choice item (also called a foil).
Equating	The strongest of several linking methods used to establish comparability between scores from multiple tests. Equated test scores should be considered exchangeable. Consequently, the criteria needed to refer to a linkage as equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that it should be a matter of indifference to a student if he/she takes any of the equated tests (see also Linking).
Equating Block (EB) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. EB items are utilized during the linking process (see also Linking). Each test form includes a set of EB items. EB items are not part of any student scores.
Error of Measurement	The amount by which the score actually received (an observed score) differs from a hypothetical true score (see also Standard Error of Measurement).
Exact Agreement	When identical scores/ratings are assigned by two different raters under the same conditions (e.g., two independent raters give a paper the same score).

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Field-Test (FT) Items	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. An FT item is a newly developed item that is ready to be tried out to determine its statistical properties (see also *P*-value and Point-Biserial Correlation). Each test form includes a set of FT items. FT items are not part of any student scores.
Frequency	The number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	A tabulation of scores from low to high or high to low showing the number and/or percent of individuals who obtain each score or who fall within each score interval or category.
Infit/Outfit	Statistical indicators of the agreement of the data and the measurement model (see also Outfit/Infit).
Item Difficulty	For the Rasch model, the dichotomous item difficulty represents the point along the latent trait continuum where an examinee has a 0.50 probability of making a correct response. For a polytomous item, the difficulty is the average of the item's step difficulties (see also Step Difficulty).
Key	The correct response option or answer to a test item.
Linking	A generic term referring to one of a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also Equating).
Logit	In Rasch scaling, logits are units used to express both examinee ability and item difficulty. When expressing examinee ability, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into Scaled Scores through a linear transformation. When expressing item difficulty, logits are transformed *p*-value (see also *P*-value). The logit difficulty scale is inversely related to *p*-values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.
Mean	Also referred to as the arithmetic mean of a set of scores, is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Measure	In Rasch scaling, measure generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the PSSA, a student's reading measure might be equal to 0.525 logits. Or, a PSSA Reading test item might have logit equal to -0.905.
Median	The middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts such that each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Multiple-Choice Item	A type of item format that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed (see also Open-Ended Item).
N-count	Sometimes designated as *N* or *n*, it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), the number of students who attained a specific score, etc. In the follow set {23, 32, 56, 65, 78, 87}, $n = 6$.
Open-Ended Item	An open-ended (OE) item—referred to by some as a constructed-response (CR) item—is an item format that requires examinees to create their own responses, which can be expressed in various forms (e.g., written paragraph, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, polytomously (e.g., 0, 1, 2, and 3). This format is in contrast to when students make a choice from a supplied set of answers options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0.) When interpreting item difficulty and discrimination indices it is important to consider whether an item is polytomously or dichotomously scored.
Operational Item	The PSSA uses multiple test forms for each grade/subject-area test. Each form is composed of operational (OP) items, equating block (EB) items, and field-test (FT) items. OP items are the same on all forms for any grade/subject-area test. Student total raw scores and scaled scores are based exclusively on the OP items.
Outfit/Infit	Statistical indicators of the agreement of the data and the measurement model. Infit and Outfit are highly correlated, and both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Percent Correct	When referring to an individual item, the percent correct is the item's *p*-value expressed as a percent (instead of a proportion). When referring to a total test score, it is the percentage of the total number of points that a student received. The percent correct score is obtained by dividing the student's raw score by the total number of possible points and multiplying the result by 100. Percent Correct scores are often used in criterion-referenced interpretations and are generally more helpful if the overall difficulty of a test is known. Sometimes Percent Correct scores are incorrectly interpreted as Percentile Ranks.
Percentile	The score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a Scaled Score of 1500 on a given test, then the Scaled Score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The percentage of scores in a specified distribution falling at/below a certain point on a score distribution. Percentile Ranks range in value from 1 to 99, and indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, Percentiles and Percentile Rank are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Performance Level Descriptors	Descriptions of an individual's competency in a particular content area, usually defined as ordered categories on a continuum, often labeled from Below Basic to Advanced, that constitute broad ranges for classifying performance. The exact labeling of these categories, and narrative descriptions, may vary from one assessment or testing program to another.
Performance Level Setting	Also referred to as standard setting, a procedure used in the determination of the cut scores for a given assessment that is used to measure students' progress towards certain performance standards. Standard setting methods vary (e.g., modified Angoff, Bookmark Method, etc.), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Point-Biserial Correlation	In classical test theory this is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
P-value	An index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. *P*-values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. *P*-values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a *p*-value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also Logit).
Raw Score	Sometimes abbreviated by RS—it is an unadjusted score usually determined by tallying the number of questions answered correctly, or by the sum of item scores (i.e., points). (Some rarer situations might include formula-scoring, the amount of time required to perform a task, the number of errors, application of basal/ceiling rules, etc.). Raw scores typically have little or no meaning by themselves and require additional information—like the number of items on the test, the difficulty of the test items, norm-referenced information, or criterion-referenced information.
Reliability	The expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure, and therefore, are considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	A statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using Coefficient Alpha). Expressed this way, the reliability coefficient is a unitless index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also Standard Error of Measurement).
Scaled Score	A mathematical transformation of a raw score developed through a process called scaling. Scaled scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful score scale across different forms of a test.
Selected-Response Item	See Multiple-Choice Item.

Table G–1 (continued). Glossary of Terms

Term	Common Definition
Spiraling	A packaging process used when multiple forms of a test exist and it is desired that each form be tested in all classrooms (or other grouping unit (e.g., schools)) participating in the testing process. This process allows for the random distribution of test booklets to students. For example, if a package has four test forms labeled A, B, C, and D, the order of the test booklets in the package would be A, B, C, D, A, B, C, D, A, B, C, D, etc.
Standard Deviation (SD)	A statistic that measures the degree of spread or dispersion of a set of scores. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from each other in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic. The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data.
Standard Error of Measurement (SEM)	The amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard errors of measurement (CSEMs) provide an SEM for each possible scaled score.
Step Difficulty	Step difficulty is a parameter estimate in Master's partial credit model (PCM) that represents the relative difficulty of each score step (e.g., going from a score of 1 to a score of 2). The higher the value of a particular step difficulty, the more difficult a particular step is relative to other score steps (e.g., is it harder to go from a 1 to a 2, or to go from a 2 to a 3).
Strand	On score reports, a strand often refers to a set of items on a test measuring the same contextual area (e.g., Number Sense in Mathematics). Items developed to measure the same reporting category would be used to determine the strand score (sometimes called "subscale" score).
Technical Advisory Committee (TAC)	A group of individuals, most often professionals in the field of testing, who are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Validity	The degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purposed uses of a test. There are various ways of gathering validity evidence.

Preface: An Overview of Assessments from 2003 to the Present

The period from 2003 through 2006 brought significant structural changes to the test blueprint for the Pennsylvania System of School Assessment (PSSA). These changes necessitated extensive test development and field testing activity along with phased-in implementation of the operational assessment. Included in this process was the development and implementation of assessments at additional grade levels.

For mathematics and reading, content changes for Grades 5, 8, and 11 were developed in 2003, field tested in spring 2004, and implemented in spring 2005. The *2005 PSSA Technical Report for Reading and Mathematics* provides a description of test development activities including a review of open-ended tasks and multiple-choice items, field testing, selection of items, statistical analysis of assessment data, reliability, validity, standard setting, and other technical characteristics of the operational 2005 PSSA. Test development for the new grade levels of 4, 6, and 7 began in 2004, with field testing in 2005, and full implementation in 2006. Similarly, the *2006 PSSA Technical Report for Reading and Mathematics: Grades 4, 6, and 7* provides a complete description of test development activities, item review, field testing, statistical analysis, item selection, and technical characteristics of the operational 2006 PSSA for these grade levels. In 2007, the Grade 3 reading and mathematics assessment became DRC's responsibility and is covered in the *2007 PSSA Technical Report for Reading and Mathematics*, along with the remaining grades.

Changes implemented in the writing assessment of spring 2006 were designed to sharpen the focus on what is assessed with respect to Academic Standards 1.4 and 1.5. To support this effort, a shift in grade levels assessed was made, moving from Grades 6 and 9 to Grades 5 and 8, thereby aligning assessment to the end of elementary and middle school years. The writing testing window was changed from fall to February 2006 for Grades 5 and 8, making it consistent with Grade 11. Mode-specific scoring guidelines replaced domain scoring, and the introduction of stimulus-based passages and associated multiple-choice items measuring revising and editing expanded the basis of the conventions score. An account of the development of writing prompts and stimulus-based, multiple-choice items, review processes, field testing and item analysis, standard setting, and other technical characteristics of the operational 2006 PSSA may be found in the *2006 PSSA Technical Report for Writing*.

The introduction of an operational science assessment in 2008 moved closer to reality with a major standalone field test at Grades 4, 8, and 11 in April–May of 2007. A description of the development of science scenarios and related multiple-choice, short answer open-ended, and extended open-ended questions, item review processes, statistical analysis of field-test data, and selection of items for the 2008 operational science test may be found in the *2008 PSSA Preliminary Technical Report for Science*. Subsequently, the first operational science assessment took place in the spring of 2008, along with standard setting and reporting of results.

With the exception of some shifting of test windows, the spring assessments of 2009, 2010, 2011, and 2012 were conducted without change in content structure of the PSSA test instruments.

A transition to begin measuring the Pennsylvania Core Standards (PCS) in Mathematics and English Language Arts was initiated with standalone and embedded field-test events in 2013 for Grades 3, 4, and 5. The transition continued in 2014 with standalone field tests in Grades 6, 7, and 8 and embedded field tests in Grades 3 through 8. As a part of this transition, starting in

spring 2013, the Grade 11 PSSA and the Grade 12 PSSA Retest were dropped in favor of the Keystone Exams in Algebra I, Biology, and Literature.

The following pages provide an overview of the year-to-year changes to the PSSA. Tables and descriptions show the subject areas assessed, time of year the testing activity took place, and the type of testing that occurred (e.g., operational, field testing, Grade 12 retest) for each year.

To access any of the PSSA technical reports referenced in the Preface, please go to the Pennsylvania Department of Education website, www.education.state.pa.us. Click on the green check mark icon labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," then select "PSSA Technical Reports" under "Other Materials" in the yellow box on the right.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2003–04 SCHOOL YEAR

Table P–1 outlines the operational assessments and field tests administered during the 2003–04 school year. (A spring operational assessment in mathematics and reading took place at Grades 3, 5, 8, and 11.)

As a result of new Assessment Anchor Content Standards (Assessment Anchors) developed by the Pennsylvania Department of Education (PDE) during 2003, new test items were developed (see Chapter Two of the *2005 PSSA Technical Report for Reading and Mathematics*). Following the spring operational assessment, a separate, standalone field test of new items for Grades 5, 8, and 11 was conducted. Note that Grade 11 students also took an operational writing assessment in February, and Grades 6 and 9 students participated in a fall writing assessment. Lastly, Grade 12 students who as 11th graders in the preceding spring failed to attain at least the Proficient level in any subject area were offered an opportunity to retest.

Table P–1. Operational Assessment and Field Testing During the 2003–04 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/McGraw-Hill)	April 2004
5	Operational mathematics and reading	April 2004
	Standalone field test in mathematics and reading	April/May 2004
6	Operational writing	October 2004
8	Operational mathematics and reading	April 2004
	Standalone field test in mathematics and reading	April/May 2004
9	Operational writing	October 2004
11	Operational mathematics and reading	April 2004
	Standalone field test in mathematics and reading	April/May 2004
	Operational writing	February 2004
12	Retest opportunity for students who as Grade 11 students in the spring of 2003 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2004–05 SCHOOL YEAR

Table P–2 displays the operational assessments and field tests that took place during the 2004–05 school year. The operational assessment at Grades 5, 8, and 11 used items chosen from the spring 2004 field test. This was the first operational assessment that reflected the Pennsylvania Assessment Anchors and Eligible Content. Fulfilling the No Child Left Behind Act of 2001 (NCLB) requirement that states must implement a test at Grades 3–8, a major field test in mathematics and reading was administered at Grades 4, 6, and 7. Item development for these new grade levels took place during 2004.

The Grades 6 and 9 writing assessment was reevaluated in favor of moving the writing assessment to Grades 5 and 8. This accounts for the separate (standalone) field test at these grade levels. There was also a test administration change from October to February. In addition, the writing assessment underwent changes to align the test to the Academic Standards for writing. New writing prompts and stimulus-based multiple-choice items were also field tested at Grade 11 as part of the operational assessment, hence the reference to an embedded field test. No assessment activity of any kind occurred at Grade 9. As in fall 2003, the retest opportunity at Grade 12 continued.

Table P–2. Operational Assessment and Field Testing During the 2004–05 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (conducted by CTB/McGraw-Hill)	April 2005
4	Standalone field test for mathematics and reading	April 2005
5	Operational mathematics and reading with embedded field test	April 2005
	Standalone field test in writing	February 2005
6	Standalone field test for mathematics and reading	April 2005
7	Standalone field test for mathematics and reading	April 2005
8	Operational mathematics and reading with embedded field test	April 2005
	Standalone field test in writing	February 2005
11	Operational mathematics and reading with embedded field test	April 2005
	Operational writing with embedded field test	February 2005
12	Retest opportunity for students who as Grade 11 students in the spring of 2004 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2004

ASSESSMENT ACTIVITIES OCCURRING IN THE 2005–06 SCHOOL YEAR

Table P–3 shows the assessment activities that occurred during the 2005–06 school year. Note that the reading and mathematics operational assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the first year for operational assessments. Field testing for mathematics and reading was embedded as part of the operational assessment at each grade level. At Grade 3, the reference to field testing with items developed by DRC reflects the transition of shifting the assessment from CTB/McGraw-Hill to DRC in 2007. As in previous years, the retest opportunity at Grade 12 continued.

The first operational assessments for writing at Grades 5 and 8 took place in the 2005–06 school year, while the Grade 11 writing assessment continued in the same February testing window. For all three grade levels, the operational writing assessments featured mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis shift in writing modes assessed. See the *2006 PSSA Technical Report for Writing: Grades 5, 8, and 11* for further information about the new writing assessments. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts were field tested in 2006. However, new multiple-choice items were field tested in the 2006 writing assessment.

Table P–3. Operational Assessment and Field Testing During the 2005–06 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test of DRC-written items (conducted by CTB/McGraw-Hill)	April 2006
4	Operational mathematics and reading with embedded field test	March 2006
5	Operational mathematics and reading with embedded field test	March 2006
	Operational writing with embedded field test	February 2006
6	Operational mathematics and reading with embedded field test	March 2006
7	Operational mathematics and reading with embedded field test	March 2006
8	Operational mathematics and reading with embedded field test	March 2006
	Operational writing with embedded field test	February 2006
11	Operational mathematics and reading with embedded field test	March 2006
	Operational writing with embedded field test	February 2006
12	Retest opportunity for students who as Grade 11 students in the spring of 2005 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2005

ASSESSMENT ACTIVITIES OCCURRING IN THE 2006–07 SCHOOL YEAR

Table P–4 shows the assessment plan for the 2006–07 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the second year for operational assessments and the first year in which these grade levels were included in the adequate yearly progress (AYP) calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the first year in which DRC was responsible for the Grade 3 assessment, as the transition from CTB/McGraw-Hill was complete. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which were introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2007 writing assessment.

Following the spring operational assessments in writing, reading, and mathematics, a separate, standalone field test in science was administered for Grades 4, 8, and 11 with full implementation scheduled for 2008.

Table P–4. Operational Assessment and Field Testing During the 2006–07 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2007
4	Operational mathematics and reading with embedded field test	March 2007
	Standalone field test in science	April/May 2007
5	Operational mathematics and reading with embedded field test	March 2007
	Operational writing with embedded field test	February 2007
6	Operational mathematics and reading with embedded field test	March 2007
7	Operational mathematics and reading with embedded field test	March 2007
8	Operational mathematics and reading with embedded field test	March 2007
	Operational writing with embedded field test	February 2007
	Standalone field test in science	April/May 2007
11	Operational mathematics and reading with embedded field test	March 2007
	Operational writing with embedded field test	February 2007
	Standalone field test in science	April/May 2007
12	Retest opportunity for students who as Grade 11 students in the spring of 2006 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2006

ASSESSMENT ACTIVITIES OCCURRING IN THE 2007–08 SCHOOL YEAR

Table P–5 shows the assessment plan for the 2007–08 school year. Note that the mathematics and reading assessments ran consecutively in Grades 3–8 and Grade 11. For Grades 4, 6, and 7, it was the third year for operational assessments and the second year in which these grade levels were included in the AYP calculations. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. This was the second year in which DRC was responsible for the Grade 3 assessment. As in previous years, the retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued in the same February testing window featuring the mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed, which was introduced in 2006. Since extensive field testing in February 2005 produced a pool of prompts for use over several years, no additional writing prompts needed to be field tested in 2007. However, new multiple-choice items were field tested in the 2008 writing assessment.

Joining the spring operational assessments in writing, reading, and mathematics was science at Grades 4, 8, and 11. See the *2008 PSSA Technical Report for Science: Grades 4, 8, and 11* for further information about the new science assessments.

Table P–5. Operational Assessment and Field Testing During the 2007–08 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2008
4	Operational mathematics and reading with embedded field test	March/April 2008
	Operational science with embedded field test	April/May 2008
5	Operational mathematics and reading with embedded field test	March/April 2008
	Operational writing with embedded field test	February 2008
6	Operational mathematics and reading with embedded field test	March/April 2008
7	Operational mathematics and reading with embedded field test	March/April 2008
8	Operational mathematics and reading with embedded field test	March/April 2008
	Operational writing with embedded field test	February 2008
	Operational science with embedded field test	April/May 2008
11	Operational mathematics and reading with embedded field test	March/April 2008
	Operational writing with embedded field test	February 2008
	Operational science with embedded field test	April/May 2008
12	Retest opportunity for students who as Grade 11 students in the spring of 2007 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2007

ASSESSMENT ACTIVITIES OCCURRING IN THE 2008–09 SCHOOL YEAR

Table P–6 shows the assessment plan for the 2008–09 school year. The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued with a February testing window featuring mode-specific scoring guidelines; stimulus-based multiple-choice items; and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was incorporated in the 2009 assessment along with a set of embedded field test multiple-choice items.

The second operational assessment in science took place in April/May. Similar to the other operational assessments, field testing for science was embedded as part of the operational assessments at each grade level.

Table P–6. Operational Assessment and Field Testing During the 2008–09 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2009
4	Operational mathematics and reading with embedded field test	March 2009
	Operational science with embedded field test	April/May 2009
5	Operational mathematics and reading with embedded field test	March 2009
	Operational writing with embedded field test	February 2009
6	Operational mathematics and reading with embedded field test	March 2009
7	Operational mathematics and reading with embedded field test	March 2009
8	Operational mathematics and reading with embedded field test	March 2009
	Operational writing with embedded field test	February 2009
	Operational science with embedded field test	April/May 2009
11	Operational mathematics and reading with embedded field test	March 2009
	Operational writing with embedded field test	February 2009
	Operational science with embedded field test	April/May 2009
12	Retest opportunity for students who as Grade 11 students in the spring of 2008 failed to reach at least the Proficient level in mathematics, reading, or writing	October/ November 2008

ASSESSMENT ACTIVITIES OCCURRING IN THE 2009–10 SCHOOL YEAR

Table P–7 shows the assessment plan for the 2009–10 school year. A notable change from previous years was that all assessments and make-ups were completed during the testing window from April through the first week of May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2010 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–7. Operational Assessment and Field Testing During the 2009–10 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	April/May 2010
4	Operational mathematics and reading with embedded field test	April/May 2010
	Operational science with embedded field test	April/May 2010
5	Operational mathematics and reading with embedded field test	April/May 2010
	Operational writing with embedded field test	April/May 2010
6	Operational mathematics and reading with embedded field test	April/May 2010
7	Operational mathematics and reading with embedded field test	April/May 2010
8	Operational mathematics and reading with embedded field test	April/May 2010
	Operational writing with embedded field test	April/May 2010
	Operational science with embedded field test	April/May 2010
11	Operational mathematics and reading with embedded field test	April/May 2010
	Operational writing with embedded field test	April/May 2010
	Operational science with embedded field test	April/May 2010
12	Retest opportunity for students who as Grade 11 students in the spring of 2009 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2009

ASSESSMENT ACTIVITIES OCCURRING IN THE 2010–11 SCHOOL YEAR

Table P–8 shows the assessment plan for the 2010–11 school year. A change from the previous year is an earlier testing window, beginning in mid-March for mathematics and reading, late-March to April for writing, and early April for science. A make-up period extended into mid-April for all assessments.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2011 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–8. Operational Assessment and Field Testing During the 2010–11 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March/April 2011
4	Operational mathematics and reading with embedded field test	March/April 2011
	Operational science with embedded field test	March/April 2011
5	Operational mathematics and reading with embedded field test	March/April 2011
	Operational writing with embedded field test	March/April 2011
6	Operational mathematics and reading with embedded field test	March/April 2011
7	Operational mathematics and reading with embedded field test	March/April 2011
8	Operational mathematics and reading with embedded field test	March/April 2011
	Operational writing with embedded field test	March/April 2011
	Operational science with embedded field test	March/April 2011
11	Operational mathematics and reading with embedded field test	March/April 2011
	Operational writing with embedded field test	March/April 2011
	Operational science with embedded field test	March/April 2011
12	Retest opportunity for students who as Grade 11 students in the spring of 2010 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2010

ASSESSMENT ACTIVITIES OCCURRING IN THE 2011–12 SCHOOL YEAR

Table P–9 shows the assessment plan for the 2011–12 school year. The testing window for mathematics and reading began in mid-March, while writing and science began in mid to late April. The make-up period for mathematics and reading extended into late March, while writing and science extended into early May.

The mathematics and reading assessments continued to be operational for Grades 3–8 and Grade 11. Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. As in previous years, the fall retest opportunity at Grade 12 continued.

The operational assessment for writing at Grades 5, 8, and 11 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts was included in the 2012 assessment along with a set of embedded field test multiple-choice items.

The operational assessment for science at Grades 4, 8, and 11 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice (Grades 8 and 11) and open-ended (Grade 11 only) questions. Field testing was embedded as part of the operational assessments at each grade level.

Table P–9. Operational Assessment and Field Testing During the 2011–12 School Year

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2012
4	Operational mathematics and reading with embedded field test	March 2012
	Operational science with embedded field test	April 2012
5	Operational mathematics and reading with embedded field test	March 2012
	Operational writing with embedded field test	April 2012
6	Operational mathematics and reading with embedded field test	March 2012
7	Operational mathematics and reading with embedded field test	March 2012
8	Operational mathematics and reading with embedded field test	March 2012
	Operational writing with embedded field test	April 2012
	Operational science with embedded field test	April 2012
11	Operational mathematics and reading with embedded field test	March 2012
	Operational writing with embedded field test	April 2012
	Operational science with embedded field test	April 2012
12	Retest opportunity for students who as Grade 11 students in the spring of 2011 failed to reach at least the Proficient level in mathematics, reading, science, or writing	October/ November 2011

TRANSITION TO THE PENNSYLVANIA CORE STANDARDS

The 2012–13 school year began the initial transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS). The two-stage transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests was proposed to occur during the operational 2013–14 and 2014–15 administrations, with Grades 3, 4, and 5 part of the first phase, and Grades 6, 7, and 8 part of the second phase. (The final decision was made for a single operational transition, to occur during the operational 2014–15 administration.)

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test will be phased out and will be replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test at Grades 3, 4, and 5 for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice items on the Legacy Writing test) and writing prompts at Grades 3, 4, and 5. In addition, at Grade 3 there were open-ended items on the standalone ELA Writing test. This standalone field test took place during a two-week testing window in early to mid February 2013. A similar standalone field test took place in February 2014 for Grades 6, 7, and 8. The Reading component of the new PCS ELA test was embedded in the 2013 Reading field test in Grades 3 through 5; additional items for the Reading component of the new PCS ELA test were embedded in the 2014 Reading field test in Grades 3 through 5. The Reading component of the new PCS ELA test in Grades 6 through 8 were embedded in the 2014 Reading field test.

ASSESSMENT ACTIVITIES OCCURRING IN THE 2012–13 SCHOOL YEAR

Table P–10 shows the assessment plan for the 2012–13 school year. PDE modified the order of the testing windows for writing, reading and mathematics, and science. Writing took place earlier than reading and mathematics instead of at the same time as science. The testing window for writing began mid-March; mathematics and reading began early to mid-April, while science began mid- to late April. The make-up period for writing extended into mid- to late March, while mathematics, reading, and science extended into early May. These operational assessments were all offered in an online format in addition to the paper/pencil format used in previous assessments.

An additional change from previous years was the removal of Grade 11 from the Mathematics, Reading, Science, and Writing. As Grade 11 was no longer a part of the assessments, the fall retest opportunity at Grade 12 was no longer available. Operational tests continued to be available for Mathematics and Reading at Grades 3–8, Science at grades 4 and 8, and Writing at grades 5 and 8.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field-test items for Grades 3, 4, and 5 were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards, while the embedded field-test items for Grades 6, 7, and 8 continued to be aligned to the previous Assessment Anchor Content Standards.

The operational assessment for Science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for Writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. An embedded field test of writing prompts along with a set of embedded field test multiple-choice items was included in the 2013 assessment at Grade 8. The operational assessment at Grade 5 included placeholder multiple-choice items for consistency in the length of the multiple-choice section of the assessment; however, students responded to only two writing prompts at Grade 5, as a field-test writing prompt was not needed due to the standalone field test at that grade.

Table P–10. Operational Assessment and Field Testing During the 2012–13 School Year (Planned)

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
4	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
	Operational science with embedded field test	April 2013
	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
5	Operational mathematics and reading with embedded field test (field test aligned to the PCS)	April 2013
	Operational writing	March 2013
	Standalone field test in ELA: writing (aligned to the PCS)	February 2013
6	Operational mathematics and reading with embedded field test	April 2013
7	Operational mathematics and reading with embedded field test	April 2013
8	Operational mathematics and reading with embedded field test	April 2013
	Operational writing with embedded field test	March 2013
	Operational science with embedded field test	April 2013

ASSESSMENT ACTIVITIES OCCURRING IN THE 2013–14 SCHOOL YEAR

Table P–11 shows the assessment plan for the 2013–14 school year. The 2013–14 school year continued the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as field-test items were aligned to the PCS-aligned Assessment Anchors and Eligible Content. The operational assessments in Mathematics, Reading, and Writing were composed of items that align to both the PCS and the existing Assessment Anchors and Eligible Content. Reporting in 2013–14 continued to use the previous content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA tests will occur during the operational 2014–15 administration.

As a part of the PCS transition, the Legacy PSSA Reading test and the Legacy PSSA Writing test will be phased out and will be replaced with an English Language Arts test aligned to the PCS. As part of this transition, there was a standalone field test at Grades 6, 7, and 8 for the Writing component of the English Language Arts test. This standalone field test included standalone multiple-choice items (as opposed to stimulus-based multiple-choice items on the Legacy Writing test) and writing prompts at Grades 6, 7, and 8. This standalone field test took place during a two-week testing window in early to mid-February. The Reading component of the new PCS ELA test was embedded in the 2014 Reading field test for Grades 6, 7, and 8 and in the 2013 and 2014 Reading field test for Grades 3, 4, and 5.

Writing took place after reading and mathematics but before science. The testing window for mathematics and reading began mid-March; writing began late March to early April; and science began late April. The make-up period for mathematics and reading extended into early April, while the make-up period for writing extended into early to mid-April and science extended into early May. These operational assessments continued to be offered in an online format in addition to the paper/pencil format used in previous assessments.

Field testing for mathematics and reading continued to be embedded as part of the operational assessments at each grade level. The embedded field-test items were aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 included multiple-choice and open-ended questions. Students responded to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing was embedded as part of the operational assessments at each grade level.

The operational assessment for writing at Grades 5 and 8 continued to feature mode-specific scoring guidelines, stimulus-based multiple-choice items, and a grade-specific emphasis in writing modes assessed. Students responded to only two writing prompts, as a field-test writing prompt was not needed due to the upcoming transition to the ELA assessments.

Table P–11. Operational Assessment and Field Testing During the 2013–14 School Year (Planned)

Grade	Assessment Activity	Date
3	Operational mathematics and reading with embedded field test	March 2014
4	Operational mathematics and reading with embedded field test	March 2014
	Operational science with embedded field test	April/May 2014
5	Operational mathematics and reading with embedded field test	March 2014
	Operational writing	March/April 2014
6	Operational mathematics and reading with embedded field test	March 2014
	Standalone field test in ELA: writing	February 2014
7	Operational mathematics and reading with embedded field test	March 2014
	Standalone field test in ELA: writing	February 2014
8	Operational mathematics and reading with embedded field test	March 2014
	Operational writing with embedded field test	March/April 2014
	Operational science with embedded field test	April/May 2014
	Standalone field test in ELA: writing	February 2014

ASSESSMENT ACTIVITIES PLANNED FOR THE 2014–15 SCHOOL YEAR

Table P–12 shows the assessment plan for the 2014–15 school year. The 2014–15 school year completes the transition for the PSSA Mathematics, Reading, and Writing tests to align to the newly developed Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards (PCS), as both operational and field-test items will be aligned only to the PCS-aligned Assessment Anchors and Eligible Content. Reporting in 2014–15 will also transition to the new content structure. The transition from the Legacy PSSA Mathematics, Reading, and Writing tests to the new PCS-based PSSA Mathematics and ELA tests will occur during the operational 2014–15 administration.

The testing window for English Language Arts will be in mid-April followed by the testing windows for Mathematics in mid- to late April and then Science in late April to early May. These operational assessments will continue to be offered in an online format in addition to the paper/pencil format used in previous assessments.

Field testing for mathematics and reading will continue to be embedded as part of the operational assessments at each grade level. The embedded field-test items will continue to be aligned to the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Core Standards.

The operational assessment for science at Grades 4 and 8 will include multiple-choice and open-ended questions. Students will respond to standalone multiple-choice and open-ended questions (all grades) as well as scenario-based multiple-choice questions (Grades 8 only). Field testing will be embedded as part of the operational assessments at each grade level.

Table P–12. Operational Assessment and Field Testing During the 2014–15 School Year (Planned)

Grade	Assessment Activity	Date
3	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
4	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
	Operational science with embedded field test	April/May 2015
5	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
6	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
7	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
8	Operational mathematics with embedded field test	April 2015
	Operational ELA with embedded field test	April 2015
	Operational science with embedded field test	April/May 2015

Chapter One: Background of the Pennsylvania System of School Assessment (PSSA)

This brief overview of the Pennsylvania System of School Assessment (PSSA) summarizes the history of the current program's development process, the program's intent and purpose, recent changes to the program, and the student population that participates in the assessments. Pennsylvania's involvement in state-wide assessment actually began in the 1969–70 school year with a purely school-based assessment known as *Educational Quality Assessment* (EQA), which continued through the 1987–88 school year. A state-mandated student competency testing program called *Testing for Essential Learning and Literacy Skills* (TELLS) also operated from the school years of 1984–85 through 1990–91.

THE PENNSYLVANIA SYSTEM OF SCHOOL ASSESSMENT

The Pennsylvania System of School Assessment program was instituted in 1992 as a school evaluation model with reporting at the school level only. Test administration took place in February/March, and school district participation was every third year based on the strategic planning cycle. Mathematics and reading were assessed at Grades 5, 8, and 11; districts could choose to participate in the writing assessment at Grades 6 and 9. The State Board of Education's revisions to Chapter Five in November 1994 brought major changes to the PSSA, beginning with the spring 1995 assessment. These changes included the following:

- All districts were required to participate in the mathematics and reading assessment each year.
- Student-level reports were generated in addition to school reports.
- The Grades 6 and 9 writing assessments became mandatory on a three-year cycle corresponding with the district's strategic planning cycle.

Yearly administration of the PSSA in 1996, 1997, and 1998 continued at the assessed grades for mathematics and reading, utilizing essentially the same test structure, reporting practices, and testing window. Writing assessment continued on the established mandatory cycle; however, an increasing number of districts chose to participate every year on a voluntary basis.

Pennsylvania Academic Standards and the PSSA

A major structural change took place in test content with the State Board of Education's adoption of the Pennsylvania Academic Standards for Reading, Writing, Speaking and Listening, and Mathematics in January 1999 (Pennsylvania State Board of Education, 1999). The Academic Standards, which are part of *Chapter 4 Regulations on Academic Standards and Assessment*, detailed what students should know (knowledge) and be able to do (skills) at various grade levels. Subsequently, the State Board approved a set of criteria defining Advanced, Proficient, Basic, and Below Basic levels of performance. Mathematics and reading performance level results were reported at both the student and school levels for the 2000 PSSA. At that point, the PSSA became a standards-based, criterion-referenced assessment measuring student attainment of the Academic Standards while simultaneously determining the extent to which school programs enabled students to achieve proficiency of the Academic Standards. The regulations also stipulated that appropriate results be broadly disseminated to an array of audiences including students, parents, educators, citizens, and state policymakers, including the State Senate, the General Assembly, and the State Board. School reporting was to include the aggregate

performance of all students and for relevant subgroups, such as those students with an Individualized Education Plan (IEP). Finally, the data was intended to inform educators regarding school program strengths and weaknesses in order to guide the improvement of curricula and instructional strategies. The data was also intended to be used in the development of strategic plans.

The mathematics and reading assessments from 2001 through 2004 underwent various content enhancements to improve alignment to the Academic Standards. For example, the reading assessment transitioned to utilizing more passages of shorter length and fewer items to improve the range of topics to which students responded. Various reporting modifications were introduced to more effectively communicate results.

ASSESSMENT ANCHOR CONTENT STANDARDS, CONTENT STRUCTURE, AND NEW GRADE LEVELS FOR MATHEMATICS AND READING

Assessment in 2005 was marked by major structural changes to the PSSA. Assessment Anchor Content Standards (Assessment Anchors) developed during the previous school year to clarify content structure and improve articulation between assessment and instruction were implemented in terms of test design and reporting. At the same time, field testing of mathematics and reading occurred at Grades 4, 6, and 7. As specified by PL 107–110, the *No Child Left Behind Act of 2001* (NCLB), states, school districts, and schools must achieve a minimum level of improvement each year, known as adequate yearly progress, or AYP. Accordingly, the third year of calculations for AYP were conducted and reported for Grades 5, 8, and 11.

The 2006 operational mathematics and reading assessment incorporated Grades 4, 6, and 7 for the first time. The assessed grade levels for 2006 included Grades 3–8 and 11. The fourth year of calculations for AYP were conducted and reported for Grades 5, 8, and 11 and, for the first time, Grade 3.

In 2007 the operational mathematics and reading assessment continued in Grades 3–8 and 11. AYP calculations for Grades 4, 6, and 7 took place in 2007 when they were assessed for the second time.

The operational mathematics and reading assessments of 2008, 2009, 2010, 2011, and 2012 continued in Grades 3–8 and 11, utilizing the same content structure. AYP calculations continued for all grades. The operational mathematics and reading assessments continued for Grades 3–8 in 2013 utilizing the same content structure. As a part of the transition to align to the Pennsylvania Core Standards, the operational mathematics and reading assessments for Grades 3–8 in 2014 aligned to both the previous Assessment Anchors (those aligned to the Pennsylvania Academic Standards) and the newly developed Assessment Anchors aligned to the Pennsylvania Core Standards.

The validation of performance levels for mathematics and reading, utilizing the Bookmark method, took place during the summer of the following years: 2005 (Grades 5, 8, and 11), 2006 (Grades 4, 6, and 7), and 2007 (Grade 3). See Chapter Thirteen for a brief summary.

More information regarding the 2014 mathematics and reading tests may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *2013–2014 PSSA Assessment Handbook*, *2009–2010 PSSA Reading Item and Scoring Sampler Supplement* (one per assessed grade level), and *2009–2010 PSSA Mathematics Item and Scoring Sampler Supplement* (one per assessed grade level). These

handbooks can be accessed by going to www.education.state.pa.us. Click on the green check mark icon labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," then select "Archived Materials" under "Other Materials" in the yellow box on the right.

Core Recycling for Mathematics and Reading

In 2009, PDE made a temporary change to the PSSA test plan for reading and mathematics in order to create required cost savings due to state-level budget concerns. A recycling plan was proposed and accepted that significantly decreased the volume of new item development over a two-year period in 2011 and 2012 and required that a portion of the core from the 2013 administration would be composed of items recycled from prior core administrations. Under this plan, the reduced number of new items in 2011 and 2012 resulted in a reduced number of field-test forms in 2011 and 2012 from nine down to five. These changes impacted the test design for 2013 and 2014.

In order to use items that aligned to both sets of Assessment Anchors (those aligned to the Pennsylvania Academic Standards and those aligned to the Pennsylvania Core Standards), the existing pool of items was first analyzed to determine alignments to the Pennsylvania Core Standards Assessment Anchors. The mathematics core for 2014 was then built with the standard core-to-core links from the 2013 core as well as from items recycled from previous cores but not designated as core-to-core links, from the existing item bank, and from items appearing in the embedded field-test positions from the 2013 embedded field test. Because the embedded field test in 2013 for Grades 3, 4, and 5 included items developed for assessments aligned to the Pennsylvania Core Standards, only those items that were determined to align to both sets of Assessment Anchors were considered usable on the core for those grades.

The reading core for 2014 was built with the standard core-to-core links from the 2013 core. The remainder of the core was built from items appearing in the embedded field-test positions from the 2013 embedded field test (Grades 6–8 only), from the existing item bank, or from items recycled from the 2010, 2011, or 2012 cores.

The 2014 PSSA had nine field-test forms per grade in Grades 3–5 and twenty field-test forms per grade in Grades 6–8, each with a normal core, normal core-to-core link, and normal equating block (per form).

More information regarding the 2014 operational layout and core recycling for mathematics and reading can be found in Chapter Three.

THE PENNSYLVANIA SCIENCE ASSESSMENT

In accordance with the NCLB requirement to implement an operational science assessment in 2008, a major test development effort in science took place during 2006, followed by a large-scale, standalone field test in April/May of 2007. A full implementation of an operational science assessment at Grades 4, 8, and 11 first occurred in April/May 2008. The 2009 PSSA operational science assessment continued with the same content structure and testing window as in 2008.

Several historical milestones were significant to the development of a science test in Pennsylvania. These include the following:

- The adoption of Act 16 or Pennsylvania Senate Bill 652 in 2000, which redefined the PSSA "as a test developed and implemented by the Department of Education to determine only academic achievement relating directly to objective Academic Standards in the areas of reading, mathematics, and science." (See the *Science Assessment Handbook*, PDE, November 2006.)
- Pennsylvania State Board of Education adoption of the *Science and Technology Standards* on July 12, 2001, and the *Environment and Ecology Standards* on January 5, 2002.

Aligned to the *Pennsylvania Science Assessment Anchor Content Standards* and Eligible Content, the science test is designed to measure and report results in four major categories:

- The Nature of Science
- Biological Sciences
- Physical Sciences
- Earth and Space Sciences

Students use their content knowledge and science process skills to answer a set of multiple-choice items and open-ended questions that are standalone or related to a scenario. A science scenario consists of a description of a class project, an experiment, or other research and typically contains text, graphs, charts, and/or tables. Science test questions at Grade 4 consist of standalone multiple-choice and 0–2-point short answer open-ended items. At Grade 8, multiple-choice questions consist of both standalone and scenario-based items. All open-ended items at Grade 8 are standalone 0–2-point questions. More information may be found in Chapter Two and in the following Pennsylvania Department of Education publications available on the PDE website: *2013–2014 PSSA Assessment Handbook* and *2009–2010 PSSA Science Item and Scoring Sampler Supplement* (one per assessed grade level). These handbooks can be accessed by going to www.education.state.pa.us. Click on the green check mark icon labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," then scroll down to "Science Resources." The establishment of performance levels for science, utilizing the Bookmark method, took place during the summer of 2008. See Chapter Thirteen of this technical report for a brief summary.

THE PENNSYLVANIA WRITING ASSESSMENT

In 1990, the state initiated an on-demand writing assessment in which students wrote an essay in response to a particular topic or prompt. With the advent of the Pennsylvania Academic Standards in 1999, major changes took place in the writing assessment, including alignment to the Academic Standards, as well as changes in scoring method, prompts, testing date, and reporting. These changes, which are summarized below, were implemented in the 2000–01 school year and were followed by performance level reporting in the 2001–02 school year.

- The writing assessment became mandatory for all districts every year.
- Administration of the Grades 6 and 9 writing assessment was changed from February to October.

- Scoring changed to a four-point scale for each of five domains (focus, content, organization, style, and conventions).
- Prompts were different for Grade 6 and Grade 9 rather than being identical at the two grade levels.
- Within a grade level, all students responded to two common prompts.
- The reporting model was greatly revised, and individual student reports were issued for the first time.
- A writing assessment for Grade 11 was administered for the first time in February 2001.
- In 2002, performance levels were adopted for writing and implemented in the reporting of total writing results for the February Grade 11 and fall 2002 Grades 6 and 9 writing assessment.

In 2003 and 2004 writing continued to be assessed with a February window for Grade 11 and a fall window for Grades 6 and 9.

In 2005 Grade 11 continued to be assessed in February; however, major field testing took place at Grades 5 and 8 in anticipation of implementation of an operational writing assessment in 2006. Consequently, a fall 2005 operational writing assessment did not take place.

The 2006 PSSA operational writing assessment featured additional revisions that included the following enhancements:

- Testing previously done in Grades 6 and 9 shifted to Grades 5 and 8 to provide better alignment to the end of elementary school and middle school.
- Grades 5 and 8 joined Grade 11 in a February testing window rather than the October window used previously for Grades 6 and 9.
- Students responded to two writing prompts, which were evaluated in terms of (1) a mode-specific scoring guideline and (2) a conventions scoring guideline, instead of the former domain scoring.
- Stimulus-based revising/editing multiple-choice items were incorporated to provide a more reliable and valid measure of the Conventions Academic Standard.

The 2007 and 2008 PSSA operational writing assessments continued with the same structure and February testing window as in 2006.

Although the 2009, 2010, 2011, and 2012 PSSA operational writing assessments continued with the same structure as in previous years, students also responded to an embedded field-test prompt. In addition, adjustments were made to the testing window in 2010 as it was shifted from February to April/May. In 2013, the PSSA operational writing assessment continued for Grades 5 and 8; however, only students in Grade 8 responded to an embedded field-test prompt. The embedded field-test prompt was also removed from Grade 5 in 2014 in anticipation of the transition to a single English Language Arts assessment aligned to the Pennsylvania Core Standards that will occur in 2015. Instead, students in Grades 3–5 participated in a standalone field test in February 2013, and students in Grades 6–8 participated in a similar standalone field test in February 2014.

The validation of performance levels for writing, utilizing the Body of Work method, took place during the summer of 2006. See Chapter Thirteen for a brief summary.

More information may be found in Chapter Two and in the following two Pennsylvania Department of Education publications available on the PDE website: *2013–2014 PSSA Assessment Handbook* and *2009–2010 PSSA Writing Item and Scoring Sampler Supplement* (one per assessed grade level). These handbooks can be accessed by going to www.education.state.pa.us. Click on the green check mark icon labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," then select "Archived Materials" under "Other Materials" in the yellow box on the right.

Chapter Two: Overview of the PSSA Framework

PENNSYLVANIA ACADEMIC STANDARDS, ASSESSMENT ANCHOR CONTENT STANDARDS, AND ELIGIBLE CONTENT

PSSA Mathematics, Reading, and Science

The PSSA Assessment Anchor Content Standards and Eligible Content are based on the Pennsylvania Academic Standards. Although the Academic Standards indicated what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop Assessment Anchor Content Standards (Assessment Anchors) to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

The Assessment Anchor's coding is read like an outline. The coding includes the content, grade level, Reporting Category, Assessment Anchor, descriptor (Sub-Assessment Anchor), and Eligible Content. Thus, S.4.A.1.3.1 would be Science, Grade 4, Reporting Category A, Assessment Anchor 1, descriptor (Sub-Assessment Anchor) 3, and Eligible Content 1.

Each of the Assessment Anchors has one or more descriptors (Sub-Assessment Anchors) and Eligible Content varying to reflect grade-level appropriateness. The Assessment Anchors form the basis of the test design. In turn, this hierarchy is the basis for organizing the total content scores (based on the core [common] sections).

A draft version of the Assessment Anchors and Eligible Content for mathematics and reading was submitted to Achieve, Inc., Washington, D.C., for a special analysis to evaluate the degree of alignment with the Academic Standards. Preliminary feedback enabled PDE to make adjustments to improve the alignment as the Assessment Anchors took final form. These adjustments were reflected operationally starting with the 2007 PSSA. Achieve, Inc., also conducted a preliminary review of the science anchors in 2003 and produced a follow-up report on the anchors in 2005.

The complete set of Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards can be referenced at PDE's website: www.education.state.pa.us. Click on the green check mark icon labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," then select "Assessment Anchors" under "Other Materials" in the yellow box on the right.

PSSA Writing

Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards were not developed for the writing content area. Instead, the PSSA writing program is aligned directly to the Academic Standards at 1.4 (Types of Writing [Mode]) and at 1.5 (Quality of Writing). In 1999, Pennsylvania adopted academic standards for writing (*Academic Standards for Reading, Writing, Speaking, and Listening*) that describe what students should know and be able to do with the English language at a grade level. Within the framework of the assessment, the writing prompts are measured under Academic Standards 1.4.A Narrative, 1.4.B Informational, and 1.4.C Persuasive, thus providing the responses to the eligible modes the prompts are designed to elicit. The writing prompts are also measured under Academic Standards 1.5.A–F Quality of Writing. The stimulus-based multiple-choice items are measured under the Academic Standards 1.5.E Revising and 1.5.F Editing.

PENNSYLVANIA CORE STANDARDS, ASSESSMENT ANCHORS, AND ELIGIBLE CONTENT

PSSA Mathematics and English Language Arts

With Pennsylvania's decision to adopt the Pennsylvania Core Standards based on the Common Core State Standards, committees of Pennsylvania educators met in October 2011 to write, review, and approve the Assessment Anchors and Eligible Content statements. To provide initial focus, each content and grade-span committee was presented with materials specific to the content and grade span in question, including a basic blueprint structure, the Pennsylvania Academic Standards, the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards, the Common Core State Standards, and draft Eligible Content statements. Committees then completed an iterative process of reviewing and revising the draft Eligible Content statements followed by discussions across grade-span committees to ensure vertical articulation across the grades. The results from the committee work were evaluated by national, state, and local subject experts, and, following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content for English Language Arts and Mathematics were approved by the State Board of Education in September 2013.

OVERVIEW OF THE 2014 PSSA

Mathematics Assessment Measures

The PSSA mathematics assessment has five major reporting categories: Numbers and Operations, Algebraic Concepts, Geometry, Measurement, and Data Analysis and Probability. By organizing the Assessment Anchors into a five-category reporting structure, there is a similarity to the categories used by the National Council of Teachers of Mathematics (NCTM) and the National Assessment of Educational Progress (NAEP).

The PSSA mathematics assessment employs two types of test items: multiple choice and open ended. These item types assess different levels of knowledge and provide different kinds of information about mathematics achievement. Psychometrically, multiple-choice items are very useful and efficient tools for collecting information about a student's academic achievement. Open-ended performance tasks generally generate fewer scoreable points than multiple-choice items in the same amount of testing time; however, they provide tasks that are more realistic and

better sample higher-level thinking skills. Furthermore, well-constructed scoring guides have made it possible to include open-ended tasks in large-scale assessments such as the PSSA. Trained scorers can apply the scoring guides to efficiently score large numbers of student papers in a highly reliable way. The design of the PSSA attempts to achieve a reasonable balance between the two item types.

MATHEMATICS MULTIPLE-CHOICE ITEMS

The majority of the mathematics items included on the PSSA are multiple-choice (selected-response) items. This item type is especially efficient for measuring a broad range of content. In the PSSA mathematics assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, incorrect application of an algorithm, or computational errors.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to problem solving. PSSA items involving application emphasize the requirement to carry out some mathematical process to find an answer, rather than simply recalling information from memory.

OPEN-ENDED TASKS FOR MATHEMATICS

Open-ended, or constructed-response, tasks require students to read a problem description and to develop an appropriate solution. The open-ended items are designed to take about 10 minutes per item. Most of the open-ended items have several components to the overall task that may enable students to enter or begin the problem at different places. In some items, each successive component is designed to assess progressively more difficult skills or higher knowledge levels. Certain components ask students to explain their reasoning for engaging in particular mathematical operations or for arriving at certain conclusions. The types of tasks utilized do not necessarily require computations. Students may also be asked to perform such tasks as constructing a graph, shading some portion of a figure, or listing object combinations that meet specified criteria.

Open-ended tasks are especially useful for measuring students' problem-solving skills in mathematics. They offer the opportunity to present real-life situations that require students to solve problems using mathematics abilities learned in the classroom. Students must read the task carefully, identify the necessary information, devise a method of solution, perform the calculations, enter the solution directly in the response space, and, when required, offer an explanation. This provides insight into the students' mathematical knowledge, abilities, and reasoning processes.

The open-ended mathematics items are scored on a 0–4 point scale using an item-specific scoring guideline. The item-specific scoring guideline outlines the requirements for each score point. Item-specific scoring guidelines are based on the *General Description of Mathematics Scoring Guidelines for Open-ended Items*. The general guidelines describe a hierarchy of responses, which represent the five score levels. See Appendix A or the *Mathematics Item and Scoring Samplers* available on the PDE website.

Reading Assessment Measures

The PSSA reading assessment has two major reporting categories: Comprehension and Reading Skills, and Interpretation and Analysis of Fictional and Nonfictional Text. These two reporting categories are derived from the Reading Academic Standards 1.1, 1.2, and 1.3. Standards 1.6, 1.7, and 1.8 are not addressed on the PSSA because they are not specific to reading comprehension and can be more accurately evaluated at the school level. Standards 1.4 and 1.5 are addressed on the PSSA writing assessment.

The reading assessment employs two types of test items: multiple choice and short answer, or constructed response[1]. The items are designed to measure students' comprehension of the content contained in the reading passages.

READING MULTIPLE-CHOICE ITEMS

Multiple-choice (selected-response) items measure how well students comprehend the overall meaning of a passage or make basic inferences about it. At times, asking students to choose a preferred answer is the best way to determine whether they have gleaned certain information from a story. Such information may include setting, central idea, or main events and their sequence.

Each reading multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading.

SHORT-ANSWER OR OPEN-ENDED TASKS FOR READING

Constructed response tasks require written responses and are designed to address comprehension of text in ways that multiple-choice items cannot. These short written responses require about 10 minutes per item, and allow a student to prepare an answer using supporting details or examples derived from the text. Prior to 2013, these test questions were called "open ended" items due to the many possible responses students could construct compared to the four static options available in a multiple-choice item. In Grades 3–5, these items began to be labeled as short-answer items during the 2013 administration. In Grades 6–8, these reading items continued to be called open-ended items for the 2013 administration. All grades transitioned to the short-answer label beginning with the 2014 administration. The shift in labeling, from "open-ended" to "short-answer," was implemented to draw a greater contrast to the new "Text-Dependent Analysis" questions which require substantial student writing. By comparison, responses to the short-answer items are simpler and require less explication and almost no analysis.

[1] Additionally, the 2014 reading assessment in grades 3–8 included two additional item types in field-test positions only: evidence-based selected response items (two-part items that require a student to select an answer to a comprehension question in part one and to select one or more pieces of evidence to support their answer in part two) and text-dependent analysis questions (which require students to write an essay analyzing a passage or passage set to be scored using a holistic scoring guideline). These item types will be discussed in more detail in a future technical report.

The reading short-answer items are scored on a 0–3 point scale using an item-specific scoring guideline. This scale is consistent with the scale used on the National Assessment of Educational Progress (NAEP). The change from the former 0–4 point scale improves the alignment with the types of tasks required. Each task is text-dependent and is carefully constructed with the scoring guideline reflecting the task requirements. All item-specific scoring guidelines are based on the *General Scoring Guidelines for Short-answer Reading Items*. The general guidelines describe a hierarchy of responses, which represent the four score levels. See Appendix A or the *Reading Item and Scoring Samplers* available on the PDE website.

Science Assessment Measures

The PSSA science assessment has four major reporting categories: The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences. These categories are similar to those used by the National Assessment of Educational Progress (NAEP) and The Third International Mathematics and Science Study (TIMSS). However, the PSSA organizes the categories differently. The science assessment anchors cover seventeen major categories from two sets of standards: Science and Technology Standards (3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8) and Environment and Ecology Standards (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9).

The science assessment employs two types of test items: multiple choice and open ended. These item types assess different levels of knowledge and provide different kinds of information about science achievement. The design of the operational 2014 PSSA for science achieves a reasonable balance between the two item types.

SCIENCE MULTIPLE-CHOICE ITEMS

The majority of the science items included on the PSSA are multiple-choice (selected-response) items, either as standalone multiple-choice items or as scenario-based multiple-choice items. (Scenario-based multiple-choice items are found in Grade 8 only.) Multiple-choice items are especially efficient for measuring a broad range of content. In the PSSA science assessment, each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, or incorrect application of a scientific principle.

Multiple-choice items are used to assess a variety of skill levels, from short-term recall of facts to the application of science content. PSSA items involving application emphasize the requirement to utilize science content to find an answer rather than simply recalling information from memory.

OPEN-ENDED ITEMS FOR SCIENCE

At all grades, standalone open-ended science items require students to read a description of a scientific problem and to develop an appropriate solution. Standalone open-ended items require about five minutes per task.

Open-ended tasks are especially useful for measuring students' skills in science. These tasks may present real-life situations that require students to solve problems using science abilities learned in the classroom. Students must read a task carefully, identify the necessary information, devise a method of solution, enter the solution directly into the answer document, and, when required, offer an explanation. This provides insight into students' science knowledge, abilities, and reasoning processes.

The open-ended science items are scored on a 0–2 point scale with an item-specific scoring guideline, and each task is carefully constructed with a scoring guideline reflecting the task requirements. The general guidelines describe a hierarchy of responses, which represent the three score levels. Each item-specific scoring guideline outlines the requirements at each score point, and each item-specific scoring guideline is based on the *Science Scoring Guidelines for Open-ended Items*. See Appendix A or the *Science Item and Scoring Samplers* available on the PDE website.

SCIENCE SCENARIOS FOR GRADE 8

In addition to standalone multiple-choice and open-ended items, the science assessment includes scenarios at Grade 8. In consideration of the multidisciplinary and interdisciplinary nature of science content, science scenarios create stronger connections between The Nature of Science/Science Content and the multiple-choice items associated with a scenario. As a result, science scenarios allow the assessment to efficiently address and utilize the connections among the science content domains. A science scenario contains text, graphics, charts, and/or tables, and uses these elements to describe the results of a class project, an experiment, or other similar research. Students use the information found in a science scenario as a platform from which to answer multiple-choice questions. Scenarios and questions reach beyond simple fact recollection; they are designed to challenge students to think and to apply the knowledge and skills learned in their classrooms. Scenarios are designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Science scenarios challenge students to interpret stimulus content and to apply existing knowledge to new data while using science knowledge and process skills to arrive at their answers.

Writing Assessment Measures

WRITING MULTIPLE-CHOICE ITEMS

Each multiple-choice item on the writing test is associated with a passage containing embedded errors. Starting with the 2006 operational assessment and continuing through the 2014 assessment, four multiple-choice items are associated with each passage. Multiple revising and editing instances are incorporated within each passage and require that a student demonstrate both passive (recognizing and identifying grammatical and mechanical errors in text, such as misspellings, errors in word choice, errors in verb tense, or pronoun usage) and active (choosing the appropriate correction of an embedded error, such as deleting an irrelevant detail, changing the sequence of details, or placing correct marks of punctuation) revising and editing skills.

All multiple-choice items have four response options that include only one correct answer. The student is awarded one raw score point for choosing the correct response. Incorrect response choices, or distractors, typically represent some kind of misinterpretation or predisposition, unsound reasoning, or casual reading of the item and/or stimuli.

WRITING PROMPTS

At each assessed grade level, students respond to writing prompts developed to measure composition of writing as specified in the Academic Standards 1.4.A–C and further clarified in Academic Standards 1.5 A–F. A student response to a prompt requires approximately 60 minutes per prompt, though students are allowed more time to finish their responses if necessary. The writing prompts were field tested in a standalone field test in 2005 and in embedded field-test positions in 2009, 2010, 2011, 2012, and 2013 with only one field-test prompt being administered per student in the embedded field test. (The 2005 field test yielded enough prompts that no additional writing prompts were field tested in 2006, 2007, or 2008.In anticipation of the transition to an ELA assessment in 2015, no embedded field-test prompts were included in the 2013 administration for Grade 5 or in the 2014 administration for either grade.) Prompt modes and prompts were spiraled across the total number of available forms. Spiraling is accomplished by administering each student one of many available field-test prompts in a sequential manner. For example, the first student received Prompt 1, the second student Prompt 2, and so on until every prompt was administered. If there were more students than prompts, the sequence was repeated starting with the first prompt until every student was assigned a prompt. This process ensured that each prompt was administered to approximately equal and representative student populations in regard to demographics like gender, ethnicity, school size, and location in the state.

Table 2–1. Writing Prompt Field Test Implementation

Administration	Activity		
	Grade 5	**Grade 8**	**Grade 11**
2005	Standalone FT	Standalone FT	Embedded FT
2006	None	None	None
2007	None	None	None
2008	None	None	None
2009	Embedded FT	Embedded FT	Embedded FT
2010	Embedded FT	Embedded FT	Embedded FT
2011	Embedded FT	Embedded FT	Embedded FT
2012	Embedded FT	Embedded FT	Embedded FT
2013	None	Embedded FT	No Assessment
2014	None	None	No Assessment

See Chapter Five for more information about the writing prompt field tests.

Beginning with the operational assessment in 2006 and continuing through 2014, students in Grade 5 responded to two pre-selected operational prompts chosen from across the three modes: narrative, informational, and persuasive. (See Table 2–2 for more information about the modes selected for operational use during a given administration.) The narrative prompt can be story/fiction or personal narrative/recount, which aligns with Academic Standard 1.4.A. The informational prompt can be sequence (process analysis) or simple definition, which aligns with

Academic Standard 1.4.B. The persuasive prompt can be problem/solution or evaluation, which aligns with Academic Standard 1.4.C.

Beginning with the operational assessment in 2006 and continuing through 2014, students in Grade 8 responded to two operational prompts: informational and persuasive. The informational prompt can be sequence (process analysis), illustration, conceptual definition, cause/effect, classification, or compare/contrast, which aligns with Academic Standard 1.4.B. The persuasive prompt can be problem/solution or evaluation, which aligns with Academic Standard 1.4.C.

Beginning with the field test in 2005 and continuing through 2014, the responses to writing prompts were scored twice using two different scoring guidelines developed especially for the PSSA. The first score is based on the application of a mode-specific scoring guideline, and the second score is based on the application of a conventions scoring guideline. The mode-specific scoring guideline is designed to evaluate first-draft, on-demand responses. It identifies the essential criteria for successfully responding to a particular mode of writing relating to the core areas of writing: focus, development of content, organization, and style. In contrast, the conventions scoring guideline measures the demonstrated level of control of sentence formation, grammar, usage, spelling, and punctuation. For more information on the application of the new scoring guidelines, see Appendix A or the current *Writing Item and Scoring Sampler*, available on the PDE website.

Table 2–2. Writing Prompt Operational Mode Summary

Administration	Operational Modes		
	Grade 5	**Grade 8**	**Grade 11**
2006	Narrative, Informational	Informational, Persuasive	Informational, Persuasive
2007	Informational, Persuasive	Informational, Persuasive	Informational, Persuasive
2008	Narrative, Persuasive	Informational, Persuasive	Informational, Persuasive
2009	Informational, Persuasive	Informational, Persuasive	Informational, Persuasive
2010	Narrative, Informational	Informational, Persuasive	Informational, Persuasive
2011	Informational, Persuasive	Informational, Persuasive	Informational, Persuasive
2012	Narrative, Persuasive	Informational, Persuasive	Informational, Persuasive
2013	Narrative, Informational	Informational, Persuasive	No Assessment
2014	Informational, Persuasive	Informational, Persuasive	No Assessment

Chapter Three: Item Development Process

The core portion of the 2014 PSSA operational administration is made up of items that were field tested primarily in the 2013 PSSA administration with the exception of reading Grades 3–5, mathematics Grades 3–5, and writing Grade 5. Therefore, the activities that led to the 2014 PSSA operational administration began with the development of the test items that appeared in the field-test portion of the 2013 operational administration. In turn, items that appeared on the field-test portion of the 2013 operational administration were developed during and prior to 2012. (See Table 3–1 for a graphic representation of the basic process flow and overlap of the development cycles.)

Table 3–1. General Development Timeline Pattern of the PSSA

	Events Occurring in Calendar Year						
Operational Admin Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
2008	Operational Core Admin with embedded matrix items→	Core-to-Core Link					
2009	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link				
2010	Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link			
2011		Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link		
2012			Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link	
2013				Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items→	Core-to-Core Link
2014					Initial Item Development →	Field Test →	Operational Core Admin with embedded equating block items[2]

[2] Core-to-core links will not appear on the 2015 assessments for mathematics and ELA.

Table 3–2. General Timeline Associated with the 2013 Field Test and 2014 Operational Assessment of Mathematics and Reading at Grades 3, 4, 5, 6, 7, and 8

Time Frame	Assessment	Activity
January 2012–July 2012	’13 FT for ’14 OP	Item development for items to embed in 2013 operational test
March 2012–May 2012	’12 FT for ’13 OP	2012 embedded field test in 2012 operational test
July 2012	’13 FT for ’14 OP	Item review for the embedded field test in 2013 operational assessment
July 2012	’12 FT for ’13 OP	Statistical review of 2012 field-tested items
September 2012–January 2013	’13 OP & ’13 FT for ’14 OP	Forms construction for 2013 operational assessment with embedded field test
January 2013–June 2013	’14 FT for ’15 OP	Item development for items to embed on 2014 operational assessment[3]
March 2013–May 2013	’13 FT for ’14 or ’15 OP	2013 embedded field test in 2013 operational test
June 2013	’14 FT for ’15 OP	Item review for the embedded field test in 2014 operational assessment
July 2013	’13 FT for ’14 or ’15 OP	Statistical review of 2013 field-tested items
September 2013–January 2014	’14 OP & ’14 FT for ’15 OP	Forms construction for 2014 operational assessment
March 2014–May 2014	’14 OP & ’14 FT for ’15 OP	2014 operational assessment

MATHEMATICS AND READING

A series of major activities took place from 2011 through 2013 that led to the 2014 PSSA in mathematics and reading that is dual aligned to both the Pennsylvania Academic Standards and Pennsylvania Core Standards. These activities include the development of the Pennsylvania Core Standards Assessment Anchors and Eligible Content; test item development; content review; bias, fairness, and sensitivity review; field testing of items in spring 2013; item review with data; alignment of items in the existing pool to the PCS-based Assessment Anchors; and final selection of items to compose the 2014 PSSA.

These activities are described in some detail in this chapter as well as in Chapters Four and Five. It should also be noted that test items for the 2013 field test were developed by Data Recognition Corporation (DRC) and WestEd.

[3] Items embedded as field-test items on the Reading/Mathematics forms for Grades 3–8 are aligned to the Pennsylvania Core Standards; the first operational assessment aligned to only Pennsylvania Core Standards in ELA and Mathematics will take place in 2015.

Test Content Blueprint for 2014 Mathematics and Reading Assessment

The 2014 PSSA is based on the Pennsylvania Academic Standards as well as the Pennsylvania Core Standards. The 2014 PSSA reflects the Assessment Anchors (PDE 2004; PDE 2013), which were designed as a means of improving the articulation of curricular, instructional, and assessment practices. Due to the transition from the Pennsylvania Academic Standards to the Pennsylvania Core Standards (which will be complete for the 2015 assessment), the 2014 PSSA aligns to both sets of Assessment Anchors. The reporting and test design maintain the content structure found in the Assessment Anchors aligned to the Pennsylvania Academic Standards to the extent possible while ensuring that every test question included on the 2014 PSSA is also aligned to the Assessment Anchors aligned to the Pennsylvania Core Standards. (This requirement was intended to ensure that schools/districts are not penalized for completing their transition to instruction based on the Pennsylvania Core Standards prior to the 2014–2015 school year.) The Assessment Anchors serve to clarify the standards assessed on the PSSA and to communicate assessment limits, or the range of knowledge and skills from which the PSSA was designed. Relevant to item development are the refinement and clarification embodied in the Assessment Anchors.

The Assessment Anchors aligned to the Pennsylvania Academic Standards were developed during 2003; items aligned to these Assessment Anchors were field tested in 2004 for Grades 3, 5, 8, and 11 and in 2005 for Grades 4, 6, and 7. The PSSA for Grades 3, 5, 8, and 11 in 2005 through 2013 followed a revised blueprint and testing plan to reflect the Assessment Anchors and item distribution. The first operational administration of the PSSA for Grades 4, 6, and 7 took place in 2006. It followed the revised blueprint and testing plan, and it reflected the Assessment Anchors and item distribution revised plan first applied to the PSSA for Grades 3, 5, 8, and 11 in 2005 and continued through 2013. This plan continued to be applied to the PSSA for Grades 3–8 in 2014 to the extent possible while using only items that also aligned to the Assessment Anchors aligned to the Pennsylvania Core Standards.

Operational Layout and Core Recycling for 2014 Mathematics and Reading

The mathematics and reading PSSA plan was developed through the collaborative efforts of Data Recognition Corporation (DRC) and the National Center for Improvement of Educational Assessment (NCIEA). The plan was subsequently evaluated and approved by PDE. At Grades 4–8, the mathematics and reading assessments are combined in one test booklet and one separate answer booklet. The test booklet contains mathematics multiple-choice items and reading passages with multiple-choice items. The answer booklet contains scannable pages for multiple-choice (MC) responses, open-ended (OE) mathematics items with response spaces, short-answer (SA) reading items with response spaces, and demographic data collection areas. At Grade 3, the mathematics and reading assessments are combined into one integrated test/answer booklet. Each MC item is worth 1 point. Mathematics OE items receive a maximum of 4 points (on a scale of 0–4) and reading short-answer (SA) items receive a maximum of 3 points (on a scale of 0–3). Each test form contains common items (identical on all forms) along with equating block (containing equating items) and embedded field-test items. The common items consist of a set of core items taken by all students. These core items also include core-to-core linking items, which are items that also appeared on the previous year's core form. The equating block items and the embedded field-test items are unique, in most instances, to a form. That is, there can be instances in which an equating block or embedded field-test item appears on more than one form.

The 2014 PSSA had nine field-test forms per grade in Grades 3–5 and twenty field-test forms per grade in Grades 6–8 with a normal core, normal core-to-core link, and normal equating block (per form). All of the forms contain the common items identical for all students and sets of generally unique items that fulfill two purposes:

1. Field testing new items (FT items)
2. Using items from the previous years' assessments for the purpose of linking equating block (EB) items

Tables 3–3 through 3–6 display the test design for mathematics and reading for each form. The column entries for these tables denote the following:

- Grade level
- Number of unique common, or core, MC items
- Number of core-to-core linking MC items
- Number of equating block MC items
- Number of embedded MC field-test items
- Number of unique common, or core, OE or SA items
- Number of core-to-core linking OE or SA items
- Number of equating block OE or SA items
- Number of embedded OE, SA, or TDA field-test items
- Total number of MC and OE, SA, or TDA items in the form
- Total number of operational points (derived from Core MC, Core-to-Core MC, Core OE or SA, and Core-to-Core OE or SA only) for producing a student score

Table 3–3. Mathematics Test Plan 2014

Grade	Total Core MC (all forms)	Total Equating Block MC (all forms)*	Total Embedded Field Test MC (all forms)	Total MC (Core, EB, & Field Test) positions (all forms)	Total Core 4-point OE (all forms)	Total Equating Block OE (all forms)*	Total Embedded Field Test OE (all forms)	Total OE (Core, EB, & Field Test) (all forms)	Total No. of Items per Op. Form MC/OE	Total No. of Core Points per Op. Test
3, 4, 5	60	18	90	168	3	0	9	12	72/4	72
6, 7, 8	60	40	200	300	3	0	20	23	72/4	72

* Some of the equating block items may not be unique.

Table 3–4. Mathematics Operational Core Test Plan 2014

Grade	Unique Core MC per Form	Core-to-Core Equating (from 2013) MC per Form	Unique Core 4-point OE per Form	Core-to-Core (from 2013) Equating OE per Form	Total Number of Core Items (MC/OE)	Total Core Points per Test
3, 4, 5, 6, 7, and 8	44	16	1	2	60/3	72

The mathematics core for 2014 was built with the standard core-to-core links from the 2013 core. The remainder of the core was built from items appearing in the embedded field-test positions from the existing item bank or from the 2013 embedded field test (only when necessary for Grades 3–5). Sixteen MC items and two OE items were moved from the previous core to the current year core to serve as linking items. All core linking items appeared in the same relative position as they appeared in the most recent administration. Eighteen MC items from 2013 (field test) were pulled forward into 2013 to form an Equating Block (EB). Two EB MC items appeared on each form. The EB items in Grades 6–8 were not unique. EB items did not contribute to student or school/district scores as the goal for the equating block is to increase the total available equating points.

Table 3–5. Reading Test Plan 2014 per Operational Form

Grade	No. of Unique Core MC per Op. Form	No. of Core-to-Core MC per Op. Form	No. of Equating Block MC per Op. Form	No. of Embedded FT MC per Op. Form	No. of Unique Core 3-pt. SA per Op. Form	No. of Core-to-Core 3-pt. SA per Op. Form	No. of Equating Block SA per Op. Form	No. of Embedded FT SA/TDA per Op. Form	Total No. of Items per Op. Form MC/SA	Estimated No. of Passages per Op. Form	Total No. of Core Points per Op. Test
3	22–29 (3 passages)	11–18 (2 passages)	8* (1 passage)	10* (1 passage)	1	1	0	1	58/3	7	46
4 and 5	22–29 (3 passages)	11–18 (2 passages)	8* (1 passage)	10* (1 passage)	2	2	0	1	58/5	7	52
6, 7, and 8	22–29 (4 passages)	11–18 (2 passages)	8* (1 passage)	10* (1 passage)	2	2	0	1	58/5	8	52

* Average

The reading core for 2014 was built with the standard core-to-core links from the 2013 core. The remainder of the core was built from items appearing in the embedded field-test positions from the 2013 embedded field test (Grades 6–8 only), from the existing item bank, or from items recycled from the 2010, 2011, and 2012 cores that were not designated as core-to-core links. The core-to-core link consists of two reading passages with eleven to eighteen MC items and two SA items (one SA item at grade 3) moved from the previous core to the current year core to serve as linking items. Approximately 16 MC items from the 2013 (field test) were pulled forward into 2014 to form an Equating Block (EB). One passage equal to approximately eight equating block MC items appeared on each form. Up to two equating block passages were alternated across the forms. EB items did not contribute to student or school/district scores as the goal for the equating block is to increase the total available equating points.

Table 3–6. 2014 Mathematics and Reading Core Points

Content Area	MC Items	Grade	OE Items	Total Score
Mathematics	60	3, 4, 5, 6, 7, and 8	3 items × 4 points=12 points	72
Reading	40	3	2 items × 3 points=6 points	46
		4, 5, 6, 7, and 8	4 items × 3 points=12 points	52

For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency) see Chapter Ten.

Linking for 2014 Mathematics and Reading Assessment

Linking provides a statistical bridge between assessment administrations. The 2014 administration is linked back to the 2013 administration through the use of linking items in the core (core-to-core linking items) and the equating block (equating items).

MULTIPLE-CHOICE ITEMS

For Grades 3–8, mathematics used 16 core-to-core linking MC items and 18 equating block MC items per grade, and reading used 11 to 18 core-to-core linking MC items and 16 equating block MC items per grade.

OPEN-ENDED/SHORT-ANSWER ITEMS

For Grades 3–8, mathematics used two 4-point core-to-core linking OE items and no [zero] equating block OE items per grade. For Grade 3, reading used one 3-point core-to-core linking SA item and no [zero] equating block SA items. For Grades 4–8, reading used two 3-point core-to-core linking SA items and no [zero] equating block SA items. Table 3–7 shows the 2014 linking points plan for mathematics and reading.

Table 3–7. 2014 Mathematics and Reading Linking Points Plan

Content	Grade	No. of Core-to-Core MC	No. of Equating Block MC	No. of Core-to-Core OE/SA	No. of Equating Block OE/SA	Max. No. of Linking Points per Op. Test*
Mathematics	3, 4, 5, 6, 7, and 8	16	2*	2 (4 pt)	0	34*
Reading	3	11–18	8*	1 (3 pt)	0	29*
	4, 5, 6, 7, and 8	11–18	8*	2 (3 pt)	0	32*

*Not all equating block items will be unique to each form as some may appear on more than one form.

The topic of *linking* will be detailed thoroughly in Chapter Fifteen.

Test Sessions and Timing for 2014 Mathematics and Reading Assessment

The testing window for the 2014 operational assessment, including make-up sessions, extended from March 17 through April 4, 2014. The mathematics and reading assessments consisted of six sections. Test administration recommendations called for each section to be scheduled as one assessment session, although schools were permitted to combine multiple sections in a single session. Administration guidelines stipulated that the sections be administered in the sequence in which they were printed in the test booklets. Table 3–8 outlines the assessment schedule and estimated times for each section, as well as the number and types of items tested for each grade level. The estimated Student Testing Times shown on the next page do not include time for administrative tasks that occur during the pre- and post-administration activities. These times are

estimated separately. Times are approximate and are supplied to test administrators for scheduling purposes only.

Table 3–8. Mathematics and Reading—2014 Administration and Testing Times

Test Section & Content	Suggested Times (In Minutes)			Grade Level Number of Items and Item Type					
	Administration (Total)	Administrative (Pre & Post)	Student Testing	3	4	5	6	7	8
1 Mathematics	70 to 85	15 to 20	55 to 65	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR	24 MC 2 CR
2 Reading	75 to 95	15 to 20	60 to 75	25 MC/SR 1 CR	23 MC/SR 2 CR	25 MC/SR 2 CR	21 MC/SR 2 CR	20 MC/SR 2 CR	21 MC/SR 2 CR
3 Mathematics	65 to 80	15 to 20	50 to 60	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR
4 Reading	65 to 105	15 to 20	50 to 85	18 MC/SR 1 CR	18 MC/SR 1 CR	18 MC/SR 1 CR	18 MC/SR 1 CR	18 MC/SR 1 CR	18 MC/SR 1 CR
5 Mathematics	65 to 80	15 to 20	50 to 60	24 MC 1 CR	24 MC 1 CR	24 MC 1 CR	24 MC 1 OE	24 MC 1 OE	24 MC 1 OE
6 Reading	55 to 90	15 to 20	40 to 70	15 MC/SR 1 CR	17 MC/SR 2 CR	15 MC/SR 2 CR	19 MC/SR 2 CR	20 MC/SR 2 CR	19 MC/SR 2 CR

During the assessment, students may request an extended assessment period if they indicate that they have not completed the task. Such requests are granted if the test administrator finds the request to be educationally valid. See Chapter Seven for more information about testing sessions.

Reporting Categories and Points Distributions for 2014 Mathematics and Reading Assessments

Since the 2005 assessment, the mathematics assessment results have been reported in five categories that approximately correspond to those advocated by the National Council of Teachers of Mathematics (NCTM). The code letters for these Assessment Anchor categories are A–E and correspond to the following:

- **A.** Numbers and Operations
- **B.** Measurement
- **C.** Geometry
- **D.** Algebraic Concepts
- **E.** Data Analysis and Probability

The traditional distribution of mathematics items into these five categories is shown in Table 3–9.

Table 3–9. Mathematics Reporting Categories

Grade	Reporting Categories				
	A: Numbers and Operations	**B: Measurement**	**C: Geometry**	**D: Algebraic Concepts**	**E: Data Analysis and Probability**
3	40%–50%	12%–15%	12%–15%	12%–15%	12%–15%
4	43%–47%	12%–15%	12%–15%	12%–15%	12%–15%
5	41%–45%	12%–15%	12%–15%	13%–17%	12%–15%
6	28%–32%	12%–15%	15%–20%	15%–20%	15%–20%
7	20%–24%	12%–15%	15%–20%	20%–27%	15%–20%
8	18%–22%	12%–15%	15%–20%	25%–30%	15%–20%

Due to the dual alignment of the items found in the 2014 operational assessment, these target distributions could not be met at every grade. Prior to the selection of the 2014 form, content specialists conducted a thorough review of both sets of Assessment Anchors and Eligible Content and the items in the existing pool to identify items that aligned to both. Using only items aligned to both sets of Assessment Anchors and Eligible Content, content specialists attempted to meet the reporting category-level blueprint to the extent possible. In situations where this was not feasible due to shifts in content covered at a particular grade from the Pennsylvania Academic Standards to the Pennsylvania Core Standards, adjustments to the blueprint were made to maintain the original test length while ensuring a true dual alignment of every operational and linking item. For the final distribution of items and points across reporting categories at each grade level, see Appendix B.

The reading assessment results will be reported in two broad categories:

- **A.** Comprehension and Reading Skills
- **B.** Interpretation and Analysis of Fictional and Nonfictional Text

Assessment Anchors associated with Comprehension and Reading Skills are coded with an initial letter A, and those related to Interpretation and Analysis of Fictional and Nonfictional Text are coded with an initial letter B. The distribution of items into these two categories across genres is shown in Table 3–10.

Table 3–10. Reading Reporting Categories and Genre

Grade	Reporting Categories			
	A: Comprehension and Reading Skills % Range	**B: Interpretation and Analysis of Fictional and Nonfictional Text % Range**	**% of Passages (Genre) Fiction**	**% of Passages (Genre) Nonfiction**
3	60%–80%	20%–40%	50%–70%	30%–50%
4	60%–80%	20%–40%	50%–70%	30%–50%
5	60%–80%	20%–40%	50%–70%	30%–50%
6	50%–70%	30%–50%	40%–60%	40%–60%
7	50%–70%	30%–50%	40%–60%	40%–60%
8	40%–60%	40%–60%	40%–60%	40%–60%

Both the mathematics and reading content area reporting categories are further subdivided for specificity and Eligible Content or limits. Each subdivision is coded by adding an additional numeral, such as A.1. These subdivisions are called Assessment Anchors and Eligible Content.

Assessment Anchor Content Standards Subsumed within Reporting Categories for 2014 Mathematics and Reading Assessment

For mathematics, there are 16 Assessment Anchor Content Standards (Assessment Anchors) aligned to the Pennsylvania Academic Standards that occur at all grade levels (Grades 3–8), although they are not all assessed at each grade level. More specifically, the number targeted for assessment by grade level are 10 at Grade 3; 12 at Grade 4; 13 at Grade 5; 12 at Grade 6; 14 at Grade 7; and 13 at Grade 8.

For reading, there are five Assessment Anchors aligned to the Pennsylvania Academic Standards that vary to reflect grade-level appropriateness. Within the Comprehension and Reading Skills Reporting Category, two Assessment Anchors pertain to understanding fiction text and understanding nonfiction text. Within the Interpretation and Analysis of Fictional and Nonfictional Text Reporting Category, three Assessment Anchors pertain to Components of Text, Literary Devices and Concepts, and Organization of Nonfiction Text.

Mathematics and reading scores are based on the core (common) sections. Also reported are the student's mathematics and reading performance levels. See Appendix B for a summary by grade level and content.

SCIENCE

In 2003, the existing Science, Technology, Environment, and Ecology (STEE) test was deferred, and PDE began efforts to develop a new science assessment. In the winter of 2006, a series of cognitive labs or item pilots were conducted across Pennsylvania with the primary focus of ascertaining language and contextual issues within the draft open-ended test items (Grade 4), scenario-based multiple-choice items (Grades 8 and 11), and scenario-based open-ended items (Grade 11), as well as determining the relative difficulty of the test items, the time required to complete the individual tasks, and the opportunity to know factors related to the implementation of the new science Assessment Anchors and Eligible Content by the participating schools. (See the section on the science cognitive labs discussed later in this chapter.)

Following the series of successful cognitive labs or item pilots, DRC developed another set of test items for the proposed voluntary, standalone field test. During the development phase, PDE made the determination to change the designation of the field test from a voluntary assessment to a census-based assessment. Leading up to the administration of the standalone field test, both content review and bias, fairness, and sensitivity review were conducted in Pennsylvania with Pennsylvania educators. In the spring of 2007, the initial standalone field test was administered to the census populations at Grades 4, 8, and 11, followed by a rangefinding for the open-ended items. After the scoring was completed, an item review with data was conducted for the field-test items administered in 2007. Table 3–11 shows a timeline for development of the science assessment.

Table 3–11. Science Development Implementation Timeline

Year	Event
2003	STEE test put on hold
2004–2005	New assessment plan developed by PDE
2006	Item Pilot (Cognitive Labs) to try out scenario-based science items
2007	Initial Standalone Field Test for Grades 4, 8, and 11
2008	Initial Operational Administration with core, matrix, and embedded field-test positions
2009	Second Operational Administration with core, equating block, and embedded field-test positions
2010–2014	Continuation of Operational Administration with core, equating block, and embedded field-test positions

Test Content Blueprint for the 2014 Operational Science Test

The PSSA is based on the Pennsylvania Academic Standards as defined by the Eligible Content. The PSSA science assessment for 2014 reflects the Assessment Anchor Content Standards, which were designed as a means of improving the articulation of curricular, instructional, and assessment practices. The Assessment Anchors serve to clarify the Academic Standards assessed on the PSSA and to communicate assessment limits, or the range of knowledge and skills from which the PSSA would be designed. Relevant to item development are the refinement and clarification embodied in the Assessment Anchors (PDE, 2004).

The Assessment Anchors are rooted in the Academic Standards adopted by the State Board of Education in January of 2002, and the standards—under two documents: *Science and Technology Standards* and the *Environment and Ecology Standards*—cover seventeen major categories describing what students need to know. Rather than attempting to report results for all seventeen standards, the categories are organized into only four. These categories are similar to those used by the National Assessment of Educational Progress (NEAP) and The Third International Mathematics and Science Study (TIMSS). However, the PSSA organizes the categories differently.

Achieve, Inc. conducted a preliminary review of the anchors in 2003 and produced a follow-up report on the anchors in 2005. More information about the Assessment Anchors and the Eligible Content can be found by referencing the Pennsylvania Science Assessment Anchors located on PDE's website at www.education.state.pa.us.

More information on the Assessment Anchors can be found in Chapter Two.

Operational Layout for 2014 Science

The seventh operational administration of the PSSA science test took place in 2014. Critical to the preparation for this operational assessment, the design of the operational assessment had to be configured to meet NCLB requirements as well as other test development and psychometric requirements. The preliminary science PSSA plan was developed in 2004 through the collaborative efforts of DRC and PDE based on the recommendations of the Pennsylvania Technical Advisory Committee (TAC). At Grades 4 and 8, the science assessment consists of one test booklet and one separate answer booklet. The test booklet contains multiple-choice items and at Grade 8 contains stimulus scenario text. The answer booklet contains scannable pages for multiple-choice (MC) responses (answer grids), open-ended (OE) items with response spaces, and demographic data collection areas.

All MC items are worth 1 point. Standalone OE items receive a maximum of 2 points (on a scale of 0–2). Each test form contains common items (that are identical on all forms) along with equating block (equating items) and embedded field-test items. The common items consist of a set of core items taken by all students. The equating block items and the embedded field-test items are unique, in most instances, to a form. That is, there can be instances in which an equating block or embedded field-test item appears on more than one form.

At Grades 4 and 8, the 2014 PSSA science assessment is composed of 12 forms per grade. All of the forms contain common items identical for all students and sets of generally unique items that fulfill two purposes:

1. Field testing new items
2. Using items from the previous years' assessments for the purpose of linking

Tables 3–12 through 3–14 display the 2014 operational test design for science.

Table 3–12. 2014 Science Test Plan per Operational Form

Grade	No. of Unique Core MC per Op. Form	No. of Core-to-Core MC per Op. Form	No. of Equating Block MC per Op. Form	No. of Embedded FT MC per Op. Form	No. of Unique Core OE per Op. Form	No. of Core-to-Core OE per Op. Form	No. of Equating Block OE per Op. Form	No. of Embedded FT OE per Op. Form	Total No. of Items per Op. Form MC/OE	Total No. of Core Points per Op Test*
4	42	16	2	8	3 (2 pt)	2 (2 pt)	0	1 (2 pt)	68 MC 6 OE	68
8	38 + 4 scenario-based	16	2	6 + 4 scenario-based	3 (2 pt)	2 (2 pt)	0	1 (2 pt)	70 MC 6 OE	68

*Some equating block items may not be unique to each form.

Since an individual student's score is based solely on the common (or core) items, the total number of operational points is 68 for both grades. The total score is obtained by combining the points from the core MC and OE portions of the test as follows:

Table 3–13. 2014 Science Core Plan per Grade

Grade	Standalone MC Items	Scenario-based MC Items	Standalone OE Items	Scenario-based OE Items	Total Points
4	58	0	5 (2 pt)	0 (4 pt)	68
8	54	4	5 (2 pt)	0 (4 pt)	68

For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency), see Chapter Ten.

Linking for 2014 Science Assessment

Linking provides a statistical bridge between assessment administrations. The 2014 administration is linked back to the 2013 administration through the use of linking items in the core (core-to-core linking items) and the equating block (equating items).

MULTIPLE-CHOICE ITEMS

For Grades 4 and 8, science used 16 core-to-core linking MC items and 24 equating block MC items per grade.

OPEN-ENDED ITEMS

For both grades, science used two 2-point core-to-core linking OE items and no [zero] equating block OE items per grade.

Table 3–14. 2014 Science Linking Points Plan

Grade	No. of Core-to-Core MC	No. of Equating Block MC	No. of Core-to-Core OE	No. of Equating Block OE	Max. No. of Linking Points per Op. Test*
4	16	24*	2 (2 pt)	0	44*
8	16	24*	2 (2 pt)	0	44*

*Not all equating block items will be unique; some may appear on more than one form.

The topic of *linking* is discussed thoroughly in Chapter Fifteen.

Test Sessions and Timing for 2014 Science Assessment

The testing window for the 2014 operational assessment extended from April 28 through May 9, 2014, including make-up sessions. The science assessments consisted of two sections in each grade. Test administration recommendations call for each section to be scheduled as one assessment session, although schools are permitted to combine both sections in a single session. Administration guidelines stipulate that the sections be administered in the sequence in which they are printed in the booklets. Table 3–15 and Table 3–16 outline the assessment schedule and estimated times for each section and the number and types of items tested for each grade level. The estimated student testing times did not include time for administrative tasks that occur during the pre- and post-administration activities.

Table 3–15. Science – 2014 Administration and Testing Times

Test Section	Suggested Times (In Minutes)			Grade Level Number of Items and Item Type	
	Administration (Total)	Administrative (Pre & Post)	Student Testing	4	8
1	60 to 80	15 to 20	45 to 60	34 MC 3 OE	35 MC 3 OE
2	60 to 80	15 to 20	45 to 60	34 MC 3 OE	35 MC 3 OE

During the assessment, students were allowed to request an extended assessment period if they indicated that they had not completed the task. Such requests were granted if the assessment administrator found them to be educationally valid. See Chapter Seven for more information about testing sessions.

Reporting Categories and Points Distributions

The science assessment results will be reported in four categories, coded as A through D:

- **A.** The Nature of Science
- **B.** Biological Sciences
- **C.** Physical Sciences
- **D.** Earth and Space Sciences

The distribution of science items into these four categories is shown in Table 3–16.

Table 3–16. Science Reporting Categories

Grade	Reporting Categories			
	A: The Nature of Science	**B: Biological Sciences**	**C: Physical Sciences**	**D: Earth and Space Sciences**
4	~50%	~17%	~17%	~17%
8	~50%	~17%	~17%	~17%

The Reporting Categories are further subdivided for specificity and Eligible Content limits. Each subdivision is coded by adding an additional numeral, such as A.1. These subdivisions are called Assessment Anchors, Descriptors (Sub-Assessment Anchors), and Eligible Content.

Assessment Anchor Content Standards Subsumed within Reporting Categories for 2014 Science Assessment

Distributed across the four Reporting Categories are a dozen Sub-Reporting Categories. Each of the 12 Assessment Anchors exists at each grade level, with the Assessment Anchors and Eligible Content varying to reflect grade-level appropriateness. The numbers of Assessment Anchors targeted by grade level are 21 at Grade 4 and 23 at Grade 8.

Total science scores reported at the student level are based on the core (common) sections. School- and district-level scores are reported at the Eligible Content level under the Assessment Anchors and are based on the core (common) positions. See Appendix B for a summary by grade level and subject.

2006 Science Item Pilot

Prior to the initial field test in 2007, DRC, in collaboration with PDE, conducted a science cognitive lab/item pilot in selected schools throughout the Commonwealth from February 27 through March 17, 2006. A sample of 507 students from urban, suburban, and rural school districts from across the Commonwealth participated in the PSSA Science Item Tryout Project. The impetus for this study was Pennsylvania's response to the mandatory science assessment component of the No Child Left Behind legislation to create a rigorous science test for Grades 4, 8, and 11 by 2008. The primary purpose of the cognitive lab or item tryout was to pilot the use of the new science scenarios at Grade 8 and Grade 11 and to pilot the multiple-choice items at Grade 4.

The project involved development of science scenarios, refinement of science test items, creation of survey questions, and design of interview protocols to be administered using a cognitive laboratory technique. The cognitive laboratory technique was developed in the early 1980s through an interdisciplinary effort by survey methodologists and psychologists (Willis, 1999; Erickson and Simon, 1993). Different models of the cognitive process to solve a test item have evolved over the years, but all have four major processes in common: 1) comprehension of the question, 2) retrieval of relevant information, 3) decision process, and 4) response process (Tourangearu, 1984).

In the development and execution of the cognitive laboratory project, DRC customized the techniques employed specifically to meet PDE's goal and expectations. The goal of the project was to gather relevant information about the thinking processes of students enrolled in science in Grades 4, 8, and 11 in order to create a better science assessment for Pennsylvania students.

Logistics and Demographics

PDE provided DRC with a list of the Science, Technology, Environment, and Ecology Assessment Advisory Committee (STEEAAC) members who agreed to participate and to facilitate the PSSA Science Item Tryout Project in their respective districts. Disbursed throughout Pennsylvania, participating districts provided a representative sample of students enrolled in science in Grades 4, 8, and 11 in urban, suburban, and rural schools. Participating districts are listed in Table 3–17.

Table 3–17. Participating Districts by Region

Region of Commonwealth	School District
Western	Athens Area Grove City Area Penn Hills Pittsburgh Public Schools
Central	Manheim Township Newport State College Area West Shore Wilkes-Barre Area
Eastern	Haverford Township Lower Merion Mid-Valley Philadelphia City SD Upper Merion

Process and Procedures for the 2006 Item Pilot

Two parallel forms of the science assessment were designed for each grade level, with a designated administration time of thirty minutes. No attempt was made to replicate the design of a PSSA science operational test for the cognitive lab or pilot test because of testing-time limitations and the objectives of this study. The items were representative of items from each of the proposed PSSA's four reporting strands (i.e., The Nature of Science, Biological Sciences, Physical Sciences, and Earth and Space Sciences). All test items were approved by PDE before inclusion in the PSSA Science Item Tryout Project.

In Grade 4, each form of the test consisted of 10 multiple-choice items, 70 percent of which included graphs, graphics, charts, or tables with relevant information associated with the item. All four reporting strands were assessed in each Grade 4 test form. In Grades 8 and 11, age/grade-appropriate science scenarios were developed. The scenarios included graphics, charts, tables, graphs, and diagrams to support the scenario text. A set of test items associated with each science scenario was developed. In Grade 8, each test form included items from all four reporting strands. In Grade 11, scenarios in test Form A assessed the biological, earth and space, and nature of science reporting strands, while test Form B assessed the physical, earth and space, and nature of science reporting strands.

Scenarios and questions reached beyond simple fact recollection; they were designed to challenge students to think and to apply knowledge and skills learned in their classrooms. The science scenarios were based on Pennsylvania Assessment Anchors and Eligible Content. Scenarios were designed to reflect multi-dimensional classroom activities that incorporate higher cognitive levels of understanding. Each scenario was stimulus-based and included passages with graphics, charts, graphs, or a combination of all three media. Science scenarios challenged students to interpret passage content while using science knowledge and process skills to determine their answers.

Implementation and Test Administration for 2006 Item Pilot

Two classrooms within one geographic region participated in the project each day. At least two test development specialists were present at all but one school district during the pilot study project sessions; in addition, representatives from PDE attended most sessions. The PSSA Science Item Tryout Project field work occurred during a three-week window, beginning on February 27 and concluding on March 16, 2006.

WRITING

Test Content Blueprint for 2014 Writing Assessment

As indicated in Chapter One and Chapter Two, the PSSA is based on the Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening. The writing test specifically measures Pennsylvania Academic Standards 1.4 (Types of Writing) and 1.5 (Quality of Writing). The Reading, Writing, Speaking, and Listening Standards were designed to show what students should know and be able to do with the English language at each grade level. The Standards establish an outline for what can be assessed on the PSSA writing test and help to communicate the range of knowledge and skills from which the PSSA items would be designed.

The PSSA writing test for Grades 5, 8, and 11 in 2006 through 2012 followed this content blueprint and testing plan in order to reflect the Pennsylvania Academic Standards. The PSSA writing test in 2013 continued to follow this blueprint and testing plan for Grades 5 and 8. The 2014 writing assessment continues to follow this blueprint and testing plan, but is aligned to the Language and Writing Eligible Content of the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content in addition to the Pennsylvania Academic Standards.

Operational Layout for 2014 Writing

The PSSA operational layout was developed through the collaborative efforts of Data Recognition Corporation (DRC), the National Center for Improvement of Educational Assessment (NCIEA), and the Pennsylvania Department of Education. The layout was subsequently evaluated and approved by PDE. The writing test book is scannable and includes fields for student demographic data, stimuli (i.e., embedded error passages) linked to multiple-choice (MC) items, and writing prompts (WP). Each MC item is worth 1 point. Responses to WP items receive a maximum of 4 points (on a scale of 1–4) for demonstrating control in a given mode and also receive a maximum of 4 points (on a scale of 1–4) for demonstrating control of conventions. The writing scoring guidelines have a 1, 2, 3, and 4 score point, but there is no zero score point. Blanks and other non-scoreable responses are the only situations in which a student's raw score is zero.

MULTIPLE-CHOICE ITEMS

Each test form contains a common set of operational items (i.e., each student is tested on an identical set of core items). Due to the transition to an ELA assessment planned for 2015, embedded field-test items were not included in the 2014 assessment for either Grade 5 or Grade 8.

WRITING PROMPTS

Each 2014 test form contains two common operational writing prompts. The core prompts are taken by all students at a grade level. The 2006 through 2008 operational forms did not contain matrix or embedded field-test writing prompts; however, in order to begin building a bank of usable prompts for use in future operational administrations, writing prompts began to appear in field-test positions starting again in 2009. Grade 5 did not require embedded field testing in 2013, so the embedded field-test writing prompt section was omitted in 2013. Neither grade required embedded field testing in 2014, so the embedded field-test writing prompt section was omitted for both grades in 2014. For more information on the field-test process that occurred for the development of the writing prompts used operationally in 2014, see Chapter Five.

Forms

The 2014 writing PSSA is composed of one form at Grade 5 and one form at Grade 8.

Table 3–18 and Table 3–19 display the design for the writing test forms. The column entries for these tables denote the following:

- Number of core Revising and Editing (R&E) stimulus-based MC items
- Number of embedded field-test R&E stimulus-based MC items
- Total number of R&E stimulus-based MC items
- Number of pre-equated core 4-point writing prompts (WP)

- Number of field-test WP
- Total number of MC and OE items in the form (Total Items MC/WP)

Table 3–18. 2014 Writing Test Plan per Operational Form per Grade

Grade	No. of Core R&E Stimulus-based MC Items per Form	No. of FT R&E Stimulus-based MC Items per Form	Total No. of R&E MC Items per Form	No. of Pre-equated Core 4-point WP per Form	No. of FT WP per Form	Total No. of Items per Op. Form (MC/WP)
5	12	0	12	2	0	12/2
8	12	0	12	2	0	12/2

Since an individual student's score is based solely on the common, or core, items, the total number of operational points is 100. The total score is obtained by combining the points from the core MC and WP portions of the test as displayed in Table 3–19.

Table 3–19. Maximum Eligible Core Points for Writing Prompts

Multiple-choice	Writing Prompts		Totals
	Conventions	Mode	
12	8	80	100
12 items × 1 point each (12×1)	2 items, each worth a maximum of 4 points each (2×4)	2 items, each worth a maximum of 4 points each. The raw score is then multiplied by 10. (2×4)×10	(12 + 8 + 80)

Linking for 2014 Writing Assessment

The matter of linking for the PSSA writing assessment is covered in Chapter Fifteen.

Test Sessions and Timing

The testing window for the 2014 operational assessment was from March 31 through April 11, 2014, including make-up sessions. The writing assessment consisted of three sections in each grade. Test administration required each complete section to be scheduled as one assessment session, although schools were permitted to combine multiple sections as a single session. Administration guidelines stipulated that the sections be administered in the sequence in which they were printed in the test book. Table 3–20 outlines the assessment schedule and estimated times for each section.

Table 3–20. Writing

Section	Contents	Administration (Total in minutes)	Administrative (Pre & Post in minutes)	Student Testing in minutes
1	12 Multiple-choice	40 to 55	15 to 20	25 to 35
2	1 Writing Prompt	70 to 85	15 to 20	55 to 65
3	1 Writing Prompt	70 to 85	15 to 20	55 to 65

Reporting Categories and Point Distribution for 2014 Writing Assessment

The writing assessment results will be reported in two categories:

1. Composition – Academic Standard 1.4, Types of Writing
2. Revising and Editing – Academic Standard 1.5, Quality of Writing

Academic Standards A, B, and C are associated with Composition. Academic Standards E and F are associated with Revising and Editing. The distribution of core items into these two categories is shown in Table 3–21. See also Appendix B for a summary by grade level and subject.

Table 3–21. Core Points Distribution

Reporting Category	Composition	Revising and Editing	Total
Academic Standards	1.4.A, 1.4.B, 1.4.C	1.5.E and 1.5.F	
Multiple-choice Items	N/A	12	12
Writing Prompt 1	4 (Mode)	4 (Conventions)	8
Writing Prompt 2	4 (Mode)	4 (Conventions)	8
Raw Subtotal	8	20	28
Weighting Factor applied to Raw Score	×10	×1	
Total Possible Points	80	20	100

For more information concerning the process used to convert the operational layout into forms (i.e., form construction), see Chapter Six. For more information about operational layout across forms and across years (i.e., form equivalency), see Chapter Ten.

TEST DEVELOPMENT CONSIDERATIONS: ALL ASSESSMENTS

Alignment to the Pennsylvania Academic Standards-aligned Assessment Anchors and Eligible Content (or, in the case or writing, strong alignment with the PSSA Academic Standards), alignment to the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content, grade-level appropriateness (reading/interest level, etc.), depth of knowledge, cognitive level, item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology were major considerations in the item development process. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999) and the *Principles of Universal Design* (Thompson, Johnstone, & Thurlow, 2002)

guided the development process. In addition, DRC's manual, *Fairness in Testing: Guidelines for Training on Bias, Fairness, and Sensitivity Issues* was used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field specialists. Items were also reviewed for adherence to the Principles of Universal Design by representatives from the National Center for Educational Outcomes (NCEO). In addition, the items were reviewed for adherence to the guidelines outlined in the Pennsylvania publication *Principles, Guidelines and Procedures for Developing Fair Assessment Systems: Pennsylvania Assessment Through Themes* (PATT).

Bias, Fairness, and Sensitivity: All Assessments

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests meet Standard 7.4 of the Standards for Educational and Psychological Testing (AERA, APA, NCME, 1999).

> *Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.*

To meet Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity (as well as for technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity include instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include, but are not limited to, stereotyping, gender, regional/geographic, ethnic/cultural, socioeconomic/class, religious, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

Universal Design: All Assessments

As stated above, the Principles of Universal Design were incorporated throughout the item development process to allow participation of the widest possible range of students in the PSSA. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.
- Items have concise and readable text.

- Items allow changes to other formats, such as Braille, without changing meaning or difficulty.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the Principles of Universal Design is described in Chapter Four.

Depth of Knowledge: All Assessments

An important element in statewide assessment is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating depth of knowledge (DOK). According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (p. 7–8). The four levels of cognitive complexity (i.e., depths of knowledge) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

Depth-of-knowledge levels were incorporated in the item writing and review process, and items were coded with respect to the level they represented. Generally, multiple-choice items are written to DOK levels 1 and 2, and constructed-response items are written to DOK level 3.

Passage Readability

Evaluating the readability of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate at a given grade level as described in the section on reading passage selection later in this chapter. Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way, but more informally to provide for several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness.

Test Item Readability: All Assessments

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject areas such as mathematics or science contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary one grade level below the tested grade level for non-reading tests.

There was a conscious consideration made to ensure that each test question was evaluating a student's ability to build toward mastery of the mathematics standards or the science standards versus the student's reading ability. Resources used to verify the vocabulary level were the *EDL Core Vocabularies* and the *Children's Writer's Word Book.*

In addition, every test question is brought before several different committees composed of grade-level experts in the field of mathematics education and science education. They review each question from the perspective of the students they teach, and they determine the validity of the vocabulary used and work to minimize the level of reading required.

Vocabulary was also addressed at the Bias, Fairness, and Sensitivity Review, although the focus was on how certain words or phrases may represent a possible source of bias or issue of fairness or sensitivity.

TEST DEVELOPMENT PROCESS: ALL ASSESSMENTS

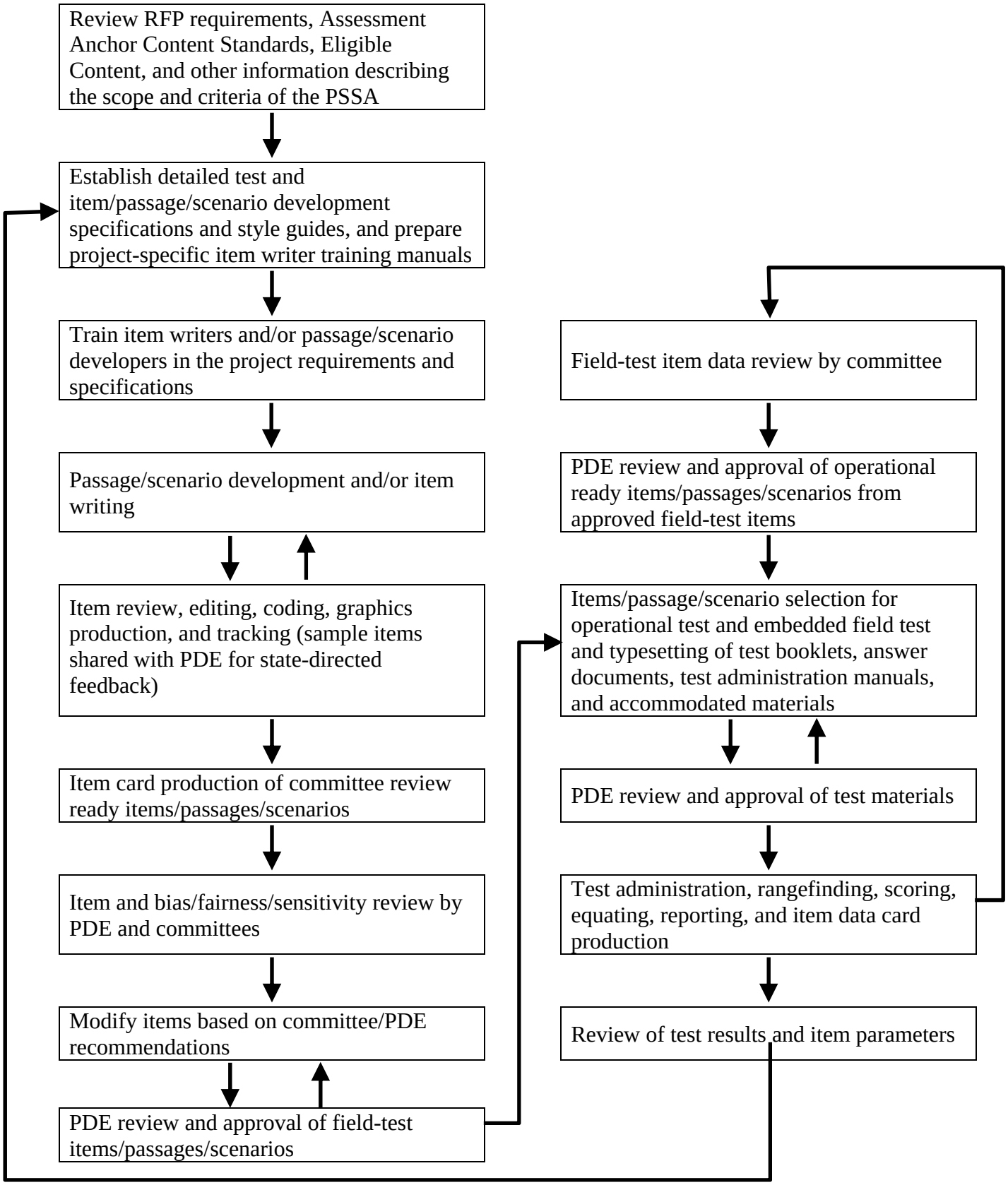
The test development process for passages, scenarios, and items followed a logical timeline, which is outlined below in Figure 3–1. On the front end of the schedule, tasks were generally completed with the goal of presenting field-test candidate items to committees of Pennsylvania educators. On the back-end of the schedule, all tasks lead to the field-test data review.

Figure 3–1. Item and Test Development Cycle and Timeline

Steps in Development Cycle	Timeline Before/After New Item Review		
Development planning	Fall	⇩	-12 to -9 months
Reading passage selection	Fall	⇩	-12 to -9 months
Item writer training	Fall/Winter	⇩	-9 months
Initial item authoring	Winter/Spring	⇩	-9 to -4 months
Internal reviews and PDE reviews	Spring/Summer	⇳	-8 to -1 month
Bias, Fairness, and Sensitivity Review	Summer/Fall	⇩	+/- 0 months
New Item Content Review	**Summer/Fall**	**⇨**	**+/- 0 months**
Post-review resolution and clean-up	Summer/Fall	⇩	+1 to +2 months
Build test forms	Fall	⇩	+2 to +4 months
Internal form reviews and PDE reviews	Fall/Winter	⇳	+3 to +4 months
Form printing, packaging, and shipping	Winter/Spring	⇩	+4 to +8 months
Test administration	Spring	⇩	+9 months
Material/data processing, rangefinding, and scoring	Spring/Summer	⇩	+10 to +12 months
Field-Test Item Data Review	**Summer**	**⇨**	**+12 months**
Select operational items	Summer/Fall	⇩	+13 to +15 months

The process flowchart in Figure 3–2 illustrates the interrelationship among the steps in the process that occur in a normal year of development (i.e., when the items for field testing are primarily from new development, as opposed to being selected from an existing item bank). In addition, a detailed process table describing the item and test development processes also appears in Appendix C.

Figure 3–2. DRC Item and Test Development Process



The following paragraphs describe the processes which lead up to the operational test in a normal round of development. These processes were used to develop all the 2013 field-test items used as operational items in the 2014 administration.

Item Development Planning Meeting: All Assessments

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans for the next PSSA administration, including the test blueprint, the field-test plan (including development counts), procedures, timelines, etc. With a complete development cycle lasting several years (from item authoring through field test, data review, and operational usage), the initial planning begins well in advance of the anticipated administration. For the 2014 operational administration, the initial planning meeting for the item authoring process for the 2013 field test occurred in fall 2011. Item authoring began early in 2012, with the item review meetings occurring in July 2012. See Table 3–2.

Item Writer Training: All Assessments

Item writers were selected and trained for the content areas of mathematics, reading, science, and writing. Qualified writers were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing multiple-choice and open-ended items. Prior to developing items for the PSSA, the cadre of item writers was trained with regard to the following:

- Pennsylvania Academic Standards, Assessment Anchors, and Eligible Content
- Pennsylvania Core Standards, Assessment Anchors, and Eligible Content
- Webb's Four Levels of Cognitive Complexity: Recall, Basic Application of Skill/Concept, Strategic Thinking, and Extended Thinking
- General Scoring Guidelines for Each Content Area
- Specific and General Guidelines for Item Writing
- Bias, Fairness, and Sensitivity Guidelines
- Principles of Universal Design
- Item Quality Technical Style Guidelines
- Reference Information
- Sample Items

Reading Passage Selection

The task of searching for passages was conducted by DRC professionals with classroom experience in reading/language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage selection included appropriate length, text structure, density, and vocabulary for the grade level. A judgment was also made about whether the reading level required by a particular passage was at the independent level, that is, where the average student should be able to read 90 percent of words in the text independently. Passage finders were given the charge to search for a specified number of passages for each genre. Generally, at least twice as many passages as needed were sought. Most passages acquired for the 2013 field test were authentic in that they were culled from published materials. Approval to reprint was secured from the publishers. Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are grade-appropriate in terms of vocabulary and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are from a variety of sources.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of MC and CR items.
- Passages are complete with all necessary permissions documentation.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages should not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, those passages deemed potentially acceptable were reviewed by the Reading Content Committee and Bias, Fairness, and Sensitivity Committee for final approval.

Item Authoring and Tracking: All Assessments

Initially, items are generated with software-prepared PSSA Item Cards, which allows for preliminary sorting and reviewing. Although very similar, the PSSA Item Card for Multiple-Choice Items differs from the PSSA Item Card for Constructed-Response Items in that the former has a location at the bottom of the card for comments regarding the distractors. Examples of these two cards are shown in Appendix D. In both instances a column against the right margin includes codes to identify the subject area, grade level, content categories, passage information (in the case of reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key (for MC items), and calculator use (for mathematics items).

All items undergoing field testing in 2013 were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use within a test form. The system supports an extensive item history that includes item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF). A sample IDEAS Data Card is presented in Appendix D.

Internal Reviews and PDE Reviews: All Assessments

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as grade level, content category, and subcategories. Based on the item writer's classroom teaching experience, knowledge of the content-area curriculum, and cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulty.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC, at WestEd, or at both companies (depending on the grade level and content). Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and/or Assessment Anchor Content Standard. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided and cued only one correct answer (MC items only). In addition, the difficulty level, depth of knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process include, but are not limited to Universal Design, bias, source of challenge, grammar/punctuation, and PSSA style.

Following this internal process, items were reviewed by content specialists at the Pennsylvania Department of Education. PDE staff then consulted with DRC and WestEd about any general issues or concerns (e.g., style, format, interpretation of Assessment Anchors and Eligible Content) and about edits to specific items. Following PDE's review, the items were prepared for the content review meetings conducted with Pennsylvania educators.

Item Content Review in Summer 2012: All Assessments

Prior to the 2013 field testing, all newly developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level appropriateness, estimated difficulty, depth of knowledge, and source of challenge. With source of challenge, items are identified where the cognitive demand is focused on an unintended content, concept, or skill (Webb, 2002). In addition, source of challenge may be attributed if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge. They also suggested revisions and made

recommendations for reclassification of items. In some cases when an item was deleted, the committee suggested a replacement item and/or reviewed a suggested replacement item provided by the facilitators. The committee also reviewed the items for adherence to the Principles of Universal Design, including language demand and issues of bias, fairness, and sensitivity.

The content review was held June 11–13, 2012, for science; June 11–15, 2012, for ELA: writing Grades 6–8; June 18–20, 2012, for mathematics Grades 3–5; June 18–22, 2012, for ELA: reading Grades 3–5; June 25–26, 2012, for writing Grade 8; and June 25–27, 2012, for mathematics Grades 6–8 and reading Grades 6–8. Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE and WestEd. Committee members, grouped by grade level and content area, worked through and reviewed the items for quality and content, as well as for the following categories:

- Assessment Anchor Alignment (classified as Full, Partial, or No)
- Content Limits (classified as Yes or No)
- Grade-Level Appropriateness (classified as At Grade Level, Below Grade Level, or Above Grade Level)
- Difficulty Level (classified as Easy, Medium, or Hard)
- Depth of Knowledge (classified as Recall, Application, Strategic Thinking)
- Appropriate Source of Challenge (classified as Yes or No)
- Correct Answer (classified as Yes or No)
- Quality of Distractors (classified as Yes or No)
- Graphics (classified as Yes or No) in regards to appropriateness
- Appropriate Language Demand (classified as Yes or No)
- Freedom from Bias (classified as Yes or No)

The members then came to consensus and assigned a status to each item as a group: Approved, Accepted with Revision, Move to Another Assessment Anchor or Grade, or Rejected. All comments were recorded, and a master rating sheet was completed. Committee facilitators recorded the committee consensus on the Item Review Rating Sheet. A sample form and rating criteria may be found in Appendix E.

Security was addressed by adhering to a strict set of procedures. Items in binders were distributed for committee review by number and signed for by each member on a daily basis. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials not in use at any time were stored in a locked room. Secure materials that did not need to be retained after the meetings were deposited in secure barrels and the contents were shredded.

Bias, Fairness, and Sensitivity Reviews in July 2012: All Assessments

Prior to 2013 field testing, all newly developed test items for science and writing were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This took place from June 11–15, 2012, and June 20–22, 2012, for reading, mathematics, science, writing, and English Language Arts. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multi-ethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2003–2012). Members of the committee also had expertise with special-needs students and English Language Learners. PDE staff members were also trained and participated in the review. All reading, mathematics, science, and writing items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed, for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, religion, socioeconomic status, or stereotyping. These categories were then the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee then discussed each of the issues as a group and came to consensus as to which issues should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to PDE. This review followed the same security procedures as outlined above, except that the materials were locked up and stored at the DRC offices in Harrisburg. Table 3–22 shows the gender and race/ethnicity composition for the members of the bias committee who reviewed the PSSA items and passages for bias, fairness, and sensitivity.

Table 3–22. Demographic Composition of the 2012 Bias, Fairness, and Sensitivity Committee

Member #	Gender	Race/Ethnicity	Background
1.	Female	Hispanic American	Migrant Education Student Support Specialist
2.	Female	Hispanic American	Community Leader
3.	Male	Hispanic American	Special Education/ELL/PATTAN Representative
4.	Female	Asian American	Retired Educator/National Consultant
5.	Male	Asian American	Educator/National Consultant
6.	Female	Caucasian American	Educator/Special Education
7.	Female	Caucasian American	Educator/Special Education
8.	Female	Caucasian American	Educator/Special Education
9.	Male	Caucasian American	University Professor
10.	Female	African American	Educator/Instructional Specialist
11.	Female	African American	Retired Educator
12.	Male	African American	Retired Superintendent/National Consultant
Totals	8 Females 4 Males	3 Hispanic Americans 2 Asian Americans 4 Caucasian Americans 3 African Americans	

The results from the Bias, Fairness, and Sensitivity Committee review of mathematics are summarized in Table 3–23.

Table 3–23. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for Mathematics

Grade	Mathematics Items			
	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	276	274	2	0
4	277	267	10	0
5	277	276	1	0
6	112	108	4	0
7	112	108	4	0
8	115	112	3	0
Total	1,169	1,145	24	0

The results from the Bias, Fairness, and Sensitivity Committee review of reading are summarized in Table 3–24.

Table 3–24. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for Reading

Grade	Reading Passages and Items				
	Total passage sets reviewed	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
6	13	141	141	0	0
7	12	119	119	0	0
8	13	141	141	0	0
Total	38	401	401	0	0

The results from the Bias, Fairness, and Sensitivity Committee review of science are summarized in Table 3–25.

Table 3–25. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for Science

Grade	Science Items				
	Total scenarios reviewed per grade	Total items reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
4	n/a	168	166	2	0
8	7	242	242	0	0
Total	7	410	408	2	0

The results from the Bias, Fairness, and Sensitivity Committee review of writing are summarized in Table 3–26.

Table 3–26. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for Writing

Grade	Writing Items, Passages, and Prompts				
	Total passages reviewed per grade	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
8	13	90	90	0	0
Total	13	90	90	0	0

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Reading are summarized in Table 3–27.

Table 3–27. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for ELA: Reading

Grade	Writing Items, Passages, and Prompts				
	Total passages reviewed per grade	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	27	290	289	1	0
4	31	324	312	1	11
5	33	305	305	0	0
Total	91	919	906	2	11

The results from the Bias, Fairness, and Sensitivity Committee review of ELA: Writing are summarized in Table 3–28.

Table 3–28. Number of Items—2012
Bias, Fairness, and Sensitivity Committee Review for ELA: Writing

Grade	Writing Items, Passages, and Prompts			
	Total items or prompts reviewed per grade	Accepted As Is	Accepted With Revision	Rejected
3	267	249	18	0
4	264	251	13	0
5	262	258	2	2
Total	793	758	33	2

Chapter Four: Universal Design Procedures Applied in the PSSA Test Development Process

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone & Thurlow, 2002). At every stage of the item and test development process, including the 2013 field test, procedures were employed to ensure that items and subsequent tests were designed and developed using the elements of universally designed assessments developed by the National Center for Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title 1 and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and English Language Learners. The benefits of universally designed assessments not only apply to these groups of students, but to all individuals with wide-ranging characteristics.

DRC's test development team was trained in the elements of Universal Design as it relates to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Language Learners. Likewise some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines followed during all stages of the item development process for the PSSA.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Center for Universal Design, 1997), NCEO has produced seven elements of Universal Design as they apply to assessments (Thompson, Johnstone & Thurlow, 2002). These elements served to guide PSSA item development.

- **Inclusive Assessment Population**

  The PSSA target population includes all students at the assessed grades attending Commonwealth schools. For state, district, and school accountability purposes, the target population includes all students except those who will participate in accountability through an alternate assessment.

- **Precisely Defined Constructs**

  An important function of well-designed assessments is that they actually measure what they are intended to measure. The Pennsylvania Assessment Anchor Content Standards (Assessment Anchors) provided clear descriptions of the constructs to be measured by the PSSA at the assessed grade levels. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

- **Accessible, Non-biased Items**

  DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers because of lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team of individuals who understand the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than being added after the fact.

- **Amenable to Accommodations**

  Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the test is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology. (See the section on Assessment Accommodations later in Chapter Four.)

- **Simple, Clear, and Intuitive Instructions and Procedures**

  Assessment instructions should be easy to understand, regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

- **Maximum Readability and Comprehensibility**

  A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, text organization, and others. All of these features were considered as item text was developed.

  Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the new PSSA items:

  - Reduction of excessive length
  - Use of common words
  - Avoidance of ambiguous words
  - Avoidance of irregularly spelled words
  - Avoidance of proper names
  - Avoidance of inconsistent naming and graphic conventions
  - Avoidance of unclear signals about how to direct attention

- **Maximum Legibility**

  Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are intended to assess. A style guide developed and updated annually (DRC, 2004–2012) was utilized, with PDE approval, which included dimensions of style consistent with universal design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was attended to. For more information on the checklist, see the Universal Design section in Chapter Three of this report.

1. **Items measure what they are intended to measure.** Item writing training included ensuring that writers and reviewers had a clear understanding of Pennsylvania's Academic Standards and the Assessment Anchors. During all phases of test development, items were presented with content-standard information to ensure that each item reflected the intended Assessment Anchor. Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant to what was being tested. In certain types of items an additional skill is necessary, such as the mathematics test, which requires the student to read.
2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items for issues of bias, fairness, and sensitivity. Training also included an awareness of, and sensitivity to, issues of cultural and regional diversity.
3. **Items have a clear format for text.** Decisions about how items are presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which is far less legible and is read considerably more slowly than standard typeface. Captions, footnotes, keys, and legends were at least a 12-point size.[4] Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space around paragraphs and between columns and staggered right margins were used.
4. **Stimuli and items have clear pictures and graphics.** When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used where possible. Sufficient contrast between background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.

[4] While font size follows specific requirements during online setup of an assessment, the screen resolution used at the local level can impact whether the effective font size is visible to the student.

5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used:
    - Simple, clear, commonly used words were used whenever possible.
    - Extraneous text was omitted.
    - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
    - Technical terms and abbreviations were used only if they were related to the content being measured.
    - Definitions and examples were clear and understandable.
    - Idioms were avoided unless idiomatic speech was being assessed.
    - The questions to be answered were clearly identifiable.
6. **Items allow changes to format without changing meaning or difficulty.** A Braille version of the PSSA was available at each assessed grade. Attention was given to using items that allow for Braille. Specific accommodations were permitted, such as signing to a student, the use of oral presentation under specified conditions, and the use of various assistive technologies. A Spanish version of the PSSA mathematics and PSSA science test was available for use by English Language Learners who would benefit from this accommodation. In the online format, permitted accommodations included text-to-speech audio, a color overlay, contrasting text options, and American Sign Language videos.
7. **The test has an overall appearance that is clean and organized.** Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, visual crowding, shading) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose. Information was organized in a left-right, top-bottom format.

ITEM DEVELOPMENT

DRC and WestEd work closely with the Pennsylvania Department of Education to help ensure that PSSA tests comply with nationally recognized Principles of Universal Design. The implementation of accommodations on large-scale statewide assessments for students with disabilities is supported in the development of the PSSA. In addition to the Principles of Universal Design as described in the Pennsylvania Technical Report, DRC and WestEd apply to each content-area assessment the standards for test accessibility as described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004). To this end, DRC and WestEd embrace the following precepts:

- Test directions are carefully worded to allow for alternate responses to open-ended questions.
- During item and bias reviews, test committee members are made aware of the Principles of Universal Design and of issues that may adversely affect students with disabilities with the goal of ensuring that PSSA tests are free from bias for all students.

- With the goal of ensuring that the PSSA tests are accessible to the widest range of diverse student populations, PDE instructs DRC and WestEd to limit item types that are difficult to format in Braille and that may become distorted when published in large print. DRC and WestEd are instructed to limit the following on the PSSA:
  - Mathematics: Complicated tessellations; charts or graphs that extend beyond one page
  - Reading: Graphics and illustrations that are not germane to the content presented
  - All content areas: Unnecessary boxes and framing of text, unless enclosing the text provides necessary context for the student; use of italics (limited to only when it is absolutely necessary, such as with variables)

ITEM FORMATTING

For all content areas, DRC formats PSSA tests to maximize accessibility for all students by using text that is in a size and font style that is easily readable. DRC limits shading, graphics, charts, and the number of items per page so that there is sufficient white space on each page. Whenever possible, DRC ensures that graphics, pictures, diagrams, charts, and tables are positioned on the page with the associated test items. DRC uses high contrast for text and background where possible to convey pertinent information. Tests are published on dull-finish paper to avoid the glare encountered on glossy paper. DRC pays close attention to the binding of the PSSA test booklets to ensure that they lie flat for two-page viewing and ease of reading and handling.

DRC ensures consistency across PSSA assessments by following these Principles of Universal Design:

- High contrast and clarity is used to convey detailed information.
- Typically, shading is avoided; when necessary for content purposes, 10 percent screens are used as the standard.
- Overlaid print on diagrams, charts, and graphs is avoided.
- Charts, graphs, diagrams, and tables are clearly labeled with titles and with short descriptions where applicable.
- Only relevant information is included in diagrams, pictures, and graphics.
- Symbols used in keys and legends are meaningful and provide reasonable representations of the topics they depict.
- Pictures that require physical measurement are true to size.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to ensure that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. Accommodations manuals for the PSSA titled *2014 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners* were developed for use with the 2014 PSSA.

The manuals can be accessed by going to www.education.state.pa.us. Click on the green check-mark icon, then select "Pennsylvania System of School Assessment (PSSA)."

In addition, Spanish-language versions, translated from the original English versions, were made available for both the mathematics and science PSSA. The Spanish-translation versions are discussed in Chapter Six.

Chapter Five: Field Test Leading to the 2014 Core

Generally, all non-linking core items appearing on the 2014 assessments (with the exception of reading and mathematics Grades 3, 4, and 5) came from the 2013 embedded field-test positions. Prior to 2009, PSSA test forms contained common items that were identical on all forms along with matrix/embedded field-test items. On the 2009 administration, equating block positions (equating items) replaced matrix positions. The common items consisted of a set of core items taken by all students. The matrix and field-test items were embedded and were unique, in most instances, to a form; however, there were instances in which a matrix or embedded field-test item appeared on more than one form. The purpose of administering field-test items is to obtain statistics for them so they can be reviewed before becoming operational. Based on this statistical review, many of the field-test items embedded in the 2013 PSSA were selected for use as common or equating block items (equating items) in the 2014 PSSA.

Note that for reading and mathematics assessments in Grades 3, 4, and 5, items included in the 2013 embedded field test were developed in preparation for the transition to the Pennsylvania Core Standards (PCS). As such, the reading items were not selected for use in the 2014 cores. However, the mathematics items aligned to the PCS were reviewed for alignment back to the Pennsylvania Academic Standards (PAS). Some of the items that were aligned to the PAS were then considered for use on the 2014 cores. For the Grade 5 writing assessment, all core items were selected from the existing pool as the 2013 assessment did not include embedded field-test items.

More information on the field test designs for all contents can be found in the content-specific portions of Chapter Three.

STATISTICAL ANALYSIS OF ITEM DATA

All field-tested items were analyzed statistically following conventional item analysis methods. For MC items, traditional or classical item statistics included the corrected point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), percent correct (*p*-value), and the percent responding to incorrect responses. For constructed-response (CR) items (including open-ended questions, short-answer questions, and writing prompts), the statistical indices included the item-test correlation, the point-biserial correlation for each score level, percent in each score category or level, and the percent of non-scoreable responses.

In general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient for dichotomous (MC) items and the item-total correlation for polytomous (CR) items. In each case the statistic will be positive if the total test mean score is higher for the students who respond correctly to MC items (or attain a higher CR item score) and negative when the reverse is true.

Item statistics are used as a means of detecting items that deserve closer scrutiny, rather than being a mechanism for automatic retention or rejection. Toward this end, a set of criteria was used as a screening tool to identify items that needed a closer review by committees of Pennsylvania educators. For an MC item to be flagged, the criteria included any of the following:

- Point-biserial correlation for the correct response of less than 0.25
- Point-biserial correlation for any incorrect response greater than 0.0
- Percent correct less than 0.3 or greater than 0.9
- Percent responding to any incorrect responses greater than the percent correct
- Gender DIF code of either C-, or C+
- Any ethnic DIF code of C-

For a CR item to be flagged, the criteria included any of the following:

- Score Proportion < .05
- Gender DIF code of B-, B+, C-, or C+
- Any ethnic DIF code of B- or C-

Item analysis results for MC and CR field-test items are presented in Appendix F.

REVIEW OF ITEMS WITH DATA

In the preceding section on Statistical Analysis of Item Data, it was stated that test development content-area specialists used certain statistics from item and DIF analyses of the 2013 field test to identify items for further review. Specific flagging criteria for this purpose were specified in the previous section. Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no further review. However, there were some items—relatively few in number—that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer look; thus, the criteria employed tended to over-identify rather than under-identify items.

The review of the items with data was conducted by over 60 Pennsylvania educators (teachers and PDE staff) broken out into subject-area and/or grade-level or grade-span committees. Additional information, including gender, ethnicity (when available), and Instructional Unit (geographic location within Pennsylvania), about the participants is provided in Tables 5–1 through 5–6. The review for mathematics Grades 3–5, mathematics Grades 6–8, reading Grades 6–8, science, and writing Grade 8 took place on July 30, 2013. The review for ELA Grades 3–5 took place on July 30 through August 1, 2013. In these sessions, committee members were first trained by a representative from DRC's psychometrics staff with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field-tested items and made recommendations on each item and/or scenario/passage. Further discussion on how this information was used is covered in Chapter Six.

Table 5–1. Demographic Composition of the 2013 Mathematics Grades 3–5 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	12
2.	Male	White	19
3.	Male	White	14
4.	Female	White	24
5.	Female	White	7
6.	Female	White	11
7.	Female	White	21
8.	Female	White	28
9.	Female	White	6
10.	Female	White	12
11.	Female	White	18
12.	Female	African American	26
13.	Female	White	12
Totals	11 Female 2 Male	1 African American 12 White	

Table 5–2. Demographic Composition of the 2013 Mathematics Grades 6–8 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Male	White	25
2.	Female	White	12
3.	Female	Not Specified	13
4.	Female	African American	26
5.	Female	White	3
6.	Female	Not Specified	23
7.	Female	White	3
8.	Male	White	22
9.	Female	White	29
Totals	7 Female 2 Male	1 African American 6 White 2 Not Specified	

Table 5–3. Demographic Composition of the 2013 Reading Grades 6–8 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	5
2.	Female	White	18
3.	Female	White	3
4.	Male	Multi-racial	26
5.	Female	White	9
6.	Female	White	18
7.	Female	White	25
8.	Female	White	13
9.	Male	White	10
Totals	7 Female 2 Male	1 Multi-racial 8 White	

Table 5–4. Demographic Composition of the 2013 Science Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Male	White	Not Specified
2.	Female	White	12
3.	Male	Not Specified	14
4.	Male	White	29
5.	Male	White	15
6.	Female	White	12
7.	Male	Not Specified	25
8.	Female	White	23
9.	Male	White	5
Totals	3 Female 6 Male	7 White 2 Not Specified	

Table 5–5. Demographic Composition of the 2013 Writing Grade 8 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	Multi-racial	15
2.	Female	White	20
3.	Female	White	5
4.	Male	White	17
5.	Female	White	18
6.	Female	White	17
7.	Female	White	3
8.	Male	Not Specified	1
9.	Female	Asian American	8
Totals	7 Female 2 Male	1 Asian American 1 Multi-racial 6 White 1 Not Specified	

Table 5–6. Demographic Composition of the 2013 ELA Grades 3–5 Data Review Committee

Member #	Gender	Race/Ethnicity	Instructional Unit Represented
1.	Female	White	24
2.	Female	White	15
3.	Female	White	6
4.	Female	Not Specified	12
5.	Female	Not Specified	24
6.	Male	White	26
7.	Female	African American	5
8.	Female	White	12
9.	Female	White	23
Totals	8 Female 1 Male	1 African American 6 White 2 Not Specified	

Table 5–7. 2013 Data Review Committee Results

Assessment	Grade	No. of Items in 2013 Field Test	Flagged Items in 2013 Field Test Examined at 2013 Data Review Committee					Flagged Items in 2013 Field Test Rejected by 2013 Data Review Committee		Items Classified as "Rejected" from 2013 Field Test (all sources: Data Review Committee, PDE, and DRC)	
			MC	CR	Items flagged for DIF only	Total	Total (% of FT)	No. of	% of FT	No. of	% of FT
Mathematics	3	220	74	16	0	90	40.9%	22	10.0%	23	10.5%
	4	220	79	14	4	93	42.3%	21	9.5%	21	9.5%
	5	220	89	15	2	104	47.3%	22	10.0%	22	10.0%
	6	99	11	6	1	17	17.2%	7	7.1%	7	7.1%
	7	99	16	3	1	19	19.2%	4	4.0%	4	4.0%
	8	99	22	4	3	26	26.3%	11	11.1%	13	13.1%
Reading	6	99	26	6	2	32	32.3%	3	3.0%	4	4.0%
	7	99	26	8	7	36	36.4%	3	3.0%	3	3.0%
	8	99	33	8	3	41	41.4%	4	4.0%	4	4.0%
Science	4	132	25	4	2	29	22.0%	10	7.6%	11	8.3%
	8	156	47	6	1	53	34.0%	7	4.5%	7	4.5%
Writing	8	54	18	3	4	21	38.9%	7	13.0%	7	13.0%
ELA	3	220	35	20	2	55	25.0%	7	3.2%	10	4.5%
	4	220	22	40	8	62	25.8%	3	1.3%	5	2.1%
	5	220	45	39	17	84	35.0%	4	1.7%	12	5.0%
Totals		**2,256**	**568**	**192**	**57**	**762**	**33.8%**	**135**	**6.0%**	**153**	**6.8%**

DIFFERENTIAL ITEM FUNCTIONING

Differential item functioning (DIF) occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. This pattern of results may suggest the presence of *item bias*. As a statistical concept, however, DIF can be differentiated from item bias, which is a content issue that can arise when an item presents negative group stereotypes, uses language that is more familiar to one subpopulation than to another, or is presented in a format that disadvantages certain learning styles. While the source of item bias is often plain to trained judges, DIF may have no clear cause. However, studying how DIF arises and how it presents itself can provide information about how to detect and correct for it.

Limitations of Statistical Detection

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is not an exact science. There have been a variety of methods proposed for detecting DIF, but no single statistic can be considered either necessary or sufficient. Different methods are more or less successful depending on the situation. No analysis can guarantee that a test is free of bias, but almost any thoughtful analysis will uncover the most flagrant problems.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method will locate the problems. If, however, all items on the test show consistent DIF to the disadvantage of a given subpopulation, a statistical analysis of the items will not be able to separate DIF effects from true differences in achievement.

Mantel-Haenszel Procedure for Differential Item Functioning

For multiple-choice (MC) items, the *Mantel-Haenszel* procedure (Mantel & Haenszel, 1959) for detecting differential item functioning is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score to organize the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal group was female for gender-based DIF and black for ethnicity-based DIF; reference groups were male and white, respectively. The Mantel-Haenszel (MH) statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right or wrong). The ability groups are defined by the test's score distribution for the total examinee populations.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

For OE items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt, & Bleistein, 1992), which is computed as the differences in mean scores for the focal and reference groups if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code based on the magnitude of the MH statistic. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

Results and Observations

Counts of the number of items from each grade and subject area that were assigned to each severity code are shown in Table 5–8A (MC items), 5–8B (OE items), 5–8C (ESR items), and 5–8D (TDA items). DIF analyses were conducted on the 2014 PSSA field-test items and may be compared to the 2013 results with MC, OE, and ESR items.

The number of field-test items in each DIF category across the two years was quite similar. Overall, relatively few items had B or C DIF for the Male/Female or White/Black reference and focal groups. Generally speaking, there were more items showing White/Black DIF than Male/Female DIF. However, it was the Male/Female DIF for TDA items in Reading that exhibited the highest proportion of B or C classifications. The nature of TDA items are similar to writing prompt items. While this matches historical trends (writing tended to exhibit more Male/Female DIF than White/Black DIF historically), additional monitoring and study of DIF in these areas may be warranted.[5]

[5] As suggested earlier, only a subset of items showing DIF will actually be biased. For example, any given B or C DIF code might be a false positive. It may also be the result of one of a number of systematic factors not actually attributable to bias. Of course, only items approved by teacher review committees will actually appear on operational PSSA tests.

Table 5–8A. DIF Summary—MC Items

	Grade	Male/Female																White/Black											
		2013							2014							2013							2014							
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Mathematics	3	79	115	1	5	0	0	200	37	49	2	2	0	0	90	43	139	0	18	0	0	200	17	64	0	8	0	1	90
	4	89	108	1	1	1	0	200	43	47	0	0	0	0	90	60	137	0	3	0	0	200	18	67	0	5	0	0	90
	5	84	114	0	2	0	0	200	39	50	0	1	0	0	90	53	143	0	4	0	0	200	25	65	0	0	0	0	90
	6	49	36	2	3	0	0	90	77	118	2	2	0	1	200	25	61	0	4	0	0	90	34	159	0	6	0	1	200
	7	43	43	1	2	0	1	90	69	123	0	7	1	0	200	15	71	0	4	0	0	90	49	142	0	9	0	0	200
	8	48	37	2	3	0	0	90	68	125	1	5	0	1	200	19	64	0	4	0	3	90	69	123	0	7	0	1	200
Reading	3	81	77	0	1	0	1	160	24	47	0	1	0	0	72	33	123	0	4	0	0	160	13	58	0	1	0	0	72
	4	57	102	0	1	0	0	160	39	33	0	0	0	0	72	15	136	0	9	0	0	160	6	50	0	12	0	4	72
	5	71	80	0	6	0	3	160	40	32	0	0	0	0	72	33	113	0	10	1	3	160	14	57	0	1	0	0	72
	6	34	53	0	2	0	1	90	71	85	0	4	0	0	160	2	81	0	7	0	0	90	32	119	0	5	0	4	160
	7	43	43	1	3	0	0	90	74	81	1	4	0	0	160	22	62	0	4	0	2	90	24	125	0	11	0	0	160
	8	48	40	0	2	0	0	90	58	89	0	11	0	2	160	25	57	0	8	0	0	90	31	114	0	14	0	1	160
Science	4	44	52	0	0	0	0	96	44	51	0	1	0	0	96	18	73	0	3	0	2	96	9	82	0	5	0	0	96
	8	60	54	5	1	0	0	120	63	48	2	7	0	0	120	35	83	0	2	0	0	120	33	85	0	2	0	0	120
Writing	5	3	5	0	0	0	0	8	-	-	-	-	-	-	-	0	8	0	0	0	0	8	-	-	-	-	-	-	-
	8	24	23	0	1	0	0	48	-	-	-	-	-	-	-	5	36	0	7	0	0	48	-	-	-	-	-	-	-

Table 5–8B. DIF Summary—OE Items

	Grade	Male/Female																White/Black											
		2013							2014							2013							2014							
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Mathematics	3	14	4	0	1	0	0	19	5	4	0	0	0	0	9	0	13	0	5	0	1	19	0	6	0	3	0	0	9
	4	11	8	1	0	0	0	20	5	3	0	0	0	0	8	2	14	0	3	0	1	20	0	8	0	0	0	0	8
	5	14	5	1	0	0	0	20	7	1	1	0	0	0	9	4	13	0	2	0	1	20	3	4	0	2	0	0	9
	6	3	6	0	0	0	0	9	13	4	1	1	0	0	19	0	7	0	1	0	1	9	2	12	0	4	0	1	19
	7	8	1	0	0	0	0	9	12	5	2	0	1	0	20	0	6	0	3	0	0	9	2	14	0	1	0	3	20
	8	5	1	1	0	0	0	7	8	12	0	0	0	0	20	1	5	0	0	0	1	7	1	12	0	6	0	1	20
Reading	3	16	1	2	0	1	0	20	4	0	2	0	3	0	9	2	15	0	1	0	0	18	2	7	0	0	0	0	9
	4	21	0	14	0	5	0	40	0	0	0	0	0	0	0	2	27	0	7	0	4	40	0	0	0	0	0	0	0
	5	18	1	10	0	10	0	39	0	0	0	0	0	0	0	8	23	0	5	0	3	39	0	0	0	0	0	0	0
	6	1	0	5	0	3	0	9	0	0	0	0	0	0	0	4	5	0	0	0	0	9	0	0	0	0	0	0	0
	7	1	0	1	0	7	0	9	0	0	0	0	0	0	0	6	3	0	0	0	0	9	0	0	0	0	0	0	0
	8	2	0	2	0	5	0	9	0	0	0	0	0	0	0	7	2	0	0	0	0	9	0	0	0	0	0	0	0
Science	4	9	3	0	0	0	0	12	4	8	0	0	0	0	12	1	6	0	2	0	3	12	0	5	1	3	0	3	12
	8	3	5	2	1	1	0	12	7	4	0	1	0	0	12	1	6	0	1	0	4	12	0	6	0	2	0	4	12
Writing	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8	4	0	5	0	3	0	12	-	-	-	-	-	-	-	0	10	0	1	0	1	12	-	-	-	-	-	-	-

Table 5–8C. DIF Summary—ESR Items

	Grade	Male/Female														White/Black												
		2013							2014							2013							2014						
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Reading	3	26	14	0	0	0	0	40	8	10	0	0	0	0	18	3	31	2	3	1	0	40	3	15	0	0	0	0	18
	4	20	20	0	0	0	0	40	11	7	0	0	0	0	18	0	33	0	6	0	1	40	1	8	0	9	0	0	18
	5	20	19	0	1	0	0	40	7	11	0	0	0	0	18	3	32	0	4	0	1	40	1	16	0	0	0	1	18
	6	-	-	-	-	-	-	-	20	20	0	0	0	0	40	-	-	-	-	-	-	-	1	33	0	6	0	0	40
	7	-	-	-	-	-	-	-	18	21	0	1	0	0	40	-	-	-	-	-	-	-	3	29	0	8	0	0	40
	8	-	-	-	-	-	-	-	20	18	0	1	0	1	40	-	-	-	-	-	-	-	8	25	0	7	0	0	40

Table 5–8D. DIF Summary—TDA Items

	Grade	Male/Female							White/Black						
		2014							2014						
		A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
Reading	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4	4	0	3	0	2	0	9	0	5	0	4	0	0	9
	5	3	0	4	0	2	0	9	0	7	0	1	0	1	9
	6	2	0	5	0	13	0	20	1	13	0	5	0	1	20
	7	4	0	4	0	12	0	20	0	16	0	3	0	1	20
	8	6	0	9	0	5	0	20	2	13	0	5	0	0	20

Chapter Six: Operational Forms Construction for 2014

FINAL SELECTION OF ITEMS AND 2014 PSSA FORMS CONSTRUCTION

When the final selection of items for the operational 2014 test was ready to begin, the candidate items that emerged, including those from the spring 2013 field test, had undergone multiple reviews, including:

- reviews by DRC and WestEd content-area test development specialists and curriculum specialists to ensure that all items were properly aligned with content standards,
- formal bias, fairness, and sensitivity review by the Bias, Fairness, and Sensitivity Committee consisting of a multi-ethnic group of men and women having expertise with special-needs students and English Language Learners,
- formal review by the content committees consisting of Pennsylvania educators, including teachers as well as district personnel,
- PDE review, and
- item data review by members of the PDE subject-area teacher committees.

The item and bias reviews are detailed in Chapter Three. The results of the data review are summarized in Chapter Five.

The end product of the above process was an item status designation for each field-tested item. All items having an item status code of Acceptable/Active were candidates to be selected for the 2014 PSSA. To have an item status code of Acceptable/Active meant that the item met the following criteria:

- Appropriately aligned with its designated Assessment Anchor Content Standard (Assessment Anchor) and sub-classifications
- Acceptable in terms of bias/fairness/sensitivity issues, including differential item functioning (for gender and ethnicity)
- Acceptable in terms of psychometric standards, including a special review of flagged items

Next, all relevant information regarding the acceptable items, including associated graphics, was entered into the item banking system known as IDEAS (Item Development and Education Assessment System). From IDEAS and other database sources, Microsoft Excel files were created for each content area at each grade. These files contained all relevant content codes and statistical characteristics. IDEAS also created an item card displaying each acceptable item, any associated graphic, and all relevant content codes and item statistics for use by the content-area test development specialists and psychometric services staff.

DRC test development specialists reviewed the test design blueprint, including the number of items per strand for each content-area test. Special considerations, such as calculator use and manipulatives, were noted.

Psychometricians provided content-area test development specialists with an overview of the psychometric guidelines for forms construction, including guidelines for selecting linking items to link to previous test forms.

Senior DRC content-area test development specialists reviewed all items in the operational pool to make an initial selection for common (core) and equating block (equating items) positions according to test blueprint requirements and psychometric guidelines. Changes to items were not encouraged since alterations could affect how an item might perform on subsequent testing.

For the common items, this meant that the combination of MC and OE items would yield the appropriate range of points while tapping an appropriate variety of the Assessment Anchors and related Eligible Content within each Reporting Category. Items selected in the first round were examined with regard to how well they went together as a set. Of particular concern were the following:

- One item providing cues as to the correct answer to another item
- Context redundancy (e.g., mathematics items with a sports context)
- Presence of clang (distractors not unique from one another)
- Diversity of names and artwork for gender and ethnicity

The first round of items was then evaluated for statistical features such as an acceptable point-biserial correlation and whether correct answers were distributed equally—that is, whether approximately 25 percent of correct answers appeared in each of the four possible positions (A, B, C, or D). Selected items that were deemed psychometrically less advantageous in contrast to the overall psychometric characteristics of the core resulted in a search by the senior reviewer for suitable replacements. At this point, the second round of items was analyzed. If necessary, this iterative process between content-based selections and statistical properties continued in an effort to reach the best possible balance.

In the case of the core-to-core linking items (part of the overall core pull), content considerations remained relevant, together with statistical features, such as an acceptable point-biserial correlation and whether the items, as a collection, had an average logit value and a test characteristic curve approximating that of the previous year.

The process for selecting equating block items was slightly different. The chief consideration was that items in equating block positions of the various forms mirrored the psychometric considerations of the core. In some cases, the selection of equating block items also required multiple rounds of selection and evaluation until the best possible balance of content and statistical properties was obtained. The content-area test development specialist's task was to distribute these items in equating block positions across the forms so that the MC items assigned to a particular form would go well with one another and reflect the same content and statistical considerations as previously outlined. Additionally, the forms needed to display similar difficulty levels.

Once the recommendations were finalized for the core items, core-to-core linking items, and equating block items, they were submitted to PDE for review. Department staff provided feedback, which could be in the form of approval or recommendations for replacing certain items. Any item replacement was accomplished by the collective effort of the test development specialists, psychometricians, and PDE staff until final PDE approval was given. Once final PDE approval of the forms was given, PDE also participated in the construction and review of scrambled forms.

SPECIAL FORMS USED IN THE 2014 PSSA

Braille and Large Print

Students with visual impairments were able to respond to test materials that were available in either Braille or large print. At each grade level assessed, one form was selected for the creation of a Braille and a large-print edition. School district personnel ordered Braille or large-print assessment materials directly from DRC. They could also contact PaTTAN for technical assistance regarding students with visual impairments.

School personnel were directed to transcribe all student answers (MC and OE) into scannable answer documents exactly as the student responded. No alterations or corrections of student work were permitted, and the transcribed answer document had to have the same form designation as the Braille and large-print version.

Spanish Translation of the Mathematics and Science Assessments

Starting with the 2005 assessment, school personnel had the option of allowing Spanish-speaking students who had been enrolled in schools in the United States for less than three years to respond to a Spanish version of the PSSA for mathematics. In 2009, a Spanish version was also added for the science component of the PSSA. The original translation of the items and the *Directions for Administration Manual* was completed by Second Language Testing, Incorporated. Second Language Testing, Incorporated, uses translators with varying cultural and regional backgrounds to create the Spanish versions of the mathematics and science assessments. The translations were then reviewed and verified by DRC's internal Spanish group. As part of the internal review, a Spanish style guide is maintained to document Spanish word choice from administration to administration and across grades within an administration. After discussions with PDE and Second Language Testing, Incorporated, the mathematics sections of the mathematics and reading test booklets for Grades 4–8 and the entire science assessment for Grades 4 and 8 were designed with a side-by-side format with the English text and Spanish translated text on facing pages. The Spanish translated text was on the left-hand side followed by the original English text on the right-hand (facing) side.

The mathematics sections of the answer booklets for Grades 4–8 and the science answer booklets for Grades 4 and 8 were also presented in Spanish and English. In the case of mathematics, each open-ended item covered a total of four pages in the answer booklet. In the case of science, each open-ended item covered either two or four pages in the answer booklet, depending on the length of the original English-language item. In the case of four-page open-ended items, the first set of facing pages of an item was presented in Spanish. The second set of facing pages of an item was presented in the original English. Those students using this accommodated version of the mathematics assessment could write their answers on either the English language pages or on the translated Spanish language pages. Their answers could be written in English, Spanish, or a combination of both Spanish and English, as all pages were evaluated and scored, and the highest possible scores from those combinations recorded for the students.

The mathematics sections of the scannable booklets for Grade 3 were presented in Spanish and English using a modified over/under format, with the Spanish presented directly above or to the left of the English. To assist the presentation of the two languages on the same page, the English portion was presented in italics and in a smaller font. Those students using this accommodated version of the mathematics assessment could write their answers in English, Spanish, or a

combination of both Spanish and English, with the highest possible scores from those combinations recorded for the students.

Spanish-translated versions of the mathematics assessment were used by a total of 2,511 students at Grades 3–8 in 2014. Spanish-translated versions of the science assessment were used by a total of 843 students at Grades 4 and 8 in 2014.

Instructions for the appropriate use of these special forms are detailed in accommodation manuals titled *2014 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners.*

Summary of the Translation Verification Study by SLTI of the 2009 PSSA Science Assessments

From November 2009 through January 2010, Second Language Testing, Incorporated, conducted a translation verification study of the 2009 PSSA science assessments titled "Translation Verification Study of the 2009 Pennsylvania System of School Assessment (PSSA) of Science for Grades 4, 8, and 11." In this study, the appropriateness of the transadaptation of the PSSA Science Assessments into Spanish was investigated. Three independent reviewers, specialists in bilingual science education and science translation, were used to determine the appropriateness of each translated or adapted item. The purpose of the report was to conduct qualitative research on the comparability of the Spanish and English versions of the PSSA Science assessments.

The report of this study by Second Language Testing, Incorporated, described the assessments, the purpose of the translation verification study, the reviewers, the translation verification process, and the translation verification results. A total of 185 items covering tests at Grades 4 (63 items), 8 (63 items), and 11 (59 items) were reviewed. The study shows that none of the 185 reviewed items were judged by the reviewers to be inappropriately translated or adapted into Spanish. The study did provide suggestions for nine items that were judged as appropriate but the translation could still be improved in the event the items were used again.

Overall, the report concluded that the transadaptation of the 2009 PSSA Science Assessments was clearly appropriate. Since both the English and Spanish versions are comparable in the sense that both versions assess the same content, use the same format, have equal numbers of items, follow the same test administration and scoring procedures, and are used and interpreted in the same way, the study concluded that the English and Spanish versions of the science assessments measured the same content in two different languages. Thus, the study indicated that both language versions showed the same degree of alignment and the same depth-of-knowledge described in the Assessment Anchors alignment study. As a result, the report concluded that there is no need to conduct a separate alignment study of the Spanish version of the PSSA Science Assessments.

Beyond the findings presented in the study, the report recommended that appropriate quantitative analyses be carried out on construct equivalence. Unless such analyses clearly demonstrate a lack of equivalence, it is appropriate to assume that there is no need to conduct a separate linking study or a separate standard setting study for the Spanish versions of the tests. Both versions can be scored on the same scale, and scores on each version have the same meaning in terms of student mastery of the Science Assessment Anchors as defined by the Eligible Content.

The full report can be obtained by request from the Pennsylvania Department of Education.

Summary of Comparability Report from Sireci Psychometric Services

In addition to the study conducted by Second Language Testing, Incorporated, a second comparability study of the 2009 PSSA Spanish translations for science was completed in February 2010 by Sireci Psychometric Services. The report of the study is titled "Evaluating the Comparability of English and English-Spanish Science Tests from the Pennsylvania System of School Assessment."

In this study, the data from the English language and English-Spanish dual-language Pennsylvania science tests for Grades 4, 8, and 11 were analyzed. These analyses were designed to evaluate the consistency of the structure of the data and the consistency of item functioning across the English and Spanish versions of these assessments using various psychometrics methods.

The full report can be obtained by request from the Pennsylvania Department of Education.

Chapter Seven: Test Administration Procedures

TEST SESSIONS, TEST SECTIONS, TEST TIMING, AND TEST LAYOUT

Some assessments utilized separate test booklets and answer booklets. An answer booklet was used to respond to the multiple-choice and constructed-response items (i.e., open-ended items, short-answer items, and writing prompts) and to collect demographic information. The multiple-choice items and all stimulus text were placed within the test booklet. Other assessments used a single consumable booklet. When a single scannable answer booklet was utilized, the contents of the answer booklet and the test booklet were combined into one integrated booklet.

Table 7–1. Booklet Type by Administration

Assessment	Grade	Test Booklet	Answer Booklet	Single Consumable Booklet
Mathematics & Reading	3			✓
	4	✓	✓	
	5	✓	✓	
	6	✓	✓	
	7	✓	✓	
	8	✓	✓	
Science	4	✓	✓	
	8	✓	✓	
Writing	5			✓
	8			✓

Generally, a separate test booklet and answer booklet were used to separate the multiple-choice items and constructed-response items. For the Grade 3 mathematics and reading assessment, a single booklet was used to accommodate the younger age of the students. The writing assessments also utilized one booklet, since sections 2 and 3 both required student writing only.

The number of sections for the 2014 operational assessment varied based on the content area of the assessment. The reading and mathematics assessments consisted of six sections. The science assessments consisted of two sections. The writing assessments consisted of three sections. See also Appendix G.

Table 7–2. PSSA Test Section Information

	Assessment	No. of Sections per Content	No. of Sections per Form
1.	**Mathematics**	3	6
	Reading	3	
2.	**Science**	2	2
3.	**Writing**	3	3

Table 7–3. PSSA Testing Load and Duration by Subject by Grade

Assessment	Grade	Total No. of MC Items per Form per Administration	Total No. of OE Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)
Mathematics	**3**	72	4	200 to 245
	4	72	4	200 to 245
	5	72	4	200 to 245
	6	72	4	200 to 245
	7	72	4	200 to 245
	8	72	4	200 to 245
Reading	**3**	58	3	215 to 260
	4	58	5	255 to 300
	5	58	5	255 to 300
	6	58	5	225 to 270
	7	58	5	225 to 270
	8	58	5	230 to 275
Science	**4**	68	6	120 to 150
	8	70	6	130 to 160
Writing	**5**	20	2	200 to 245
	8	20	3	270 to 330

Table 7–4. PSSA Testing Load and Duration by Grade by Subject

Grade	Content	Total No. of Items per Form per Administration	Total Estimated Administration Time per Form (in Minutes)	Total No. of Items per Student	Total Estimated Administration Time per Student (in Minutes)
3	**Mathematics**	76	200 to 245	137	395 to 485
	Reading	61	195 to 240		
4	**Mathematics**	76	200 to 245	213	550 to 670
	Reading	63	230 to 275		
	Science	74	120 to 150		
5	**Mathematics**	76	200 to 245	153	610 to 745
	Reading	63	230 to 275		
	Writing	14	180 to 225		
6	**Mathematics**	76	200 to 245	139	435 to 525
	Reading	63	235 to 280		
7	**Mathematics**	76	200 to 245	139	440 to 530
	Reading	63	240 to 285		
8	**Mathematics**	76	200 to 245	229	745 to 910
	Reading	63	235 to 280		
	Science	76	130 to 160		
	Writing	14	180 to 225		

In general, the estimated testing times allowed 1–3 minutes per multiple-choice item, depending on the content area. The open-ended or short-answer items were estimated to take approximately 5–10 minutes per item, also depending on the content area. Writing prompts were estimated to take approximately 55–65 minutes per prompt.

Test administrators were instructed that each section in a form should be scheduled as one assessment session. However, they were allowed to combine multiple sections into a single session, as long as the sections were administered in the sequence in which they are printed in the test booklets (or shown on the screen). In all cases, individual assessment sections had to be completed within one school day.

Since not all students finished the assessment sections at the same time, test administrators were advised to use the flexibility of the time limits to the students' advantage. For example, test administrators managed the testing time so that students did not feel rushed while they were taking any assessment section, and no student was penalized because he or she worked slowly. It was equally stressed to test administrators that a student should not be given an opportunity to waste time. Students were told to close their booklets when they had finished the section of the assessment in which they had been working. Students who finished early were allowed to sit

quietly or read for pleasure until all students had finished. Students with special requirements and/or abilities (i.e., physical, visual, auditory, or learning disabilities as defined by their IEP or service contracts) and students who just worked slowly may have required extended time. Special assessment situations were arranged for these students. When all students in a testing session indicated that they had finished an assessment section, test administrators ended the section and began the next section or allowed the students to return to regular activities.

Scheduled extended time was provided by a test administrator, and students were allowed to request extended time if they indicated that they had not completed the task. Such requests were granted if the test administrator found the request to be educationally valid. Test administrators were advised that not permitting ample time for students to complete the assessment might impact the students' and school's performance.

As a general guideline, however, when all students indicated that they had finished a section, that section was closed. Students requiring time beyond the majority of the student population were allowed to continue immediately following the regularly scheduled session in another setting. When such accommodations were made, school personnel ensured that students were monitored at all times to prevent sharing of information. Students were not permitted to continue a section of the assessment after a significant lapse of time from the original session.

Additional information concerning testing time and test layouts can be found in Chapter Three.

TESTING WINDOW

The testing windows for the 2014 operational assessments were as follows:

- Mathematics and Reading – March 17 through March 28, 2014
- Make-up for Mathematics and Reading – March 31 through April 4, 2014
- Writing – March 31 through April 4, 2014
- Make-up for Writing – April 7 through April 11, 2014
- Science – April 28 through May 2, 2014
- Make-up for Science – May 5 through May 9, 2014

Additional information concerning testing time and test layouts can be found in Chapter Three.

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

DRC sent two shipments for the 2014 PSSA operational assessment:

- Shipment one contained the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s for each grade tested at a school participating in the mathematics, reading, science, and writing assessments. Shipment one was delivered by February 18, 2014.
- Shipment two contained the administrative materials (e.g., Return Shipping labels, District/School labels, Do Not Score labels, and Student Precode labels) and secure materials (e.g., consumable test/answer booklets) for each grade tested at a school participating in the mathematics, reading, science, and writing assessments. Shipment two was delivered by March 3, 2014.

DRC ensured that all assessment materials were assembled correctly prior to shipping. DRC operations staff used the automated Operations Materials Management System (Ops MMS) to assign secure materials to a school at the time of ship out. This system used barcode technology to provide an automated quality check between items requested for a site and items shipped to a site. A shipment box manifest was produced for and placed in each box shipped. DRC operations staff double-checked all box contents with the box manifest prior to sealing the box for shipping to ensure accurate delivery of materials. DRC operations staff performed lot acceptance sampling on both shipments. Districts and schools were selected at random and examined for correct and complete packaging and labeling. This sampling represented a minimum of 10 percent of all shipping sites.

DRC's materials management system, along with the systems of shippers, allowed DRC to track materials from DRC's warehouse facility to receipt at the district, school, or testing site. All DRC shipping facilities, materials processing facilities, and storage facilities are secure. Access is restricted by security code. Non-DRC personnel are escorted by a DRC employee at all times. Only DRC inventory control personnel have access to stored secure materials. DRC employees are trained in and made aware of the high level of security that is required.

DRC packed 2,832,412 assessment booklets and 137,277 *Directions for Administration Manual*s for 2,747 testing sites. DRC used United Parcel Service (UPS) and Advanced Shipping Technologies to deliver the secure materials to the testing sites.

MATERIALS RETURNED

DRC used UPS for all returns. The return windows for the PSSA materials were as follows:

- Mathematics and Reading primary return window – April 2 through April 8, 2014
- Mathematics and Reading make-up return window – April 4 through April 11, 2014
- Writing primary return window – April 8 through April 15, 2014
- Writing make-up return window – April 11 through April 25, 2014
- Science return window (including make-ups) – May 6 through May 9, 2014

TEST SECURITY MEASURES

Test security is essential to obtaining reliable and valid scores for accountability purposes. Test Security Certifications were required to be signed by each building Principal, School Assessment Coordinator, District Assessment Coordinator, Test Administrator, and Proctor after the assessment has been administered. All signed Certifications were returned to the Chief School Administrator who must retain the Certifications for three years. The purpose of the Certifications was to serve as a tool to document that the individuals responsible for administering the assessments both understood and acknowledged the importance of test security and accountability. The Certifications attested that all security measures were followed concerning the handling of secure materials.

SAMPLE MANUALS

Copies of the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s can be found on the PDE website at www.education.state.pa.us.

TESTING WINDOW ASSESSMENT ACCOMMODATIONS

The *Accommodations Guidelines* was developed by PDE for use with the 2014 PSSA. This manual can be found on the PDE website at www.education.state.pa.us. Additional information regarding assessment accommodations can be found in Chapter Four of this report.

Chapter Eight: Processing and Scoring

RECEIPT OF MATERIALS

Receipt of PSSA test materials began on March 26, 2014, and concluded with all make-up tests on May 14, 2014. DRC's Operations Materials Management System (Ops MMS) was utilized to receive assessment materials securely, accurately, and efficiently. This system features innovative automation and advanced barcode scanners. Captured data were organized into reports, which provided timely information with respect to suspected missing material.

The first step in the Ops MMS was the Box Receipt System. When a shipment arrived at DRC, the boxes were removed from the carrier's truck and passed under a barcode reader, which read the barcode printed on the return label and identified the district and school. The number of boxes was immediately compared to what was picked up at the district. The data collected in this process were stored in the Ops MMS database. After the barcode data were captured, the boxes were placed on a pallet and assigned a corresponding pallet number.

Once the box receipt process was completed, the materials separation phase began. Warehouse personnel opened the boxes and sorted materials by grade, subject, and status (used or unused booklets) into scanning boxes. Every booklet's security barcode and precode barcode were hand-scanned to link each document to the original box. As the booklets were sorted, the Ops MMS system guided the floor operator to which box to place the document. The Ops MMS system kept count and record of the materials placed in each box. This count remained correlated to the box as an essential quality-control step throughout the secure booklet processing and provided a target number for all steps of the check-in process. Once a box was closed, an MMS Processing Label was placed on that box.

Once labeled, the sorted and counted boxes proceeded to the Quality Assurance process, where a secure booklet check-in operator used a hand scanner to scan the MMS Processing Label. This procedure identified the material type and quantity parameters for what the Ops MMS should expect within a box. The box contents were then loaded into the streamfeeder.

The documents were fed past oscillating scanners that captured both the security code and precode from the booklets. A human operator monitored an Ops MMS screen that displayed scan errors, an ordered accounting of what was successfully scanned, and the document count for each box. The system ensured that each material within the box matched the information obtained from the original hand-scanning process.

When all materials were scanned and the correct document count was confirmed, the box was sealed and placed on a pallet. If the correct document count was not confirmed, or if the operator encountered difficulties with material scanning, the box and its contents were delivered to an exception handling station for resolution.

This check-in process occurred immediately upon receipt of materials; therefore, DRC provided feedback to districts and schools regarding any missing materials based on actual receipt versus expected receipt. Sites that had 100 percent of their materials missing after the date they were due to DRC were contacted, and any issues were resolved.

Throughout the process of secure booklet check-in, DRC project management ran a daily missing materials report. Every site that was missing any number of booklets was contacted by DRC. Results of these correspondences were recorded for inclusion in the final Missing Materials Report if the missing booklets were not returned by the testing site. DRC produced the Missing Materials Report for PDE upon completion of secure booklet check-in. The report listed all schools in each participating district along with security barcodes for any booklets not returned to DRC.

After scannable materials (used answer booklets) were processed through booklet check-in, the materials became available to the DRC Document Processing staff for document log-in. The booklets were logged-in using the following process:

- A DRC scannable barcode batch header was scanned, and a batch number was assigned to each box of booklets.
- The DRC box label barcode was scanned into the system to link the box and booklets to the newly created batch and to create a Batch Control Sheet.
- The DRC box label barcode number, along with the number of booklets in the box, was printed on the Batch Control Sheet for document tracking purposes. All booklets that were linked to the box barcode were assigned to the batch number and tracked through all processing steps. As booklets were processed, DRC staff dated and initialed the Batch Control Sheet to indicate that proper processing and controls were observed.

Before the booklets were scanned, all batches went through a quality inspection to ensure batch integrity and correct document placement.

After a quality check-in at the DRC Document Processing log-in area, the spines were cut off the scannable documents, and the pages were sent to DRC's Imaging and Scoring System.

SCANNING OF MATERIALS

Customized scanning programs for all scannable documents were prepared to read the booklets and to format the scanned information electronically. Before materials arrived, all image scanning programs went through a quality review process that included scanning of mock data from production booklets to ensure proper data collection.

DRC's image scanners were calibrated using a standard deck of scannable pages with 16 known levels of gray. On a predefined page location, the average pixel darkness was compared to the standard calibration to determine the level of gray. Marks with an average darkness level of 4 or above on a scale of 16 (0 through F) were determined to be valid responses, per industry standards. If multiple marks were read for a single item and the difference of the grayscale reads was greater than four levels, the lighter mark was discarded. If the multiple marks had fewer than four levels of grayscale difference, the response was flagged systematically and forwarded to an editor for resolution.

DRC's image scanners read selected-response, demographic, and identification information. The image scanners also used barcode readers to read pre-printed barcodes from a label on the booklets.

The scannable documents were automatically fed into the image scanners where predefined processing criteria determined which fields were to be captured electronically. Open-ended response images were separated out for image-based scoring.

During scanning, a unique serial number was printed on each sheet of paper. This serial number was used for document integrity and to maintain sequencing within a batch of booklets.

A monitor randomly displayed images, and the human operator adjusted or cleaned the scanner when the scanned image did not meet DRC's strict quality standards for image clarity.

All images passed through a software clean-up program that despeckled, deskewed, and desmeared the images. A random sample of images was reviewed for image quality approval. If any document failed to meet image quality standards, the document was returned for rescanning.

Page-scan verification was performed to ensure that all predefined portions of the booklets were represented in their entirety in the image files. If a page was missing, the entire booklet was flagged for resolution.

After each batch was scanned, booklets were processed through a computer-based editing program to detect potential errors as a result of smudges, multiple marks, and omissions in predetermined fields. Marks that did not meet the predefined editing standards were routed to editors for resolution.

Experienced DRC Document Processing editing staff reviewed all potential errors detected during scanning and made necessary corrections to the data files. The imaging system displayed each suspected error. The editing staff then inspected the image and made any needed corrections using the unique serial number printed on the document during scanning.

Upon completion of editing, quality control reports were run to ensure that all detected potential errors were reviewed again and a final disposition was determined.

Before batches of booklets were extracted for scoring, a final edit was performed to ensure that all requirements for final processing were met. If a batch contained errors, it was flagged for further review before being extracted for scoring and reporting.

During this processing step, the actual number of documents scanned was compared to the number of booklets assigned to the box during book receipt. Count discrepancies between book receipt and booklets scanned were resolved at this time.

Once all requirements for final processing were met, the batch was released for scoring and student-level processing.

Table 8–1 shows the number of answer booklets received through booklet check-in, the number of booklets that contained student responses that were scanned and scored, the number of test booklets received, and the total number of booklets received for the writing assessment (W), the mathematics and reading assessment (MR), and the science assessment (S).

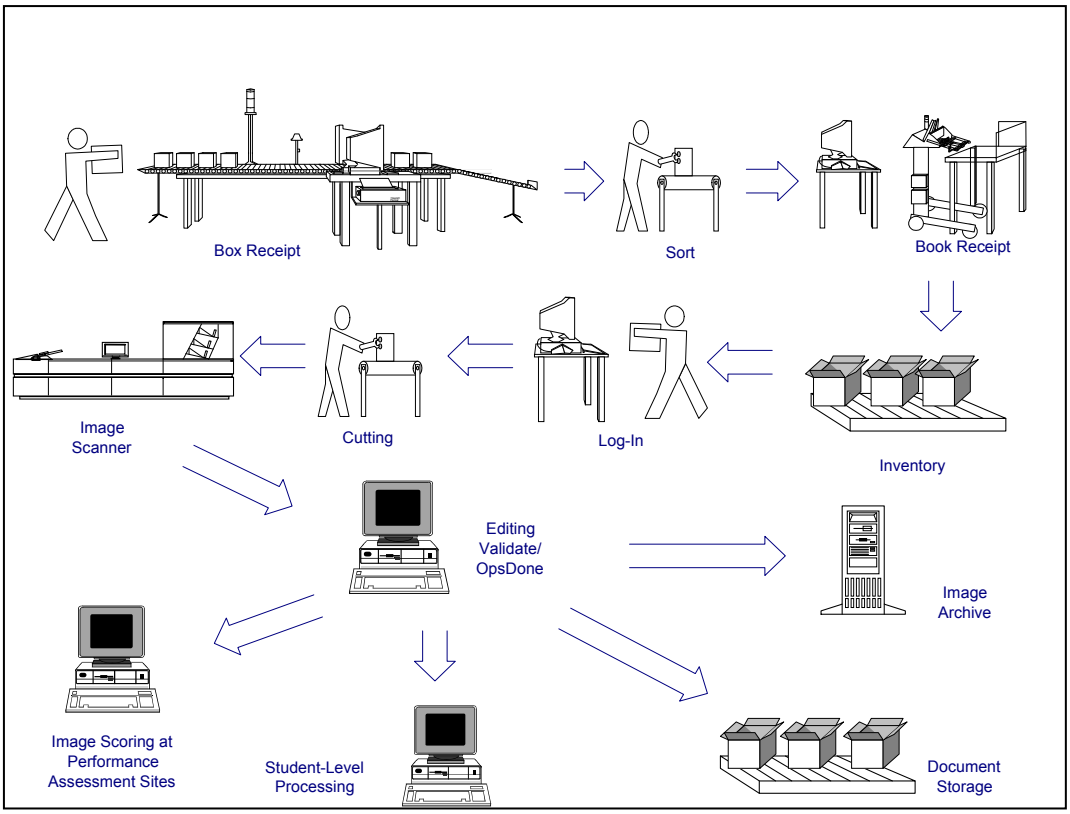
Table 8–1. Counts of 2014 PSSA Materials Received: Grades 3–8

	Answer Booklets Received	Used Answer Booklets Received	Test Booklets Received	Total Booklets Received	Total Booklets Shipped
Grade 3 MR	159,270	128,120	n/a*	159,270	159,290
Grade 4 MR	168,848	129,765	168,846	337,694	337,768
Grade 4 S	168,579	129,176	168,540	337,119	337,220
Grade 5 MR	167,667	129,379	167,663	335,330	335,386
Grade 5 W	166,577	129,226	n/a*	166,577	166,634
Grade 6 MR	163,507	127,920	163,429	326,936	327,014
Grade 7 MR	166,168	131,751	166,161	332,329	332,418
Grade 8 MR	167,439	132,350	167,436	334,875	334,924
Grade 8 S	166,176	130,880	166,137	332,313	332,352
Grade 8 W	166,116	131,968	n/a*	166,116	166,142

* Grades 5 and 8 writing and Grade 3 mathematics and reading were presented in a single, integrated test/answer booklet.

Figure 8–1 illustrates the production workflow for DRC's Ops MMS and Image Scanning and Scoring System from receipt of materials through all processing of materials and the presentation of scanned images for scoring.

Figure 8–1. Workflow System



MATERIALS STORAGE

Upon completion of processing, student response documents were boxed for security purposes and final storage:

- Project-specific box labels were created containing unique customer and project information, material type, batch number, pallet/box number, and the number of boxes for a given batch.
- Boxes were stacked on pallets that were labeled with the project information and a list of the pallet's contents before delivery to the Materials Distribution Center for final secure storage.
- Materials will be destroyed one year after contract year ends, with PDE written approval.

SCORING MULTIPLE-CHOICE ITEMS

The scoring process included the scoring of multiple-choice items against the answer key and the aggregation of raw scores from the open-ended responses. A student's raw score is the actual number of points achieved by the student for tested elements of an assessment. From the raw scores, the scale scores were calculated.

The student file was scored against the final and approved multiple-choice answer key. Items were scored as right, wrong, omitted, or double-gridded (more than one answer was bubbled for an item). Sections of the test were evaluated as a whole and an attempt status was determined for each student for each subject. The score program defined all data elements at the student level for reporting.

RANGEFINDING

After student answer documents were received and processed, DRC's Performance Assessment Services (PAS) staff assembled groups of responses that exemplified the different score points for each subject. The score point ranges were represented by the following scoring guidelines:

- 0–3 item-specific scoring guidelines for ELA: reading (short answer)
- 1–4 holistic scoring guideline for ELA: text-dependent analysis
- 0–4 item-specific scoring guidelines for math
- 0–2 item-specific scoring guidelines for science

Note: For English language arts and mathematics at all grade levels (3–8), Pennsylvania Core Standards (PCS) items were rangefound and field tested this year. Grades 6–8 rangefound/field tested 20 forms per subject, per grade. Grades 3–5 rangefound/field tested 9 forms per subject, per grade. All items were embedded in the 2014 operational PSSA. The grades 6–8 PCS writing prompts were rangefound and field tested as part of a separate standalone field test not addressed in this technical report.

Responses were pulled from the embedded field-test portion of the PSSA for each subject. Once examples of all score points were selected for each item, sets were assembled for rangefinding. Copies were made for each rangefinding participant. Rangefinding committees consisted of Pennsylvania educators, PDE staff members, DRC Test Development staff, and DRC Performance Assessment Services staff. The rangefinding meetings were as follows:

- ELA: Text-Dependent Analysis (TDA) Field Test Rangefinding (grades 4 and 5), May 5–9, The Sheraton Harrisburg-Hershey, Harrisburg
- Reading Field Test Rangefinding (grade 3), May 5–7, The Sheraton Harrisburg-Hershey, Harrisburg
- Math Field Test Rangefinding (grades 6–8), May 5–8, The Sheraton Harrisburg-Hershey, Harrisburg
- ELA: TDA Field Test Rangefinding (grades 6–8), June 9–13, The Hilton, Harrisburg
- Math Field Test Rangefinding (grades 3–5), June 9–11, The Hilton, Harrisburg
- Science Field Test Rangefinding (grades 4 and 8), June 9–10, The Hilton, Harrisburg

Each rangefinding meeting began in a joint session with a review of the history of the assessment and a discussion of the transition towards a PCS assessment and then broke into subject/grade-specific groups. Sets of student responses were presented to the committees, one item at a time. Each committee initially reviewed and scored student responses as a group to ensure that everyone was interpreting the scoring guidelines consistently. Committee members then went on to score responses independently. For each student response, committee members' scores were discussed until a consensus was reached. Only those responses for which there was strong agreement among committee members were chosen for inclusion in training materials for DRC raters.

Discussions of student responses included the mandatory use of scoring guideline language. This ensured that committee members remained focused on the specific requirements of each score level. DRC PAS staff took notes addressing how and why the committees arrived at score point decisions, and this information was used by the scoring directors in rater training.

DRC and PDE discussed scoring guideline edits suggested by the rangefinding committees. Changes approved by PDE were then incorporated into the scoring guidelines by DRC Test Development staff. The edited scoring guidelines were used in the preparation of materials and the training of raters.

RATER RECRUITMENT/QUALIFICATIONS

DRC retains a number of raters from year to year; the overall return rate in 2014 was 63 percent. This pool of experienced raters was drawn from to staff the scoring of the 2014 PSSA. To complete the rater staffing for this project, DRC placed advertisements in local newspapers and utilized a variety of web sites. Open houses were held and applications for rater positions were screened by DRC's recruiting staff. Candidates were personally interviewed by DRC staff. In addition, each candidate was required to provide an on-demand writing sample, an on-demand math sample, references, and proof of a four-year college degree. In this screening process, preference was given to candidates with previous experience scoring large-scale assessments and degrees emphasizing expertise in mathematics, English language arts, or science. Thus, the rater pool consisted of educators and other professionals with content-specific backgrounds. These individuals were valued for their content-specific knowledge, but they were required to set aside their own biases about student performance and accept the scoring standards outlined in the PSSA.

LEADERSHIP RECRUITMENT/QUALIFICATIONS

Scoring directors and team leaders were selected by content specialists from a pool of employees who displayed expertise as raters and leaders on previous DRC projects. These individuals had strong backgrounds in mathematics, English language arts, or science and demonstrated organizational, leadership, and management skills. A majority of scoring directors and team leaders had at least five years of leadership experience working on large-scale assessments, including the PSSA. All scoring directors, team leaders, and raters were required to sign confidentiality agreements before handling secure materials.

Each room of raters was assigned a scoring director. This individual led all handscoring activities for the duration of the project. Scoring directors assisted in rangefinding, worked with supervisors to create training materials, conducted team leader training, and were responsible for training the raters. The scoring director made sure that reports were available and interpreted

those reports for the raters. The scoring director also supervised the team leaders. All scoring directors were monitored by the project director, the project manager, and the content specialists.

Team leaders assisted the scoring director with rater training by leading their teams in small-group discussions and answering individual questions that raters may not have felt comfortable asking in a large group. Once raters were qualified, team leaders were responsible for maintaining the accuracy and workload of each team member. Ongoing monitoring identified those individuals having difficulty scoring accurately. These raters received one-on-one retraining from the team leader. Any rater who could not be successfully retrained had his/her scores purged and was released from the project.

TRAINING

As part of preparation for the 2014 mathematics, reading, science, and writing assessments, DRC's PAS staff assembled the PDE-approved scoring guidelines and scored student responses approved by rangefinding committees into sets used for training raters. The item-specific scoring guidelines (and the revising and editing, and composing writing guidelines) served as the raters' constant reference. Responses that were relevant in terms of the scoring concepts they illustrated were annotated and included in an anchor set. The full range of each score point was clearly represented and annotated in the anchor set, which was used for reference by raters throughout the project.

Training sets and qualifying sets contained student responses consensus-scored by rangefinding committee members. Raters were instructed on how to apply the scoring guidelines and were required to demonstrate a clear comprehension of each anchor set by performing well on the associated training materials. Responses were selected for training to show raters the range of each score point (e.g., high, mid, and low 2s). Examples of 0s were also included for all mathematics, reading, and science items. This process helped raters recognize the various ways that a student could respond in order to earn each score point outlined and defined in the item-specific scoring guidelines.

The scoring director conducted a team leader training session before training the raters. This session followed the same procedures as rater training, but qualifying standards were more stringent due to the extra responsibilities required of team leaders. During team leader training, all PSSA materials were reviewed and discussed. Team leaders were required to annotate all of their training materials with committee justifications from the rangefinding meetings. To facilitate scoring consistency, it was imperative that all team leaders imparted the same rationale for each response. Once the team leaders were qualified, leadership responsibilities were reviewed and team assignments were given. A ratio of one team leader per each 8–10 raters ensured sufficient monitoring rates for team members.

The 2014 assessment included the opportunity for students to respond in Spanish to mathematics and science items. The scoring director responsible for overseeing this is a Spanish language speaker who has a strong mathematics and science background and has worked closely with the PSSA in this capacity for five years. All Spanish raters were bilingual and hired specifically to score the Spanish portion of the assessment. They were required to meet the same training and scoring standards set for the raters of the English version of the assessment.

Rater training began with the scoring director providing an intensive review of the scoring guidelines and anchor papers. Next, raters practiced by independently scoring the responses in the training sets. After each training set, the scoring director or team leaders led a thorough discussion of the responses, either in a large-group or small-group setting.

Once the scoring guidelines, anchor sets, and training sets were thoroughly discussed, each rater was required to demonstrate understanding of the scoring criteria by qualifying (i.e., scoring with acceptable agreement to the true scores) on at least one of the qualifying sets. Raters who failed to achieve 70 percent exact agreement on the first qualifying set were given additional, individual training. Raters who did not perform at the required level of agreement by the end of the qualifying process were not allowed to score any student responses. These individuals were removed from the pool of potential raters in DRC's imaging system and released from the project.

HANDSCORING PROCESS

Student responses were scored independently. All responses were scored once, and 10 percent of the responses were scored a second time. The data collected from the 10 percent double-read portion was used to calculate the exact and adjacent agreement rates in the Scoring Summary Reports. The responses that were used for the 10 percent read behind were randomly chosen by the imaging system at the item level. Additional read behinds by the team leaders and scoring directors were done to further ensure reliability.

Raters scored the imaged student responses on PC monitors at DRC Scoring Centers in Sharonville and Columbus, Ohio; Plymouth and Woodbury, Minnesota; Pittsburgh, Pennsylvania; and Austin, Texas. Raters were seated at tables with two imaging stations at each table. Image distribution was controlled, ensuring that student images were sent only to designated groups of raters qualified to score those items. Imaged student responses were electronically separated for routing to individual raters by item. Raters were only provided with student responses that they were qualified to score. Scores were keyed into DRC's imaging system.

To handle possible alerts (i.e., student responses indicating potential issues related to students' safety and well-being that sometimes require attention at the state or local level), DRC's imaging system allows raters to forward responses needing attention to the scoring director. These alerts are reviewed by project management, who then notifies the students' schools and PDE of the occurrences. However, PDE does not receive students' responses or any other identifying information about the students. At no time in the alerts process do raters, or other DRC staff, acquire any knowledge concerning a student's personal identity.

HANDSCORING VALIDITY PROCESS

One of the training tools PAS utilized to ensure rater accuracy was the validity process. The goal of the validity process is to ensure that scoring standards are maintained. Specifically, the objective is to make sure that raters score student responses in a manner consistent with statewide standards both within a single administration of the PSSA and across consecutive administrations. In scoring the 2014 PSSA, this scoring consistency was maintained, in part, through the validity process.

The validity process began with the selection of scored responses from the initial field test. The content specialist for each subject selected 40 validity papers for each core open-ended (OE) item. These 40 papers were drawn from a pool of exemplars (responses that are representative of

a particular score point and have been verified by the scoring director and the content specialist). The scores on validity papers are considered true scores.

The validity papers were then implemented to test rater accuracy. The responses were scanned into the imaging system and dispersed intermittently to the raters. By the end of the project, raters had scored all 40 validity papers for any items they were qualified to score. Raters were unaware that they were being dealt pre-scored validity responses and assumed that they were scoring live student responses. This helped bolster the internal validity of the process. It is important to note that all raters who received validity papers had already successfully completed the training/qualifying process.

Next, the scores that the raters assigned to the validity papers were compared to the true scores in order to determine the validity of the raters' scores. For each item, the percentage of exact agreement as well as the percentage of high and low scores was computed. This data was accessed through the Validity Item Detail Report. The same sort of data was also computed for each specific rater. This data was accessed through the Validity Reader Detail Report. Both of these may be run as daily or cumulative reports.

The Validity Reader Detail Report was used to identify particular raters for retraining. If a rater on a certain day generated a lower rate of agreement on a group of validity papers, it was immediately apparent in the Validity Reader Detail Report. A lower rate of agreement was defined as anything below 70 percent exact agreement with the true scores. Any time a rater's validity agreement rate fell below 70 percent, the scoring director was cued to examine that rater's scoring. First, the scoring director attempted to ascertain what kind of validity papers the rater was scoring incorrectly. This was done to determine whether there was any sort of a trend (e.g., trending low on the 1–2 line). Once the source of the low agreement rate was determined, the rater was retrained. If it was determined that the rater had been scoring live papers inaccurately, then his/her scores were purged for that day, and the responses were re-circulated and scored by other raters.

The cumulative Validity Item Detail Report was utilized to identify potential room-wide trends in need of correction. For instance, if a particular validity response with a true score of 3 was given a score of 2 by a significant number of raters within the room, that trend would be revealed in the Validity Item Detail Report. To correct a trend of this sort, the scoring director would look for student responses similar to the validity paper being scored incorrectly. Once located, these responses would be used in room-wide re-training, usually in the form of an annotated handout or a short set of papers without printed scores given to raters as a recalibration test.

Validity was employed on all core mathematics, reading, and science OE items and for all operational writing prompts. Each 40-paper validity set was formulated to mirror the score point distribution that the item generated during its previous administration. Each validity set included at least five examples of each score point. Examples of different types of responses were included to ensure that raters were tested on the full spectrum of response types.

The exact rater agreement rate generated during the validity process was often higher than the inter-rater agreement rate for the same item. The reason for this discrepancy has to do with how validity sets are formulated. The 40 validity papers for each item, chosen by the content specialist, are intended to cover the full breadth of each score point. For example, each validity set contains examples of high, mid, and low 2s. This scope ensures that the validity process is truly valid in terms of addressing the complete spectrum of response types. However, certain types of responses are generally not included in validity sets. These include line papers (i.e.,

examples of score points that are so close to the adjacent score point that raters are instructed to consult with a supervisor before assigning a score) and responses that, because of poor word choice/writing, are difficult to understand. The reason for these exclusions is that confusing/line/illegible papers often do not impart a teachable lesson. Since these types of papers are usually unique, any potential lesson the response might teach would apply only to that particular paper. Conversely, the papers in validity sets are chosen because they represent common response-types and teach lessons that can be applied to other similar papers. Due to this distinction, validity sets generate a slightly higher agreement rate than is typically generated during operational scoring.

QUALITY CONTROL

Rater accuracy was monitored throughout the scoring session by means of daily and on-demand reports. These reports ensured that an acceptable level of scoring accuracy was maintained throughout the project. Inter-rater reliability was tracked and monitored with multiple quality control reports that were reviewed by quality assurance analysts. These reports and other quality control documents were generated at the scoring centers, where they were reviewed by the scoring directors, team leaders, content specialists, and project directors. The following reports and documents were used during the scoring of the open-ended items:

The Scoring Summary Report (includes two related reports)

1. The Reader Monitor Report monitored how often raters were in exact agreement with one another and ensured that an acceptable agreement rate was maintained. This report provided daily and cumulative exact and adjacent inter-rater agreement on the 10 percent that was double read.
2. The Score Point Distribution Report monitored the percentage of responses given each of the score points. For example, the mathematics daily and cumulative reports showed what percentage of 0s, 1s, 2s, 3s, and 4s a rater had given to all the responses scored at the time the report was produced. It also indicated the number of responses read by each rater so that production rates could be monitored.

The Item Status Report monitored the progress of handscoring. This report tracked each response and indicated the status (e.g., not read, complete, awaiting supervisor review, etc.). This report ensured that all responses were scored by the end of the project.

The Reader Score Report identified all responses scored by an individual rater. This report was useful if any responses needed rescoring because of possible rater drift.

The Validity Reports (addressed in detail on previous page) tracked how raters performed by comparing pre-scored responses to raters' scores for the same responses. If a rater's scoring fell below the 70 percent determined agreement rate, remediation occurred. Raters who did not retrain to the required level of agreement were released from the project.

The Read-Behind Log was used by the team leader/scoring director to monitor individual rater reliability. Team leaders read randomly selected, scored items from each team member. If the team leader disagreed with a rater's score, remediation occurred. This proved to be a very effective type of feedback because it was done with live items scored by a particular rater.

Recalibration Sets were used throughout the scoring sessions to ensure accuracy by comparing each rater's scores with the true scores on a pre-selected set of responses. Recalibration sets helped to refocus raters on Pennsylvania scoring standards. This check made sure there was no

change in the scoring pattern as the project progressed. Raters failing to achieve 70 percent agreement with the recalibration true scores were given additional training to achieve the highest degree of accuracy possible. Raters who were unable to recalibrate were released from the project. The process for creating and administering recalibration sets was similar to the one used for training sets.

Table 8–2 shows exact and adjacent agreement rates of raters on the core open-ended responses for the mathematics items in the 2014 PSSA. All student responses were read once, and 10 percent of the responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–2. Inter-rater Agreement for 2014 PSSA
Mathematics Grades 3–8
Open-Ended Response Items and Validity

Mathematics	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	94	6	100	91
	2	94	6	100	97
	3	96	4	100	97
Grade 4	1	92	8	100	90
	2	94	5	99	95
	3	87	12	99	84
Grade 5	1	84	16	100	92
	2	94	6	100	98
	3	88	13	101	92
Grade 6	1	97	3	100	94
	2	89	11	100	92
	3	93	7	100	96
Grade 7	1	91	9	100	95
	2	87	13	100	92
	3	91	9	100	95
Grade 8	1	90	10	100	88
	2	87	13	100	93
	3	89	11	100	88

Note. 0–4 possible score points

Table 8–3 shows the distribution of scores for the mathematics items. All mathematics items are scored with a 0–4 score point range.

Table 8–3. Percentages Awarded for Each Possible Score Point
2014 PSSA Mathematics Grades 3–8

Mathematics	Common Item	%0	%1	%2	%3	%4	%B/NS*
Grade 3	1	14	21	21	29	14	1
	2	15	28	26	17	14	2
	3	2	7	23	23	44	1
Grade 4	1	16	14	20	40	9	2
	2	4	14	17	26	31	8
	3	27	21	23	17	11	1
Grade 5	1	13	22	24	23	17	1
	2	5	13	54	19	5	5
	3	27	30	17	18	7	1
Grade 6	1	13	63	5	12	7	1
	2	12	34	26	20	2	6
	3	5	8	20	45	21	1
Grade 7	1	26	45	10	13	4	2
	2	21	26	21	10	17	5
	3	18	8	27	36	10	1
Grade 8	1	43	6	27	9	13	2
	2	13	35	20	16	10	5
	3	6	53	8	24	8	2

*B=blank and NS=non-scoreable

Table 8–4 shows exact and adjacent agreement rates of raters on the core open-ended responses for the reading items in the 2014 PSSA. All student responses were read once, and 10 percent of responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–4. Inter-rater Agreement for 2014 PSSA
Reading Grades 3–8
Open-Ended Response Items and Validity

Reading	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 3	1	78	22	100	76
	2	77	23	100	82
Grade 4	1	81	19	100	84
	2	80	20	100	81
	3	80	20	100	84
	4	83	17	100	87
Grade 5	1	78	22	100	87
	2	78	21	99	81
	3	80	20	100	89
	4	75	25	100	79
Grade 6	1	77	23	100	81
	2	81	18	99	75
	3	82	18	100	82
	4	83	17	100	85
Grade 7	1	86	14	100	86
	2	78	22	100	80
	3	81	19	100	86
	4	82	18	100	75
Grade 8	1	74	26	100	89
	2	77	23	100	89
	3	74	26	100	81
	4	78	22	100	74

Note. 0–3 possible score points

Table 8–5 shows the distribution of scores for the reading items. All reading items are scored with a 0–3 score point range.

Table 8–5. Percentages Awarded for Each Possible Score Point
2014 PSSA Reading Grades 3–8

Reading	Common Item	%0	%1	%2	%3	%B/NS*
Grade 3	1	8	40	40	9	3
	2	6	41	41	10	2
Grade 4	1	5	24	41	27	3
	2	5	20	42	30	3
	3	6	26	44	22	2
	4	12	33	33	19	3
Grade 5	1	2	23	57	16	2
	2	7	25	53	13	2
	3	8	19	57	15	1
	4	14	40	34	10	2
Grade 6	1	2	30	45	21	2
	2	5	34	47	13	1
	3	5	32	53	10	0
	4	16	26	43	9	6
Grade 7	1	2	49	27	21	1
	2	6	31	43	17	3
	3	7	30	35	26	2
	4	11	36	31	21	1
Grade 8	1	7	35	42	14	2
	2	3	15	53	26	3
	3	7	29	46	16	2
	4	9	37	32	19	3

*B=blank and NS=non-scoreable

Table 8–6 shows exact and adjacent agreement rates of raters on the core open-ended responses for the science items in the 2014 PSSA. All student responses were read once, and 10 percent of responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–6. Inter-rater Agreement for 2014 PSSA
Science Grades 4 and 8
Open-Ended Response Items and Validity

Science	Common Item	% Exact Agreement	% Adjacent Agreement	% Exact + Adjacent Agreement	% Exact Validity Agreement
Grade 4	1	95	5	100	98
	2	93	7	100	96
	3	96	4	100	99
	4	97	3	100	99
	5	83	17	100	92
Grade 8	1	86	14	100	94
	2	78	21	100	90
	3	84	15	99	95
	4	86	14	100	94
	5	93	7	100	98

Note. 0–2 possible score points

Table 8–7 shows the distribution of scores for the science items. All science items are scored with a 0–2 score point range for reporting purposes.

Table 8–7. Percentages Awarded for Each Possible Score Point
2014 PSSA Science Grades 4 and 8

Science	Common Item	%0	%1	%2	%B/NS*
Grade 4	1	21	42	36	1
	2	13	38	47	1
	3	5	46	48	2
	4	23	35	40	1
	5	16	38	45	2
Grade 8	1	11	27	60	2
	2	13	36	49	3
	3	33	34	29	4
	4	24	29	44	3
	5	26	36	35	3

*B=blank and NS=non-scoreable

Table 8–8 shows exact and adjacent agreement rates of raters on the core open-ended responses for the writing items in the 2014 PSSA. All student responses were read once, and 10 percent of responses were read a second time. The data collected from this 10 percent double read was used to calculate the exact and adjacent agreement rates.

Table 8–8. Inter-rater Agreement for 2014 PSSA
Writing Grades 5 and 8
Open-Ended Response Items and Validity

Writing		Composition % Agreement			Revising and Editing % Agreement		
Grade	**Prompt**	**Exact**	**Adjacent**	**Exact + Adjacent**	**Exact**	**Adjacent**	**Exact + Adjacent**
5	1	84	16	100	82	18	100
	2	84	16	100	83	17	100
	1 Validity	73	27	100	75	25	100
	2 Validity	71	29	100	72	29	100
8	1	83	17	100	79	21	100
	2	80	20	100	76	24	100
	1 Validity	71	29	100	70	30	100
	2 Validity	81	19	100	80	20	100

Note. 1–4 possible score points

Table 8–9 shows the distribution of scores for the writing items. All prompts are scored with a 1–4 score point range for both Composition and for Revising and Editing.

Table 8–9. Percentages Awarded for Each Possible Score Point
2014 PSSA Writing Grades 5 and 8

Writing		Composition					Revising and Editing				
Grade	**Prompt**	**%1**	**%2**	**%3**	**%4**	**%NS/ NT***	**%1**	**%2**	**%3**	**%4**	**%NS/ NT***
5	1	6	41	46	4	2	7	43	44	4	2
	2	7	45	41	4	2	8	45	41	4	2
8	1	3	26	63	6	2	3	28	61	7	2
	2	4	34	55	6	2	5	33	55	6	2

* NS=non-scoreable and NT=not taken

Chapter Nine: Description of Data Sources and Sampling Adequacy

This chapter describes the data sources (e.g., *n*-counts, characteristics of students) used for the various analysis procedures discussed in the remaining chapters of this technical report. Psychometric analyses are conducted at several points for the PSSA: 1) early analyses for quality control purposes; 2) analyses associated with the calibration, scaling, and linking processes; 3) analyses used for item banking; and 4) analyses for the technical report. Detailed information regarding the attributes of students used for Adequate Yearly Progress (AYP) reporting is provided in Chapter Ten.

PRIMARY STUDENT FILTERING CRITERIA

For many data files, the primary means of filtering students for inclusion/exclusion from any data analysis are based on the state reporting criteria which are outlined below. Within the state reporting rules are separate attempt criteria for individual subject areas. The attempt criteria are discussed more fully below.

State Reporting Criteria

The state reporting criteria are as follows:

- The student must be enrolled for the full academic year.
- The student must be attributed to a public district/school (state).
- The student must receive a score (i.e., met the subject attempt logic—see additional information below).
- The student is not a homeschool student.
- The student is not a foreign exchange student.
- The student is not a first-year ELL student (mathematics/reading only).

PSSA Attempt Criteria

For all data sources, only students who meet the attempt criteria are included. For mathematics, reading, and science, the attempt criteria required students to complete a minimum of five items (multiple-choice (MC) or open-ended (OE)) in each respective subject-area section of the test booklets. Science counts were based on operational items only, while mathematics and reading counts were based on operational and nonoperational items. For writing, a student must complete at least five MC items and respond to both operational writing prompts.

KEY VALIDATION DATA

These data are only mentioned for the sake of completeness, as no formal results from these data are provided in this technical document. An analysis on all operational MC items is conducted early in the scoring process to ensure that the items are performing as expected. This is an important quality check that is always done for the PSSA. This analysis is usually (but not always) done using all students from early-return schools. The sample does not need to be representative of the entire state for these quality checks. Available student data typically suffices as long as there is reasonable variability in the total test scores of students.

For 2014 this data included all public school students who 1) had their MC items scanned and scored by May 12 (mathematics/reading/writing) or May 16 (science) and 2) met preliminary attempt criteria (i.e., attempt was determined based on MC items only). Note that the full state reporting criteria were not in effect for this file (only attribution to a public school based on tested site and preliminary attempt criteria were used to filter students).

CALIBRATION DATA

Calibration data included students who met the preliminary state reporting criteria (including attempt criteria) by May 16. The state reporting criteria were preliminary, meaning that attributions and final PIMS[6] information were not complete by this time. No sampling was undertaken in this data (i.e., it included all students who met the above criteria with operational test scores up to this point[7]). This data file was used to provide impact results to the Technical Advisory Committee (TAC) during the linking review process.

ITEM BANK DATA

The item bank data included students who met the state reporting criteria by July 8. No sampling was undertaken in this data (i.e., it included all students who met the above criteria with scored field-test data up to this point). The data banked for field-test items were based on this data file.

FINAL DATA

This file included all students who met state reporting criteria by August 5 for all subject areas. The final data reflects update by schools for correction of certain fields (e.g., student ethnicity). All other files contained preliminary data (item bank data). The majority of the results included in this technical report were derived using the final data file.

[6] Pennsylvania Information Management System

[7] Historically, PSSA has retained all students who met the stated criteria in the calibration data set, even those who had testing accommodations.

FINAL *N*-COUNTS FOR ALL DATA SOURCES

The *n*-counts for all data sources are provided in Table 9–1.The calibration count includes students who met the preliminary state reporting criteria, while the final count includes students who met the final state reporting criteria.[8] A computer-based test (CBT) was offered for all subjects for the first time in 2014. Calibration data shows the number of students in both modes. Calibration of item parameters was conducted with paper students only; however, other analyses conducted during the calibration period (see Chapter Twelve) used both paper and CBT students. The *n*-counts of item bank data show only the number of students who took a paper test, because values for item banking (e.g., CTT statistics) were obtained with paper students. However, the *n*-counts of paper students and total are not very different because the proportions of CBT students were small (see Table 9–2).

Table 9–1. Data Source *N*-Counts

Subject	Grade	Key Validation (Paper/CBT)	Calibration (Paper/CBT)	Item Bank (Paper)	Final (Paper/CBT)
Mathematics	3	47790	124259	124520	124702
	4	38846	126486	126588	126911
	5	41133	126188	126242	126693
	6	42668	125564	124839	126128
	7	46718	129348	128268	130189
	8	43368	130101	128649	131363
Reading	3	47719	124336	124477	124659
	4	38784	126469	126565	126887
	5	41069	126134	126187	126639
	6	42612	125489	124757	126044
	7	46669	129220	128135	130053
	8	43301	129968	128507	131218
Science	4	121006	126268	125860	127105
	8	121165	129067	126375	130918
Writing	5	71718	124168	124429	124666
	8	76702	128991	127637	130302

[8] For this reason, the final count may be smaller than the calibration count in any given year.

COMPUTER-BASED TEST (CBT)

Table 9–2 displays the count of students who took the 2014 PSSAs broken out by content, grade, and mode with the final data. In all grades, only three percent or less of students were enrolled to take the PSSAs online in the spring. Lower grades had fewer students who took CBT and grade 8 had highest CBT proportion of students in all subjects. Slightly over two percent of grade 8 students took CBT with mathematics, reading, and writing, and slightly over three percent of grade 8 students took science CBT.

Table 9–2. Final *N*-Counts and Proportion by Mode

Subject	Grade	*N*-Counts		Proportion (%)	
		Paper	CBT	Paper	CBT
Mathematics	3	124456	246	99.80	0.20
	4	126514	397	99.69	0.31
	5	126143	550	99.57	0.43
	6	124724	1404	98.89	1.11
	7	128137	2052	98.42	1.58
	8	128491	2872	97.81	2.19
Reading	3	124413	246	99.80	0.20
	4	126491	396	99.69	0.31
	5	126088	551	99.56	0.44
	6	124642	1402	98.89	1.11
	7	128004	2049	98.42	1.58
	8	128348	2870	97.81	2.19
Science	4	126246	859	99.32	0.68
	8	126840	4078	96.89	3.11
Writing	5	124304	362	99.71	0.29
	8	127449	2853	97.81	2.19

SPIRALING OF FORMS

PSSA forms were scrambled and spiraled for all grades and subjects except writing. For writing, no scrambling was done. With 2014 PSSA, there was only one form for both grades 5 and 8 and thus no spiraling was done (see Appendix H for summary statistics).

Appendix H provides summary statistics for all test forms (there are multiple forms for mathematics, reading, and science) for each grade and subject-area test. The tables provide the form number (Form), the number of students (N), test length in items (L), total points (Pts.), the minimum score (Min), the maximum score (Max), the mean score (Mean), the median score (Med), and the standard deviation (SD). The mean raw scores across forms are similar, indicating the student populations taking each form are of approximately equal ability and item scrambling are appropriate. This equivalence of ability distributions across forms is the desired outcome of spiraling and allows for optimum analysis of the embedded field-test items.

SCRAMBLING OF FORMS

In response to test security issues raised in prior PSSA administrations, multiple scrambled patterns of operational forms were constructed for each mathematics, reading, and science assessment since 2013. The core form was constructed following the past test construction and equating guidelines and will be referred to as the Master Core throughout the remainder of this document. Based on previous TAC recommendation, the Master Core is the pattern of the test that would have been administered to all students in the absence of scrambling. More importantly, the data obtained from administration of the Master Core were used for operational MC item calibration for the 2014 PSSA.

Once the Master Core was constructed and approved, DRC and PDE content specialists built seven scrambled patterns of the Master Core for each content and grade. OE items were not scrambled so each OE item appeared in the same position on every form. Some MC items also appear in the same position on multiple forms due to content constraints. In some content areas and grades the number of field-test forms was greater than the number of scrambled patterns. In these instances the Master Core and scrambled patterns were repeated with no specific pattern appearing more than three times. Due to the limited enrollment for the PSSA CBT, only three forms were offered. These forms included the accommodation form, a Master Core form, and one additional scrambled form; therefore, these forms have slightly higher participation than other forms.

When the Master Core was built, the linking position rules were observed for all core-linking and equating block items. The Master Core was used at least as often, or more often, than any scrambled version of the core form. Since form 1 was used for all accommodated forms (e.g., Braille, Large Print, Audio, and Spanish) it was never designated as a Master Core. The specific forms presenting the Master Core vary across grades within each content area. For example, the Master Core for mathematics Grade 8 is repeated on Forms 2, 9, and 13 while the Master Core for Grade 7 is repeated on Forms 2, 10, and 11. Given that all forms were spiraled at the student level, the distribution of forms is reasonably uniform. The exception is Form 1, which had higher participation due to the fact that it is the only form used for accommodations.

Based on TAC recommendations to minimize possible item position effects, each section of the Master Core was divided into blocks of non-overlapping MC items. Recall that the OE items were not part of the scrambling. The blocks generally contained six to seven MC items (or one passage), but the block sizes varied depending on the content and test session. Within each block, MC items were scrambled following general psychometric and content guidelines to create up to five versions of the block in addition to the Master Core sequencing. The blocks were assembled to create seven scrambled versions of the Master Core. Table 9–3 shows the mathematics Grade 8 scrambled form structure. The core was divided into nine blocks (labeled "1"–"9") and each block was scrambled in five different permutations (labeled I, II, III, IV, and M). So, for example, Form 1 was constructed with scrambled block version "I" for all nine blocks. Seven scrambled variations (labeled A, B, C, D, E, F, and G in the "Pattern" column) of the Master Core were used in addition to the Master Core across the twenty field-test forms. The Master Core was used on Forms 2, 9, and 13.

Table 9–3. Mathematics Grade 8 Scrambling

	Block									
Form	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	Pattern
1	I	I	I	I	I	I	I	I	I	B
2	M	M	M	M	M	M	M	M	M	Master
3	II	II	II	II	II	II	II	II	II	C
4	III	III	III	III	III	III	III	III	III	F
5	IV	IV	IV	IV	IV	IV	IV	IV	IV	D
6	II	IV	I	III	II	III	M	IV	I	E
7	III	I	IV	M	I	II	IV	II	III	G
8	IV	III	M	I	III	IV	II	I	II	A
9	M	M	M	M	M	M	M	M	M	Master
10	III	I	IV	M	I	II	IV	II	III	G
11	I	I	I	I	I	I	I	I	I	B
12	II	IV	I	III	II	III	M	IV	I	E
13	M	M	M	M	M	M	M	M	M	Master
14	II	II	II	II	II	II	II	II	II	C
15	IV	IV	IV	IV	IV	IV	IV	IV	IV	D
16	III	III	III	III	III	III	III	III	III	F
17	IV	III	M	I	III	IV	II	I	II	A
18	I	I	I	I	I	I	I	I	I	B
19	IV	III	M	I	III	IV	II	I	II	A
20	II	II	II	II	II	II	II	II	II	C

Prior to scrambling the Master Core, DRC and PDE content specialists developed the following general psychometric and content guidelines:

- Items cannot move between blocks.
- DRC and PDE content specialists will work to ensure that the scrambling does not result in making content more difficult than the Master Core item sequence. For example, items of similar cognitive complexity will be swapped rather than random scrambling.
- A block scramble pattern is only valid if it does not contain an invalid key distribution within the block. Additional checks for an invalid key distribution across blocks must be made when combining block scramble patterns to create forms. For example, scrambling must not create more than three (3) of the same key positions in a row.
- A block scramble pattern is only valid if it does not contain an invalid standard (AA/EC) distribution within a block. Additional checks for standard distribution across blocks must be made when combining block scramble patterns to create forms. An exception was made for one mathematics scramble for each grade which ordered items within block by eligible content per PDE request.

- Scrambling should not place a difficult item as the first item in a section. The first item in a block that does NOT begin a section may be a difficult item since blocks are invisible to the student.
- For passage-based items, a block scramble pattern is only valid if it does not create dissonance between the items and passage(s).
- Scrambling should not place a difficult item as the first item in a passage set.
- Within a set of items connected to a paired set of passages, an item associated with both passages can be swapped only with another item associated with both passages. (These items must remain at the end of the set of items associated with the passage set.)

Table 9–4 shows a summary of the scrambling strategy employed for the 2014 PSSAs. Each content and grade used a total of eight different patterns of the core including the Master Core. Recall that mathematics and reading have started transitioning to the PA Common Core (PACC). In 2013, grades 3–5 had more forms to field test PACC-aligned items, and in 2014, grades 6–8 were required to field test more forms. Also note that no scrambling was implemented for the writing assessment.

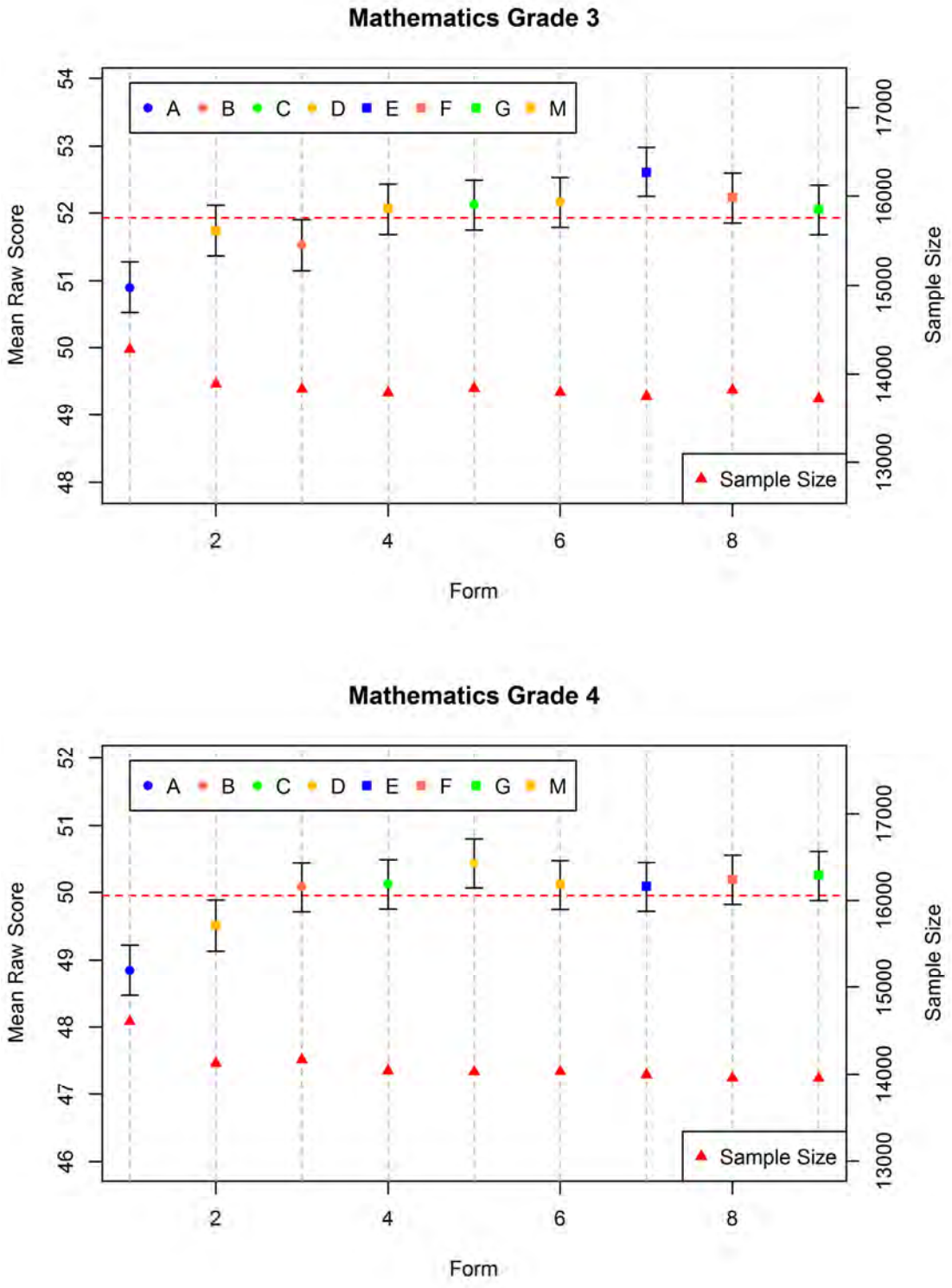
Table 9–4. Form Scrambling

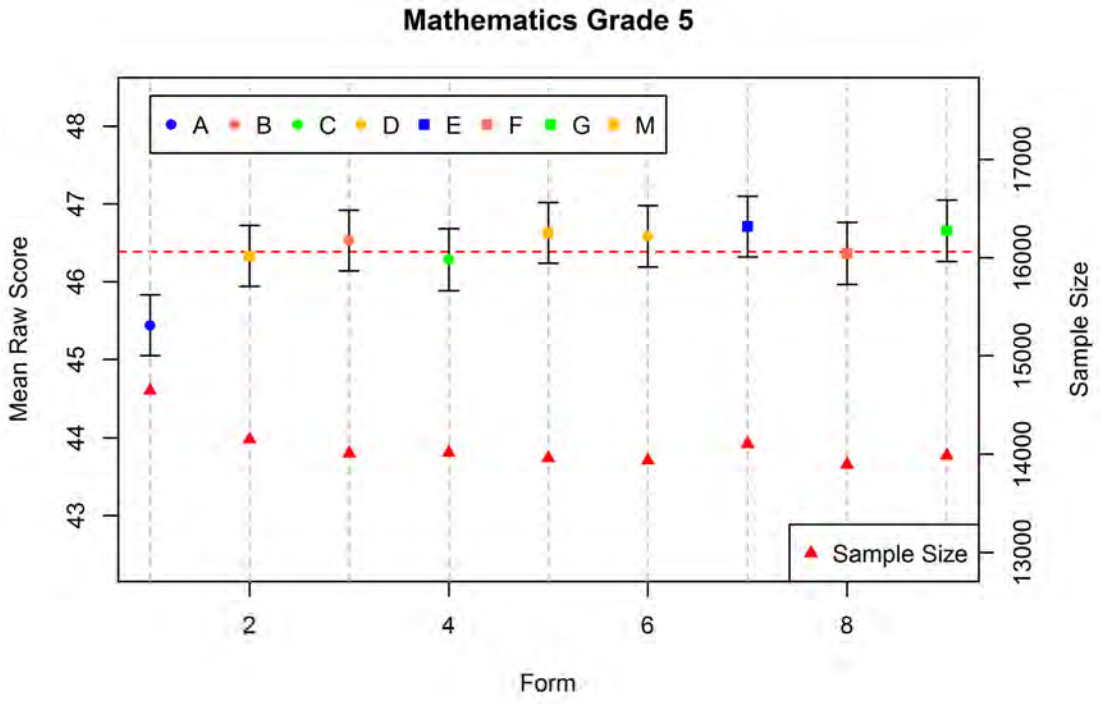
Content	Grade	Forms	Total Patterns	Master Cores
Mathematics	**3**	9	8	2
	4	9	8	2
	5	9	8	2
	6	20	8	3
	7	20	8	3
	8	20	8	3
Reading	**3**	9	8	2
	4	9	8	2
	5	9	8	2
	6	20	8	3
	7	20	8	3
	8	20	8	3
Science	**4**	12	8	2
	8	12	8	2

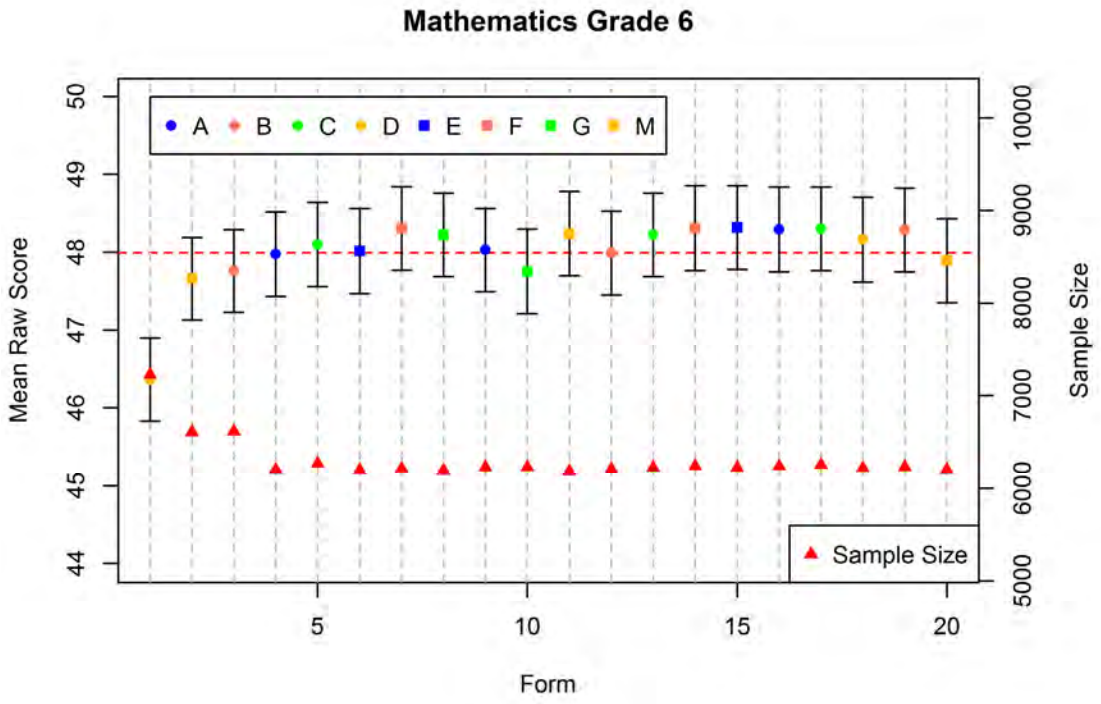
An important assumption for effectively collapsing forms into pattern groups is that the form spiraling yielded randomly equivalent groups. Figure 9–1 displays the raw score mean, a 3 standard error band, and the scramble pattern for each form. The standard error bands we have plotted here are equivalent to approximately 99 percent confidence interval for the form means. When the error bands for a form overlapped the overall mean (the red line), the form means were not statistically different from the overall mean regardless of the type of scrambling. As can be seen, the spiraling essentially produced randomly equivalent groups. Please note that Form 1 is

used for all accommodated administrations and as such appears very different from the remaining forms in these plots.

Figure 9–1. Form Mean Scores with +/- Three Standard Error (SE) Bands




Mathematics Grade 5
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
43
44
45
46
47
48
13000
14000
15000
16000
17000
2
4
6
8


Mathematics Grade 6
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
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45
46
47
48
49
50
5000
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7000
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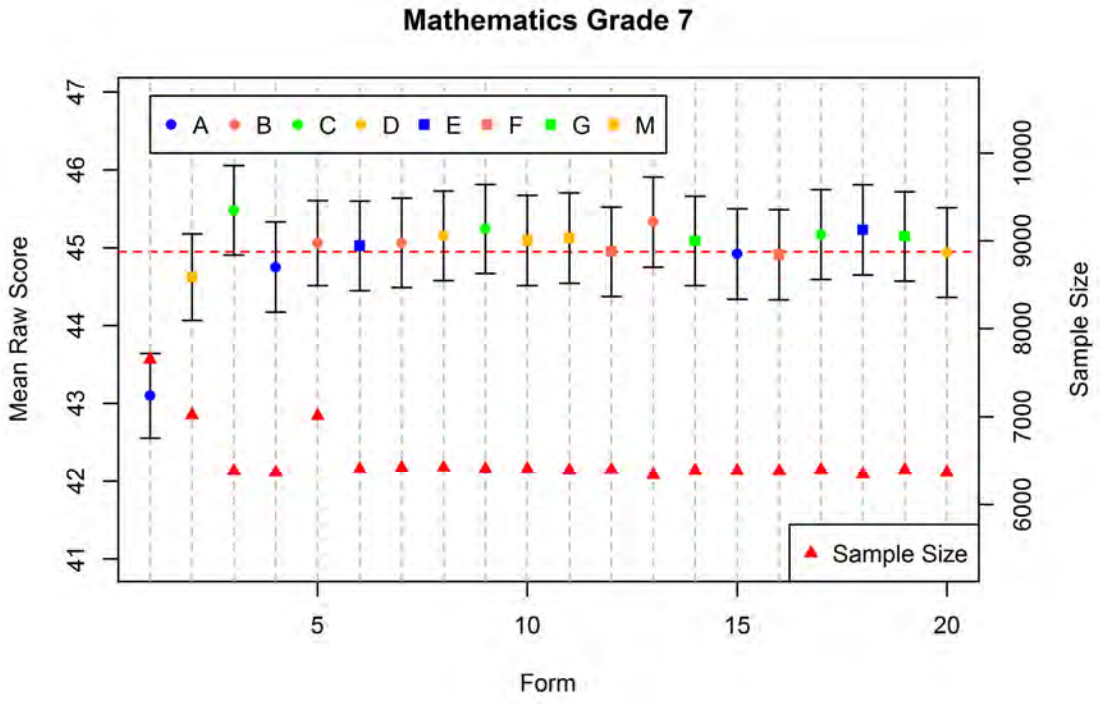
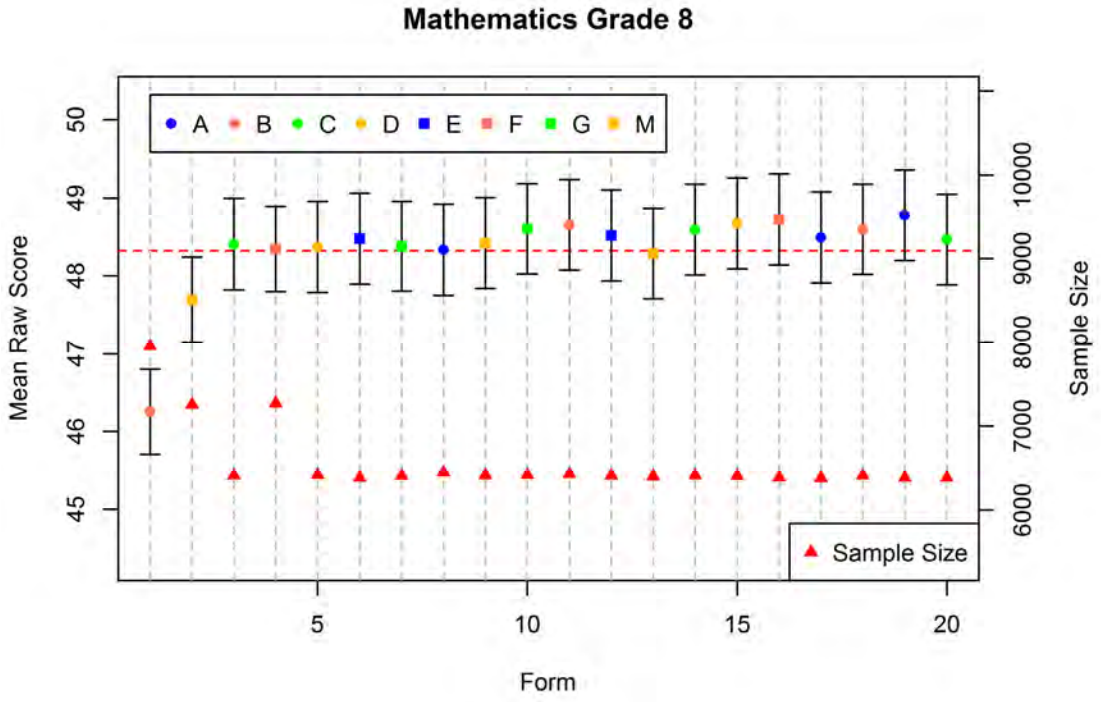
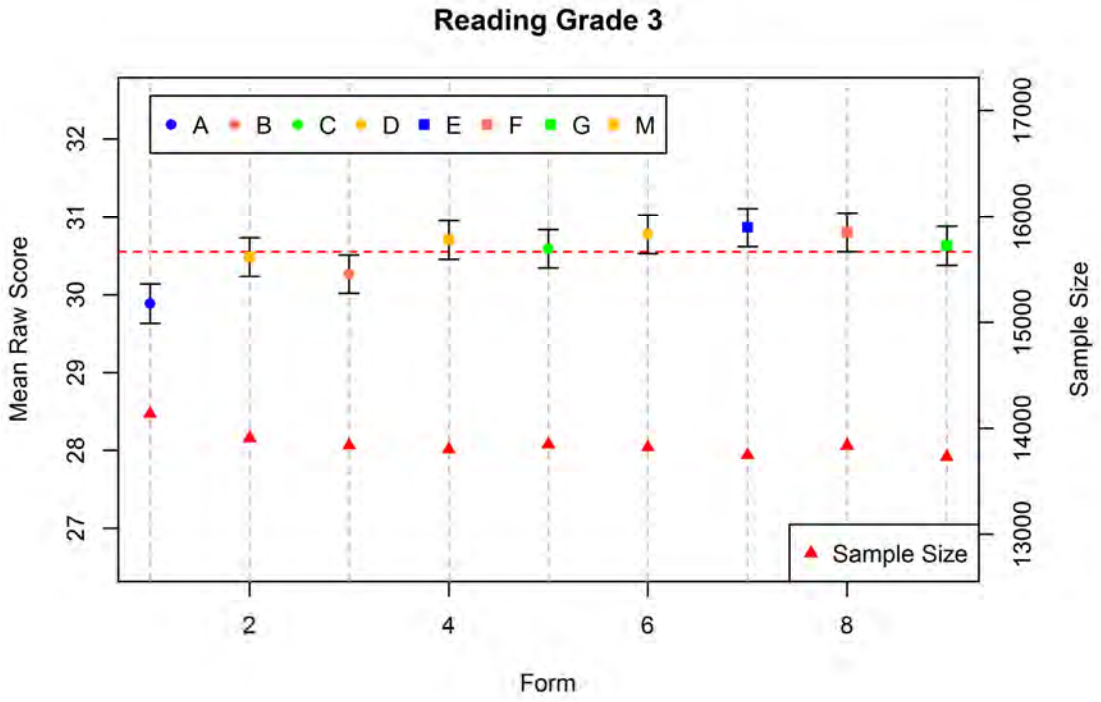
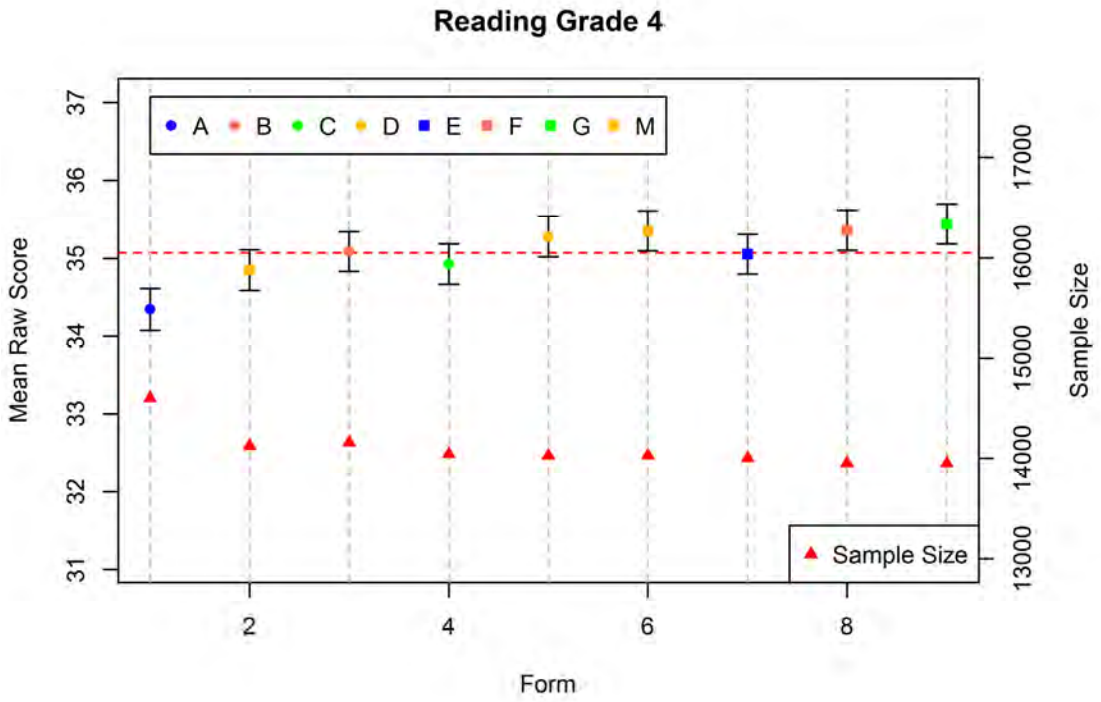
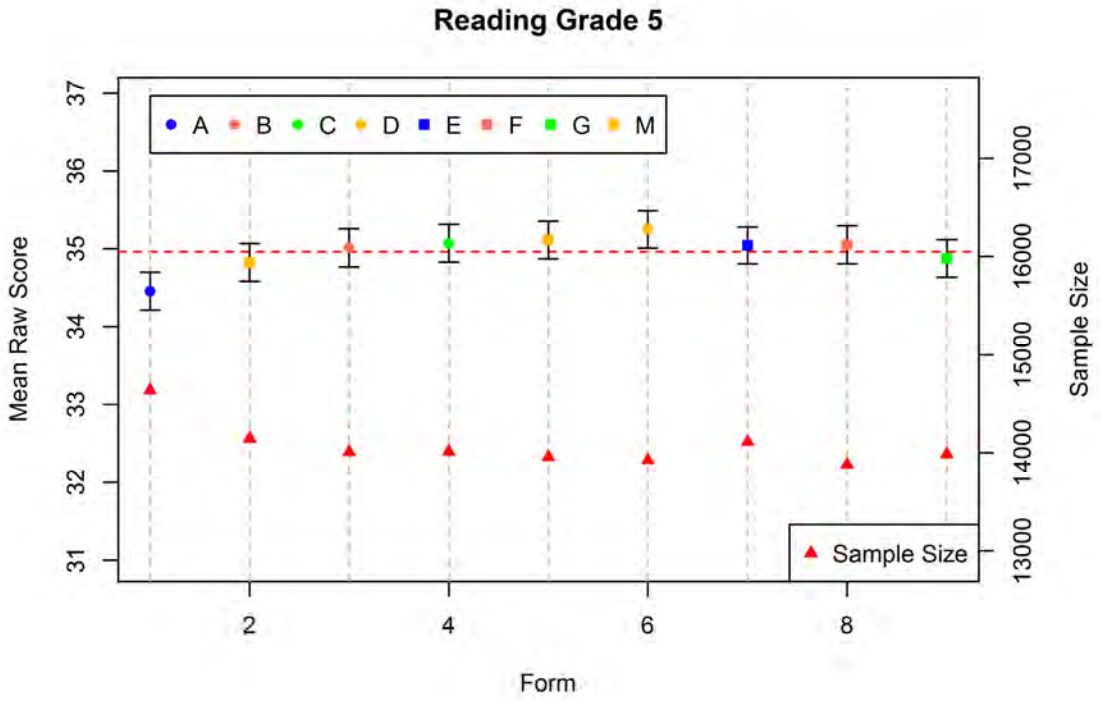
9000
10000
5
10
15
20

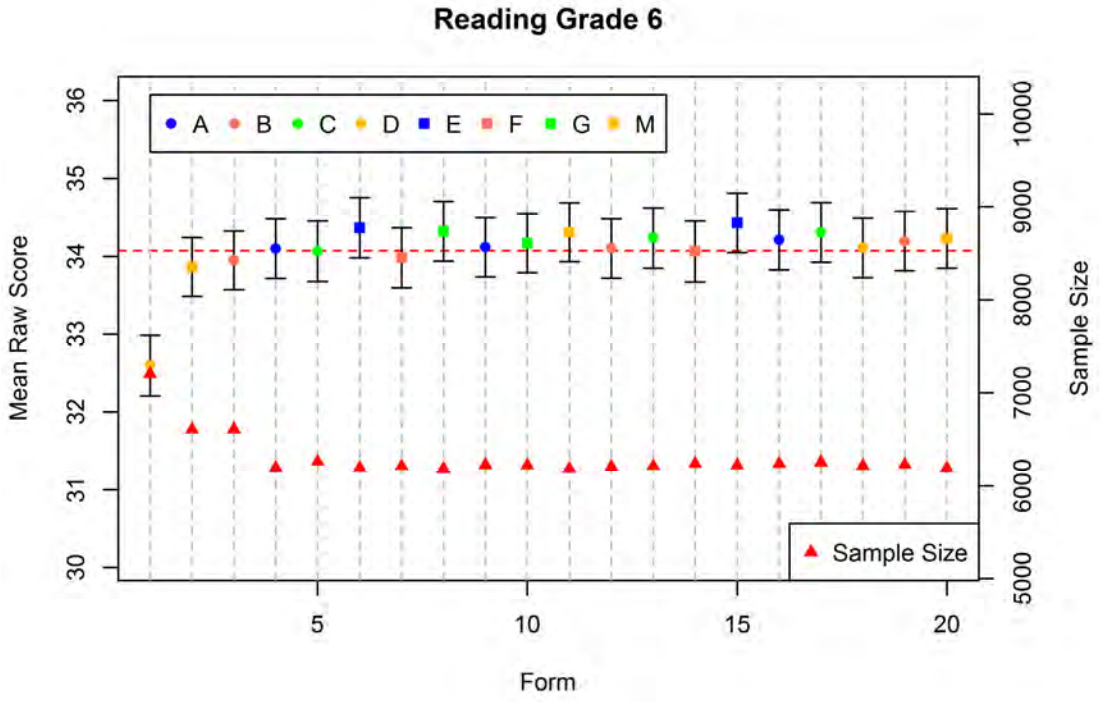

Mathematics Grade 7
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
41 42 43 44 45 46 47
6000 7000 8000 9000 10000
5 10 15 20

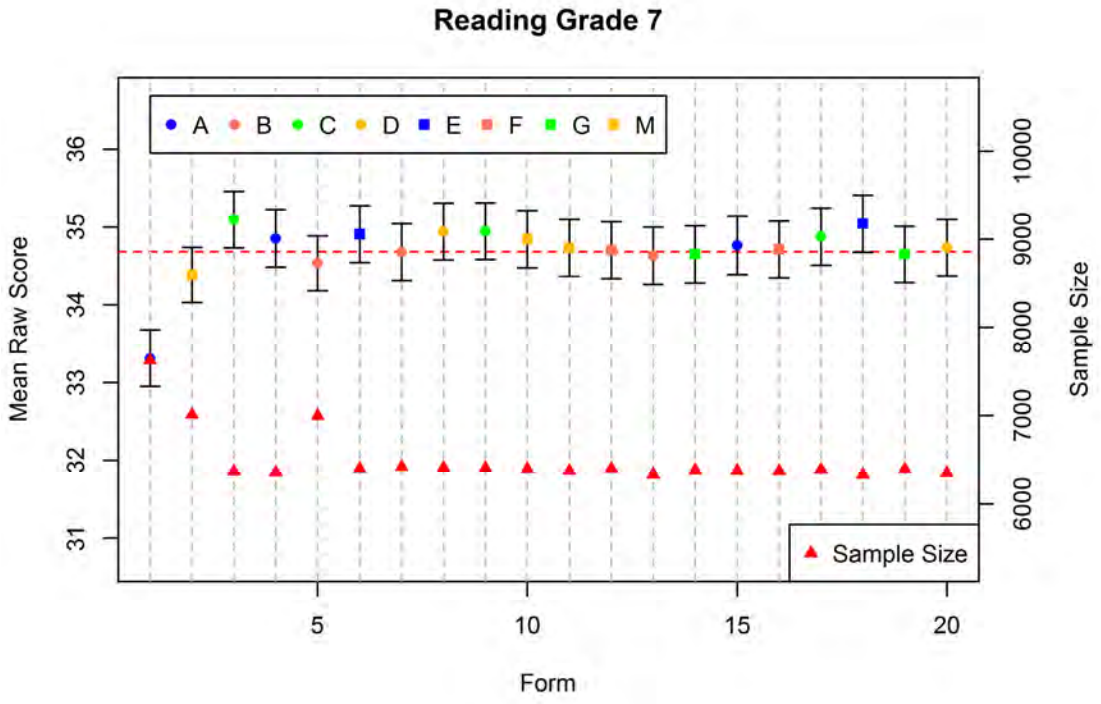

Mathematics Grade 8
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
45 46 47 48 49 50
6000 7000 8000 9000 10000
5 10 15 20

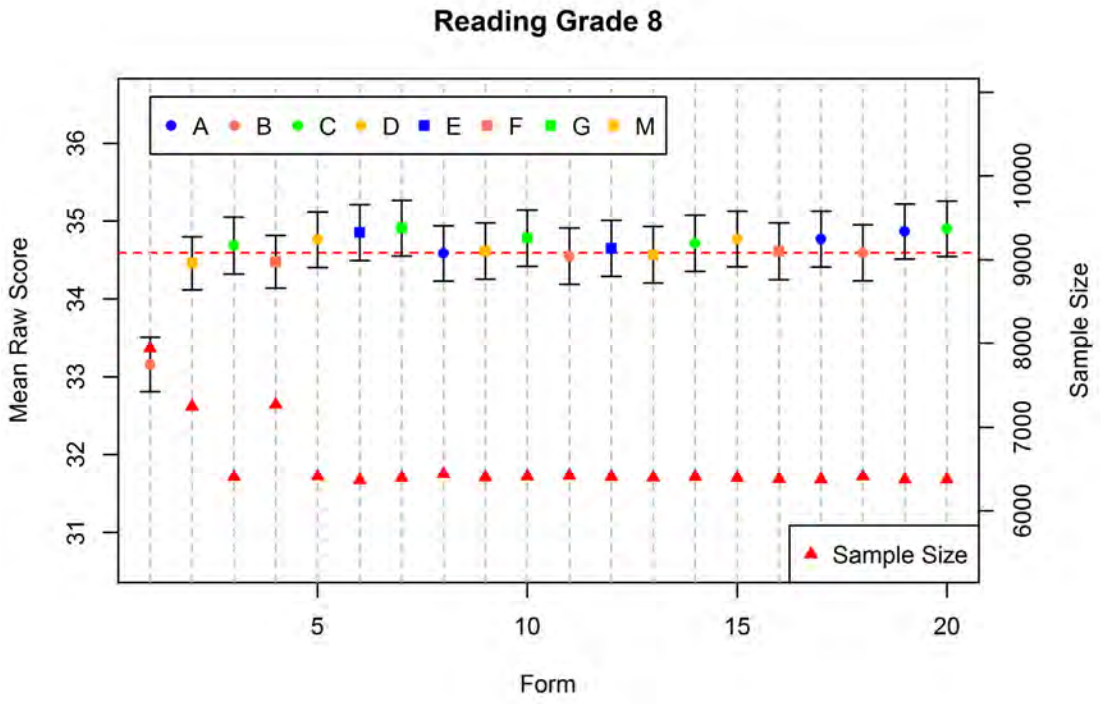

Reading Grade 3
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
27 28 29 30 31 32
13000 14000 15000 16000 17000
2 4 6 8

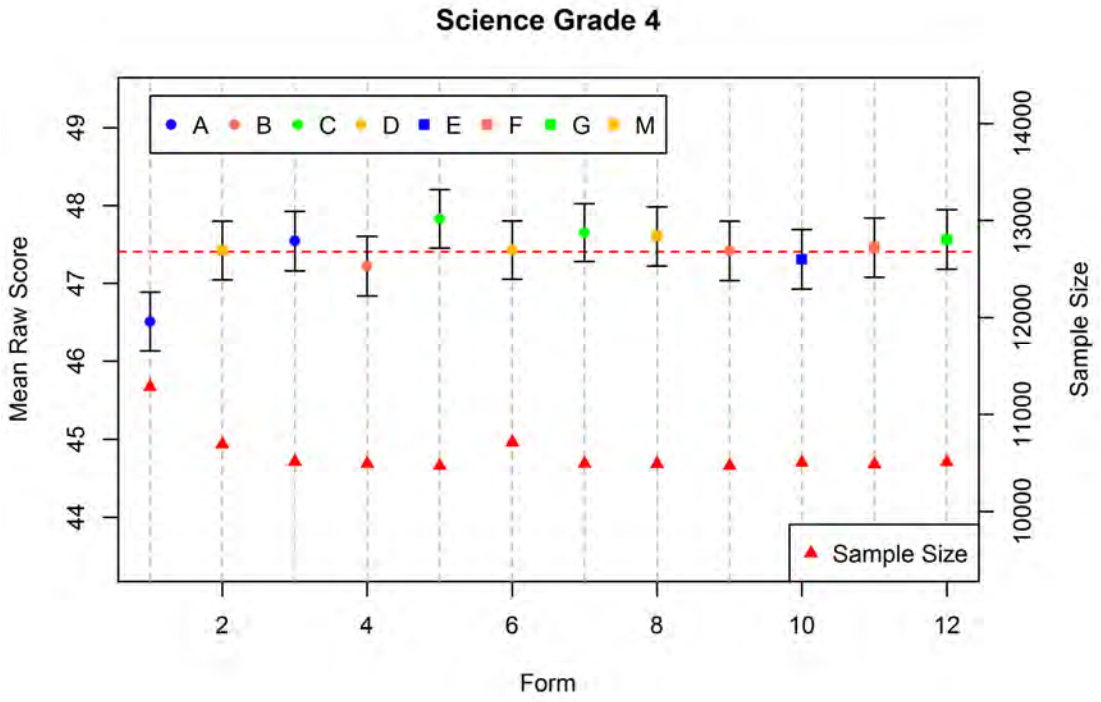

Reading Grade 4
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
31 32 33 34 35 36 37
13000 14000 15000 16000 17000
2 4 6 8


Reading Grade 5
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
31 32 33 34 35 36 37
13000 14000 15000 16000 17000
2 4 6 8


Reading Grade 6
A B C D E F G M
Sample Size
Mean Raw Score
Sample Size
Form
30 31 32 33 34 35 36
5000 6000 7000 8000 9000 10000
5 10 15 20


Reading Grade 7
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
31
32
33
34
35
36
6000
7000
8000
9000
10000
5
10
15
20


Reading Grade 8
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
31
32
33
34
35
36
6000
7000
8000
9000
10000
5
10
15
20


Science Grade 4
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
44
45
46
47
48
49
10000
11000
12000
13000
14000
2
4
6
8
10
12

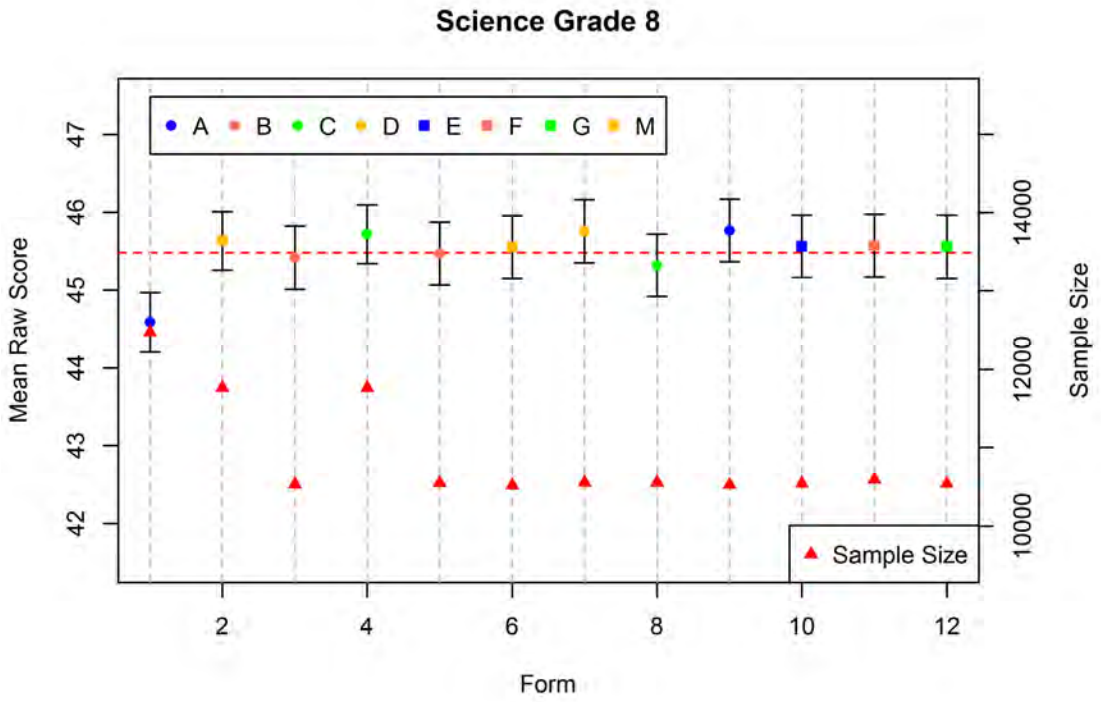

Science Grade 8
A B C D E F G M
Mean Raw Score
Sample Size
Sample Size
Form
42
43
44
45
46
47
10000
12000
14000
2
4
6
8
10
12

Table 9–5 shows the number of students who took each form pattern (recall that pattern A is the Master Core version), and Table 9–6 gives the form to scramble pattern conversion.

Table 9–5. Form Pattern Counts

Content	Grade	Pattern							
		A	**B**	**C**	**D**	**E**	**F**	**G**	**M**
Mathematics	**3**	14275	13829	13839	13794	13748	13817	13723	27677
	4	14605	14167	14042	14029	13995	13960	13956	28157
	5	14647	14007	14014	13936	14104	13893	13985	28107
	6	18653	19040	18734	13439	12414	12446	12416	18986
	7	20394	19756	19169	12779	12742	12771	12775	19803
	8	19207	20791	19203	12825	12791	13658	12821	20067
Reading	**3**	14137	13837	13847	13818	13747	13835	13730	27708
	4	14602	14158	14042	14027	14000	13953	13950	28155
	5	14636	14005	14009	13924	14107	13877	13984	28097
	6	18647	19032	18719	13416	12410	12444	12400	18976
	7	20358	19743	19153	12757	12728	12765	12773	19776
	8	19188	20773	19187	12805	12772	13647	12805	20041
Science	**4**	21796	20960	20961	10712	10502	10485	10508	21181
	8	22999	21082	22323	10556	10543	10592	10539	22284

Note. Final data was used

Table 9–6. Form to Pattern Conversion Table

		Form																			
Content	**Grade**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Mathematics	3	A*	M*	B	M	C*	D	E	F	G											
	4	A*	M*	B*	C	D	M	E	F	G											
	5	A*	M*	B	C	M	D	E*	F	G											
	6	D*	M*	B*	A	C	E	F	G	A	G	M	B	C	F	E	A	C	D	B	M
	7	A*	M*	C	A	B*	E	B	D	C	M	M	F	B	G	A	F	C	E	G	D
	8	B*	M*	C	F*	D	E	G	A	M	G	B	E	M	C	D	F	A	B	A	C
Reading	3	A*	M*	B	M	C*	D	E	F	G											
	4	A*	M*	B*	C	D	M	E	F	G											
	5	A*	M*	B	C	M	D	E*	F	G											
	6	D*	M*	B*	A	C	E	F	G	A	G	M	B	C	F	E	A	C	D	B	M
	7	A*	M*	C	A	B*	E	B	D	C	M	M	F	B	G	A	F	C	E	G	D
	8	B*	M*	C	F*	D	E	G	A	M	G	B	E	M	C	D	F	A	B	A	C
Science	4	A*	M*	A	B	C	D*	C	M	B	E	F	G								
	8	A*	M*	B	C*	B	M	D	C	A	E	F	G								

Note. * indicates the form was offered online

SCRAMBLING ANALYSIS

Form Level

The test-level and item-level effects of scrambling are presented in the following section. Table 9–7 shows the mean raw score difference from the Master Core for each scramble pattern (scramble pattern mean minus Master Core mean). The Master Core is labeled as scramble pattern A. The highlighted mean differences are statistically significant at family-wise Type I error rate (alpha) 0.01 with two-sample *t*-test. For example, with grade 3 math, seven two sample *t*-tests are conducted (Master Core vs. A, B, C, D, E, F, and G) and each test had Type I error rate (alpha) of 0.001428571 to keep the family-wise Type I error rate 0.01. Form 1 was excluded from these analyses since the accommodations tend to lower average performance. This means that there are no pattern A results for mathematics and reading grades 3–5 because pattern A was only used once in these contents and grades and form 1 followed pattern A. Table 9–7 shows that 2 of 39, 3 of 39, and 0 of 12 scramble pattern raw score means showed a significant difference from the Master Core in mathematics, reading, and science, respectively. Although there are some content grades showing a constant direction of performance differences of the scramble patterns from the Master Core, there does not appear to be a general pattern by either content or grade.

Table 9–7. Mean Raw Score Differences From the Master Core

		Scramble Pattern						
Content	**Grade**	**A**	**B**	**C**	**D**	**E**	**F**	**G**
Mathematics	**3**		-0.37	0.22	0.26	0.71	0.33	0.15
	4		0.27	0.31	0.62	0.27	0.38	0.44
	5		0.05	-0.20	0.10	0.23	-0.11	0.17
	6	0.18	0.08	0.28	0.24	0.24	0.38	0.06
	7	-0.10	0.21	0.36	0.11	0.19	-0.01	0.18
	8	0.42	0.51	0.37	0.41	0.38	0.41	0.38
Reading	**3**		-0.33	0.00	0.18	0.27	0.21	0.03
	4		-0.01	-0.17	0.18	-0.04	0.26	0.34
	5		0.05	0.10	0.28	0.08	0.08	-0.09
	6	0.02	-0.05	0.08	-0.02	0.27	-0.10	0.12
	7	0.16	-0.03	0.33	0.19	0.33	0.06	0.00
	8	0.20	0.03	0.22	0.22	0.21	0.00	0.30
Science	**4**	0.03	-0.19	0.23	-0.08	-0.20	-0.05	0.05
	8	0.17	-0.15	-0.07	0.16	-0.03	-0.03	-0.04

Note. Final data is used and highlighted cells indicate the scramble patter is statistically significant different from master core form at family-wise $\alpha = 0.01$ for each subject and grade combination.

Item Level

The item *p*-values are tested for the independence using the chi-square test. For example, a chi-square test for the 2-by-2 table is conducted for comparison of Master Core form and Scramble pattern B for the first item in grade 3 mathematics (Table 9–8). The chi-square test is thought to be a good method here because the item scores are discrete and we are interested in comparing proportions. The null hypothesis here is that students are equally likely to answer the item correct regardless of Master Core or scramble pattern B, and the alternative hypothesis is that students are not equally likely to answer the item correct in Master Core and form B.

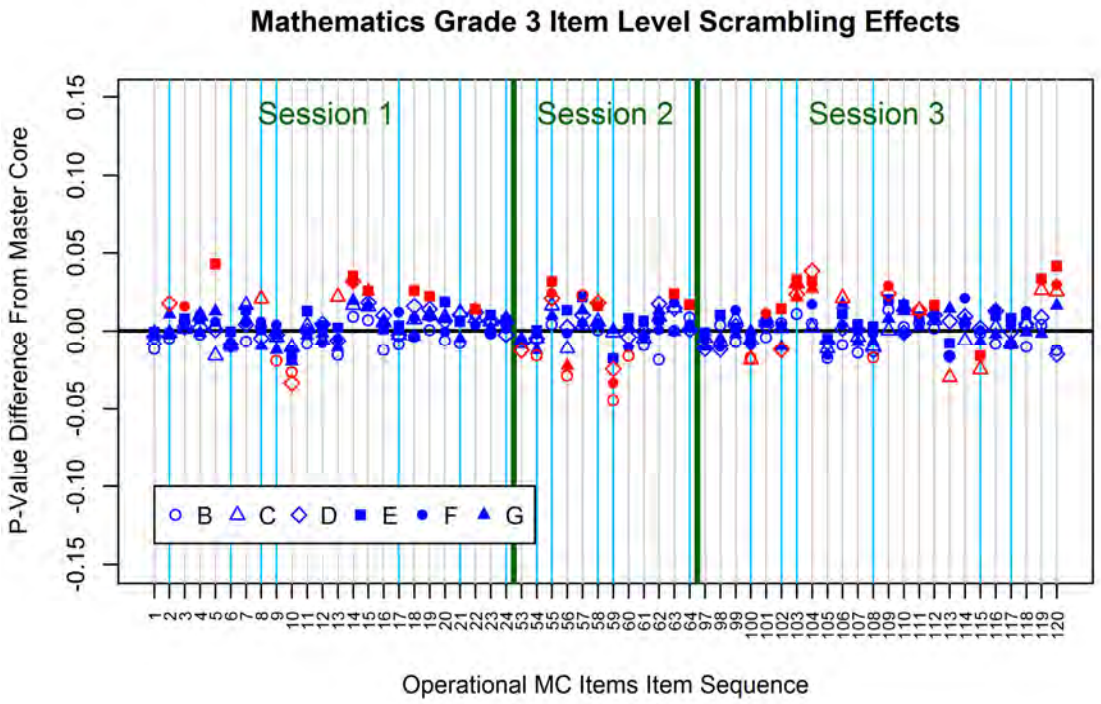
Table 9–8. Example of a Contingency Table for Grade 3 Mathematics for Item 1

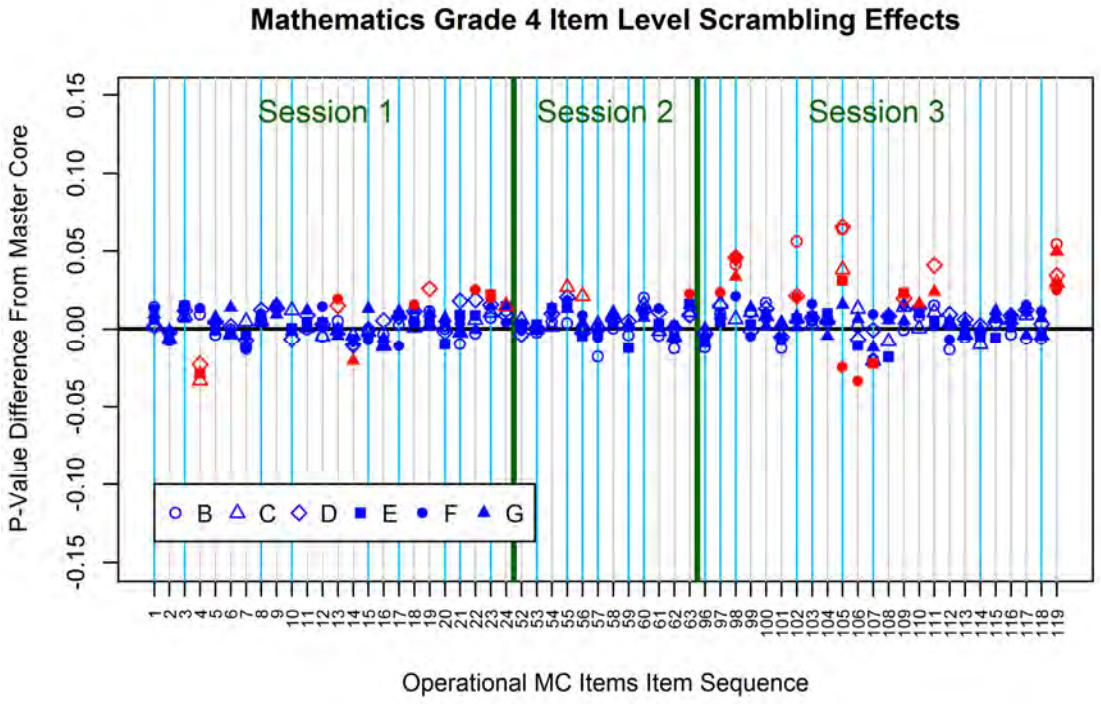
		Scramble Pattern	
		Master Core	**B**
Item Score	1	1057	1534
	0	17991	11114

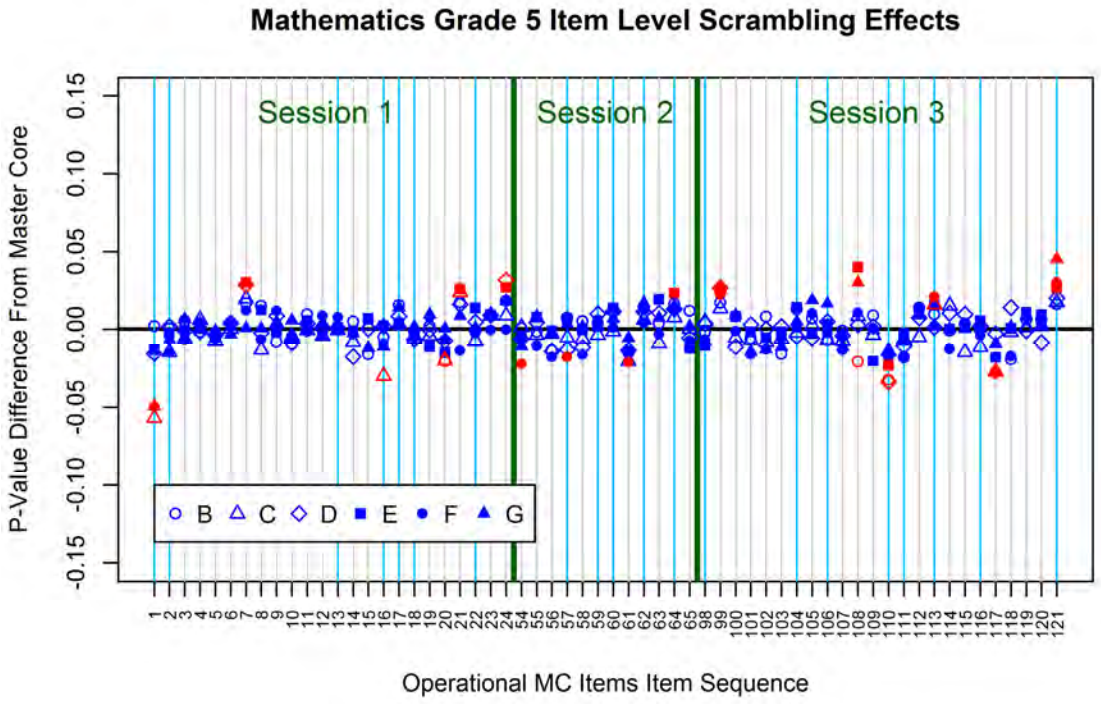
Figure 9–2 shows the item *p*-value difference from Master Core (Master Core mean minus scramble pattern mean). Blue symbols means there were no statistically significant difference. Red symbols mean the difference was statistically significant.

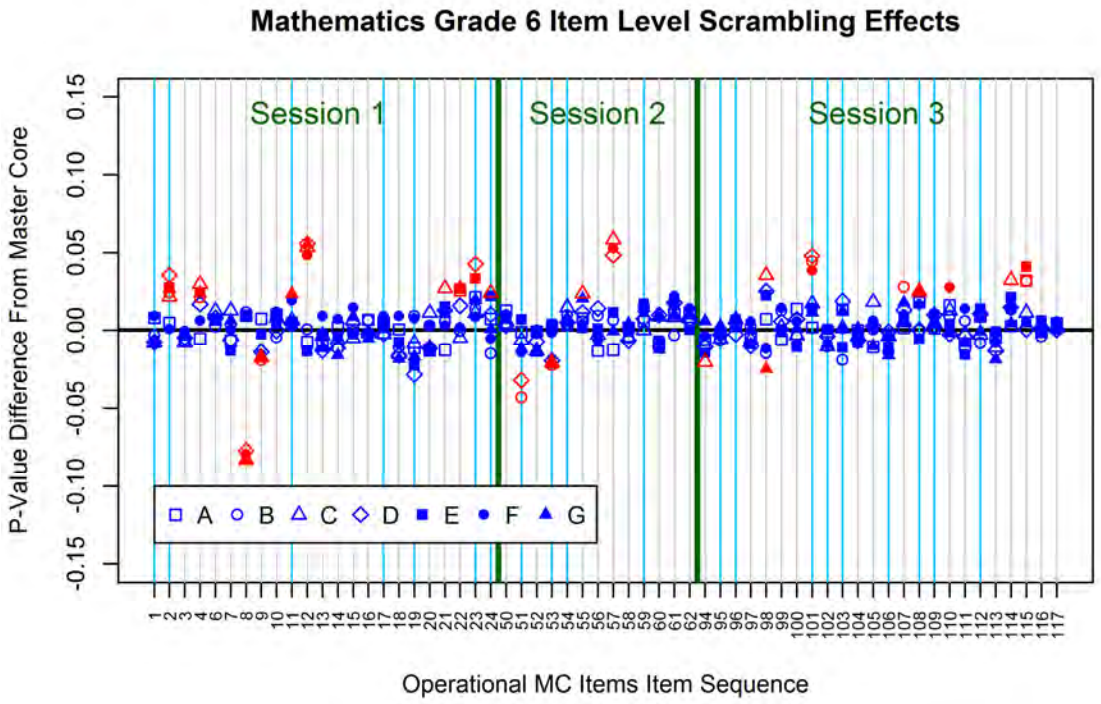
As in *t*-test for the form-level analyses, the Type I error rate is controlled by Bonferroni correction to keep family-wise alpha equal to 0.01. For example, for grade 6 mathematics, each comparison has alpha equals to 0.01 divided by 60 items and divided by 7 scrambling patterns. Please note that even though the analysis includes controlling the family-wise alpha to 0.01, statistical differences are still likely to be found given the large sample size. For this reason, flagged items are further scrutinized to evaluate whether the statistically significant differences have practical implications for the testing program. Content specialists scrutinized these outliers for any possible clanging, clueing, or other item sequence interactions but were unable to furnish any content-based explanations that would account for the differences.

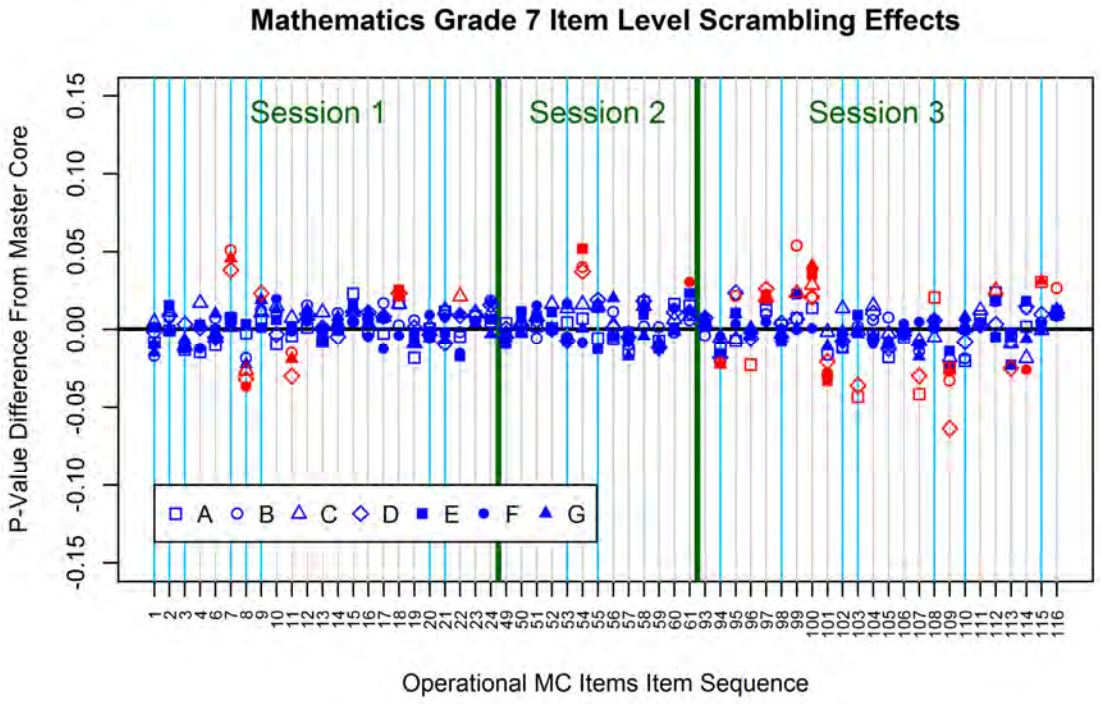
Figure 9–2. Mathematics, Reading, and Science Item Level Scrambling Effects

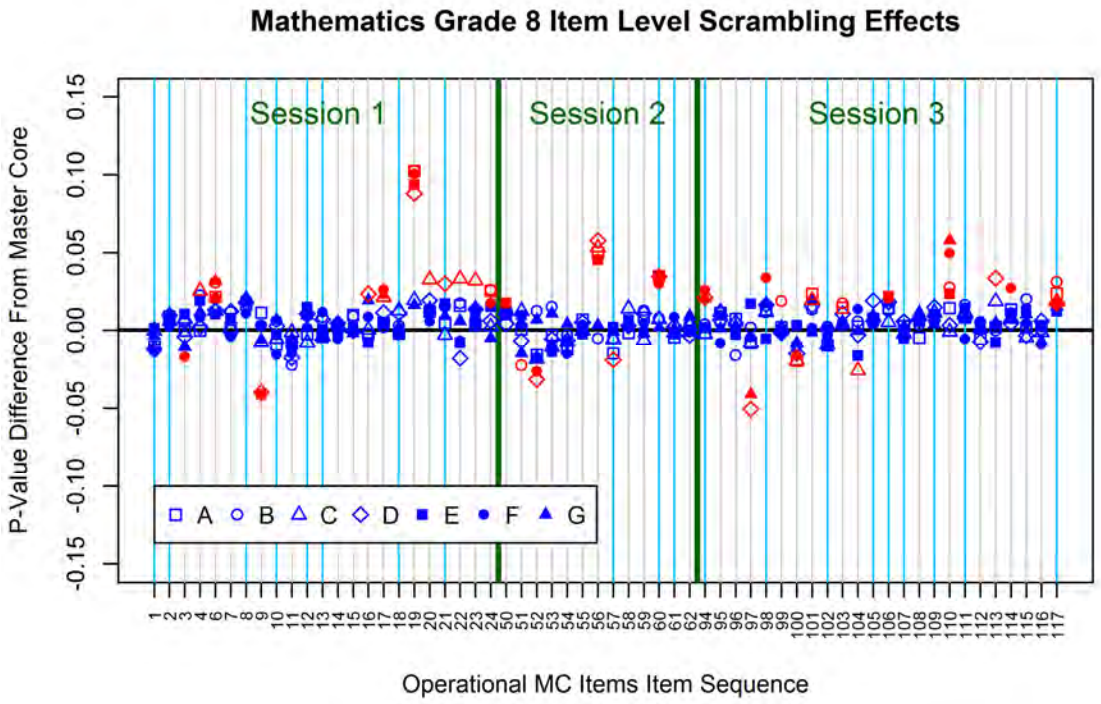


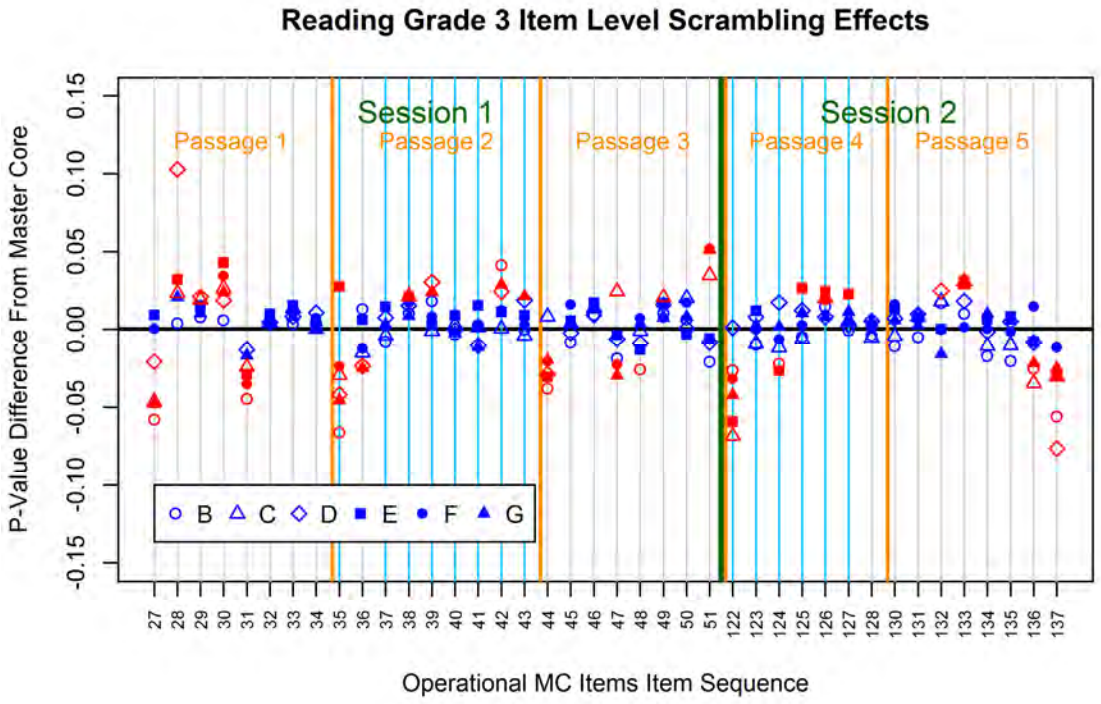


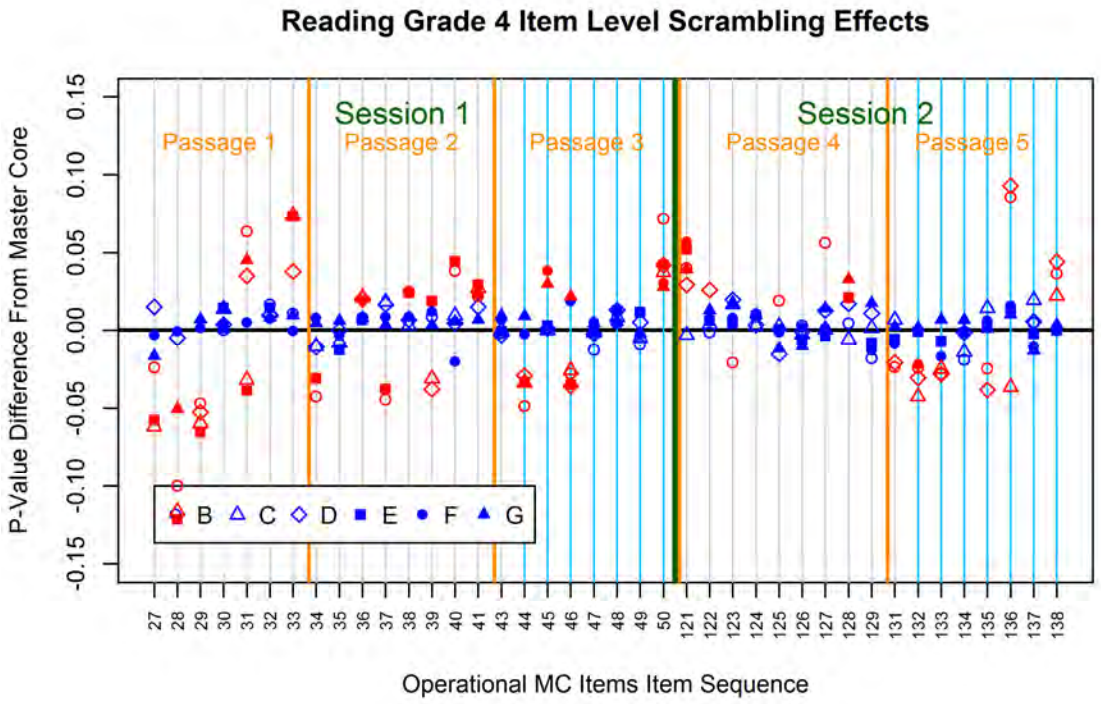

Mathematics Grade 5 Item Level Scrambling Effects
Session 1
Session 2
Session 3
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
B C D E F G
Operational MC Items Item Sequence

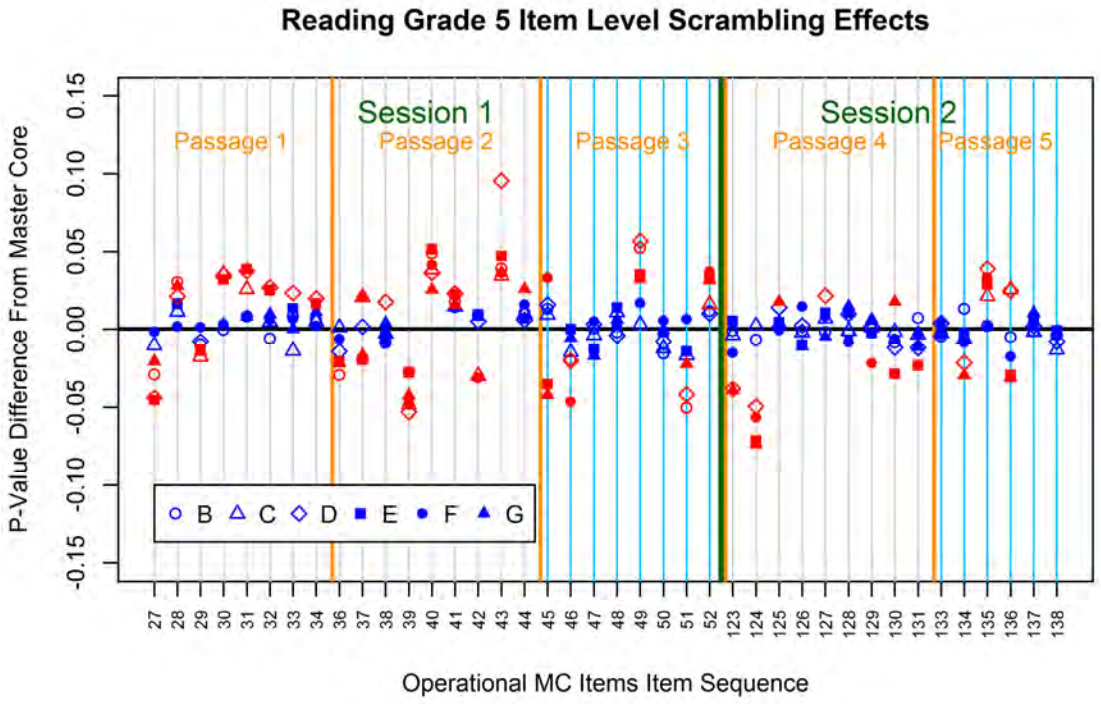

Mathematics Grade 6 Item Level Scrambling Effects
Session 1
Session 2
Session 3
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
A B C D E F G
Operational MC Items Item Sequence

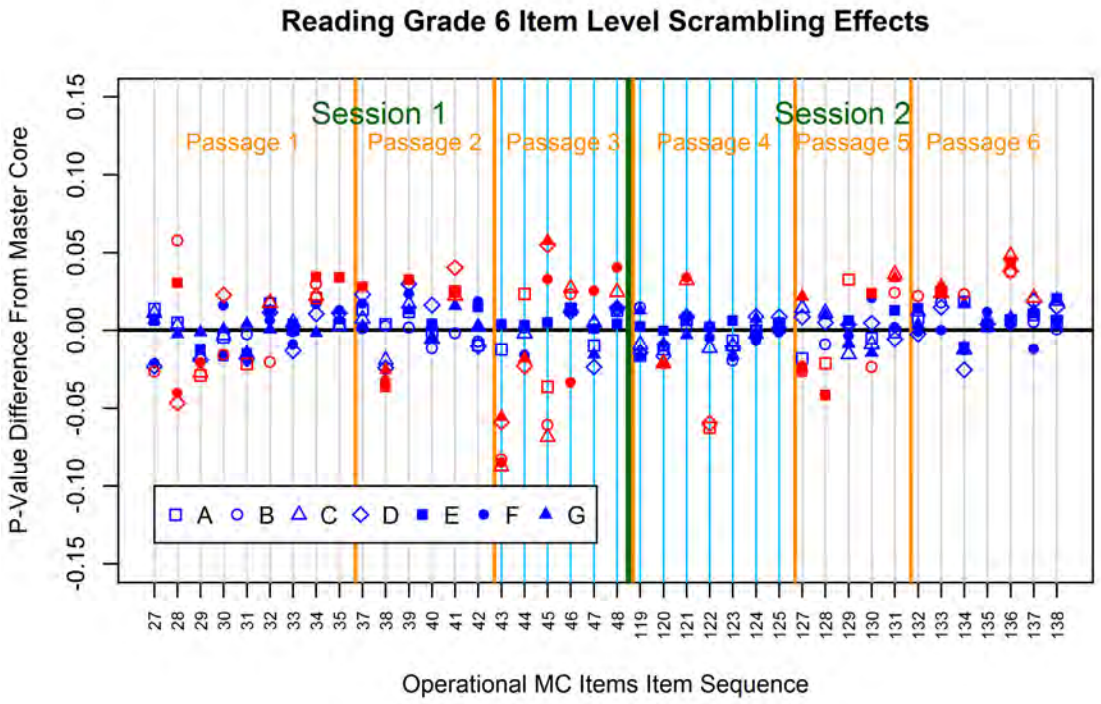

Mathematics Grade 7 Item Level Scrambling Effects
Session 1
Session 2
Session 3
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
A B C D E F G
Operational MC Items Item Sequence

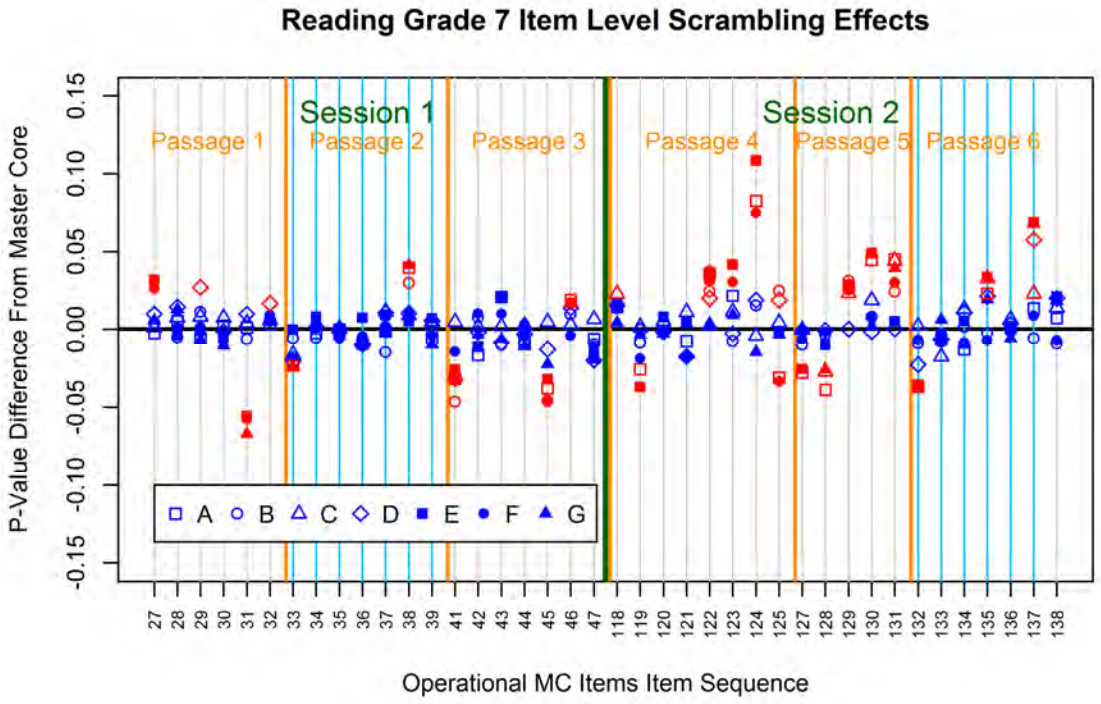

Mathematics Grade 8 Item Level Scrambling Effects
Session 1
Session 2
Session 3
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
A B C D E F G
Operational MC Items Item Sequence

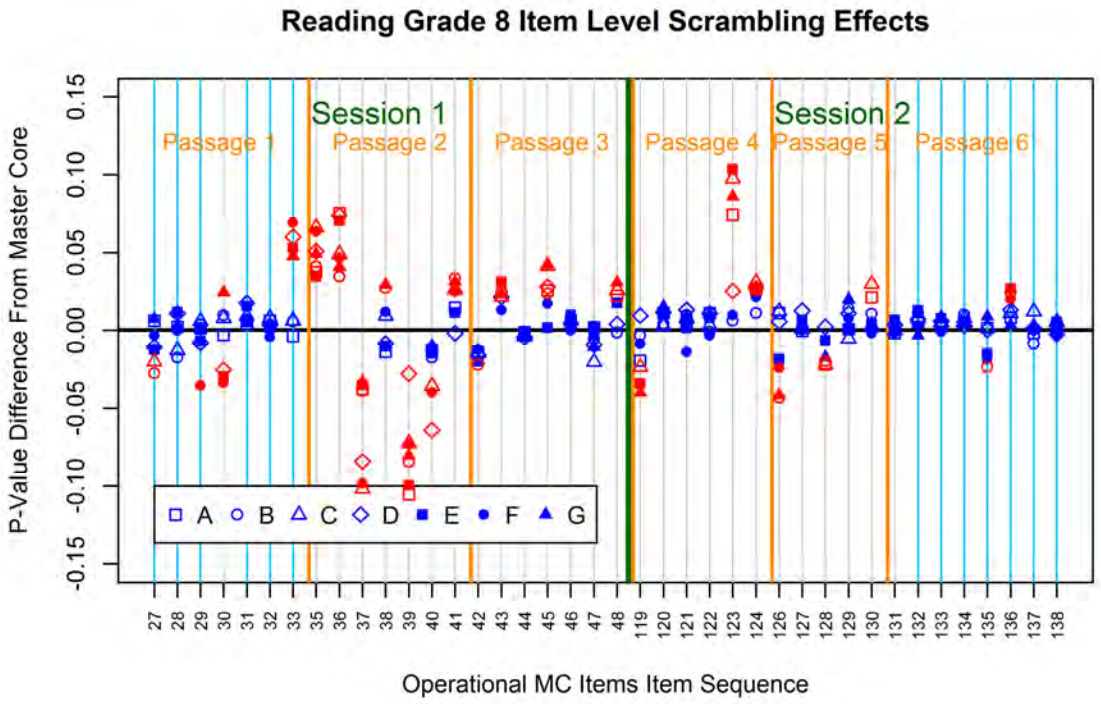

Reading Grade 3 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
B C D E F G
P-Value Difference From Master Core
Operational MC Items Item Sequence

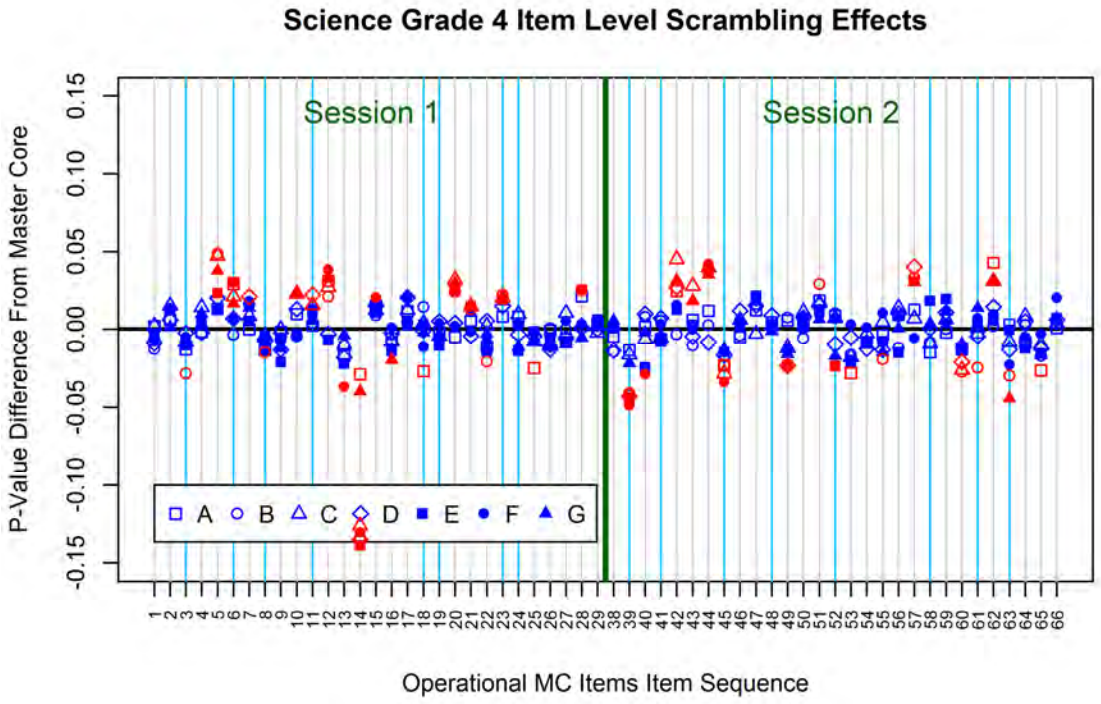

Reading Grade 4 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
B C D E F G
P-Value Difference From Master Core
Operational MC Items Item Sequence

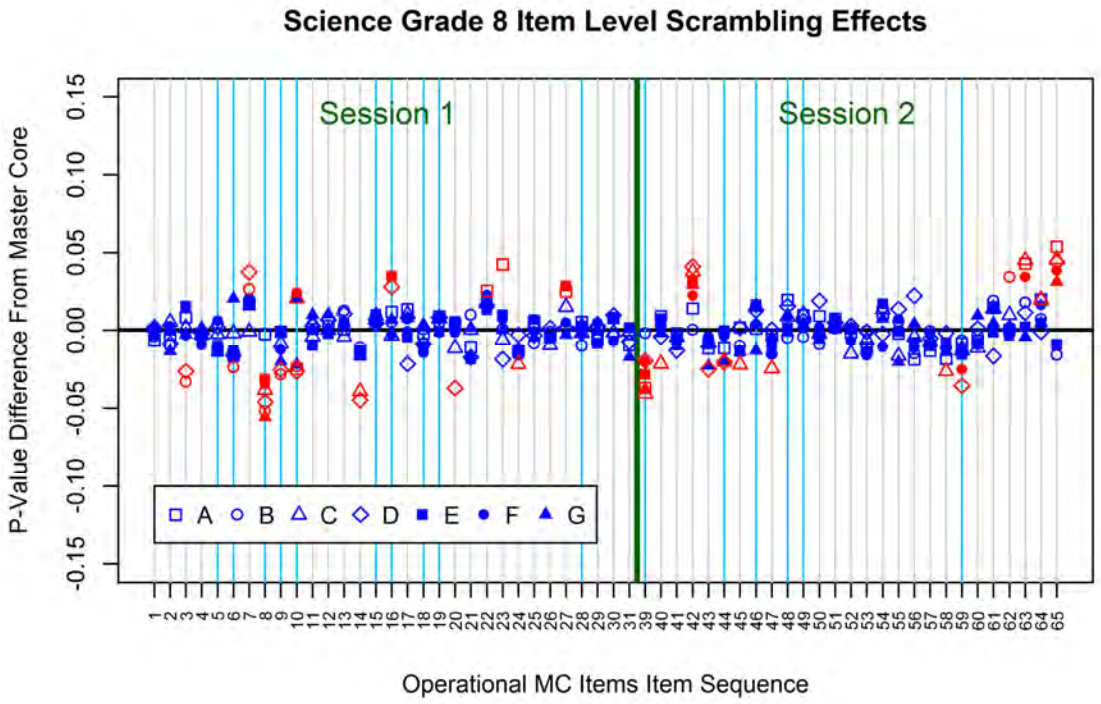

Reading Grade 5 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
B C D E F G
P-Value Difference From Master Core
Operational MC Items Item Sequence


Reading Grade 6 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
Passage 6
A B C D E F G
P-Value Difference From Master Core
Operational MC Items Item Sequence


Reading Grade 7 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
Passage 6
A B C D E F G
P-Value Difference From Master Core
0.15 0.10 0.05 0.00 -0.05 -0.10 -0.15
27 28 29 30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 118 119 120 121 122 123 124 125 127 128 129 130 131 132 133 134 135 136 137 138
Operational MC Items Item Sequence


Reading Grade 8 Item Level Scrambling Effects
Session 1
Session 2
Passage 1
Passage 2
Passage 3
Passage 4
Passage 5
Passage 6
A B C D E F G
P-Value Difference From Master Core
0.15 0.10 0.05 0.00 -0.05 -0.10 -0.15
27 28 29 30 31 32 33 35 36 37 38 39 40 41 42 43 44 45 46 47 48 119 120 121 122 123 124 126 127 128 129 130 131 132 133 134 135 136 137 138
Operational MC Items Item Sequence


Science Grade 4 Item Level Scrambling Effects
Session 1
Session 2
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
A B C D E F G
Operational MC Items Item Sequence


Science Grade 8 Item Level Scrambling Effects
Session 1
Session 2
P-Value Difference From Master Core
0.15
0.10
0.05
0.00
-0.05
-0.10
-0.15
A B C D E F G
Operational MC Items Item Sequence

Chapter Ten: Summary Demographic, Program, and Accommodation Data for the 2014 PSSA

ASSESSED STUDENTS

The PSSA assessed students include those from public schools who are required to participate as well as those from a small number of non-public schools (fewer than 500 students per grade level) that elected to participate. Also included are home-schooled students (fewer than 100 per grade) and a small number of foreign exchange students (generally fewer than 30 per grade through Grade 8). An exception was granted for those IEP students with quite significant cognitive impairments who met each of the following criteria, making them eligible to participate in the Pennsylvania Alternate System of Assessment (PASA) for mathematics, reading, and science and a school-administered alternate assessment for writing: 1) was enrolled in the assessed grade level for the subject area, 2) had a very severe cognitive disability, 3) required very intensive instruction, 4) required very extensive adaptation and support to perform or participate meaningfully, 5) required very substantial modification of the general education curriculum, and 6) participated in the general education curriculum that differed markedly in form and substance from that of other students. (See the *2013–2014 Pennsylvania System of School Assessment: Handbook for Assessment Coordinators*, p. 8.)

Results for this chapter are presented in sets of tables for the four PSSA subject areas (mathematics, reading, science, and writing). Accompanying each numbered table is a letter (M, R, S, or W) to designate the subject area. Table set 10–1M through 10–1W provides a summary of the assessed students for each subject. Presented on the first line is the total number of non-blank answer documents processed by grade level for the 2014 PSSA. This number pertains to the total number of records on the student file and is typically less than the "Used Answer Booklets Scanned" column shown in the Appendix L tables. The reason for the difference is that completely blank answer booklets (no student name and no items responded to) get removed from the initial batch of materials scanned. See Chapter Eight for more details on processing. The second line shows the number and percentage of students with a PSSA score in the subject area, followed by the number and percentage not receiving a score. The final line shows the number of students contributing to state summary statistics, which is especially relevant for all tables in Appendices I, J, K, and L. (See the section of this chapter entitled "Composition of Sample Used in Subsequent Tables" for additional explanation.)

Table 10–1M. Students Assessed on the 2014 PSSA: Mathematics

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	127,870	129,763	129,379	127,917	131,748	132,319
Total number of CBT processed	286	440	596	1,492	2,170	2,986
Total number of tests processed	128,156	130,203	129,975	129,409	133,918	135,305
Total number of tests processed with a score	127,454 99.5	129,451 99.4	129,192 99.4	128,615 99.4	132,772 99.1	133,853 98.9
Total number of tests processed without a score	702 0.5	752 0.6	783 0.6	794 0.6	1,146 0.9	1,452 1.1
Students with a mathematics score used in state summaries	124,702	126,911	126,693	126,128	130,189	131,363

Table 10–1R. Students Assessed on the 2014 PSSA: Reading

	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	127,754	129,763	129,379	127,917	131,748	132,319
Total number of CBT processed	285	440	593	1,489	2,168	2,980
Total number of tests processed	128,039	130,203	129,972	129,406	133,916	135,299
Total number of tests processed with a score	127,047 99.2	129,094 99.1	128,834 99.1	128,288 99.1	132,368 98.8	133,427 98.6
Total number of tests processed without a score	992 0.8	1,109 0.9	1,138 0.9	1,118 0.9	1,548 1.2	1,872 1.4
Students with a reading score used in state summaries	124,659	126,887	126,639	126,044	130,053	131,218

Table 10–1S. Students Assessed on the 2014 PSSA: Science

	Gr. 4	Gr. 8
	N/Pct	N/Pct
Total number of PPT processed	129,175	130,854
Total number of CBT processed	903	4,192
Total number of tests processed	130,078	135,046
Total number of tests processed with a score	129,338 99.4	133,158 98.6
Total number of tests processed without a score	740 0.6	1,888 1.4
Students with a science score used in state summaries	127,105	130,918

Table 10–1W. Students Assessed on the 2014 PSSA: Writing

	Gr. 5	Gr. 8
	N/Pct	N/Pct
Total number of PPT processed	129,226	131,963
Total number of CBT processed	414	2,976
Total number of tests processed	129,640	134,939
Total number of tests processed with a score	126,723 97.7	132,459 98.2
Total number of tests processed without a score	2,917 2.3	2,480 1.8
Students with a writing score used in state summaries	124,666	130,302

NON-ASSESSED STUDENTS

As may be observed from Tables 10–1M through 10–1W, not all students were assessed. Although there are a variety of reasons for this, the major ones pertain to the following:

- Extended absence from school that continued beyond the assessment window
- Absence without make-up for at least one section of a subject-area test
- Failure to meet the attempt criteria on one or more subject-area test sections and no exclusion code was marked by school personnel; for mathematics, reading, and science, the attempt criteria required a minimum of five items to be completed in each subject-area section; for writing, the attempt criteria required is at least five multiple-choice items and a response to both operational writing prompts
- ELL students in the first year in U.S. schools (reading and writing only)
- Medical emergency
- Other reasons (includes parental request due to religious reasons, students who are court-agency placed, students with multiple reasons coded, and the category of other)

The numbers of students without test scores for these reasons are presented in Tables 10–2M through 10–2W.

Table 10–2M. Counts of Students without Scores on the 2014 PSSA: Mathematics

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	39	37	62	80	166	229
	5.6	4.9	7.9	10.1	14.5	15.8
Absent without make-up	49	71	83	81	125	173
	7.0	9.4	10.6	10.2	10.9	11.9
Non-attempt	292	297	238	249	316	358
	41.6	39.5	30.4	31.4	27.6	24.7
Medical emergency	100	110	162	189	302	386
	14.2	14.6	20.7	23.8	26.4	26.6
Other reasons	222	237	238	195	237	306
	31.6	31.5	30.4	24.6	20.7	21.1
Total not assessed	702	752	783	794	1,146	1,452

Table 10–2R. Counts of Students without Scores on the 2014 PSSA: Reading

Reason for Non-Assessment	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	40	38	65	82	169	231
	4.0	3.4	5.7	7.3	10.9	12.3
Absent without make-up	62	82	98	87	152	193
	6.3	7.4	8.6	7.8	9.8	10.3
Non-attempt	326	329	284	338	435	483
	32.9	29.7	25.0	30.2	28.1	25.8
ELL in first year in U.S. schools	242	306	287	214	237	254
	24.4	27.6	25.2	19.1	15.3	13.6
Medical emergency	103	113	168	194	314	391
	10.4	10.2	14.8	17.4	20.3	20.9
Other reasons	219	241	236	203	241	320
	22.1	21.7	20.7	18.2	15.6	17.1
Total not assessed	992	1,109	1,138	1,118	1,548	1,872

Table 10–2S. Counts of Students without Scores on the 2014 PSSA: Science

Reason for Non-Assessment	Gr. 4	Gr. 8
	N/Pct	N/Pct
Extended absence from school	86	464
	11.6	24.6
Absent without make-up	78	260
	10.5	13.8
Non-attempt	234	433
	31.6	22.9
Medical emergency	108	434
	14.6	23.0
Other reasons	234	297
	31.6	15.7
Total not assessed	740	1,888

Table 10–2W. Counts of Students without Scores on the 2014 PSSA: Writing

Reason for Non-Assessment	Gr. 5	Gr. 8
	N/Pct	N/Pct
Extended absence from school	109	400
	3.7	16.1
Absent without make-up	82	213
	2.8	8.6
Non-attempt	2,159	1,075
	74.0	43.3
ELL in first year in U.S. schools	101	50
	3.5	2.0
Medical emergency	202	428
	6.9	17.3
Other reasons	264	314
	9.1	12.7
Total not assessed	2,917	2,480

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

Students included in the following demographic analyses were those who contributed to state summary statistics, using the final individual student data file provided to the Pennsylvania Department of Education in August 2014. Students not included in the present state summary data were those who were 1) enrolled in a Pennsylvania school after October 1, 2013, 2) coded as ELL and enrolled after May 3, 2013, 3) foreign exchange students, 4) home schooled, 5) enrolled in a non-public school, or 6) without a subject-area test score.

Demographic data for students taking the PSSA is presented separately for each subject area in Appendix I. Results for accommodations received were collected separately by subject area and are presented in separate tables as well.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses involving demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. Updates of attribution data were carried out through the DRC Attribution System. Some data such as accommodation information is marked directly on the student answer document at the time the PSSA is administered.

PARTICIPATION BY ADMINISTRATION MODE

This was the second year in which online testing was available for the PSSA. As anticipated, the vast majority of students were assessed utilizing paper/pencil tests (PPT). The bottom row of the tables presented in Appendix I present the number of students involved in the PPT and CBT administrations as well as Table 9–2 in Chapter Nine. Overall, the percent of students responding by CBT was approximately 1.0 percent for mathematics and reading, 1.9 percent for science, and 1.3 percent for writing. There was a slight rise in the percent of students taking a CBT across grade levels. For mathematics and reading the percent of CBT usage went from 0.2, 0.3, 0.4, 1.1, 1.6, and 2.2 percent from Grades 3 through 8. For science, CBT participation rate was 0.7 percent and 3.1 percent for grades 4 and 8, respectively. Writing participation was 0.3 percent and 2.2 percent at Grades 5 and 8.

Demographic Characteristics

Frequency data for each demographic category is presented in Appendix I. Percentages are based on students with scores in a subject area, which are shown at the bottom of the appropriate table. Included are students receiving education in a non-traditional setting, such as a court-agency placement.

Demographic Characteristics of Students Taking the 2014 PSSA can be found in Appendix I.

TEST ACCOMMODATIONS PROVIDED

School personnel supplied information regarding accommodations that a student may have received while taking the PSSA. Accommodations are classified in terms of presentation, response, setting, and timing to enable students to better manage disabilities that hinder their ability to learn and respond to assessments. An accommodations manual entitled *Accommodations Guidelines: Keystone Exams and PSSA* (PDE, revised 11/12/2013) was updated for use with the 2014 PSSA and Keystone Exams. This manual may be found on the PDE website at www.education.state.pa.us. Click on State Assessment System on the home page next to the large green check mark, then PSSA. A glossary of accommodation terms as applied to the PSSAs is provided in Table 10–3 at the end of this chapter.

It should be noted that a few of the accommodations available to students in the current year differ from those of the previous year. These include several new or revised accommodations along with several that were dropped.

The frequency with which accommodations were utilized for PPT and CBT formats is summarized separately for each subject area in Appendix J. Tabled values are based on all students whose score contributed to state summary statistics in a given subject area. Because of the very small number of students utilizing CBT, combined with the fact that a number of accommodations are primarily accessed by only one of the two administration modes, meaningful comparisons with PPT are rather limited. In the tables, an NA denotes those instances in which a particular accommodation does not apply to one of the testing modes.

PRESENTATION ACCOMMODATIONS RECEIVED

Presentation accommodations are those that provide alternate ways for students to access and process printed instructional material and assessments. These include auditory, tactile, visual, and combined auditory/visual modes of presentation. The number of presentation accommodations provided in the 2014 PSSA varied by subject and testing mode as follows:

- PPT: mathematics and science, 11; reading, 7; and writing, 11.
- CBT: mathematics and science, 11; reading, 5; and writing, 9.

As depicted in Appendix J, the actual frequencies were quite low, generally representing less than two-tenths of one percent of assessed students statewide. Frequencies of less than one-tenth of one percent were observed in at least half of the instances. The most notable exceptions were "All items/questions read aloud" and "Some items/questions read aloud" (mathematics and science), and "some items/questions/prompt read aloud" (writing) and "all items/questions/prompt read aloud" (writing). Among accommodations specific to CBT, the use of audio was the most frequent. Although included in the tabled data, Spanish version (mathematics and science) is not included in the counts listed above. For CBT administration there were also four unique accommodations for mathematics and science and two for reading and writing.

Incidence of Presentation Accommodations Received on the 2014 PSSA can be found in Appendix J.

RESPONSE ACCOMMODATIONS RECEIVED

Response accommodations permit students to complete assignments, tests, and activities in different ways to solve or organize problems using some type of assistive device or organizer. The number of response accommodations provided on the 2014 PSSA varied by subject as follows:

- PPT: mathematics and science, 12; reading, 9; and writing, 8.
- CBT: mathematics and science, 9; reading, 6; and writing, 5.

Summarized in Appendix J is the frequency with which these accommodations were utilized, most of which are quite low. Very few response accommodations were coded as being utilized by students responding by CBT.

Incidence of Response Accommodations Received on the 2014 PSSA can be found in Appendix J.

SETTING ACCOMMODATIONS RECEIVED

Setting accommodations permit a change in location in which a student receives instruction or participates in an assessment. There were four categories of setting accommodations for mathematics, reading, science, and writing on the 2014 PSSA. As depicted in Appendix J, the most common accommodation across subject areas was small group setting. This was true for PPT and CBT modes of administration. In mathematics and reading the percentage of use for this accommodation by students using a PPT was greatest at Grade 4, followed by gradual decreases through Grade 8. Similarly, usage of a small group setting was greatest at the elementary level for science (Grade 4) and writing (Grade 5), with a slightly lower percentage at Grade 8.

Incidence of Setting Accommodations Received on the 2014 PSSA can be found in Appendix J.

TIMING ACCOMMODATIONS RECEIVED

Timing accommodations involve a change in the allowable length of time to complete assignments or assessments, including the way in which time is organized. There were four categories of timing accommodations for mathematics, reading, science, and writing on the 2014 PSSA. As depicted in Appendix J, the most commonly used accommodation was extended time, followed by frequent breaks. One consistent finding for mathematics and reading was that students responding by CBT had a slightly higher usage of frequent breaks across all six grade levels than observed for students taking a PPT. This was also true for the two grade levels assessed for science and writing.

Incidence of Timing Accommodations Received on the 2014 PSSA can be found in Appendix J.

ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

A comparison between students without an IEP (non-IEP students) and those with an IEP (IEP students) with regard to having received an accommodation is provided in Appendix K. In this data, accommodated means that a student received one or more of the total number of accommodations available for a given subject area; however, this also varies with administration mode. The total number of available accommodations for students taking a PPT was as follows: mathematics and science, 31; reading, 24; and writing, 27. The number of available accommodations for students taking a CBT was as follows: mathematics and science, 28; reading, 19; and writing, 22. The category of "non-accommodated" indicates that a student did not receive any accommodation during testing.

The general pattern of findings reveals a consistent and substantially higher percentage of IEP students receiving an accommodation in contrast to non-IEP students. This same pattern holds true regardless of test administration mode and PSSA test.

Comparisons between administration modes are less clear. IEP students taking a CBT exceeded those taking a PPT in receiving an accommodation by at least five percentage points in all grade levels for math. In reading, accommodated IEP students taking a PPT exceeded those taking a CBT by a margin of at least five percent in four grade levels. No clear pattern emerged for science or writing. These results are tentative at best due to the very small sample size for students taking a CBT.

Accommodation Rates for Non-IEP and IEP Students can be found in Appendix K.

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND ELL STATUS

As noted in Appendix L, students with an IEP received an accommodation of some type far more often than non-IEP students. Certain accommodations with very low frequencies are specific to particular disabilities while others are far more common and may also apply to students classified as English Language Learners (ELL). Accommodations having the largest frequencies can potentially supply the most stable data when separated out for subgroup analysis. Listed below are the most commonly used accommodations, which were chosen for display.

- Some test items/questions read aloud (mathematics, science)
- All test items/questions read aloud (mathematics, science)
- Small group setting (mathematics, reading, science, writing)
- Extended time (mathematics, reading, science, writing)
- Frequent breaks (mathematics, reading, science, writing)
- Test directions read aloud (writing)
- Some test items/questions/prompt read aloud (writing)
- All test items/questions/prompt read aloud (writing)

Coding for IEP is dichotomous, as students are classified IEP and non-IEP. For purposes of this analysis, an English Language Learner (ELL) is a student classified ELL and enrolled in a U.S. school on or before March 3, 2013. All other assessed students, including those who have exited an ESL/bilingual program and are in the first or second year of monitoring, are regarded as non-ELL. Students coded as ELL and enrolled in a U.S. school after March 3, 2013, are excluded from state summary statistics, with the exception of science, as stated earlier in this chapter.

Customarily, a considerably larger percentage of IEP students receive a given accommodation than non-IEP students. Although less frequent, certain accommodations also have a high frequency rate for ELL students. To separate out the effect of being classified IEP or ELL, four possible combinations are presented in the tables. These include general education students who are neither IEP nor ELL, students who are IEP but non-ELL, students who are ELL but non-IEP, and students who are both IEP and ELL. The bottom row for each grade provides the total number of assessed students in each of the four classifications.

Because the combination of tabled accommodations and grades assessed differs somewhat by subject area, it is useful to reference the number of instances of accommodations for which the tabled results apply. For example, mathematics has 30 possible instances resulting from five accommodations displayed and six assessed grade levels. There are 18 instances for reading, 10 for science, and 12 for writing. The total number of instances across subjects is 70.

For purposes of comparing the four groups in terms of whether a group displayed a larger frequency rate than another group, a choice was made to use a difference of five or more percentage points. In many instances, the percentage difference between groups was of little practical significance (from zero to only several percentage points).

Although the separate presentation of data for PPT and CBT modes provides an impression of overall findings, the much smaller *n*-counts and accommodation rate by students taking a CBT renders an administration mode comparison meaningless for two groups, namely, ELL and Non-IEP and Both IEP and ELL. Nevertheless, it is possible to make some cautious descriptive observations when sufficient *n*-counts and consistency are present. In the summary comments regarding the tables in Appendix L the term "instances" refers to the set of **accommodations for which data is displayed**. The general findings for each of the four classifications of students may be summarized as follows.

Group Comparisons for Students Taking a PPT

The general findings for students receiving a PPT, where the volume of data is quite substantial, showed a great deal of consistency. Among the accommodations presented in Appendix L, frequent breaks displayed the least differentiation among the four comparison groups. Small group testing had the largest frequency for each subject area at all assessed grades. A dominant pattern was in the especially high number of times that the IEP/ELL group had the largest percent of accommodations at the elementary level (grades 3–5), which then shifted as the IEP/Non-ELL group tended to receive larger percentages of particular accommodations at the middle school level (grades 6–8). Major findings for each of the four classifications of students are summarized below:

- General education students (neither IEP nor ELL) had a very low incidence of accommodations in general and less than the other three groups in nearly all instances. The frequency of accommodations was less than one percent in 31 of the 70 total instances and less than five percent in all but five instances.
- The IEP/non-ELL students had the largest percentage of these accommodations in 37 of the 70 instances, all occurring within Grades 6–8 (small group setting), and was within five percentage points of the IEP/ELL group in 48 of 70 instances.
- The ELL/non-IEP students received a larger percentage of these accommodations than the general education students in all 70 instances, 41 of which exceeded the five percent margin. Furthermore, they exhibited lower percentages than IEP/non-ELL students (69 of 70 instances) and IEP/ELL students (70 of 70 instances).
- The IEP/ELL students had the largest percentage of these accommodations in 31 instances. In 48 instances it was within five percentage points of the IEP/non-ELL student group.

CBT Comparisons with PPT

The only groups for which comparisons between PPT and CBT administration modes were deemed reasonable based on sample sizes were within the general education group and the IEP/non-ELL group. The findings are summarized below.

- General education students at grade levels in which at least 300 students responded by CBT included mathematics and reading (Grades 5–8), science (Grades 4 and 8), and writing (Grade 8). As noted for PPT, CBT also displayed a very low incidence of accommodations. Of 49 possible instances, the difference between PPT and CBT in percent of students receiving an accommodation was within five percentage points and most often within a percentage point or two.

- IEP/non-ELL students at grade levels in which at least 300 students responded by CBT included mathematics and reading (Grades 6, 7, and 8) and science and writing (Grade 8). Results indicated that in 23 of 35 possible instances students tested by CBT had a greater frequency of accommodations than those responding by PPT, 14 of which were by a margin of 10 or more percentage points. In five instances, PPT exceeded CBT by a wide margin (small group setting). Consistent with the PPT findings, the percentage of CBT students receiving an accommodation was far greater for the IEP/non-ELL group than for the general education group.

Incidence of IEP and ELL Students Receiving Selected Accommodations can be found in Appendix L.

GLOSSARY OF ACCOMMODATION TERMS

Table 10–3 provides a brief description of accommodation terms as used in the PSSA and Keystone Exams. Accommodation data was supplied by school personnel as noted in the left column of the table. The right column contains an explanation derived from the PDE publication, 2014 *Accommodations Guidelines: Keystone Exams and PSSA* (PDE, revised 11/12/2013, pages 23–47). This manual may be found on the PDE website at www.education.state.pa.us. Click on State Assessment System on the home page next to the large green check mark, then PSSA.

Table 10–3. Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Presentation Accommodations	
Braille format	Students may use a Braille format of the test. Answers must then be transcribed into the answer booklet without alteration.
Large-print format	Students with visual impairments may use a large-print format. Answers must then be transcribed into the answer booklet without alteration.
Magnification device	Devices to magnify print may be used for students with visual impairments and/or print disabilities.
Color overlay	Students with visual impairments may place a color overlay on a printed page of the test document to make text more readable.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with severe visual disabilities that prevent them from accessing instructional material or performing the skill may use computer assistive technology; however, PDE must approve the program and functions prior to the test window.
Test items/questions/prompt signed (PSSA writing)	Deaf/hearing-impaired students may receive test directions from a qualified interpreter. Signing is also permitted for essay prompts in PSSA writing and all items in PSSA mathematics and science and for Keystone Algebra and Biology.
Test items/questions/prompt interpreted for ELL	A qualified interpreter may translate directions or clarify instructions for the assessments. The interpreter may translate but not define specific words or test questions on the PSSA mathematics, science, and writing (including a writing prompt) tests and Keystone Algebra and Biology exams. On the PSSA reading test, the interpreter may only translate directions and may not translate or define words in the passages or test questions.
Some or all test items/questions/prompt read aloud (writing only)	Students unable to decode text visually may have items/questions read aloud for PSSA mathematics and science and Keystone Algebra I and Biology; however, words may not be defined.
Amplification device	In addition to using hearing aids, an amplification device to enhance clarity may be required.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Other (PDE approval required)	Other presentation accommodations indicated in the *Accommodation Guidelines* may be provided; however, PDE approval is required prior to the test window.
Spanish version for PSSA (Math and Science) and Keystone (Algebra and Biology)	Students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than three years may take this version.
Student used the following Online Presentation Accommodations	
Audio	An audio CD version of PSSA mathematics and science or Keystone Algebra and Biology test items/questions may be taken by students with severe hearing disabilities as documented by their IEPs.
Video sign language (per accommodations guidelines)	Eligible students who use a sign language accommodation during instructional periods may use a VSL on the PSSA mathematics and science assessments.
Color chooser or contrasting text chooser	The use of this accommodation enables a visually impaired student to change the background color or text color to make text more readable.
Student used the following Response Accommodations	
Brailler/Note taker (per *Accommodations Guidelines*)	Students using this device as part of their regular instructional program may use it on the assessments; however, they may not use the thesaurus, spelling, or grammar checker.
Test administrator scribed **open-ended** responses at student's direction	A test administrator may record word-for-word exactly what a student dictated directly into the test booklet. This includes MC and OE responses Keystone Algebra, Biology, and Literature tests and PSSA mathematics and science.
Test administrator marked **multiple-choice** responses at student's direction	A test administrator may mark an answer booklet at the direction of a student (e.g., a student may point to an MC answer with the test administrator marking the response in the answer booklet).
Test administrator transcribed student responses (per *Accommodations Guidelines*)	A test administrator may transcribe (copy) a student's written, typed, or keyed response into a standard answer booklet.
Qualified Interpreter translated, transcribed, and/or scribed student's **signed** responses	A qualified interpreter may interpret a student's **signed** responses into written English for Keystone Algebra and Biology exams and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Qualified Interpreter translated, transcribed, and/or scribed ELL student responses	A qualified interpreter may interpret a student's non-English oral responses into written English for Keystone Algebra and Biology exams and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Augmentative communication device	Students with severe communication difficulties may use a special device to convey responses, which must be transcribed into the answer booklet by the test administrator.
Keyboard, word processor, or computer (per *Accommodations Guidelines*)	This is an allowable accommodation as a typing function only for students with the identified need. Supports such as dictionaries, thesauri, spell checkers, and grammar checkers must be turned off. Answers must then be transcribed into the answer booklet without alteration.
Audio recording of student responses (per *Accommodations Guidelines*)	An electronic recording device may be used to record responses, which must be transcribed into the answer booklet by the test administrator. (Students who are unable to use a pencil or have illegible handwriting may answer MC questions orally. Answers must be recorded in the answer booklet without alteration during the testing period.)
Translation dictionary for ELL student	A word-to-word dictionary that translates native language to English (or vice versa) without word definitions or pictures is allowed on any portion of the Keystone Algebra and Biology exams, and PSSA mathematics and science tests.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with blindness or extremely low vision may dictate text into a computer. Responses must be transcribed verbatim into student's regular answer booklet.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Setting Accommodations	
Hospital/home testing	A student who is confined to a hospital or to home during the testing window may be tested in that environment.
One-on-one setting (Keystone Exams and PSSA Math, Reading, Science, Writing)	One-on-one settings are necessitated in certain instances, such as to reduce distraction or in the use of certain devices. A separate room may be used to reduce distraction.
Small group setting	Some students may require a test setting with fewer students or a setting apart from all other students to minimize distraction.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.

Table 10–3 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Timing Accommodations	
Extended time	Extended time may be allotted for each section of the test as a planned accommodation to enable students to finish.
Frequent breaks	Frequent breaks (breaks within a test section) may be scheduled for the completion of each test section; however, a test section must be completed within one school day.
Changed test schedule	Students whose disabilities prevent them from following a regular, planned test schedule may follow an individual schedule that enables test completion.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.

Chapter Eleven: Classical Item Statistics

This chapter provides an overview of the two most familiar item-level statistics obtained from any classical (traditional) item analysis: item difficulty and item discrimination. The following results pertain only to operational PSSA items (i.e., those items that contributed to a student's total test score). Rasch item statistics are discussed in Chapter Twelve, and test-level statistics are found in Chapter Seventeen.

ITEM-LEVEL STATISTICS

Appendix F provides classical item statistics for all PSSA items. Results are organized by subject and grade. These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in the appendices include *p*-values for multiple-choice (MC) items and item means for open-ended (OE) items (indicators of item difficulty); point-biserial correlations for MC items and item-test correlations for OE items (indicators of item discrimination); and the proportion of students selecting each MC item option or earning each OE item score point.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For multiple-choice items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0–1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. Therefore, this is also the proportion correct for the item, or the *p*-value. In theory, *p*-values can range from 0.00[9] to 1.00 on the proportion-correct scale. For example, if an item has a *p*-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item was relatively easy and/or the students who attempted the item were relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

For OE items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of some mathematics, science, and writing items). Sometimes a pseudo *p*-value is provided for an OE item. This is done by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are typically not seen in applied practice. However, understanding the extremes helps illustrate that relatively lower values correspond to more difficult items, and that relatively higher values correspond to easier items. (As a result of this, some assert that this index would be more accurately referred to as the item's easiness.)

Item difficulty is an important consideration for the PSSA tests because of the ranging achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced).

[9] For MC items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item taps has been mastered by most students. Conversely, an item answered incorrectly by a low percentage of students would suggest few students have mastered the knowledge or skill the item taps. On standards-referenced tests like the PSSAs, a test development goal is to include a wide range of item difficulties.

ITEM DISCRIMINATION

At the most general level, item discrimination[10] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the PSSA overall) would be more likely to answer any given PSSA item correctly, while students with low ability (i.e., those who perform poorly on the PSSA overall) would be more likely to answer the same item incorrectly. For the PSSA tests, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. (As commonly practiced, DRC removes the item score from the total score such that the resulting correlations will not be spuriously high.) The correlation coefficient can range from -1.0 to +1.0. If the aforementioned expectation is met (high-scoring students tend to get the item right while low-scoring students do not), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high- and low-ability students. This should be the case for all PSSA operational test items.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[11] In other words, this indicates that students who did well on the total test tended to do well on the item as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., the items have extreme *p*-values) can have reduced power to discriminate, and thus, can have lower correlations.

Discrimination is an important consideration for the PSSA because the use of more discriminating items on a test is associated with more reliable test scores. This in turn means that score estimates will be more precise (i.e., there will be smaller confidence intervals around the scores) and, perhaps more importantly, that more accurate performance level placements will be made. The issues of reliability, confidence intervals, and performance level classifications are further discussed in Chapter Eighteen.

[10] As noted earlier, the discrimination index for PSSA dichotomous MC items is typically referred to as the point-biserial correlation coefficient. For OE items, the term item-test correlation is sometimes used.

[11] It is legitimate to view the point-biserial correlation as a standardized mean difference. A positive value indicates students who chose that response had a higher mean score than the average student; a negative value indicates students who chose that response had a lower-than-average mean score.

DISCRIMINATION ON DIFFICULTY SCATTERPLOTS

Figure 11–1 contains a series of scatterplots showing item discrimination values (*y*-axis) on the item difficulty (*x*-axis) for each grade and subject-area test. Note that pseudo *p*-values (described above) are used for OE items in these plots. These plots provide maximum information about item discrimination and difficulty in a single visual image for each PSSA test. This is because the *x*- and *y*-axes also show histogram with following descriptive statistics:

- Minimum and maximum values
- Mean scores
- Median scores
- First and third quantile (Q1 and Q3)

The bivariate relationship between item discrimination (item-test *correlations*) and difficulty (item *mean* scores) is also presented through scatterplots in these figures. One does not usually expect any type of trend here. However, as noted earlier, it is often the case that items with extreme difficulties can have lower discrimination values, as this can be revealed in such plots.

OBSERVATIONS AND INTERPRETATIONS

To support the visuals, Table 11–1 provides break-out results for the MC and OE items. The mean *p*-values for the MC items ranged from about 0.66 to 0.75, while the mean proportion-correct values for the OE items ranged from about 0.41 to 0.67. Most means were generally close to their historic values[12] and suggest that the PSSA items, overall, were reasonably challenging to most students based on these past trends. From the difficulty distributions illustrated in the plots, a wide range of item difficulties appeared on each exam, which was one test development goal.

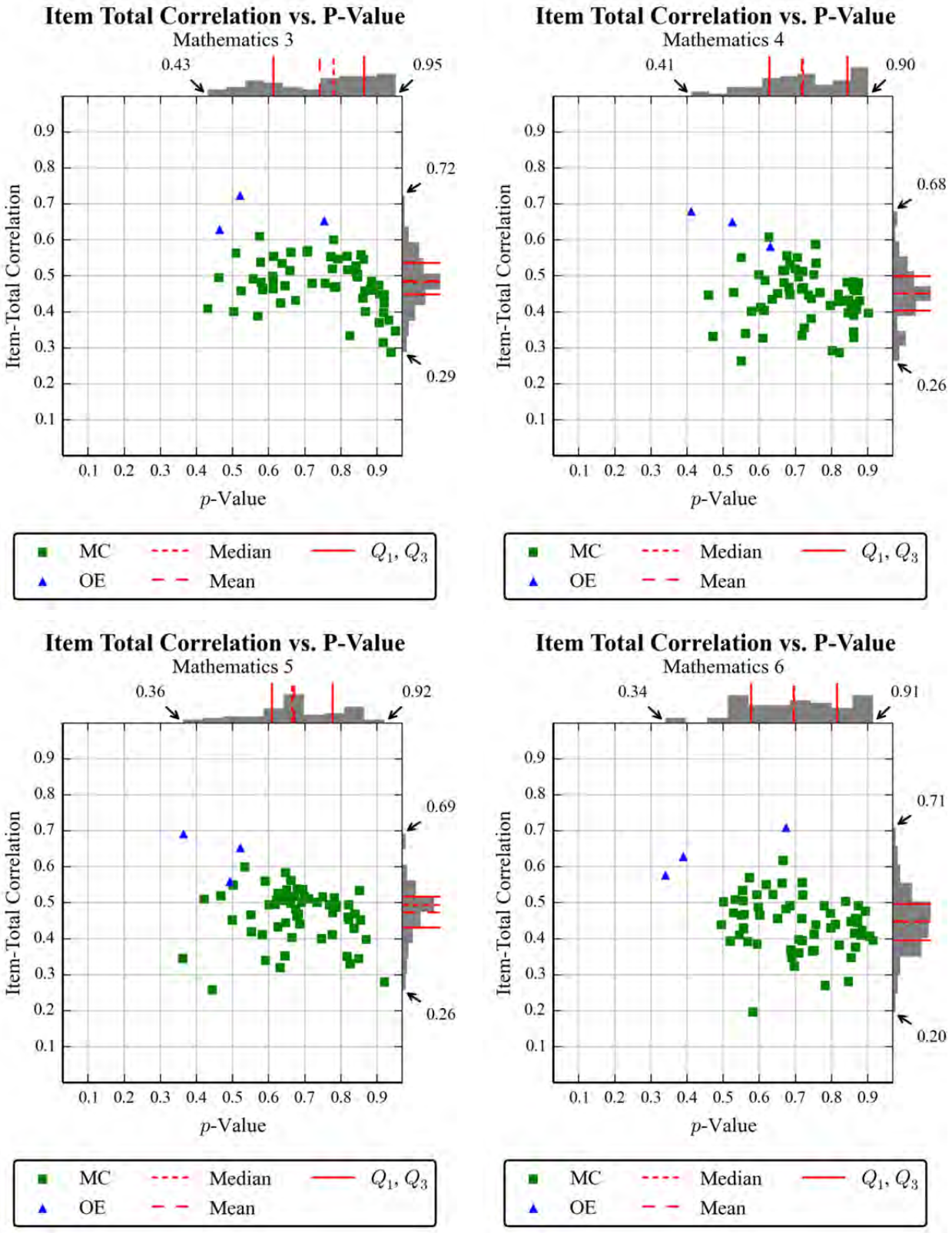
The mean item-test correlations ranged from roughly 0.37 to 0.48 and 0.47 to 0.68 for the MC and OE items, respectively. Again, these were similar to historic trends. The writing MC item-test correlations were generally the lowest, but even here were in the upper 0.30s. The writing MC items were correlated against the unweighted writing total scores, which included the prompt scores. The correlations in writing might be suppressed some because the prompt tasks are so different from the MC tasks. The OE correlations tended to be higher than the MC correlations, which is not surprising because the OE items include more score points. Based on the distribution of the discrimination statistics, the overall item quality was quite good.

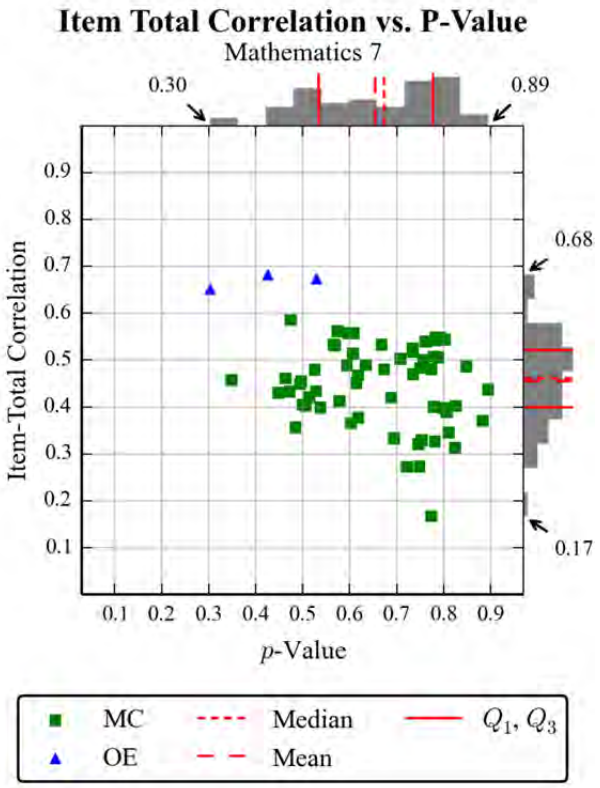
It is difficult to make global conclusions about overall test quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the PSSA item difficulty and discrimination were in expected and acceptable ranges when using historic trends as a guide.[13]

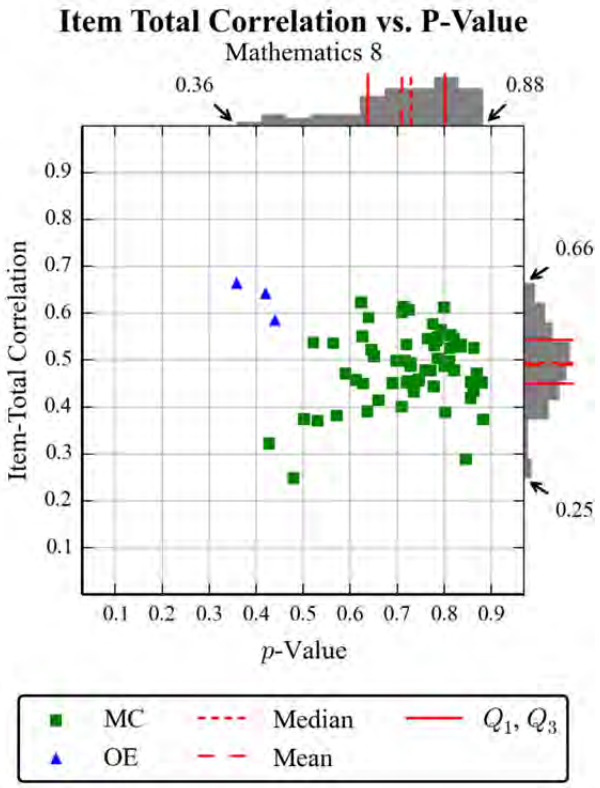
[12] Historically, average item difficulties have ranged from mid 0.60s to low 0.70s for most PSSA tests.

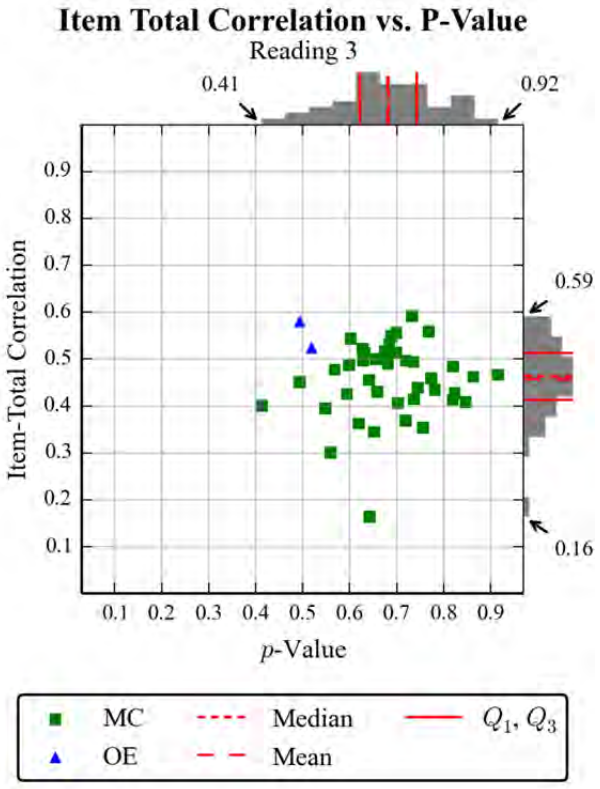
[13] Every year each PSSA test is built to the same content and statistical specifications. Since the average item difficulty and discrimination indices are similar, the historic trend is expected.

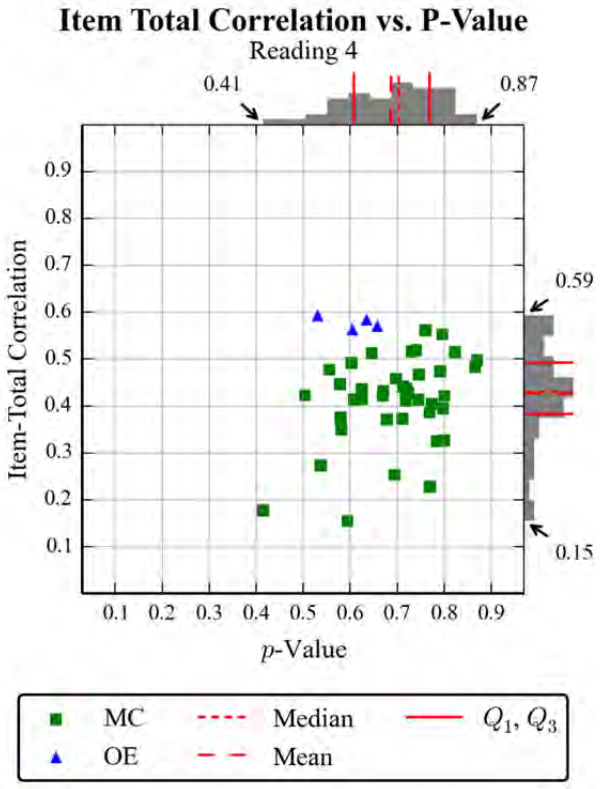
Figure 11–1. Discrimination on Difficulty Scatterplots

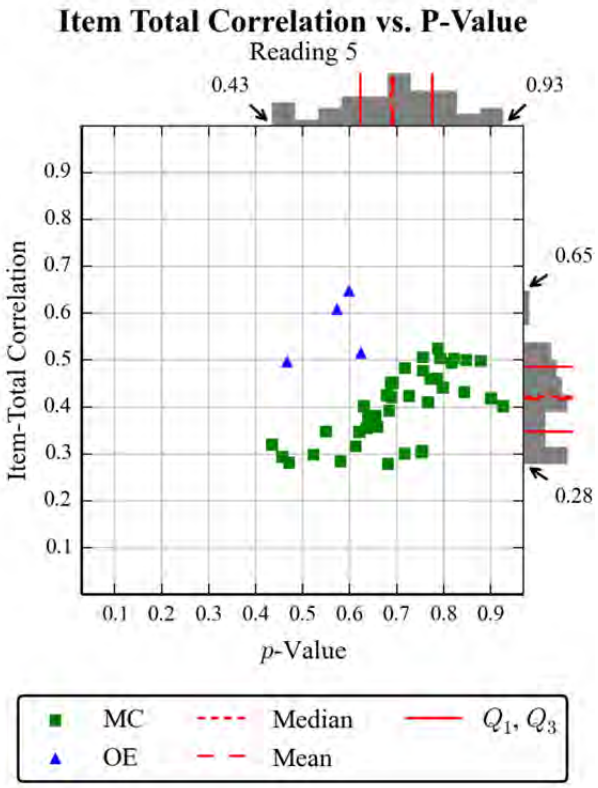


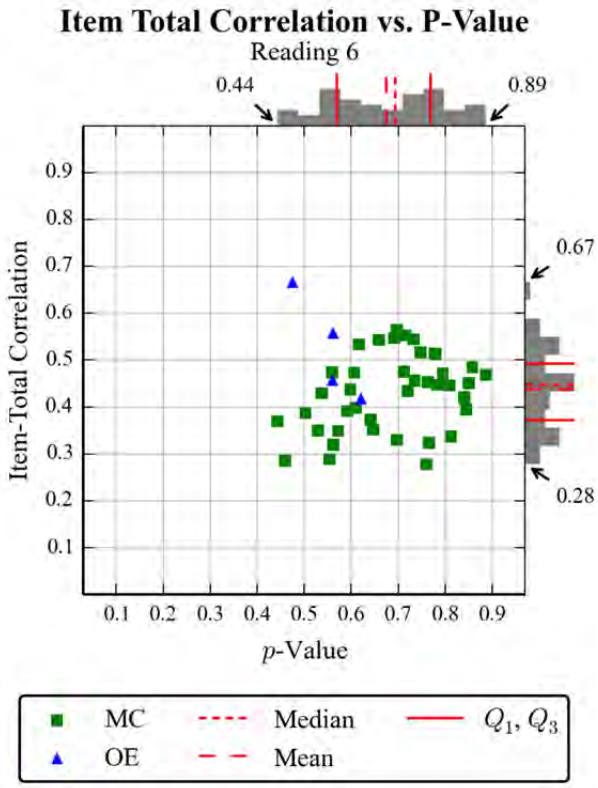

Item Total Correlation vs. P-Value
Mathematics 7
0.30
0.89
0.68
0.17
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

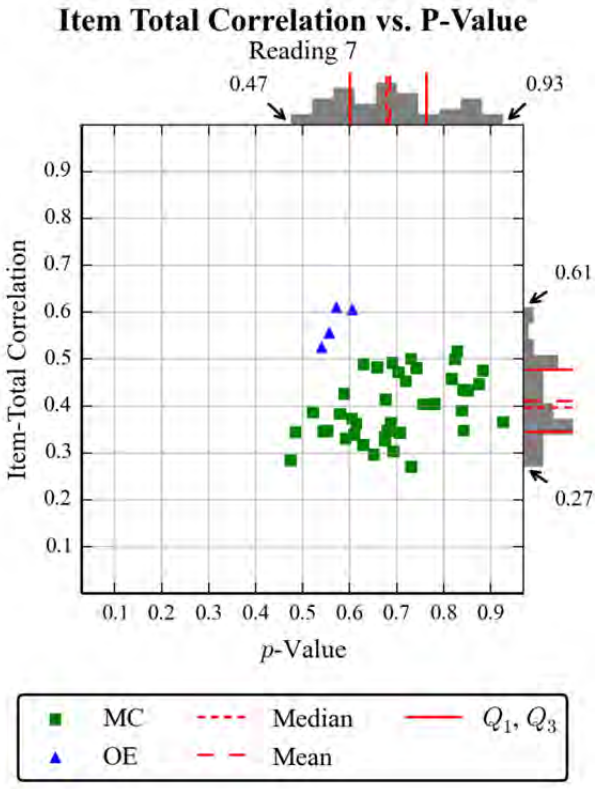

Item Total Correlation vs. P-Value
Mathematics 8
0.36
0.88
0.66
0.25
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

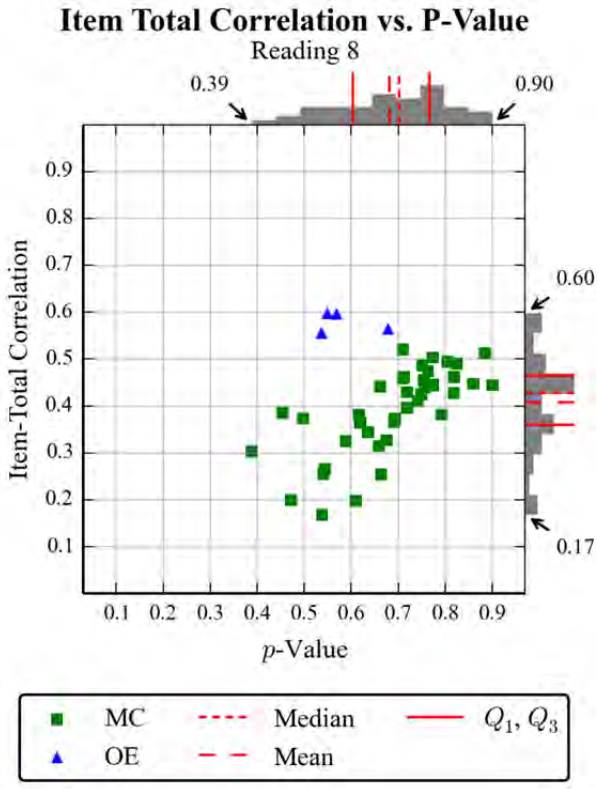

Item Total Correlation vs. P-Value
Reading 3
0.41
0.92
0.59
0.16
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

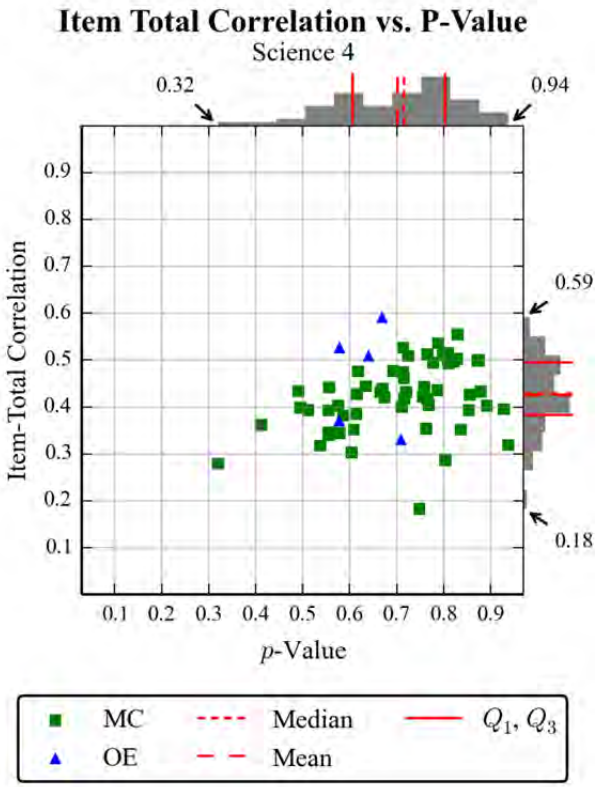

Item Total Correlation vs. P-Value
Reading 4
0.41
0.87
0.59
0.15
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

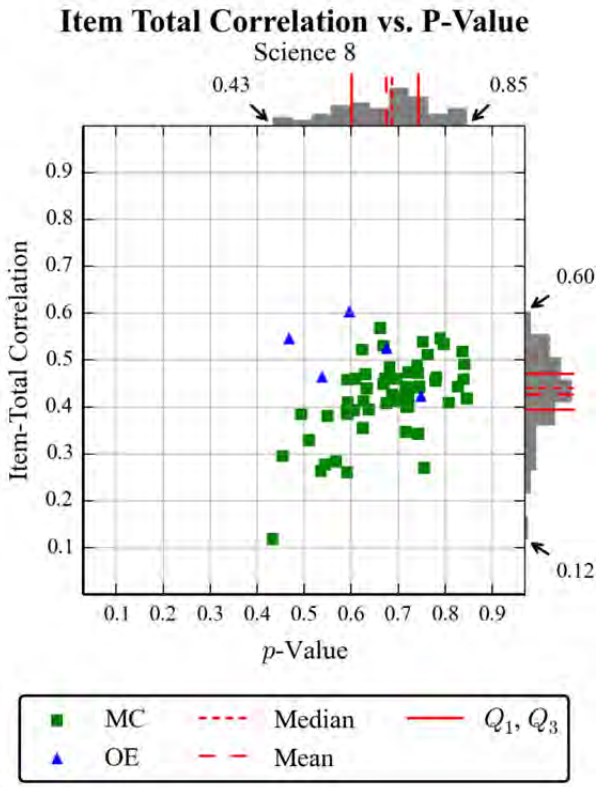

Item Total Correlation vs. P-Value
Reading 5
0.43
0.93
0.65
0.28
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

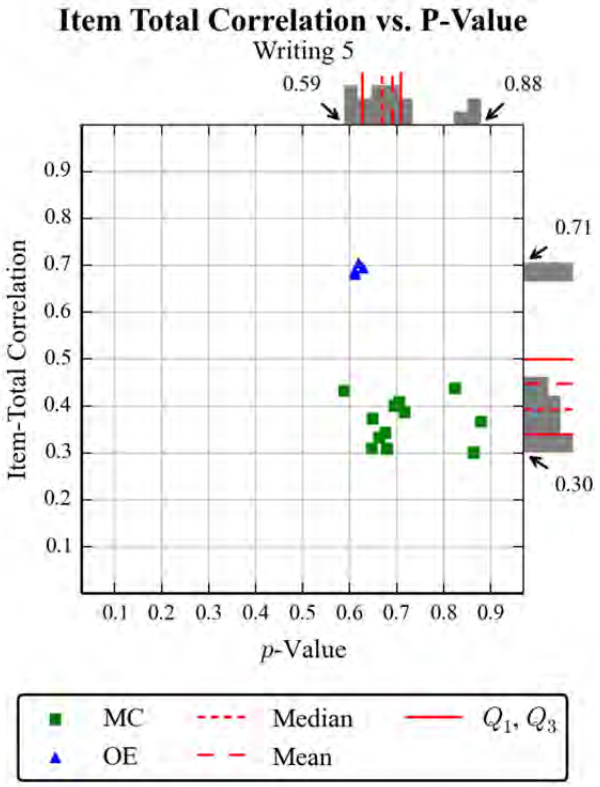

Item Total Correlation vs. P-Value
Reading 6
0.44
0.89
0.67
0.28
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Reading 7
0.47
0.93
0.61
0.27
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Reading 8
0.39
0.90
0.60
0.17
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Science 4
0.32
0.94
0.59
0.18
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Science 8
0.43
0.85
0.60
0.12
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3


Item Total Correlation vs. P-Value
Writing 5
0.59
0.88
0.71
0.30
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

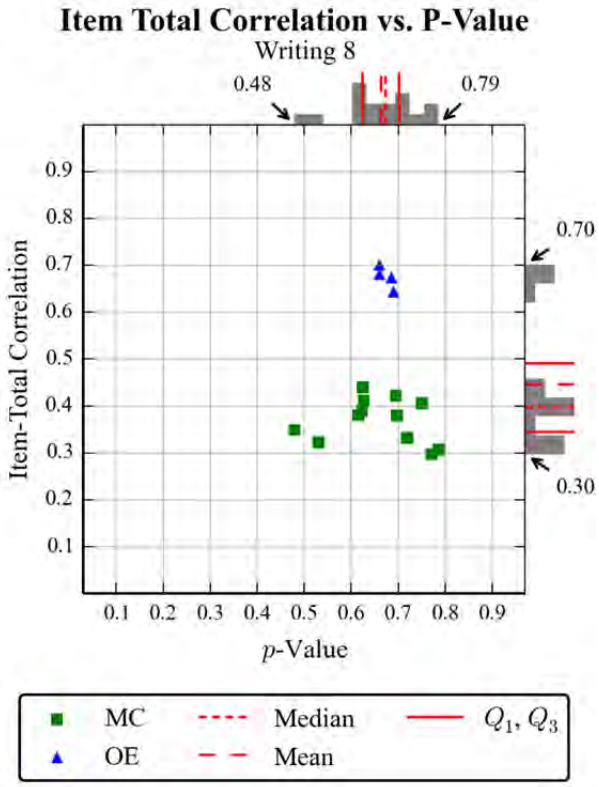

Item Total Correlation vs. P-Value
Writing 8
0.48
0.79
0.70
0.30
Item-Total Correlation
p-Value
MC
OE
Median
Mean
Q_1, Q_3

Table 11–1. Sum and Mean Statistics for MC and OE Items

Subject	Grade	Multiple-Choice Items				Open-Ended Items			
		Points	Sum	Mean P-val.	Mean I-T Corr.	Points	Sum	Mean P-Val.	Mean I-T Corr.
Mathematics	3	60	44.99	0.75	0.48	12	6.96	0.58	0.67
	4	60	43.70	0.73	0.44	12	6.27	0.52	0.64
	5	60	40.89	0.68	0.46	12	5.52	0.46	0.63
	6	60	42.41	0.71	0.44	12	5.62	0.47	0.64
	7	60	39.98	0.67	0.44	12	5.03	0.42	0.67
	8	60	43.56	0.73	0.48	12	4.87	0.41	0.63
Reading	3	40	27.52	0.69	0.45	6	3.04	0.51	0.55
	4	40	27.80	0.70	0.41	12	7.28	0.61	0.58
	5	40	28.19	0.70	0.40	12	6.79	0.57	0.57
	6	40	27.46	0.69	0.43	12	6.65	0.55	0.52
	7	40	27.92	0.70	0.39	12	6.82	0.57	0.57
	8	40	27.66	0.69	0.39	12	7.00	0.58	0.58
Science	4	58	41.06	0.71	0.42	10	6.35	0.63	0.47
	8	58	39.43	0.68	0.42	10	6.05	0.61	0.51
Writing	5	12	8.59	0.72	0.37	16	9.88	0.62	0.69
	8	12	7.92	0.66	0.37	16	10.78	0.67	0.68

Note. I-T Corr. is the item-test score correlation.

Chapter Twelve: Rasch Item Calibration

The particular item response theory (IRT) model used for the PSSA is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and it has been the methodology continually used to calibrate PSSA items in recent history. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make a number of strong assumptions related to dimensionality, local independence, model-data fit, and item parameter invariance. Resulting inferences derived from any application of IRT rests strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the operational PSSA items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item on an assessment so that all items are placed onto a common scale. This chapter briefly introduces the Rasch model, reports the results from evaluations of the adequacy of the Rasch assumptions, and summarizes the Rasch item statistics for the PSSA mathematics, reading, and science tests. Additional Rasch procedures are discussed with respect to scale linking in Chapter Fifteen.

DESCRIPTION OF THE RASCH MODEL

The Rasch partial credit model (RPCM; Wright and Masters, 1982) was used to calibrate PSSA items because both multiple-choice (MC) and open-ended (OE) items were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous OE item data. Under the RPCM, for a given item i with m_i score categories, the probability of person n scoring x (x = 0, 1, 2,... m_i) is given by:

$$P_{ni}(X = x) = \frac{\exp\sum_{j=0}^{x}(\theta_n - D_{ij})}{\sum_{k=0}^{m_i}\exp\sum_{j=0}^{k}(\theta_n - D_{ij})},$$

where θ_n represents a student's proficiency (ability) level, and D_{ij} is the step difficulty of the j^{th} step on item i. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person n getting item i correct as follows:

$$P_{ni}(X = 1) = \frac{\exp(\theta_n - D_{ij})}{1 + \exp(\theta_n - D_{ij})}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, the Rasch model provides estimates of a person's ability which are independent of the items employed in the assessment, and conversely, estimates item difficulty independently of the sample of examinees. (As noted in Chapter Eleven, interpretation of item p-values confounds item difficulty and student ability.)

Software and Estimation Algorithm

Item calibration was implemented via WINSTEPS 3.54 computer program (Wright and Linacre, 2003), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

Sample Characteristics

The characteristics of calibration samples are reported in Chapter Nine. These samples only include the students who attempted the tests. All omits (no response) and multiple responses (more than one response selected) were scored as incorrect answers (coded as 0s) for calibration.

CHECKING RASCH ASSUMPTIONS

Since the Rasch model was the basis of all calibration, scoring, and scaling analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model were met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, item fit, and item parameter invariance. It should be noted that only operational items were analyzed since they are the basis of student scores.

Unidimensionality

Rasch models assume that one dominant dimension determines the difference among students' performances. Principal Components Analysis (PCA) can be used to assess the unidimensionality assumption. The purpose of the analysis is to verify whether any other dominant component(s) exist among the items. If any other dimensions are found, the unidimensionality assumption would be violated.

Figure 12–1 shows the PCA results for the mathematics, reading, science, and writing tests. The results include the eigenvalues and the percentage of variance explained for the first five components as well as the scree plots. The scree plots show the eigenvalues plotted by component number and the results from a parallel analysis. The total number of components in PCA is same as the total number of items in a test; however, Figure 12–1 shows only the first 10 components given that beyond 10^{th} component the additional information would be negligible.

Parallel analysis (Horn, 1965) is a technique to decide how many factors exists in principal components. A parallel analysis (Horn, 1965) was also conducted to help distinguish components that are real from components that are random. For the parallel analysis, 100 random data sets were created of size equal to the original data. For each random data set, a PCA was performed and the resulting eigenvalues stored. Then for each component, the upper 95th percentile value of the distribution of the 100 eigenvalues from the random data sets was plotted. Given the size of the data generated for the parallel analysis, the reference line is essentially equivalent to plotting a reference line for an eigenvalue of 1.

As can been seen in Figure 12–1, for PSSA mathematics the primary dimension explained about 23 percent to 27 percent of the total variance across Grades 3 through 8. The eigenvalues of the second dimensions ranged from 2.7 to 4.5. This indicates that the second dimension accounted for only 1.7 to 2.9 units out of 63 units of total variance, where 63 is the total number of items in

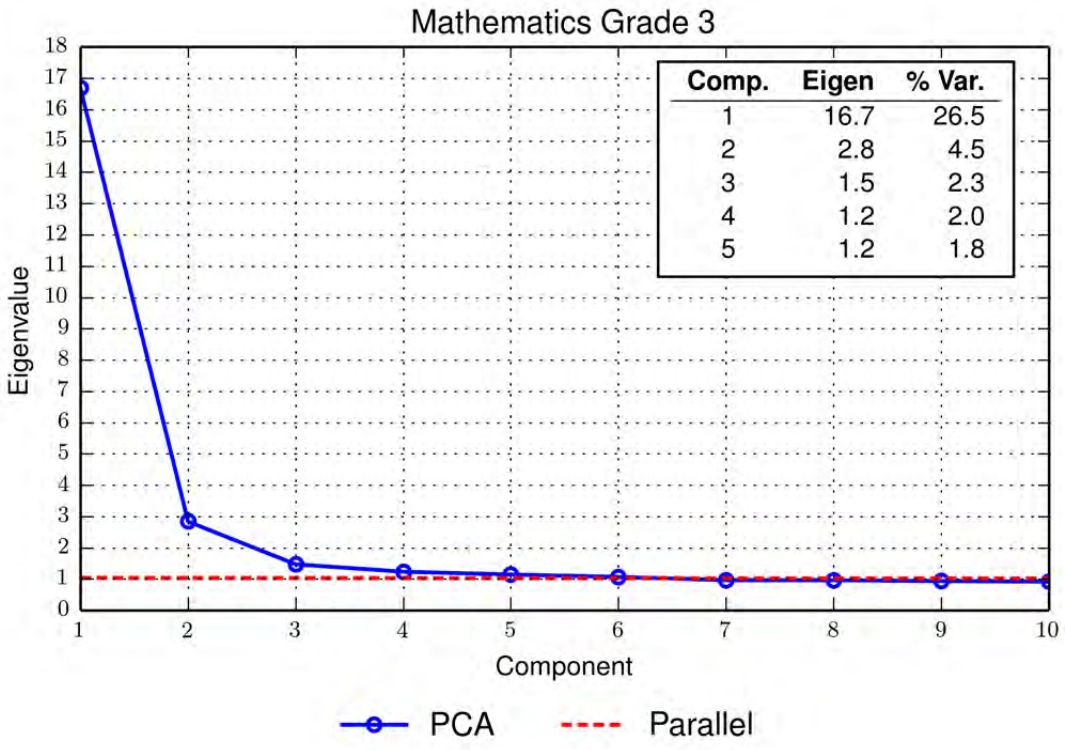
a test. Overall, the PCA suggests that there is one clearly dominant dimension for all mathematics tests[14].

For the PSSA reading tests, the primary dimension explained about 21 percent to 25 percent of the total variance. The second dimension accounted for only 1.3 to 1.4 units out of 42 or 44 units total variance. The parallel analysis in the scree plots also suggests that only the first component should be retained in each grade. These results also suggest that each reading test essentially measures a single dominant dimension.

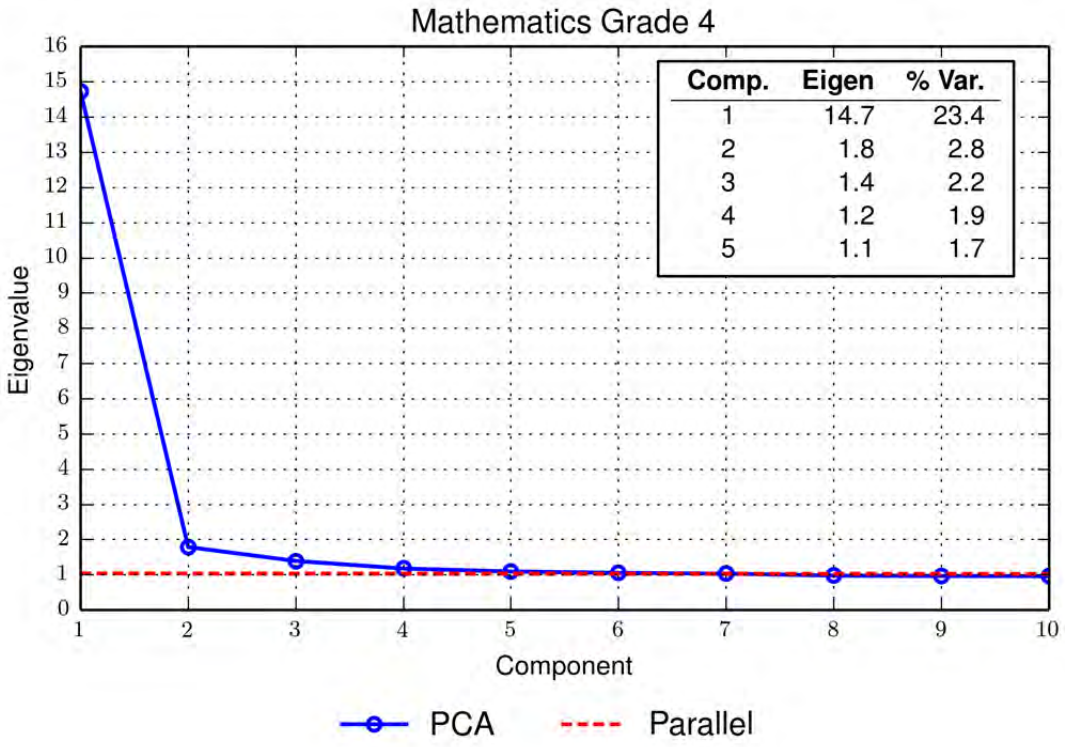
For the PSSA science tests, the primary dimension explained about 21 percent of the total variance for both grades 4 and 8. The second dimension accounted for only 1.8 and 1.3 units out of 63 unit of total variance. The parallel analysis in the scree plots also suggests that only the first factor should be retained in each grade. This, too, suggests that one dominant dimension was measured by each science test.

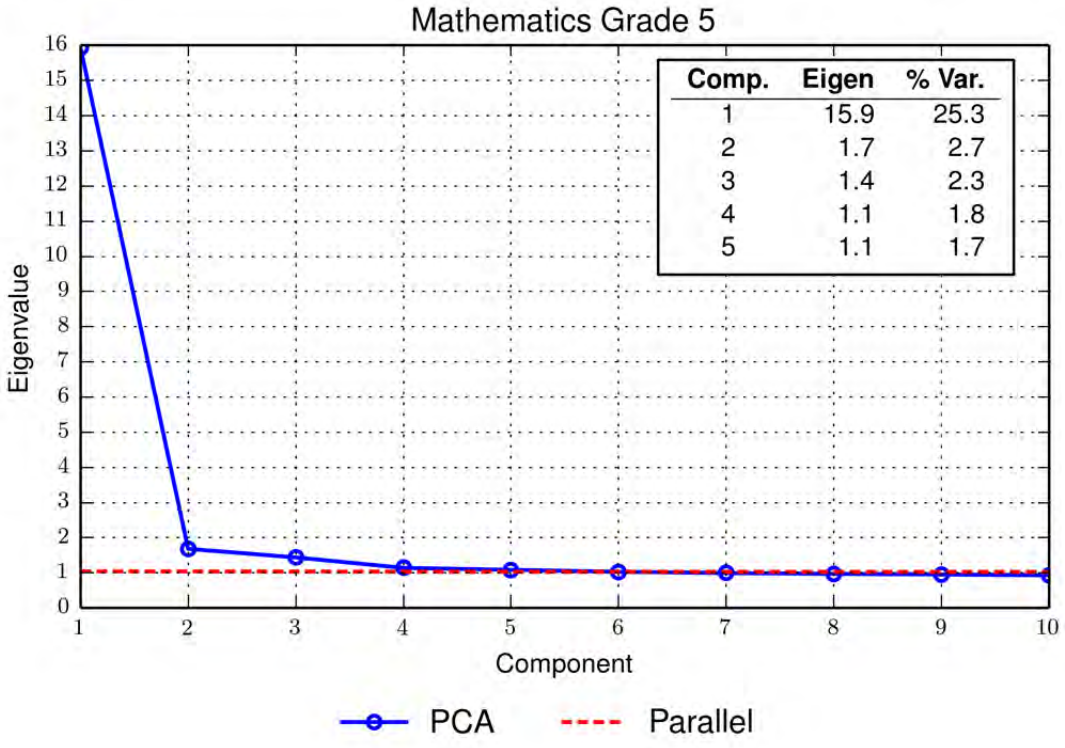
For the PSSA writing tests, first dimension accounted for 30 percent of the total variance for both grades 5 and 8. Second dimension accounted for 5 and 8 percent of total variance for grades 5 and 8, respectively, which were about 2.8 and 1.2 units out of 12 unit of total variance. The figures suggest that one dominant dimension was measured by each writing test.

Figure 12–1. Scree Plots



[14] According to Reckase (1979), the variance explained by the primary dimension should be greater than 20% to indicate unidimensionality.


Mathematics Grade 4
Comp. Eigen % Var.
1 14.7 23.4
2 1.8 2.8
3 1.4 2.2
4 1.2 1.9
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 5
Comp. Eigen % Var.
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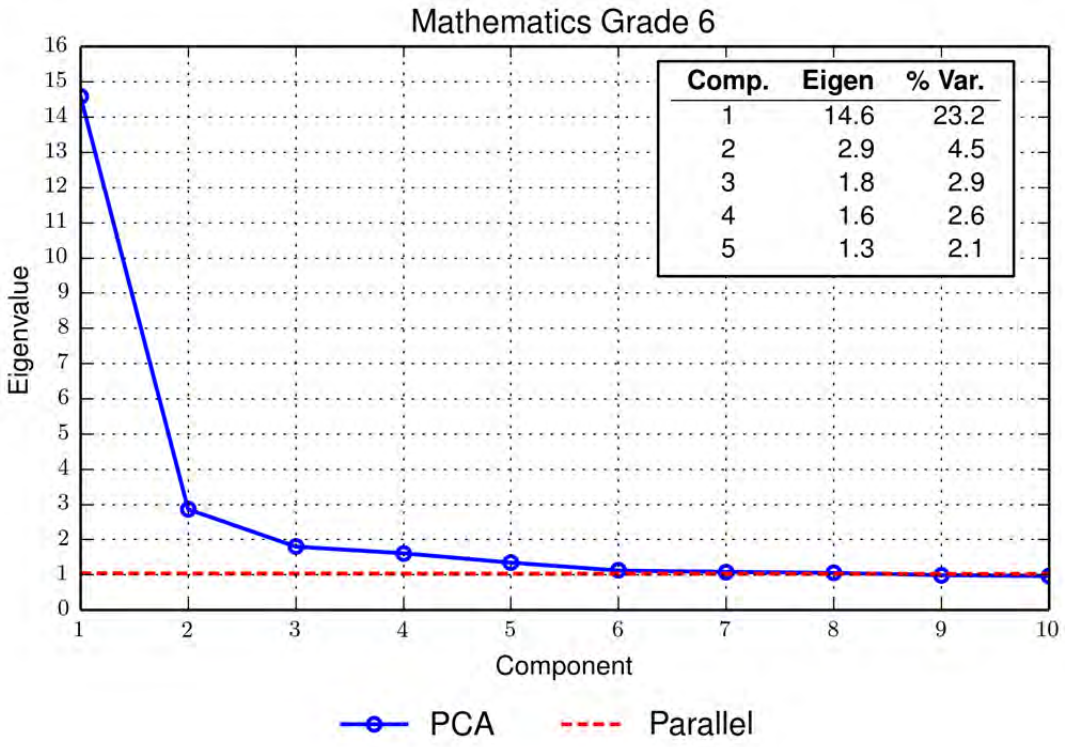
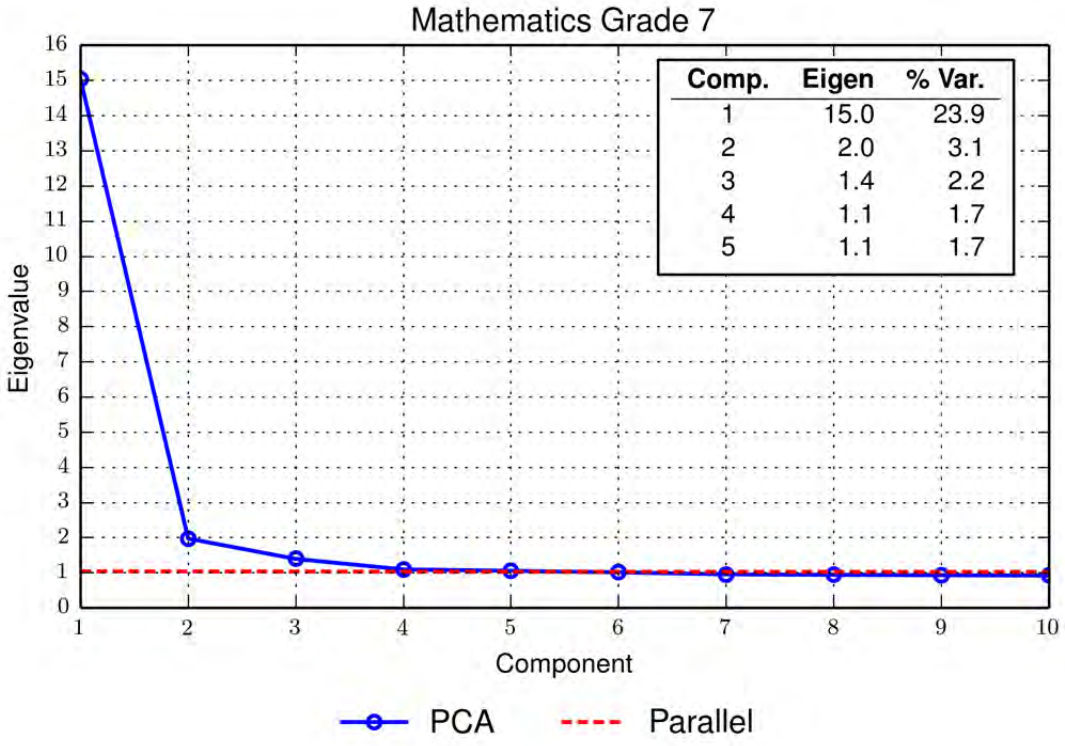
2 1.7 2.7
3 1.4 2.3
4 1.1 1.8
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 6
Comp. Eigen % Var.
1 14.6 23.2
2 2.9 4.5
3 1.8 2.9
4 1.6 2.6
5 1.3 2.1
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 7
Comp. Eigen % Var.
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3 1.4 2.2
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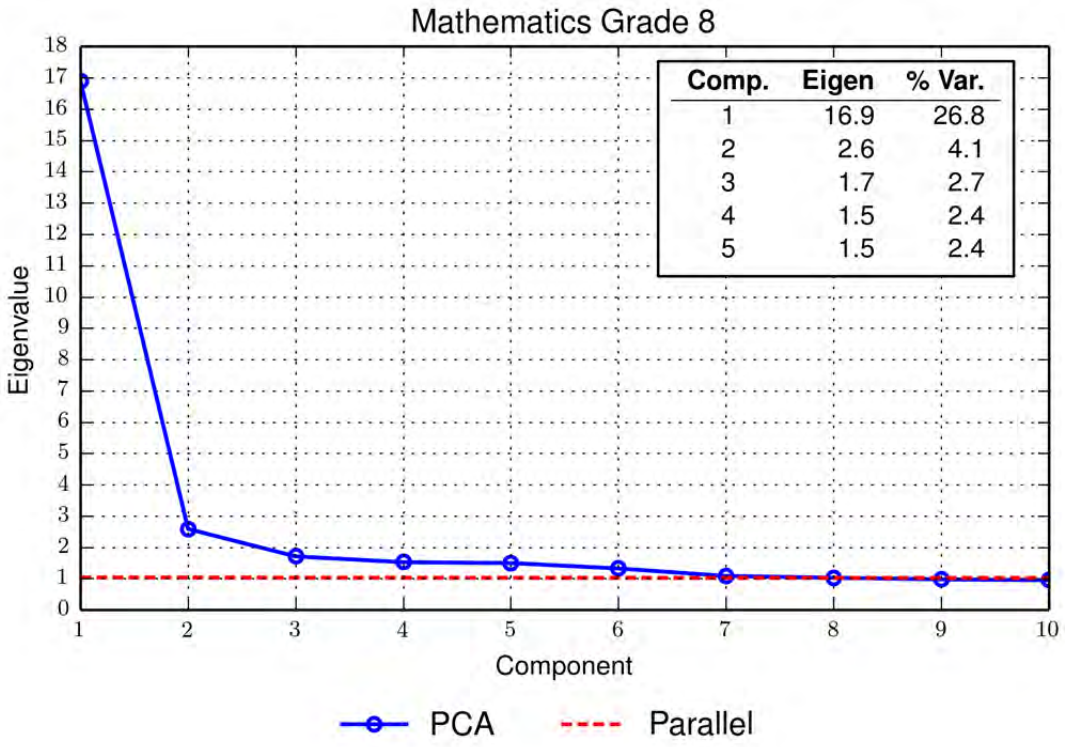
5 1.1 1.7
Eigenvalue
Component
PCA
Parallel


Mathematics Grade 8
Comp. Eigen % Var.
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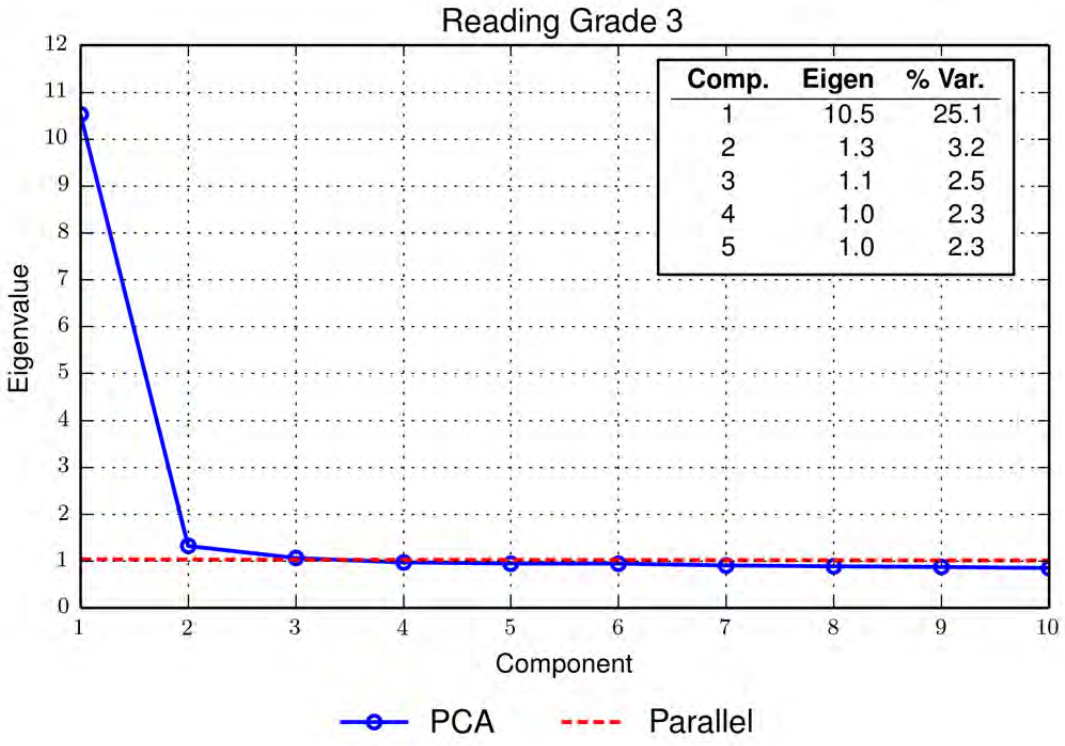
2 2.6 4.1
3 1.7 2.7
4 1.5 2.4
5 1.5 2.4
Eigenvalue
Component
PCA
Parallel


Reading Grade 3
Comp. Eigen % Var.
1 10.5 25.1
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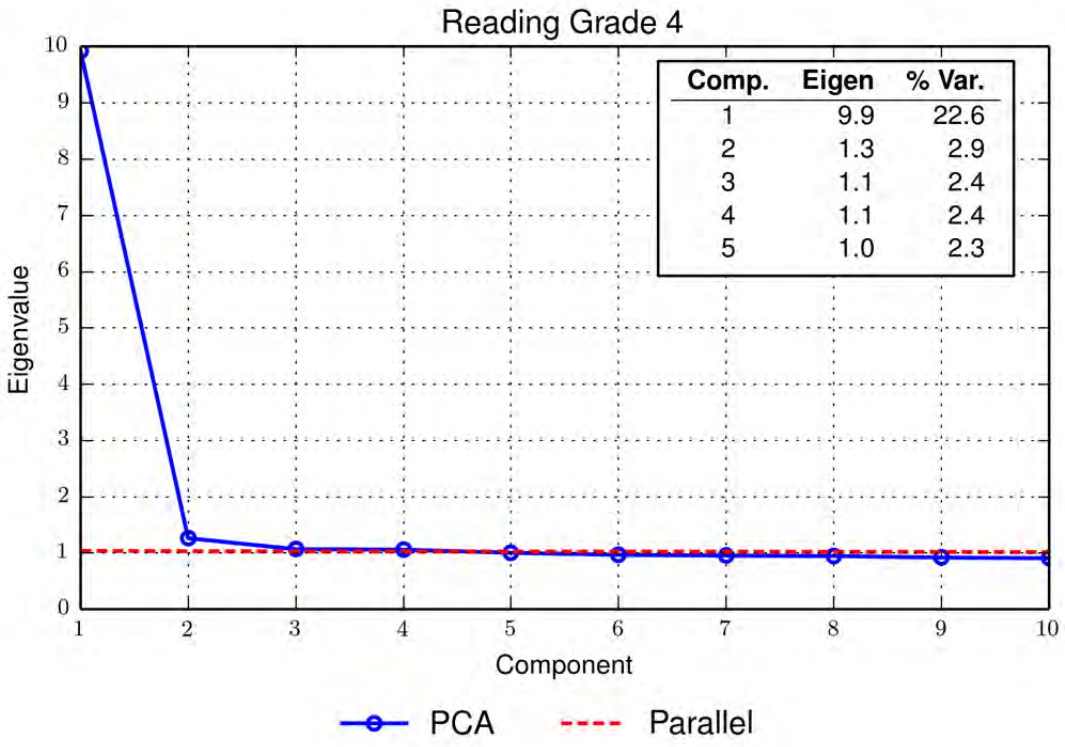
3 1.1 2.5
4 1.0 2.3
5 1.0 2.3
Eigenvalue
Component
PCA
Parallel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Comp. Eigen % Var.
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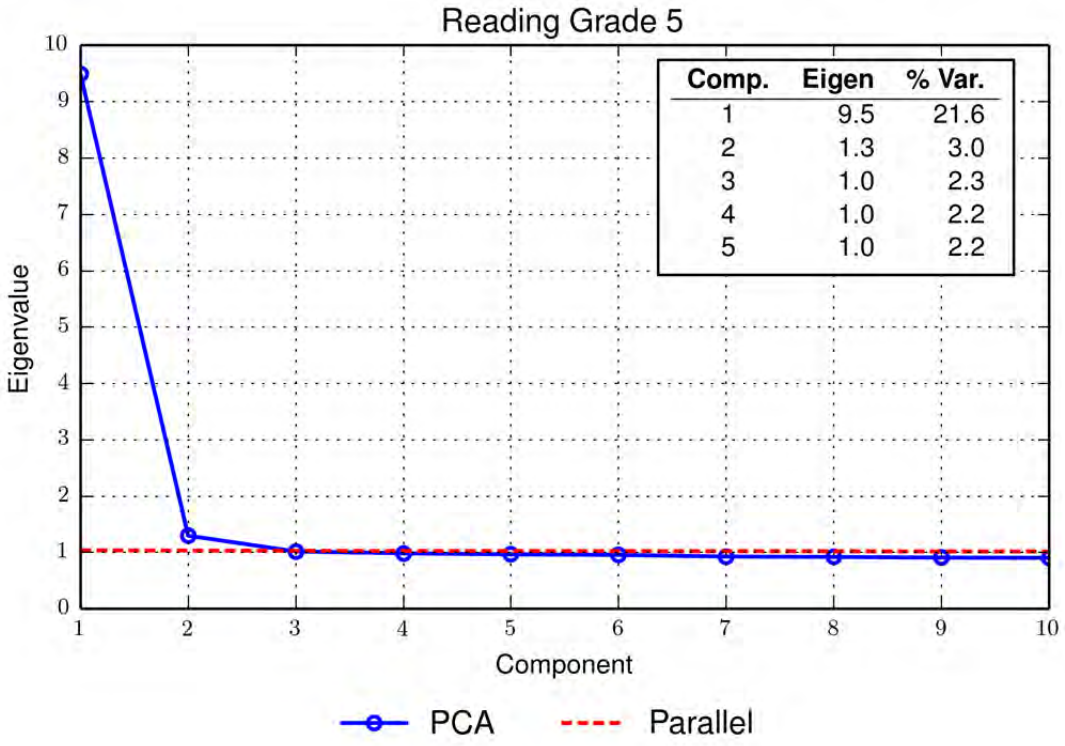
4 1.1 2.4
5 1.0 2.3
Eigenvalue
Component
PCA
Parallel


Reading Grade 5
Comp. Eigen % Var.
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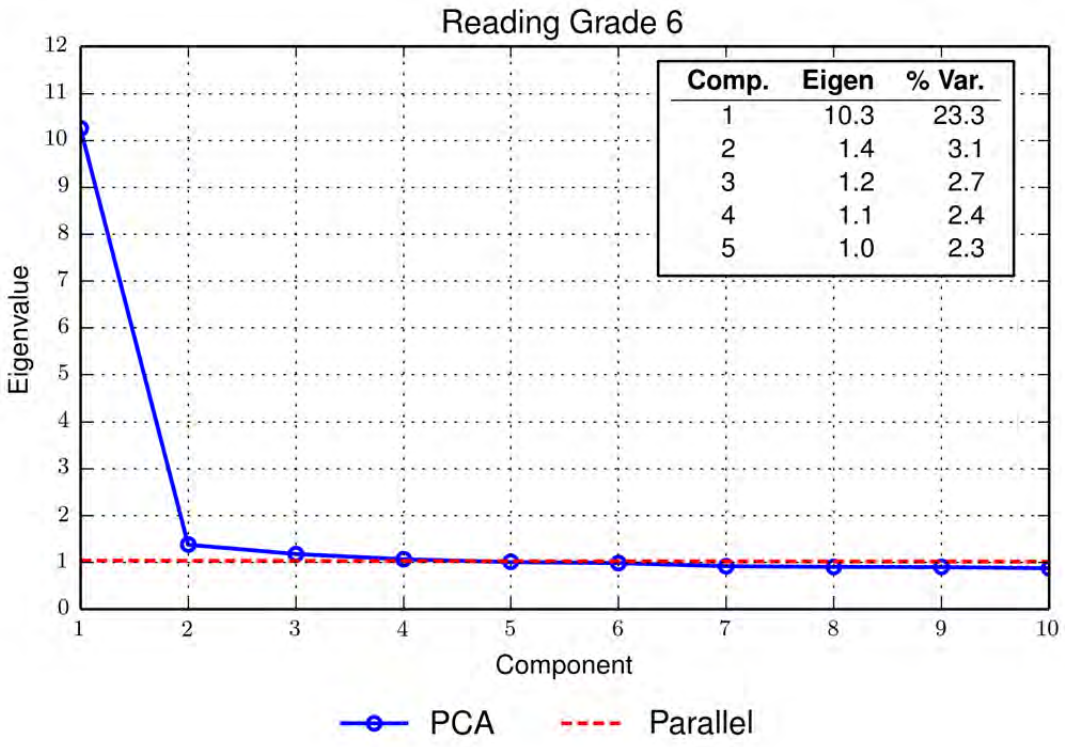
4 1.0 2.2
5 1.0 2.2
Eigenvalue
Component
PCA
Parallel


Reading Grade 6
Comp. Eigen % Var.
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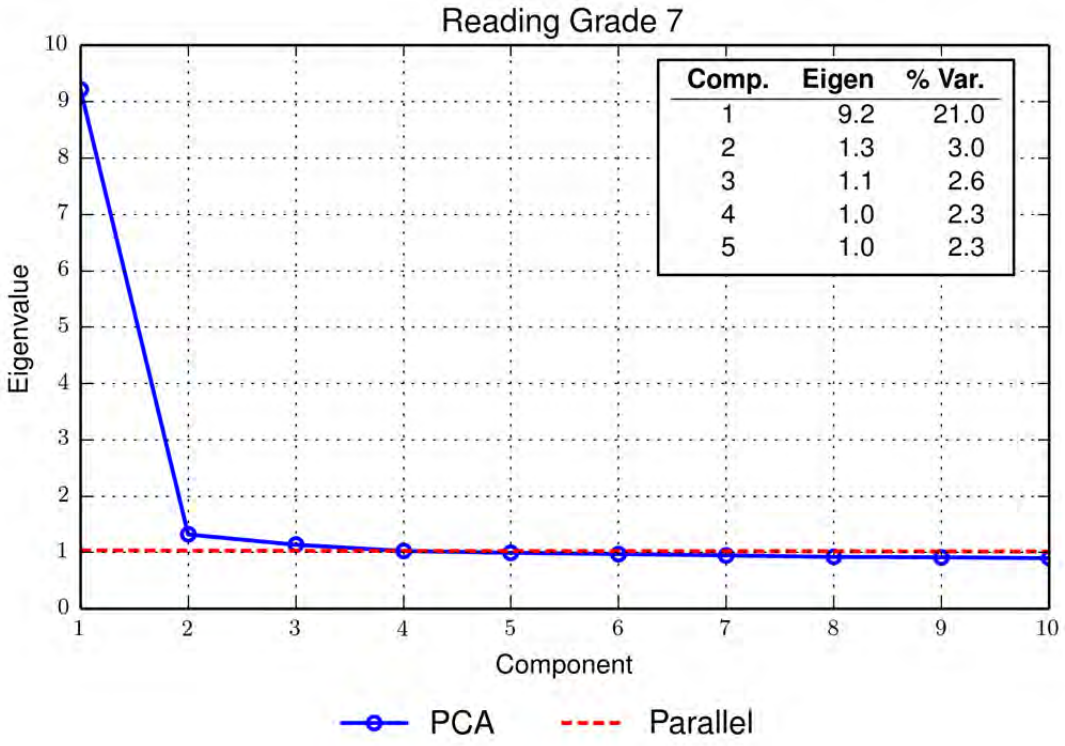
2 1.4 3.1
3 1.2 2.7
4 1.1 2.4
5 1.0 2.3
Eigenvalue
Component
PCA
Parallel


Reading Grade 7
Comp. Eigen % Var.
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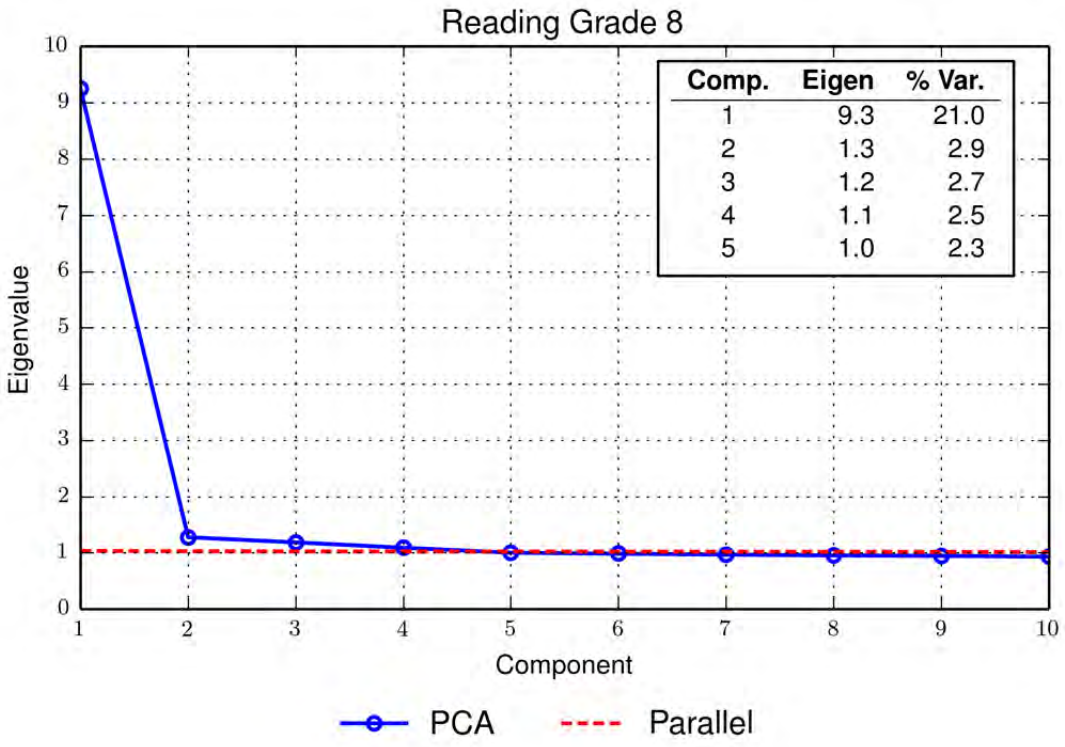
2 1.3 3.0
3 1.1 2.6
4 1.0 2.3
5 1.0 2.3
Eigenvalue
Component
PCA
Parallel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Comp. Eigen % Var.
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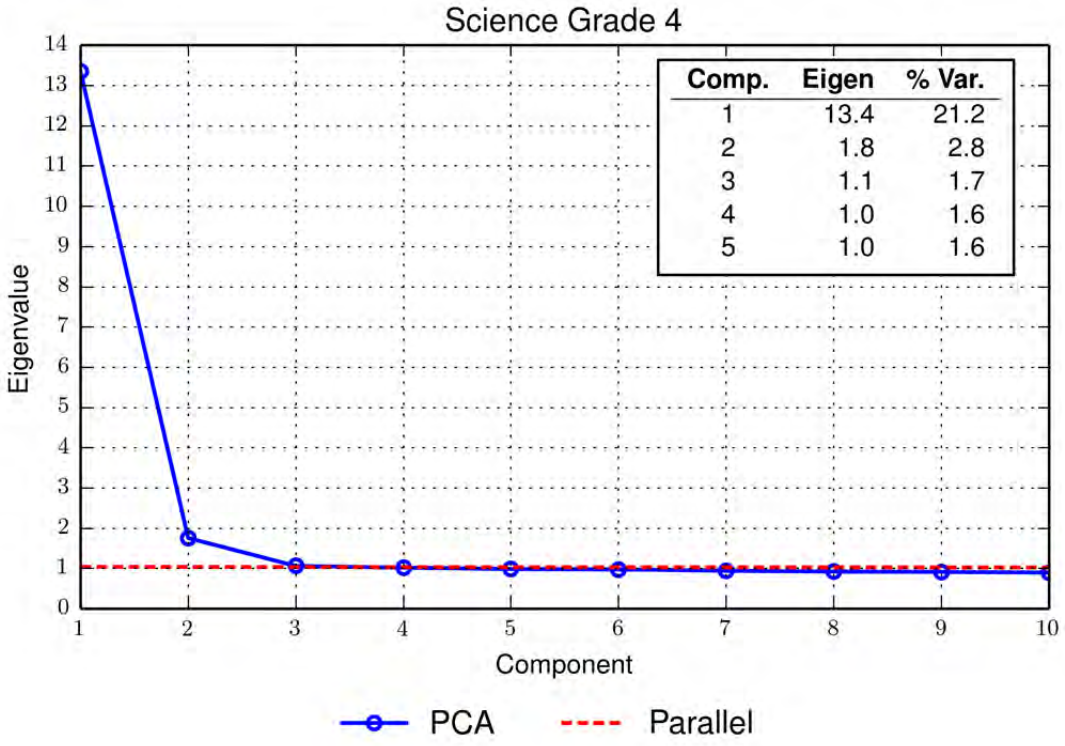
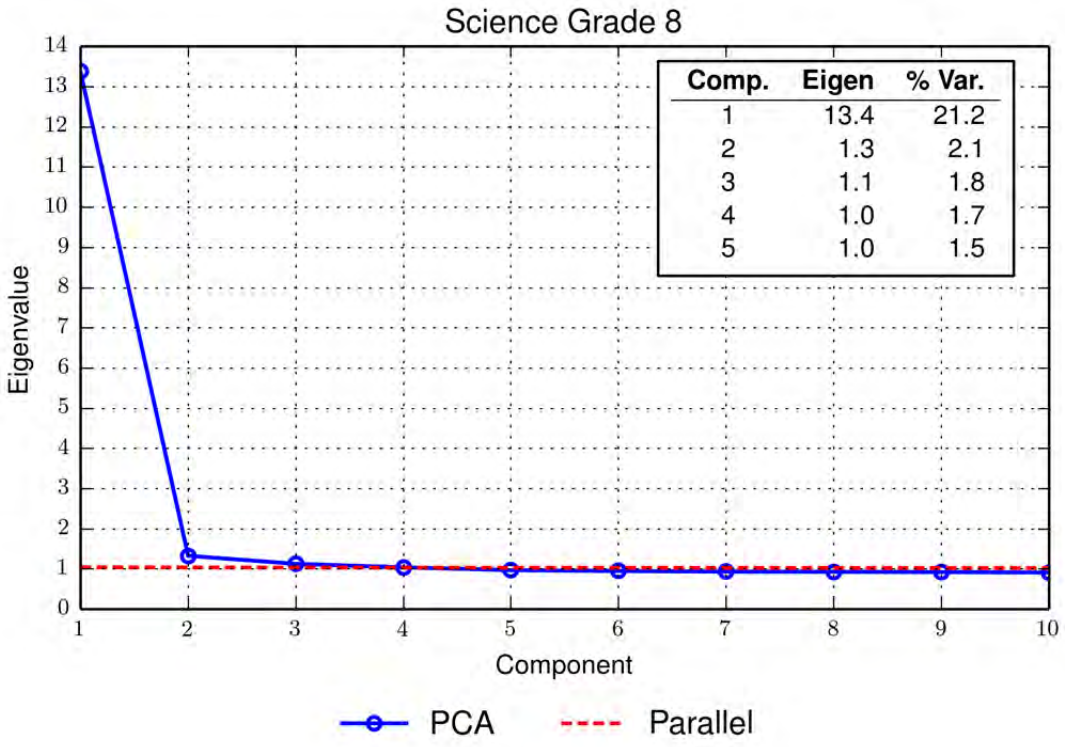
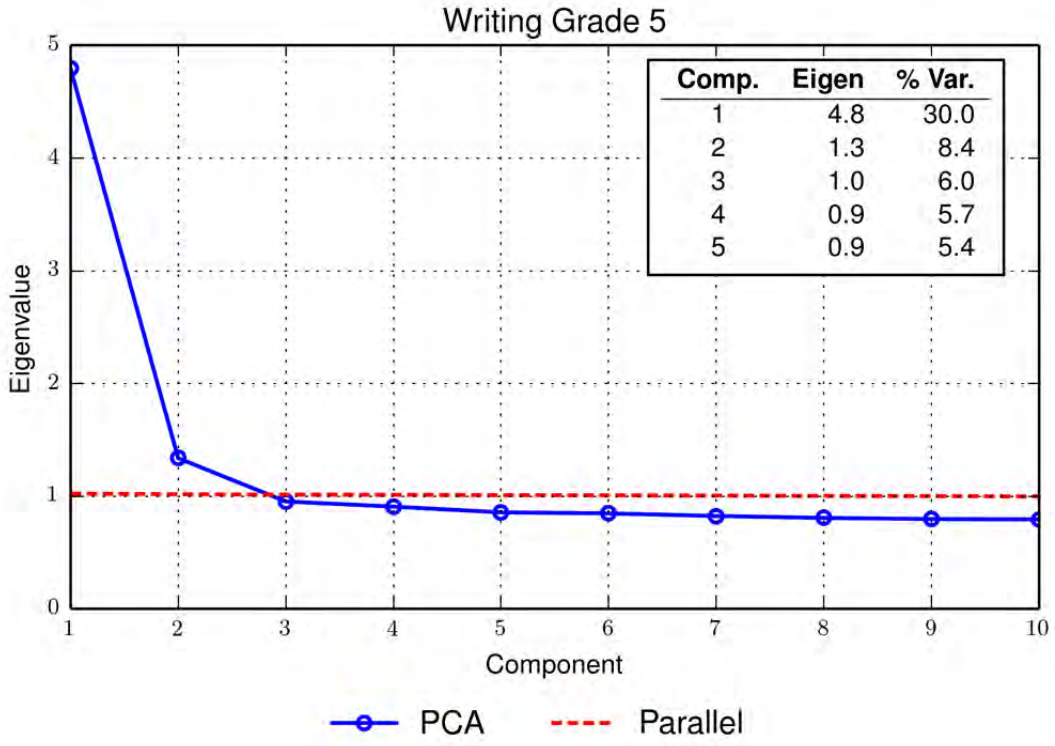
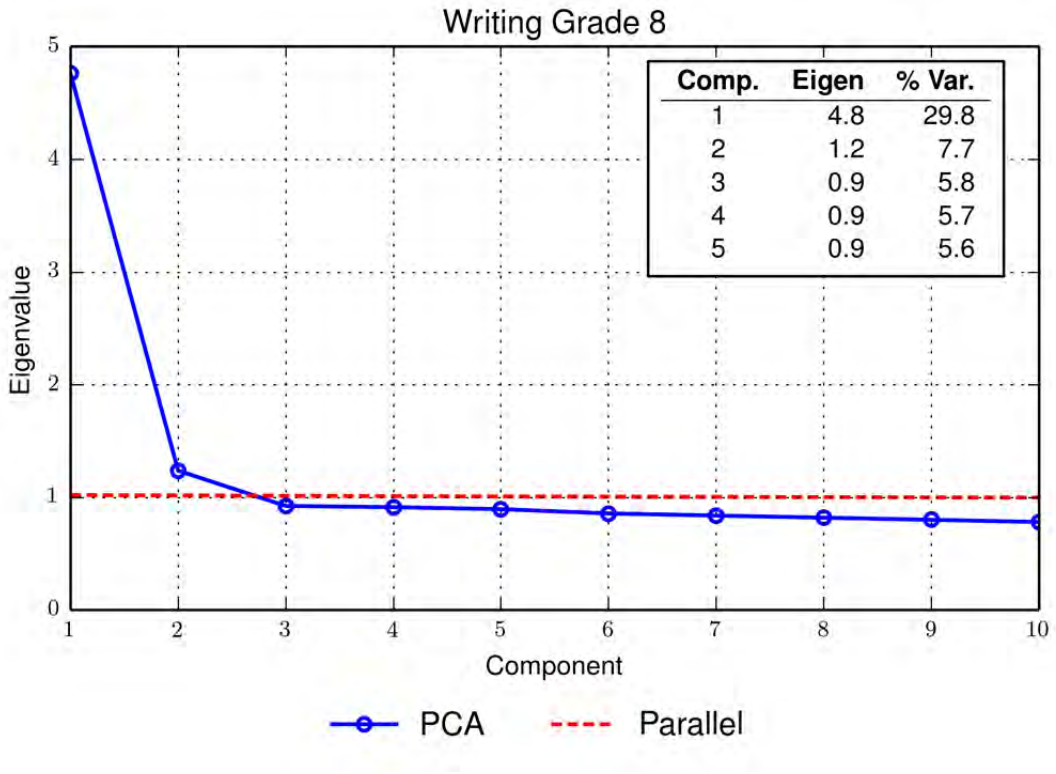
3 1.2 2.7
4 1.1 2.5
5 1.0 2.3
Eigenvalue
Component
PCA
Parallel


Science Grade 4
Comp. Eigen % Var.
1 13.4 21.2
2 1.8 2.8
3 1.1 1.7
4 1.0 1.6
5 1.0 1.6
Eigenvalue
Component
PCA
Parallel


Science Grade 8
Comp. Eigen % Var.
1 13.4 21.2
2 1.3 2.1
3 1.1 1.8
4 1.0 1.7
5 1.0 1.5
Eigenvalue
Component
PCA
Parallel


Writing Grade 5
Comp. Eigen % Var.
1 4.8 30.0
2 1.3 8.4
3 1.0 6.0
4 0.9 5.7
5 0.9 5.4
Eigenvalue
Component
PCA
Parallel



Local Independence

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test X that is comprised of items X_1, X_2,…X_n is locally independent with respect to the latent variable θ if, for all $x = (x_1, x_2,\ldots x_n)$ and θ,

$$P(\mathbf{X} = \mathbf{x} \mid \theta) = \prod_{i=1}^{I} P(X_i = x_i \mid \theta).$$

This formula essentially states that the probability of any pattern of responses across all items (**x**), after conditioning on the abilities (θ) measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the strong form of local independence. A weak form of local independence (WLI) was proposed by McDonald (1979). The distinction is important as many indicators of local dependency are actually framed by WLI. The requirement would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as shown below. (This is a weaker form because higher-order dependencies among items are allowed.) Based on the WLI, the following expression can be derived:

$$P(X_i = x_i, X_j = x_j \mid \theta) = P(X_i = x_i \mid \theta) P(X_j = x_j \mid \theta).$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension determine student performance (this can be called "trait dependence"). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called response dependence. Many people treat the assumptions of unidimensionality and local independence as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions and therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the PSSA items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviations (residuals) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

Three types of residual correlations are available in WINSTEPS: raw, standardized, and logit. It should be noted that the raw score residual correlation essentially corresponds to Yen's Q_3 index, a popular LI statistic. The expected value for the Q_3 statistic is approximately -1/(k-1) when no local dependence exists, where k is test length (Yen, 1993). Thus, the expected Q_3 values should be approximately -0.02 for the PSSA tests (since most of the PSSA tests had more than 50 core items). Index values that are greater than 0.20 indicate a degree of local dependence that probably should be examined by test developers (Chen & Thissen, 1997).

Since the three residual correlations are very similar, the default "standardized residual correlation" in WINSTEPS was used for these analyses. Table 12–1 shows the summary statistics—mean, SD, minimum, maximum, and several percentiles (P_{10}, P_{25}, P_{50}, P_{75}, P_{90}) — for all the residual correlations for each test. The total number of item pairs (N) and the number of pairs with the residual correlations greater than 0.20 are also reported in this table. The mean residual correlations were slightly negative and the values were close to -0.02. The vast majority of the correlations were very small, suggesting local item independence generally holds for the PSSA reading, mathematics, science, and writing tests.

Table 12–1. Summary of Item Residual Correlations for PSSA Mathematics, Reading, Science, and Writing

	Mathematics					
Statistic	**3**	**4**	**5**	**6**	**7**	**8**
N	1953	1953	1953	1953	1953	1953
Mean	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
SD	0.03	0.03	0.03	0.05	0.03	0.05
Minimum	-0.12	-0.1	-0.08	-0.11	-0.08	-0.14
P_{10}	-0.04	-0.04	-0.04	-0.05	-0.04	-0.06
P_{25}	-0.03	-0.03	-0.03	-0.04	-0.03	-0.04
P_{50}	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02
P_{75}	0	0	0	-0.01	0	0
P_{90}	0.01	0.01	0.01	0.02	0.01	0.03
Maximum	0.41	0.36	0.31	0.53	0.29	0.43
$> \lvert 0.20 \rvert$	7	4	3	19	2	20

	Reading					
Statistic	**3**	**4**	**5**	**6**	**7**	**8**
N	861	946	946	946	946	946
Mean	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
SD	0.02	0.03	0.02	0.03	0.02	0.03
Minimum	-0.1	-0.09	-0.08	-0.12	-0.11	-0.11
P_{10}	-0.05	-0.05	-0.05	-0.055	-0.05	-0.06
P_{25}	-0.03	-0.04	-0.03	-0.04	-0.03	-0.03
P_{50}	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
P_{75}	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
P_{90}	0	0.01	0.005	0.01	0.01	0.01
Maximum	0.13	0.12	0.08	0.2	0.13	0.15
$> \lvert 0.20 \rvert$	0	0	0	0	0	0

	Science	
Statistic	**4**	**8**
N	1953	1953
Mean	-0.01	-0.01
SD	0.02	0.02
Minimum	-0.07	-0.09
P_{10}	-0.04	-0.04
P_{25}	-0.03	-0.03
P_{50}	-0.02	-0.02
P_{75}	0	-0.01
P_{90}	0.01	0.01
Maximum	0.13	0.09
$> \lvert 0.20 \rvert$	0	0

Table 12–1 (continued). Summary of Item Residual Correlations for PSSA Mathematics, Reading, Science, and Writing

	Writing	
Statistic	**5**	**8**
N	120	120
Mean	0.02	0.04
SD	0.20	0.17
Minimum	-0.72	-0.62
P_{10}	-0.15	-0.16
P_{25}	-0.12	-0.07
P_{50}	0.08	0.14
P_{75}	0.16	0.17
P_{90}	0.19	0.2
Maximum	0.9	0.5
$> \lvert 0.20 \rvert$	10	10

Table 12–2 lists all item pairs with residual correlations greater than 0.20 with the added information of session, sequence, and Eligible Content. In terms of position, there is not an obvious pattern as some pairs of items were very close together in the test booklet while others appeared at opposites ends of the test booklet in separate sections. The pattern that is evident, however, is that these correlated items share identical or very similar Eligible Content and are testing the same or similar skills. Test blueprints determine what Assessment Anchors, as defined by the Eligible Content, will be assessed. PDE and DRC make every effort to avoid one item cueing another through careful item selection and sequencing.

Table 12–2. Item Pairs With Large Residual Correlations

		Item 1				Item 2				
	Grade	Session	Seq.	Type	Eligible Content	Session	Seq.	Type	Eligible Content	Resid. Corr.
Mathematics	3	1	14	MC	B.1.1.2	3	55	MC	B.1.1.2	0.29
	3	1	14	MC	B.1.1.2	5	109	MC	B.1.1.2	0.25
	3	1	14	MC	B.1.1.2	5	114	MC	B.1.1.2	0.23
	3	3	55	MC	B.1.1.2	5	109	MC	B.1.1.2	0.33
	3	3	55	MC	B.1.1.2	5	114	MC	B.1.1.2	0.30
	3	5	98	MC	A.2.1.3	5	118	MC	A.2.1.3	0.25
	3	5	109	MC	B.1.1.2	5	114	MC	B.1.1.2	0.41
	4	1	5	MC	E.1.2.2	3	62	MC	E.1.2.2	0.24
	4	1	6	MC	C.1.2.2	5	106	MC	C.1.2.2	0.21
	4	1	15	MC	B.1.1.3	3	53	MC	B.1.1.3	0.22
	4	1	17	MC	C.2.1.1	3	58	MC	C.2.1.1	0.36
	5	1	2	MC	A.2.1.2	1	4	MC	A.2.1.2	0.22
	5	1	12	MC	A.1.3.2	1	19	MC	A.1.3.2	0.31
	5	3	58	MC	A.3.1.1	5	102	MC	A.3.1.1	0.26
	6	1	8	MC	A.1.3.2	5	115	MC	A.1.3.2	0.26
	6	3	50	MC	C.3.1.1	3	58	MC	C.3.1.1	0.50
	6	3	50	MC	C.3.1.1	5	96	MC	C.3.1.1	0.40
	6	3	50	MC	C.3.1.1	5	104	MC	C.3.1.1	0.43
	6	3	50	MC	C.3.1.1	5	117	MC	C.3.1.1	0.36
	6	3	50	MC	C.3.1.1	1	25	OE	C.3	0.22
	6	3	58	MC	C.3.1.1	5	96	MC	C.3.1.1	0.48
	6	3	58	MC	C.3.1.1	5	104	MC	C.3.1.1	0.51
	6	3	58	MC	C.3.1.1	5	117	MC	C.3.1.1	0.40
	6	3	58	MC	C.3.1.1	1	25	OE	C.3	0.27
	6	5	94	MC	E.2.1.1	5	116	MC	E.2.1.1	0.43
	6	5	95	MC	A.1.1.3	5	102	MC	A.1.1.3	0.41
	6	5	96	MC	C.3.1.1	5	104	MC	C.3.1.1	0.53
	6	5	96	MC	C.3.1.1	5	117	MC	C.3.1.1	0.42
	6	5	96	MC	C.3.1.1	1	25	OE	C.3	0.24
	6	5	99	MC	D.2.1.2	5	109	MC	D.2.1.2	0.28
	6	5	101	MC	A.1.3.1	5	107	MC	A.1.3.1	0.21
	6	5	104	MC	C.3.1.1	5	117	MC	C.3.1.1	0.47
	6	5	104	MC	C.3.1.1	1	25	OE	C.3	0.24
	7	1	20	MC	B.2.1.1	5	106	MC	B.2.1.1	0.29
	7	3	60	MC	A.1.1.1	5	93	MC	A.1.1.1	0.23
	8	1	7	MC	A.1.1.1	1	18	MC	A.1.1.1	0.24
	8	1	8	MC	D.4.1.1	1	20	MC	D.4.1.1	0.28
	8	1	10	MC	C.1.2.1	3	56	MC	C.1.2.1	0.22
	8	1	10	MC	C.1.2.1	5	96	MC	C.1.2.1	0.23
	8	1	12	MC	D.4.1.3	1	17	MC	D.4.1.3	0.22
	8	1	12	MC	D.4.1.3	5	106	MC	D.1.1.3	0.21
	8	1	13	MC	C.1.2.1	1	25	OE	C.1	0.29
	8	1	17	MC	D.4.1.3	1	22	MC	D.1.1.3	0.25
	8	1	18	MC	A.1.1.1	3	55	MC	A.1.1.1	0.34
	8	1	18	MC	A.1.1.1	5	107	MC	A.1.1.1	0.40

Table 12–2 (continued). Item Pairs With Large Residual Correlations

		Item 1				Item 2				
	Grade	**Session**	**Seq.**	**Type**	**Eligible Content**	**Session**	**Seq.**	**Type**	**Eligible Content**	**Resid. Corr.**
Mathematics	8	3	54	MC	E.4.1.1	5	111	MC	E.4.1.1	0.25
	8	3	55	MC	A.1.1.1	5	107	MC	A.1.1.1	0.37
	8	3	56	MC	C.1.2.1	5	96	MC	C.1.2.1	0.31
	8	3	56	MC	C.1.2.1	1	25	OE	C.1	0.21
	8	3	61	MC	C.1.2.1	5	105	MC	C.1.2.1	0.39
	8	3	61	MC	C.1.2.1	5	116	MC	C.1.2.1	0.24
	8	5	105	MC	C.1.2.1	5	112	MC	C.1.2.1	0.35
	8	5	105	MC	C.1.2.1	5	116	MC	C.1.2.1	0.34
	8	5	107	MC	A.1.1.1	5	114	MC	A.1.1.1	0.22
	8	5	112	MC	C.1.2.1	5	116	MC	C.1.2.1	0.43
Writing	5	1	4	MC	B.6	1	5	MC	B.6	0.22
	5	1	4	MC	B.6	1	6	MC	B.5	0.21
	5	1	5	MC	B.6	1	6	MC	B.5	0.21
	5	1	8	MC	B.5	1	11	MC	B.5	0.22
	5	2	13.1	WP	A.2	2	13.2	WP	A.2	0.68
	5	2	13.1	WP	A.2	3	14.1	WP	A.3	-0.72
	5	2	13.1	WP	A.2	3	14.2	WP	A.3	-0.67
	5	2	13.2	WP	A.2	3	14.1	WP	A.3	-0.56
	5	2	13.2	WP	A.2	3	14.2	WP	A.3	-0.52
	5	3	14.1	WP	A.3	3	14.2	WP	A.3	0.90
	8	1	2	MC	B.6	1	10	MC	B.6	0.24
	8	1	5	MC	B.5	1	7	MC	B.6	0.25
	8	1	7	MC	B.6	1	9	MC	B.6	0.23
	8	1	7	MC	B.6	1	12	MC	B.5	0.21
	8	2	13.1	WP	A.2	2	13.2	WP	A.2	0.50
	8	2	13.1	WP	A.2	3	14.1	WP	A.3	-0.62
	8	2	13.1	WP	A.2	3	14.2	WP	A.3	-0.42
	8	2	13.2	WP	A.2	3	14.1	WP	A.3	-0.43
	8	2	13.2	WP	A.2	3	14.2	WP	A.3	-0.22
	8	3	14.1	WP	A.3	3	14.2	WP	A.3	0.49

Item Fit

WINSTEPS provides two item fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. Though both are informative, the Zstd values are very likely too sensitive to the large sample sizes observed on the PSSA. In this situation it is recommended that the Zstd values be ignored if the MnSq values are acceptable (Linacre, 2009).

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low-information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0 and can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding "practically significant" MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. In the results below, values outside of 0.7 to 1.3 are given practical importance.

Table 12–3 presents the summary statistics of infit and outfit mean square statistics for the PSSA reading, mathematics, science, and writing tests, including the mean, SD, and minimum and maximum values. The number of items within the range of [0.7, 1.3] is also reported in Table 12–3. As can be seen, the mean values for both fit statistics were close to 1.00 for mathematics, reading, and science tests. Almost all the items had infit values falling in the range of [0.7, 1.3] for mathematics, reading, and science tests. Though more outfit values fell outside this range than infit values with mathematics, reading, and science tests, most of the extreme values were just barely above 1.3 or below 0.7, except grades 3 and 7 mathematics. Overall, these results indicate that the Rasch model fits the PSSA item data well in mathematics, reading, and science. As in previous years, the fit of the model to the writing data is relatively poor compared to the other content areas given its length, structure, and item weighting.

Table 12–3. Summary of Infit and Outfit Mean Square Statistics for PSSA Mathematics, Reading, Science, and Writing

		Infit Mean Square					Outfit Mean Square				
		Mean	**SD**	**Min**	**Max**	**[0.7,1.3]**	**Mean**	**SD**	**Min**	**Max**	**[0.7,1.3]**
Mathematics	**3**	1.00	0.10	0.82	1.34	80/81	1.03	0.25	0.65	2.27	69/81
	4	0.99	0.10	0.82	1.48	80/81	0.98	0.19	0.62	1.63	74/81
	5	1.02	0.12	0.83	1.3	81/81	1.03	0.21	0.59	1.53	67/81
	6	0.99	0.11	0.8	1.37	80/81	0.97	0.21	0.56	1.56	68/81
	7	1.00	0.12	0.79	1.41	79/81	1.03	0.33	0.56	2.97	64/81
	8	0.99	0.13	0.76	1.38	79/81	0.97	0.25	0.59	1.81	66/81
Reading	**3**	1.00	0.12	0.81	1.42	57/58	0.97	0.22	0.46	1.82	49/58
	4	0.99	0.10	0.81	1.32	59/60	0.98	0.19	0.64	1.48	51/60
	5	0.99	0.10	0.74	1.14	60/60	0.97	0.17	0.57	1.27	57/60
	6	1.00	0.11	0.82	1.25	60/60	1.00	0.20	0.63	1.42	55/60
	7	1.00	0.09	0.83	1.18	60/60	1.00	0.17	0.62	1.35	56/60
	8	1.00	0.11	0.84	1.31	59/60	0.98	0.19	0.53	1.51	53/60
Science	**4**	0.99	0.10	0.79	1.31	86/87	0.97	0.18	0.61	1.39	77/87
	8	1.01	0.10	0.82	1.36	86/87	1.01	0.16	0.66	1.49	84/87
Writing	**5**	1.46	0.50	0.62	1.97	1/16	7.57	4.18	0.51	9.9	0/16
	8	1.50	0.50	0.56	1.89	2/16	7.57	4.17	0.44	9.9	1/16

Population Invariance

The property of invariance is regarded as the cornerstone of IRT and is its major distinguishing attribute from classical test theory (Hambleton, Swaminathan, & Rogers, 1991). It is this property that makes many IRT applications possible (e.g., equating, item banking, investigation of item bias, and adaptive testing) (Hambleton et al., 1991, p.25). Inferences from these IRT applications are valid to the extent that the property of invariance holds. Therefore, it is important to evaluate invariance whenever applying IRT.

Invariance should hold for both item and ability parameters. Item invariance implies that item parameter estimates do not depend on the particular sample of examinees used to derive them. Person (ability parameter) invariance means that examinees' ability estimates do not depend on which items are administered. For the Rasch item calibrations, it is more important to determine how well the item invariance assumption holds. Therefore, only item invariance is evaluated here. We call item invariance "population invariance" with the intention that item parameters do not depend on particular population.

Population invariance was examined using the root mean squared difference (RMSD) and the root expected mean standardized difference (REMSD) statistics (Dorans and Holland, 2000; von Davier & Wilson, 2008). The RMSD statistic quantifies the difference in the equating relationship at a given observed 2014 raw score point in terms of the subgroup relationship and the full group (population) equating relationship. The RMSD statistic is given as follows:

$$RMSD_x = \frac{\sqrt{\sum_{j=1}^{J} w_j \left[\hat{y}_{jx} - \hat{y}_{Px}\right]^2}}{\sigma_Y},$$

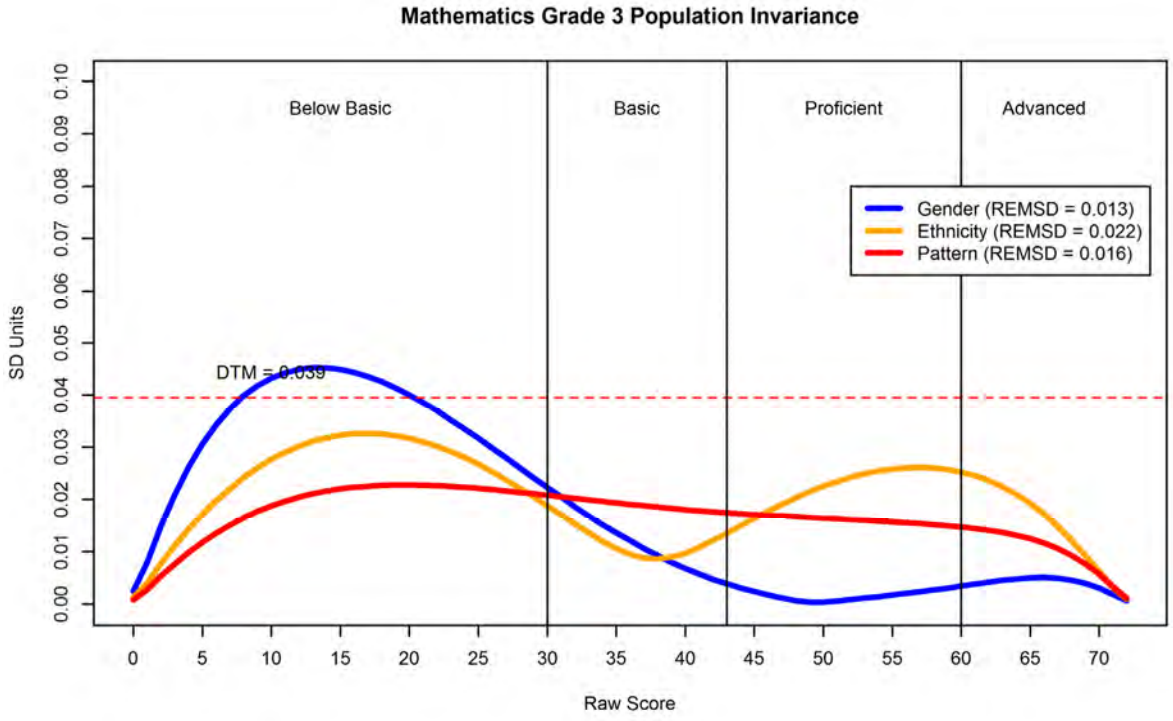
where x is an observed 2014 (scale of X) raw score, $\hat{y}_{jx}$is the expected 2013 raw score for subgroup j (based on the subgroup calibration/equating) given 2014 raw score x, $\hat{y}_{Px}$is the expected 2013 raw score for population (*P*, based on calibration/equating with all students) given 2014 raw score x, the weight, w_j, is the proportion for the subgroup, and σ_Y is the standard deviation of the 2013 raw scores with all students. A related index, REMSD, summarizes the average difference between the equating across all observed score points. Dorans, Holland, Thayer, and Tatenkeni (2003) used the notion of a "difference that matters" (DTM) to provide further context for interpreting the population invariance results. The DTM for a particular assessment depends on the reporting scale. For the PSSAs, one raw score point translates to different scaled scores and potentially different performance level classifications. Differences in equating functions greater than half a raw score point could result in different scores reported. For this reason, a DTM of a half a point is used for our evaluation of population invariance. RMSD and REMSD are compared relative to the standardized DTM which is obtained by dividing 0.5 by the standard deviation in the denominator of the RMSD and REMSD.

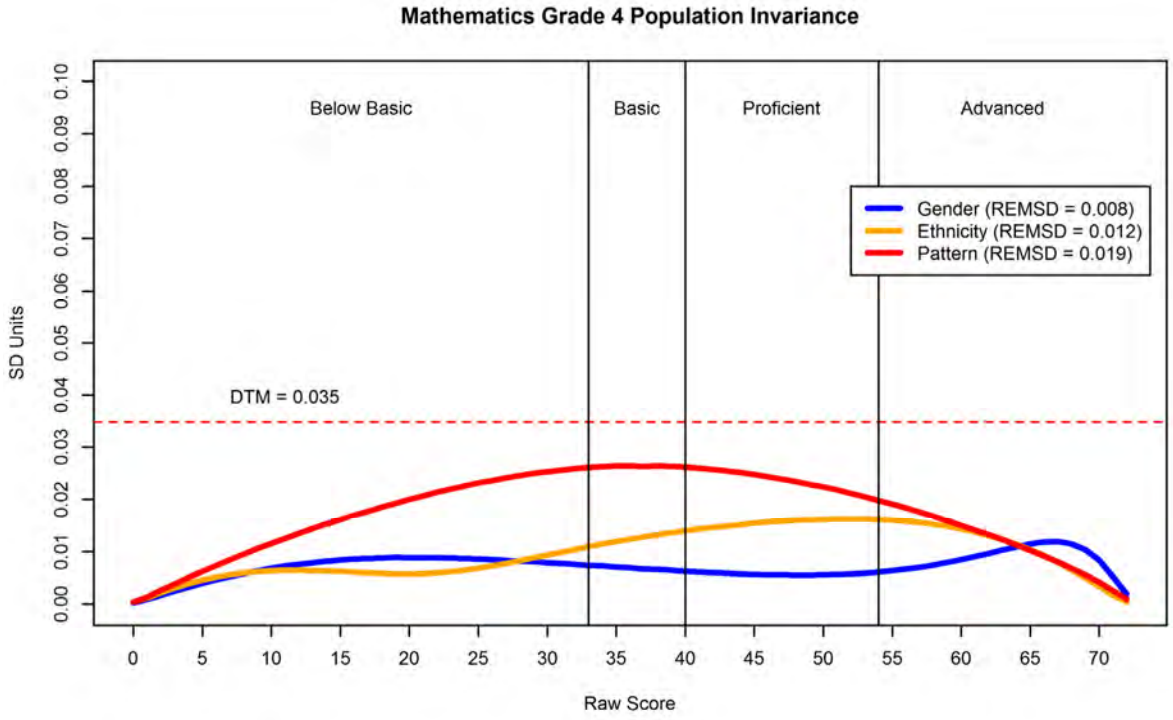
As in 2013, the subgroups considered within the population invariance analyses are gender (male, female), ethnicity (White, Black, and Hispanic), and scrambling pattern (A, B, C, D, E, F, G, M). The REMSD statistics, which provide a summary of the differences across all observed score points, were all lower than the DTM indicating that the equating results were invariant with respect to gender, ethnicity, and scramble pattern group, except for grade 5 mathematics. In grade 5 mathematics, the REMSD for both the gender and ethnic groups were above the DTM threshold.

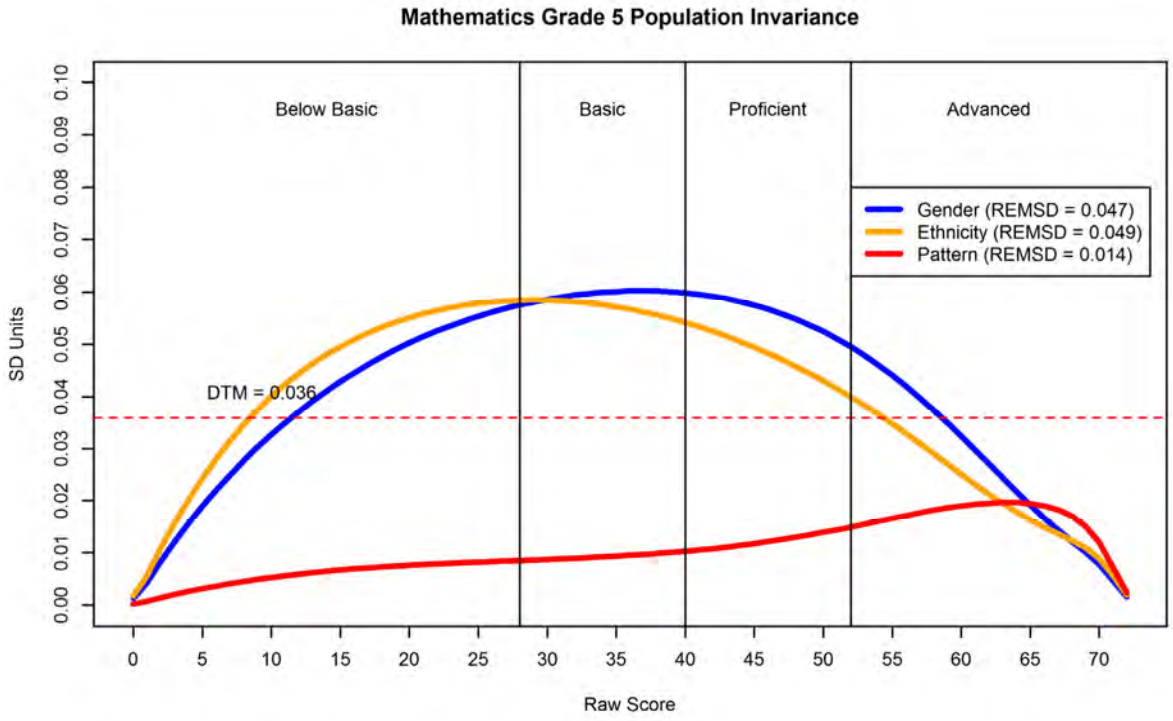
Figure 12–2 presents the RMSDs (*y*-axis) for gender, ethnicity, and scramble pattern group and includes REMSD estimates for each equating set. The population invariance curves (or deviance curves) of the RMSDs generally fell below the DTM for all score points across each test, except mathematics grades 3, 5, and 6, and writing grade 8. In grade 3 mathematics, the difference between the equating based on gender groups was above the DTM at the lowest end of the distribution. Similarly, at grade 6 mathematics and grade 8 writing, the difference in equating based on gender was above the DTM in a small section of the score range. In Grade 5 mathematics, the RMSD for both the gender and ethnic groups was above the DTM for a wider range of score points, which was consistent with the magnitude of the REMSD statistics. These results suggest that there may be some variance in equating results by gender and ethnic groups that should be monitored in future administrations.

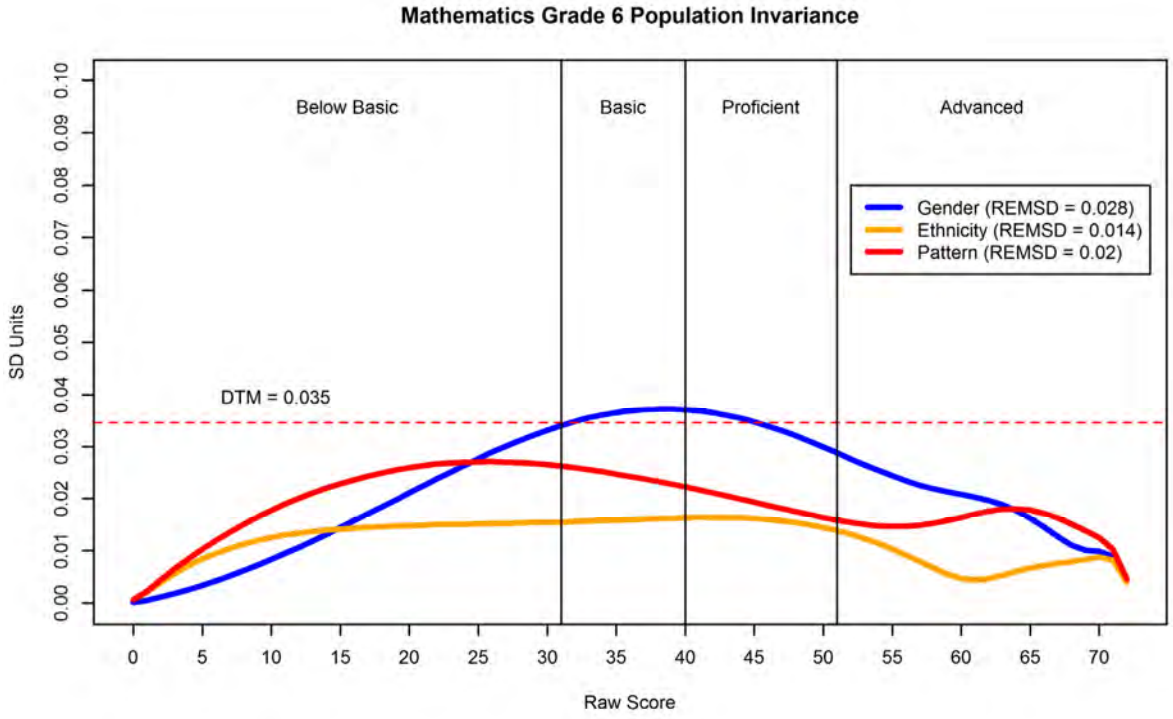
The 2014 population invariance results are consistent with 2013 in that the majority of grade-subject combinations showed population invariance of the equating relationship across gender, ethnic, and scramble groups. The fact that equating differences are seen in different grade/subject/subgroup analyses over the two years suggests that population invariance of equating may not be a stable trait of an examination. We will continue to monitor population invariance of the equating in subsequent PSSA administrations.

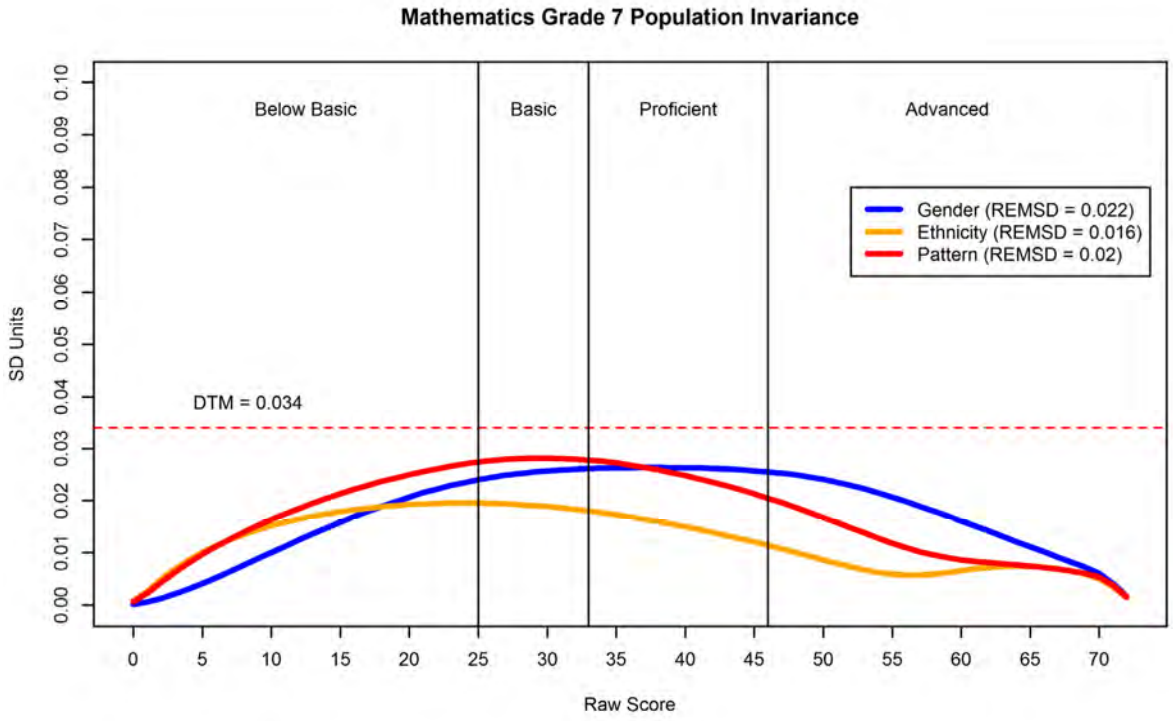
Figure 12–2. Population Invariance Plots

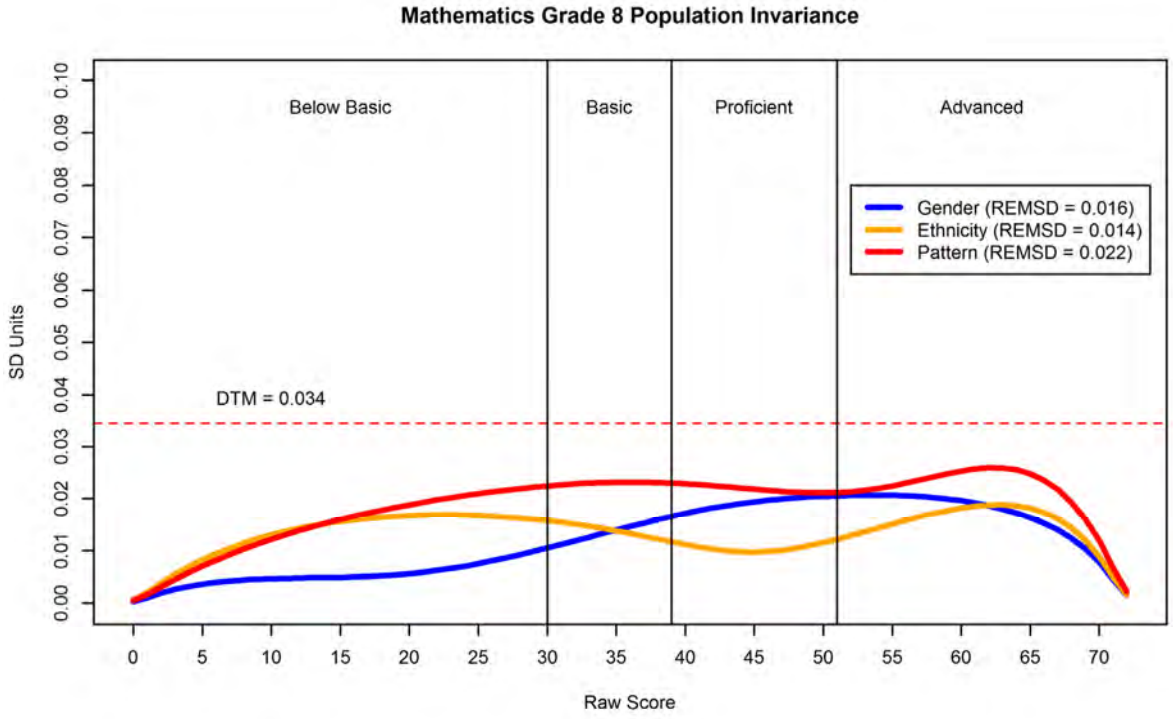


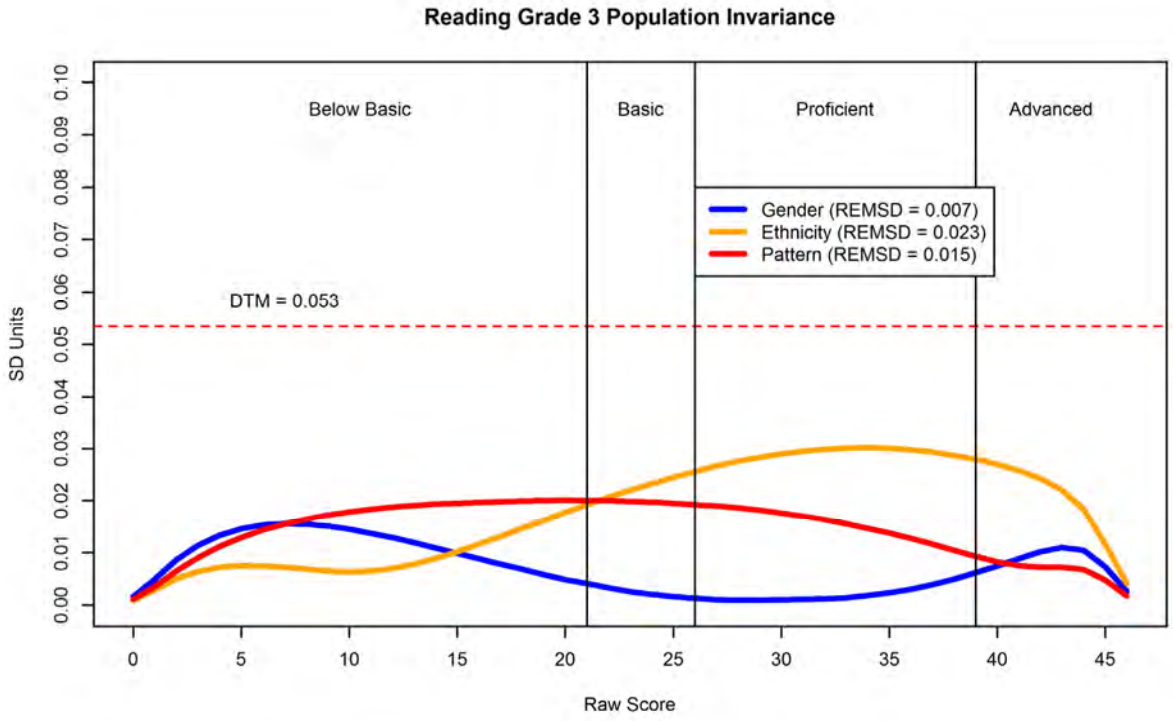


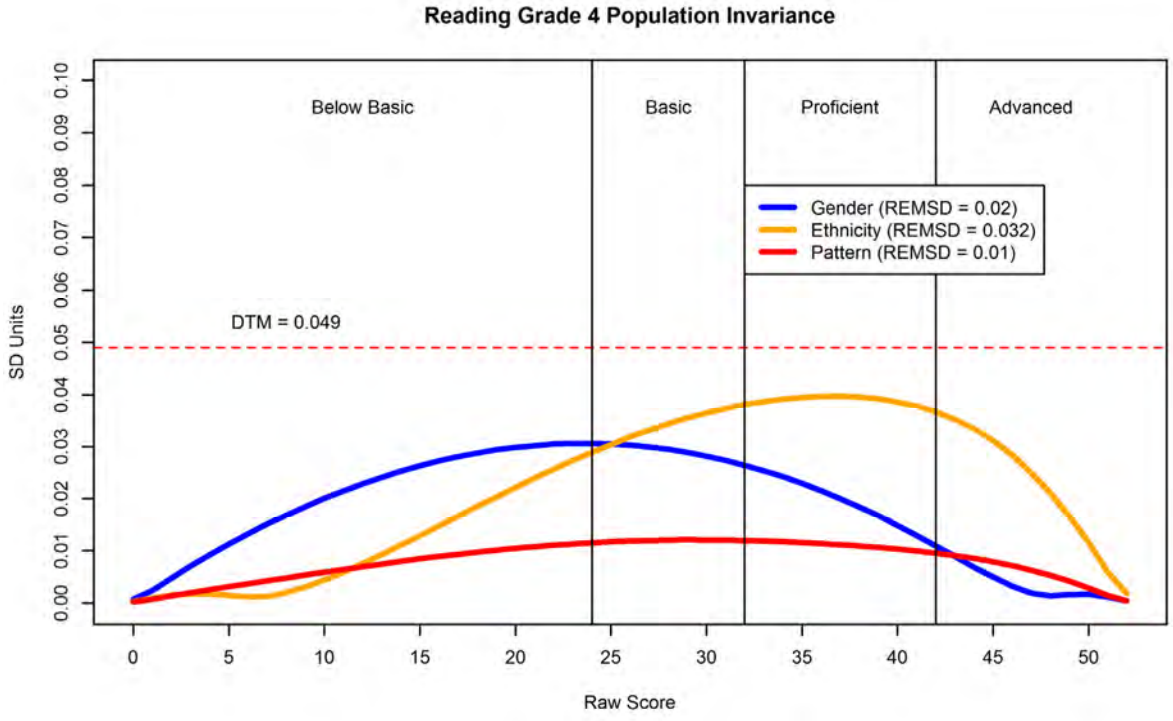

Mathematics Grade 5 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.047)
Ethnicity (REMSD = 0.049)
Pattern (REMSD = 0.014)
DTM = 0.036
SD Units
Raw Score

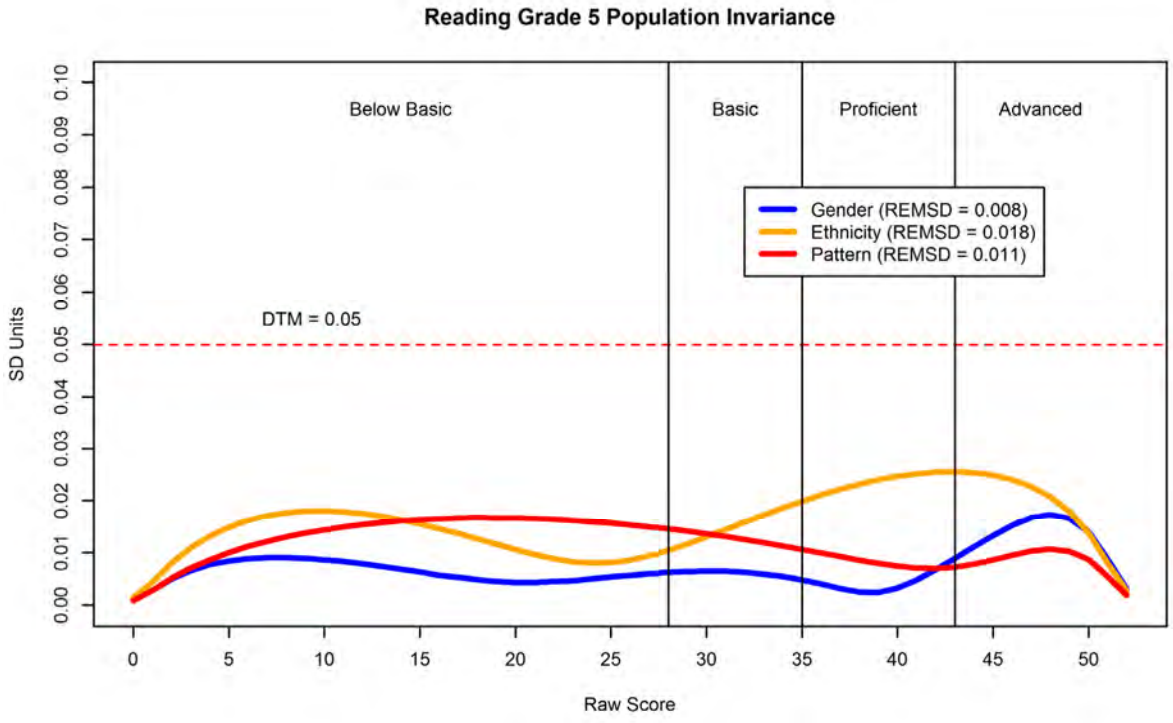

Mathematics Grade 6 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.028)
Ethnicity (REMSD = 0.014)
Pattern (REMSD = 0.02)
DTM = 0.035
SD Units
Raw Score

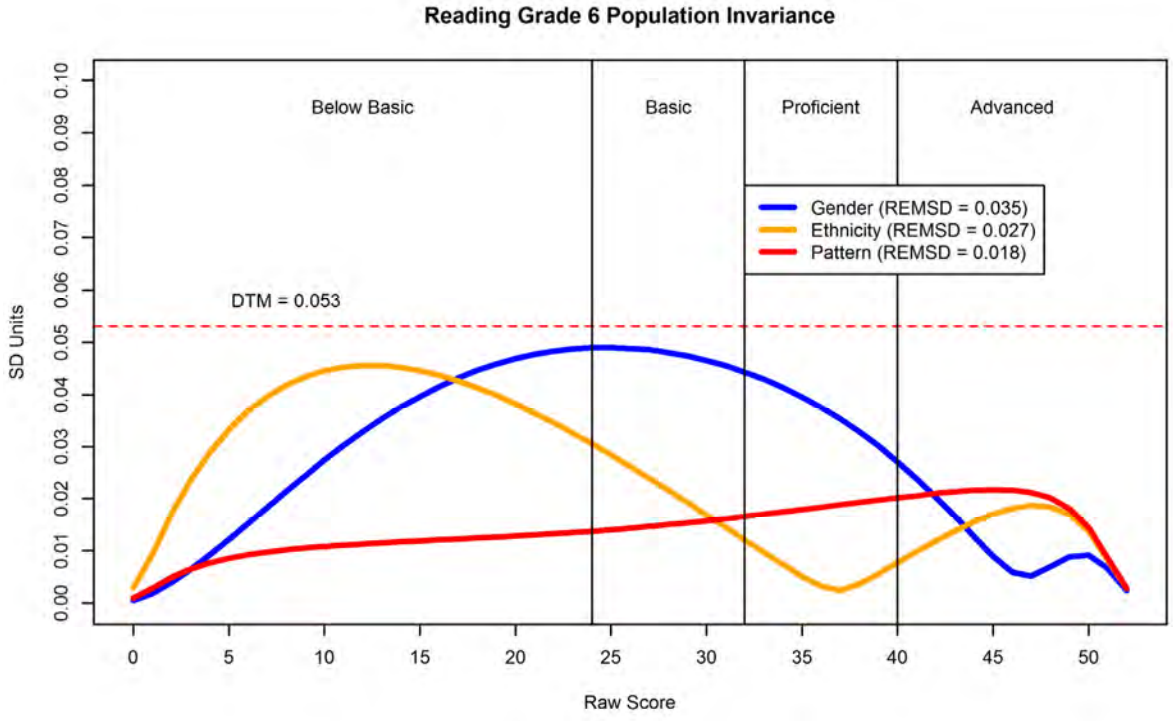

Mathematics Grade 7 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.022)
Ethnicity (REMSD = 0.016)
Pattern (REMSD = 0.02)
DTM = 0.034
SD Units
Raw Score

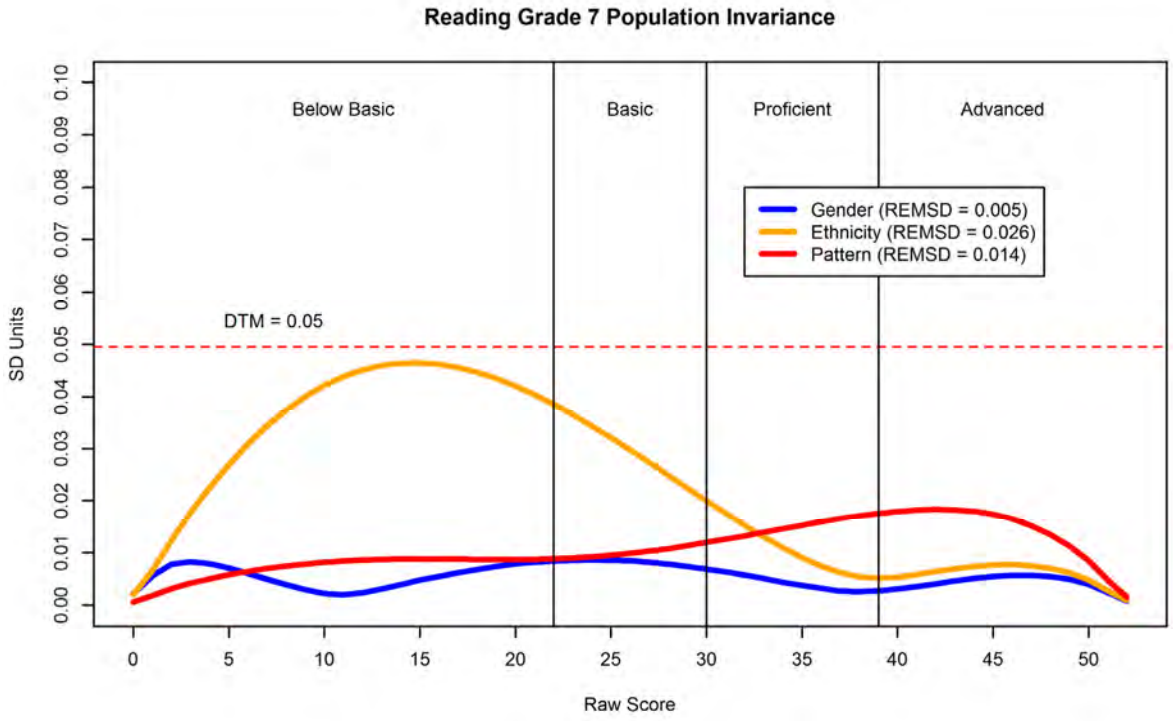

Mathematics Grade 8 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.016)
Ethnicity (REMSD = 0.014)
Pattern (REMSD = 0.022)
DTM = 0.034
SD Units
Raw Score

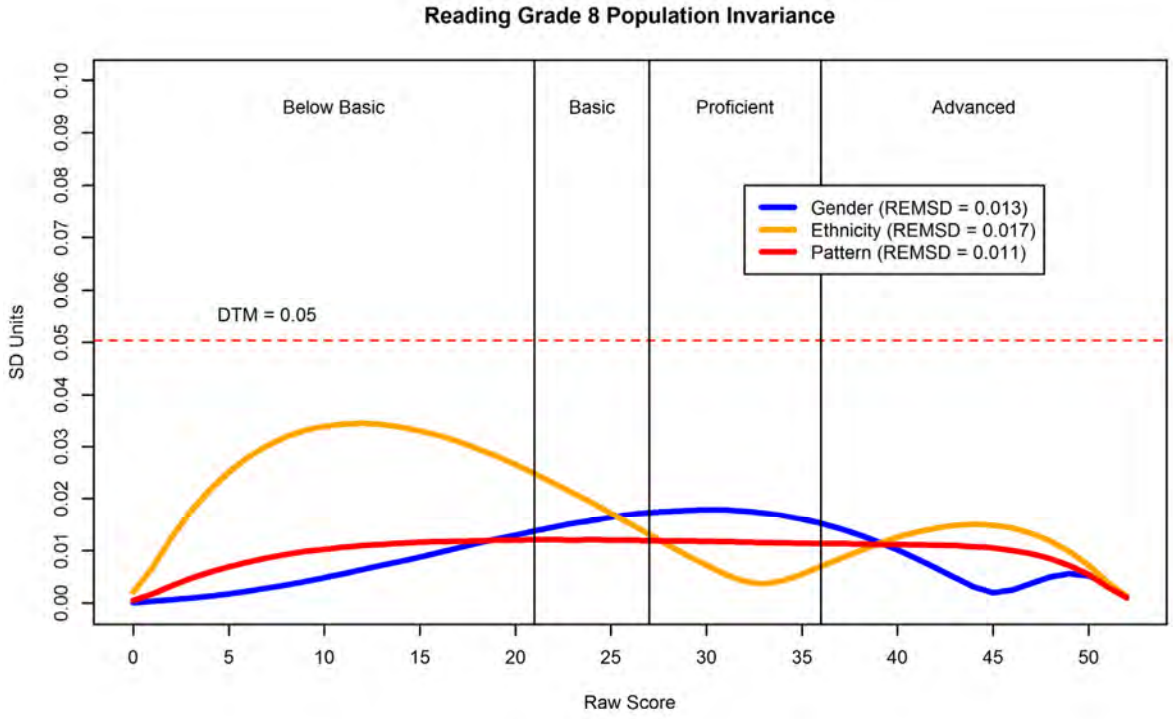

Reading Grade 3 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.007)
Ethnicity (REMSD = 0.023)
Pattern (REMSD = 0.015)
DTM = 0.053
SD Units
Raw Score

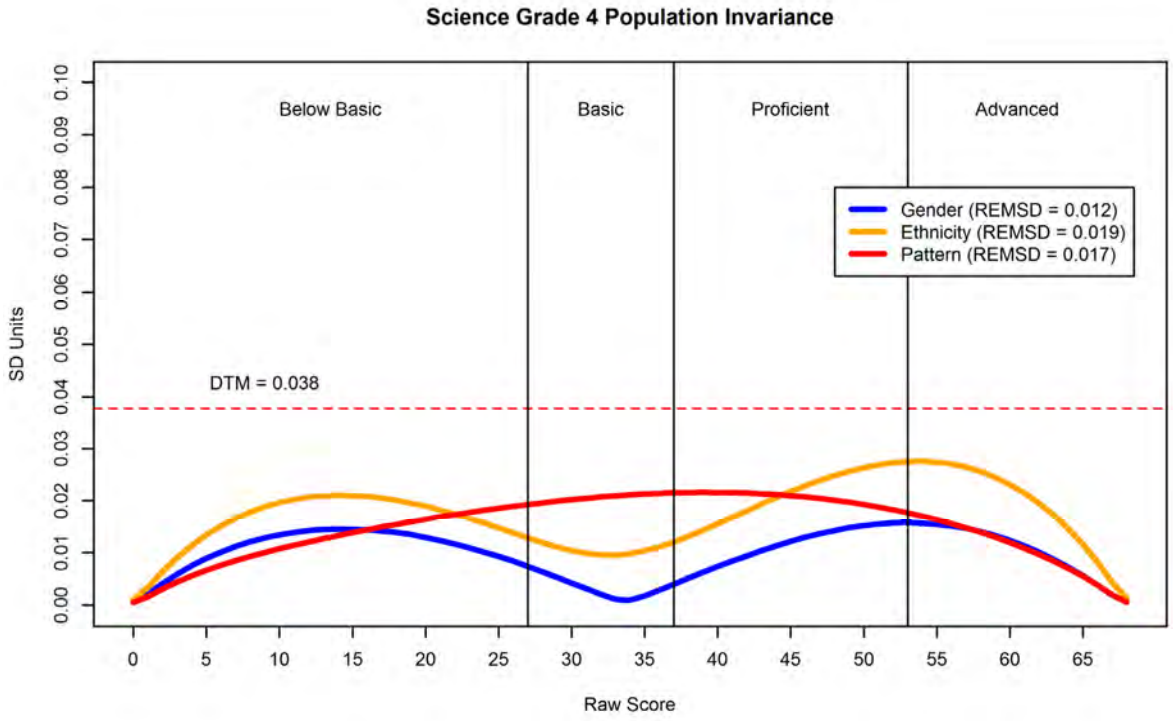

Reading Grade 4 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.02)
Ethnicity (REMSD = 0.032)
Pattern (REMSD = 0.01)
DTM = 0.049
SD Units
Raw Score

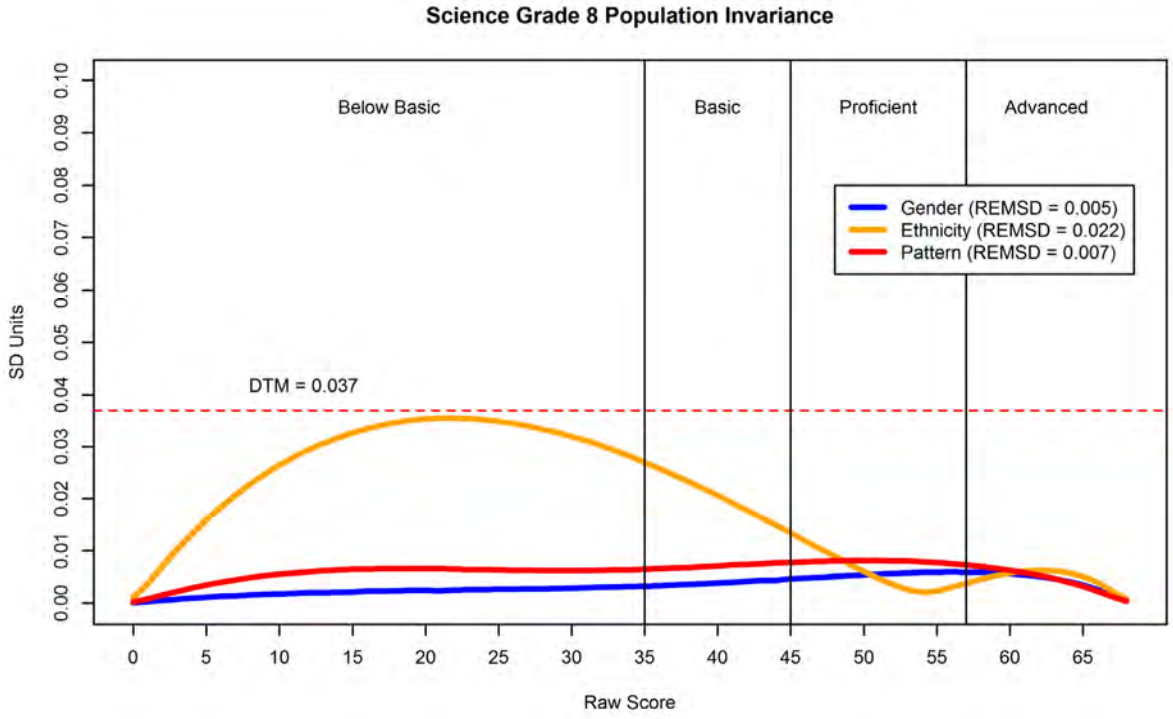

Reading Grade 5 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.008)
Ethnicity (REMSD = 0.018)
Pattern (REMSD = 0.011)
DTM = 0.05
SD Units
Raw Score

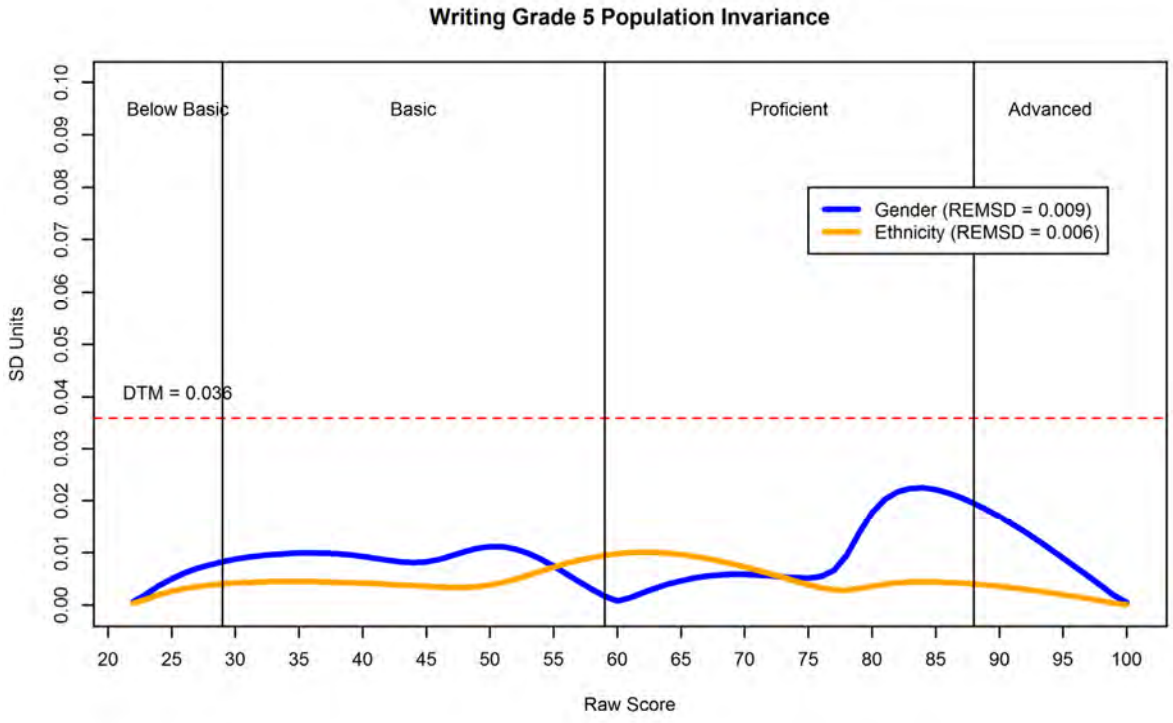

Reading Grade 6 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.035)
Ethnicity (REMSD = 0.027)
Pattern (REMSD = 0.018)
DTM = 0.053
SD Units
Raw Score

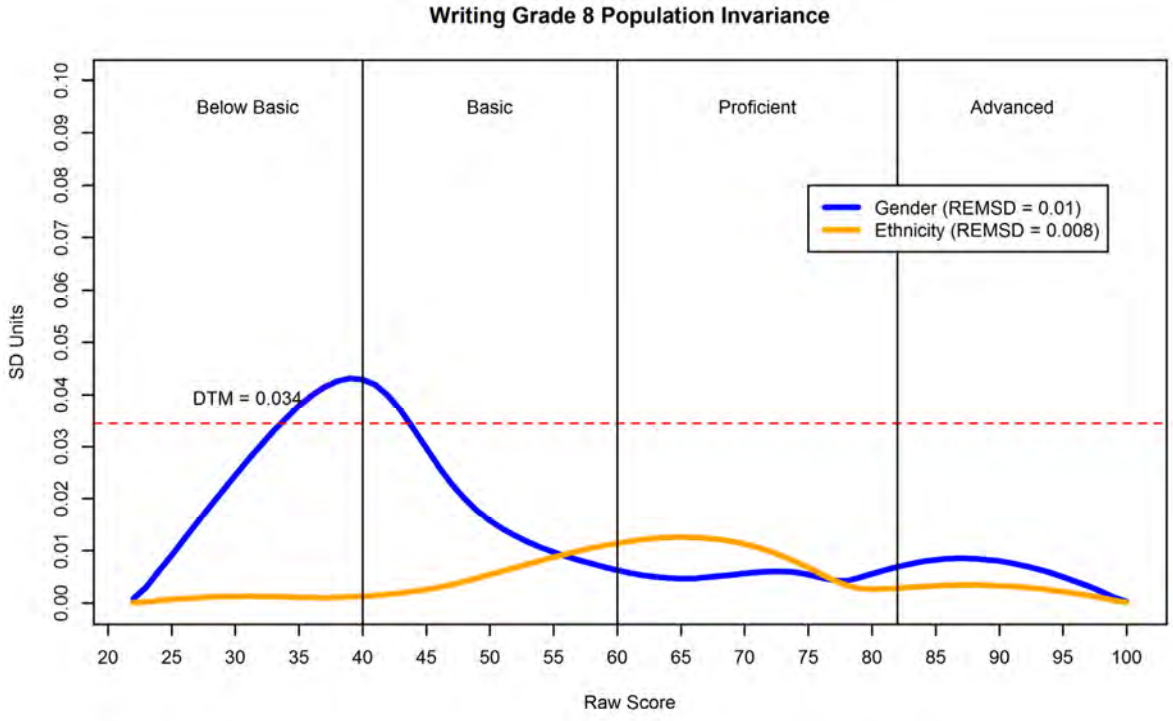

Reading Grade 7 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.005)
Ethnicity (REMSD = 0.026)
Pattern (REMSD = 0.014)
DTM = 0.05
SD Units
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0
5
10
15
20
25
30
35
40
45
50
Raw Score


Reading Grade 8 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.013)
Ethnicity (REMSD = 0.017)
Pattern (REMSD = 0.011)
DTM = 0.05
SD Units
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0
5
10
15
20
25
30
35
40
45
50
Raw Score


Science Grade 4 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.012)
Ethnicity (REMSD = 0.019)
Pattern (REMSD = 0.017)
DTM = 0.038
SD Units
Raw Score


Science Grade 8 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.005)
Ethnicity (REMSD = 0.022)
Pattern (REMSD = 0.007)
DTM = 0.037
SD Units
Raw Score


Writing Grade 5 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.009)
Ethnicity (REMSD = 0.006)
DTM = 0.036
SD Units
Raw Score


Writing Grade 8 Population Invariance
Below Basic
Basic
Proficient
Advanced
Gender (REMSD = 0.01)
Ethnicity (REMSD = 0.008)
DTM = 0.034
SD Units
Raw Score

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as *logits*, rather than on the percent-correct metric. In the simplest case, a logit is a transformed *p*-value with the average *p*-value becoming a logit of zero. In this form, logits resemble *z*-scores or standard normal deviates; a very difficult item might have a logit of +4.0 and a very easy item might have a logit of –4.0. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over *p*-values. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0 (respectively) are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero, whether the average item *p*-value for the student sample is 0.8 or 0.3.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items on any form at zero. Under normal circumstances where all students are administered the same set of items, any item with a *p*-value lower than the average item on the form receives a positive logit difficulty and any item with a *p*-value higher than the average receives a negative logit. Consequently, the logits for any calibration, whether it is a third-grade reading test or a high-school science test, relate to an arbitrary origin defined by the center of items on that form. The average third-grade reading item will have a logit of zero; the average high-school science item will have a logit of zero. Logits for both item difficulties and student abilities are placed on the same scale and relate to the same mean item difficulty.

There are a number of other arbitrary choices that could be made for centering the item difficulties. Rather than using all the items, the origin could be defined by a subset. For the PSSA, all test forms in a particular grade and content area share the same operational item set. All items on each form can then be easily adjusted to a single (but still arbitrary) origin by defining the origin as the mean of the operational items. With this done, the origins for all the forms will be statistically equal. For example, items on any two forms that are equally difficult will now have statistically equal logit difficulties. This is partly how PSSA items can be placed on the same logit difficulty scale across years. Chapter Fifteen has more detailed information about the PSSA scale linking procedures.

Appendix F reports the item statistics including classical and Rasch logit difficulties for all the operational items. Table 12–4 summarizes the Rasch logit difficulties of the operational items on each test. The minimum and maximum values and standard deviations suggest that the PSSA items covered a relatively wide range of difficulties. It is important to note that the logit difficulty values presented have not been linked to a common scale of measurement across grades and subjects. Therefore, the relative magnitude of the statistics across content areas and grades cannot be compared.

Table 12–4. Summary of Rasch Item Difficulties for PSSA Mathematics, Reading, Science, and Writing

		N	Mean	SD	Min	Max
Mathematics	**3**	63	1.01	1.16	-1.13	3.14
	4	63	-0.07	0.81	-1.58	1.70
	5	63	0.60	0.82	-1.53	2.43
	6	63	0.15	0.94	-1.68	2.37
	7	63	0.42	0.84	-1.31	2.47
	8	63	0.21	0.83	-1.25	2.31
Reading	**3**	42	-0.07	0.70	-2.00	1.44
	4	44	-0.07	0.60	-1.42	1.25
	5	44	0.06	0.74	-2.05	1.51
	6	44	-0.02	0.75	-1.58	1.36
	7	44	0.00	0.74	-1.88	1.30
	8	44	0.61	0.72	-1.00	2.18
Science	**4**	63	0.06	0.83	-1.89	2.19
	8	63	-0.28	0.60	-1.45	1.02
Writing	**5**	16	1.21	1.29	-1.06	3.07
	8	16	1.53	0.72	0.30	2.78

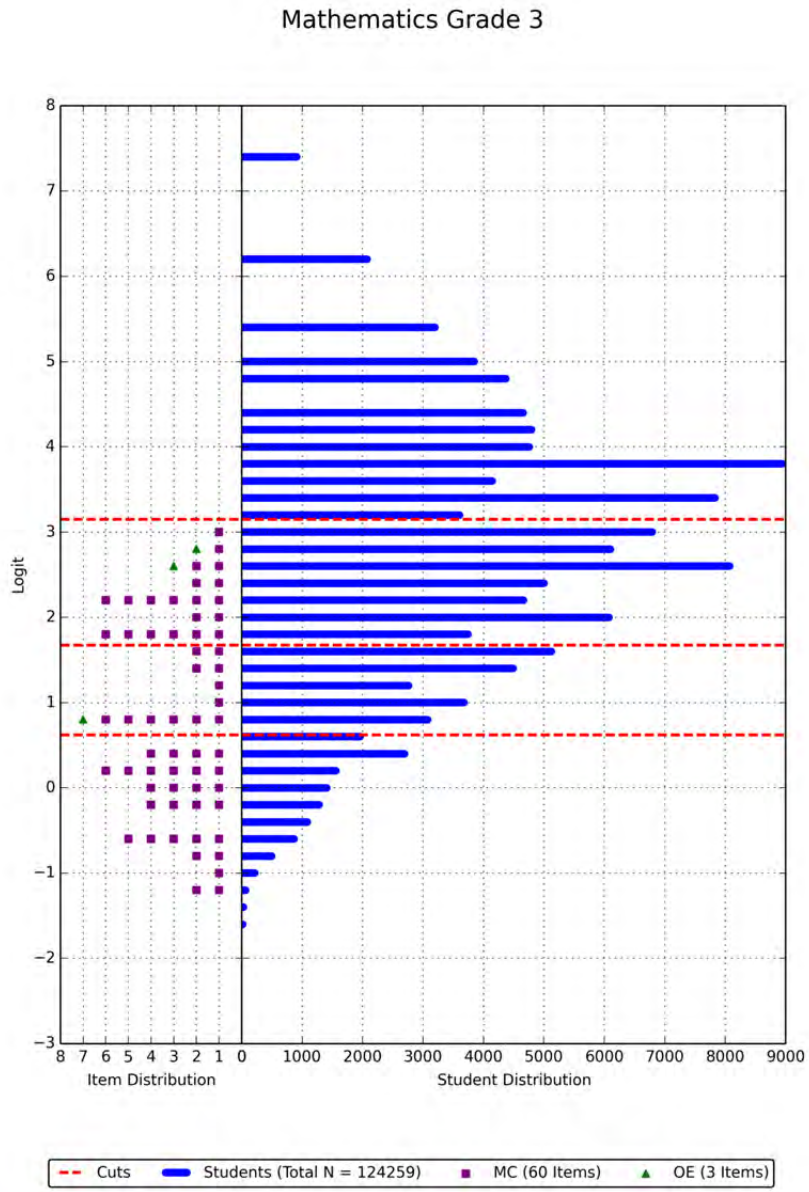
Note. The mean logit values are not necessarily 0.0 because the items have been placed on a scale that was developed in prior years.

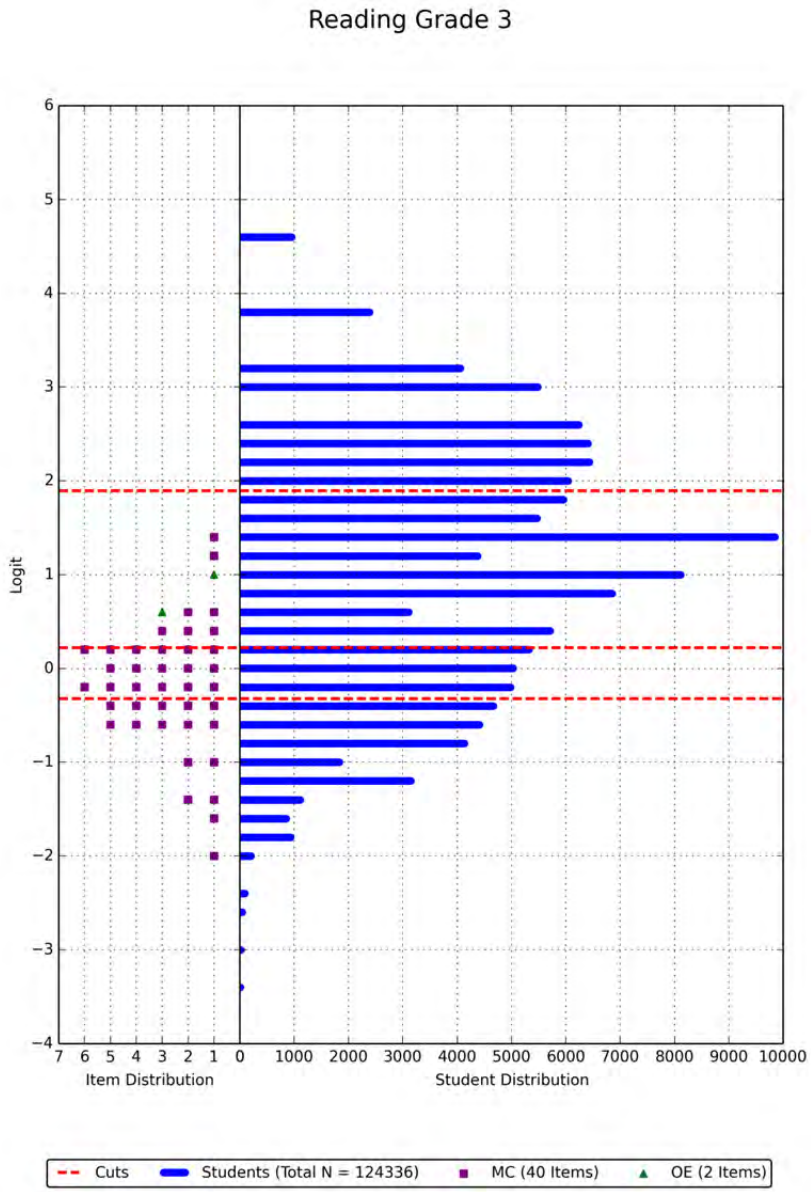
Item Difficulty-Student Ability Wright Maps

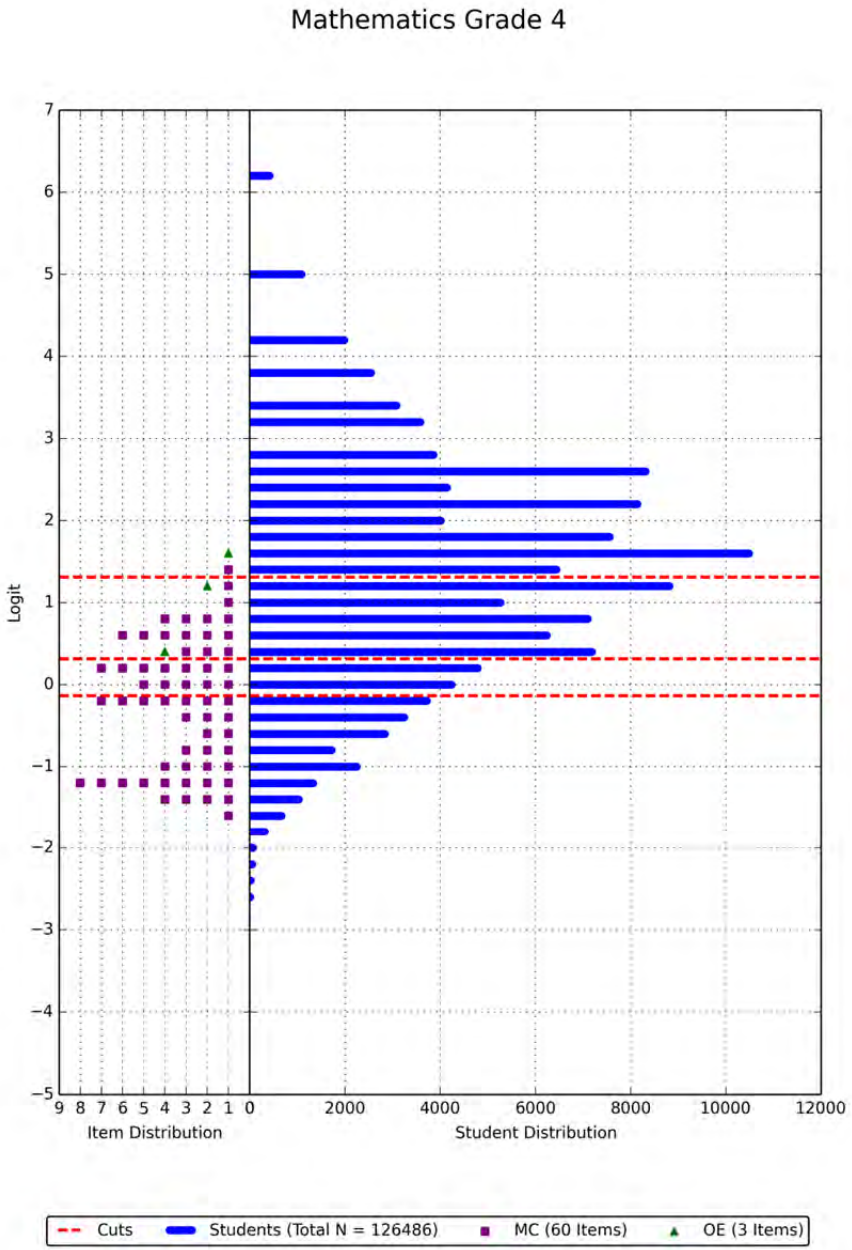
The distributions of the Rasch item logits (item difficulty estimates) are shown on the item difficulty-student ability maps presented in Figure 12–3. In each item-student map, markers on the left-hand side represent item difficult parameter estimates, whereas markers on the right-hand side represent person ability parameter estimates. As noted earlier, the Rasch model enables placement of both items and students on the same scale. Consequently, one can easily visualize information about how the difficulty of the test items related to the ability distribution of students who took the test. The students located in the upper-right quadrant of any given plot have relatively more ability. Items in the lower-left quadrant are relatively easier. High-ability students have higher probabilities of correctly answering easier items. Similarly, low-ability students (in lower-right quadrant of any given plot) have lower probabilities of answering harder items (in upper-left quadrant).

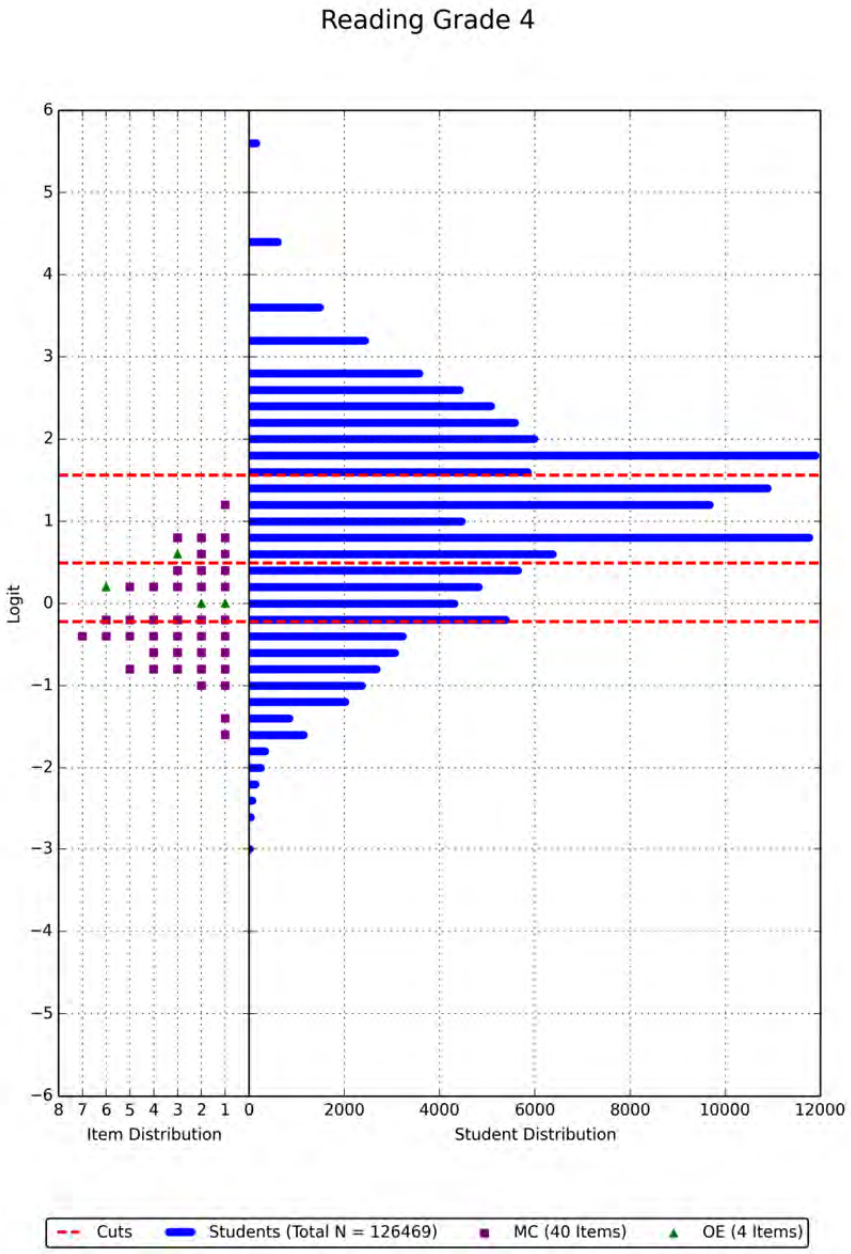
Overall, the most predominant pattern seen across all maps was for students to have relatively higher ability and for items to be relatively easier. It is also important to understand where the items are providing more accurate measurement (e.g., near the cutscores or away from the cutscores). This issue is addressed more fully in Chapter Eighteen (see Figure 18–2).

Figure 12–3. Item-Student Maps

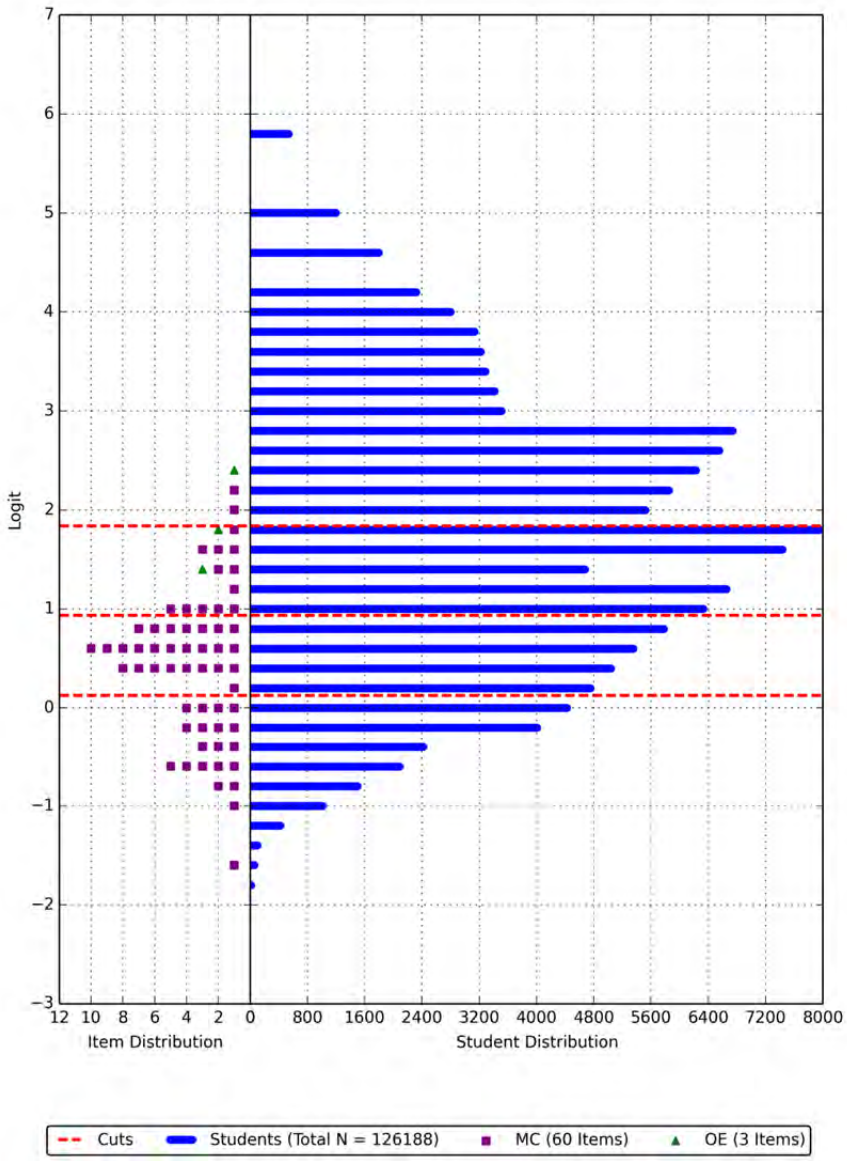




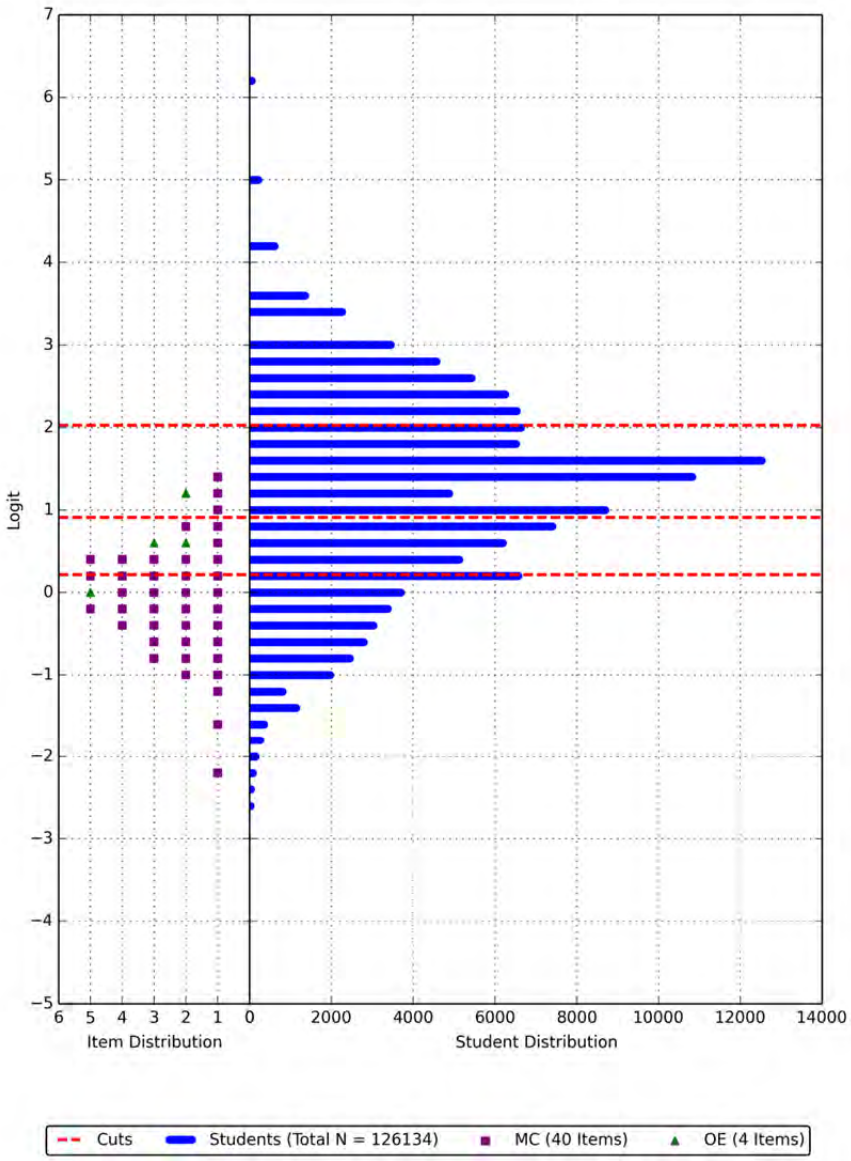

Mathematics Grade 4
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 126486)
MC (60 Items)
OE (3 Items)

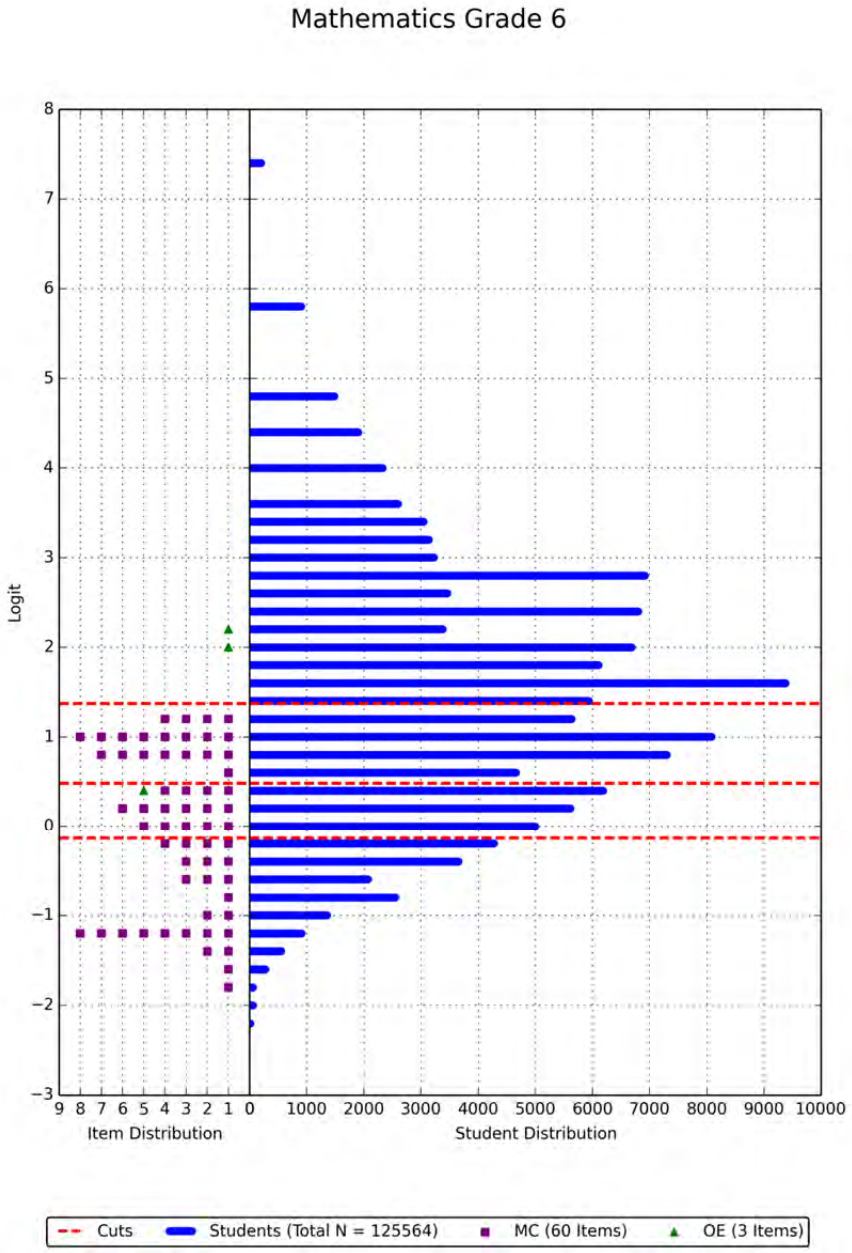

Reading Grade 4
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 126469)
MC (40 Items)
OE (4 Items)

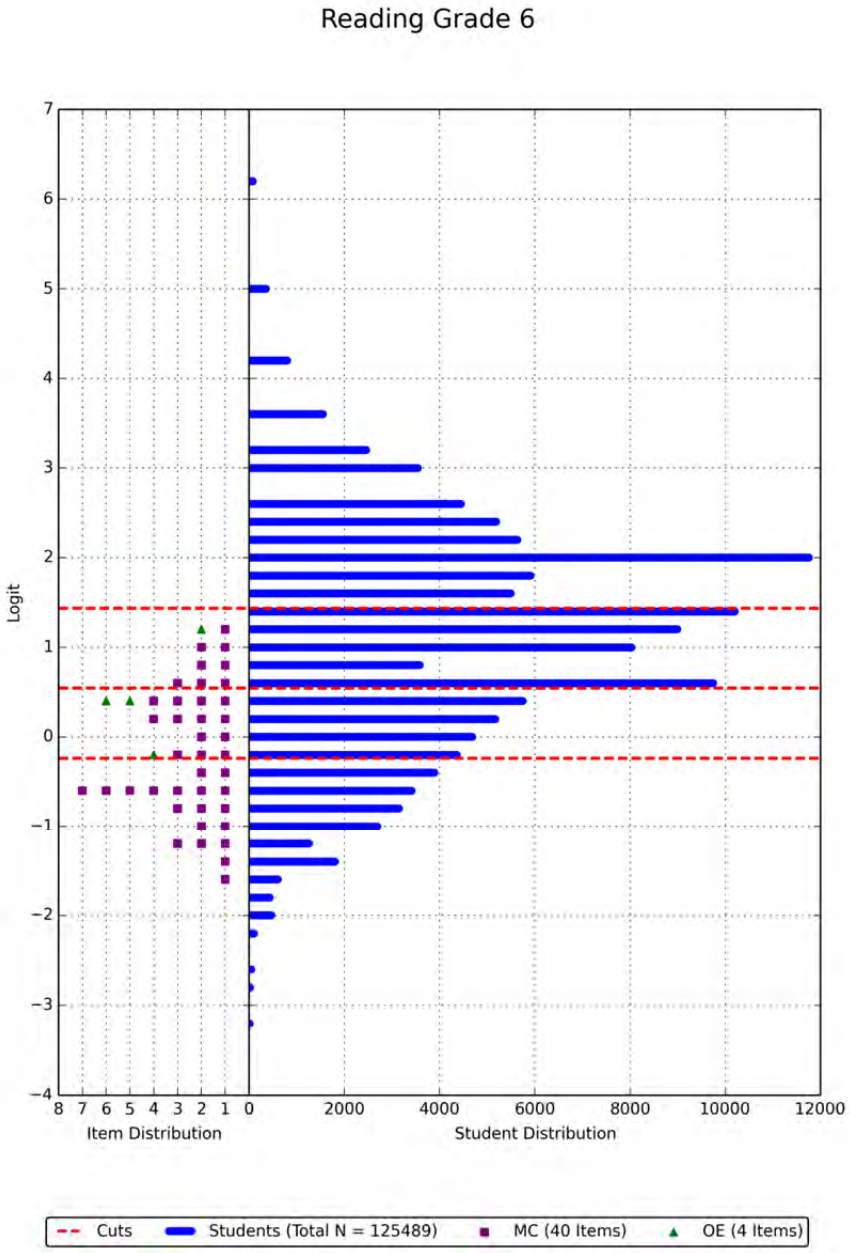
Mathematics Grade 5

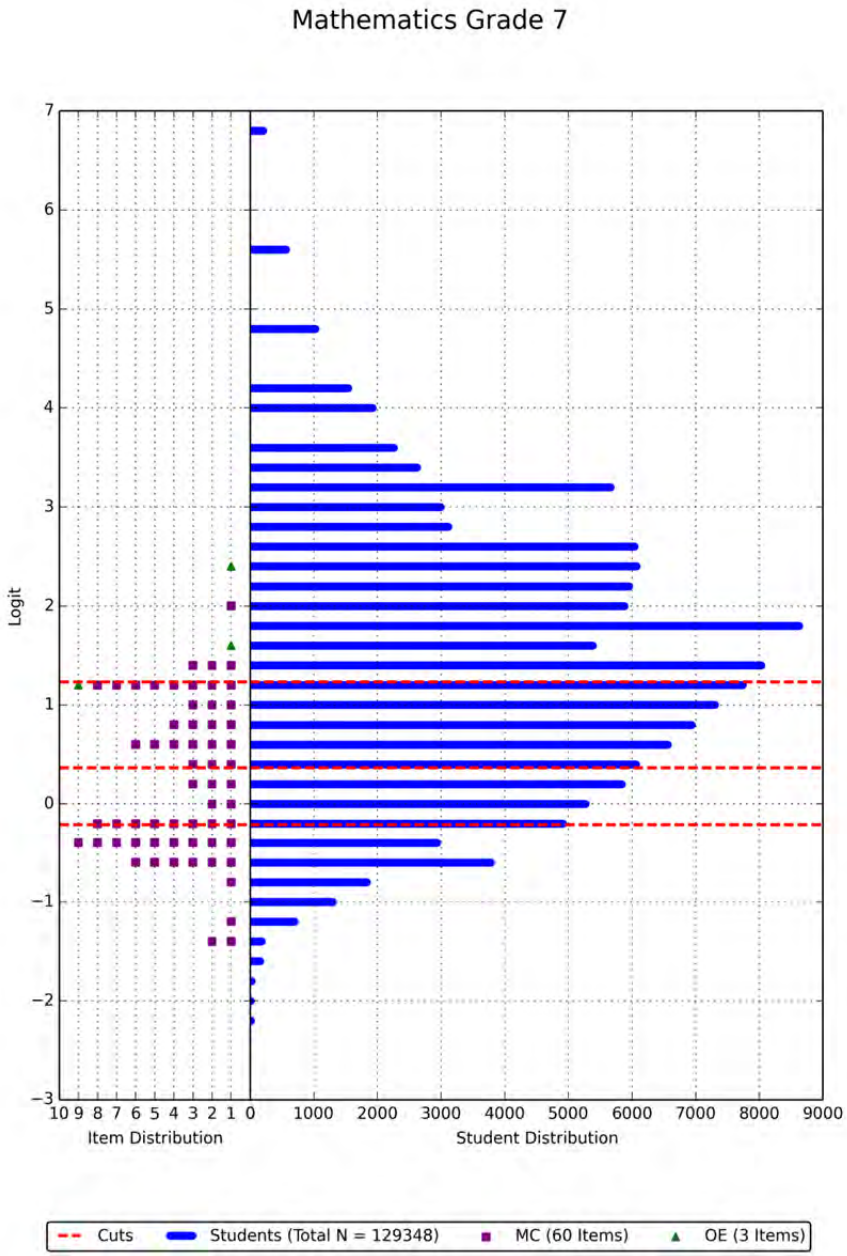


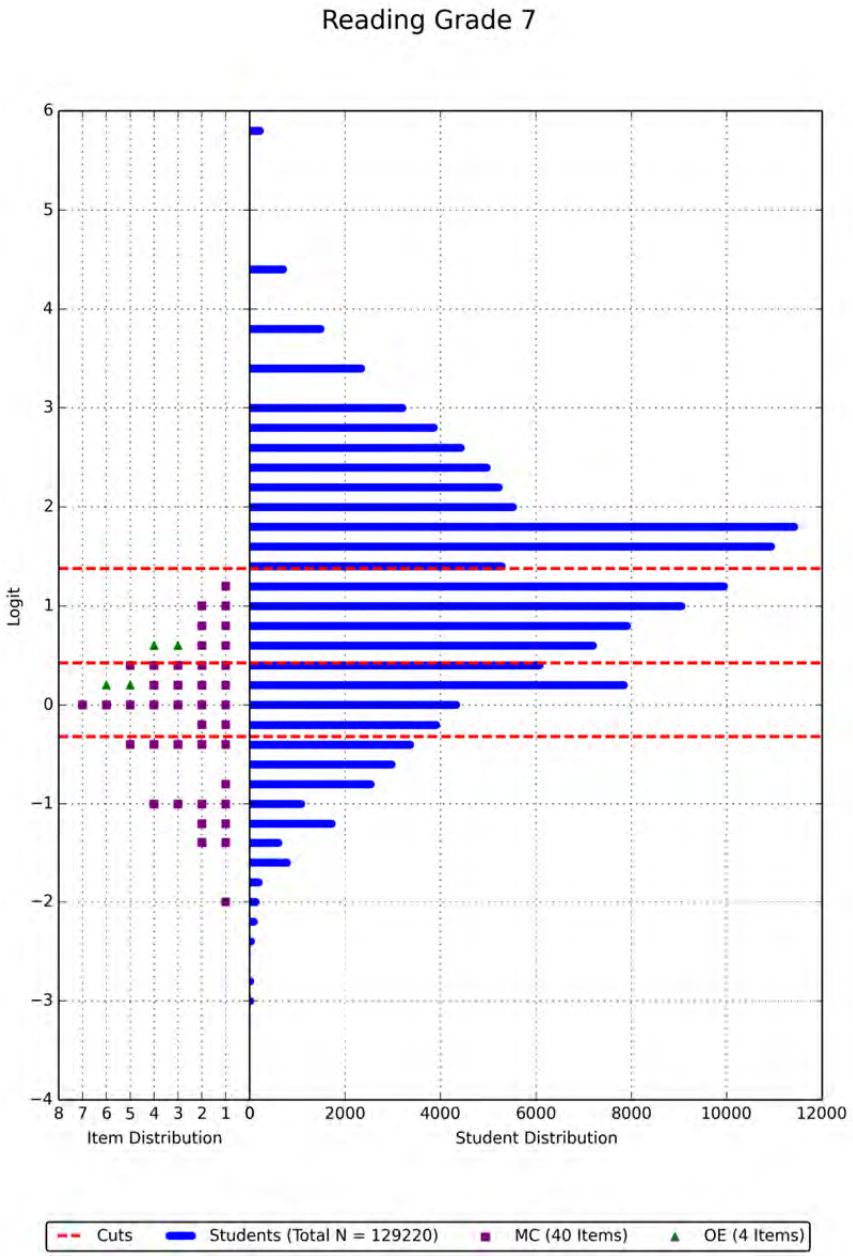
Reading Grade 5



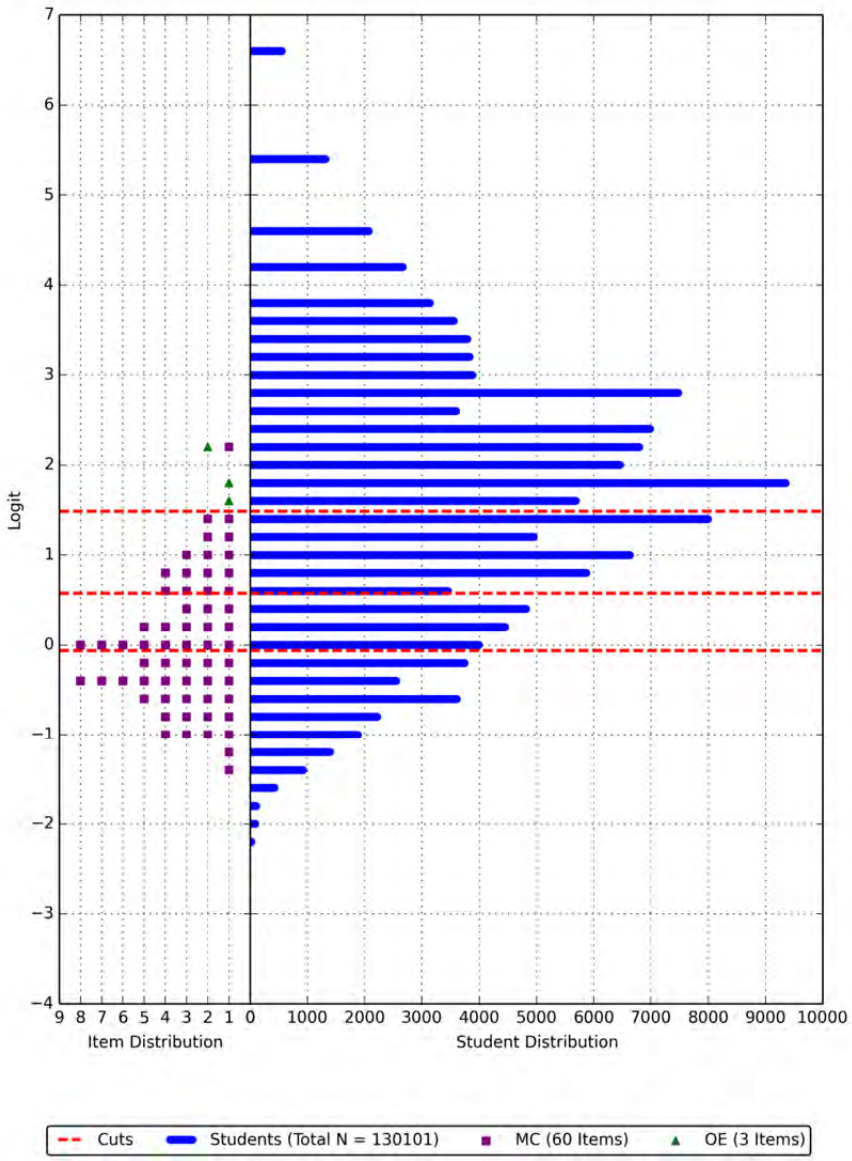

Mathematics Grade 6
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 125564)
MC (60 Items)
OE (3 Items)


Reading Grade 6
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 125489)
MC (40 Items)
OE (4 Items)

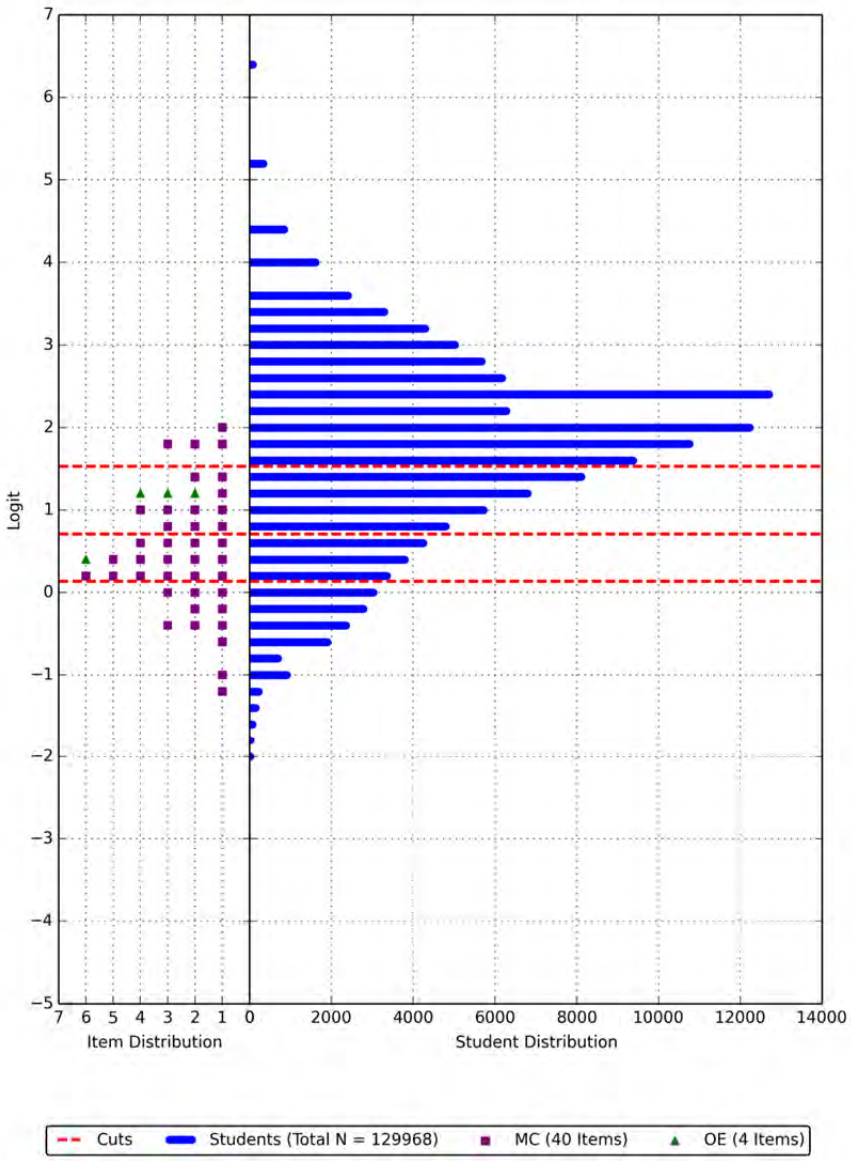

Mathematics Grade 7
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 129348)
MC (60 Items)
OE (3 Items)

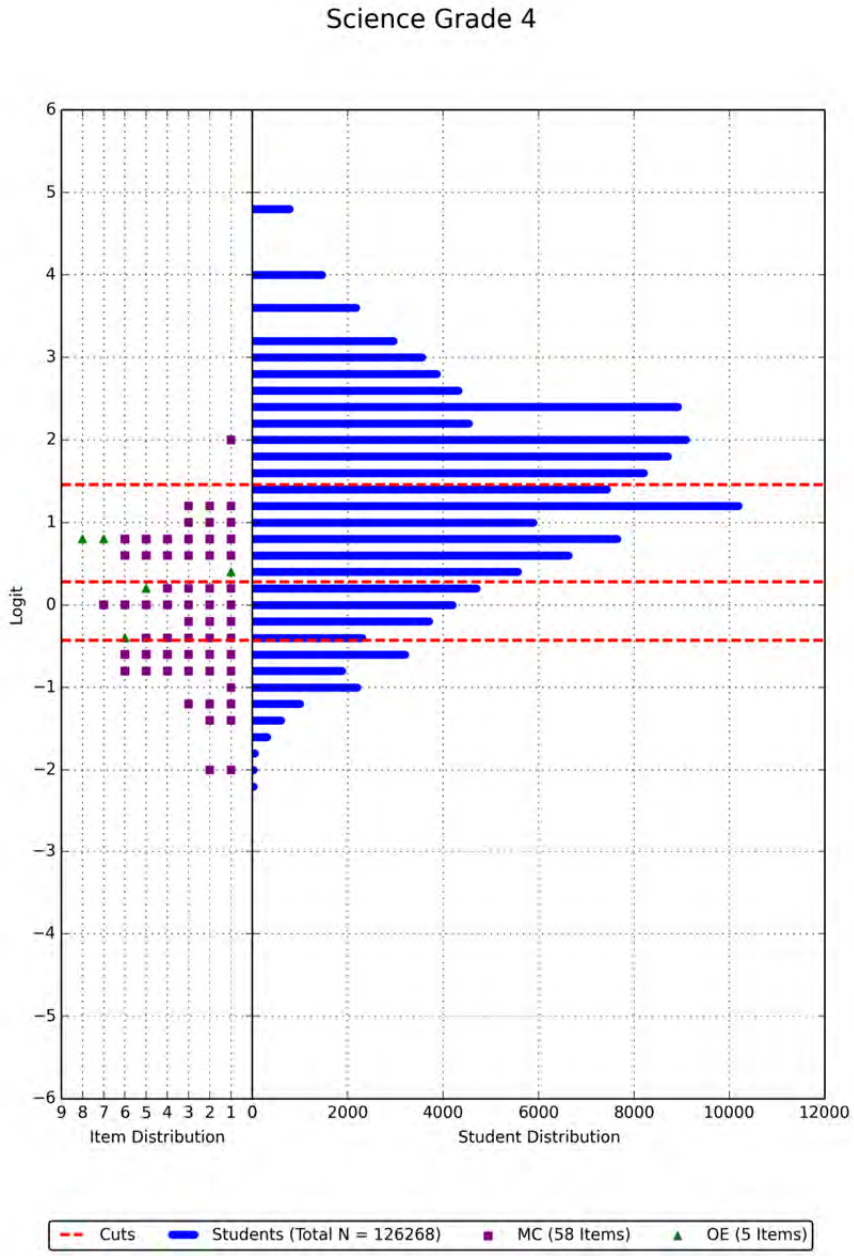

Reading Grade 7
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 129220)
MC (40 Items)
OE (4 Items)

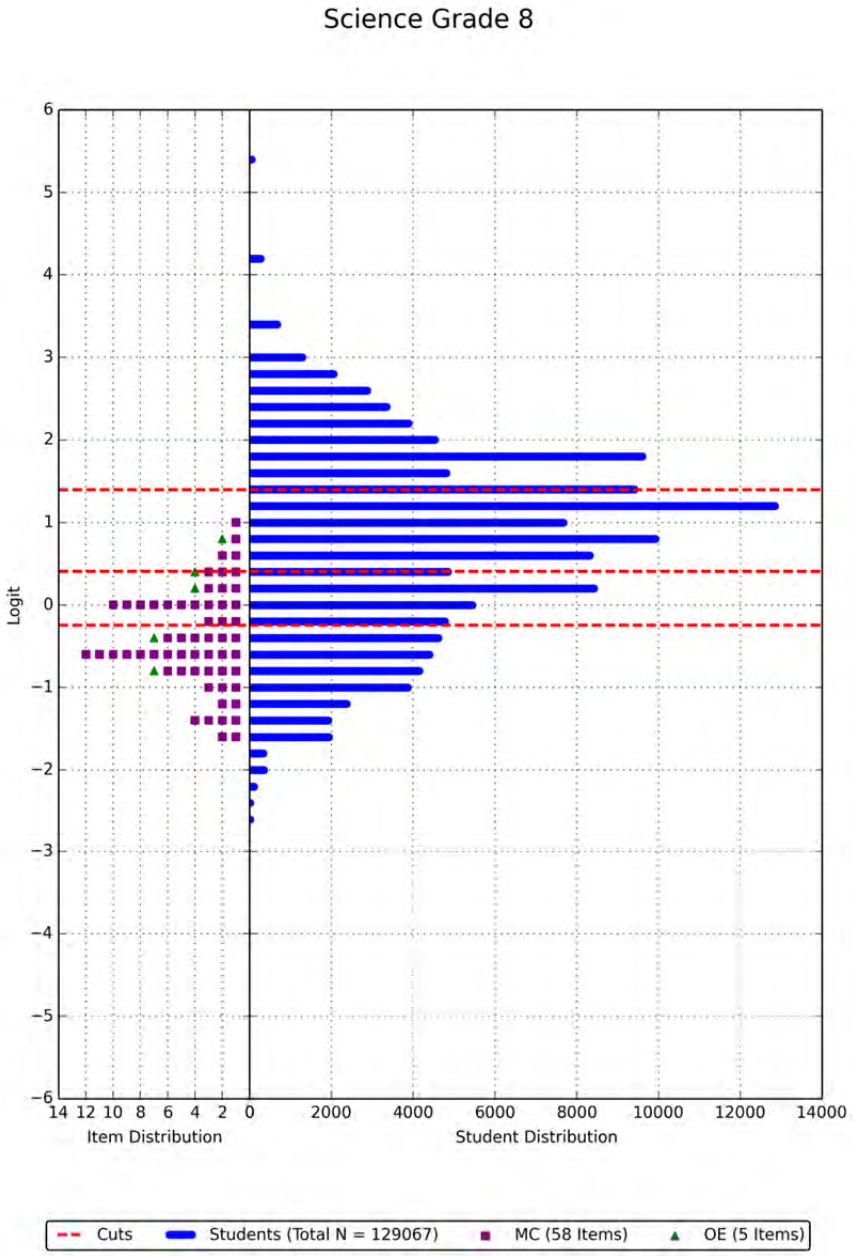
Mathematics Grade 8

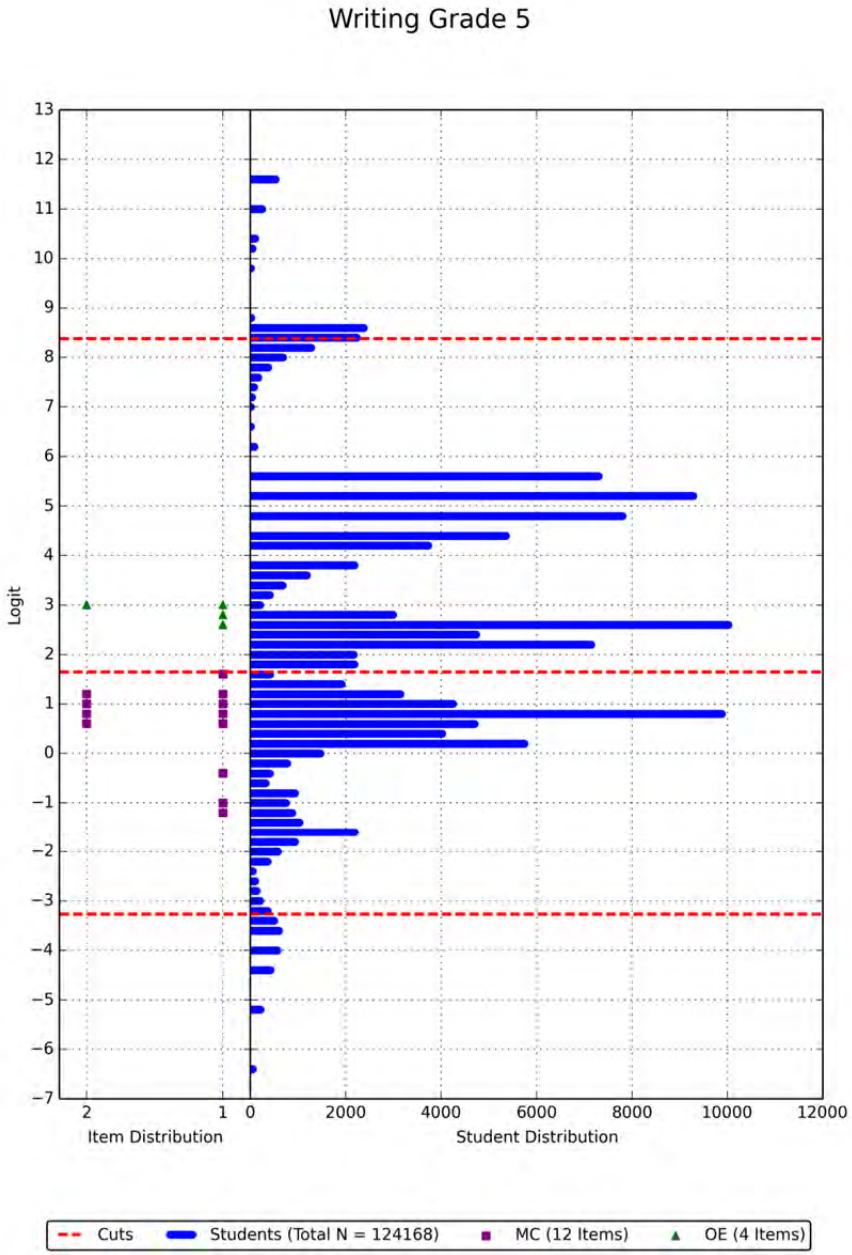


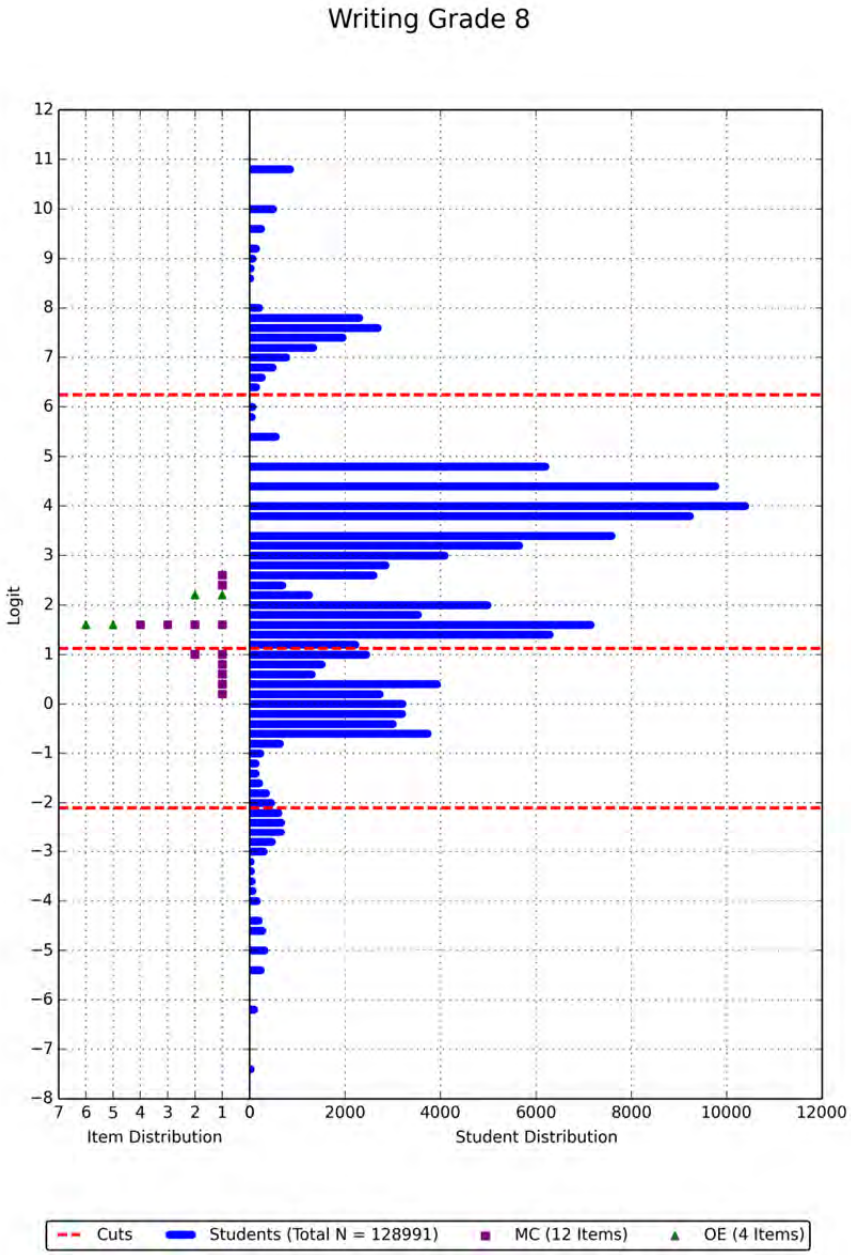
Reading Grade 8




Science Grade 4
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 126268)
MC (58 Items)
OE (5 Items)


Science Grade 8
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 129067)
MC (58 Items)
OE (5 Items)


Writing Grade 5
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 124168)
MC (12 Items)
OE (4 Items)


Writing Grade 8
Logit
Item Distribution
Student Distribution
Cuts
Students (Total N = 128991)
MC (12 Items)
OE (4 Items)

Chapter Thirteen: Performance Level Setting

No performance level setting events occurred this year. A history (dates and methodology) of prior performance level setting or validation events are provided in Table 13–1. Validation events utilized starting values; more details of this are provided in the table note. The resulting cut scores from those events are provided in Tables 13–2 and 13–3. For additional details about any given event, refer to the technical report for the year that the event occurred (Data Recognition Corporation, 2005, 2007a, 2007b, 2008a, 2008b).

Table 13–1. Performance Level Setting/Validation Event Dates and Methodology

Subject	Grade	Methodology	Validation?	Event Date
Reading	5, 8, 11	Bookmark	Yes[1]	Summer 2005
Mathematics	5, 8, 11	Bookmark	Yes[1]	Summer 2005
Writing	5, 8, 11	Body of Work	Yes[2]	Summer 2006
Reading	4, 6, 7	Bookmark	Yes[2]	Summer 2006
Mathematics	4, 6, 7	Bookmark	Yes[2]	Summer 2006
Reading	3	Bookmark	Yes[3]	Summer 2007
Mathematics	3	Bookmark	Yes[3]	Summer 2007
Science	4, 8, 11	Bookmark	No	Summer 2008

Note. 1. Starting values exponentially smoothed using post-equated 2005 results for Grades 5, 8, and 11.
2. Starting values exponentially smoothed using post-equated 2006 results for Grades 4, 6, and 7.
3. Starting values were determined using post-equated 2007 results for Grades 4

PSSA Cut Scores

Appendix M provides the Rasch ability and scaled score cuts for each PSSA test. For reader convenience, these are documented next in a different format. Table 13–2 documents the Rasch ability (Theta) cut scores for each grade and subject-area test. Table 13–3 documents the same but provides the cut scores on the scaled-score metric. PSSA scaling procedures are discussed further in Chapter Fourteen.

Table 13–2. PSSA Theta (θ) Metric Cut Scores by Grade and Subject Area

		θ Cuts		
Subject	**Grade**	**BB/B**	**B/P**	**P/A**
Mathematics	**3**	0.6192	1.6750	3.1501
	4	-0.1376	0.3124	1.3074
	5	0.1259	0.9373	1.8383
	6	-0.1377	0.4823	1.3723
	7	-0.2114	0.3636	1.2336
	8	-0.0637	0.5729	1.4854
	11	-0.1749	0.4888	1.4819
Reading	**3**	-0.3207	0.2205	1.8926
	4	-0.2215	0.4935	1.5635
	5	0.2133	0.9074	2.0241
	6	-0.2398	0.5452	1.4352
	7	-0.3170	0.4230	1.3780
	8	0.1376	0.7082	1.5301
	11	-0.0130	0.5777	1.5351
Science	**4**	-0.4280	0.2792	1.4560
	8	-0.2435	0.4091	1.3958
	11	-0.4390	0.7888	1.4960
Writing	**5**	-3.2644	1.6456	8.3756
	8	-2.0984	1.1216	6.2416
	11	-2.9230	-0.0830	5.6170

Note. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.

Table 13–3. PSSA Scaled-Score Metric Cut Scores by Grade and Subject Area

Subject	Grade	Scaled Score Cuts		
		BB/B	**B/P**	**P/A**
Mathematics	**3**	1044	1180	1370
	4	1156	1246	1445
	5	1158	1312	1483
	6	1174	1298	1476
	7	1183	1298	1472
	8	1171	1284	1446
	11	1167	1304	1509
Reading	**3**	1168	1235	1442
	4	1112	1255	1469
	5	1137	1275	1497
	6	1121	1278	1456
	7	1131	1279	1470
	8	1146	1280	1473
	11	1112	1257	1492
Science	**4**	1150	1275	1483
	8	1150	1275	1464
	11	1150	1275	1347
Writing	**5**	745	1236	1909
	8	914	1236	1748
	11	952	1236	1806

Note. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.

Chapter Fourteen: Scaling

The purpose of a scaling analysis is to create a score scale. Scaling is used to transform test score values onto a scale more easily interpreted by users. For the PSSA, the resulting scale scores will be used for score reporting and performance level classification. The PSSA classifies students into four achievement levels: Below Basic, Basic, Proficient, and Advanced.

HISTORICAL INFORMATION

Prior to 2000, when the PSSA design was heavily matrix sampling, estimating school-level scaled scores presented some statistical and psychometric challenges. The statistically correct method to compute the school-level scaled score often gave an answer different from what would be obtained by averaging student ability estimates. To avoid this source of misunderstanding, the school-level scores were made to equal the average of the appropriate students. The matrix sampling component of the design, together with items from the common section, was used at the academic standard category level to estimate relative strengths and weaknesses for schools.

The adoption of the Pennsylvania Academic Standards in 1999 brought structural changes to the PSSA that were implemented in 2000. Beginning with the new reporting design in 2000, subject-area total scores for students and schools were based exclusively on the common sections. Thus, greater emphasis was placed on ensuring that the common sections possessed optimal balance at the content-standard level and yielded reliable estimates of student-level abilities, as indicated by the standard errors. It was then possible to aggregate all scaled scores at the school, district, and state levels without resorting to any complex algorithms, making the results more understandable.

Since the original design of the PSSA was intended to produce school-level estimates only, the reporting metric was defined at the school level. For the 1996 base year, the mean of all schools in the norming sample was set at 1300 and the standard deviation at 100. The distribution to which these parameters applied was the subject-area scaled score with all schools weighted equally. Consequently, the expectation in the base year was for the state-level means to be near 1300 and for standard deviations to be near 100. The state mean of student-level scaled scores was, in general, somewhat different. This difference occurred because the mean of the school-level scores counted schools equally, regardless of size, while the mean of the student-level scores counted students equally.

Although it affected very few students, many administrators believed that their schools were being penalized by the presence of extremely low-scoring special-needs students who took the PSSA. A change was made to reduce the impact of these students on the overall school score. Namely, a minimum scaled score of 700 was implemented for all PSSA mathematics, reading, and writing tests beginning in 2002. The Grade 3 mathematics and Grade 3 reading tests as well as all grade levels of science were added after 2002. The minimum of 700 was not applied to these other tests in order to preserve other scale characteristics (e.g., the percentages in performance level categories recommended by standard setting participants and preventing students from achieving Proficient level through random response). Table 14–1 documents the minimum possible scaled scores for all PSSA tests. (There is no prescribed maximum scaled score or upper bound for the PSSA.)

Beginning with the design changes implemented for the 2000 PSSA, student-level scores were based on the common items only. This ensured that any decision made about students was done in the most equitable manner. School-level scaled scores for the subject areas were based on the mean of the student-level scaled scores. This ensured that the scaled scores used for school accountability directly reflected the student-level results. Thus, it is a simple matter to aggregate up to the school, district, and state levels.

As noted earlier, the PSSA scaled-score metric was originally anchored to the mean school-level scaled score for a base year and arbitrarily labeled as 1300. In the base year, the standard deviation of the school-level scaled scores was set to a value of 100. If school scores are approximately normally distributed, a scaled score of 1400, one standard deviation above the base year mean, means the school did better than about five-sixths of the schools in the base year. About two-thirds of the schools will have scaled scores between 1200 and 1400. About 16 percent of the schools will be below 1200. Scaled scores of 1000 and 1600 are three standard deviations from the mean, so scores more extreme than this are very rare.

These labels of 1300, 1200, etc., are completely arbitrary; they could have been called zero and one, or 100 and 110, or any other ordered pair without affecting any of the relationships among schools, years, students, or items. Changing the scale would simply be changing the labels on the axis of a graph without moving any of the points.

Setting the mean at 1300 and the standard deviation at 100 was originally chosen to avoid producing negative scores and so that scores on the PSSA would not be confused with the results from any other testing program. Users would acquire greater knowledge of the PSSA scales with experience.

SCALED SCORES

Individual student scores are reported as scaled scores. However, they are initially estimated as Rasch abilities (more information on the Rasch model is given in Chapter Twelve). Generally, scaled scores are preferred over Rasch ability values for reporting purposes. One issue is that Rasch ability values are on a scale that includes negative and decimal values. By transforming the Rasch ability values to scaled scores, all reported values can become positive integers. Scaled scores are usually obtained through some linear transformation of the Rasch ability values. The linear transformations used for the PSSA produce numeric values with three or four digits that are unit interval scaled scores. Each grade and subject has its own unique PSSA scaled score. Positive scores with no decimals make more sense to parents and students. Since Rasch ability values are comparative after linking to the base year, the transformed scaled scores have a common scale across years, even though the corresponding raw scores may differ. (Linking is discussed further in Chapter Fifteen.)

Essentially, PSSA scaled scores are derived through a two-step process. First, there is a nonlinear transformation that converts number-correct scores to Rasch ability logits. Second, a linear transformation is used to convert logits to scaled scores. These and some additional considerations (e.g., rounding rules), are discussed further below.

Definition of Scoreability

Answer documents are considered scoreable if they meet the criteria for inclusion in the data files (see Chapter Nine). For MC items, all omit (no response) and multiple marks (more than one response selected without machine-discernable erasures) were scored as zeroes. For OE items, all blank, foreign language, off-task, or unreadable responses were scored as zeroes.

WINSTEPS Scaling

Parameter estimates are derived using the WINSTEPS 3.54 computer program (Linacre & Wright, 2003), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE). WINSTEPS provides a conversion table that maps raw scores to logits (Rasch ability estimates). The logits are transformed to scaled scores as discussed below. Every year each test is scaled separately and then linked (see Chapter Fifteen).

ZERO AND PERFECT SCORES

WINSTEPS does not provide a direct ability estimate for zero (no points earned) or perfect (all points earned) raw scores. However, WINSTEPS has a default procedure for estimating such extreme scores, and this was used for the PSSA. Essentially, a fractional raw score (a value less than one) is added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores.

Linear Transformation Formulas

PSSA scaled scores are obtained through a linear transformation of the Rasch ability estimates ($\hat{\theta}$). Specifically,

$$SS = m\hat{\theta} + b,$$

where m is the slope and b is the intercept. The slopes and intercepts for deriving PSSA scaled scores are provided in Table 14–2. For reference purposes, the PSSA theta cut scores have been reproduced in this table as well.

Rounding

The linearly transformed scaled scores are generally rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down. However, at each performance level cut point, scores are rounded up (even if less than 0.50) if this action would put the rounded score into a higher performance level. As an example, the Grade 3 reading proficient cut score (in scaled-score units) is 1235. If there had been a raw score that converted to an unrounded scaled score of 1234.20, this scaled score would have been rounded up to 1235 for reporting purposes.

Lowest Obtainable Scaled Scores

Most PSSA mathematics, reading, and writing tests have a lowest obtainable scaled score (LOSS) of 700. The exception is Grade 3 mathematics and reading, which have LOSS values of 750 and 1000, respectively. For PSSA science, the LOSS values have been set to 1050 at Grades 4 and 11, and 925 for Grade 8. These LOSS values are documented in Table 14–1. See tables in Appendix N for LOSS *n*-counts.

Highest Obtainable Scaled Scores

A highest obtainable scaled score (HOSS) is not set for the PSSA. Thus, the maximum possible scaled-score value is allowed to float for each subject and grade. The upper bound varies from year to year, depending on the difficulty of the test form. Table 14–1 shows the maximum possible observed score for the current year's test. (Note: It may be that no student actually earned the maximum possible.) See tables in Appendix N for HOSS *n*-counts.

RAW-SCORE-TO-SCALED-SCORE TABLES

Raw-to-scaled-score tables can be found in Appendix N.

Table 14–1. PSSA Scaled Score Cuts for each Performance Level by Grade and Subject Area

Subject	Grade	Min	Scaled Score Cuts[1]			
			BB/B	B/P	P/A	Max[2]
Mathematics	3	750	1044	1180	1370	1914
	4	700	1156	1246	1445	2408
	5	700	1158	1312	1483	2460
	6	700	1174	1298	1476	2649
	7	700	1183	1298	1472	2561
	8	700	1171	1284	1446	2337
Reading	3	1000	1168	1235	1442	1932
	4	700	1112	1255	1469	2255
	5	700	1137	1275	1497	2312
	6	700	1121	1278	1456	2391
	7	700	1131	1279	1470	2319
	8	700	1146	1280	1473	2610
Science	4	1050	1150	1275	1483	2259
	8	925	1150	1275	1464	2213
Writing	5	700	745	1236	1909	2354
	8	700	914	1236	1748	2321

Notes. 1. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
2. Scaled Score Maximum Values are unique for the current year's test.

Table 14–2. PSSA Cut Scores (on θ metric), Intercept, and Slope by Grade and Subject Area

Subject	Grade	Θ Cuts			Intercept	Slope
		BB/B	B/P	P/A		
Mathematics	3	0.6192	1.6750	3.1501	964.24	128.81
	4	-0.1376	0.3124	1.3074	1183.52	200.00
	5	0.1259	0.9373	1.8383	1134.10	189.80
	6	-0.1377	0.4823	1.3723	1201.54	200.00
	7	-0.2114	0.3636	1.2336	1225.28	200.00
	8	-0.0637	0.5729	1.4854	1182.30	177.53
Reading	3	-0.3207	0.2205	1.8926	1207.70	123.80
	4	-0.2215	0.4935	1.5635	1156.30	200.00
	5	0.2133	0.9074	2.0241	1094.60	198.80
	6	-0.2398	0.5452	1.4352	1168.96	200.00
	7	-0.3170	0.4230	1.3780	1194.40	200.00
	8	0.1376	0.7082	1.5301	1113.70	234.82
Science	4	-0.4280	0.2792	1.4560	1225.65	176.75
	8	-0.2435	0.4091	1.3958	1196.64	191.54
Writing	5	-3.2644	1.6456	8.3756	1071.44	100.00
	8	-2.0984	1.1216	6.2416	1123.84	100.00

Notes. Linear Transformation Intercepts and Slopes are used to derive the Scaled Scores.
BB = Below Basic; B = Basic; P = Proficient; and A = Advanced

STRAND (REPORTING CATEGORY) SCORE STRENGTH PROFILE

Strength profiles for strand (reporting category) scores have been provided since 2009. The following process was followed to derive the profile:

- The items for each strand were identified.
- WINSTEPS runs were undertaken that anchored the logit values for each strand's items to get the raw-to-logit score table for each strand. This is sometimes referred to as fixed-item parameter scaling.
- The appropriate linear transformations (based on content and grade from Table 14–2) were applied to the logit values to derive strand scaled scores.

The strand scaled scores were categorized as follows: L=Low (equivalent to Below Basic and Basic); M=Medium (equivalent to Proficient); H=High (equivalent to Advanced). The maximum possible strand scaled score was converted to H in cases where no strand scaled score equaled or exceeded the Advanced scaled score cut. See Chapter Sixteen for more information on strand scores and how they are used in score reports.

Chapter Fifteen: Linking

In large-scale testing programs it is a common practice to have different item sets appear in test forms within and/or across years. Linking operational scores from the different test forms to a common scale of measurement ensures that all forms for a given grade and subject area provide comparable scores. Consequently, students are not given an unfair advantage or disadvantage because the particular test form they took is easier or harder than a test form taken by other students.

In order to account for the differences between different test forms, an application of an item response theory (IRT) linking methodology is required to place the item parameters and student ability estimates on the same scale as other forms. (As cautioned earlier, the success of these methods depends on how well the IRT assumptions are met.) The IRT model used for the PSSA is the Rasch Partial Credit Model (RPCM; Masters, 1982). Further descriptions of the RPCM are given in Chapter Twelve. Without linking analyses, the Rasch item calibrations for the new test items and associated scores on these items would be unique to the new test administration.

A chained linking design is utilized for the PSSA operational scores in mathematics, reading, and science. Here, scores from the new test form are linked to the scale of previous test forms. The chain originates from scale of measurement defined for each test's base form, which is used as the reference for calibrating all items in the item pool. The base form is usually the form upon which the cut scores were established (see Chapter Thirteen). When the item parameters from the new test are placed on the bank's scale, the resulting scaled scores for the new test form will be expressed on the same as the scale as defined by the base form.

This chapter begins with an explanation of specific PSSA design elements and associated analysis procedures. This is followed by a summary of the entire PSSA linking procedure. Some summary results are also provided. Procedures for mathematics, reading, and science are reviewed first. Writing is addressed at the end of the chapter.

PSSA Mathematics, Reading, and Science

The test designs for the operational PSSA mathematics, reading, and science assessments used multiple test forms that shared several common elements. The operational items are the same on all forms and for all students. Student total raw scores and scaled scores, as well as AYP reporting, are based exclusively on the operational items. In addition, each test form has a different set of nonoperational items (i.e., items that are not part of student scores). One such example is the embedded field-test items that are tested for possible inclusion in the PSSA item pool. Equating block items were included to bolster the linking design (discussed further below). The forms containing the nonoperational items were spiraled to ensure the items would have randomly equivalent samples of students responding to them. In summary, each test form for 2014 mathematics, reading, and science was composed of core operational, equating block, and field-test sections.

Data Collection Design

The item status codes used in the IDEAS item banking system are given in Table 15–1. For brevity, these codes are used for the remainder of this chapter.

The link between years was based on the core linking (LK) and equating block (EB) items. These items had been used in previous administrations (most often from the prior year). The LK and EB items were used in approximately the same context. That is, the items were not altered in any way, they appeared in about the same position in the booklet, and they were administered at about the same time of year.

The equivalence of student samples across years cannot be assumed. Further, the same item can have different properties in different years because of changes in the item's position or changes in the students' experiences. Consequently, between-year linking requires more scrutiny than within-year linking. This chapter focuses more on the linking between years.

The linking design employed for PSSA is often referred to as a common-item nonequivalent groups design. Test forms contained a set of common items, called core LK items or EB items, which served as anchors for linking test forms across years to a common scale. LK items were internal anchor items (i.e., they contribute to student test scores) and EB items were external anchor items (i.e., they did not contribute to student test scores). All EB items were MC items.

Since LK items were in the tests' operational sections, they were common across all test forms within a year. The majority of core MC LK items were selected from the previous administration. However, in some cases to meet the test blueprint, several core MC LK items were used from older administrations. Please note that for reading, all core MC LK items came from 2013. For mathematics and science, most core MC LK items were from 2013, but in several spots items from 2011, 2012, and 2013 were used.

The core OE LK items were typically selected from the previous administration. However, for mathematics grade 8 the core OE LK item came from 2012. With writing, core OE LK items were from 2012 and 2011 for grade 5 and from 2011 and 2013 for grade 8. To align both sets of standards, mathematics grade 4 did not have operational core OE LK items. With mathematics grades 5, 6, and 8, there was one, instead of two, core OE LK item. For those grades with fewer than two core OE LK items, the total numbers of core MC LK items were increased (Table 15–3).

The forms containing EB items were spiraled, and thus, randomly distributed across the student population. Reading used two EB item sets across forms. All EB items in the 2014 PSSA tests were pulled from the 2013 tests, except one item in mathematics grade 6 and another item in science grade 4.

The number of the LK/EB items differed depending on the subject and grade. These are summarized in Table 15–2. Specifically, there were 13 to 24 LK MC items and 0 to 2 LK open-ended items for all mathematics, reading, and science grade levels. The number of EB items shown in Table 15–2 is the total number of EB items across all forms. With reading, there were eight EB items with one passage per form. Half of the forms contained one set, while the rest of the forms contained the second set.[15] With mathematics and science, there were two EB items per form. In 2014, there were a total of 18 EB items and 24 EB items with mathematics and science, respectively, and a unique set of two EB items was distributed across forms.

[15] In other words, Forms 1, 2, and 3 had the same set of EB MC items, while Forms 4 and 5 shared a different set of EB MC items.

There were 40, 60, and 58 core MC items in reading, mathematics, and science, respectively. There were four core OE items in reading with the exception of Grade 3, which had two. There were three core OE items in mathematics. Science had five OE items.

Table 15–1. Item Status Codes in IDEAS

Item	Comments	Code in IDEAS
Core	Include core linking (i.e., anchor) items and unique core items	OP
Core Linking	Linking items in the core section which include MC and OE items	LK
Equating Block	All items in the EB are MC linking items	EB
Field Test	Items in the embedded FT section	FT

Table 15–2. 2014 PSSA Linking Designs: Mathematics, Reading, and Science

Subject	Grade	Number of Forms	Total Core		Core Links		EB*
			MC	OE	MC	OE	MC
Mathematics	3	9	60	3	18	2	18
	4	9	60	3	24	0	18
	5	9	60	3	20	1	18
	6	20	60	3	20	1	18
	7	20	60	3	17	2	18
	8	20	60	3	20	1	18
Reading	3	9	40	2	14	1	16
	4	9	40	4	14	2	16
	5	9	40	4	14	2	16
	6	20	40	4	13	2	16
	7	20	40	4	13	2	16
	8	20	40	4	13	2	16
Science	4	12	58	5	16	2	24
	8	12	58	5	16	2	24

* 2 EB items per form for mathematics and science. For reading, there was one passage with 8 EB items per form.

LINKING METHOD FOR PSSA MATHEMATICS, READING, AND SCIENCE

The first step in linking the 2014 PSSA to the base scale was to express all 2014 item parameters on the same scale. This was accomplished by calibrating all OP (including LK) MC items with master core and paper students. Then the OP MC items were anchored to calibrate EB MC items with all forms and paper students. Next, the resulting MC item parameters were anchored in WINSTEPS while all OE items in the operational section (including OP LKs) items were calibrated including paper students.[16] At this point all OP and EB item parameters were on a unique scale for 2014. Between-year linking was required to place these items on the bank scale.

Between-year linking utilized the 2014 LK and EB item parameters and their banked counterparts. The scale transformation methodology used for PSSA is the mean-shift procedure. This has been the procedure employed by the PSSA program for some time. After evaluating the robustness of the link by identifying items that did not maintain their relative difficulty across years, the difference between the 2014 and banked parameters was then determined. The mean of the differences was then used to statistically adjust the 2014 parameters to the bank scale. The final (linking) item parameters were then used to estimate student abilities, which were, in turn, transformed to scaled scores. (Transformation formulas are provided in Chapter Fourteen.)

Rater Drift

Before the final mean-shift value was determined, a rater-effect adjustment was applied to the OE LK items. All OE linking items were in the Core section (LK OE). Students' responses from the previous administration (n = 1,000 per item) for the OE linking items were selected for the rater drift study (DRC jointly stratified by point value and on ability). The selected responses were scored by 2014 raters. Thus, the selected students' responses had scores from previous year and 2014 raters and the difference between them was used to adjust for the rater effect. See Tables 18–11 through 18–13 (see Chapter Eighteen) for the correlations between the old and new scores for these OE LK items.

SUMMARY OF THE PSSA LINKING PROCEDURE

The following steps outline the linking procedure. It should be noted that the first two steps are actually item calibration, which is referred to as within-year linking in this chapter.

1. Calibrate all operational (OP) multiple-choice (MC) items in an unanchored Winsteps run:
    - **a.** Include only the Master Core and paper students with completeness status "01" and "00" (all students with MC responses).
    - **b.** Include all MC items in the core operational section (OP MC).
    - **c.** Do not include any equating block (EB) items.
    - **d.** Do not include any field-test (FT) items.

[16] No field-test items were included in any of these calibrations. FT items were calibrated after the operational linking by anchoring all OP and EB items. This placed all FT items on the bank scale.

2. Calibrate selected multiple-choice (MC) items in an anchored run:

- **a.** Include all forms, but only paper students with completeness status "01" and "00" (all students with MC responses).
- **b.** Include all MC items in the core operational section (OP MC).
- **c.** Include all equating block (EB) items.
- **d.** Do not include any field-test (FT) items.
- **e.** Fix all OP MC items from Step 1.

3. Calibrate selected open-ended (OE) items in an anchored run by putting them on the MC item scale from Step 3:

- **a.** Include all forms, but only paper students.
- **b.** Include all OE items in the Core section (OP OE).
- **c.** Do not include any FT items.
- **d.** Fix all MC items from Step 2.

4. Compute the rater-effect constant for each OE-Link item:

- **a.** Pull sample responses from the previous year (N ~ 1,000 students)[17] and create a data file including the selected students' MC and OE response scores (from the previous year's raters).
- **b.** Have the current year's raters score the selected OE responses.
- **c.** Calibrate the difficulty parameters for OE items based on the previous year's scores. (This is done separately for each OE item.)
  - i. Calibrate all MC items (from the previous year's test) in an unanchored run using the data file from Step 4.a.
  - ii. Calibrate each OE item separately using an anchored run for each item.
- **d.** Compute the rater-effect constant for each OE-Link item based on OE parameters from Step 4.c.ii.
  - i. Use current and previous year's rater raw score means as the true/expected raw scores.
  - ii. Using expected score distribution conditional on ability (item characteristic curve) for the previous year's rater scores, determine the two ability values for the two expected raw scores (i.e., the current and previous year's rater score means).
  - iii. The rater-effect constant is the difference between the two abilities.

[17] This sample is generally stratified on previous year's total test scores; however, a minimum of 100 responses are selected for each possible score point.

5. For each OE linking item, adjust the item parameter estimate obtained in Step 3 by the Step 4 Value—remove the rater effect:

a. Each OE linking item (LK OE) has a specific rater-effect adjustment value.

6. Evaluate the stability of the linking items using Robust *Z*:

a. Include all core linking (LK) items—LK MC and LK OE.

b. Include all EB items.

c. LK OE item parameters should be obtained from Step 5.

d. Calculate Robust *Z* for each item in the linking.

Once the above calculations were made, the following guidelines were used in determining possible sets of linking items used for the equating:

e. Items with an absolute value of Robust *Z* exceeding 1.645 may be considered for exclusion.

f. No more than 20 percent of the pool of linking items may be considered for exclusion.

g. The ratio of the standard deviations of previous year and current Rasch difficulties should be in the 90 to 110 percent range.

h. The correlation of previous year and current year Rasch difficulties is greater than 0.95.

Final decisions about the linking items were made in the national technical advisory committee (TAC) meeting in collaboration with PDE and DRC staff following these rules:

i. Drop items that DRC identified as having a large Robust *Z* and were out of sequence because they were pulled from a separate FT form.

j. If an item has been changed in any way from the previous year, it may no longer be used for linking.

Scatterplots of the linking item difficulties (logits) were constructed (i.e., the current year values were plotted against those from the prior year). Ideally, these plots should have a strong linear trend. Items straying from the trend line did not perform in the same way in both years. As noted above, items that departed significantly from this were further evaluated. The scatterplots with final LK/EB item sets are shown in Figure 15–1.

7. Calculate the mean shift over MC and OE linking items using global item difficulties (weighted by number of score points) for OE items:

a. Include all core linking (LK) items—LK MC and LK OE.

b. Include all EB items.

c. Weight LK OE items by maximum possible score.

8. Apply the mean shift to the item parameters calibrated in Steps 2 and 3:

a. All OP items (OP MC + OP OE).

b. All EB items.

9. Scale the operational test by fixing all operational (OP) items obtained in Step 8:

a. Include all students (all forms and all modes)

b. The result from this step is a Raw-to-Logit (Rasch Ability) table.

10. Apply the appropriate linear transformation to the logit values to derive the scaled scores and SEMs:

a. The result from this step is a Raw-to-Scaled-Score table.

RESULTS SUMMARY

Table 15–3 shows the number of linking items and the shift parameters associated with those over the two years, and the correlation of item difficulties across years for each grade/content area. At first glance, some of the mean shift values may appear large. However, the shift constants are being applied to parameter estimates from Step 1 in the equating process (where the mean of the unanchored MC items is fixed at zero). The adjustment needed to place the Step 1 estimates on the current scale can be large in magnitude as it must take into account multiple factors (e.g., weighting in the case of the writing test, rater drift, changes in student ability since the base-year administration, and differences in difficulty).

Table 15–3. Summary Data for Linking Items

Subject	Grade	Final Counts MC	Final Counts OE	2013 Shift	2014 Shift	2014 Correlation
Mathematics	3	36	2	0.4890	0.9549	0.9840
	4	42	0	0.0662	-0.1389	0.9738
	5	38	1	0.4843	0.5360	0.9702
	6	38	1	0.0958	0.0759	0.9807
	7	35	2	0.1517	0.3472	0.9810
	8	38	1	0.1735	0.1220	0.9549
Reading	3	30	1	-0.1306	-0.1148	0.9925
	4	30	2	-0.0434	-0.1087	0.9897
	5	30	2	0.0808	-0.0128	0.9912
	6	29	2	-0.1493	-0.0840	0.9884
	7	29	2	0.0463	-0.0471	0.9818
	8	29	2	0.7172	0.5676	0.9834
Science	4	40	2	0.1013	0.0215	0.9828
	8	40	2	-0.2274	-0.3202	0.9484
Writing	5	12	4	1.5596	2.1067	0.9743
	8	12	4	1.8092	1.7502	0.9512

Note. No item was dropped.

Appendix O provides the statistics for the linking items used. The previous and current values for item sequence, *p*-values, and logits are also provided. Appendix Q provides the mean raw and scaled-score points across years. Together, these appendices provide a summary of how the items and test changed across years.

VISUALIZATION SUPPLEMENT

Linking analyses require considerable scrutiny given their critical role in reporting student performance. Items repeated over administrations can behave differently because of contextual changes or changes in the students' experiences. In addition to evaluating the linking items using Robust *Z* analyses, the graphs in Figure 15–1 provide a visualization to help identify extreme differences over different test administrations. The calibration data file described in Chapter Nine was used to construct these plots.

Graphs

This technical report uses figures to help one visualize the across-year differences in linking items for mathematics, reading, and science at each grade. This section presents four types of figures, three of which illustrate the stability between the old (banked) and new (2014) item data:

1. Scatterplot of new-year *p*-values (2014) on old-year *p*-values (2013 generally).
2. Scatterplot of new-year logits (2014) on old-year logits (2013 generally).
3. Scatterplot of old and new *p*-values on new logits.
4. Test Characteristic Curves (TCCs) for the linked score distribution.

All four plots are presented for each grade and subject-area test. It should be noted that some of the linking items were not used to determine the final linking adjustments. These items are not included in the following scatterplots. As a consequence, some graphs will have fewer MC and/or OE items than expected. Each plot is described further below, and Grade 3 mathematics results are considered as an example of each.

NEW-YEAR *P*-VALUES ON OLD-YEAR *P*-VALUES

The top left-hand plot in Figure 15–1 describes the relationship between the item *p*-values for the two years. The data points in these plots should have a clear trend where the vertical axis values rise as the horizontal axis values increase (i.e., as one moves from left to right). If the *p*-values for both years were correlated at 1.0, the relationship would be expected to fall on a straight line. Generally, linking items are not perfectly stable across years, so some scatter is expected. As an example, the plot for Grade 3 mathematics shows excellent across-year stability. The extent to which the trend does not pass through the origin indicates a change in student performance.

Many test score users are familiar with the *p*-value metric, which is why these charts are provided. However, the logit charts discussed below have advantages for visualizing this trend data.

NEW-YEAR LOGITS ON OLD-YEAR LOGITS

The top right-hand plot in Figure 15–1 focuses on the logit difficulties. It shows more clearly the relationship between new- and old-year item difficulties. Logit plots often provide more defined trends, but still can present varying degrees of scatter and in some instances reveal outlier data points. As with the associated *p*-value plot, this figure for Grade 3 mathematics suggests excellent across-year stability (with a very strong, but not perfect relationship).

OLD- AND NEW-YEAR *P*-VALUES ON NEW-YEAR LOGITS

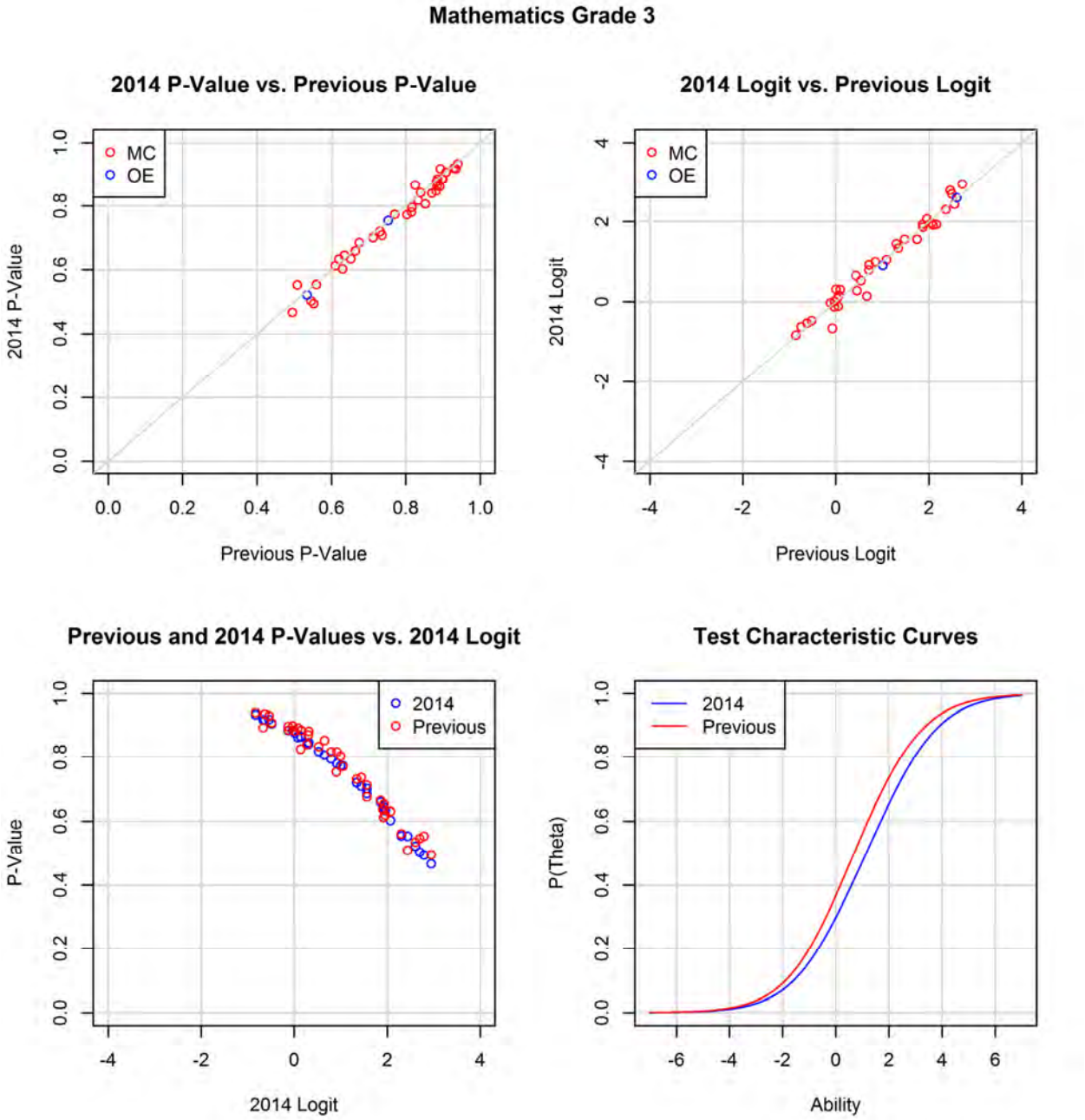
Plotting *p*-values against logit difficulties across years is not as reliable as it is within a year. Using spiraled forms within a year, a given *p*-value will translate to a given logit regardless of the form on which it is used, within the limits of statistical precision. Within a year, the *p*-values-on-logit plot should be a single curved line. The corresponding between-year plots could have separate lines for each year. The difference between the two lines is a reflection of the adjustment (positive or negative) that is required to link the two item sets.

To bolster the number of linking items, different sets of EB linking items were included on different forms. Because the forms were spiraled within classrooms, the samples generated are randomly equivalent and the same *p*-values would be expected to translate into roughly the same logit, with some random variation expected. This is the case with the Grade 3 mathematics data as the relative smoothness of this curve indicates very good agreement among the forms.

TEST CHARACTERISTIC CURVES

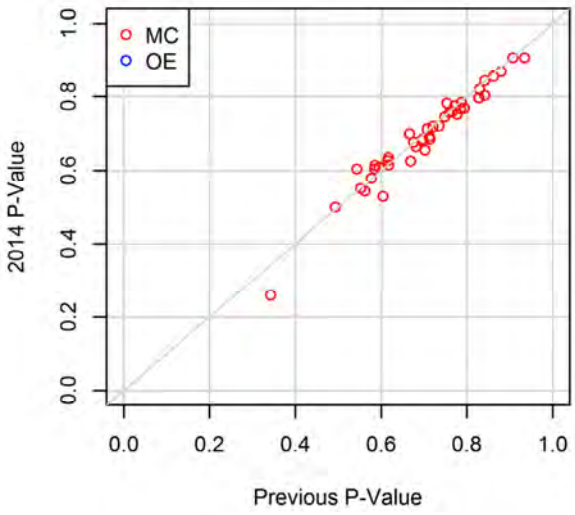
The old and new-year Test Characteristic Curves (TCCs) by grade and subject are shown in the bottom right-hand plot figures. The TCCs show the similarity between the new- and old-year tests in terms of difficulty in the logit metric (new-year results are for the final, linked values). Assuming equal numbers of items for the two years, curves that are close to being coincident will translate into similar raw score cut points. With extreme differences in test difficulties, some loss of precision and reliability may result. However, this is generally not evidenced in the figures, which display a close match across years. For Grade 3 mathematics the TCCs were essentially coincident.

Figure 15–1. Item Stability Plots and Test Characteristic Curves

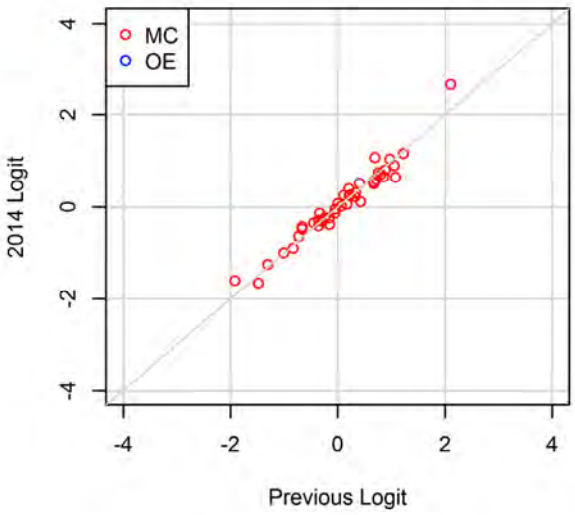


Mathematics Grade 4

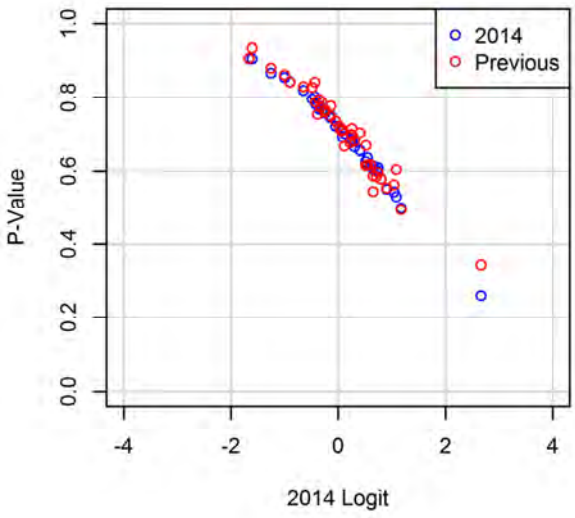
2014 P-Value vs. Previous P-Value



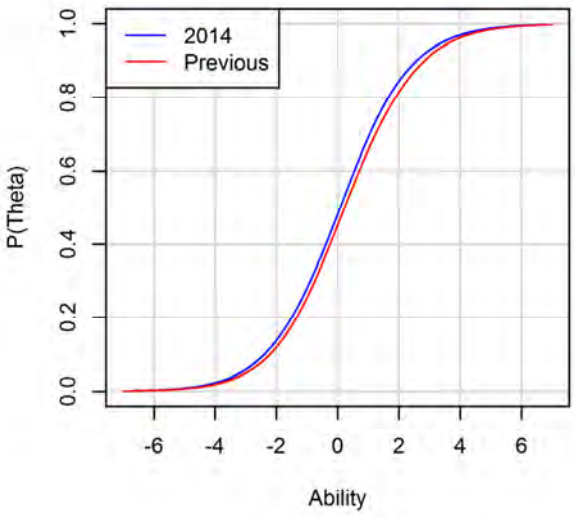
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

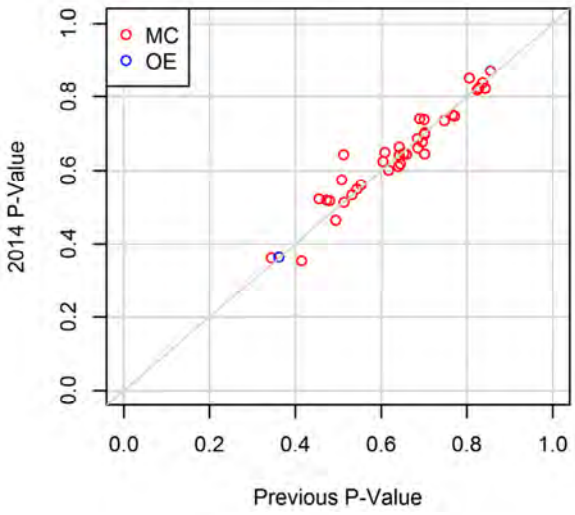


Test Characteristic Curves

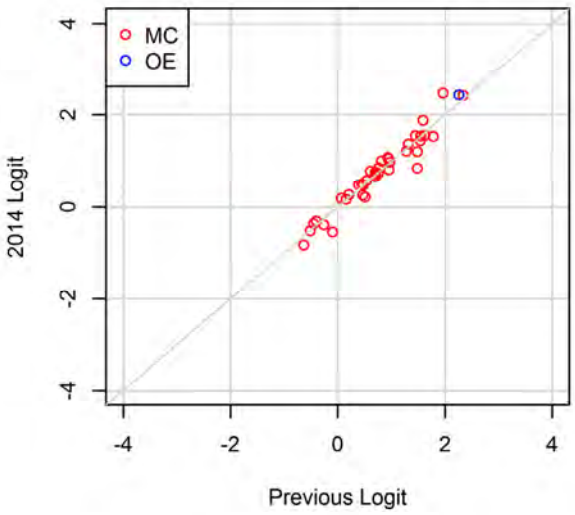


Mathematics Grade 5

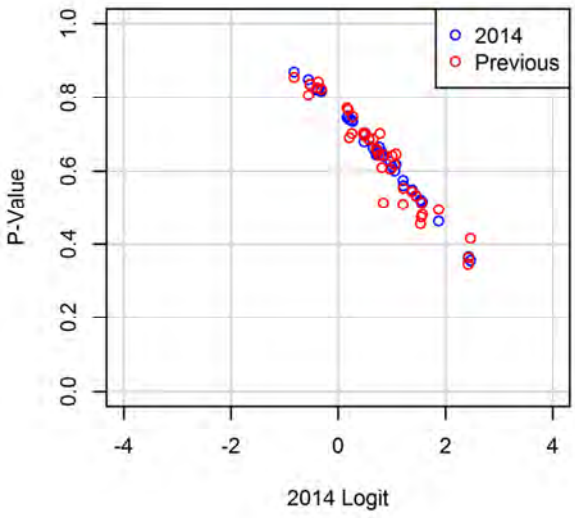
2014 P-Value vs. Previous P-Value



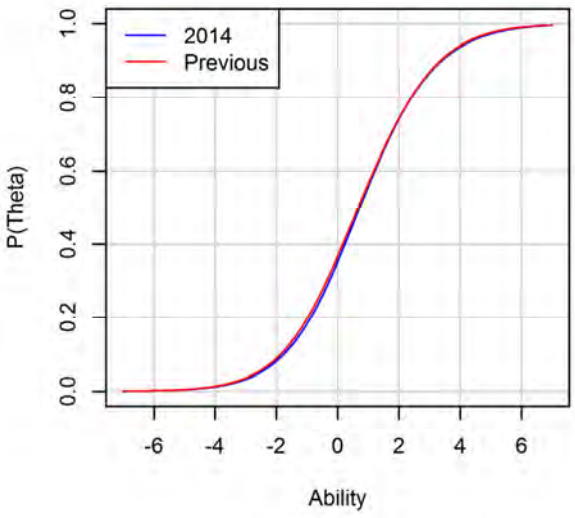
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

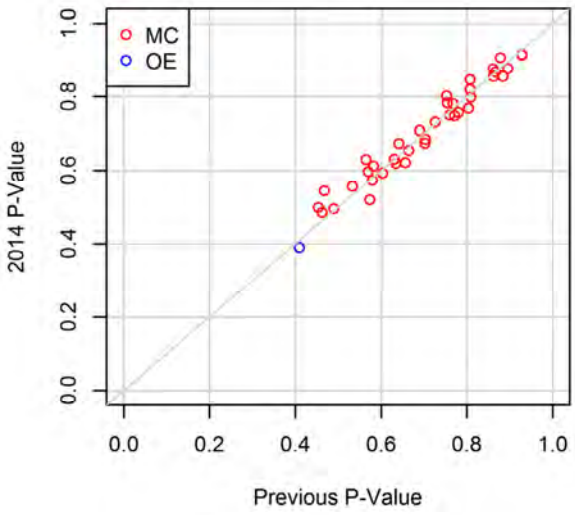


Test Characteristic Curves

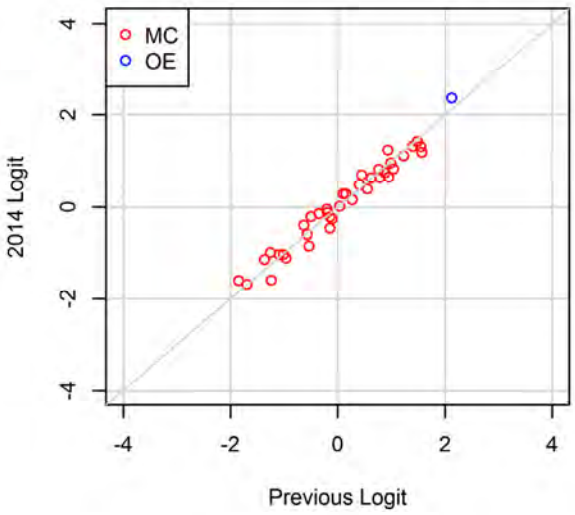


Mathematics Grade 6

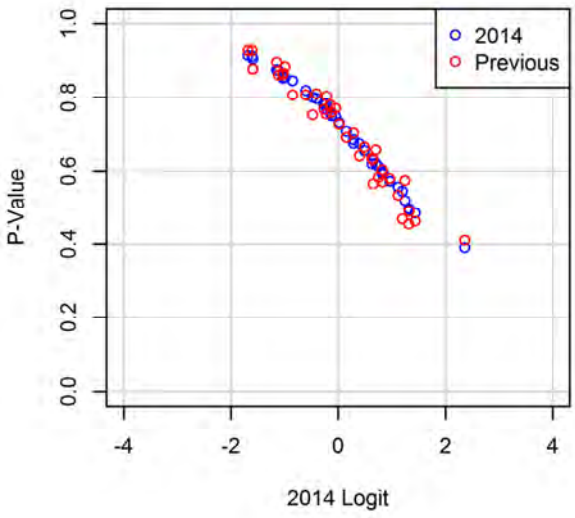
2014 P-Value vs. Previous P-Value



2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit



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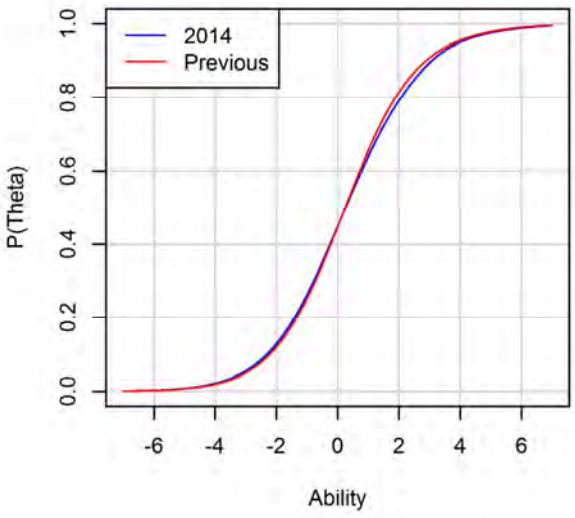
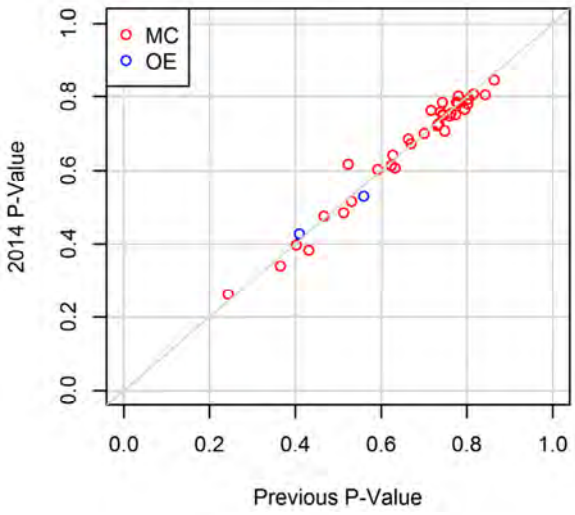
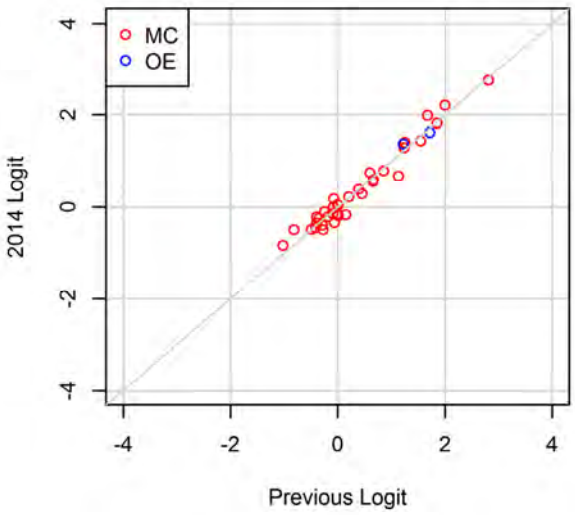


Mathematics Grade 7

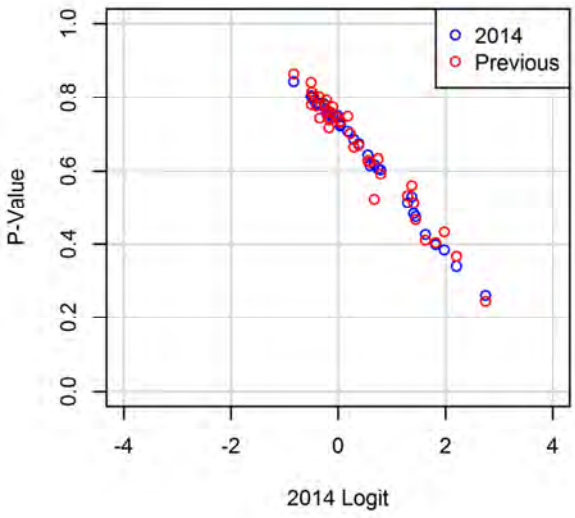
2014 P-Value vs. Previous P-Value



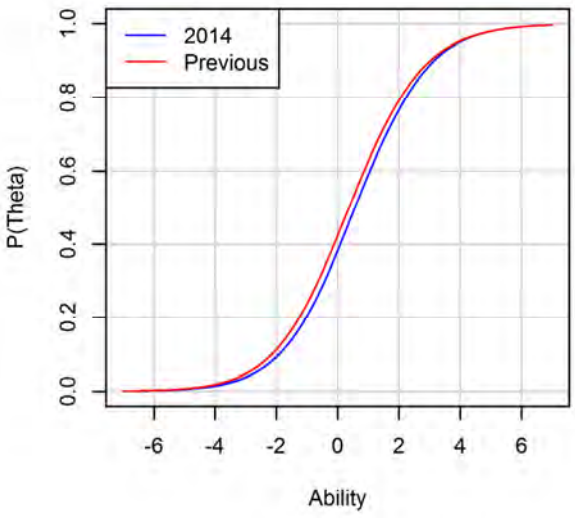
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

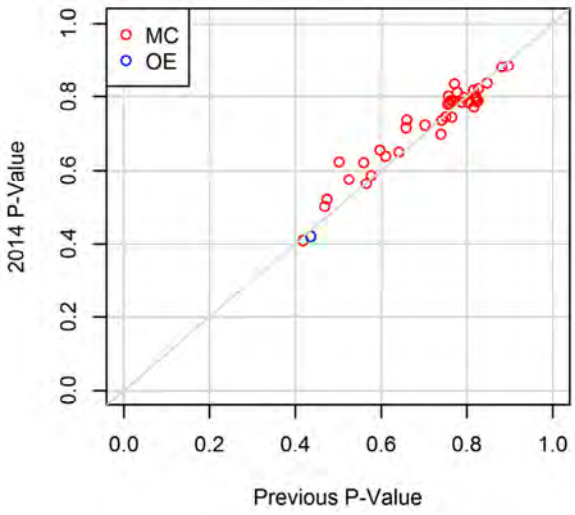


Test Characteristic Curves

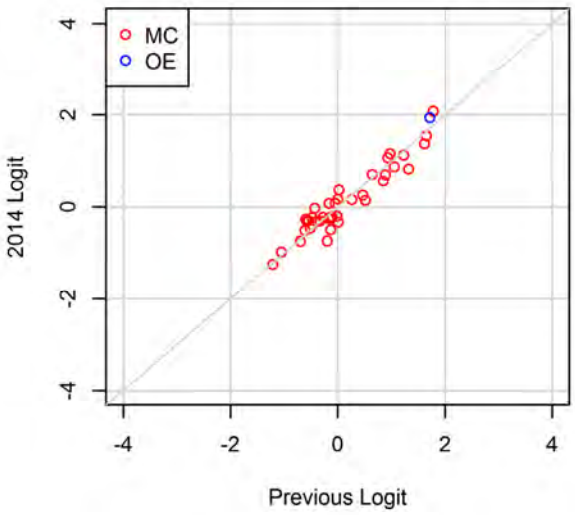


Mathematics Grade 8

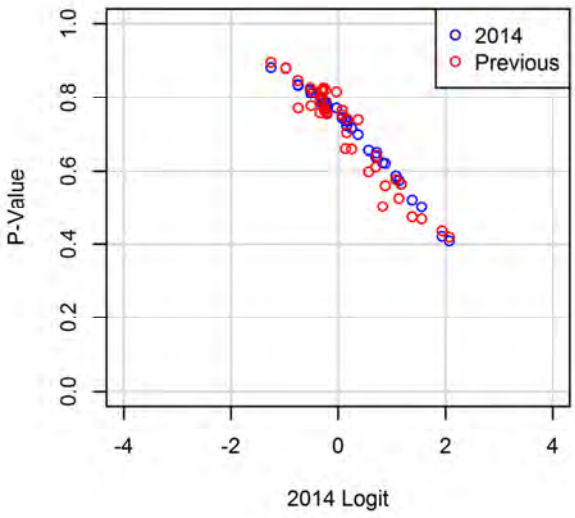
2014 P-Value vs. Previous P-Value



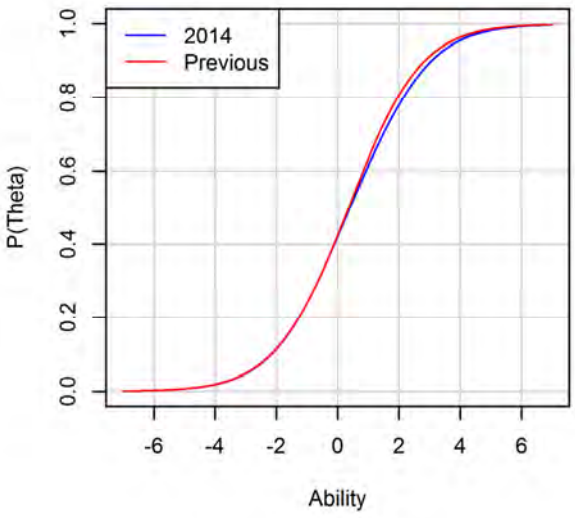
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

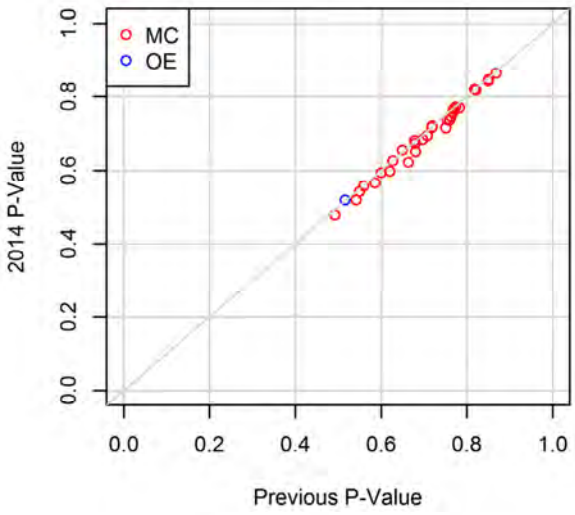


Test Characteristic Curves

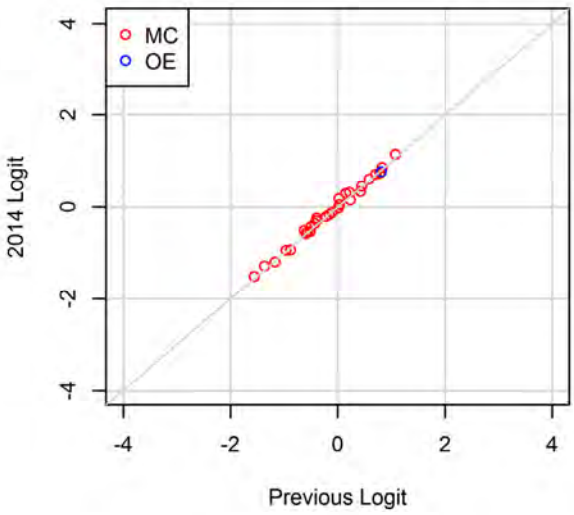


Reading Grade 3

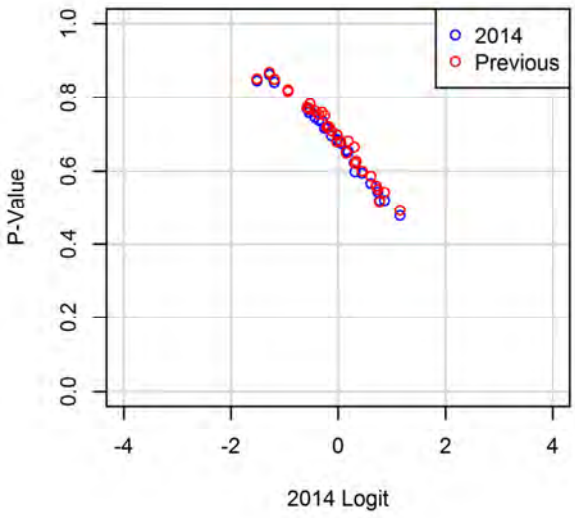
2014 P-Value vs. Previous P-Value



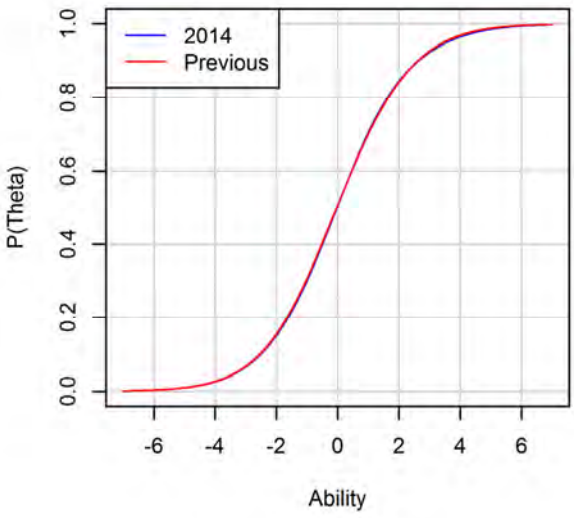
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

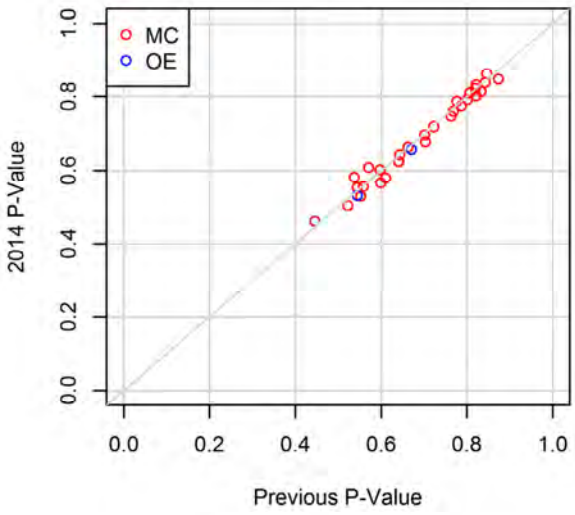


Test Characteristic Curves

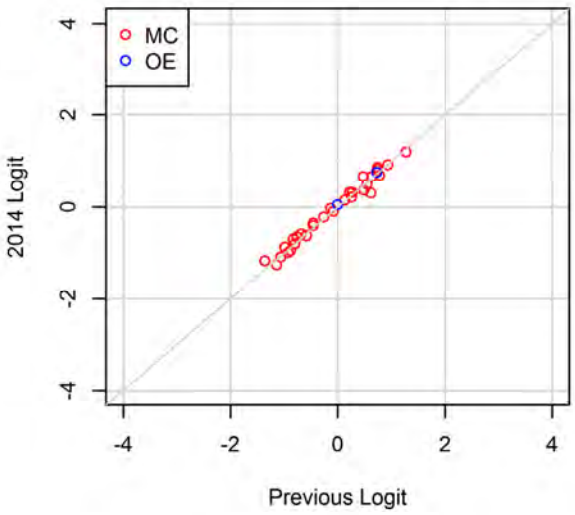


Reading Grade 4

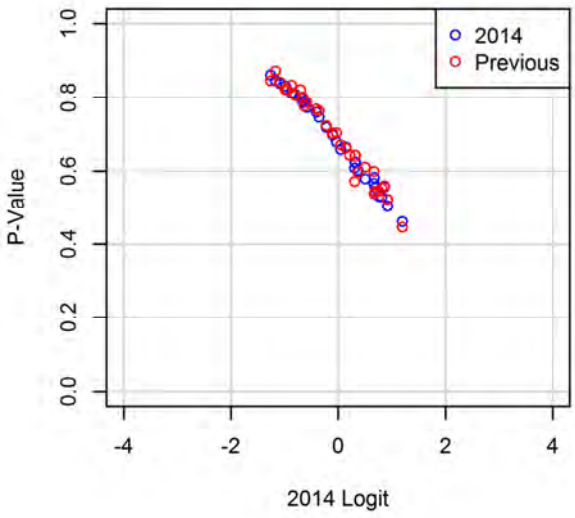
2014 P-Value vs. Previous P-Value



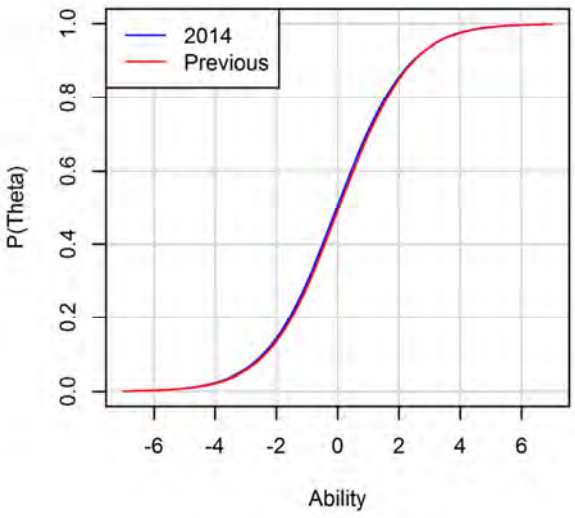
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

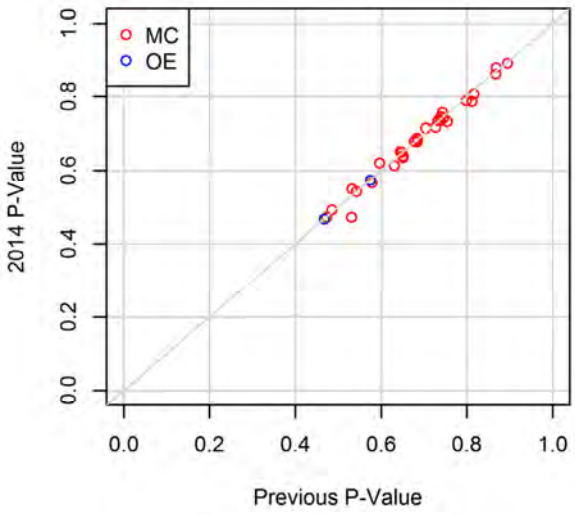


Test Characteristic Curves

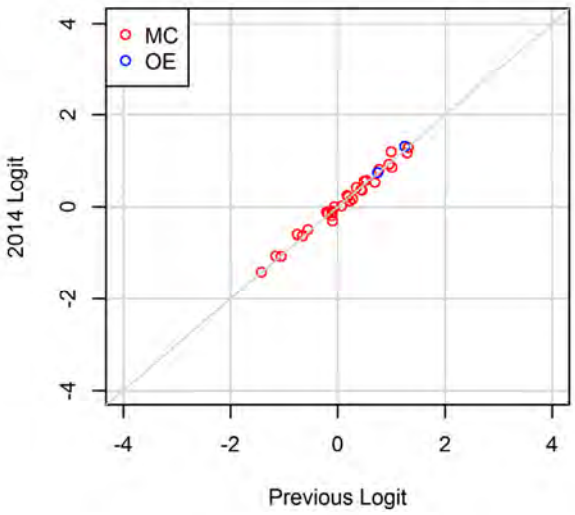


Reading Grade 5

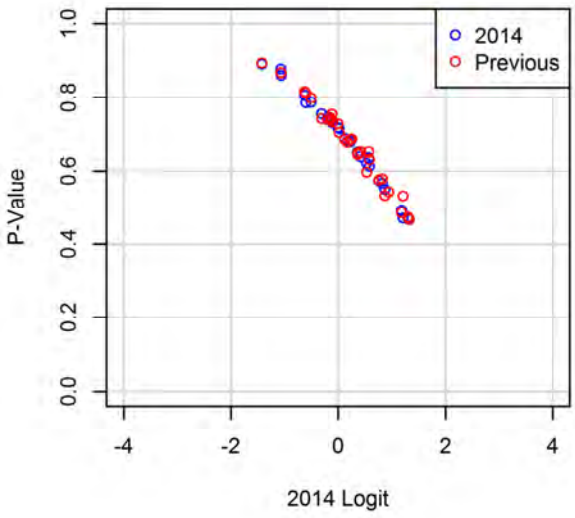
2014 P-Value vs. Previous P-Value



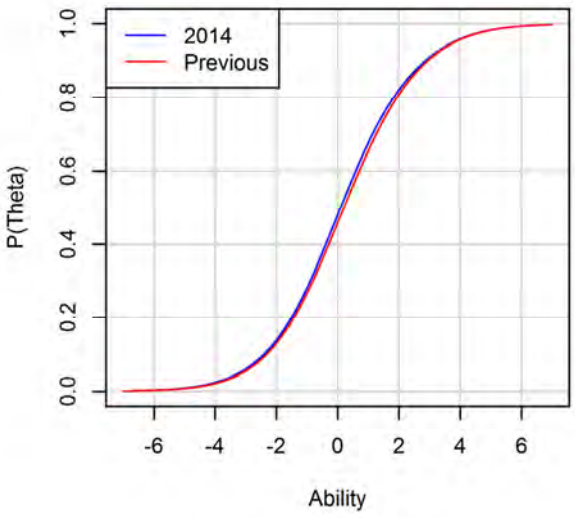
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

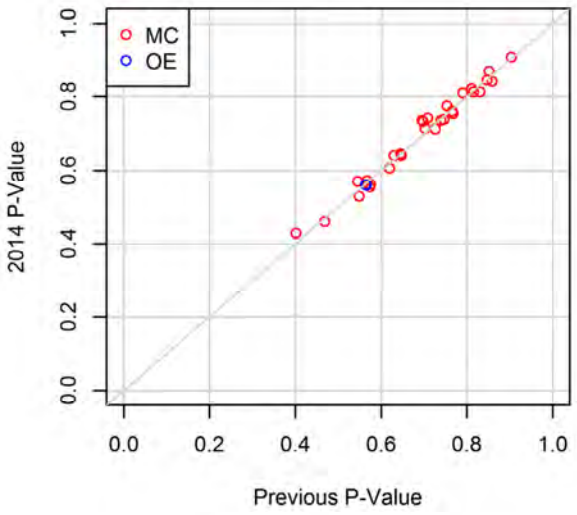


Test Characteristic Curves

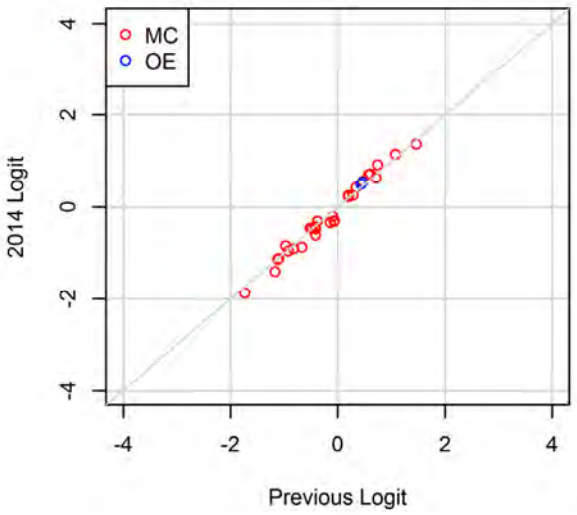


Reading Grade 6

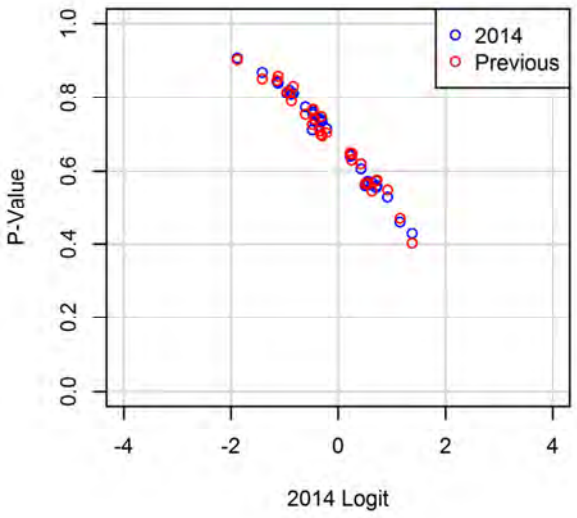
2014 P-Value vs. Previous P-Value



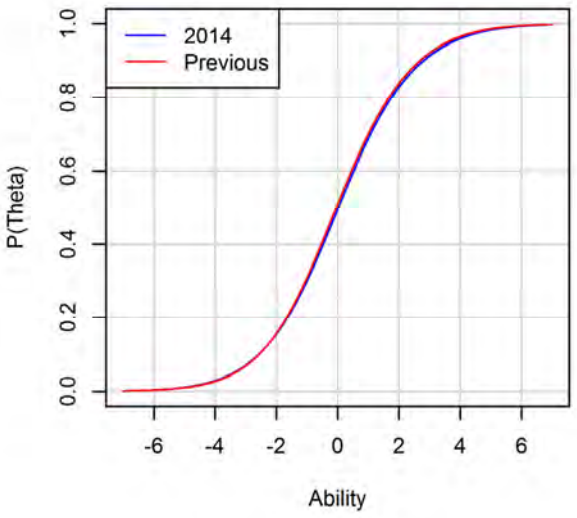
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

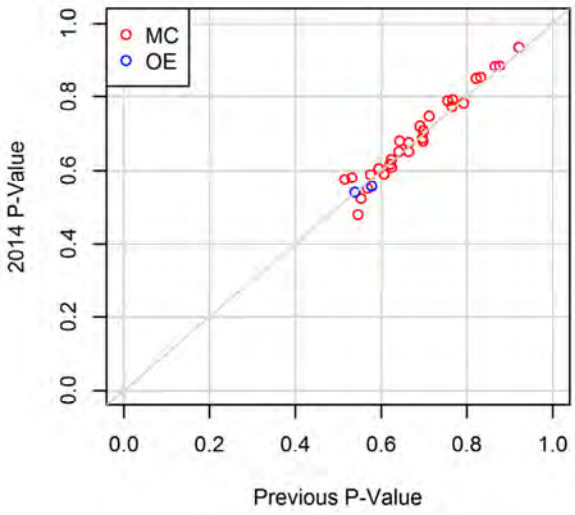


Test Characteristic Curves

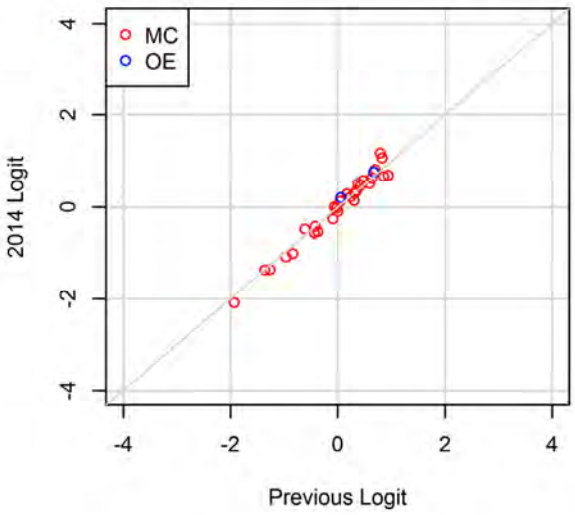


Reading Grade 7

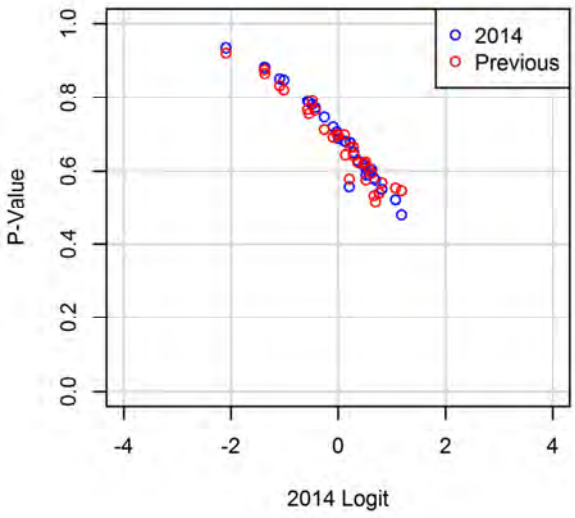
2014 P-Value vs. Previous P-Value



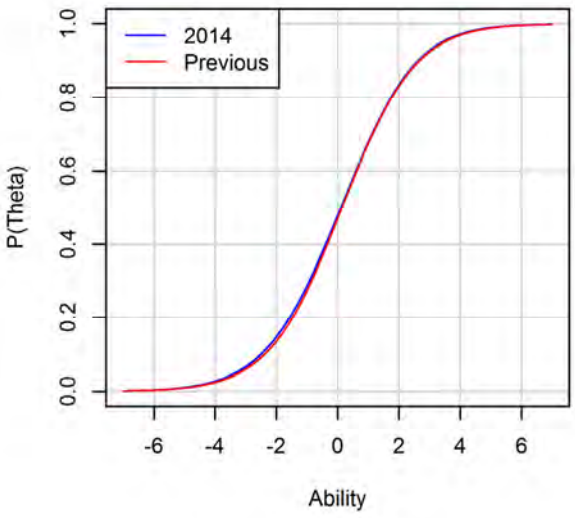
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

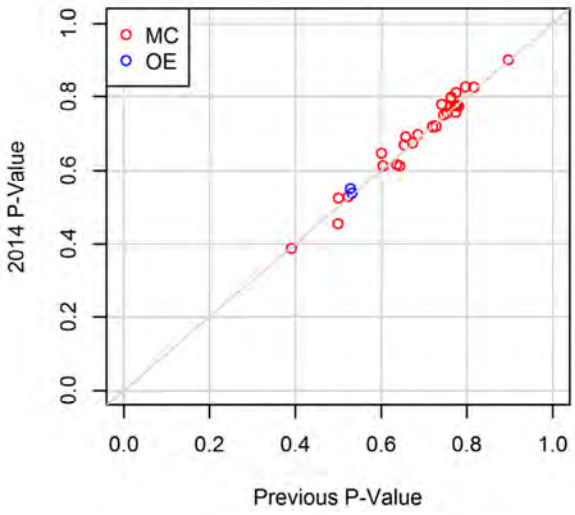


Test Characteristic Curves

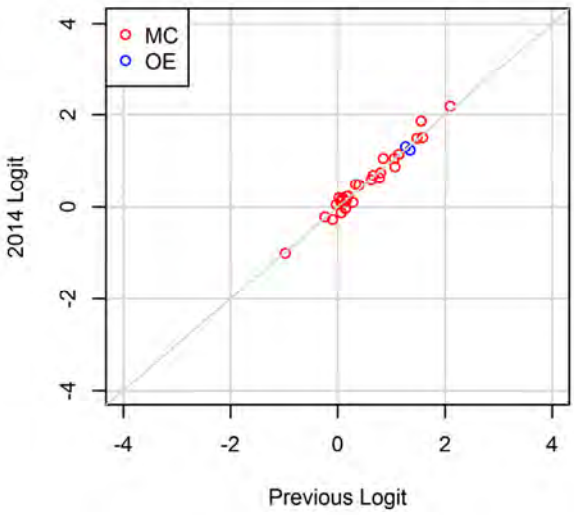


Reading Grade 8

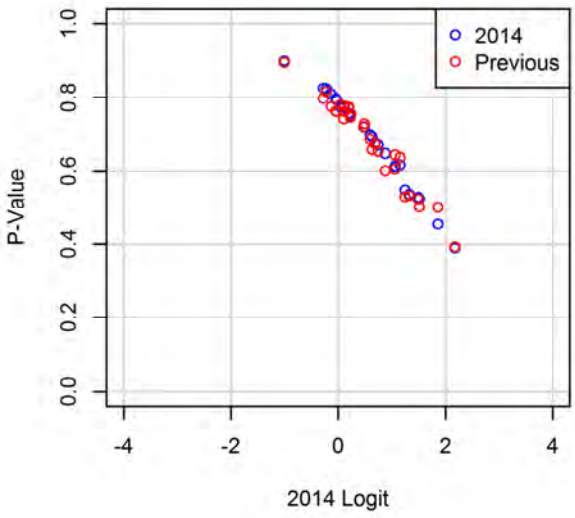
2014 P-Value vs. Previous P-Value



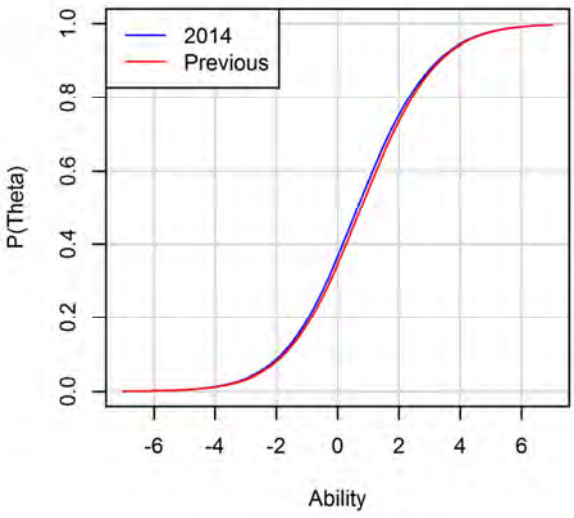
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

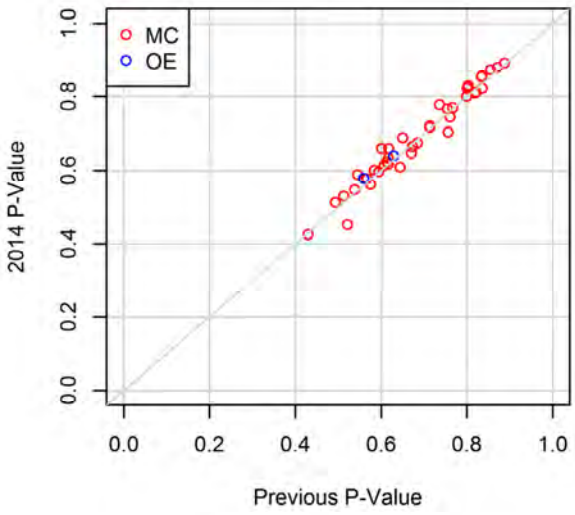


Test Characteristic Curves

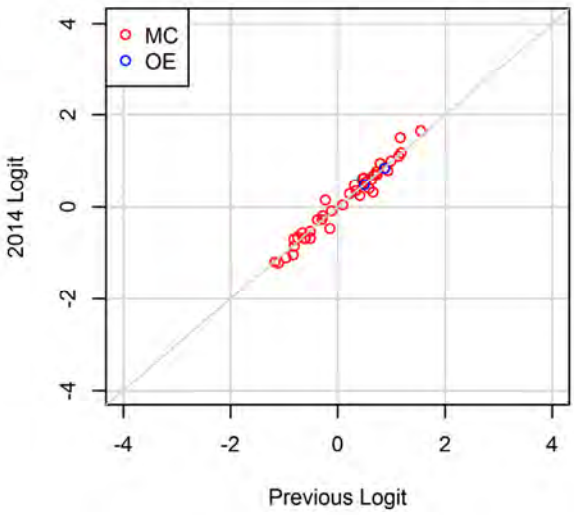


Science Grade 4

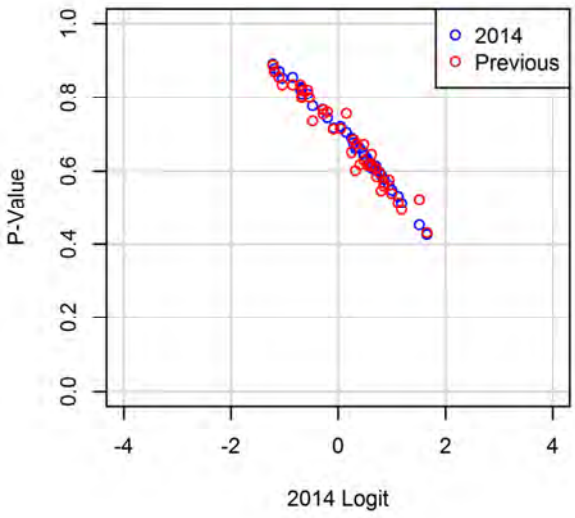
2014 P-Value vs. Previous P-Value



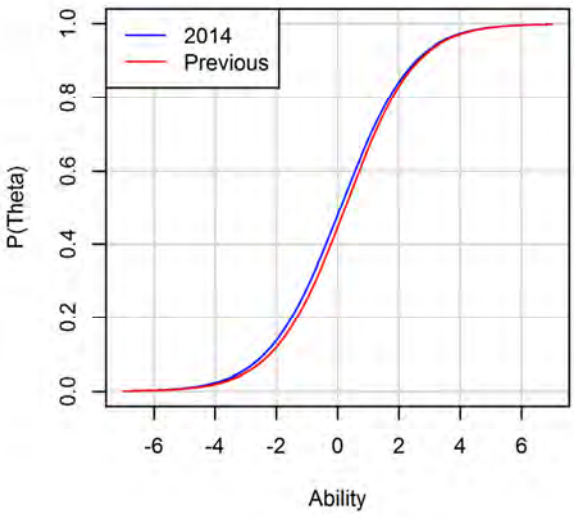
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit

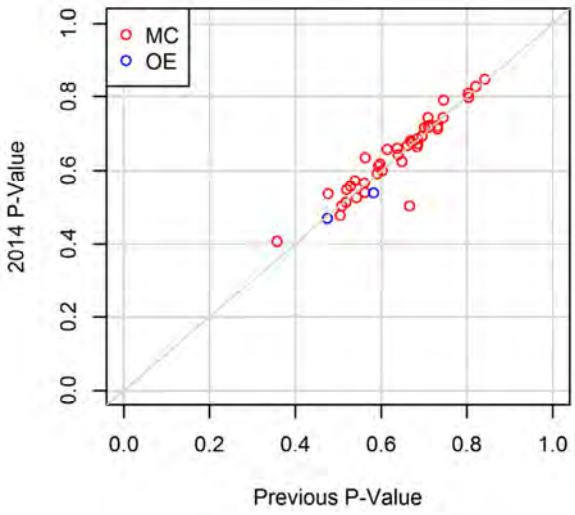


Test Characteristic Curves

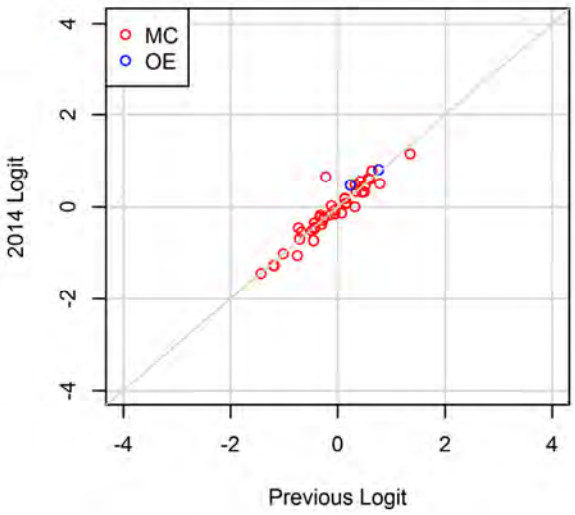


Science Grade 8

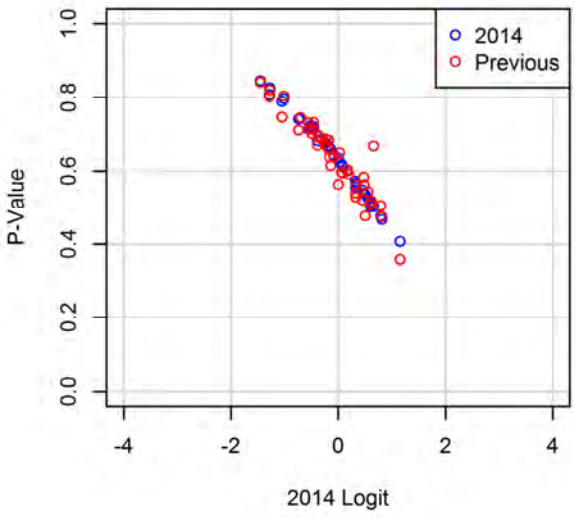
2014 P-Value vs. Previous P-Value



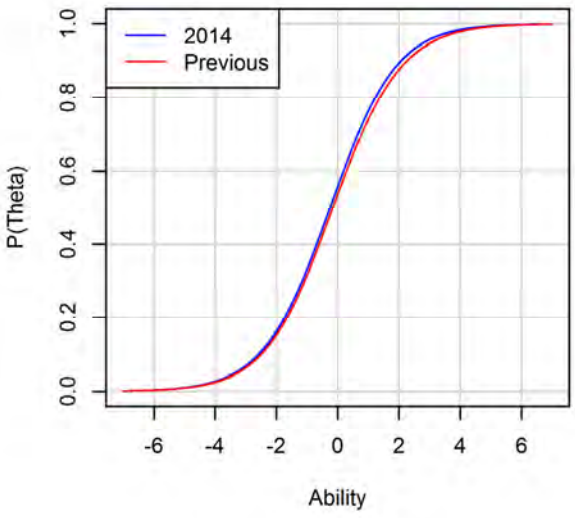
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit



Test Characteristic Curves



WRITING

In 2014, the writing exams were composed of only one form for grades 5 and 8. The form contained 12 core operational revising and editing (R&E) MC items and two core operational writing prompts (WP). There were no FT items administered with writing in 2014. As with previous years, student scores were based on the core operational MC and core operational WP items. Table 15–4 summarizes the 2014 PSSA writing equating design.

Raw-to-scaled-score tables for the writing tests were derived somewhat differently from the other subject areas. Essentially, all operational items were treated as core linking items and there were no EB items.[18] However, the actual linking procedure is essentially the same as described at the beginning of this chapter (i.e., prompt scores get a rater effect adjustment; prompt scores are weighted accordingly when computing the mean shift; and the mean shift is applied to all item parameter estimates before scoring tables are derived in a fully anchored WINSTEPS run).

Table 15–4. 2014 Writing Test Design

Grade	Core			FT		Total # (MC/WP)	Total # Core Points	Forms
	Unique Core MC	Core Linking MC	Core Linking WP	MC	WP			
5	0	12	2	0	0	12/2	100	1
8	0	12	2	0	0	12/2	100	1

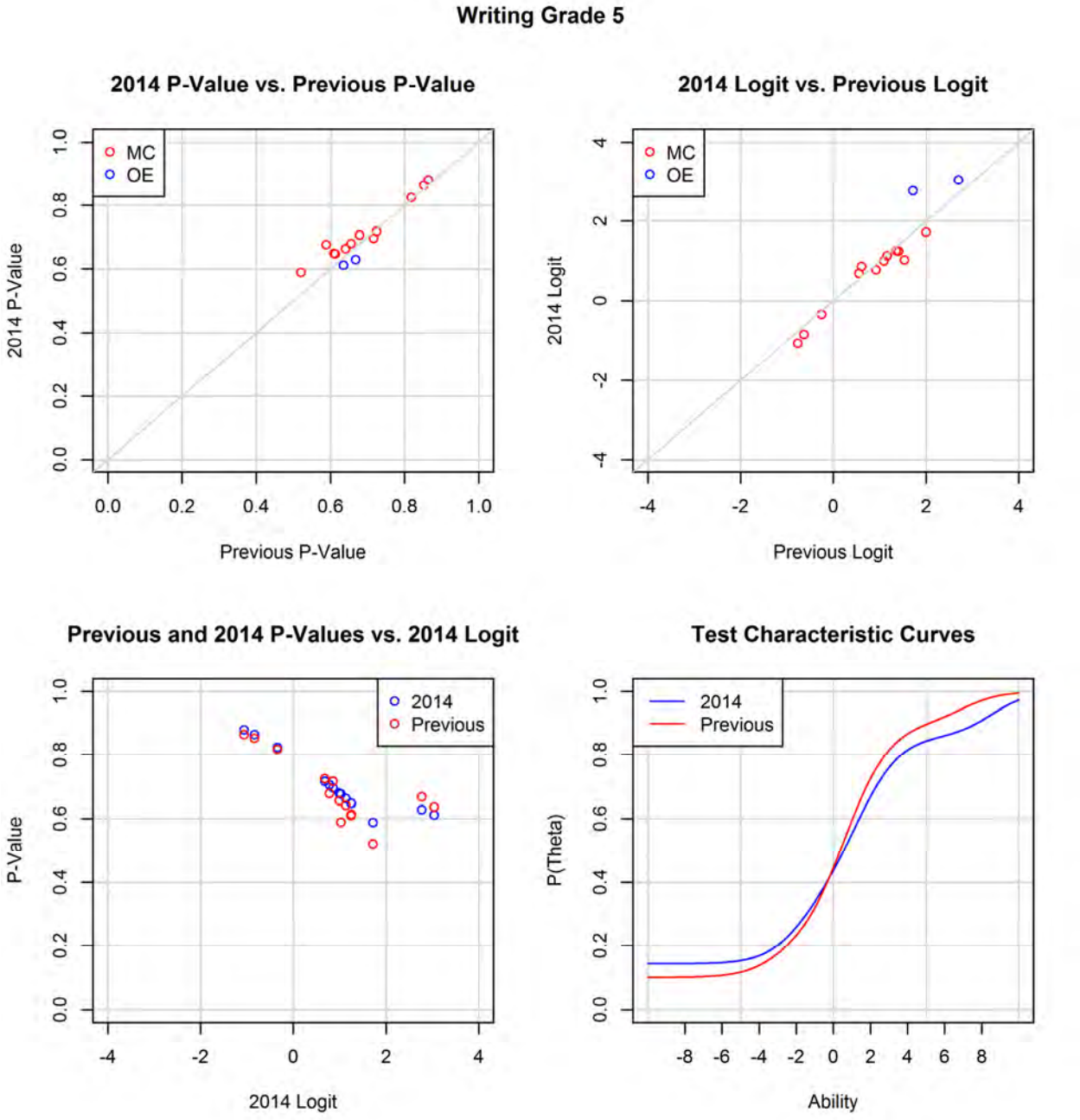
Note. Each WP is worth four points for conventions and four points for mode. However, the mode score is weighted by 10 to get the total possible points of 100.

Graphs

Graphs, similar to those presented for other subject areas, are provided for writing in Figure 15–2. The TCCs for writing are less parallel and more irregular than those for the other subjects. The writing assessment is much shorter than the other subjects and the writing prompt is weighted. Not surprisingly, the plots suggest that the writing results are less stable than the other content areas.

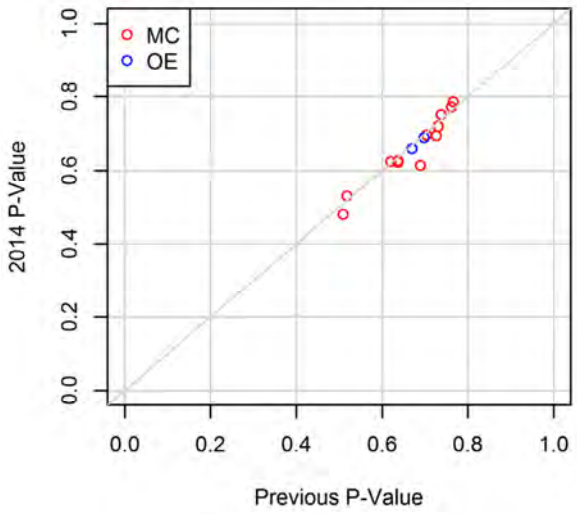
[18] In other subjects only a subset of operational items are treated as core linking items, and there were EB linking items as well.

Figure 15–2. Item Stability Plots and Test Characteristic Curves for Writing

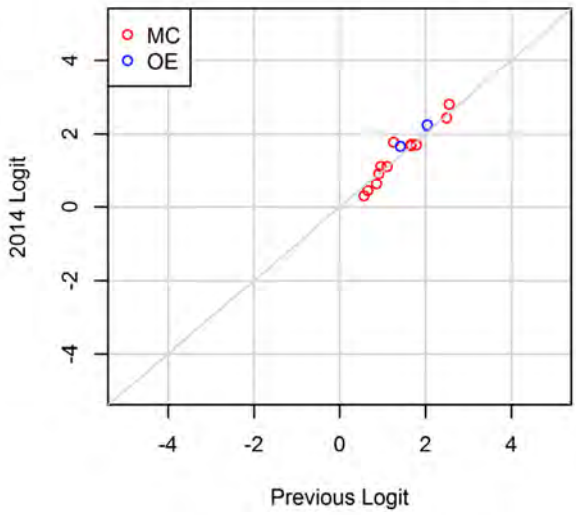


Writing Grade 8

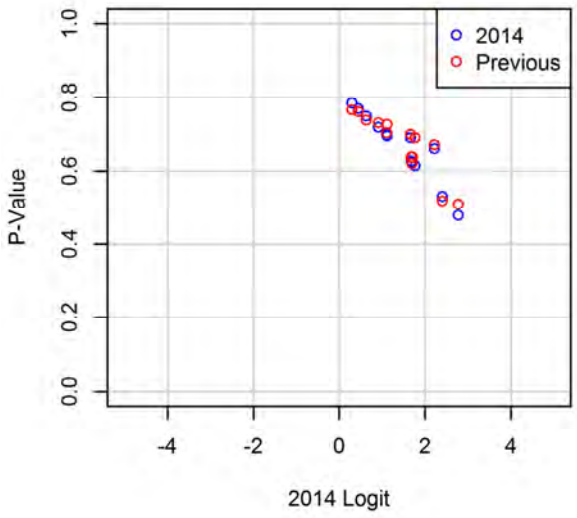
2014 P-Value vs. Previous P-Value



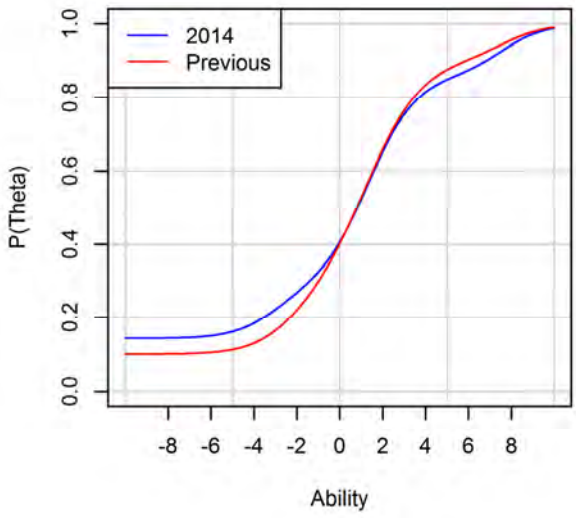
2014 Logit vs. Previous Logit



Previous and 2014 P-Values vs. 2014 Logit



Test Characteristic Curves



Chapter Sixteen: Scores and Score Reports

This chapter provides information about the scores provided for the PSSA (e.g., scaled scores, performance levels, and strand scores), how they are presented on score reports, and appropriate and inappropriate uses of the scores.

SCORING THE PSSA

PSSA items are composed of multiple-choice (MC) and open-ended (OE) items. Each correct response to an MC item receives a score of 1. Incorrect responses receive a score of zero. Scores on OE items range from zero to four, depending on the grade and subject area. Table 16–1 summarizes the types of items used on each subject-area test. More detailed information about the various item types is provided in Chapter Three.

Table 16–1. Item Types Used by Subject Area

	Subject			
Item Type	**Mathematics**	**Reading**	**Science**	**Writing**
Multiple-Choice (1 point)	■	■	■	■
Open-Ended (2 point)			■	
Open-Ended (3 point)		■		
Open-Ended (4 point)	■			
Prompt (4 point)				■

DESCRIPTION OF TOTAL TEST SCORES

Different types of scores have been developed for PSSA reporting. Since the underlying properties of these scores are not necessarily the same, the particular scores used depend on the purposes for which the test has been given. The following types of scores are provided for reporting a student's overall performance on each PSSA subject-area test:

- Raw scores
- Scaled scores
- Performance levels

Raw Scores

A raw score is the number of points a student earned over the operational MC and OE items. By itself, the raw score has very limited utility. One limitation is that it can only be interpreted with reference to the total number of items on a subject-area test (e.g., a raw score of 15 on a 20-item test is different than a raw score of 15 on a 30-item test). In addition, raw scores depend on the difficulty of test items across test forms (e.g., a raw score of 15 on a test with 20 easy items is different than a raw score of 15 on a test with 20 difficult items). Because the difficulty of the items on a test can change from year to year, raw scores should not be compared across tests or administrations.

Scaled Scores

Scaled scores are introduced in Chapter Fourteen, and additional information is provided there including historical information about the development of the PSSA scaled-score system. In the simplest sense, a scaled score is a transformed number-correct score. The specifics of the transformation processes for the PSSA are also discussed in Chapter Fourteen. When all students take the same items, as with the operational items on the PSSA, the more points the student earns, and the higher the associated scaled score will be.

The value of switching to the more abstract scaled-score metric is that it produces more general, interpretable, and equitable results. As previously noted, a raw score of 30 is meaningless unless the maximum raw score is known. The difficulty of the test items was also mentioned as an additional challenge with interpreting raw scores. Number-correct scores are transformed to scaled scores to remove the effects of test length and item difficulty. (Strictly speaking, transformation of number-correct scores to percent-correct scores would also remove the effect of test length, but it would do nothing to adjust for the difficulty of the items.)

Another advantage of scaled scores is that they lend themselves to interpretations of what is referred to as an interval level, while raw scores do not. Interval-level scales allow an interpretation of a scaled score difference of 5 points to be the same whether the scores are 1295 vs. 1300 or 1445 vs. 1450. Raw score differences, in this context, cannot be interpreted in this manner and are thus neither generalizable nor equitable.

When test scores are properly linked across years, a scaled score of 1300—or any other value for a particular grade and content-area test, such as Grade 4 reading—should have the same absolute meaning in the current year as it had in previous years. For example, a school with a scaled score above 1300 in Grade 4 reading in 2014 performed better than the average school in the base year in Grade 4 reading.

More importantly, an increase in the scaled score for Grade 4 reading from last year to the current year means that student performance improved;[19] it does not say anything about whether this year's test is easier or harder than last year's test. To make these interpretations requires no information about the length or the difficulty of the test in either year, although these variables are essential for the process of deriving the scaled scores.

There is considerable auxiliary information presented in this report that might aid the reader in further contextualizing PSSA scaled scores. The reader is specifically referred to the following information:

- Chapter Fourteen provides information on the development of the PSSA scaled-score system, including historical information, transformation formulas, rounding rules, and general scale characteristics (e.g., minimum values).
- Chapter Seventeen provides total test score statistics. In particular, Table 17–2 lists the scaled score means and standard deviations for this year's test results.

[19] This example is not an endorsement of conducting a trend analysis with only two years of results. Further, small differences may not be statistically or practically significant.

Performance Levels

PSSA results are also reported using four Performance Levels: Below Basic, Basic, Proficient, and Advanced. The cut scores on the scaled-score metric (i.e., the lowest possible scaled score to enter the Basic, Proficient, and Advanced levels) were presented earlier in this report. However, the information is repeated below (Table 16–2) for convenience.

Table 16–2. PSSA Scaled Score Cuts for Each Performance Level by Grade and Subject Area

Subject	Grade	Scaled Score Cuts[1]				
		Min	BB/B	B/P	P/A	Max[2]
Mathematics	3	750	1044	1180	1370	1914
	4	700	1156	1246	1445	2408
	5	700	1158	1312	1483	2460
	6	700	1174	1298	1476	2649
	7	700	1183	1298	1472	2561
	8	700	1171	1284	1446	2337
Reading	3	1000	1168	1235	1442	1932
	4	700	1112	1255	1469	2255
	5	700	1137	1275	1497	2312
	6	700	1121	1278	1456	2391
	7	700	1131	1279	1470	2319
	8	700	1146	1280	1473	2610
Science	4	1050	1150	1275	1483	2259
	8	925	1150	1275	1464	2213
Writing	5	700	745	1236	1909	2354
	8	700	914	1236	1748	2321

Notes. [1] BB = Below Basic; B = Basic; P = Proficient; and A = Advanced.
[2] Scaled Score Maximum Values are unique for the current year's test.

Performance level descriptors (PLDs) are another way to attach meaning to the scaled-score metric. PLDs associate precise quantitative ranges of scaled scores with verbal, qualitative descriptions of student status. While much less precise, the qualitative description of the levels is one way for parents and teachers to interpret the student scores. They are also useful in assessing the status of the school. The Pennsylvania General Performance Level Descriptors, as developed by PDE and teacher panels, are given below. These are also included on student score reports.

- Advanced: The Advanced Level reflects superior academic performance. Advanced work indicates an in-depth understanding and exemplary display of the skills included in the Pennsylvania Academic Content Standards.
- Proficient: The Proficient Level reflects satisfactory academic performance. Proficient work indicates a solid understanding and adequate display of the skills included in the Pennsylvania Academic Content Standards.

- Basic: The Basic Level reflects marginal academic performance. Basic work indicates a partial understanding and limited display of the skills included in the Pennsylvania Academic Content Standards. This work is approaching satisfactory performance, but has not yet reached it. There is a need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.
- Below Basic: The Below Basic Level reflects inadequate academic performance. Below Basic work indicates little understanding and minimal display of the skills included in the Pennsylvania Academic Content Standards. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

DESCRIPTION OF STRAND (REPORTING CATEGORY) SCORES

The following types of scores are provided for PSSA strand scores:

- Strand (Reporting Category) Scores
- Strength Profile

Strand (Reporting Category) Scores

A strand (reporting category) score describes performance of a student, school, or district on a particular strand (content standard defined in the test). For the PSSA, strand scores are raw scores, indicating the points a student or a school/district earned for that strand. (Attributes of raw scores are described earlier in this chapter.)

Strand scores cannot be compared across years because they are not statistically linked, nor are they interval scores. Also, it is not advisable to compare strand raw scores even within the same form because some strands may contain items that are easier or more difficult than other strands (the strength profile, discussed below, mitigates this problem to some degree). A greater concern is the low reliability of many of these scores, especially for strand scores based on a small number of possible points. Chapter Eighteen provides more information about strand-score reliability.

When compared to other results from the same year, strand scores can be somewhat helpful in identifying a group's strengths and weaknesses as measured by the test. For example, it can be informative to compare average strand scores of a school against the scores of another reference group (e.g., the state average). Hence, strand scores can suggest group strengths and weaknesses relative to another reference group. (Challenges pertaining to interpreting results for individual students are discussed below.)

Strength Profile

The strength profile provides another indication of a student's performance within each of the strands. This profile can be used to identify areas in which a student needs to improve and areas in which a student has performed more successfully. Unlike strand scores that are reported as raw scores, strength profile scores categorize students into one of three levels: Low, Medium, and High. These categories take into account the difficulty of the items and are based on the same scaling techniques used to derive the PSSA scaled scores. (Details regarding the creation of the strength profile are provided in Chapter Fourteen. These scaled scores are not printed on score reports. They only exist to determine whether performance in the strands was Low, Medium, or High.) A Low score on the strength profile indicates performance that is below

Proficient on the overall PSSA scale. A Medium score on the strength profile indicates performance that is comparable to Proficient on the PSSA. A High score on the strength profile indicates performance that is comparable to Advanced.

APPROPRIATE SCORE USES

Individual Students

Scaled scores on the PSSA indicate a student's achievement of the PSSA Assessment Anchors and Eligible Content. Scaled scores are primarily used to determine student performance level classifications (i.e., a criterion-referenced inference). Scaled scores that are based on Item Response Theory (IRT) models are typically assumed to be of the interval type; so comparisons may be made on differences in scaled scores. If this assumption holds, then it would be safe to infer for Grade 4 reading that the ability difference between 1110 and 1120 represents the same ability difference that separates 1250 and 1260. Scaled scores can also be used to compare the performance of an individual student to the performance of a similar demographic or subgroup at a school or district. However, when comparing performance of an individual student, test score standard errors (discussed in Chapter Eighteen) should be considered because scale scores are estimate of students' achievement which comes with estimation error.

Groups of Students

Test results can be used to evaluate performance over time. Mean scaled scores can be compared across administrations within the same grade and subject area to indicate whether student performance is improving across years. Generally, such trend analyses benefit from using mean results from as many test administration years as possible. Different cohorts of students are used (i.e., the same student or students are not tracked across grade levels). All scores can be analyzed within the same subject and grade for any single administration to determine which demographic or program group had, for example, the highest average performance or the highest percentage of students at or above the Proficient standard.

Strand scores can help evaluate academic areas for relative strengths or weaknesses. These category scores provide information to identify areas where further diagnosis is warranted. Generalizations from test results may be made to the specific content domain represented by the academic standards measured in the PSSA. However, all instruction and program evaluations should include as much information from other sources as possible to provide a more complete picture of performance.

CAUTIONS FOR SCORE USES

Extreme Error for Extreme Scores

Student scores toward the minimum or maximum ends of the score range will have very large standard errors of measurement and, therefore, such scores should be viewed very cautiously. The maximum scaled score only provides a very rough estimate of a student's ability. For instance, if the maximum score for the PSSA Grade 6 mathematics test were 2500[20] and a student achieved this score, it could not be determined whether the student could have achieved an even higher scaled score. If the test were 10 items longer, a different estimate might have been obtained. Similarly, if the items in a new test were more difficult than the items on a previous administration, the maximum scaled score would likely be higher on the new test

[20] It is not, at least for this year.

because it would take a greater level of achievement to answer the items correctly. In this manner, extreme scaled scores may vary from one administration to the next even if the number of test items does not change. The fluctuation of extreme scaled scores complicates the comparisons of students with scaled scores at the extreme ends of the score distribution. To minimize confusion and potential misinterpretation, the minimum scaled scores possible on the PSSA tests have been fixed (see Table 16–2) so they do not change between administrations. However, the maximum scaled-score values have not been fixed. Therefore, caution must be taken when comparing scores at the maximum end of the scale.

Each Test Has a Unique Scale

Scaling was conducted for each grade and subject-area test separately. Therefore, PSSA scale scores should be interpreted only within each content area. PSSA scaled scores are not status indicators in the same sense as percentile ranks (or scales that are essentially transformations of percentile ranks) and, therefore, cannot be used to profile relative strengths and weaknesses across subject areas. As an example, student scaled scores of 1450 in Grade 4 reading and 1400 in Grade 4 mathematics do not necessarily imply that the student performed better in reading than in mathematics. Neither do the PSSA scaled scores represent a developmental or vertical scale. This means that no across-grade comparisons or growth statements for a student are appropriate. For example, a 1400 in Grade 4 reading and a 1400 in Grade 5 reading does not indicate a student had no achievement growth in reading from Grade 4 to Grade 5.

Strength Profile Caveats

The category labels of Low, Medium, and High are deliberately used instead of the PSSA performance level names—Below Basic, Basic, Proficient, and Advanced—to acknowledge that the PSSA cut scores were established on the basis of the total test score. Therefore, the categories should not be interpreted in the same way as PSSA performance levels because they likely do not carry the same meaning.

While the strength profile might facilitate comparisons of a student's strengths and weaknesses across strands in some cases, several factors merit caution. As noted earlier, many of the strand scores are very unreliable. The scaling underlying the strength profile does not mitigate this problem.

Additionally, the categories reflect more absolute comparisons. Relative comparisons are more difficult to make. As an example, if one scored High in both strand A and B, we know the student did very well in both strands compared to overall performance in the state (i.e., absolute status). However, we do not know whether the student's performance in strand A was better or worse relative to the performance in strand B (relative status).

Finally, some seemingly unusual results might occur that may be difficult for users to understand. As one example, it may be possible for a student to earn Medium in all strands but have an Advanced performance level. This can happen because the strand scores are correlated, meaning the distributional properties of the total score depends not only on the variances of the strand scores, but also on the covariances among the strand scores. (An analogy would be when a school track team places first overall in a competition although they did not win a single event.)

Using PSSA Results for Other Purposes

Should PSSA results be used for placement decisions such as eligibility for gifted/talented programs or for other special programs or services? Frequently asked questions about the PSSA pertain to the maximum possible PSSA scaled scores for various subjects or to which PSSA score represents the 90th percentile. The motivation behind many of these questions may be associated with special program eligibility.

Other uses or inferences based on PSSA results may or may not be valid as the validity evidence and arguments provided in Chapter Nineteen may not necessarily support other score uses and interpretations. According to the AERA/APA/NCME *Standards* (1999) (i.e., Standard 1.4), if a test is used in a way that has not been validated, it is incumbent on the user to justify the new use, collecting new evidence if necessary. Finally, a universal caveat for any test's result is that it should not be used for placement and educational planning alone. Instead, other information about the student (e.g., other test performance data) should be considered.

REPORTS

The following score reports are provided to students, parents, schools, and districts for the PSSA tests in mathematics, reading, science, and writing:

- Parent Letter
- Individual Student Report
- School Summary Report
- District Summary Report
- Interpretive Guide

Parent Letter

Parent letters were delivered to Pennsylvania districts on June 16, 2014. This score report provided parents and students with their first glimpse of performance on the spring 2013 PSSA tests. This report provides results at the student level. A sample of the report is provided in Figure 16–1.

Figure 16–1. Parent Letter

Dear Parents:

I am pleased to provide you with information about your child's performance on the 2014 Pennsylvania System of School Assessment (PSSA) exam. The annual PSSA is a standards-based assessment used to measure a student's attainment of the academic standards while also determining the degree to which school programs enable students to attain academic proficiency.

For additional information about the PSSA, visit the Pennsylvania Department of Education's website at www.education.state.pa.us, or contact your child's school.

Sincerely,
Carolyn C. Dumaresq, Ed.D.
Acting Secretary of Education

pennsylvania
DEPARTMENT OF EDUCATION

Student Name: SAMPLE STUDENT
PA Student ID: *****00000
School: SAMPLE JSHS
District: SAMPLE SD
Test Date: Spring 2014
Grade: 8

MATHEMATICS

How did SAMPLE perform OVERALL?

Performance Level: Proficient **Score:** 1356

Below Basic | Basic | Proficient | Advanced
700 | 1171 | 1284 | 1446 | 2337

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1307–1405.

How did SAMPLE perform by REPORTING CATEGORY?

Reporting Categories	Student's Points	Total Points Possible
Numbers and Operations	**9**	**13**
Measurement	**Not Assessed**	**Not Assessed**
Geometry	**3**	**14**
Algebraic Concepts	**23**	**34**
Data Analysis and Probability	**9**	**11**

WRITING

How did SAMPLE perform OVERALL?

Performance Level: Proficient **Score:** 1417

Below Basic | Basic | Proficient | Advanced
700 | 914 | 1236 | 1748 | 2321

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1372–1462.

How did SAMPLE perform by REPORTING CATEGORY?

Reporting Categories	Student's Points	Total Points Possible
Composition	**60**	**80**
Informational	*30*	*40*
Persuasive	*30*	*40*
Revising and Editing	**12**	**20**
Informational	*3*	*4*
Persuasive	*3*	*4*
Multiple Choice	*6*	*12*

READING

How did SAMPLE perform OVERALL?

Performance Level: Proficient **Score:** 1471

Below Basic | Basic | Proficient | Advanced
700 | 1146 | 1280 | 1473 | 2610

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1395–1547.

How did SAMPLE perform by REPORTING CATEGORY?

Reporting Categories	Student's Points	Total Points Possible
Comprehension and Reading Skills	**18**	**27**
Interpretation and Analysis of Fictional and Nonfictional Text	**17**	**25**

SCIENCE

How did SAMPLE perform OVERALL?

Performance Level: Proficient **Score:** 1287

Below Basic | Basic | Proficient | Advanced
925 | 1150 | 1275 | 1464 | 2213

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1236–1338.

How did SAMPLE perform by REPORTING CATEGORY?

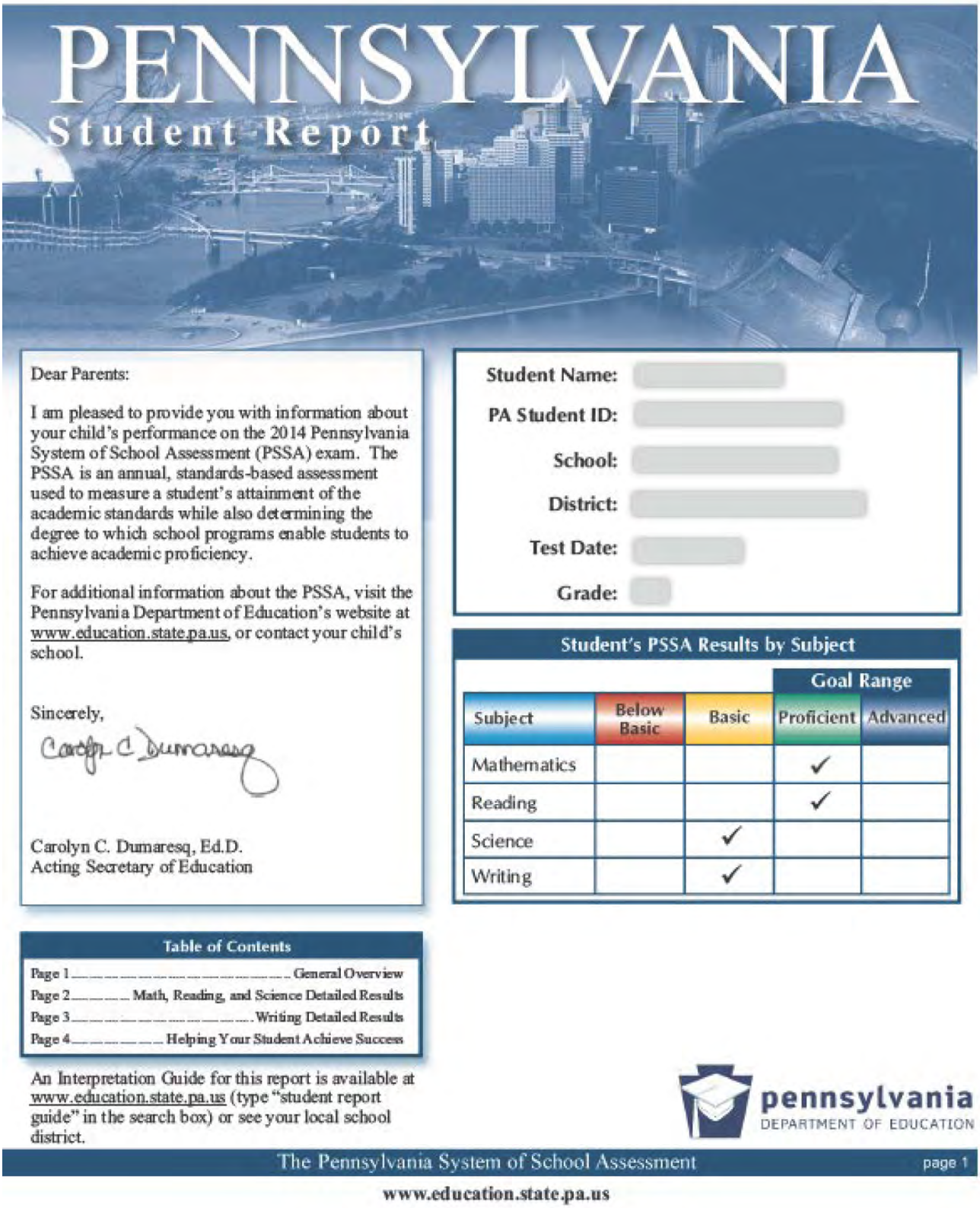
Reporting Categories	Student's Points	Total Points Possible
The Nature of Science	**25**	**34**
Biological Sciences	**10**	**12**
Physical Sciences	**5**	**10**
Earth and Space Sciences	**5**	**12**

Note that the performance level line graphs are not drawn to scale because some performance levels have more scaled score points than others. Additionally, the graphs do not display the actual percentage of students in each performance level.

Individual Student Report

An individual student report is provided for all students who took the PSSA. This report was delivered to Pennsylvania school districts in September 2014. Districts are responsible for sending the reports home to individual students. This report is a four-page color document that provides the types of scores explained earlier in this chapter. Screen shots of the four pages from a sample individual student report are provided in Figures 16–2 through 16–5.

Figure 16–2. Page 1 of the Individual Student Report



PENNSYLVANIA

Student Report

Dear Parents:

I am pleased to provide you with information about your child's performance on the 2014 Pennsylvania System of School Assessment (PSSA) exam. The PSSA is an annual, standards-based assessment used to measure a student's attainment of the academic standards while also determining the degree to which school programs enable students to achieve academic proficiency.

For additional information about the PSSA, visit the Pennsylvania Department of Education's website at www.education.state.pa.us, or contact your child's school.

Sincerely,

Carolyn C. Dumaresq, Ed.D.
Acting Secretary of Education

Student Name:
PA Student ID:
School:
District:
Test Date:
Grade:

Student's PSSA Results by Subject

Subject	Below Basic	Basic	Goal Range: Proficient	Goal Range: Advanced
Mathematics			✓	
Reading			✓	
Science		✓		
Writing		✓		

Table of Contents

Page 1 ..... General Overview
Page 2 ..... Math, Reading, and Science Detailed Results
Page 3 ..... Writing Detailed Results
Page 4 ..... Helping Your Student Achieve Success

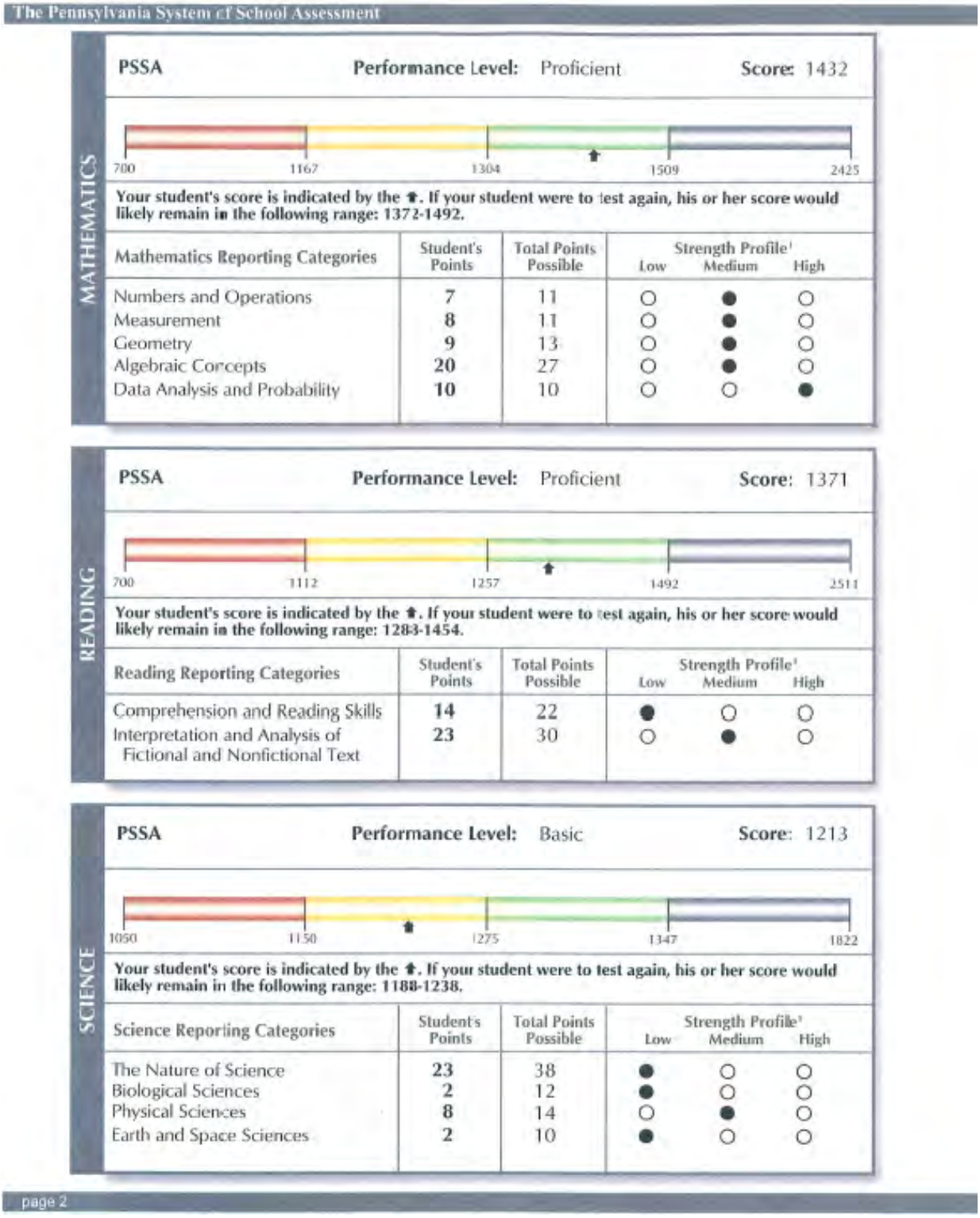
An Interpretation Guide for this report is available at www.education.state.pa.us (type "student report guide" in the search box) or see your local school district.

pennsylvania
DEPARTMENT OF EDUCATION

The Pennsylvania System of School Assessment page 1

www.education.state.pa.us

Figure 16–3. Page 2 of the Individual Student Report



The Pennsylvania System of School Assessment

MATHEMATICS

PSSA **Performance Level:** Proficient **Score:** 1432

700 1167 1304 1509 2425

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1372-1492.

Mathematics Reporting Categories	Student's Points	Total Points Possible	Strength Profile[1] Low	Medium	High
Numbers and Operations	7	11	○	●	○
Measurement	8	11	○	●	○
Geometry	9	13	○	●	○
Algebraic Concepts	20	27	○	●	○
Data Analysis and Probability	10	10	○	○	●

READING

PSSA **Performance Level:** Proficient **Score:** 1371

700 1112 1257 1492 2511

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1283-1454.

Reading Reporting Categories	Student's Points	Total Points Possible	Strength Profile[1] Low	Medium	High
Comprehension and Reading Skills	14	22	●	○	○
Interpretation and Analysis of Fictional and Nonfictional Text	23	30	○	●	○

SCIENCE

PSSA **Performance Level:** Basic **Score:** 1213

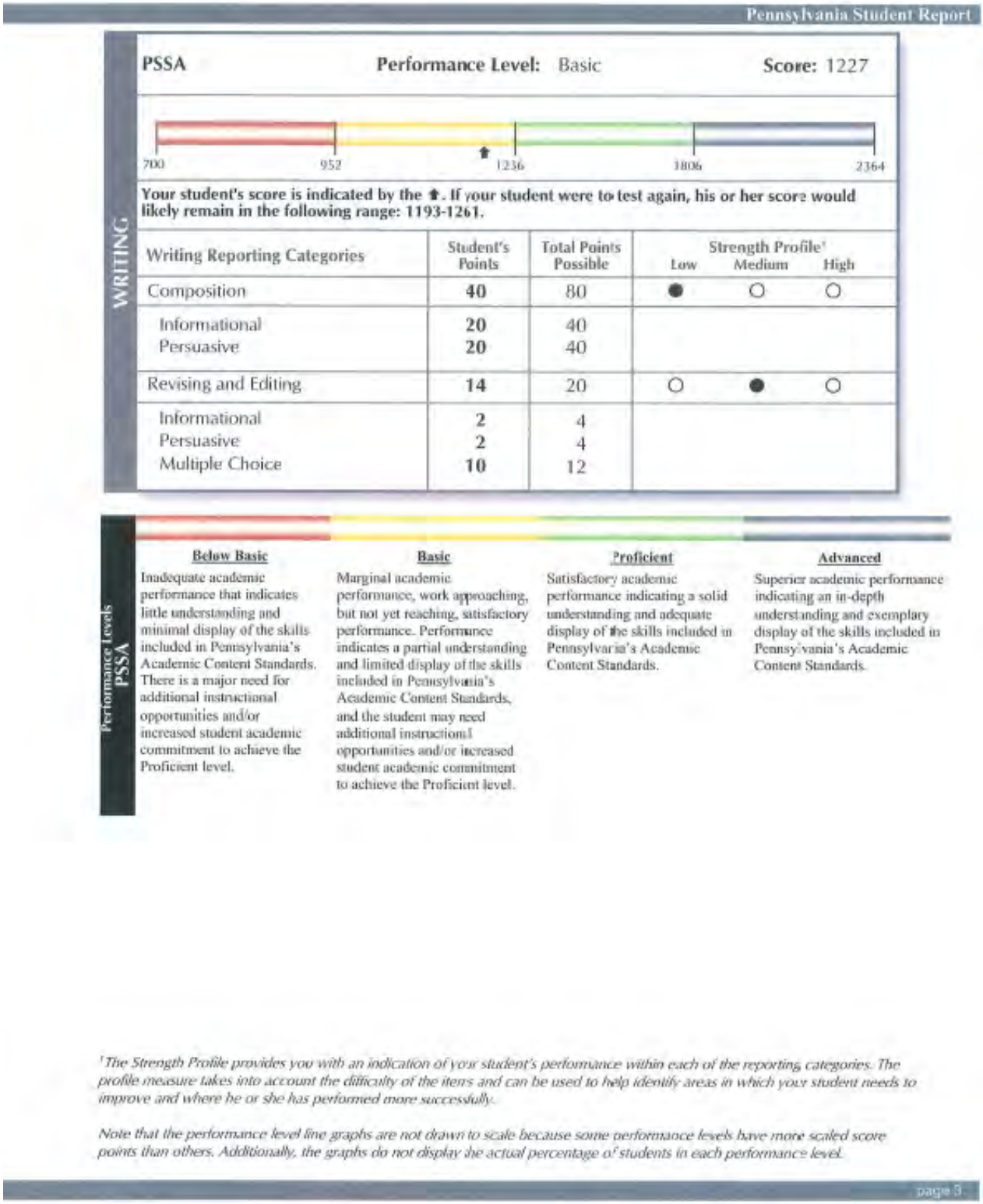
1050 1150 1275 1347 1822

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1188-1238.

Science Reporting Categories	Student's Points	Total Points Possible	Strength Profile[1] Low	Medium	High
The Nature of Science	23	38	●	○	○
Biological Sciences	2	12	●	○	○
Physical Sciences	8	14	○	●	○
Earth and Space Sciences	2	10	●	○	○

page 2

Figure 16–4. Page 3 of the Individual Student Report



Pennsylvania Student Report

WRITING

PSSA **Performance Level:** Basic **Score:** 1227

700 952 1236 1806 2364

Your student's score is indicated by the ⬆. If your student were to test again, his or her score would likely remain in the following range: 1193-1261.

Writing Reporting Categories	Student's Points	Total Points Possible	Strength Profile[1] Low	Medium	High
Composition	**40**	80	●	○	○
Informational	**20**	40			
Persuasive	**20**	40			
Revising and Editing	**14**	20	○	●	○
Informational	**2**	4			
Persuasive	**2**	4			
Multiple Choice	**10**	12			

Performance Levels PSSA

Below Basic
Inadequate academic performance that indicates little understanding and minimal display of the skills included in Pennsylvania's Academic Content Standards. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient level.

Basic
Marginal academic performance, work approaching, but not yet reaching, satisfactory performance. Performance indicates a partial understanding and limited display of the skills included in Pennsylvania's Academic Content Standards, and the student may need additional instructional opportunities and/or increased student academic commitment to achieve the Proficient level.

Proficient
Satisfactory academic performance indicating a solid understanding and adequate display of the skills included in Pennsylvania's Academic Content Standards.

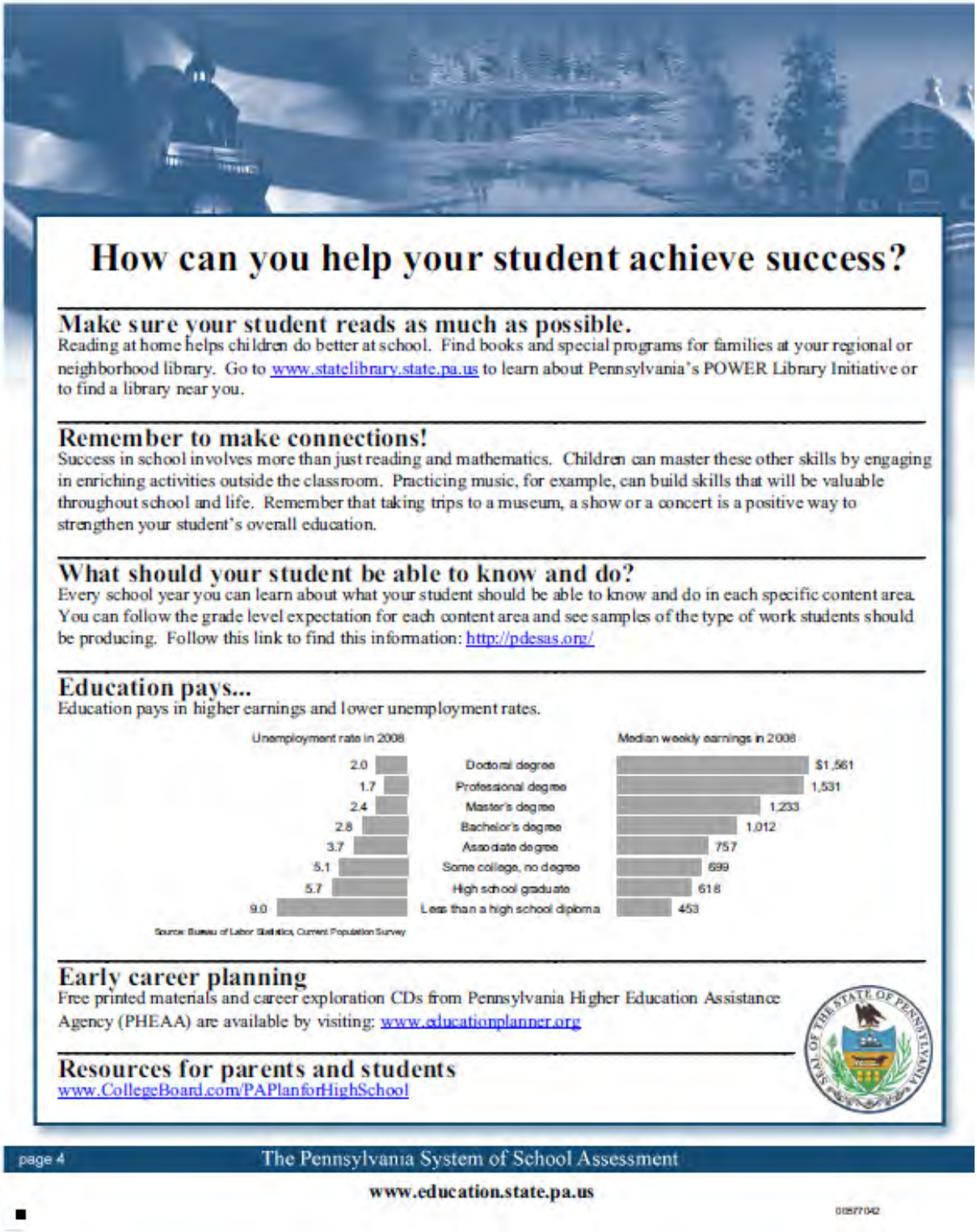
Advanced
Superior academic performance indicating an in-depth understanding and exemplary display of the skills included in Pennsylvania's Academic Content Standards.

[1] *The Strength Profile provides you with an indication of your student's performance within each of the reporting categories. The profile measure takes into account the difficulty of the items and can be used to help identify areas in which your student needs to improve and where he or she has performed more successfully.*

Note that the performance level line graphs are not drawn to scale because some performance levels have more scaled score points than others. Additionally, the graphs do not display the actual percentage of students in each performance level.

page 3

Figure 16–5. Page 4 of the Individual Student Report



How can you help your student achieve success?

Make sure your student reads as much as possible.

Reading at home helps children do better at school. Find books and special programs for families at your regional or neighborhood library. Go to www.statelibrary.state.pa.us to learn about Pennsylvania's POWER Library Initiative or to find a library near you.

Remember to make connections!

Success in school involves more than just reading and mathematics. Children can master these other skills by engaging in enriching activities outside the classroom. Practicing music, for example, can build skills that will be valuable throughout school and life. Remember that taking trips to a museum, a show or a concert is a positive way to strengthen your student's overall education.

What should your student be able to know and do?

Every school year you can learn about what your student should be able to know and do in each specific content area. You can follow the grade level expectation for each content area and see samples of the type of work students should be producing. Follow this link to find this information: http://pdesas.org/

Education pays...

Education pays in higher earnings and lower unemployment rates.

Early career planning

Free printed materials and career exploration CDs from Pennsylvania Higher Education Assistance Agency (PHEAA) are available by visiting: www.educationplanner.org

Resources for parents and students

www.CollegeBoard.com/PAPlanforHighSchool

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www.education.state.pa.us

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School and District Summary Reports

Summary reports are provided at the school and district levels. These reports contain summary information about the percentage of students in each of the four performance levels. Raw scores are also provided by assessment anchor to allow schools or districts to identify strengths or weaknesses at the content strand level.

Interpretative Guide

An interpretative guide is provided to help parents and other PSSA stakeholders better understand test result information presented in the individual student report. The interpretative guide can be found on the PDE website.

Chapter Seventeen: Operational Test Statistics

This chapter presents various summary statistics for the PSSA total test scores based on the final data file described in Chapter Nine. Related information covered elsewhere in this report includes the item-level statistics presented in Chapter Eleven (classical item statistics) and Chapter Twelve (Rasch item statistics). These chapters provide additional consideration as item difficulty distributions can affect total score distributions.

PERFORMANCE LEVEL STATISTICS

Table 17–1 presents performance level percentages by grade and content. Appendix Q provides performance level percentages for prior years.

Table 17–1. Performance Level Percentages for 2014 PSSA

		Percentage in Each Performance Level			
Subject	**Grade**	**Below Basic**	**Basic**	**Proficient**	**Advanced**
Mathematics	**3**	10.3	14.6	35.3	39.7
Reading		19.3	10.4	44.5	25.8
Mathematics	**4**	14.9	8.8	27.0	49.2
Reading		15.7	15.6	36.2	32.4
Science		9.4	11.4	36.0	43.2
Mathematics	**5**	15.4	17.4	22.8	44.4
Reading		21.4	18.0	36.3	24.2
Writing		2.3	36.5	56.2	5.1
Mathematics	**6**	14.1	13.9	23.2	48.7
Reading		18.0	17.5	27.1	37.4
Mathematics	**7**	12.6	11.7	23.6	52.1
Reading		12.2	15.7	30.3	41.7
Mathematics	**8**	15.6	10.8	21.6	52.0
Reading		11.0	9.4	24.9	54.7
Science		22.9	16.6	34.9	25.6
Writing		3.8	22.6	63.7	9.8

SCALED SCORES

Summary Statistics

Table 17–2 provides the scaled-score means and standard deviations. See the section Every Test has a Unique Scale in Chapter Sixteen for caveats regarding interpretation of scale scores.

Table 17–2. Means and Standard Deviations for the 2014 PSSA Scaled Scores

	Mathematics		Reading		Science		Writing	
Grade	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
3	1312.6	199.3	1332.5	164.8				
4	1434.0	264.0	1350.4	232.8	1447.8	206.9		
5	1447.8	263.0	1321.9	227.8			1330.6	282.0
6	1479.4	279.8	1365.9	246.0				
7	1494.4	264.6	1409.0	231.0				
8	1456.1	260.9	1494.4	263.0	1324.1	209.3	1391.4	264.8

Scaled-Score Distributions

Scaled scores are based on a linear transformation of the Rasch ability estimates. Distributions of the Rasch abilities are provided at the end of Chapter Twelve.

RAW SCORES

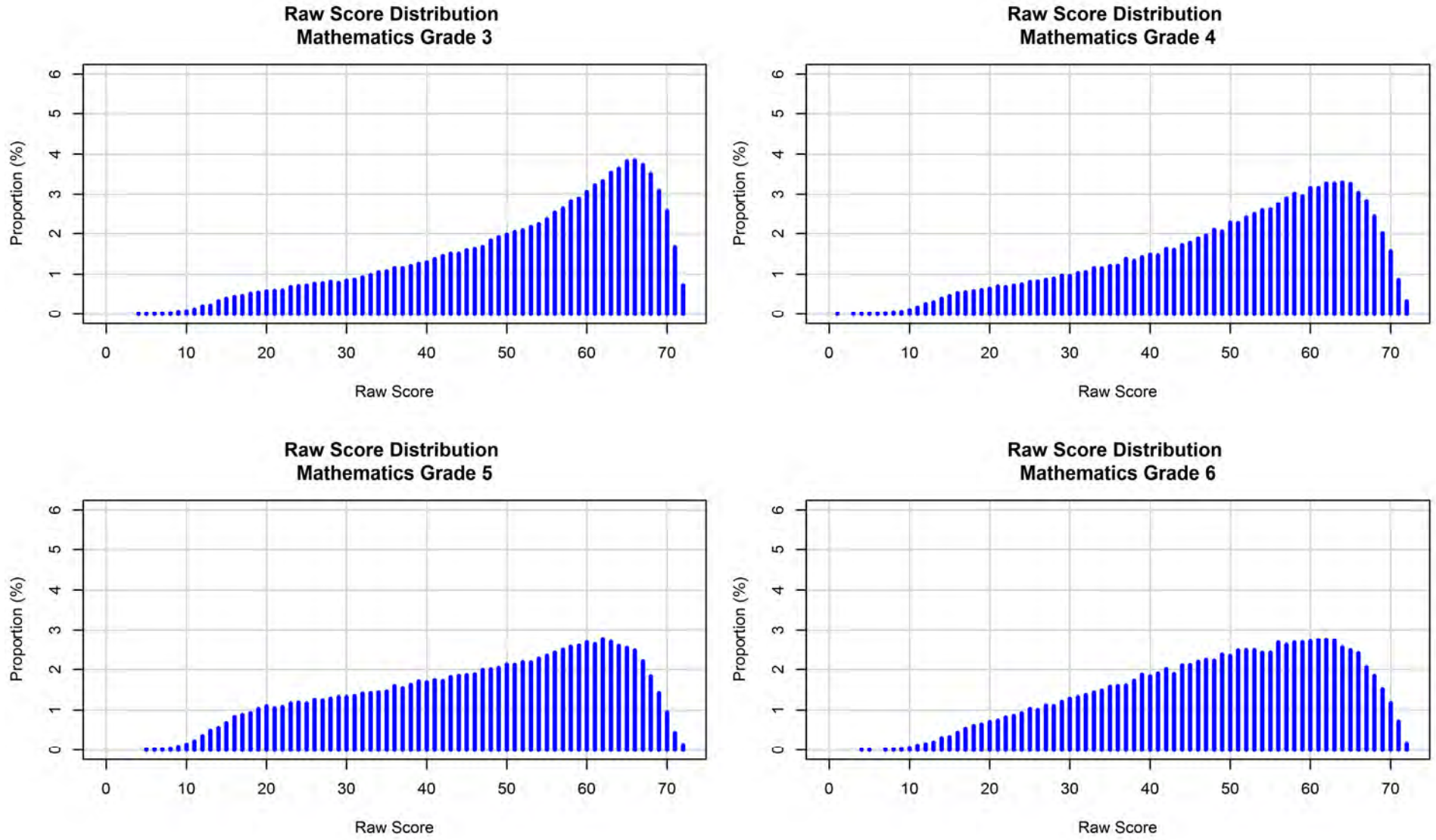
Summary Statistics

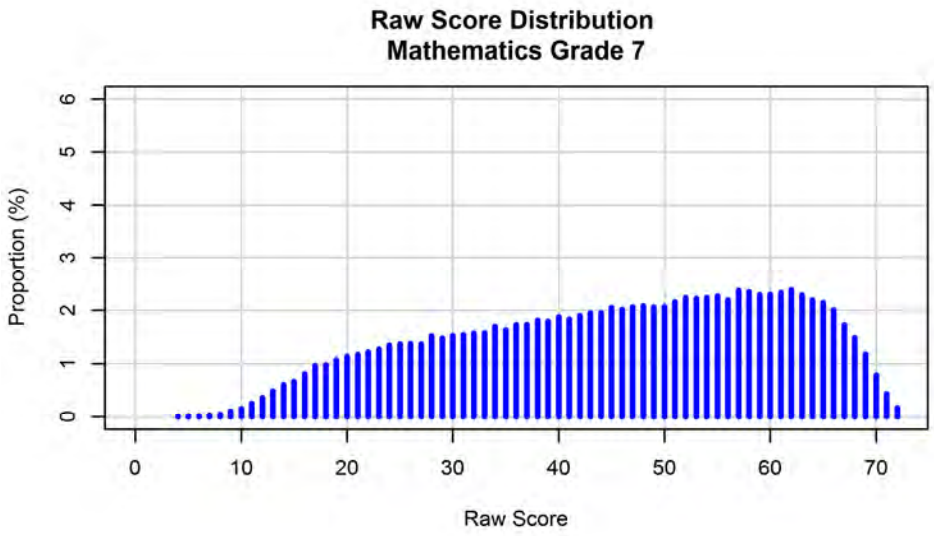
Appendix P provides summary statistics for the operational raw scores. The statistics reported include the number of points possible (Pts.), number of items (Len.), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Items) used to determine each score. These statistics are based on the total test using both multiple-choice (MC) and open-ended (OE) items for the operational sections of each form. (For information disaggregated by item type, Chapter Eleven provides breakout statistics for MC and OE items.)

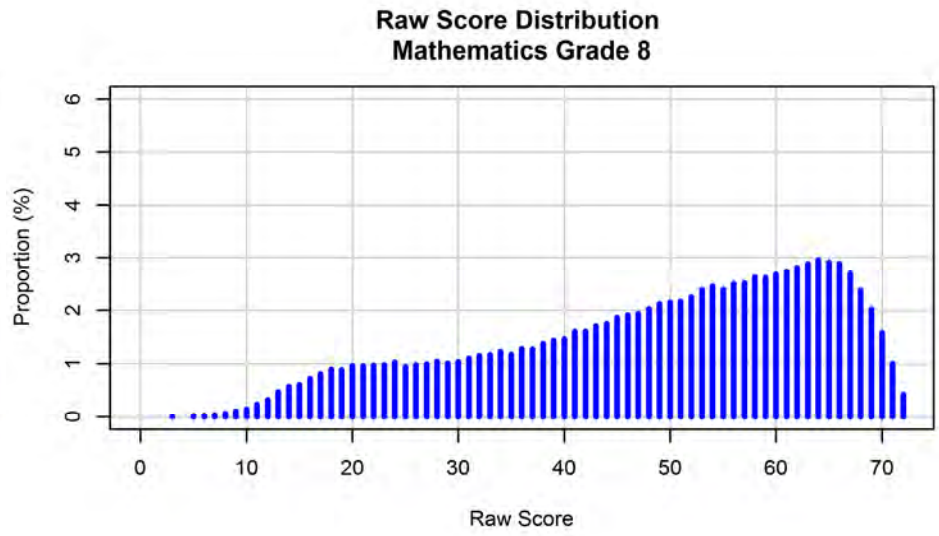
Score Distributions

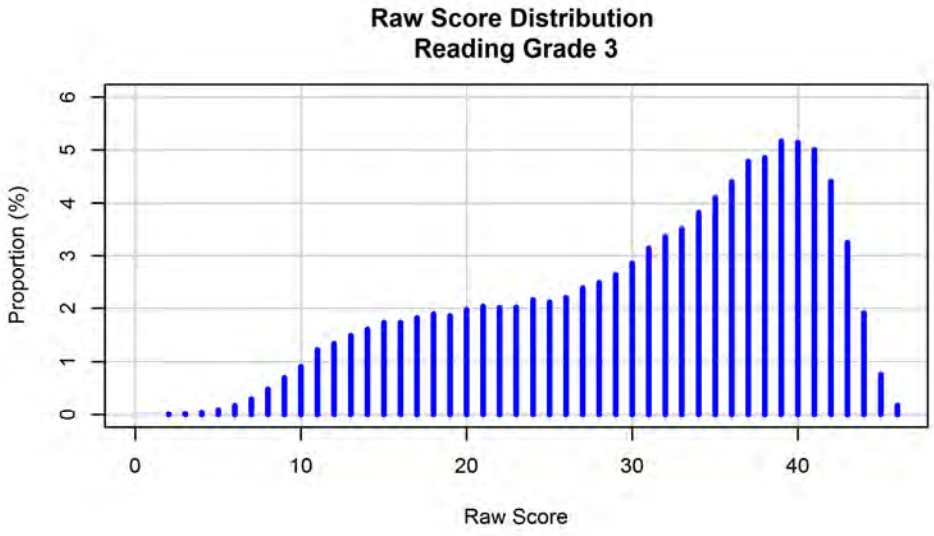
Raw score relative-frequency (rf) distributions are provided in Figure 17–1. Most distributions are negatively skewed and unimodal. Writing has one major mode and several minor modes (because of the differential weighting given to the writing prompt scores).

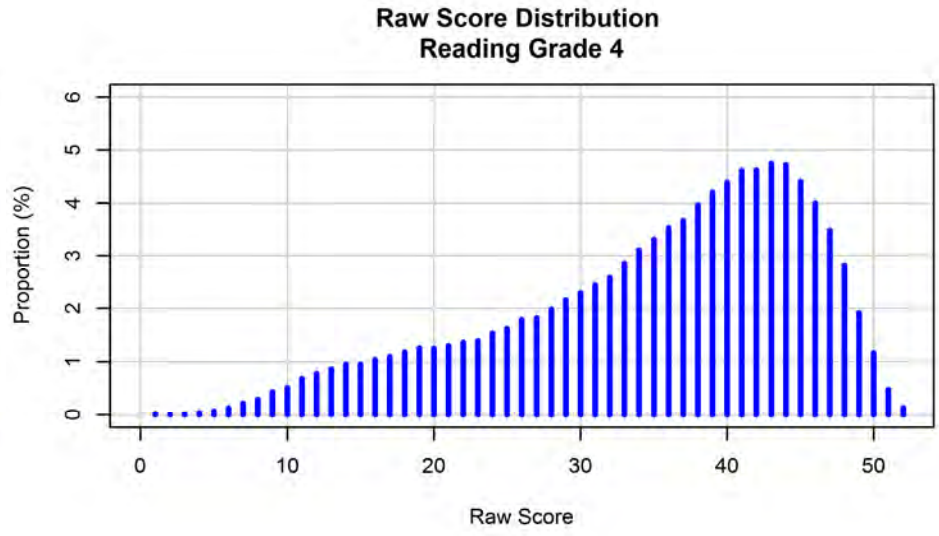
Figure 17–1. 2014 PSSA Raw Score Distributions

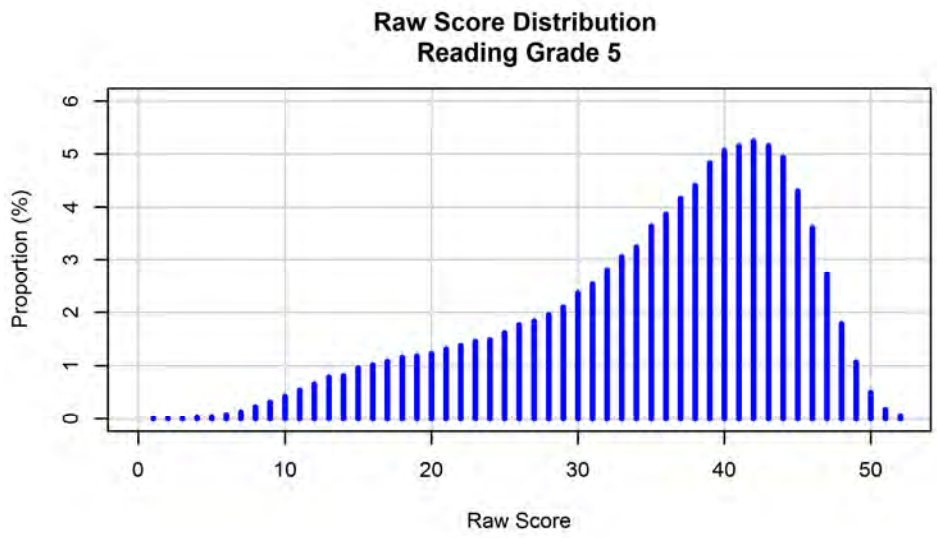


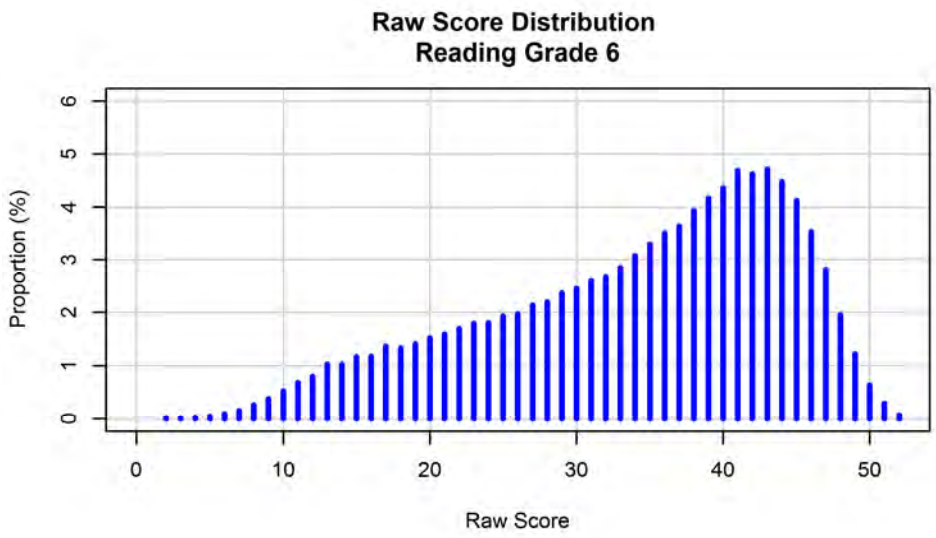

Raw Score Distribution
Mathematics Grade 7
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
60
70
Raw Score

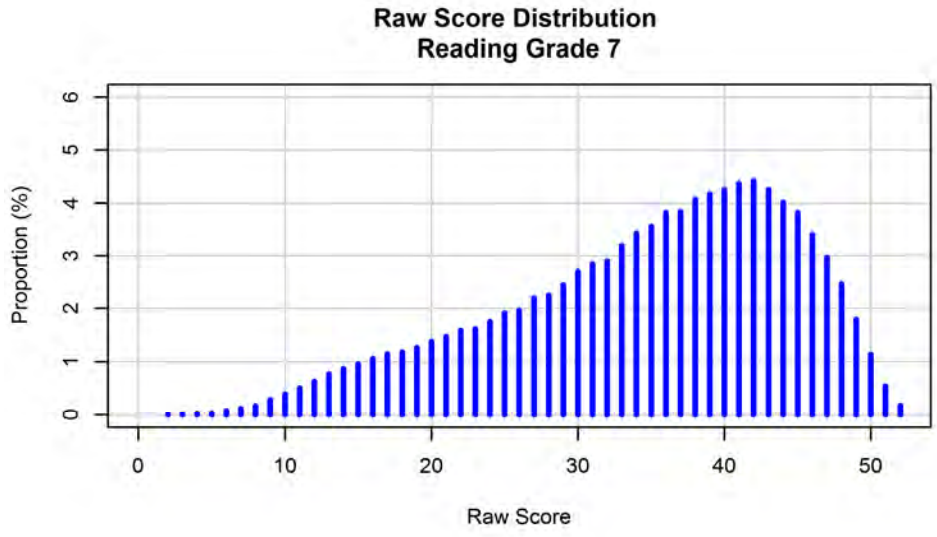

Raw Score Distribution
Mathematics Grade 8
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
60
70
Raw Score

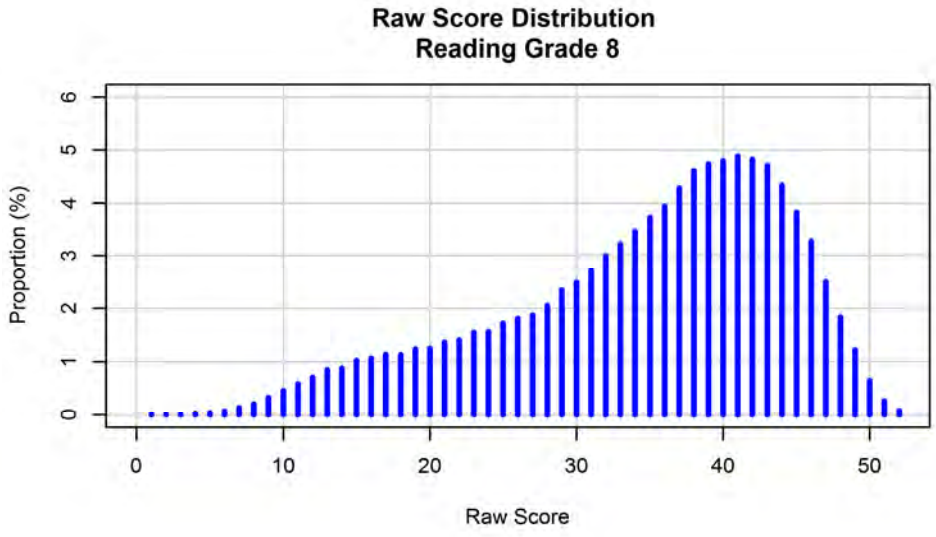

Raw Score Distribution
Reading Grade 3
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
Raw Score

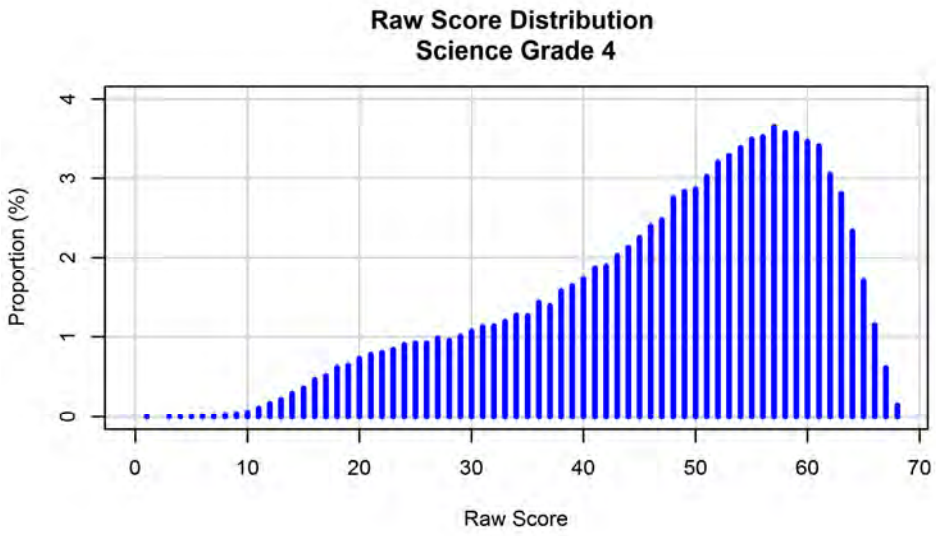

Raw Score Distribution
Reading Grade 4
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
Raw Score

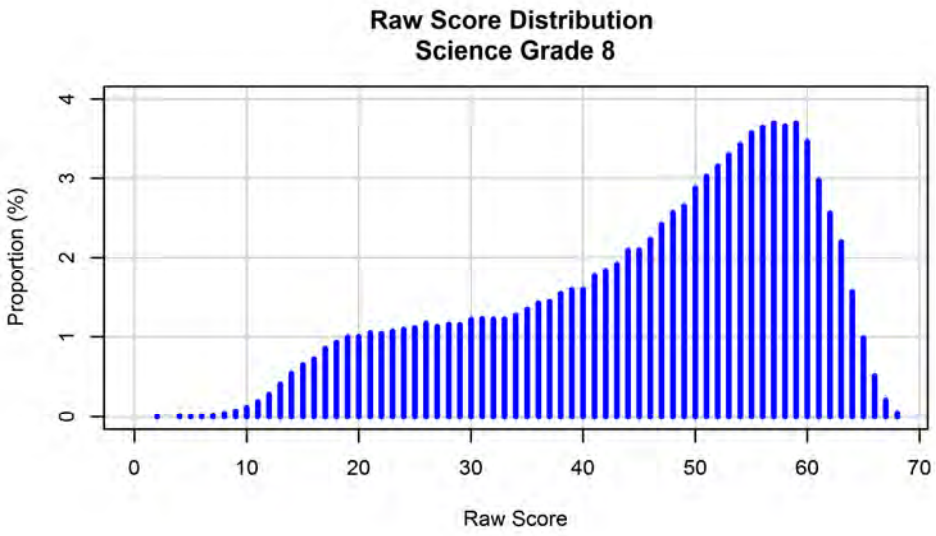

Raw Score Distribution
Reading Grade 5
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
Raw Score

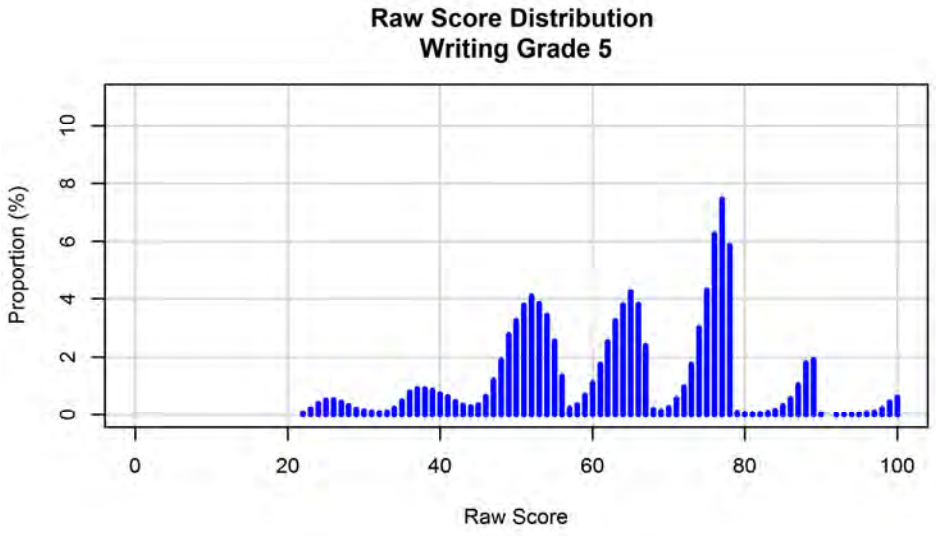

Raw Score Distribution
Reading Grade 6
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
Raw Score

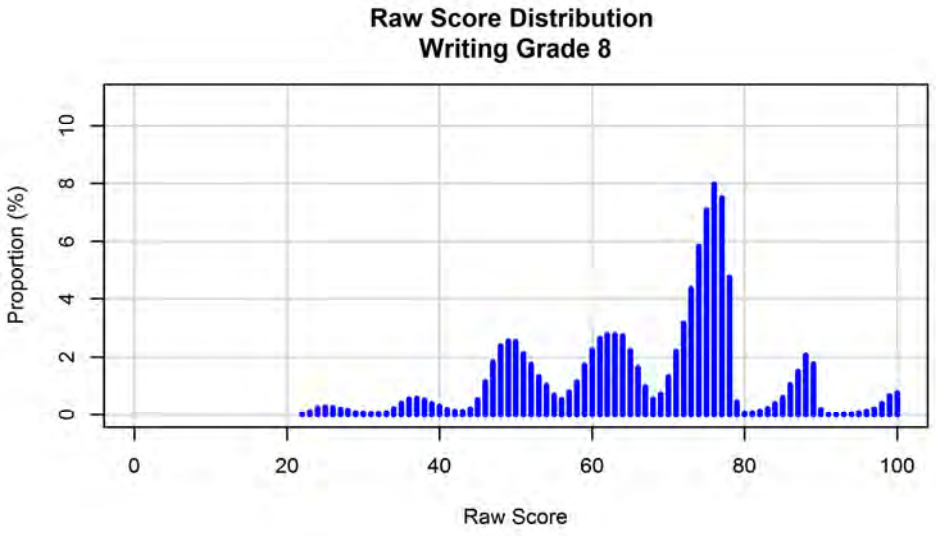

Raw Score Distribution
Reading Grade 7
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
Raw Score


Raw Score Distribution
Reading Grade 8
Proportion (%)
0
1
2
3
4
5
6
0
10
20
30
40
50
Raw Score


Raw Score Distribution
Science Grade 4
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
60
70
Raw Score


Raw Score Distribution
Science Grade 8
Proportion (%)
0
1
2
3
4
0
10
20
30
40
50
60
70
Raw Score


Raw Score Distribution
Writing Grade 5
Proportion (%)
0
2
4
6
8
10
0
20
40
60
80
100
Raw Score


Raw Score Distribution
Writing Grade 8
Proportion (%)
0
2
4
6
8
10
0
20
40
60
80
100
Raw Score

Chapter Eighteen: Reliability

This chapter[21] addresses the reliability of PSSA test scores. According to the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), reliability refers to:

> the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable and repeatable for an individual test taker; the degree to which scores are free of errors of measurement for a given group (p. 25).

Frisbie (2005) highlighted several elements of this definition. First, reliability is a property of test scores, not a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently make reference to a reliable test. While reliability concerns test scores (and not the test specifically), it is important to appreciate the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items/points tend to be more reliable than tests with fewer items/points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There are other reliability considerations that may be less evident from the *Standard's* definition, yet are still important for test users to understand. While freedom from measurement error is highlighted in the definition above, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. (Validity is further discussed in Chapter Nineteen.)

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used, the raters who score the items). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand what specific type of error is being considered in a reliability study, and equally, if not more important, what types are not.

Understanding the distinction between relative error and absolute error is also important as many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals respective to their test performance is of interest. Understanding examinee rank-order stability is important; however, such stability might be well achieved even when the specific score values are considerably different. When specific score values are considered important (e.g., if cuts cores are used), then absolute error is, too. Generally, there is more error variance when considering the absolute scores of examinees, which in turn suggests lower reliability.

[21] Please note that some of the material in this chapter is technical in nature.

As suggested, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement (SEMs and CSEMs)
- Decision consistency
- Rater agreement

RELIABILITY INDICES

As shown below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: 1) the variance in true scores and 2) the variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.[22]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variances were true, the index would equal 1.0. The index will be 0.0 if none of the test score variances were true. Such scores would be pure random noise (i.e., all measurement error). If the index achieved a value of 1.0, scores would be perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, it is clear that larger coefficients are more desirable because they indicate that test scores are less influenced by random error. (How big is big enough and how small is too small are issues considered in a later section.)

As noted in the introduction, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not take into account other sources of error, for example, variations due to random errors associated with the linking process, day-to-day variations (student health, testing environment, etc.), and rater inconsistency.

COEFFICIENT ALPHA

Although a number of reliability indices exist, perhaps the one most frequently reported for achievement tests is Coefficient Alpha. Consequently, this index is the one reported for the PSSA. Alpha indicates the internal consistency over the responses to a set of items measuring an underlying trait, in this case, academic achievement in subject areas such as mathematics, reading, and science. (The approach taken for writing is slightly different and is described later in this chapter.)

[22] A covariance term is not required, as true scores and error are assumed to be uncorrelated in classical test theory.

Alpha is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Variation in student performance from one sample of items to the next should be of particular concern for any achievement test user. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below.

Table 18–1. Two Hypothetical Vocabulary Tests

Test One	Test Two
Abase	Abate
Boon	Bilk
Capricious	Circuitous
Deface	Debase
….	….
Zealous	Zenith

If a representative group of students could take both of these tests, and the correlation between the scores could be obtained, then that result would represent the parallel forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the Coefficient Alpha index for those test scores was high, then this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If Coefficient Alpha were low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected in Alpha. (It should also be noted that Coefficient Alpha is algebraically identical to a *Person* × *Item* design under Generalizability Theory when relative error variance is assumed.)

Formula

Consider the following data matrix representing the scores of persons (rows) on items (columns).

Table 18–2. Person × Item Score (X_{pi}) Infinite (Population-Universe) Matrix

	Item			
Person	1	2	. . . *I*	. . . *k*
1	*Y*11	*Y*12	. . . *Y*1*i*	. . . *X*1*k*
2	*Y*21	*Y*22	. . . *Y*2*i*	. . . *X*2*k*
. . . . .				
. . . . .				
P	*Yp*1	*Yp*2	. . . *Ypi*	. . . *Xpk*
. . . . .				
. . . . .				
N	*YN*1	*YN*2	. . . *YNi*	. . . *XNk*

Notes. Adapted from Cronbach and Shavelson (2004).

Then, a general computational formula for Alpha is as follows:

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Yi}^2}{\sigma_X^2}\right),$$

where N is the number of parts (items or testlets), σ_X^2 is the variance of the observed total test scores, and σ_{Yi}^2 is the variance of part i.

FURTHER INTERPRETATIONS

Rules of Thumb

What reliability value is considered high enough? What values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. Another approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For the PSSA, comparisons to tests of similar lengths that were administered to similar student populations from other large-scale assessment programs would be relevant. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest ever observed and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested above, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores.

Is Alpha a Lower Limit to Reliability?

According to Brennan (1998), "the conventional wisdom that Coefficient Alpha is a lower limit to reliability is based largely on a misunderstanding." In reflecting on the 50th anniversary of his seminal 1951 article, Cronbach—in Cronbach and Shavelson (2004)—expressed similar misgivings about this conventional wisdom:

> one could argue that alpha was almost an unbiased estimate of the desired reliability….the almost in the preceding sentence refers to a small mathematical detail that causes the alpha coefficient to run a trifle lower than the desired value. This detail is of no consequence and does not support the statement made frequently in textbooks or in articles that alpha is a lower value to the reliability coefficient. That statement is justified by reasoning that starts with the definition of the desired coefficient as the expected consistency among measurements that had a higher degree of parallelism than the random parallel concept implied.

The assumptions for three common parallelism models are presented in Table 18–3. Alpha's assumptions come from the Essentially-Tau Equivalent model, which does not require equal means or equal variances across test parts. Based on this, Brennan (1998) asserts that the lower-limit issue, as conceptualized by many, provides an answer to a question that is of minimal importance. Reframed differently, the goal of selecting a reliability coefficient is not to find the one that provides the highest coefficient, but the one that most accurately reflects the test data under study.

It is important to note that there are factors encountered in practice that may legitimately make Coefficient Alpha an underestimate of reliability. However, there are also factors that might make Coefficient Alpha an overestimate of reliability. Both possibilities are discussed further below and generally arise when the Essentially-Tau Equivalent assumptions are strained.

Table 18–3. Summary of Expectations/Observable Relationships for Different Parallelism Models

	Degree of Measurement Parallelism*		
Relationship	**Classically Parallel**	**Essentially-Tau Equivalent**	**Congeneric**
Content Similarity	Yes	Yes	Yes
Equal Means across Parts	Yes	No	No
Equal Variances across Parts	Yes	No	No
Equal Covariances across Parts	Yes	Yes	No
Equal Covariances with Other Variables	Yes	Yes	No

* Other models exist, but are not considered here due to their limited application in practice.

Biases That Might Make Alpha an Underestimate of Reliability

There are factors that might negatively bias Coefficent Alpha, making the apparent reliability lower than it may actually be. Two situations frequently encountered in practice that might cause this include tests that are composed of mixed item types (e.g., multiple-choice (MC) and open-ended (OE) items) and tests that include a planned stratification of the test items according to topics or subdomains.

Although both situations strictly violate the assumptions on which Coefficient Alpha is derived (i.e., the tests are not based on equal part lengths in the former case and are not randomly parallel in the latter case), neither necessarily guarantees that the reliability will be markedly lower. In the latter case, reliability will be underestimated only when strand items are homogeneous enough for the average covariance within strata to exceed the average covariance between strata. Although both are potential influences for the PSSAs, most of the total test score reliabilities reported in Appendix P are all close to or above 0.90, indicating highly consistent test scores for these instruments. Writing is an exception discussed further below.

Biases That Might Make Alpha an Overestimate of Reliability

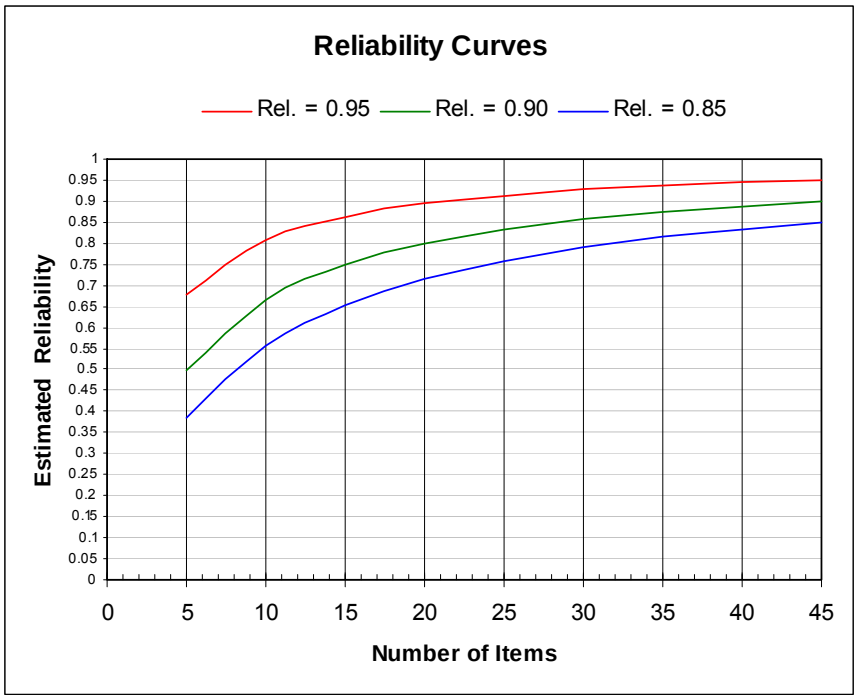
As emphasized in earlier sections, Coefficient Alpha only takes into account measurement error that arises from the selection of items used on a particular test form. There are other sources of random inaccuracy. One is due to the occasion of testing. Other various random conditions that might affect students on any particular testing occasions include illness, fatigue, and anxiety. Also, when a test includes OE items, as the PSSA does, another source that can cause random fluctuation is the OE item scorers. In a sense, Alpha may be positively biased because it does not take into account these other important sources of random error. Any internal consistency reliability index could understate the overall problem of measurement error because it ignores such sources or random error.

Another positive bias can occur when items are associated (clustered) with a common stimulus. Item bundles and testlets are other frequently used terms for this situation. One concrete example is when multiple reading comprehension items are associated with a common passage selection. Again, such a situation does not guarantee that the reliability estimate will be markedly affected, but the potential exists.

Strand Scores

As noted in the introduction, reliabilities tend to go up in value with an increase in test length and go down in value with a decrease in test length. Figure 18–1 illustrates this relationship for a hypothetical 45-point test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 10-item strand would be expected to have a score reliability of just over 0.65. The use of the Spearman-Brown prophecy formula assumes all items are exchangeable, which in practice they may not be. While such a chart may not perfectly model actual strand correlations, the intent is only to illustrate the substantial impact that limited numbers of strand items can have on strand-score reliability. One should not be surprised that strand scores with more points tend to show higher reliability coefficients and those with fewer points tend to show lower reliability coefficients. Further, what is most important for PSSA users to note is that some strand score reliabilities may be too low to warrant interpretation at the individual student level.

Figure 18–1. Example of the Relationship between Test Length and Reliability



Note. Tabled values derived using the Spearman-Brown formula.

Individual-Level versus Group-Level Scores

The results presented in this chapter pertain to the reliability of individual scores. Group results (e.g., state and district levels) are also provided on PSSA score reports, but the reliability of those scores is not specifically calculated here. However, as a general rule, the reliabilities of group mean scores are almost always higher (sometimes substantially) than the corresponding reliabilities for individual scores. This is especially important to remember for strand scores because those scores can be quite reliable at the group level, even though their individual reliabilities may be too low. Because the reliability of group mean scores (e.g., school or district means) tends to be higher than that of individual scores, the interpretation of strand scores at these aggregate levels is likely very reasonable in most instances. Even though the reliability for mean scores based on only a few items might be adequate, the validity of those same scores might be suspect because use of only a few items may not adequately cover the construct of interest. Validity is further discussed in Chapter Nineteen.

RELIABILITY OF WRITING SCORES

An extension of Coefficient Alpha that was derived to specifically fit stratified parallel tests (sometimes called stratified alpha; Cronbach, Schonemann, & McKie, 1965) was used to compute the PSSA writing score reliabilities. This approach is often used when it is believed that Alpha may be yielding a lower coefficient than it should for the reasons noted above. Although originally developed for content-stratified tests, Qualls (1995) demonstrated its utility for mixed-format tests as well when the stratification is based on item type. It may be computed as

$$_{strat\alpha}\rho_{xx'} = 1 - \frac{\Sigma\sigma^2 x_h (1 - {}_{\alpha}\rho_{x_h x_{h'}})}{\sigma^2 x},$$

where *h* indexes the individual strata.

The reliability of writing assessments (and many other performance-based tests) tends to be lower than reliabilities for other tests. Part of the reason for this is that there tends to be large student-by-task interactions on such assessments. For writing, this means individual student performance fluctuates significantly across different writing prompts, a student may score high on one prompt but much lower on another. In principle, adding more prompts can improve reliability to a more acceptable level. However, this is challenging in practice because of costs, testing time, and student fatigue. In sum, the large student-by-task interaction combined with the limited number of tasks often results in a relatively low reliability for writing assessments.

STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. It always ranges between 0.0 and 1.0 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of test score precision that is better suited for determining the effect of measurement inconsistencies for the scores obtained by individual examinees. This is particularly so for Conditional SEMs (CSEM) discussed further below.

Traditional Standard Error of Measurement

A precise, theoretical interpretation of the SEM is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score,[23] there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing and the sampling of test items. The standard error is defined as the standard deviation[24] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

The SEM formula is provided below.

$$SEM = SD\sqrt{1 - reliability}$$

This formula indicates the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value), the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value), the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account. Consider that an SEM of 3 on a 10-point test would be very different than an SEM of 3 on a 100-point test.

Traditional Standard Error of Measurement Confidence Intervals

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual test scores. SEMs help place "reasonable limits" (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, *X*, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between +/-1 SEM about two-thirds of the time.[25] For +/-2 SEM confidence intervals, this increases to about 95 percent.

Further Interpretations

ONE STANDARD ERROR OF MEASUREMENT FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score level. In reality however, such confidence intervals vary according to a student's score. Consequently, care should be taken using the SEM for students with extreme scores. (In the next sections, an alternate approach is described that conditions the SEM on a student's score estimate.)

[23] True score is the score the person would receive if the measurement process were perfect.

[24] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

[25] Some prefer the following interpretation: if a student were tested an infinite number of times, the +/-1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

RAW-SCORE METRIC

The SEM approach is calculated using raw scores, and as such, the resulting confidence interval bands are on the raw-score metric. Error bands on the scaled-score metric are considered in the next section.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the PSSA SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided less complex interpretations.

One simpler description is that a confidence interval represents the possible score range one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing, such as a student might be sleepier one day than another, or may be sick, or did not get a good breakfast. There is a reliability index that captures this source of random error, and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the PSSAs. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on the occasion of testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test; that is, the student took a test that covered exactly the same content but included a different set of items (if an infinite number of tests with equivalent content were taken, the student's true score will lie within the constructed confidence intervals 68 percent of the time). As an example, if the PSSA score was 1750 and the SEM band was 1700 to 1800, then a student would be likely to receive a score somewhere between 1700 and 1800 if a different version of the test had been taken.

RESULTS AND OBSERVATIONS

Coefficient Alpha results and associated (traditional) SEMs for various PSSA scores are documented in Table 18–4 and Appendix P. Values were derived using the PSSA final data file (see Chapter Nine). The results are organized by subject area and grade. Each table in Appendix P also breaks out the various reporting strands and groups of interest (i.e., the total student population, gender and ethnic groups, English language learners (ELL), students with individualized education plan (IEP), and the economically disadvantaged (ED)). The statistics reported in Appendix P include number of points possible (Pts.), number of items (Len.), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), traditional standard error of measurement (SEM), and item types (Items) used to determine each score.

Table 18–4. Reliabilities and Standard Errors of Measurement

Subject	Grade	Reliability	*SEM*
Mathematics	**3**	0.95	3.3
	4	0.94	3.6
	5	0.95	3.6
	6	0.94	3.4
	7	0.94	3.7
	8	0.95	3.5
Reading	**3**	0.92	2.7
	4	0.91	3.0
	5	0.91	2.9
	6	0.92	2.9
	7	0.91	3.0
	8	0.90	3.0
Science	**4**	0.93	3.3
	8	0.94	3.5
Writing	**5**	0.81	6.5
	8	0.81	6.1

Note that these tables in Appendix P report the standard deviations of observed scores. Assuming normally distributed scores, one would expect about two-thirds of the observations to be within one standard deviation of the mean. An estimate of the standard deviation of the true scores can be computed as

$$\hat{\sigma}_T = \sqrt{\hat{\sigma}_x^2 - \hat{\sigma}_x^2(1-\hat{\rho}_{xx})} \ .$$

The results are historically consistent with past PSSA reliability results. The overall test score reliability values are excellent, with many in the low 0.90s for mathematics, reading, and science. Writing reliabilities are lower, as they have been historically. (Possible reasons for this were discussed earlier.) It was also noted that reliabilities tend to go up in value with an increase in test length and population heterogeneity and go down in value with a decrease in test length and more homogeneous populations. Across the grades and subjects tabled in Appendix P, reliabilities for the sub-strands tended to follow these same trends. That is, strands with more items tended to show higher reliability coefficients. Also, groups exhibiting more variability in test scores tended to have higher reliability coefficients. Perhaps the most significant result pertains to an earlier caution (i.e., that some strand score reliabilities may be too low to warrant interpretation at the individual student level). Once again, there is no firm guideline regarding how low is too low. The lower a given reliability coefficient, the greater the potential for over-interpretation. As a point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores. It should be noted that the reliability of group mean scores (e.g., school or district means) tends to be higher than that of individual scores, suggesting interpretation of strand scores at these aggregate levels is likely reasonable.

RASCH CONDITIONAL STANDARD ERROR OF MEASUREMENT

The CSEM also indicates the degree of measurement error but does so in scaled-score units and varies as a function of a student's actual scaled score. Therefore, the CSEM may be especially useful in characterizing measurement precision in the neighborhood of a score level used for decision making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model.

$$CSEM(\hat{\theta}) = \frac{1}{\sqrt{I(\hat{\theta})}}$$

where $CSEM(\hat{\theta})$ is the conditional standard error of measurement and $I(\hat{\theta})$ is the test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability (θ) metric. The conditional standard error on the scaled-score (SS) metric is determined by simply multiplying the $CSEM(\hat{\theta})$ by the slope (multiplicative constant, *m*) of the linear transformation equation used to convert the Rasch ability estimates to scaled scores.

$$\text{CSEM(SS)} = CSEM\left(\hat{\theta}\right) * m$$

Chapter Fourteen provides the linear transformation formulas for each PSSA test.

Rasch Conditional Standard Error of Measurement Confidence Intervals

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scaled scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

Further Interpretations

DIFFERENT CONDITIONAL STANDARD ERROR OF MEASUREMENT FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score level. The magnitude of the CSEM values is U-shaped, with larger CSEM values associated with lower and higher scores.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Twelve—the Rasch-based CSEMs (conditioned on score level) should not vary across groups.

SCALED-SCORE METRIC

The CSEM and associated confidence interval bands are on the scaled-score metric.

TYPE OF ERROR REFLECTED

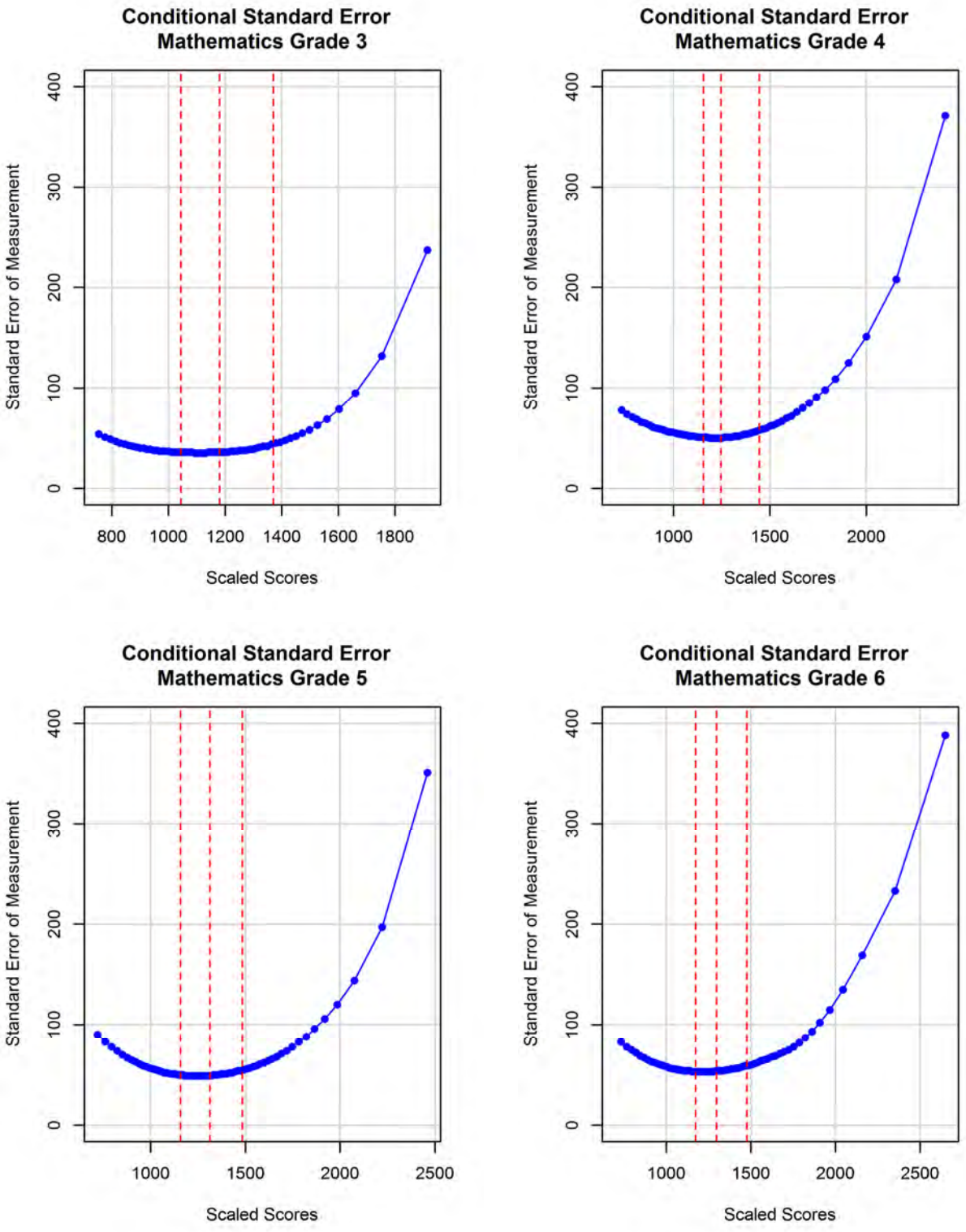
The SEMs documented on the PSSA score reports are the Rasch-based conditional standard errors of measurement described in the previous section. These are provided by the WINSTEPS scaling program described in Chapter Twelve. As noted earlier, these CSEMs are based on the concept of statistical information. For the purpose of providing a simpler explanation of SEMs to test score users, the earlier description of SEMs framed using the idea of internal consistency reliability was provided in the PSSA score report interpretive documents.[26] Score report content is considered in greater detail in Chapter Sixteen.

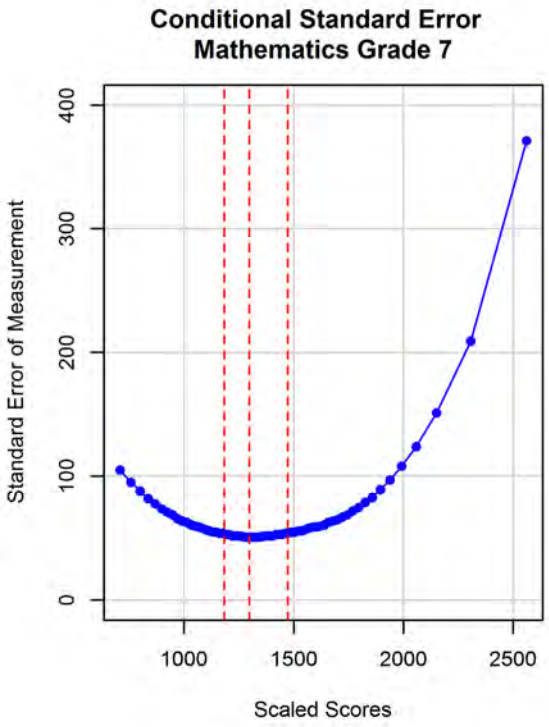
RESULTS AND OBSERVATIONS

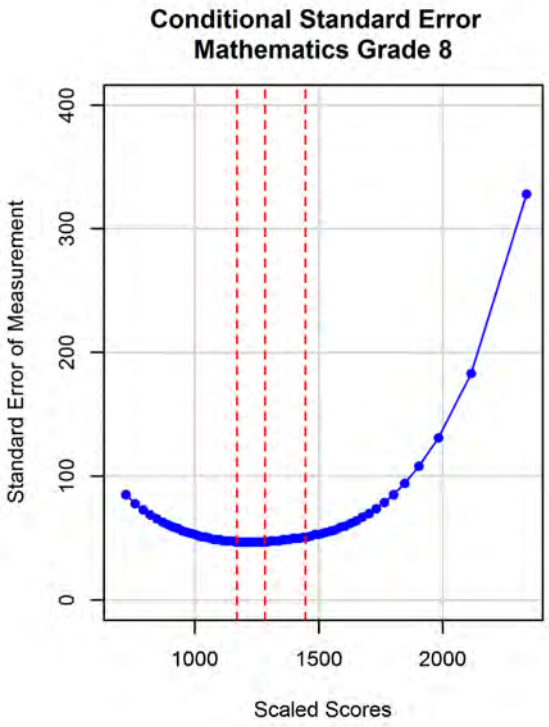
Figure 18–2 shows the Rasch CSEMs associated with each scaled-score level. (This information is also provided in tabular form in Appendix P.) Values were derived using the calibration data file described in Chapter Nine. The values are fairly consistent across a noticeably large range of the scaled scores, as demonstrated by the relatively flat bottoms of most plots. The values increase at both extremes (i.e., at smaller and larger scaled scores), giving these figures their typical U-shaped pattern. (Only the SEMs for scores greater than the lowest observable scaled scores [LOSS] are shown in the figures; consequently, the complete U-shape does not appear in most plots.) The three red-dashed lines represent the Basic, Proficient, and Advanced scaled score cuts, respectively, moving from lower to higher scaled-score values. SEM values at the cut score lines were generally associated with smaller SEM values, indicating more precise measurement occurs at these cuts. The plots for writing are somewhat irregular in shape, which is likely due to the differential weighting that occurs for portions of these tests.

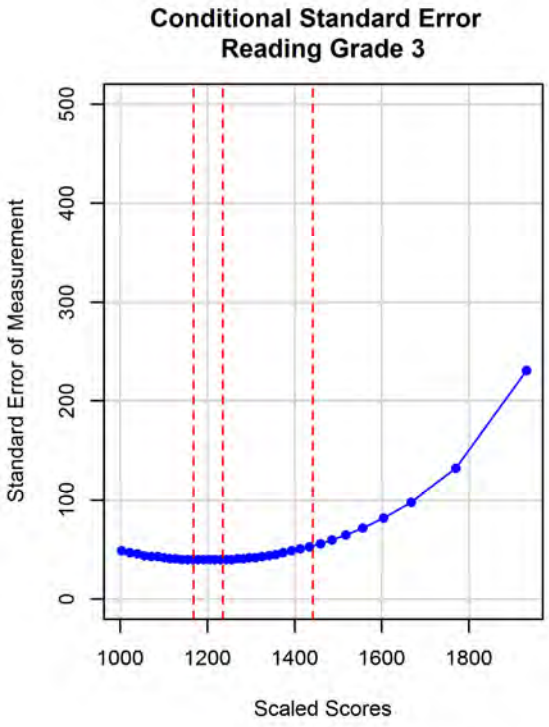
[26] Because IRT CSEMs are based on statistical information, it is questionable whether they account for error variance due to items. However, it seems difficult to construct a simple explanation of IRT CSEMs for the general public.

Figure 18–2. Conditional Standard Error Plots for Each Grade and Subject




Conditional Standard Error
Mathematics Grade 7
Standard Error of Measurement
0
100
200
300
400
1000
1500
2000
2500
Scaled Scores


Conditional Standard Error
Mathematics Grade 8
Standard Error of Measurement
0
100
200
300
400
1000
1500
2000
Scaled Scores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Reading Grade 3
Standard Error of Measurement
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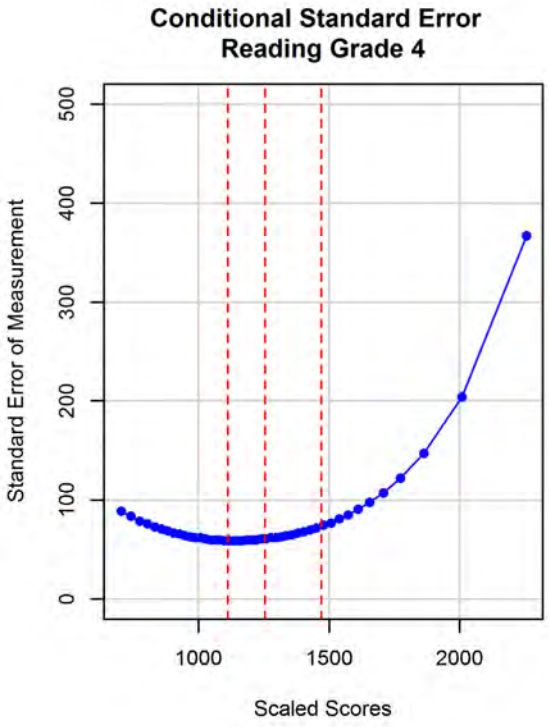
200
300
400
500
1000
1200
1400
1600
1800
Scaled Scores


Conditional Standard Error
Reading Grade 4
Standard Error of Measurement
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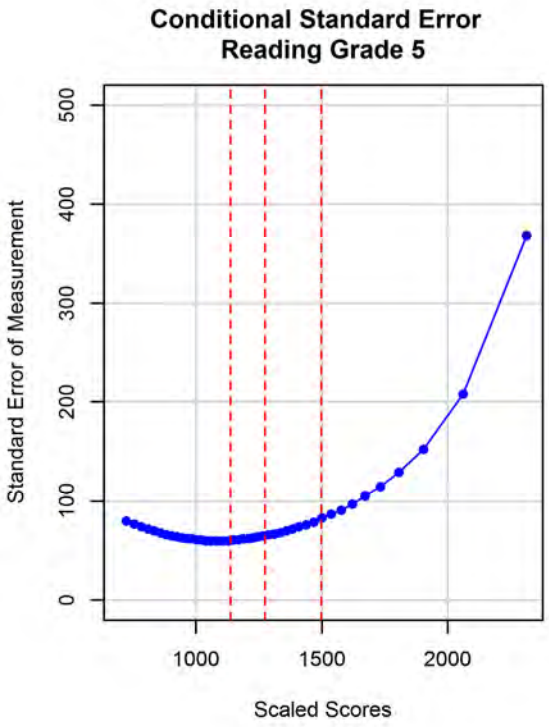
100
200
300
400
500
1000
1500
2000
Scaled Scores


Conditional Standard Error
Reading Grade 5
Standard Error of Measurement
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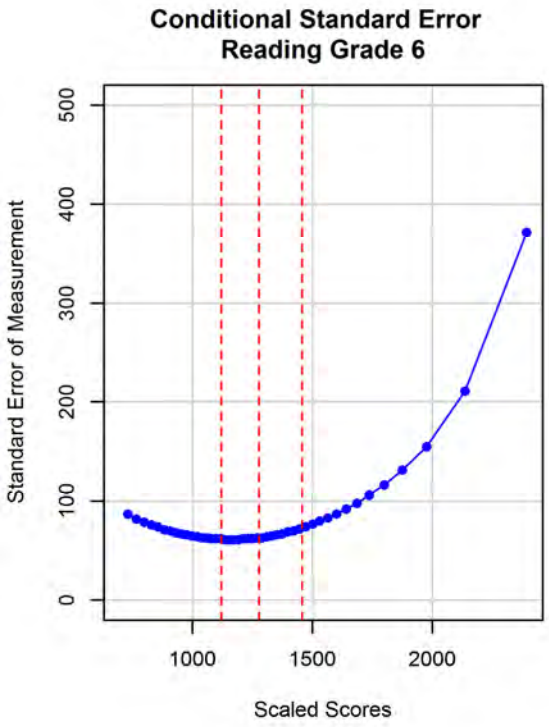
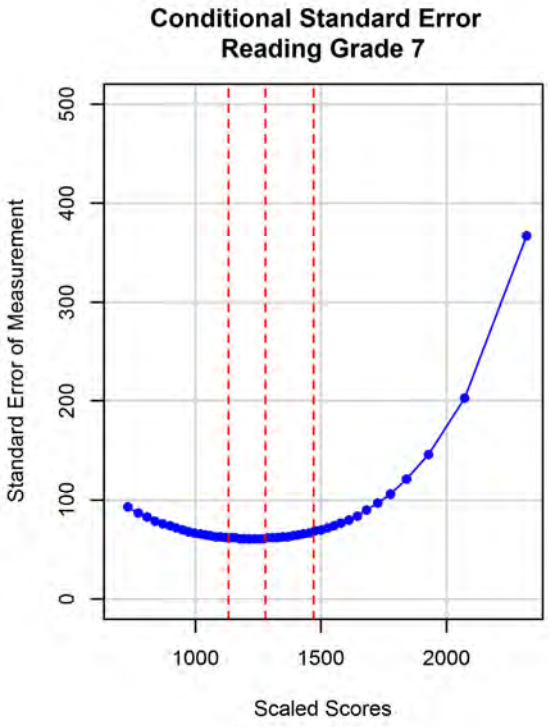
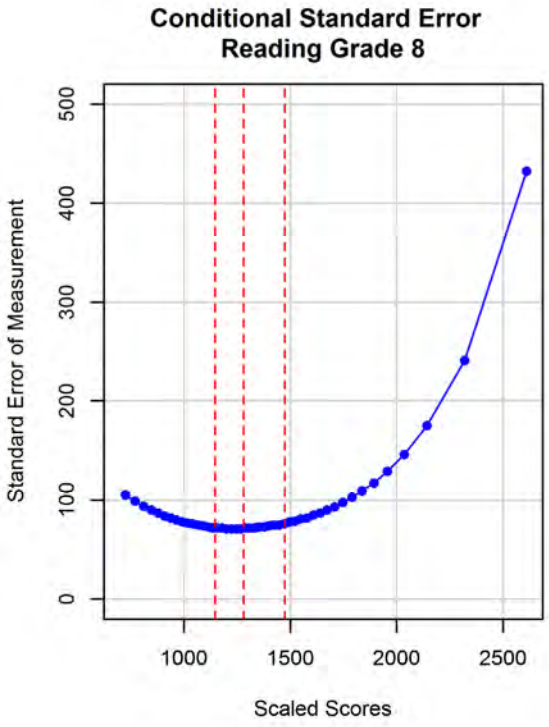
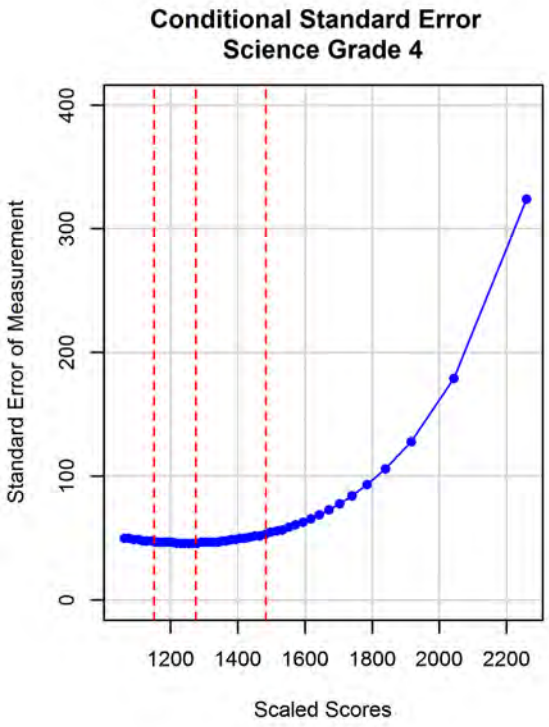
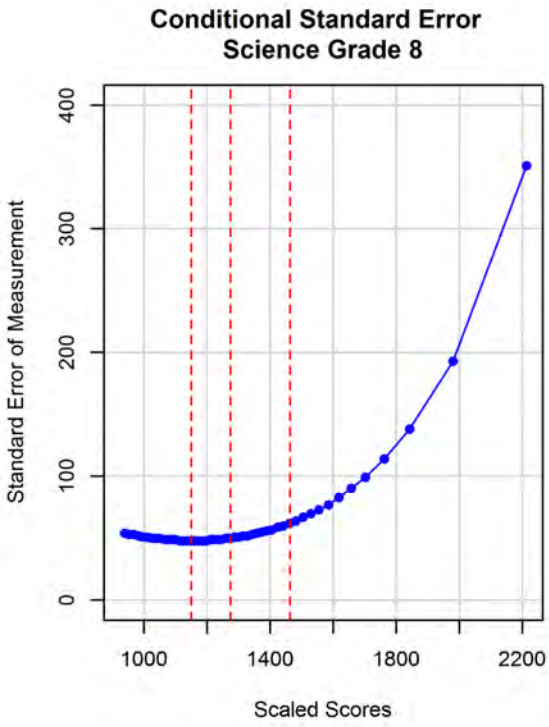
100
200
300
400
500
1000
1500
2000
Scaled Scores

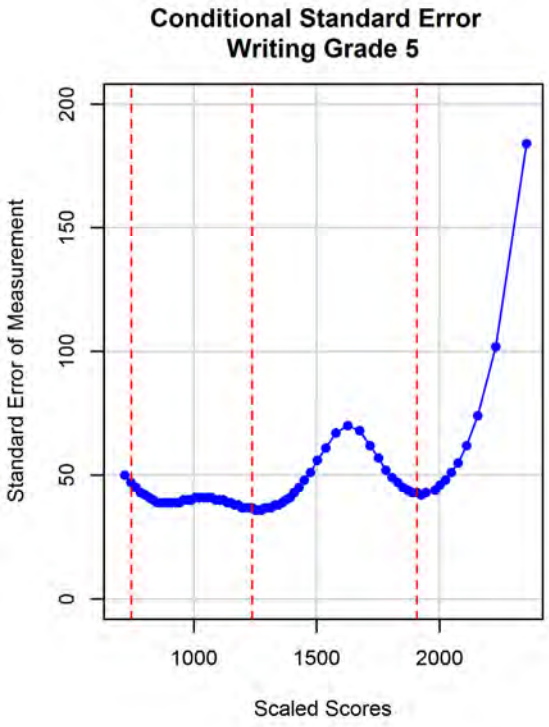

Conditional Standard Error
Reading Grade 6
Standard Error of Measurement
0
100
200
300
400
500
1000
1500
2000
Scaled Scores

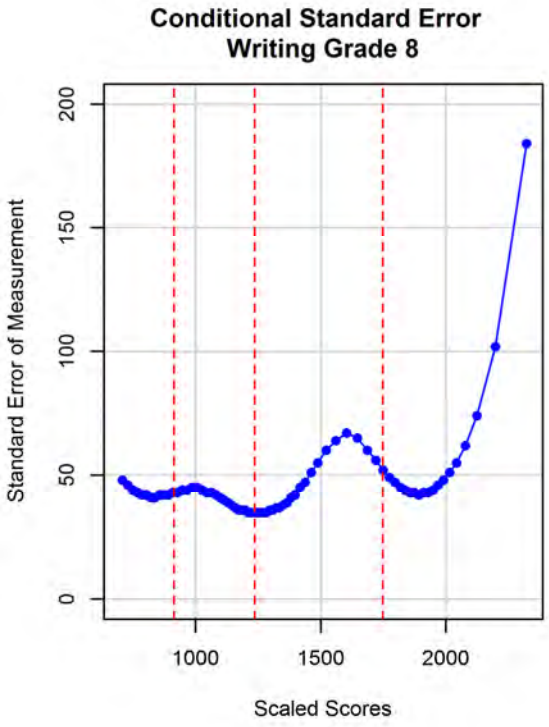

Conditional Standard Error
Reading Grade 7
Standard Error of Measurement
0
100
200
300
400
500
1000
1500
2000
Scaled Scores


Conditional Standard Error
Reading Grade 8
Standard Error of Measurement
0
100
200
300
400
500
1000
1500
2000
2500
Scaled Scores


Conditional Standard Error
Science Grade 4
Standard Error of Measurement
0
100
200
300
400
1200
1400
1600
1800
2000
2200
Scaled Scores


Conditional Standard Error
Science Grade 8
Standard Error of Measurement
0
100
200
300
400
1000
1400
1800
2200
Scaled Scores


Conditional Standard Error
Writing Grade 5
Standard Error of Measurement
0
50
100
150
200
1000
1500
2000
Scaled Scores


Conditional Standard Error
Writing Grade 8
Standard Error of Measurement
0
50
100
150
200
1000
1500
2000
Scaled Scores

DECISION CONSISTENCY AND ACCURACY

In a standards-based testing program there should be great interest in knowing how accurately students are classified into performance categories. In contrast to Coefficient Alpha that is concerned with the relative rank-ordering of students, it is the absolute values of student scores that are important in decision consistency and accuracy.

Classification consistency refers to the degree to which the achievement level for each student can be replicated upon retesting using an equivalent form (Huynh, 1976). Decision consistency answers the question: What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test. If two parallel forms of the test were given to the same students, the consistency of the measure would be reflected by the extent that the classification decisions made from the first set of test scores matched the decisions based on the second set of test scores. Consider Tables 18–5 and 18–6 below.

Table 18–5. Pseudo-Decision Table for Two Hypothetical Categories

		TEST ONE		
		LEVEL I	**LEVEL II**	**MARGINAL**
TEST TWO	**LEVEL I**	φ11	φ12	φ1●
	LEVEL II	φ21	φ22	φ2●
	MARGINAL	φ●1	φ●2	1

Table 18–6. Pseudo-Decision Table for Four Hypothetical Categories

		TEST ONE				
		LEVEL I	**LEVEL II**	**LEVEL III**	**LEVEL IV**	**MARGINAL**
TEST TWO	**LEVEL I**	φ11	φ12	φ13	φ14	φ1●
	LEVEL II	φ21	φ22	φ23	φ24	φ2●
	LEVEL III	φ31	φ32	φ33	φ34	φ3●
	LEVEL IV	φ41	φ42	φ43	φ44	φ4●
	MARGINAL	φ●1	φ●2	φ●3	φ●4	1

If a student is classified as being in one category based on Test One's score, how probable would it be that the student would be reclassified as being in the same category if he or she took Test Two (a non-overlapping, equally difficult form of the test)?

The proportions of correct decisions, φ, for two and four categories are computed by the following two formulas, respectively:

$$\varphi = \varphi_{11} + \varphi_{22}$$

$$\varphi = \varphi_{11} + \varphi_{22} + \varphi_{33} + \varphi_{44}$$

It is the sum of the diagonal entries—that is, the proportion of students classified by the two forms into exactly the same achievement level—that signifies the overall consistency.

Classification accuracy refers to the agreement of the observed classifications of students with the classifications made on the basis of their true scores. An observed score contains measurement error while a true score is free of measurement error. A student's observed score can be formulated by the sum of his or her true score plus measurement error, or $Observed = True + Error$. Decision accuracy is an index to determine the extent to which measurement error causes a classification different than expected from the true score.

Since true scores are unobserved and since it is not feasible to repeat PSSA testing in order to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data to estimate the true scores and to project the consistency and accuracy of classifications solely using data from the available administration (Hambleton & Novick, 1973). Although a number of procedures are available, one well-known method was developed by Livingston and Lewis (1995) utilizing a specific True Score Model. This approach is fairly complex, and the cited source contains details regarding the statistical model used to calculate decision consistency and accuracy from the single PSSA administration.

Further Interpretations

Several factors might affect decision consistency and accuracy. One important factor is the reliability of the scores. All other things being equal, more reliable test scores tend to result in more similar reclassifications and less measurement error. Another factor is the location of the cut score in the score distribution. More consistent and accurate classifications are observed when the cut scores are located away from the mass of the score distribution. For example, when scores are close to being normally distributed, the mass is concentrated in the middle of the distribution, and, thus classifications tend to become more consistent when cut scores go up from 70 percent to 80 percent to 90 percent or, alternatively, go down from 30 percent to 20 percent to 10 percent. The number of performance levels is also a consideration. Consistency and accuracy indices for four performance levels should be lower than those based on two categories. This is not surprising since classification and accuracy using four levels would allow more opportunity to change achievement levels. Hence, there would be more classification errors and less accuracy with four achievement levels, resulting in lower consistency indices.

RESULTS AND OBSERVATIONS

The results for the overall consistency across all four performance levels as well as for the dichotomies created by the three cut scores are presented in Table 18–7. The tabled values are derived with the program *BB-Class* (Brennan, 2004) using the Livingston and Lewis method. Across all subject areas, the overall decision consistency ranged from the mid-0.60s to the high 0.70s while the decision accuracy ranged from the low 0.70s to the mid-0.80s. The overall consistency and accuracy in reading was slightly lower than the other subject areas on average. It should be noted that consistency and accuracy indices for the four performance levels should be lower than those based on two categories (discussed above).

Dichotomous decisions using the Below Basic/Basic cuts generally have the highest consistency and accuracy values and exceeded 0.90 in all cases. The next highest values, on average, are associated with the Basic/Proficient and Proficient/Advanced cuts, respectively, for mathematics, reading, and science. In writing, the latter two are reversed.

Table 18–7. Decision Consistency and Accuracy Results

	Grade	Statistic	Overall	BBas/Bas	Bas/Prof	Prof/Adv
Mathematics	**3**	Consist.	0.79	0.96	0.93	0.90
		Accuracy	0.85	0.97	0.95	0.93
	4	Consist.	0.78	0.94	0.93	0.90
		Accuracy	0.84	0.96	0.95	0.93
	5	Consist.	0.78	0.94	0.92	0.91
		Accuracy	0.84	0.96	0.95	0.94
	6	Consist.	0.76	0.94	0.92	0.90
		Accuracy	0.83	0.96	0.94	0.93
	7	Consist.	0.77	0.94	0.92	0.91
		Accuracy	0.83	0.96	0.94	0.93
	8	Consist.	0.80	0.94	0.93	0.91
		Accuracy	0.85	0.96	0.95	0.94
Reading	**3**	Consist.	0.71	0.93	0.91	0.85
		Accuracy	0.79	0.95	0.94	0.89
	4	Consist.	0.69	0.93	0.90	0.85
		Accuracy	0.78	0.95	0.93	0.89
	5	Consist.	0.65	0.92	0.88	0.83
		Accuracy	0.74	0.94	0.92	0.88
	6	Consist.	0.71	0.93	0.90	0.87
		Accuracy	0.79	0.95	0.93	0.91
	7	Consist.	0.71	0.94	0.90	0.87
		Accuracy	0.79	0.96	0.93	0.91
	8	Consist.	0.75	0.94	0.92	0.87
		Accuracy	0.82	0.96	0.94	0.91
Science	**4**	Consist.	0.77	0.95	0.93	0.88
		Accuracy	0.84	0.97	0.95	0.92
	8	Consist.	0.72	0.93	0.91	0.87
		Accuracy	0.80	0.95	0.94	0.91
Writing	**5**	Consist.	0.75	0.98	0.81	0.95
		Accuracy	0.81	0.98	0.87	0.96
	8	Consist.	0.69	0.96	0.84	0.89
		Accuracy	0.79	0.97	0.89	0.93

Note. Results derived using PSSA final data file (see Chapter Nine).

RATER AGREEMENT

Because open-ended items are included on the PSSAs, another source of random error is related to the scorers of those items. Frisbie (2005) noted that "test score reliability differs from scorer reliability" and that "the need for one kind of estimate cannot be satisfied by the other." Additionally, the data most easily obtainable that captures this information comes from the "10 percent read behinds" collected during the scoring process (see Chapter Eight for a description). Partly because of the way that this data is obtained and reported (i.e., it is not a ratio of true score variance over observed score variance), the term rater agreement is used here, not rater reliability, or inter-rater reliability, as these terms are somewhat misleading, as explained above.

Further Interpretations

For the PSSAs, both within-year and across-year rater consistency are available. As noted earlier, the linking process adjusts for across-year changes (see Chapter Sixteen). As part of the data collected for that process, additional across-year rater consistency data is available for consideration.

RESULTS AND OBSERVATIONS

Within-year rater agreement information is provided in Chapter Eight. This information is reformatted in Tables 18–8 through 18–11 for PSSA mathematics, reading, science, and writing OE items, respectively. In addition, the percentages awarded to each score point are also presented in these tables. As seen from these tables, the inter-rater agreement percentages range from 87 percent to 97 percent for mathematics, 74 percent to 86 percent for reading, 78 percent to 97 percent for science, and 76 percent to 84 percent for writing. Mathematics had validity ranging from 84 percent to 98 percent; reading had validity ranging from 74 percent to 89 percent; and science had validity ranging from 90 percent to 99 percent. (Validity is discussed further in Chapter Eighteen.) The ranges above are similar to prior results for the PSSA.

Across-year data are presented in Tables 18–12 through 18–14 for mathematics, reading, and science. Note that for these subjects, data are only available for the designated OE core anchor items. In 2014, to align both sets of standards, there were no OE core anchor items with mathematics grade 4. With mathematics grades 5, 6, and 8, there was one, instead of two, OE core anchor items. The number of responses (N), the old score and new score means, and the Pearson correlations are tabled. Mathematics correlations range from 0.91 to 0.98. Reading correlations range from 0.69 to 0.84. Science correlations range from 0.73 to 0.97. Correlations for the writing prompt scores are reported in Table 18–15 and range from 0.63 to 0.73. The correlation ranges above are similar to prior results for the PSSAs.

Table 18–8. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Mathematics

		Inter-Rater Agreement %			Percentage Awarded for Each Score Point %					
Grade	**Item**	**Exact**	**Adjacent**	**Validity**	**0**	**1**	**2**	**3**	**4**	**B/NS**
	1	94	6	91	14	21	21	29	14	1
3	2	94	6	97	15	28	26	17	14	2
	3	96	4	97	2	7	23	23	44	1
	1	92	8	90	16	14	20	40	9	2
4	2	94	5	95	4	14	17	26	31	8
	3	87	12	84	27	21	23	17	11	1
	1	84	16	92	13	22	24	23	17	1
5	2	94	6	98	5	13	54	19	5	5
	3	88	13	92	27	30	17	18	7	1
	1	97	3	94	13	63	5	12	7	1
6	2	89	11	92	12	34	26	20	2	6
	3	93	7	96	5	8	20	45	21	1
	1	91	9	95	26	45	10	13	4	2
7	2	87	13	92	21	26	21	10	17	5
	3	91	9	95	18	8	27	36	10	1
	1	90	10	88	43	6	27	9	13	2
8	2	87	13	93	13	35	20	16	10	5
	3	89	11	88	6	53	8	24	8	2

Note. B = blank; NS = non-scoreable

Table 18–9. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Reading

		Inter-Rater Agreement %			Percentage Awarded for Each Score Point %				
Grade	**Item**	**Exact**	**Adjacent**	**Validity**	**0**	**1**	**2**	**3**	**B/NS**
3	1	78	22	76	8	40	40	9	3
	2	77	23	82	6	41	41	10	2
4	1	81	19	84	5	24	41	27	3
	2	80	20	81	5	20	42	30	3
	3	80	20	84	6	26	44	22	2
	4	83	17	87	12	33	33	19	3
5	1	78	22	87	2	23	57	16	2
	2	78	21	81	7	25	53	13	2
	3	80	20	89	8	19	57	15	1
	4	75	25	79	14	40	34	10	2
6	1	77	23	81	2	30	45	21	2
	2	81	18	75	5	34	47	13	1
	3	82	18	82	5	32	53	10	0
	4	83	17	85	16	26	43	9	6
7	1	86	14	86	2	49	27	21	1
	2	78	22	80	6	31	43	17	3
	3	81	19	86	7	30	35	26	2
	4	82	18	75	11	36	31	21	1
8	1	74	26	89	7	35	42	14	2
	2	77	23	89	3	15	53	26	3
	3	74	26	81	7	29	46	16	2
	4	78	22	74	9	37	32	19	3

Note. B = blank; NS = non-scoreable.

Table 18–10. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Science

		Inter-Rater Agreement %			Percentage Awarded for Each Score Point %			
Grade	**Item**	**Exact**	**Adjacent**	**Validity**	**0**	**1**	**2**	**B/NS**
4	1	95	5	98	21	42	36	1
	2	93	7	96	13	38	47	1
	3	96	4	99	5	46	48	2
	4	97	3	99	23	35	40	1
	5	83	17	92	16	38	45	2
8	1	86	14	94	11	27	60	2
	2	78	21	90	13	36	49	3
	3	84	15	95	33	34	29	4
	4	86	14	94	24	29	44	3
	5	93	7	98	26	36	35	3

Note. B = blank; NS = non-scoreable. For more information regarding validity, see the section on Handscoring Validity Process in Chapter Eight.

Table 18–11. Inter-Rater Agreement and Percentage Awarded for Each Score Point for OE Items—Writing

		Inter-Rater Agreement %		Percentage Awarded for Each Score Point %				
Grade	**Promp**	**Exact**	**Adjacent**	**1**	**2**	**3**	**4**	**NT/NS**
5	1 (Com)	84	16	6	41	46	4	2
	1 (R&E)	82	18	7	43	44	4	2
	2 (Com)	84	16	7	45	41	4	2
	2 (R&E)	83	17	8	45	41	4	2
8	1 (Com)	83	17	3	26	63	6	2
	1 (R&E)	79	21	3	28	61	7	2
	2 (Com)	80	20	4	34	55	6	2
	2 (R&E)	76	24	5	33	55	6	2

Note. NT = not taken; NS = non-scoreable.

Table 18–12. Mathematics Mean Scores and Correlations

Grade	Item ID	N	Prev. Mean	2014 Mean	Corr.
3	1	1000	2.77	2.77	0.98
	2	1000	2.14	2.16	0.95
5	1	1000	1.54	1.51	0.94
6	1	999	1.89	1.83	0.91
7	1	1000	1.72	1.72	0.94
	2	999	2.22	2.24	0.95
8	1	1000	1.81*	1.80	0.91

* OE linking item is from 2012.

Table 18–13. Reading Mean Scores and Correlations

Grade	Item ID	N	Prev. Mean	2014 Mean	Corr.
3	1	997	1.51	1.42	0.73
4	1	999	1.65	1.57	0.79
	2	1000	1.93	1.87	0.84
5	1	1000	1.42	1.42	0.73
	2	999	1.67	1.65	0.74
6	1	997	1.60	1.64	0.74
	2	998	1.60	1.64	0.78
7	1	999	1.62	1.49	0.80
	2	995	1.60	1.69	0.84
8	1	1000	1.56	1.57	0.69
	2	999	1.60	1.62	0.79

Table 18–14. Science Mean Scores and Correlations

Grade	Item ID	N	Prev. Mean	2014 Mean	Corr.
4	1	1000	1.27	1.29	0.73
	2	1000	1.13	1.13	0.97
8	1	999	0.98	0.97	0.82
	2	1000	1.19	1.15	0.92

Table 18–15. Writing Mean Scores and Correlations

Grade	Item ID	N	Prev. Mean	2014 Mean	Corr.
5	1-A	998	2.52	2.38	0.72
	1-B	998	2.56	2.38	0.71
	2-A	1000	2.67	2.52	0.70
	2-B	1000	2.64	2.47	0.69
8	1-A	999	2.69	2.59	0.73
	1-B	999	2.66	2.61	0.69
	2-A	1000	2.81	2.82	0.64
	2-B	1000	2.75	2.77	0.63

Chapter Nineteen: Validity

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), validity refers to "the degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests" (p. 9). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on 1) test content, 2) response processes, 3) the internal structure of the test, 4) the relationships between test scores and other variables, and 5) the consequences of testing. In addition, when Item Response Theory (IRT) models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of a variety of evidence to support the proposed test score interpretations and uses. This entire technical report describes the technical aspects of the PSSA tests in support of their score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, linking, score reporting, and reliability. This chapter summarizes and synthesizes the evidence based on the *Standards'* framework. The purposes and intended uses of PSSA test scores are reviewed first, then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE PSSA

The *Standards* emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the PSSA will be reviewed first. As stated in Chapter One, the three main purposes of the PSSA include the following:

1. Measuring how well students acquire the knowledge and skills described in the *Pennsylvania Assessment Anchor Content Standards* (Assessment Anchors) as defined by the Eligible Content for Mathematics, Reading, and Science and the Academic Content Standards for Writing.
2. Providing information on school and district accountability.
3. Improving curricular and instructional practices in order to help students reach proficiency in the Academic Standards.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the PSSA rests greatly on establishing a link between each piece of the assessment (i.e., the items) and what the students should know and be able to do as required by the Assessment Anchors, Eligible Content, and/or the Academic Content Standards. The PSSA tests are intended to measure students' knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for Mathematics, Reading, and Science and the Academic Content Standards for Writing. Thus the evidence supporting the alignment among the PSSA tasks, the Assessment Anchors as defined by the Eligible Content, and the Academic Content Standards should be provided.

Lane (1999) suggests taking the following steps to support the content validity of the PSSA:

- Evaluate the degree to which the PSSA test specifications represent and align with the knowledge and skills described in the Assessment Anchors as defined by the Eligible Content for Mathematics, Reading, and Science and the Academic Content Standards for Writing in terms of both content and cognitive processes.
- Evaluate the alignment between the PSSA items and test specifications to ensure representativeness.
- Evaluate the extent to which the curriculum aligns with the Assessment Anchors. If some contents are not included in the curriculum, then low scores on the PSSA should not be interpreted as meaning that instruction was ineffective.
- Conduct content reviews of the PSSA items using a panel of content experts to see whether they measure the intended construct or are the sources of construct-irrelevant variance.
- Conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- Evaluate procedures for administration and scoring, such as the appropriateness of instructions to examinees, time limit for the assessment, and training of raters.
- Submit operational tests to third-party, independent reviews (i.e., Achieve.org).

Chapters Two through Eight of this report present a considerable amount of evidence related to test content. As described in these chapters, all the PSSA items were developed and aligned with the PSSA Assessment Anchors and Eligible Content for Mathematics, Reading, and Science and the Academic Content Standards for Writing following well-established procedures. After the items were developed, they underwent multiple rounds of content and bias reviews. After they were field tested, they were reviewed with respect to their statistical properties. Items selected for the operational assessment had to pass content, psychometric, and PDE reviews. Tests were administered according to standardized procedures with allowable accommodations.

Some efforts made to ensure content validity are summarized below:

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the PSSA items aligned with the Assessment Anchors as defined by the Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content and levels of cognitive complexity and difficulty.
- DRC and WestEd selected qualified item writers and provided training to help ensure they wrote high-quality items.
- Each newly developed item was first reviewed by content specialists and editors at DRC and/or WestEd to make sure that all items measured the intended Assessment Anchors, as defined by the Eligible Content for Mathematics, Reading, and Science and the Academic Content Standards for Writing. Appropriateness for the intended grade was also considered, as well as depth of knowledge, graphics, grammar/punctuation, language demand, and distractor reasonableness.

- Before field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
    - Overall quality and clarity
    - Anchor, eligible content, and/or standard alignment
    - Grade-level appropriateness
    - Difficulty level
    - Depth of knowledge
    - Appropriate sources of challenge (e.g., unintended content and skills)
    - Correct answer
    - Quality of distractors
    - Graphics
    - Appropriate language demand
    - Freedom from bias
- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all the prior hurdles were tried out in a field-test event. Several statistical analyses were conducted on the field-test data, including classical item analyses, distractor analyses, and differential item functioning (DIF). Items were once again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for particular groups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for students in particular groups by eliminating potential sources of construct-irrelevant variance; as such, DIF results might be better considered as internal structure validity evidence.
- The PSSA tests were administered according to standardized procedures with allowable accommodations. Students were given ample time to complete the tests (i.e., there were no speededness issues).
- As shown in Chapter Eight, the raters for open-ended (OE) items were carefully recruited and well trained. Their scoring was monitored throughout the scoring session to ensure that an acceptable level of scoring accuracy was maintained.

EVIDENCE BASED ON RESPONSE PROCESSES

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match those identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or cognitive labs can be used to collect this type of evidence. In addition, when an assessment includes OE items, an examination of the extent to which the raters interpret and apply the scoring criteria accurately when assigning scores to students' responses on OE items also provides validity of the response-processes evidence.

For the PSSA science tests, DRC conducted a science cognitive lab study to gather relative information about the thinking processes students used to solve science scenario items. The use of the cognitive lab helped ensure that the intended response processes were employed by students. (No cognitive lab studies have been conducted for the PSSA mathematics, reading, or writing assessments because these assessments do not have scenarios.)

For all the PSSA tests, well-organized scorer training and subsequent monitoring of rating accuracy helped ensure that raters strictly followed the scoring criteria and that no rubric-unrelated features significantly affected their scoring.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (1999), internal-structure evidence refers to the degree to which the relationships between test items and test components conform to the construct on which the proposed test interpretations are based. For each PSSA test, one total test score as well as strand scores are reported (see Chapter Sixteen for more information about PSSA scores). Several dimensionality studies were conducted in order to provide internal-structure evidence relating to the use of both types of scores.

Item-Test Correlations

Item-test correlations are reviewed in Chapter Eleven. All values are positive and of acceptable magnitude.

Item Response Theory Dimensionality

Results from principle components analyses conducted using WINSTEPS were presented in Chapter Twelve. The PSSA mathematics, reading, and science tests were essentially unidimensional, providing evidence supporting interpretations based on the total scores for the respective PSSA tests. (Writing was not studied for reasons discussed in Chapter Twelve. However, one might expect some dimensionality issues because the writing MC items and Prompt tasks are so different.)

Strand Correlations

Correlations and disattenuated correlations between strand scores within each subject area are presented in Tables 19–1a through 19–1f and Tables 19–2a through 19–2f. Values were derived from the PSSA final data file (see Chapter Nine). This data can also provide information on score dimensionality that is part of internal-structure evidence. As noted in Chapter Three, typically the PSSA mathematics tests have five strands (denoted by M.A, M.B, M.C, M.D, and M.E). However the cores for 2014 had to align to both the current set of standards and the next set of standards. As such, there were some strands that ended up with zero items eligible for use in mathematics and therefore no items for those strands were selected for the 2014 cores. Grades 3 and 7 mathematics have 4 domains (A, B, D, and E) and grades 6 and 8 mathematics have 4 domains (A, C, D, and E). The PSSA reading tests have two strands (denoted by R.A and R.B), the PSSA science tests have four strands (denoted by S.A, S.B, S.C, and S.D), and the PSSA writing tests include two strands (denoted by W.A and W.B).

For each grade, Pearson's correlation coefficients between these strands are reported in Tables 19–1a through 19–1f. The inter-correlations between the strands within the content areas are positive and generally range from moderate to high in value.

Table 19–1a. Correlations between Mathematics and Reading Strands for Grade 3

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	0.74	-					
M.C	-	-	-				
M.D	0.79	0.60	-	-			
M.E	0.75	0.57	-	0.69	-		
R.A	0.74	0.55	-	0.67	0.64	-	
R.B	0.70	0.51	-	0.65	0.64	0.82	-

Table 19–1b. Correlations between Mathematics, Reading, and Science Strands for Grade 4

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	S.A	S.B	S.C	S.D
M.A	-										
M.B	0.76	-									
M.C	0.66	0.58	-								
M.D	0.78	0.64	0.59	-							
M.E	0.69	0.57	0.53	0.60	-						
R.A	0.77	0.64	0.61	0.67	0.61	-					
R.B	0.70	0.58	0.54	0.62	0.57	0.80	-				
S.A	0.78	0.65	0.63	0.67	0.63	0.81	0.71	-			
S.B	0.68	0.56	0.54	0.59	0.55	0.73	0.64	0.81	-		
S.C	0.65	0.54	0.54	0.57	0.53	0.68	0.61	0.76	0.70	-	
S.D	0.65	0.55	0.54	0.56	0.51	0.68	0.58	0.76	0.69	0.65	-

Table 19–1c. Correlations between Mathematics, Reading, and Writing Strands for Grade 5

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	W.A	W.B
M.A	-								
M.B	0.77	-							
M.C	0.72	0.61	-						
M.D	0.79	0.69	0.65	-					
M.E	0.72	0.65	0.58	0.65	-				
R.A	0.74	0.64	0.64	0.68	0.63	-			
R.B	0.72	0.61	0.63	0.67	0.61	0.83	-		
W.A	0.56	0.46	0.48	0.52	0.45	0.59	0.61	-	
W.B	0.73	0.61	0.62	0.66	0.60	0.77	0.76	0.76	-

Table 19–1d. Correlations between Mathematics and Reading Strands for Grade 6

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	-	-					
M.C	0.57	-	-				
M.D	0.81	-	0.54	-			
M.E	0.76	-	0.54	0.70	-		
R.A	0.73	-	0.48	0.74	0.65	-	
R.B	0.72	-	0.48	0.72	0.64	0.85	-

Table 19–1e. Correlations between Mathematics and Reading Strands for Grade 7

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	0.77	-					
M.C	-	-	-				
M.D	0.80	0.79	-	-			
M.E	0.76	0.74	-	0.79	-		
R.A	0.71	0.69	-	0.74	0.69	-	
R.B	0.68	0.67	-	0.71	0.67	0.84	-

Table 19–1f. Correlations between Mathematics, Reading, Science, and Writing Strands for Grade 8

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	S.A	S.B	S.C	S.D	W.A	W.B
M.A	-												
M.B	-	-											
M.C	0.64	-	-										
M.D	0.76	-	0.67	-									
M.E	0.64	-	0.59	0.73	-								
R.A	0.62	-	0.55	0.72	0.64	-							
R.B	0.61	-	0.55	0.71	0.64	0.83	-						
S.A	0.66	-	0.60	0.76	0.71	0.79	0.79	-					
S.B	0.55	-	0.49	0.63	0.60	0.69	0.70	0.78	-				
S.C	0.56	-	0.53	0.63	0.60	0.64	0.65	0.76	0.65	-			
S.D	0.56	-	0.52	0.63	0.61	0.67	0.68	0.79	0.69	0.69	-		
W.A	0.50	-	0.45	0.56	0.47	0.63	0.60	0.56	0.49	0.45	0.46	-	
W.B	0.63	-	0.57	0.71	0.62	0.76	0.76	0.75	0.65	0.61	0.63	0.73	-

The correlations in Tables 19–1a through 19–1f are based on the observed strand scores. These observed-score correlations are weakened by existing measurement error contained within each strand. As a result, disattenuating the observed correlations can provide an estimate of the relationships between strands if there were no measurement error. (An important caveat is provided further below.) The disattenuated correlation coefficients (R_{xy}) can be computed by using the formula (Spearman 1904, 1910) below:

$$R_{xy} = \frac{r_{xy}}{\sqrt{r_{xx} r_{yy}}},$$

where r_{xy} is the observed correlation, and r_{xx} and r_{yy} are the reliabilities for strand X and strand Y. Disattenuated correlations very near 1.00 might suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 might suggest that different strands are measuring slightly different aspects of the same construct. Values markedly less than 1.00 might suggest the strands reflect different constructs.

Tables 19–2a through 19–2f show the corresponding disattenuated correlations for the 2014 PSSA tests for each grade. Given that none of these strands has perfect reliabilities (see Chapter Eighteen), the disattenuated strand correlations are higher than their observed score counterparts.

Some within-subject correlations are very high (e.g., above 0.95), suggesting that the within-subject strands might be measuring essentially the same construct. This, in turn, suggests that some strand scores might not provide unique information about the strengths or weaknesses of students.

On the other hand, some within-subject strand correlations are somewhat lower than 1.00. For such strands, partial evidence is provided regarding the multidimensional structure of some tests and further supporting the validity of those specific strand scores.

On a fairly consistent basis, the correlations between the strands within each subject area were higher than the correlations between strands across different subject areas. In general, within-subject strand disattenuated correlations are higher than across-subject strand disattenuated correlations. As a specific example, Grade 3 disattenuated correlations for the M.A, M.B, M.D, and M.E strands range from 0.77 to 1.07 and the correlations between R.A and R.B was 0.98. In contrast, the disattenuated correlations between the two reading strands with the five mathematics strands range from 0.64 to 0.95. Such a pattern is expected since the two subject-area tests were designed to measure different constructs. Similar patterns are also observed at other grade levels.

Table 19–2a. Disattenuated Strand Correlations for Mathematics and Reading: Grade 3

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	0.86	-					
M.C	-	-	-				
M.D	1.06	0.87	-	-			
M.E	0.95	0.77	-	1.07	-		
R.A	0.82	0.65	-	0.92	0.83	-	
R.B	0.83	0.64	-	0.95	0.88	0.98	-

Table 19–2b. Disattenuated Strand Correlations for Mathematics, Reading, and Science: Grade 4

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	S.A	S.B	S.C	S.D
M.A	-										
M.B	0.98	-									
M.C	0.83	0.83	-								
M.D	0.98	0.93	0.83	-							
M.E	1.01	0.97	0.87	1.00	-						
R.A	0.86	0.83	0.77	0.85	0.91	-					
R.B	0.87	0.83	0.75	0.87	0.93	1.00	-				
S.A	0.88	0.84	0.79	0.85	0.93	0.91	0.88	-			
S.B	0.84	0.80	0.75	0.82	0.90	0.91	0.88	1.01	-		
S.C	0.85	0.81	0.78	0.84	0.91	0.89	0.88	0.99	1.01	-	
S.D	0.85	0.82	0.79	0.81	0.88	0.89	0.84	1.00	0.99	0.98	-

Table 19–2c. Disattenuated Strand Correlations for Mathematics, Reading, and Writing: Grade 5

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	W.A	W.B
M.A	-								
M.B	0.94	-							
M.C	0.97	0.91	-						
M.D	0.97	0.95	0.98	-					
M.E	0.95	0.94	0.93	0.96	-				
R.A	0.84	0.81	0.89	0.87	0.85	-			
R.B	0.84	0.79	0.89	0.87	0.85	1.00	-		
W.A	0.69	0.63	0.73	0.71	0.66	0.75	0.80	-	
W.B	0.84	0.79	0.89	0.87	0.84	0.93	0.94	1.00	-

Table 19–2d. Disattenuated Strand Correlations for Mathematics and Reading: Grade 6

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	-	-					
M.C	0.70	-	-				
M.D	0.98	-	0.70	-			
M.E	0.89	-	0.67	0.87	-		
R.A	0.84	-	0.59	0.90	0.76	-	
R.B	0.84	-	0.61	0.90	0.77	1.01	-

Table 19–2e. Disattenuated Strand Correlations for Mathematics and Reading: Grade 7

	M.A	M.B	M.C	M.D	M.E	R.A	R.B
M.A	-						
M.B	0.94	-					
M.C	-	-	-				
M.D	0.96	0.95	-	-			
M.E	0.99	0.95	-	1.00	-		
R.A	0.86	0.83	-	0.86	0.88	-	
R.B	0.86	0.83	-	0.87	0.88	1.02	-

Table 19–2f. Disattenuated Strand Correlations for Mathematics, Reading, Science, and Writing: Grade 8

	M.A	M.B	M.C	M.D	M.E	R.A	R.B	S.A	S.B	S.C	S.D	W.A	W.B
M.A	-												
M.B	-	-											
M.C	0.79	-	-										
M.D	0.90	-	0.76	-									
M.E	0.86	-	0.75	0.90	-								
R.A	0.77	-	0.66	0.83	0.82	-							
R.B	0.77	-	0.66	0.82	0.82	1.01	-						
S.A	0.80	-	0.69	0.84	0.88	0.92	0.93	-					
S.B	0.75	-	0.64	0.80	0.84	0.92	0.93	1.00	-				
S.C	0.78	-	0.70	0.81	0.87	0.86	0.88	0.99	0.96	-			
S.D	0.74	-	0.66	0.77	0.84	0.86	0.88	0.98	0.97	0.98	-		
W.A	0.67	-	0.58	0.70	0.65	0.81	0.78	0.70	0.70	0.64	0.63	-	
W.B	0.79	-	0.68	0.83	0.80	0.93	0.93	0.88	0.87	0.83	0.82	0.95	-

Some caution is needed in interpreting the disattenuated results because the reliabilities used to calculate the disattenuated correlations are subject to both upward and downward biases. (These are discussed in some detail in Chapter Eighteen.) Consequently, some of the values tabled above may be higher or lower than they should be, depending on which bias prevails for any given pair of strand scores. When the reliabilities are lower than they should be, the disattenuated correlations will be inflated (and in some instances can appear larger than the theoretical correlation maximum value of 1.00).

Exploratory Factor Analysis

In order to further explore the internal structure of the PSSA tests, an exploratory factor analysis (EFA) of the strand scores across all the PSSA subject areas was conducted. The PSSA final data file (see Chapter Nine) was used to create the observed correlation matrices shown in Tables 19–1a through 19–1f, which in turn were used in the EFAs. In SPSS, Principle Axis Factor extraction was utilized with an oblique rotation (Promax) of the initial factor solution to improve interpretability. Oblique rotations allow for correlated factors which seemed more appropriate for the PSSA tests because of a priori expectations that academic achievement across subject areas should be correlated.

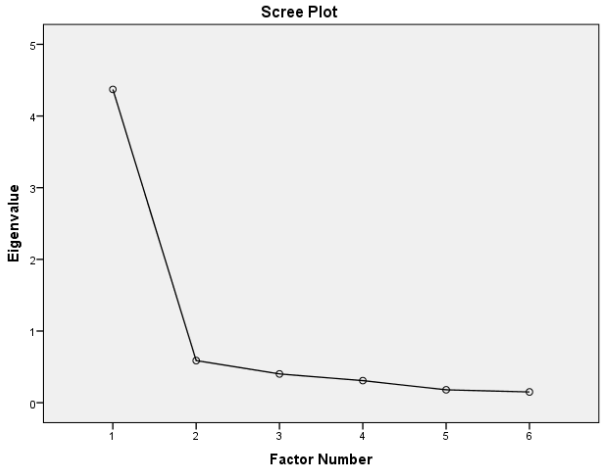
Table 19–3 presents the eigenvalues and the explained variance for the extracted factors for the Grade 3 PSSA tests. The Scree Plot graphing the eigenvalues against the factor number is shown in Figure 19–1. The first factor accounted for about 73 percent of the total variance, while the second factor explained about 10 percent of the total variance. Only the first factor had an eigenvalue greater than 1.0, typically suggesting a one-factor solution using the Kaiser criterion. However, the one-factor solution resulted in many large fitted residual values in the reproduced correlation matrix: 14 of 15 residuals were greater than absolute value 0.005 with one as large as 0.14, while two-factor solution had only 7 out of 15 residuals larger than absolute value 0.005.

Based on this finding and the prior belief that there should be two distinct factors at Grade 3 (one for mathematics and another for reading), a two-factor solution was further explored.

Table 19–3. Eigenvalues and Explained Variance for Grade 3

Factor	Eigenvalue	%
1	4.37	72.86
2	0.59	9.80
3	0.40	6.70
4	0.31	5.14
5	0.18	3.00
6	0.15	2.51

Figure 19–1. Scree Plot for Grade 3



The Pattern loadings resulting from the two-factor solution are presented in Table 19–4a. The Pattern loadings have simple structure which show that the five mathematics strands clearly loaded on the first factor while the two reading strands clearly loaded on the second factor. The respective factor loadings are quite high. The factor correlation matrix shows that the correlation between the two latent factors is 0.77, which is similar to the observed correlation between mathematics and reading (0.76 as seen Table 19–5) but just lower than the disattenuated correlation.

Table 19–4a. Pattern Matrix and Factor Correlation for Grade 3

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	*0.93*	0.05
M.B	*0.79*	-0.05
M.D	*0.67*	0.20
M.E	*0.61*	0.23
Reading		
R.A	0.16	*0.76*
R.B	-0.04	*0.96*
Correlation (F1, F2) = 0.77		

Other grades have similar results. The eigenvalue scree plots consistently indicate a one-factor solution. This possibly resulted because of the high correlations between the PSSA subjects. (The eigenvalues and explained variances are not shown for the other grades due to space considerations.) The pattern matrices and the factor correlations are reported in Tables 19–4b through 19–4f for the remaining five grades, respectively. The Pattern loadings clearly suggested that the PSSA tests measured different but correlated constructs.

Table 19–4b. Pattern Matrix and Factor Correlations for Grade 4

	Factor		
Domain	**1**	**2**	**3**
Mathematics			
M.A	*0.89*	0.06	0.02
M.B	*0.76*	0.04	0.00
M.C	*0.54*	0.20	0.01
M.D	*0.73*	0.02	0.09
M.E	*0.58*	0.10	0.08
Reading			
R.A	0.12	0.26	*0.60*
R.B	0.08	0.02	*0.80*
Science			
S.A	0.13	*0.81*	0.03
S.B	0.00	*0.80*	0.07
S.C	0.07	*0.72*	0.03
S.D	0.09	*0.76*	-0.03
Correlation (F1, F2) = 0.80 Correlation (F2, F3) = 0.80		Correlation (F1, F3) = 0.79	

Table 19–4c. Pattern Matrix and Factor Correlations for Grade 5

	Factor		
Domain	**1**	**2**	**3**
Mathematics			
M.A	*0.90*	0.05	0.00
M.B	*0.85*	-0.02	-0.01
M.C	*0.60*	0.06	0.14
M.D	*0.76*	0.06	0.05
M.E	*0.71*	-0.01	0.08
Reading			
R.A	0.12	0.01	*0.81*
R.B	0.07	0.11	*0.75*
Writing			
W.A	-0.02	*0.88*	-0.04
W.B	0.11	*0.74*	0.14
Correlation (F1, F2) = 0.72 Correlation (F2, F3) = 0.79		Correlation (F1, F3) = 0.80	

Table 19–4d. Pattern Matrix and Factor Correlation for Grade 6

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	*0.84*	0.10
M.C	*0.62*	0.01
M.D	*0.66*	0.25
M.E	*0.79*	0.05
Reading		
R.A	0.06	*0.89*
R.B	0.05	*0.87*
Correlation (F1, F2) = 0.80		

Table 19–4e. Pattern Matrix and Factor Correlation for Grade 7

	Factor	
Domain	**1**	**2**
Mathematics		
M.A	*0.80*	0.10
M.B	*0.81*	0.07
M.D	*0.83*	0.10
M.E	*0.79*	0.09
Reading		
R.A	0.11	*0.83*
R.B	0.06	*0.85*
Correlation (F1, F2) = 0.80		

Table 19–4f. Pattern Matrix and Factor Correlations for Grade 8

	Factor			
Domain	**1**	**2**	**3**	**4**
Mathematics				
M.A	-0.01	*0.83*	0.05	-0.03
M.C	0.06	*0.71*	0.06	-0.08
M.D	0.02	*0.77*	0.02	0.13
M.E	0.28	*0.56*	-0.04	0.04
Reading				
R.A	0.14	0.04	0.15	*0.65*
R.B	0.24	0.02	0.12	*0.59*
Science				
S.A	*0.78*	0.11	0.03	0.06
S.B	*0.72*	-0.04	0.05	0.12
S.C	*0.76*	0.14	-0.01	-0.07
S.D	*0.87*	0.02	0.00	-0.04
Writing				
W.A	-0.08	0.04	*0.81*	0.02
W.B	0.19	0.05	*0.74*	0.00

Correlation (F1, F2) = 0.79 Correlation (F1, F3) = 0.71
Correlation (F1, F4) = 0.80
Correlation (F2, F3) = 0.72 Correlation (F2, F4) = 0.74
Correlation (F3, F4) = 0.78

Taken as a whole, all the internal structure evidence presented in Tables 19–4a through 19–4f generally indicates that related elements of each of the PSSA tests correlate in the intended manner. Different PSSA subject-area tests seem to measure different constructs. Additionally, the strands within each subject area have stronger relationships than those across subject strands. This further supports using a total score to report student performance in the different subject areas.

The strand scores present more of a mixed message. Since the strands in each subject area were designed to measure distinct components of the subject area, it is reasonable to expect that the inter-subject strand correlations should be positive and strong, but ideally, not extremely high. However, the disattenuated correlations imply that some strands are essentially measuring the same constructs. Consequently, there may be less support for providing results for some strand scores beyond the total score. While there is content rationale underlying the creation of the strand scores, the empirical correlations illustrate that caution is required when using the strand scores as a way to identify individual student strengths and weaknesses. Certainly, instructional programs should not be based on strand score information alone but in conjunction with other sources of evidence available (e.g., teacher observations, other exam performances).

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (1999), "Evidence based on relationships with other variables addresses questions about the degree to which relationships are consistent with the construct underlying the proposed interpretations" (p. 13). This category of evidence refers to external structure evidence and is classified on three types—convergent, discriminant, and criterion-related evidence. Convergent evidence is provided by relationships between students' performance on different assessments intended to measure a similar construct. Discriminant evidence is provided by relationships between students' performance on different tests intended to measure different constructs. Criterion-related evidence, either predictive or concurrent, is provided by relationships between students' test scores and their performance on a criterion measure (Cronbach, 1971; Messick, 1989).

External evidence for the PSSA tests has been examined by HumRRO in a series of independent studies using 2001–2003 PSSA data (Koger, Thacker, & Dickinson, 2004; Sinclair & Thacker, 2005; Thacker, Dickinson, & Koger, 2004). In their studies, the correlations of PSSA scores with a variety of measures including SAT, CTB, and other commonly administered assessments were investigated to provide the convergent and discriminant evidence. The criterion-related evidence was evaluated by the relationships between PSSA and criterion variables such as grade point average (GPA), course grades, university proficiency exams, and students' GPA in their first college course.

The results from their studies provided strong external evidence in support of PSSA as a valid measure of student achievement. Same-subject correlations were highest for mathematics, typically ranging from about 0.70 to about 0.90. For reading, correlations were also quite high, although slightly weaker than for mathematics and ranging from about 0.60 to about 0.80 (Thacker, Dickinson, & Koger, 2004). For example, the correlations between PSSA and SAT were high (r = 0.78 for reading and r = 0.87 for mathematics in 2003). They also found that PSSA scores positively correlated with students' course grades and GPAs, although not as highly as with SATs (r = 0.46 to r = 0.55) (Koger, Thacker, & Dickinson, 2004). Regarding the predictive evidence, they found that the university proficiency tests were moderately to highly correlated with the PSSA. Students' course GPAs in their first college English and Mathematics

classes generally showed positive relationships with both the PSSA and the university proficiency exams, but these correlations were not as strong as the correlations between the PSSA and the proficiency exams (Sinclair & Thacker, 2005). Moreover, the different assessments measuring the same subject were found to be more highly related to each other than with the assessments measuring different subjects, providing some discriminant evidence. All these results suggest that PSSA subject-area tests measure the intended constructs.

In addition, Thacker and his colleagues also examined the relationship between the PSSA and some irrelevant characteristics to determine whether the PSSA exhibited any differential impact based on gender, ethnicity, English proficiency, or socioeconomic status. None of these characteristics appeared to influence the PSSA scores more than would be expected based on observed differences for SAT scores and other comparison tests. In other words, PSSA items are not injecting any unexpected gender, racial/ethnic, socioeconomic status, or limited English proficiency bias.

For the 2014 PSSA dataset, the correlations between students' test scores on different PSSA tests, including mathematics, reading, science, and writing, are shown in Table 19–5 in order to provide some discriminant validity evidence. In this table, both the observed and disattenuated correlations are reported.

Table 19–5. Correlations among Students' Performance on All PSSA Tests

	Mathematics/ Reading	Mathematics/ Science	Mathematics/ Writing	Reading/ Science	Reading/ Writing	Science/ Writing
G3	.76 (.81)	-	-	-	-	-
G4	.78 (.85)	.78 (.84)	-	.80 (.87)	-	-
G5	.78 (.84)	-	.63 (.72)	-	.68 (.79)	-
G6	.77 (.83)	-	-	-	-	-
G7	.78 (.85)	-	-	-	-	-
G8	.75 (.81)	.78 (.83)	.64 (.73)	.81 (.88)	.70 (.82)	.62 (.71)

Note. Numbers in the parenthesis are disattenuated correlations. The PSSA final data file was used for these calculations (see Chapter Nine). Case-wise elimination of missing data was used.

Each PSSA assessment measures a different construct, so the correlations between them were not expected to be extremely high. The values in this table are consistent with this expectation. As can be seen, the correlations between the PSSA tests range from 0.62 to 0.81. The correlations between mathematics, reading, and science were relatively higher, while the correlations between writing and other subjects were relatively lower. In addition, the correlations are very stable across different grade levels. For example, the correlation between mathematics and reading tests was around 0.77 for all grades. (Factor correlations between the latent variables are presented in Tables 19–4a through 19–4f.)

EVIDENCE BASED ON CONSEQUENCES OF TESTING

Based on the *Standards* (1999), evidence of the consequences of implementing an assessment program is an additional source of validity information. Both positive and negative (intended and unintended) consequences of score-based inferences must be investigated to fully evaluate the pool of validity evidence. It is important to note that the consequences of the assessment program themselves to do not serve as indicators of validity. That is, the investigation and evaluation of the consequences provides a richer context for establishing the validity of an assessment program.

Given that the evaluation of consequential validity is broadly defined, it is difficult to specifically measure aspects of consequential validity. Test data only provide one small insight into this type of validation evidence. Chapter Sixteen includes several different types of scores and score reports used for the PSSA. This chapter also provides accurate and clear test score and report information to help users avoid unintended uses and interpretations of the PSSA results. The extent to which various groups of users (e.g., students, teachers, and parents) interpret these scores and reports appropriately affects the validity of subsequent uses of these results. PDE continues to gather evidence to improve or guide decisions pertaining to all aspects of intended and unintended consequences of the PSSA program.

EVIDENCE RELATED TO THE USE OF THE RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and linking analyses associated with the PSSA, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met, as well as the fit between the model and test data. As discussed at length in Chapter Twelve, the underlying assumptions of Rasch models were essentially met for all the PSSA data, indicating the appropriateness of using the Rasch models to analyze the PSSA data.

In addition, the Rasch model was also used to link different operational PSSA tests across years. The accuracy of the linking also affects the accuracy of student scores and the validity of score uses. As described in Chapter Fifteen, DRC Psychometric Services staffers follow linking procedures previously vetted by the Pennsylvania National TAC. Moreover, DRC internal and the third-party (HumRRO) checks ensured the accuracy of the linking results.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. On the whole, the early chapters of this technical report show that a strong link can be established between each PSSA item and its associated eligible content. Details regarding how the PSSA operational assessments were assembled to reflect the state content standards and detailed information regarding educator reviews (including content, bias, and sensitivity reviews) are presented in Chapter Three.

Strand score intercorrelations are also presented in this chapter. In general, within-subject-area strands (e.g., mathematics) correlate more highly with themselves than they do with other subject-area strands (e.g., reading). Consequently, this provides some favorable evidence regarding the internal and external relationships between the tests' components.

PDE's commitment to validity is also evidenced by the fact that the Pennsylvania State Board of Education commissioned an independent study of an earlier version of the PSSA. That study, conducted by HumRRO, included an extensive evaluation of the items (Thacker & Dickinson, 2004) and statistical relationships of the PSSA, including convergent and discriminant validity (Thacker, Dickinson, & Koger, 2004).

Validity of score inferences is bolstered when test scores are consistent. Here, the reliabilities of the total test scores (see Chapter Eighteen) are very good, with many being in the low 0.90s.

Additionally, reported in Chapter Five, differential item functioning with respect to gender and ethnicity helps address construct-irrelevant variance, which represents an important threat to the validity of inferences made from achievement test scores. As noted in that chapter, field-test items are screened and reviewed for DIF. Only items approved by teacher committees are eligible for operational use.

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Appendix A:

General Scoring Guidelines

PENNSYLVANIA DEPARTMENT OF EDUCATION

PSSA

General Description of Scoring Guidelines for Mathematics Open-Ended Questions

4 – The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" (e.g., missing $) or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3 – The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2 – The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1 – The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0 – The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Response may show only information copied from the question.

Special Categories within zero reported separately:
BLK (blank) ..Blank, entirely erased, or written refusal to respond
OT.....Off task
IL.....Illegible
LOE .....Response in a language other than English

The Scoring Guideline documents are available on the PDE website.

PENNSYLVANIA DEPARTMENT OF EDUCATION
PSSA

General Description of Scoring Guidelines for Reading Short-Answer Questions

3 Points

- The response provides a complete answer to the task (e.g., a statement that offers a correct answer as well as text-based support).
- The response provides specific, appropriate and accurate details (e.g., naming, describing, explaining, or comparing) or examples.

2 Points

- The response provides a partial answer to the task (e.g., indicates some awareness of the task and at least one text-based detail).
- The response attempts to provide sufficient, appropriate details (e.g., naming, describing, explaining, or comparing) or examples; may contain minor inaccuracies.

1 Point

- The response provides an incomplete answer to the task (e.g., indicating either a misunderstanding of the task or no text-based details).
- The response provides insufficient or inappropriate details or examples that have a major effect on accuracy.
- The response consists entirely of relevant copied text.

0 Points

- The response provides insufficient material for scoring.
- The response is inaccurate in all aspects.

Categories within zero reported separately:

- **BLK (blank) = no response or written refusal to respond or too brief to determine response.**
- **OT = off task/topic.**
- **LOE = response in a language other than English.**
- **IL = illegible.**

PENNSYLVANIA DEPARTMENT OF EDUCATION
PSSA

General Description of Scoring Guidelines for Science Open-Ended Questions

2 – The response demonstrates a *thorough* understanding of the scientific content, concepts, and procedures required by the task/s.

The response provides a clear, complete, and correct response as required by the task/s. Response may contain a minor blemish (e.g., misspelled words) or omission in work or explanation that does not detract from demonstrating a thorough understanding.

1 – The response demonstrates a *partial* understanding of the scientific content, concepts, and procedures required by the task/s.

The response is somewhat correct with partial understanding of the required scientific content, concepts, and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

0 – The response provides *insufficient* evidence to demonstrate any understanding of the scientific content, concepts, and procedures as required by the task/s for that grade level.

Response may show only information copied or rephrased from the question or insufficient correct information to receive a score of 1.

Special Categories within zero reported separately:
BLK – Blank, entirely erased or written refusal to respond
OT – Off Task
IL – Illegible
LOE – Response in a language other than English

PSSA CONVENTIONS SCORING GUIDELINE FOR WRITING

4

- Thorough control of sentence formation.
- Few errors, if any, are present in grammar, usage, spelling, and punctuation, but the errors that are present do not interfere with meaning.

3

- Adequate control of sentence formation.
- Some errors may be present in grammar, usage, spelling, and punctuation, but few, if any, of the errors that are present may interfere with meaning.

2

- Limited and/or inconsistent control of sentence formation. Some sentences may be awkward or fragmented
- Many errors may be present in grammar, usage, spelling, and punctuation, and some of those errors may interfere with meaning.

1

- Minimal control of sentence formation. Many sentences are awkward and fragmented.
- Many errors may be present in grammar, usage, spelling, and punctuation, and many of those errors may interfere with meaning.

PSSA INFORMATIONAL SCORING GUIDELINE FOR WRITING

4	FOCUS	*Sharp, distinct controlling point made about a single topic with evident awareness of task and audience.*
	CONTENT DEVELOPMENT	*Substantial, relevant, and illustrative content that demonstrates a clear understanding of the purpose. Thorough elaboration with effectively presented information consistently supported with well-chosen details.*
	ORGANIZATION	Effective organizational strategies and structures, such as logical order and transitions, which develop a controlling idea.
	STYLE	Precise control of language, stylistic techniques, and sentence structures that creates a consistent and effective tone.
3	FOCUS	Clear controlling point made about a single topic with general awareness of task and audience.
	CONTENT DEVELOPMENT	Adequate, specific, and/or illustrative content that demonstrates an understanding of the purpose. Sufficient elaboration with clearly presented information supported with well-chosen details.
	ORGANIZATION	Organizational strategies and structures, such as logical order and transitions, which develop a controlling idea.
	STYLE	Appropriate control of language, stylistic techniques, and sentence structures that creates a consistent tone.
2	FOCUS	Vague evidence of a controlling point made about a single topic with an inconsistent awareness of task and audience.
	CONTENT DEVELOPMENT	Inadequate, vague content that demonstrates a weak understanding of the purpose. Underdeveloped and/or repetitive elaboration with inconsistently supported information. May be an extended list.
	ORGANIZATION	Inconsistent organizational strategies and structures, such as logical order and transitions, which ineffectively develop a controlling idea.
	STYLE	Limited control of language and sentence structures that creates interference with tone.
1	FOCUS	Little or no evidence of a controlling point made about a single topic with a minimal awareness of task and audience.
	CONTENT DEVELOPMENT	Minimal evidence of content that demonstrates a lack of understanding of the purpose. Superficial, undeveloped writing with little or no support. May be a bare list.
	ORGANIZATION	Little or no evidence of organizational strategies and structures, such as logical order and transitions, which inadequately develop a controlling idea.
	STYLE	Minimal control of language and sentence structures that creates an inconsistent tone.

PSSA PERSUASIVE SCORING GUIDELINE FOR WRITING

4	FOCUS	Sharp, distinct controlling point presented as a position and made convincing through a clear, thoughtful, and substantiated argument with evident awareness of task and audience.
	CONTENT DEVELOPMENT	Substantial, relevant, and illustrative content that demonstrates a clear understanding of the purpose. Thoroughly elaborated argument that includes a clear position consistently supported with precise and relevant evidence. Rhetorical (persuasive) strategies are evident.
	ORGANIZATION	Effective organizational strategies and structures, such as logical order and transitions, to develop a position supported with a purposeful presentation of content.
	STYLE	Precise control of language, stylistic techniques, and sentence structures that creates a consistent and effective tone.
3	FOCUS	Clear controlling point presented as a position and made convincing through a credible and substantiated argument with general awareness of task and audience.
	CONTENT DEVELOPMENT	Adequate, specific and/or illustrative content that demonstrates an understanding of the purpose. Sufficiently elaborated argument that includes a clear position supported with some relevant evidence. Rhetorical (persuasive) strategies may be evident.
	ORGANIZATION	Organizational strategies and structures, such as logical order and transitions, to develop a position supported with sufficient presentation of content.
	STYLE	Appropriate control of language, stylistic techniques, and sentence structures that creates a consistent tone.
2	FOCUS	Vague evidence of a controlling point presented as a position that may lack a credible and/or substantiated argument with an inconsistent awareness of task and audience.
	CONTENT DEVELOPMENT	Inadequate, vague content that demonstrates a weak understanding of the purpose. Insufficiently elaborated argument that includes an underdeveloped position supported with little evidence.
	ORGANIZATION	Inconsistent organizational strategies and structures, such as logical order and transitions, to develop a position with inadequate presentation of content.
	STYLE	Limited control of language and sentence structures that creates interference with tone.
1	FOCUS	Little or no evidence of a controlling point presented as a position that lacks a credible and/or substantiated argument with minimal awareness of task and audience.
	CONTENT DEVELOPMENT	Minimal evidence of content that demonstrates a lack of understanding of the purpose. Unelaborated argument that includes an undeveloped position supported with minimal or no evidence.
	ORGANIZATION	Little or no evidence of organizational strategies and structures, such as logical order and transitions, to develop a position with insufficient presentation of content.
	STYLE	Minimal control of language and sentence structures that creates an inconsistent tone.

Appendix B:

Tally Sheets

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems														
	1	1	1	Match word to number														
	1	1	2	Differentiate between even & odd														
	1	1	3	Compare two whole numbers														
	1	1	4	Order a set of whole numbers	2				2		2	2				2		2
	1	1	5	Match symbolic representation														
	1	2	1	Write fraction that corresponds to drawing	2				2		2	2				2		2
	1	2	2	Draw representation of a fraction	1				1		1	1				1		1
	1	3	1	Count a collection of bills & coins														
	1	3	2	Compare total values of combinations of coins	6		1		7		7	6		1		7		7
	1	3	3	Make change up to $5.00	6				6		6	6				6		6
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				17		1		18		18	17		1		18		18
	2			Understand meanings, uses and relations of operations														
	2	1	1	Represent multiplication as repeated addition														
	2	1	2	Demonstrate inverse relationships														
	2	1	3	Identify correct operation(s)	7				7		7	7				7		7
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				7				7		7	7				7		7
	3			Compute accurately/fluently and make reasonable estimates		4				4	4		1				1	1
	3	1	1	Solve single- & double-digit addition & subtraction problems														
	3	1	2	Solve multiplication problems	4				4		4	4				4		4
	3	1	3	Solve triple digit addition & subtraction problems	4				4		4	4				4		4
	3	2	1	Estimate sums and differences	4		1		5		5	4		1		5		5
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				12	4	1		13	4	17	12	1	1		13	1	14
Total For Reporting Category A					36	4	2		38	4	42	36	1	2		38	1	39

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Tell/show analog time to the minute	4		1		5		5	4		1		5		5
	1	1	2	Find elapsed time	4				4		4	4				4		4
	1	1	3	Identify times as AM or PM														
	1	2	1	Select appropriate unit for measurement														
	1	2	2	Compare and/or order objects by length, area, or weight														
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				8		1		9		9	8		1		9		9
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Use a ruler to nearest 1/2 inch	2				2		2	2				2		2
	2	2	1	Match object with measurement														
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements				2				2		2	2				2		2
Total For Reporting Category B					10		1		11		11	10		1		11		11

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes														
	1	1	1	Name/identify/describe 2-D shapes														
	1	1	2	Name/identify 3-D shapes														
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes																	
	2			Identify and/or apply concepts of transformations or symmetry														
	2	1	1	Identify/draw line of symmetry														
	2	1	2	Identify symmetrical 2-D shapes														
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations or symmetry																	
Total For Reporting Category C																		

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions														
	1	1	1	Extend or find a missing element in a pattern	1		1		2		2	1		1		2		2
	1	1	2	Identify/describe rule for a pattern	1		1		2		2	1		1		2		2
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				2		2		4		4	2		2		4		4
	2			Represent/analyze mathematical situations		4				4	4		1				1	1
	2	1	1	Create or match a story	2				2		2	2				2		2
	2	1	2	Match number sentence to story	2				2		2	2				2		2
	2	2	1	Find a missing number	1				1		1	1				1		1
	2	2	2	Identify the missing symbol			1		1		1			1		1		1
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				5	4	1		6	4	10	5	1	1		6	1	7
Total For Reporting Category D					7	4	3		10	4	14	7	1	3		10	1	11

Grade 03 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data		4				4	4		1				1	1
	1	1	1	Analyze data shown on tables, charts, or bar graphs	1				1		1	1				1		1
	1	1	2	Describe, interpret and/or answer questions based on data	2				2		2	2				2		2
	1	2	1	Graph data	2				2		2	2				2		2
	1	2	2	Translate information from one type of display to another	2				2		2	2				2		2
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				7	4			7	4	11	7	1			7	1	8
Total For Reporting Category E					7	4			7	4	11	7	1			7	1	8

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems														
	1	1	1	Match drawing to fraction, decimal, mixed number														
	1	1	2	Create a drawing or set to represent a fraction														
	1	1	3	Match standard form to word form (decimals)														
	1	1	4	Write in expanded, standard or word form (whole numbers)	4				4		4	4				4		4
	1	2	1	Locate/identify fractions or decimals on number line														
	1	2	2	Compare/order whole numbers	4				4		4	4				4		4
	1	3	1	Find/identify/list factors	4		1		5		5	4		1		5		5
	1	3	2	Find/identify/list multiples	4				4		4	4				4		4
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				16		1		17		17	16		1		17		17
	2			Understand meanings, uses and relations of operations		4				4	4		1				1	1
	2	1	1	Solve problems involving all operations (whole numbers)	3		1		4		4	3		1		4		4
	2	1	2	Solve problems with decimals														
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				3	4	1		4	4	8	3	1	1		4	1	5
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Round whole numbers	6		1		7		7	6		1		7		7
	3	1	2	Round to nearest dollar														
	3	1	3	Estimate answers with whole numbers	3				3		3	3				3		3
	3	2	1	Solve addition/subtraction problems involving decimals														
	3	2	2	Solve addition/subtraction problems involving fractions	3				3		3	3				3		3
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				12		1		13		13	12		1		13		13
Total For Reporting Category A					31	4	3		34	4	38	31	1	3		34	1	35

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement		4				4	4		1				1	1
	1	1	1	Match analog time to digital time														
	1	1	2	Identify time	2		1		3		3	2		1		3		3
	1	1	3	Calculate elapsed time	2				2		2	2				2		2
	1	1	4	Determine beginning or ending time	2				2		2	2				2		2
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				6	4	1		7	4	11	6	1	1		7	1	8
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Use/read ruler to nearest 1/4 inch														
	2	2	1	Make reasonable estimates of measurement														
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements																	
Total For Reporting Category B					6	4	1		7	4	11	6	1	1		7	1	8

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes														
	1	1	1	Identify/classify/compare 2-D figures														
	1	1	2	Classify 3-D figures, identify characteristics														
	1	2	1	Identify points/lines/segments/rays	4		1		5		5	4		1		5		5
	1	2	2	Identify parallel/perpendicular lines	3		1		4		4	3		1		4		4
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				7		2		9		9	7		2		9		9
	2			Identify and/or apply concepts of transformations and symmetry														
	2	1	1	Identify/draw figures having one, two, or no lines of symmetry	3				3		3	3				3		3
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations and symmetry				3				3		3	3				3		3
	3			Locate points/describe relationships using the coordinate plane														
	3	1	1	Match or plot ordered pair														
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane																	
Total For Reporting Category C					10		2		12		12	10		2		12		12

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions														
	1	1	1	Extend or find a missing element in a numerical or geometric pattern	2				2		2	2				2		2
	1	1	2	Identify/describe rule for numerical or geometric pattern														
	1	1	3	Create or replicate numerical or geometric pattern	2		1		3		3	2		1		3		3
	1	2	1	Determine missing elements in function table given the rule	2		1		3		3	2		1		3		3
	1	2	2	Determine rule given a table	2				2		2	2				2		2
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				8		2		10		10	8		2		10		10
	2			Represent/analyze mathematical situations														
	2	1	1	Correlate story with expression or equation														
	2	2	1	Solve for missing number in equation														
	2	2	2	Identify the missing symbol	2				2		2	2				2		2
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				2				2		2	2				2		2
Total For Reporting Category D					10		2		12		12	10		2		12		12

Grade 04 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate questions; organize, display, interpret or analyze data		4				4	4		1				1	1
	1	1	1	Describe/interpret/answer questions based on data shown														
	1	2	1	Graph data or complete a graph														
	1	2	2	Translate data from one type of display to another	3				3		3	3				3		3
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				3	4			3	4	7	3	1			3	1	4
	3			Understand and apply basic concepts of probability														
	3	1	1	Make a prediction based on data or chance														
	Total For Assessment Anchor E.3 Understand and apply basic concepts of probability																	
Total For Reporting Category E					3	4			3	4	7	3	1			3	1	4

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems														
	1	1	1	Use expanded notation	5				5		5	5				5		5
	1	2	1	Read/write decimals	5				5		5	5				5		5
	1	2	2	Identify number with place value														
	1	3	1	Compare whole numbers														
	1	3	2	Compare and/or order decimals	5				5		5	5				5		5
	1	3	3	Compare proper fractions														
	1	4	1	Identify negative numbers on number line														
	1	4	2	Identify negative numbers on thermometer														
	1	5	1	Model fractions/mixed numbers														
	1	6	1	Name/identify prime and composite numbers														
	1	6	2	List/identify factors, multiples														
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				15				15		15	15				15		15
	2			Understand meanings, uses and relations of operations		4				4	4		1				1	1
	2	1	1	Solve problems involving all operations (whole numbers & decimals)	4				4		4	4				4		4
	2	1	2	Solve problems involving addition/subtraction (fractions)	4				4		4	4				4		4
	2	1	3	Choose correct operation	3				3		3	3				3		3
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				11	4			11	4	15	11	1			11	1	12
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Round whole numbers & decimals	5				5		5	5				5		5
	3	1	2	Estimate to solve														
	3	2	1	Compute without calculator	2				2		2	2				2		2
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				7				7		7	7				7		7
Total For Reporting Category A					33	4			33	4	37	33	1			33	1	34

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Select appropriate unit														
	1	2	1	Convert measurements	8				8		8	8				8		8
	1	2	2	Add/subtract measurements	1				1		1	1				1		1
	1	3	1	Estimate polygon perimeter/area														
	1	3	2	Estimate area of irregular figure														
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement				9				9		9	9				9		9
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Use a ruler to nearest 1/8 in. or cm														
	2	2	1	Find perimeter of square or rectangle or labeled figure														
	2	2	2	Find area of square or rectangle														
	2	2	3	Solve measurement problems														
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements																	
Total For Reporting Category B					9				9		9	9				9		9

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes		4				4	4		1				1	1
	1	1	1	Identify/classify/compare 3-D figures														
	1	1	2	Identify/classify/compare quadrilaterals	5				5		5	5				5		5
	1	2	1	Identify/draw/label points, lines, segments, rays, planes														
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				5	4			5	4	9	5	1			5	1	6
	2			Identify and/or apply concepts of transformations or symmetry														
	2	1	1	Draw or identify translation, reflection, rotation														
	2	1	2	Draw/identify lines of symmetry														
	Total For Assessment Anchor C.2 Identify and/or apply concepts of transformations or symmetry																	
Total For Reporting Category C					5	4			5	4	9	5	1			5	1	6

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions		4				4	4		1				1	1
	1	1	1	Extend or find a missing element in a numerical or geometric pattern	2				2		2	2				2		2
	1	1	2	Create numerical or geometric pattern	5				5		5	5				5		5
	1	2	1	Form/illustrate pattern rule	1				1		1	1				1		1
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				8	4			8	4	12	8	1			8	1	9
	2			Represent/analyze mathematical situations														
	2	1	1	Solve for missing number														
	2	1	2	Match number sentence to story														
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs																	
Total For Reporting Category D					8	4			8	4	12	8	1			8	1	9

Grade 05 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data														
	1	1	1	Interpret/display data	5				5		5	5				5		5
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				5				5		5	5				5		5
	2			Select and/or use appropriate statistical methods to analyze data														
	2	1	1	Determine the mean, median, range														
	2	1	2	Identify the mode in set of data														
	Total For Assessment Anchor E.2 Select and/or use appropriate statistical methods to analyze data																	
	3			Understand/apply basic concepts of probability or outcomes														
	3	1	1	Predict/determine likelihood of outcomes														
	3	1	2	Determine probability of outcome														
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes																	
Total For Reporting Category E					5				5		5	5				5		5

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems		4				4	4		1				1	1
	1	1	1	Represent percents as fractions and/or decimals	5				5		5	5				5		5
	1	1	2	Convert between fractions and decimals/differentiate between terminating & repeating decimals														
	1	1	3	Represent number in exponential form	4		2		6		6	4		2		6		6
	1	1	4	Represent mixed number as an improper fraction														
	1	2	1	Compare/order rational numbers except integers														
	1	3	1	Find GCF of two numbers	6		2		8		8	6		2		8		8
	1	3	2	Find LCM of two numbers	2		2		4		4	2		2		4		4
	1	3	3	Use divisibility rules for 2, 3, 5 & 10 to solve problems														
	1	4	1	Model percents														
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				17	4	6		23	4	27	17	1	6		23	1	24
	2			Understand meanings, uses and relations of operations														
	2	1	1	Complete equations by using properties: associative, commutative, distributive, Identity	3		1		4		4	3		1		4		4
	Total For Assessment Anchor A.2 Select /use operations to solve problems				3		1		4		4	3		1		4		4
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Estimate to solve														
	3	2	1	Solve problems involving operations	7				7		7	7				7		7
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				7				7		7	7				7		7
Total For Reporting Category A					27	4	7		34	4	38	27	1	7		34	1	35

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Determine/compare elapsed time														
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement																	
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Use ruler to nearest 1/16 in. or mm														
	2	1	2	Choose precise measurement														
	2	1	3	Measure angles using protractor														
	2	2	1	Find perimeter of any polygon														
	2	3	1	Define/label/identify angles														
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements																	
Total For Reporting Category B																		

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes														
	1	1	1	Identify, classify, and compare types of polygons														
	1	1	2	Identify properties of all types of triangles														
	1	1	3	Solve radius/diameter problems														
	1	1	4	Identify/use polygon/circle degrees														
	1	2	1	Identify/describe/label parallel, perpendicular, and intersecting lines														
	1	2	2	Identify points, planes, lines, line segments, rays, angles, and vertices														
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes																	
	3			Locate points/describe relationships using the coordinate plane		4				4	4		1				1	1
	3	1	1	Plot points in Quadrant I & on axes	7		1		8		8	7		1		8		8
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane				7	4	1		8	4	12	7	1	1		8	1	9
Total For Reporting Category C					7	4	1		8	4	12	7	1	1		8	1	9

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions														
	1	1	1	Create/extend/complete pattern														
	1	2	1	Determine or illustrate pattern rule														
	Total For Assessment Anchor D.1 Understand patterns, relations and functions																	
	2			Represent/analyze mathematical situations		4				4	4		1				1	1
	2	1	1	Identify inverse operation to solve one step equation														
	2	1	2	Solve one-step equation	4		2		6		6	4		2		6		6
	2	2	1	Match one variable, one-step equation/expression to situation	7		4		11		11	7		4		11		11
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				11	4	6		17	4	21	11	1	6		17	1	18
Total For Reporting Category D					11	4	6		17	4	21	11	1	6		17	1	18

Grade 06 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data														
	1	1	1	Analyze data	2				2		2	2				2		2
	1	1	2	Choose appropriate data representation														
	1	1	3	Display data in graphs, etc.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data				3		1		4		4	3		1		4		4
	2			Select/use appropriate statistical methods to analyze data														
	2	1	1	Determine/calculate mean, median, mode, range	12		3		15		15	12		3		15		15
	Total For Assessment Anchor E.2 Select and/or use appropriate statistical methods to analyze data				12		3		15		15	12		3		15		15
	3			Understand/apply basic concepts of probability or outcomes														
	3	1	1	Define/find probability														
	3	1	2	Determine/show combinations														
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes																	
Total For Reporting Category E					15		4		19		19	15		4		19		19

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems														
	1	1	1	Convert between fractions, decimals, percents	7				7		7	7				7		7
	1	2	1	Compare/order rational numbers														
	1	2	2	Locate and identify rational numbers on a number line														
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				7				7		7	7				7		7
	2			Understand meanings, uses and relations of operations		4				4	4		1				1	1
	2	1	1	Use order of operations	1		2		3		3	1		2		3		3
	2	2	1	Write ratios to compare quantities														
	2	2	2	Solve for a variable in proportions														
	2	2	3	Use proportions to test equivalency														
	2	2	4	Calculate/apply unit rates or unit prices	1		1		2		2	1		1		2		2
	2	2	5	Select and use ratios/proportions to solve problems	2		1		3		3	2		1		3		3
	2	2	6	Use proportions to find missing lengths in similar figures														
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				4	4	4		8	4	12	4	1	4		8	1	9
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Estimate answers involving operations with whole numbers, decimals, fractions and mixed numbers	2				2		2	2				2		2
	3	2	1	Solve problems involving operations with whole numbers, decimals, fractions and mixed numbers	3				3		3	3				3		3
	3	2	2	Solve problems involving addition/subtraction of integers	2				2		2	2				2		2
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates				7				7		7	7				7		7
Total For Reporting Category A					18	4	4		22	4	26	18	1	4		22	1	23

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Add/subtract/convert measurements														
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement																	
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Find perimeter and/or area of compound figures	3		1		4		4	3		1		4		4
	2	1	2	Find circumference/area of circles	3		1		4		4	3		1		4		4
	2	1	3	Find area of triangles, parallelograms, trapezoids														
	2	2	1	Interpret and apply scale drawings	3		1		4		4	3		1		4		4
	2	2	2	Determine appropriate scale for reduction and enlargement	3		1		4		4	3		1		4		4
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements				12		4		16		16	12		4		16		16
Total For Reporting Category B					12		4		16		16	12		4		16		16

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes														
	1	1	1	Identify diameter, radius, chord, circumference in circles														
	1	1	2	Solve problems using radius/diameter relationship														
	1	1	3	Identify parallel, perpendicular, and skew lines in a 3-dimensional figure														
	1	2	1	Identify similar/congruent polygons														
	1	2	2	Identify corresponding sides/angles														
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes																	
	3			Locate points/describe relationships using the coordinate plane														
	3	1	1	Plot/identify ordered pairs														
	3	1	2	Identify Quadrants I, II, III, IV, x- and y- axes, and the origin on the coordinate plane														
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane																	
Total For Reporting Category C																		

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions														
	1	1	1	Describe/extend/complete pattern														
	Total For Assessment Anchor D.1 Understand patterns, relations and functions																	
	2			Represent/analyze mathematical situations														
	2	1	1	Solve one-step equations														
	2	1	2	Use substitution of variables to simplify expression														
	2	2	1	Identify mathematical models	8		2		10		10	8		2		10		10
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				8		2		10		10	8		2		10		10
	3			Analyze change in various contexts		4				4	4		1				1	1
	3	1	1	Solve problems w/ constant rate of change	6		2		8		8	6		2		8		8
	3	1	2	Describe or use a rate of change shown on a graph	6		2		8		8	6		2		8		8
	Total For Assessment Anchor D.3 Analyze change in various contexts				12	4	4		16	4	20	12	1	4		16	1	17
Total For Reporting Category D					20	4	6		26	4	30	20	1	6		26	1	27

Grade 07 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data														
	1	1	1	Analyze data														
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data																	
	2			Select and/or use appropriate statistical methods to analyze data														
	2	1	1	Identify/calculate mean, median, mode, range for a set of data														
	2	1	2	Choose appropriate measure of central tendency for a situation														
	Total For Assessment Anchor E.2 Select and/or use appropriate statistical methods to analyze data																	
	3			Understand/apply basic concepts of probability or outcomes		4				4	4		1				1	1
	3	1	1	Find theoretical probability of event	2		1		3		3	2		1		3		3
	3	1	2	Find theoretical probability of event not occurring	2		1		3		3	2		1		3		3
	3	1	3	Find experimental probability	2		1		3		3	2		1		3		3
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes				6	4	3		9	4	13	6	1	3		9	1	10
	4			Develop/evaluate inferences and predictions based on data displays														
	4	1	1	Predict/draw conclusions from displays or probability	4		1		5		5	4		1		5		5
	Total For Assessment Anchor E.4 Develop/evaluate inferences and predictions based on data displays				4		1		5		5	4		1		5		5
Total For Reporting Category E					10	4	4		14	4	18	10	1	4		14	1	15

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Numbers and Operations	1			Understand relationships and representations of numbers and number systems		4				4	4		1				1	1
	1	1	1	Use scientific notation or exponential forms	5		1		6		6	5		1		6		6
	1	1	2	Find the square/cube/square root	2				2		2	2				2		2
	Total For Assessment Anchor A.1 Understand relationships among and representations of numbers and number systems				7	4	1		8	4	12	7	1	1		8	1	9
	2			Understand meanings, uses and relations of operations														
	2	1	1	Use order of operations to simplify	2				2		2	2				2		2
	2	2	1	Use ratios, proportions, percents to solve problems														
	2	2	2	Represent or solve rate problems														
	Total For Assessment Anchor A.2 Understand meanings, uses of operations and how they relate to each other				2				2		2	2				2		2
	3			Compute accurately/fluently and make reasonable estimates														
	3	1	1	Explain when to round up or down														
	3	1	2	Explain when to estimate														
	3	2	1	Estimate percent problems														
	3	3	1	Compute with/without calculator														
	Total For Assessment Anchor A.3 Compute accurately and fluently and make reasonable estimates																	
Total For Reporting Category A					9	4	1		10	4	14	9	1	1		10	1	11

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Measurement	1			Understand measurable attributes and units, systems, processes of measurement														
	1	1	1	Convert metric measurements														
	1	1	2	Convert customary measurements														
	1	1	3	Convert time														
	1	1	4	Convert temperature														
	Total For Assessment Anchor B.1 Understand measurable attributes and units, systems, processes of measurement																	
	2			Apply techniques, tools & formulas to determine measurements														
	2	1	1	Determine total degrees of interior angles														
	2	1	2	Determine the measurement of 1 interior angle of a polygon														
	2	1	3	Determine the number of sides of a polygon given total degrees of interior angles														
	2	2	1	Calculate surface area of cubes and rectangular prisms														
	2	2	2	Calculate volume of cubes and rectangular prisms														
	2	2	3	Determine appropriate type of measurement for a given situation														
	Total For Assessment Anchor B.2 Apply appropriate techniques, tools and formulas to determine measurements																	
Total For Reporting Category B																		

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Geometry	1			Analyze characteristics & properties of 2-D & 3-D shapes		4				4	4		1				1	1
	1	1	1	Match the 3-dimensional figure w/ its net														
	1	1	2	Define, identify, and use properties of angles formed by intersecting lines														
	1	1	3	Define, identify, and use properties of angles formed when parallel lines are cut by a transversal														
	1	2	1	Use the Pythagorean Theorem	10		3		13		13	10		3		13		13
	Total For Assessment Anchor C.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes				10	4	3		13	4	17	10	1	3		13	1	14
	3			Locate points/describe relationships using the coordinate plane														
	3	1	1	Plot/locate/identify ordered pairs														
	Total For Assessment Anchor C.3 Locate points or describe relationships using the coordinate plane																	
Total For Reporting Category C					10	4	3		13	4	17	10	1	3		13	1	14

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Algebraic Concepts	1			Understand patterns, relations and functions		4				4	4		1				1	1
	1	1	1	Continue numeric/algebraic pattern														
	1	1	2	Find missing element in pattern														
	1	1	3	Write/state rule of function	3		3		6		6	3		3		6		6
	Total For Assessment Anchor D.1 Understand patterns, relations and functions				3	4	3		6	4	10	3	1	3		6	1	7
	2			Represent/analyze mathematical situations														
	2	1	1	Solve equations/inequalities	4				4		4	4				4		4
	2	1	2	Use substitution to check solution														
	2	1	3	Simplify/substitute for expression														
	2	2	1	Match written situation to expression, equation, or inequality	3				3		3	3				3		3
	2	2	2	Write/solve equation for a situation	7				7		7	7				7		7
	Total For Assessment Anchor D.2 Represent/analyze mathematical situations using numbers, symbols, words, tables and/or graphs				14				14		14	14				14		14
	4			Describe/use models to represent quantitative relationships														
	4	1	1	Graph linear function from x/y table	4		3		7		7	4		3		7		7
	4	1	2	Match linear graph to x/y table	4		3		7		7	4		3		7		7
	4	1	3	Match linear equation to x/y table	5		3		8		8	5		3		8		8
	Total For Assessment Anchor D.4 Describe/use models to represent quantitative relationships				13		9		22		22	13		9		22		22
Total For Reporting Category D					30	4	12		42	4	46	30	1	12		42	1	43

Grade 08 **Mathematics**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
E: Data Analysis and Probability	1			Formulate/answer questions; organize, display, interpret or analyze data														
	1	1	1	Choose correct data representation														
	1	1	2	Display and/or interpret data														
	1	1	3	Interpret stem-and-leaf, box-and-whisker plots														
	Total For Assessment Anchor E.1 Formulate or answer questions about data and/or organize, display, interpret or analyze data																	
	3			Understand/apply basic concepts of probability or outcomes														
	3	1	1	Find probability														
	3	2	1	Calculate show number of permutations/combinations														
	Total For Assessment Anchor E.3 Understand and/or apply basic concepts of probability or outcomes																	
	4			Develop/evaluate inferences & predictions based on data														
	4	1	1	Fit line to scatter plot; describe correlation	6		1		7		7	6		1		7		7
	4	1	2	Make predictions based on data	5		1		6		6	5		1		6		6
	Total For Assessment Anchor E.4 Develop/evaluate inferences & predictions or draw conclusions based on data or data displays				11		2		13		13	11		2		13		13
Total For Reporting Category E					11		2		13		13	11		2		13		13

Grade 03 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words	3				3		3	3				3		3
	1	1	2	Identify synonym/antonym														
	1	2	1	Identify meaning of word with an affix/how meaning changes														
	1	2	2	Define words from context clues	1				1		1	1				1		1
	1	3	1	Make inferences/draw conclusions	6				6		6	6				6		6
	1	4	1	Identify main ideas/relevant details	5				5		5	5				5		5
	1	5	1	Summarize key details and events of a text as a whole	1				1		1	1				1		1
	1	6	1	Identify author's purpose for writing text	1				1		1	1				1		1
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				17				17		17	17				17		17
	2	1	1	Identify meaning of multiple-meaning words														
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Identify meaning of word with an affix/how meaning changes	1				1		1	1				1		1
	2	2	2	Define words from context clues	1				1		1	1				1		1
	2	3	1	Make inferences/draw conclusions	1				1		1	1				1		1
	2	4	1	Identify main ideas/relevant details	10				10		10	10				10		10
	2	5	1	Summarize major points/processes/events of a text as a whole														
	2	6	1	Identify author's purpose for writing text	1				1		1	1				1		1
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				14				14		14	14				14		14
Total For Reporting Category A					31				31		31	31				31		31

Grade 03 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot	5	6			5	6	11	5	2			5	2	7
	1	2	1	Connections between texts	1				1		1	1				1		1
	Total For Assessment Anchor B.1 Understand components within and between texts.				6	6			6	6	12	6	2			6	2	8
	2	1	1	Identify examples of personification														
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.																	
	3	1	1	Identify fact/opinion														
	3	2	1	Identify exaggeration (bias)														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)	1				1		1	1				1		1
	3	3	2	Use headings to locate information or identify content that fits into a specific section	2				2		2	2				2		2
	3	3	3	Interpret and make connections between graphics/charts/texts														
	3	3	4	Sequence of steps in a list of directions														
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				3				3		3	3				3		3
Total For Reporting Category B					9	6			9	6	15	9	2			9	2	11

Grade 04 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words	1				1		1	1				1		1
	1	1	2	Identify synonym/antonym														
	1	2	1	Identify meaning of word with an affix/how meaning changes	2				2		2	2				2		2
	1	2	2	Define words from context clues														
	1	3	1	Make inferences/draw conclusions	9				9		9	9				9		9
	1	4	1	Identify main ideas/relevant details	6				6		6	6				6		6
	1	5	1	Summarize key details and events of a text as a whole		3				3	3		1				1	1
	1	6	1	Identify author's purpose for writing text														
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				18	3			18	3	21	18	1			18	1	19
	2	1	1	Identify meaning of multiple-meaning words														
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Identify meaning of word with an affix/how meaning changes	2				2		2	2				2		2
	2	2	2	Define words from context clues	1				1		1	1				1		1
	2	3	1	Make inferences/draw conclusions	4				4		4	4				4		4
	2	4	1	Identify main ideas/relevant details	5				5		5	5				5		5
	2	5	1	Summarize major points/processes/events of a text as a whole	1	3			1	3	4	1	1			1	1	2
	2	6	1	Identify author's purpose for writing text														
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				13	3			13	3	16	13	1			13	1	14
Total For Reporting Category A					31	6			31	6	37	31	2			31	2	33

Grade 04 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot	5	6			5	6	11	5	2			5	2	7
	1	2	1	Connections between texts														
	Total For Assessment Anchor B.1 Understand components within and between texts.				5	6			5	6	11	5	2			5	2	7
	2	1	1	Identify examples of personification														
	2	1	2	Identify examples of similes	1				1		1	1				1		1
	2	1	3	Identify examples of alliteration														
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.				1				1		1	1				1		1
	3	1	1	Identify fact/opinion														
	3	2	1	Identify exaggeration (bias)														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)														
	3	3	2	Use headings to locate information or identify content that fits into a specific section														
	3	3	3	Interpret and make connections between graphics/charts/texts	2				2		2	2				2		2
	3	3	4	Sequence of steps in a list of directions	1				1		1	1				1		1
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				3				3		3	3				3		3
Total For Reporting Category B					9	6			9	6	15	9	2			9	2	11

Grade 05 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Identify meaning of multiple-meaning words	1				1		1	1				1		1
	1	1	2	Identify synonym/antonym														
	1	2	1	Identify meaning of word with an affix/how meaning changes	1				1		1	1				1		1
	1	2	2	Define words from context clues	2				2		2	2				2		2
	1	3	1	Make inferences/draw conclusions	4				4		4	4				4		4
	1	3	2	Cite evidence from text to support generalizations														
	1	4	1	Identify and/or interpret main ideas/relevant details	6				6		6	6				6		6
	1	5	1	Summarize key details and events of a text as a whole		3				3	3		1				1	1
	1	6	1	Identify author's purpose for writing text														
	1	6	2	Identify text that supports the author's intended purpose	1				1		1	1				1		1
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				15	3			15	3	18	15	1			15	1	16
	2	1	1	Identify meaning of multiple-meaning words														
	2	1	2	Identify meaning of content-specific words	1				1		1	1				1		1
	2	2	1	Identify meaning of word with an affix/how meaning changes	1				1		1	1				1		1
	2	2	2	Define words from context clues	1				1		1	1				1		1
	2	3	1	Make inferences/draw conclusions	3				3		3	3				3		3
	2	3	2	Cite evidence from text to support generalizations	2				2		2	2				2		2
	2	4	1	Identify and/or interpret main ideas/relevant details	3				3		3	3				3		3
	2	5	1	Summarize major points/processes/events of a text as a whole														
	2	6	1	Identify author's purpose for writing text														
	2	6	2	Identify text that supports the author's intended purpose	1				1		1	1				1		1
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				12				12		12	12				12		12
Total For Reporting Category A					27	3			27	3	30	27	1			27	1	28

Grade 05 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot, theme	8	6			8	6	14	8	2			8	2	10
	1	2	1	Connections between texts	1	3			1	3	4	1	1			1	1	2
	Total For Assessment Anchor B.1 Understand components within and between texts.				9	9			9	9	18	9	3			9	3	12
	2	1	1	Identify examples of personification	2				2		2	2				2		2
	2	1	2	Identify examples of similes	1				1		1	1				1		1
	2	1	3	Identify/interpret examples of alliteration														
	2	1	4	Identify/interpret examples of metaphors														
	2	2	1	Identify point of view of the narrator as first or third person														
	2	2	2	Describe the effectiveness of the point of view used by the author														
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.				3				3		3	3				3		3
	3	1	1	Identify fact/opinion	1				1		1	1				1		1
	3	2	1	Identify exaggeration (bias)														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)														
	3	3	2	Use headings to locate information or identify content that fits into a specific section														
	3	3	3	Interpret and make connections between graphics/charts/texts														
	3	3	4	Sequence of steps in a list of directions														
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				1				1		1	1				1		1
Total For Reporting Category B					13	9			13	9	22	13	3			13	3	16

Grade 06 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Apply meaning of multiple-meaning words in text	1				1		1	1				1		1
	1	1	2	Identify synonym/antonym														
	1	2	1	Identify meaning of word with an affix/how meaning changes														
	1	2	2	Define words from context clues	1				1		1	1				1		1
	1	3	1	Make inferences/draw conclusions	1				1		1	1				1		1
	1	3	2	Cite evidence from text to support generalizations														
	1	4	1	Identify and/or interpret main ideas/relevant details	4				4		4	4				4		4
	1	5	1	Summarize key details and events of a text as a whole														
	1	6	1	Identify author's purpose for writing text														
	1	6	2	Identify text that supports the author's intended purpose														
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				7				7		7	7				7		7
	2	1	1	Apply meaning of multiple-meaning words in text	1				1		1	1				1		1
	2	1	2	Identify meaning of content-specific words														
	2	2	1	Identify meaning of word with an affix/how meaning changes														
	2	2	2	Define words from context clues														
	2	3	1	Make inferences/draw conclusions	8	6			8	6	14	8	2			8	2	10
	2	3	2	Cite evidence from text to support generalizations	3				3		3	3				3		3
	2	4	1	Identify and/or interpret main ideas/relevant details	5				5		5	5				5		5
	2	5	1	Summarize major points/processes/events of a text as a whole														
	2	6	1	Identify author's purpose for writing text														
	2	6	2	Identify text that supports the author's intended purpose														
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				17	6			17	6	23	17	2			17	2	19
Total For Reporting Category A					24	6			24	6	30	24	2			24	2	26

Grade 06 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot, theme	4	3			4	3	7	4	1			4	1	5
	1	2	1	Connections between texts	1	3			1	3	4	1	1			1	1	2
	Total For Assessment Anchor B.1 Understand components within and between texts.				5	6			5	6	11	5	2			5	2	7
	2	1	1	Identify examples of personification														
	2	1	2	Identify examples of similes	2				2		2	2				2		2
	2	1	3	Identify/interpret examples of alliteration														
	2	1	4	Identify/interpret examples of metaphors														
	2	2	1	Identify point of view of the narrator as first or third person														
	2	2	2	Describe the effectiveness of the point of view used by the author	2				2		2	2				2		2
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.				4				4		4	4				4		4
	3	1	1	Identify fact/opinion	3				3		3	3				3		3
	3	2	1	Identify exaggeration (bias)														
	3	3	1	Identify text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)														
	3	3	2	Use headings to locate information or identify content that fits into a specific section	1				1		1	1				1		1
	3	3	3	Interpret and make connections between graphics/charts/texts	1				1		1	1				1		1
	3	3	4	Sequence of steps in a list of directions	2				2		2	2				2		2
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				7				7		7	7				7		7
Total For Reporting Category B					16	6			16	6	22	16	2			16	2	18

Grade 07 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Apply meaning of multiple-meaning words in text														
	1	1	2	Identify synonym/antonym	2				2		2	2				2		2
	1	2	1	Identify meaning of word with an affix/how meaning changes														
	1	2	2	Define words from context clues	1				1		1	1				1		1
	1	3	1	Make inferences/draw conclusions	3	3			3	3	6	3	1			3	1	4
	1	3	2	Cite evidence from text to support generalizations														
	1	4	1	Identify and/or interpret main ideas/relevant details	2				2		2	2				2		2
	1	5	1	Summarize key details and events of a text as a whole														
	1	6	1	Identify author's purpose for writing text														
	1	6	2	Identify text that supports the author's intended purpose	1				1		1	1				1		1
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				9	3			9	3	12	9	1			9	1	10
	2	1	1	Apply meaning of multiple-meaning words in text														
	2	1	2	Identify meaning of content-specific words	1				1		1	1				1		1
	2	2	1	Identify meaning of word with an affix/how meaning changes														
	2	2	2	Define words from context clues	3				3		3	3				3		3
	2	3	1	Make inferences/draw conclusions	4	3			4	3	7	4	1			4	1	5
	2	3	2	Cite evidence from text to support generalizations	1				1		1	1				1		1
	2	4	1	Identify and/or interpret main ideas/relevant details	4				4		4	4				4		4
	2	5	1	Summarize major points/processes/events of a text as a whole	1				1		1	1				1		1
	2	6	1	Identify author's purpose for writing text														
	2	6	2	Identify text that supports the author's intended purpose	1				1		1	1				1		1
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				15	3			15	3	18	15	1			15	1	16
Total For Reporting Category A					24	6			24	6	30	24	2			24	2	26

Grade 07 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot, theme	5				5		5	5				5		5
	1	2	1	Connections between texts	2	6			2	6	8	2	2			2	2	4
	Total For Assessment Anchor B.1 Understand components within and between texts.				7	6			7	6	13	7	2			7	2	9
	2	1	1	Interpret/analyze examples of personification, simile, alliteration, metaphor, hyperbole, and imagery	6				6		6	6				6		6
	2	1	2	Identify author's purpose/effectiveness of figurative language	1				1		1	1				1		1
	2	2	1	Identify point of view of the narrator as first or third person														
	2	2	2	Describe the effectiveness of the point of view used by the author														
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.				7				7		7	7				7		7
	3	1	1	Use of facts and opinions to make a point/construct an argument														
	3	2	1	Identify bias/propaganda techniques														
	3	3	1	Analyze text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)	1				1		1	1				1		1
	3	3	2	Identify content that fits into a specific section														
	3	3	3	Interpret and make connections between graphics/charts/texts														
	3	3	4	Sequence of steps in a list of directions	1				1		1	1				1		1
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				2				2		2	2				2		2
Total For Reporting Category B					16	6			16	6	22	16	2			16	2	18

Grade 08 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Comprehension and Reading Skills	1	1	1	Apply meaning of multiple-meaning words in text														
	1	1	2	Identify synonym/antonym	1				1		1	1				1		1
	1	2	1	Identify meaning of word with an affix/how meaning changes														
	1	2	2	Define words from context clues														
	1	3	1	Make inferences/draw conclusions	4	3			4	3	7	4	1			4	1	5
	1	3	2	Cite evidence from text to support generalizations	1				1		1	1				1		1
	1	4	1	Identify and/or interpret main ideas/relevant details														
	1	5	1	Summarize key details and events of a text as a whole														
	1	6	1	Identify author's purpose for writing text														
	1	6	2	Identify text that supports the author's intended purpose														
	Total For Assessment Anchor A.1 Understand fiction appropriate to grade level.				6	3			6	3	9	6	1			6	1	7
	2	1	1	Apply meaning of multiple-meaning words in text	1				1		1	1				1		1
	2	1	2	Identify meaning of content-specific words	1				1		1	1				1		1
	2	2	1	Identify meaning of word with an affix/how meaning changes	2				2		2	2				2		2
	2	2	2	Define words from context clues														
	2	3	1	Make inferences/draw conclusions	4				4		4	4				4		4
	2	3	2	Cite evidence from text to support generalizations														
	2	4	1	Identify and/or interpret main ideas/relevant details	4	3			4	3	7	4	1			4	1	5
	2	5	1	Summarize major points/processes/events of a text as a whole														
	2	6	1	Identify author's purpose for writing text		3				3	3		1				1	1
	2	6	2	Identify text that supports the author's intended purpose														
	Total For Assessment Anchor A.2 Understand nonfiction appropriate to grade level.				12	6			12	6	18	12	2			12	2	14
Total For Reporting Category A					18	9			18	9	27	18	3			18	3	21

Grade 08 **Reading**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Interpretation and Analysis of Fictional and Nonfictional Text	1	1	1	Identify in fiction and literary nonfiction character (narrator/ speaker/subject of a biography), setting, plot, theme	11				11		11	11				11		11
	1	2	1	Connections between texts	1	3			1	3	4	1	1			1	1	2
	Total For Assessment Anchor B.1 Understand components within and between texts.				12	3			12	3	15	12	1			12	1	13
	2	1	1	Interpret/analyze examples of personification, simile, metaphor, hyperbole, and imagery	3				3		3	3				3		3
	2	1	2	Identify author's purpose/effectiveness of figurative language	2				2		2	2				2		2
	2	2	1	Identify point of view of the narrator as first or third person														
	2	2	2	Analyze the effectiveness of the point of view used by the author	1				1		1	1				1		1
	Total For Assessment Anchor B.2 Understand literary devices in fictional and nonfictional text.				6				6		6	6				6		6
	3	1	1	Use of facts and opinions to make a point/construct an argument	1				1		1	1				1		1
	3	2	1	Identify bias/propaganda techniques	1				1		1	1				1		1
	3	3	1	Analyze text organization (sequence, question/answer, comparison/contrast, cause/effect, problem/solution)														
	3	3	2	Identify content that fits into a specific section	1				1		1	1				1		1
	3	3	3	Interpret and make connections between graphics/charts/texts	1				1		1	1				1		1
	3	3	4	Sequence of steps in a list of directions														
	Total For Assessment Anchor B.3 Understand concepts and organization of nonfictional text.				4				4		4	4				4		4
Total For Reporting Category B					22	3			22	3	25	22	1			22	1	23

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Distinguish between a scientific fact and an opinion, providing clear explanations that connect observations and results (e.g., a scientific fact can be supported by making observations).	1		1		2		2	1		1		2		2
	1	1	2	Identify and describe examples of common technological changes past to present in the community (e.g., energy production, transportation, communications, agriculture, packaging materials) that have either positive or negative impacts on society or the environment.	2		1		3		3	2		1		3		3
	1	3	1	Observe and record change by using time and measurement.	2		1		3		3	2		1		3		3
	1	3	2	Describe relative size, distance, or motion.	1				1		1	1				1		1
	1	3	3	Observe and describe the change to objects caused by temperature change or light.	1	2	1		2	2	4	1	1	1		2	1	3
	1	3	4	Explain what happens to a living organism when its food supply, access to water, shelter, or space is changed (e.g., it might die, migrate, change behavior, eat something else).	2		1		3		3	2		1		3		3
	1	3	5	Provide examples, predict, or describe how everyday human activities (e.g., solid waste production, food production and consumption, transportation, water consumption, energy production and use) may change the environment.	1		1		2		2	1		1		2		2
Total For Assessment Anchor A.1 Reasoning and Analysis					10	2	6		16	2	18	10	1	6		16	1	17

A: Nature of Science	2	1	1	Generate questions about objects, organisms, or events that can be answered through scientific investigations.	1		1		2		2	1		1		2		2
	2	1	2	Design and describe an investigation (a fair test) to test one variable.	2				2		2	2				2		2
	2	1	3	Observe a natural phenomenon (e.g., weather changes, length of daylight/night, movement of shadows, animal migrations, growth of plants), record observations, and then make a prediction based on those observations.	1				1		1	1				1		1
	2	1	4	State a conclusion that is consistent with the information/data.	1		1		2		2	1		1		2		2
	2	2	1	Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, telescope).	2		1		3		3	2		1		3		3
	Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				7		3		10		10	7		3		10		10

3	1	1	Categorize systems as either natural or human-made (e.g., ballpoint pens, simple electrical circuits, plant anatomy, water cycle).	3		1		4		4	3		1		4		4
3	1	2	Explain a relationship between the living and nonliving components in a system (e.g., food web, terrarium).	1				1		1	1				1		1
3	1	3	Categorize the parts of an ecosystem as either living or nonliving and describe their roles in the system.	1	2			1	2	3	1	1			1	1	2
3	1	4	Identify the parts of the food and fiber systems as they relate to agricultural products from the source to the consumer.	1	2			1	2	3	1	1			1	1	2
3	2	1	Identify what different models represent (e.g., maps show physical features, directions, distances; globes represent Earth; drawings of watersheds depict terrain; dioramas show ecosystems; concept maps show relationships of ideas).Identify what different models represent	2				2		2	2				2		2
3	2	2	Use models to make observations to explain how systems work (e.g., water cycle, Sun-Earth-Moon system).			2		2		2			2		2		2
3	2	3	Use appropriate, simple modeling tools and techniques to describe or illustrate a system (e.g., two cans and string to model a communications system, terrarium to model an ecosystem).	2				2		2	2				2		2
3	3	1	Identify and describe observable patterns (e.g., growth patterns in plants, weather, water cycle).	1				1		1	1				1		1
3	3	2	Predict future conditions/events based on observable patterns (e.g., day/night, seasons, sunrise/sunset, lunar phases).	1				1		1	1				1		1
Total For Assessment Anchor A.3 Systems, Models, and Patterns				12	4	3		15	4	19	12	2	3		15	2	17
Total For Reporting Category A				29	6	12		41	6	47	29	3	12		41	3	44

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Identify life processes of living things (e.g., growth, digestion, respiration).														
	1	1	2	Compare similar functions of external characteristics of organisms (e.g., anatomical characteristics: appendages, type of covering, body segments).														
	1	1	3	Describe basic needs of plants and animals (e.g., air, water, food).	1		1		2		2	1		1		2		2
	1	1	4	Describe how different parts of a living thing work together to provide what the organism needs (e.g., parts of plants: roots, stems, leaves).														
	1	1	5	Describe the life cycles of different organisms (e.g., moth, grasshopper, frog, seed-producing plant).	1				1		1	1				1		1
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				2		1		3		3	2		1		3		3
	2	1	1	Identify characteristics for plant and animal survival in different environments (e.g., wetland, tundra, desert, prairie, deep ocean, forest).														
	2	1	2	Explain how specific adaptations can help a living organism survive (e.g., protective coloration, mimicry, leaf sizes and shapes, ability to catch or retain water).			1		1		1			1		1		1
	2	2	1	Identify physical characteristics (e.g., height, hair color, eye color, attached earlobes, ability to roll tongue) that appear in both parents and could be passed on to offspring.	1				1		1	1				1		1
	Total For Assessment Anchor B.2 Continuity of Life				1		1		2		2	1		1		2		2

B: Biological Sciences	3	1	1	Describe the living and nonliving components of a local ecosystem (e.g., lentic and lotic systems, forest, cornfield, grasslands, city park, playground).	1				1		1	1				1		1
	3	1	2	Describe interactions between living and nonliving components (e.g. plants – water, soil, sunlight, carbon dioxide, temperature; animals – food, water, shelter, oxygen, temperature) of a local ecosystem.			1		1		1			1		1		1
	3	2	1	Describe what happens to a living thing when its habitat is changed.	1				1		1	1				1		1
	3	2	2	Describe and predict how changes in the environment (e.g., fire, pollution, flood, building dams) can affect systems.		2	1		1	2	3		1	1		1	1	2
	3	2	3	Explain and predict how changes in seasons affect plants, animals, or daily human life (e.g., food availability, shelter, mobility).	1				1		1	1				1		1
	3	3	1	Identify everyday human activities (e.g., driving, washing, eating, manufacturing, farming) within a community that depend on the natural environment.														
	3	3	2	Describe the human dependence on the food and fiber systems from production to consumption (e.g., food, clothing, shelter, products).	1				1		1	1				1		1
	3	3	3	Identify biological pests (e.g., fungi – molds, plants – foxtail, purple loosestrife, Eurasian water milfoil; animals – aphides, ticks, zebra mussels, starlings, mice) that compete with humans for resources.	1				1		1	1				1		1
	3	3	4	Identify major land uses in the urban, suburban and rural communities (e.g., housing, commercial, recreation).	1				1		1	1				1		1
	3	3	5	Describe the effects of pollution (e.g., litter) in the community.	1				1		1	1				1		1
	Total For Assessment Anchor B.3 Ecological Behavior and Systems				7	2	2		9	2	11	7	1	2		9	1	10
Total For Reporting Category B					10	2	4		14	2	16	10	1	4		14	1	15

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Physical Sciences	1	1	1	Use physical properties [e.g., mass, shape, size, volume, color, texture, magnetism, state to describe matter.	2				2		2	2				2		2
	1	1	2	Categorize/group objects using physical characteristics.	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				3		1		4		4	3		1		4		4
	2	1	1	Identify energy forms, energy transfer, and energy examples (e.g., light, heat, electrical).	1				1		1	1				1		1
	2	1	2	Describe the flow of energy through an object or system (e.g., feeling radiant heat from a light bulb, eating food to get energy, using a battery to light a bulb or run a fan).	1	2			1	2	3	1	1			1	1	2
	2	1	3	Recognize or illustrate simple direct current series and parallel circuits composed of batteries, light bulbs (or other common loads), wire, and on/off switches.														
	2	1	4	Identify characteristics of sound (e.g., pitch, loudness, reflection).	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				3	2	1		4	2	6	3	1	1		4	1	5
	3	1	1	Describe changes in motion caused by forces (e.g., magnetic, pushes or pulls, gravity, friction).	1		1		2		2	1		1		2		2
	3	1	2	Compare the relative movement of objects or describe types of motion that are evident (e.g., bouncing ball, moving in a straight line, back and forth, merry-go-round).	1				1		1	1				1		1
	3	1	3	Describe the position of an object by locating it relative to another object or a stationary background (e.g., geographic direction, left, up).	1		1		2		2	1		1		2		2
	Total For Assessment Anchor C.3 Principles of Motion and Force				3		2		5		5	3		2		5		5
Total For Reporting Category C					9	2	4		13	2	15	9	1	4		13	1	14

Grade 04 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
D: Earth and Space Sciences	1	1	1	Describe how prominent Earth features in Pennsylvania (e.g., mountains, valleys, caves, sinkholes, lakes, rivers) were formed.	1				1		1	1				1		1
	1	1	2	Identify various Earth structures (e.g., mountains, watersheds, peninsulas, lakes, rivers, valleys) through the use of models.														
	1	1	3	Describe the composition of soil as weathered rock and decomposed organic remains.	1		1		2		2	1		1		2		2
	1	2	1	Identify products and by-products of plants and animals for human use (e.g., food, clothing, building materials, paper products).														
	1	2	2	Identify the types and uses of Earth materials for renewable, nonrenewable, and reusable products (e.g., human-made products: concrete, paper, plastics, fabrics).	1				1		1	1				1		1
	1	2	3	Recognize ways that humans benefit from the use of water resources (e.g., agriculture, energy, recreation).	1				1		1	1				1		1
	1	3	1	Describe types of freshwater and saltwater bodies (e.g., lakes, rivers, wetlands, oceans).			1		1		1			1		1		1
	1	3	2	Explain how water goes through phase changes (i.e., evaporation, condensation, freezing, and melting).	1				1		1	1				1		1
	1	3	3	Describe or compare lentic systems (i.e., ponds, lakes, and bays) and lotic systems (i.e., streams, creeks, and rivers).	1				1		1	1				1		1
	1	3	4	Explain the role and relationship of a watershed or a wetland on water sources (e.g., water storage, groundwater recharge, water filtration, water source, water cycle).	2				2		2	2				2		2
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				8		2		10		10	8		2		10		10

2	1	1	Identify basic cloud types (i.e., cirrus, cumulus, stratus, and cumulonimbus) and make connections to basic elements of weather (e.g., changes in temperature, precipitation).															
2	1	2	Identify weather patterns from data charts or graphs of the data (e.g., temperature, wind direction, wind speed, cloud types, precipitation).	1				1		1	1				1		1	
2	1	3	Identify appropriate instruments (i.e., thermometer, rain gauge, weather vane, anemometer, and barometer) to study weather and what they measure.			1		1		1			1		1		1	
Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				1		1		2		2	1		1		2		2	
3	1	1	Describe motions of the Sun - Earth - Moon system.	1				1		1	1				1		1	
3	1	2	Explain how the motion of the Sun - Earth - Moon system relates to time (e.g., days, months, years).			1		1		1			1		1		1	
3	1	3	Describe the causes of seasonal change as they relate to the revolution of Earth and the tilt of Earth's axis.															
Total For Assessment Anchor D.3 Composition and Structure of the Universe				1		1		2		2	1		1		2		2	
Total For Reporting Category D				10		4		14		14	10		4		14		14	

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Distinguish between a scientific theory and an opinion, explaining how a theory is supported with evidence, or how new data/information may change existing theories and practices	2				2		2	2				2		2
	1	1	2	Explain how certain questions can be answered through scientific inquiry and/or technological design.	1				1		1	1				1		1
	1	1	3	Use evidence, such as observations or experimental results, to support inferences about a relationship.	1				1		1	1				1		1
	1	1	4	Develop descriptions, explanations, predictions, and models using evidence.	2				2		2	2				2		2
	1	2	1	Describe the positive and negative, intended and unintended, effects of specific scientific results or technological developments (e.g., air/space travel, genetic engineering, nuclear fission/fusion, artificial intelligence, lasers, organ transplants).	1				1		1	1				1		1
	1	2	2	Identify environmental issues and explain their potential long-term health effects (e.g., pollution, pest controls, vaccinations).	1				1		1	1				1		1
	1	2	3	Describe fundamental scientific or technological concepts that could solve practical problems (e.g., Newton's laws of motion, Mendelian genetics).	1		2		3		3	1		2		3		3
	1	2	4	Explain society's standard of living in terms of technological advancements and how these advancements impact on agriculture (e.g., transportation, processing, production, storage).	1				1		1	1				1		1
	1	3	1	Use ratio to describe change (e.g., percents, parts per million, grams per cubic centimeter, mechanical advantage).	1				1		1	1				1		1

1	3	2	Use evidence, observations, or explanations to make inferences about change in systems over time (e.g., carrying capacity, succession, population dynamics, loss of mass in chemical reactions, indicator fossils in geologic time scale) and the variables affecting these changes.	1		1		2		2	1		1		2		2
1	3	3	Examine systems changing over time, identifying the possible variables causing this change, and drawing inferences about how these variables affect this change.		2	1		1	2	3		1	1		1	1	2
1	3	4	Given a scenario, explain how a dynamically changing environment provides for the sustainability of living systems.														
Total For Assessment Anchor A.1 Reasoning and Analysis				12	2	4		16	2	18	12	1	4		16	1	17
2	1	1	Use evidence, observations, or a variety of scales (e.g., mass, distance, volume, temperature) to describe relationships.	1				1		1	1				1		1
2	1	2	Use space/time relationships, define concepts operationally, raise testable questions, or formulate hypotheses.			1		1		1			1		1		1
2	1	3	Design a controlled experiment by specifying how the independent variables will be manipulated, how the dependent variable will be measured, and which variables will be held constant.														
2	1	4	Interpret data/observations; develop relationships among variables based on data/observations to design models as solutions.	1		1		2		2	1		1		2		2
2	1	5	Use evidence from investigations to clearly communicate and support conclusions.	2				2		2	2				2		2
2	1	6	Identify a design flaw in a simple technological system and devise possible working solutions.			1		1		1			1		1		1
2	2	1	Describe the appropriate use of instruments and scales to accurately and safely measure time, mass, distance, volume, or temperature under a variety of conditions.		2				2	2		1				1	1
2	2	2	Apply appropriate measurement systems (e.g., time, mass, distance, volume, temperature) to record and interpret observations under varying conditions.	1				1		1	1				1		1
2	2	3	Describe ways technology (e.g., microscope, telescope, micrometer, hydraulics, barometer) extends and enhances human abilities for specific purposes.	2				2		2	2				2		2
Total For Assessment Anchor A.2 Processes, Procedures, and Tools of Scientific Investigations				7	2	3		10	2	12	7	1	3		10	1	11

A: Nature of Science

3	1	1	Describe a system (e.g., watershed, circulatory system, heating system, agricultural system) as a group of related parts with specific roles that work together to achieve an observed result.	1				1		1	1				1		1
3	1	2	Explain the concept of order in a system [e.g., (first to last: manufacturing steps, trophic levels); (simple to complex: cell, tissue, organ, organ system)].	1		1		2		2	1		1		2		2
3	1	3	Distinguish between system inputs, system processes, system outputs, and feedback (e.g., physical, ecological, biological, informational).			1		1		1			1		1		1
3	1	4	Distinguish between open loop (e.g., energy flow, food web) and closed loop (e.g., materials in the nitrogen and carbon cycles, closed switch) systems.	1				1		1	1				1		1
3	1	5	Explain how components of natural and human-made systems play different roles in a working system.	2		1		3		3	2		1		3		3
3	2	1	Describe how scientists use models to explore relationships in natural systems (e.g., an ecosystem, river system, the solar system).	1				1		1	1				1		1
3	2	2	Describe how engineers use models to develop new and improved technologies to solve problems.	2	2			2	2	4	2	1			2	1	3
3	2	3	Given a model showing simple cause- and-effect relationships in a natural system, predict results that can be used to test the assumptions in the model (e.g., photosynthesis, water cycle, diffusion, infiltration).			1		1		1			1		1		1
3	3	1	Identify and describe patterns as repeated processes or recurring elements in human-made systems (e.g., trusses, hub-and-spoke system in communications and transportation systems, feedback controls in regulated systems).														
3	3	2	Describe repeating structure patterns in nature(e.g., veins in a leaf, tree rings, crystals, water waves) or periodic patterns (e.g., daily, monthly, annually).	1		1		2		2	1		1		2		2
Total For Assessment Anchor A.3 Systems, Models, and Patterns				9	2	5		14	2	16	9	1	5		14	1	15
Total For Reporting Category A				28	6	12		40	6	46	28	3	12		40	3	43

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
	1	1	1	Describe the structures of living things that help them function effectively in specific ways (e.g., adaptations, characteristics).	1				1		1	1				1		1
	1	1	2	Compare similarities and differences in internal structures of organisms (e.g., invertebrate/vertebrate, vascular/nonvascular, single-celled/multi-celled) and external structures (e.g., appendages, body segments, type of covering, size, shape)														
	1	1	3	Apply knowledge of characteristic structures to identify or categorize organisms (i.e., plants, animals, fungi, bacteria, and protista).														
	1	1	4	Identify the levels of organization from cell to organism and describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole.			1		1		1			1		1		1
	Total For Assessment Anchor B.1 Structures and Functions of Organisms				1		1		2		2	1		1		2		2
	2	1	1	Explain how inherited structures or behaviors help organisms survive and reproduce in different environments.	1				1		1	1				1		1
	2	1	2	Explain how different adaptations in individuals of the same species may affect survivability or reproduction success.														
	2	1	3	Explain that mutations can alter a gene and are the original source of new variations.														
	2	1	4	Describe how selective breeding or biotechnology can change the genetic makeup of organisms.	1				1		1	1				1		1
	2	1	5	Explain that adaptations are developed over long periods of time and are passed from one generation to another	1				1		1	1				1		1

B: Biological Sciences	2	2	1	Identify and explain differences between inherited and acquired traits.															
	2	2	2	Recognize that the gene is the basic unit of inheritance, that there are dominant and recessive genes, and that traits are inherited.	1				1		1	1				1		1
	Total For Assessment Anchor B.2 Continuity of Life				4				4		4	4				4		4
	3	1	1	Explain the flow of energy through an ecosystem (e.g., food chains, food webs).	1				1		1	1				1		1
	3	1	2	Identify major biomes and describe abiotic and biotic components (e.g., abiotic: different soil types, air, water sunlight; biotic: soil microbes, decomposers).	1				1		1	1				1		1
	3	1	3	Explain relationships among organisms (e.g., producers/consumers, predator/prey) in an ecosystem.	1				1		1	1				1		1
	3	2	1	Use evidence to explain factors that affect changes in populations (e.g., deforestation, disease, land use, natural disaster, invasive species).	1				1		1	1				1		1
	3	2	2	Use evidence to explain how diversity affects the ecological integrity of natural systems														
	3	2	3	Describe the response of organisms to environmental changes (e.g., changes in climate, hibernation, migration, coloration) and how those changes affect survival.		2	1		1	2	3		1	1		1	1	2
	3	3	1	Explain how human activities may affect local, regional, and global environments.			1		1		1			1		1		1
	3	3	2	Explain how renewable and nonrenewable resources provide for human needs (i.e., energy, food, water, clothing, and shelter).														
	3	3	3	Describe how waste management affects the environment (e.g., recycling, composting, landfills, incineration, sewage treatment).	1				1		1	1				1		1
	3	3	4	Explain the long-term effects of using integrated pest management (e.g., herbicides, natural predators, biogenetics) on the environment.			1		1		1			1		1		1
	Total For Assessment Anchor B.3 Ecological Behavior and Systems				5	2	3		8	2	10	5	1	3		8	1	9
Total For Reporting Category B					10	2	4		14	2	16	10	1	4		14	1	15

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
C: Physical Sciences	1	1	1	Explain the differences among elements, compounds, and mixtures.	2				2		2	2				2		2
	1	1	2	Use characteristic physical or chemical properties to distinguish one substance from another (e.g., density, thermal expansion/contraction, freezing/melting points, streak test).	1				1		1	1				1		1
	1	1	3	Identify and describe reactants and products of simple chemical reactions.	1				1		1	1				1		1
	Total For Assessment Anchor C.1 Structures, Properties, and Interaction of Matter and Energy				4				4		4	4				4		4
	2	1	1	Distinguish among forms of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) and sources of energy (i.e., renewable and nonrenewable energy)	2				2		2	2				2		2
	2	1	2	Explain how energy is transferred from one place to another through convection, conduction, or radiation.	1		1		2		2	1		1		2		2
	2	1	3	Describe how one form of energy (e.g., electrical, mechanical, chemical, light, sound, nuclear) can be converted into a different form of energy.	1				1		1	1				1		1
	2	2	1	Describe the Sun as the major source of energy that impacts the environment.			1		1		1			1		1		1
	2	2	2	Compare the time span of renewability for fossil fuels and the time span of renewability for alternative fuels.			1		1		1			1		1		1
	2	2	3	Describe the waste (i.e., kind and quantity) derived from the use of renewable and nonrenewable resources and their potential impact on the environment.														
	Total For Assessment Anchor C.2 Forms, Sources, Conversions, and Transer of Energy				4		3		7		7	4		3		7		7
	3	1	1	Describe forces acting on objects (e.g., friction, gravity, balanced versus unbalanced).	2				2		2	2				2		2
	3	1	2	Distinguish between kinetic and potential energy.			1		1		1			1		1		1
	3	1	3	Explain that mechanical advantage helps to do work (physics) by either changing a force or changing the direction of the applied force (e.g., simple machines, hydraulic systems).														
	Total For Assessment Anchor C.3 Principles of Motion and Force				2		1		3		3	2		1		3		3
Total For Reporting Category C					10		4		14		14	10		4		14		14

Grade 08 **Science**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
Earth and Space Sciences	1	1	1	Explain the rock cycle as changes in the solid earth and rock types found in Pennsylvania (igneous – granite, basalt, pumice; sedimentary – limestone, sandstone, shale, coal; and metamorphic – slate, quartzite, marble, gneiss).			1		1		1			1		1		1
	1	1	2	Describe natural processes that change Earth's surface (e.g., landslides, volcanic eruptions, earthquakes, mountain building, new land being formed, weathering, erosion, sedimentation, soil formation).			1		1		1			1		1		1
	1	1	3	Identify soil types (i.e., humus, topsoil, subsoil, loam, loess, and parent material) and their characteristics (i.e., particle size, porosity, and permeability) found in different biomes and in Pennsylvania, and explain how they formed.														
	1	1	4	Explain how fossils provide evidence about plants and animals that once lived throughout Pennsylvania's history (e.g., fossils provide evidence of different environments).	2		2		4		4	2		2		4		4
	1	2	1	Describe a product's transformation process from production to consumption (e.g., prospecting, propagating, growing, maintaining, adapting, treating, converting, distributing, disposing) and explain the process's potential impact on Earth's resources.		2				2	2		1				1	1
	1	2	2	Describe potential impacts of human-made processes (e.g., manufacturing, agriculture, transportation, mining) on Earth's resources, both nonliving (i.e., air, water, or earth materials) and living (i.e., plants and animals).	3				3		3	3				3		3
	1	3	1	Describe the water cycle and the physical processes on which it depends (i.e., evaporation, condensation, precipitation, transpiration, runoff, infiltration, energy inputs, and phase changes).	1				1		1	1				1		1
	1	3	2	Compare and contrast characteristics of freshwater and saltwater systems on the basis of their physical characteristics (i.e., composition, density, and electrical conductivity) and their use as natural resources.														

D: E																			
	1	3	3	Distinguish among different water systems (e.g., wetland systems, ocean systems, river systems, watersheds) and describe their relationships to each other as well as to landforms.															
	1	3	4	Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found within the stream environment (e.g., biological diversity, water quality, flow rate, tributaries, surrounding watershed)															
	Total For Assessment Anchor D.1 Earth Features and Processes that Change Earth and its Resources				6	2	4		10	2	12	6	1	4		10	1	11	
	2	1	1	Explain the impact of water systems on the local weather or the climate of a region (e.g., lake effect snow, land/ocean breezes).	1				1		1	1				1		1	
	2	1	2	Identify how global patterns of atmospheric movement influence regional weather and climate.															
	2	1	3	Identify how cloud types, wind directions, and barometric pressure changes are associated with weather patterns in different regions of the country.															
	Total For Assessment Anchor D.2 Weather, Climate, and Atmospheric Processes				1				1		1	1				1		1	
	3	1	1	Describe patterns of Earth's movements (i.e., rotation and revolution) and the Moon's movements (i.e., phases, eclipses, and tides) in relation to the Sun.															
	3	1	2	Describe the role of gravity as the force that governs the movement of the solar system and universe.	1				1		1	1				1		1	
	3	1	3	Compare and contrast characteristics of celestial bodies found in the solar system (e.g., moons, asteroids, comets, meteors, inner and outer planets).	2				2		2	2				2		2	
	Total For Assessment Anchor D.3 Composition and Structure of the Universe				3				3		3	3				3		3	
Total For Reporting Category D					10	2	4		14	2	16	10	1	4		14	1	15	

Grade 05 **Writing**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Composition	1			Narrative														
	Total For Assessment Anchor A.1 A.S. 1.4 -- Types of Writing																	
	2			Informational		4				4	4		1				1	1
	Total For Assessment Anchor A.2 A.S. 1.4 -- Types of Writing					4				4	4		1				1	1
	3			Persuasive		4				4	4		1				1	1
	Total For Assessment Anchor A.3 A.S. 1.4 -- Types of Writing					4				4	4		1				1	1
Total For Reporting Category A						8				8	8		2				2	2

Grade 05 **Writing**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Revising and Edit	5			Editing	7				7		7	7				7		7
	Total For Assessment Anchor B.5 A.S. 1.5 -- Quality of Writing				7				7		7	7				7		7
	6			Revising	5				5		5	5				5		5
	Total For Assessment Anchor B.6 A.S. 1.5 -- Quality of Writing				5				5		5	5				5		5
Total For Reporting Category B					12				12		12	12				12		12

Grade 08 **Writing**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
A: Composition	1			Narrative														
	Total For Assessment Anchor A.1 A.S. 1.4 -- Types of Writing																	
	2			Informational		4				4	4		1				1	1
	Total For Assessment Anchor A.2 A.S. 1.4 -- Types of Writing					4				4	4		1				1	1
	3			Persuasive		4				4	4		1				1	1
	Total For Assessment Anchor A.3 A.S. 1.4 -- Types of Writing					4				4	4		1				1	1
Total For Reporting Category A						8				8	8		2				2	2

Grade 08 **Writing**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Points							Items						
					Student Scores (Core Points)		Equating Block (EB)		Total Points (Core & EB)			Number of Items				Total Number of Items (Core & EB)		
												Core		EB				
					MC	OE	MC	OE	MC	OE	Total	MC	OE	MC	OE	MC	OE	Total
B: Revising and Edi	5			Editing	6				6		6	6				6		6
	Total For Assessment Anchor B.5 A.S. 1.5 -- Quality of Writing				6				6		6	6				6		6
	6			Revising	6				6		6	6				6		6
	Total For Assessment Anchor B.6 A.S. 1.5 -- Quality of Writing				6				6		6	6				6		6
Total For Reporting Category B					12				12		12	12				12		12

Appendix C:

Item and Test Development Process

Item and Test Development Process for the PSSA

Step	Description
1. Review Guiding Documentation	Each year item and test development specialists meet internally to review all guiding documentation related to the PSSA. Documentation reviewed includes the test design blueprints, the Pennsylvania Assessment Anchors and Eligible Content, the test item specifications, the test style specifications (style guide), and all test content descriptions.
2. Meet with PDE to Confirm Understanding of Program	The goal of the meeting each year is to ensure that item and test development teams have a clear understanding of PDE's vision for test development. A successful development cycle requires a clear understanding of Pennsylvania's content-area test specifications and of any unique interpretations of the Pennsylvania Assessment Anchors (if any).
3. Create Preliminary Test Item Development Plan	Item and test development specialists generate a preliminary development plan which includes an overview of the program, the internal and external (PDE) review and approval processes, a projected schedule for development of test items—including the number of test items to be developed for review by PDE and subsequent review by the committees of Pennsylvania educators. Item and test development specialists also generate strategies for securing passages and developing writing prompts, science scenarios, and passage-based items, etc.
4. Meet with PDE to Finalize Test Item Development Plan	Over the course of the meeting, item and test development specialists verify all steps in the development process including timelines and schedules for test item/test development.
5. Analyze Item Bank	Existing test items in the current PSSA Item Bank are reviewed for technical psychometric quality as well as for their match to the Assessment Anchors. During this phase, test development specialists also make a tally of the test items by Assessment Anchor—including test development specialists' best thinking regarding the number of usable test items in the existing item bank. A tally is also made of the number of usable passages, as well as other stimulus prompts in the bank, including science scenarios.
6. Refine Test Item Development Plan to Include Writers and Subcontractors	Item and test development specialists identify the writers who will write the test items (test development specialists or other professional item writers, subcontractors, etc.), the estimated number of writers needed, the qualifications of writers, and the approximate number of test items to be submitted by each source.
7. Train Item Writers	Item and test development specialists train item writers, as needed. Item writers who have written for the PSSA in the past receive updated information, as needed.

Item and Test Development Process for the PSSA

Step	Description
8. Write and Review Items	Test items are written by item writers after training is complete, and feedback is provided by the item and test development specialists to item writers on a regular basis. As test items are written, they are reviewed and edited in a series of internal reviews. Item and test development specialists review and edit items to include, but not limited to, the following: match to Assessment Anchor/Eligible Content, relevance to purpose, accuracy of content, item difficulty, interest level, grade appropriateness, depth of knowledge and cognitive complexity, adherence to the principles of Universal Design, and freedom from issues of bias/fairness/sensitivity. At the same time, the process of procuring permissions also begins, including securing permissions for passages, art, prompts, etc.
9. Enter Test Items into Database	Upon acceptance from item writers, test items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*). Item data stored in the system database includes, but is not limited to, the following: readability, cognitive level, estimated level of difficulty, alignment to assessment anchors, and correlation to stimulus prompts and passages.
10. Prepare Item Set for Sample Item Review by PDE	Item and test development specialists prepare a subset of the items for review by PDE.
11. PDE Conducts Sample Item Review	After a subset of the items is submitted to PDE for review, PDE reviews the items and provides feedback to item and test development teams via a conference call. Items are revised per PDE feedback.
12. Continue to Write and Review Items	The remaining items are written, and feedback is provided by the item and test development specialists to item writers on a regular basis. Items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*) (See step 8 and step 9).
13. Review Items Prior to Test Item Review and Validation Sessions	Prior to New Item Content Review, all items are submitted to PDE for review. Item and test development specialists incorporate all PDE feedback, and PDE-requested edits to items are made.
14. Prepare for Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Item and test development specialists prepare all items and stimulus passages for review by the New Item Content Review Committee (consisting of Pennsylvania educators) and by the separate Bias, Fairness, and Sensitivity Committee (consisting of a panel of experts including Pennsylvania educators). Item and test development specialists also prepare training materials needed for training committee members to review items for content or for bias, fairness, and sensitivity issues. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are also developed and then submitted to PDE for review and approval. Invitations are sent to Pennsylvania educators and national experts from PDE-approved committee lists.

Item and Test Development Process for the PSSA

Step	Description
15. Conduct Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Committees of Pennsylvania educators and national experts review items in two meetings: one addressing item content and quality, the other addressing bias, fairness, and sensitivity. PDE, with support from item and test development specialists, presents training on how to review new test items for content considerations or bias/fairness/sensitivity issues. At the New Item Content Review, suggested edits to test items are made and/or replacement test items are written during the actual item review so that both the committee and the PDE are able to observe changes to the test items and approve the test items during the committee review process. At the Bias, Fairness, and Sensitivity Review, experts in bias, fairness, and sensitivity review all test items and passages and come to a consensus about any issues that are noted. At both meetings the results are carefully documented.
16. Conduct Item Review Resolution and Cleanup	Following the conclusion of the New Item Content Review Committee meetings, PDE re-examines the consensus changes suggested by the committee members during the New Item Content Review Committee meetings. DRC item and test development specialists then record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the changes as requested by the committee or rejects the decision of the committee. If a committee decision is rejected, PDE provides an alternate decision for DRC to implement. During this cleanup process, PDE also interprets the report from the Bias, Fairness, and Sensitivity Committee meetings and subsequently identifies changes to test items and passages. DRC item and test development specialists then apply the changes to the test items and passages per PDE's decisions.
17. Submit Field Test Items for Final Sign-Off	PDE-approved changes are applied to the items, scenarios, non-permissioned passages, prompts, etc. (Changes reflect PDE's arbitration of the committee decisions.) Once all revisions to the items, non-permissioned passage text, and/or the art used by test items and passages are completed, the test items are submitted to PDE for final review and sign-off. (Changes requested to permissioned passages are sought from the publisher of record, and, if approved by the copyright holders, changes are implemented.) [PDE's approval process for field test items generally occurs simultaneously with PDE's approval of the core test forms. See step 25.]
*To follow the path for new field test items, skip to **step 22**.* *OR* *To follow the chronological test development path, continue with **step 18**.*	

Item and Test Development Process for the PSSA

Step	Description
18. Review Results of the Field Test	Following the administration of a field test form and the subsequent rangefinding and field test scoring processes for field test items, performance data for all field test items are analyzed by DRC psychometricians and test development specialists. Test item performance data that meet certain triggering criteria are flagged for additional reviews by test development specialists. Flagged field-test items with extreme performance data are considered psychometrically unusable and are removed from future operational consideration. Field-test items with marginal performance data are prepared for the Field Test Item Data Review meeting.
19. Prepare for Field Test Item Data Review	Test development specialists prepare the items and stimulus passages for review by the Field Test Item Data Review Committee (which consists of Pennsylvania educators). Psychometricians also prepare training materials needed for training committee members to review items for their performance. All training materials and other ancillary materials (e.g., agendas, presentations, etc.) are submitted to PDE for review and approval. Invitations are also sent to Pennsylvania educators from PDE-approved committee lists.
20. Conduct Field Test Item Data Review	Committees of Pennsylvania educators review the performance data of flagged field-test items. Psychometricians present training on how to review field-test items based on their performance data. At the Item Data Review, committee members examine the performance of the items and determine whether each field-test item is technically sound and appropriate for use on an operational PSSA test. Since test items cannot be modified at the Field Test Item Data Review, the committee can either accept an item as is, or the committee can reject the item.
21. Conduct Field Test Item Data Review Reconciliation	Following the conclusion of the Field Test Item Data Review Committee meetings, PDE re-examines the consensus decisions (accept or reject) suggested by the committee members during the Field Test Item Data Review Committee meetings. Test development specialists record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the decisions of the data review committee, or PDE rejects the decisions of the data review committee. If a committee decision is not accepted, PDE provides an alternate decision for test development specialists to implement. All PDE-approved changes to the test items status (accepted or rejected) are incorporated into the *Item Development and Educational Assessment System*, IDEAS.
22. Select Items to Fill Core, Field Test, and Equating Block Positions in Core and Field Test Forms	After the PDE-approved changes to the new field-test items is completed AND the results of the prior field test have been finalized following data review, test development specialists collaborate with psychometricians to follow the Test Design Blueprints and build requirements to make the initial selection of items for core, field-test, and equating block positions for all test forms.

Item and Test Development Process for the PSSA

Step	Description
23. Review Core and Equating Block Selections	After test content and psychometric requirements have been achieved for core and equating block positions, the core and equating block items are provided to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. Test development specialists work with psychometricians and PDE staff to create scrambled versions of the core items that will appear across forms.
24. Construct Test Forms	Items, passages, and test components are assembled into forms using the form construction and typesetting function of DRC's *Item Development and Educational Assessment System*, IDEAS. Forms are reviewed internally for style and formatting requirements.
25. Review Typeset Forms	After forms are constructed in IDEAS, draft hard copies of the forms are produced and presented to PDE for review and approval. Any changes to the content of the core or equating block requested by PDE are balanced with psychometric requirements until all core and equating block positions are approved by PDE, test development specialists, and psychometricians. PDE also re-reviews all field-test items appearing in the test forms. DRC applies changes to the field-test items as required.
26. Print Test Forms	Following PDE's approval of the test forms, DRC completes a series of final proofing of all test forms. Final forms (along with ancillary materials) are then approved for printing.
27. Assemble Documentation of Test Materials	Metadata for each test item and form is documented and proofed, including: grade, form, session/section, item sequence, reporting category, Assessment Anchor, descriptor (sub-anchor), Eligible Content, number of points, item type, number of answer options, item usage, stimulus ID, etc.
28. Prepare Online Forms	Following approval of the print forms, all online forms are prepared. Forms are rendered in form sets, and items and forms are compared for continuity with the print forms as well as to ensure that all tools and features are functioning as expected.
*To follow the path for new field test items, return to **step 18**.*	

Appendix D:

Item Review Cards

Standard: Demonstrate an understanding of numbers, ways of representing numbers, relationships among numbers, and number systems.

PA - Item Card

1. [illegible]

A. [illegible]

B. [illegible]

Item ID
[illegible]
Content Area
Mathematics
Passage ID
Passage Title
Grade
[illegible]
AACS Standards
A.1
Item Type
Open Ended
Points
4
Depth of Knowledge
Est Difficulty
Calculator
C
Focus

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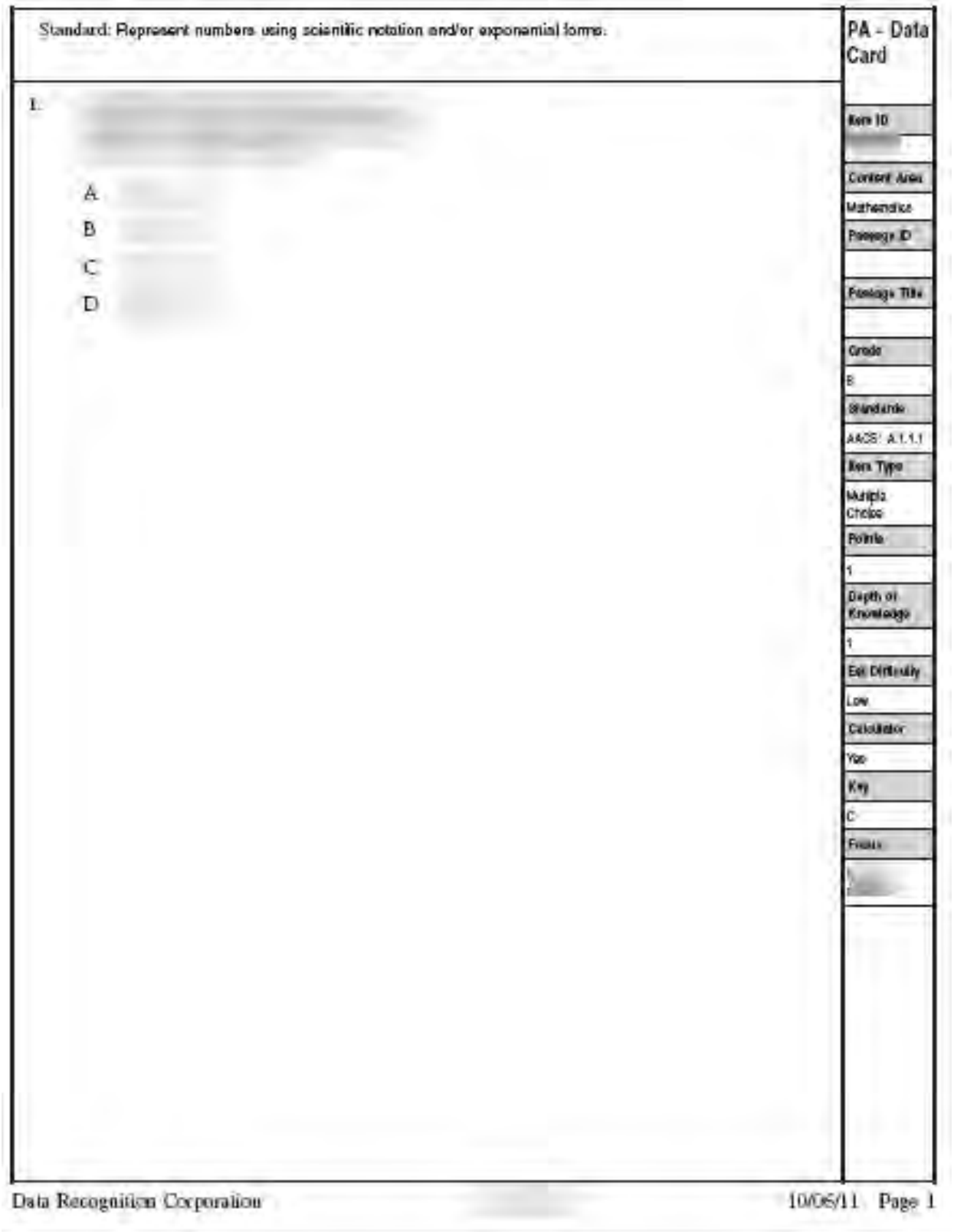

Standard: Represent numbers using scientific notation and/or exponential forms.

1.

A

B

C

D

PA - Data Card

Item ID

Content Area

Mathematics

Passage ID

Passage Title

Grade

8

Standards

AACS: A.1.1.1

Item Type

Multiple Choice

Points

1

Depth of Knowledge

1

Est Difficulty

Low

Calculator

Yes

Key

C

Notes

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PA - Data Card continued

Administration

Name	Use Function	Rptg Flag	Seq	Period	Year	Day	Session	Calc	Model/Ext	Grade
08	FT		[illegible]	[illegible]	[illegible]		[illegible]	No		[illegible]

Traditional Statistics

# In group	P-Value	Item Mean	Item/Tot Corr
14185	0.68		0.31

Fit Statistics

Outfit t	Infit t	Deg Free	Chi-sq/df	Fit
7.3	9.7			

IRT Statistics

Label	Final	Final S.E.	Preliminary	Preliminary S.E.
Location	0.08	0.02		

Distractor/Step Specific

Label	Proportion	Correlation	Avg Meas	Step Logit
A	0.16	-0.26		
B	0.13	-0.22		
C*	0.68	0.31		
D	0.03	-0.28		
OMITS	0.00			

DIF Analysis

Category	Bias Code	Num Value	N - Ref	N - Focal
MALEFEMALE	A+	0.05	7231	6948
WHITEBLACK	A-	-0.70	10419	2145

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Appendix E:

Item Rating Sheet and Criteria Guidelines

Reviewer Signature: _____

Item Rating Sheet

Content Area: _____ **Grade:** _____

	Content Alignment	Rigor Level Alignment				Technical Design			Universal Design		STATUS
	Standards	Grade	Difficulty	Depth of Knowledge	Source of Challenge	Correct Answer	Distractors	Graphics	Language Demand	Bias	Acceptance Status
Unique ID number	—Higher —Lower —None	—Above —At —Below	—Hard —Medium —Easy	—Recall —Application —Strategic Thinking	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	—Yes —No	— Approved as is — Accepted with suggested revisions — Dissenting View

Item Review Criteria Guidelines

The purpose of this form is to provide guidelines to the item review process in terms of item characteristics that are essential in building a fair and balanced assessment. Use these guidelines in conjunction with the Item Rating Sheet when recording your feedback on individual items.

Content Alignment		Options
Standards, Anchors, Eligible Content	Does the content of the item align with the Standard/Anchor/Eligible Content? Each item was written to assess a particular Standard/Anchor/ Eligible Content statement which is indicated on the individual Item Card. Consider the degree to which the item is, in fact, aligned with the indicated eligible content. In making this judgment, it is important to consider whether the **content** is aligned (e.g., do the eligible content and the item both deal with fractions) and whether the required **performance** is aligned (e.g., if the eligible content calls for a comparison to be made, is this reflected in the item).	**HIGHER**—Aligns to the higher level of the EC **LOWER**—Aligns to the lower level of the EC **NONE**—No alignment with EC

Rigor Level Alignment		Options
Grade	Is the item grade-level appropriate? Is the content consistent with the experiences of a student at the grade level assessed? Is the challenge level appropriate for the grade?	**ABOVE** Grade Level **AT** Grade Level **BELOW** Grade Level
Difficulty	Do you agree with the item's difficulty rating? Item Difficulty is indicated as Easy, Medium, and Hard? Is your rating in agreement with the difficulty rating on the Item Form?	**HARD** **MEDIUM** **EASY**
Depth of Knowledge	Depth of Knowledge is based on the alignment work of Norman Webb. Rate each item based on the cognitive demand, using the following levels: 1. Recall – ***Recall*** of a fact, information, or procedure. 2. Basic Application of Skill or Concept – ***Use*** of information, conceptual knowledge, procedures, two or more steps, etc. 3. Strategic Thinking – Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer. 4. Extended Thinking – Requires an investigation, time to think and process multiple conditions of the problem or task, and more than 10 minutes to do non-routine manipulations. (This level is generally not assessed in on-demand assessments.)	**4** = Extended Thinking **3** = Strategic Thinking **2** = Basic Application **1** = Recall

Source of Challenge	Is the source of challenge appropriately targeted to the content? The hardest part of the item (i.e., source of challenge) should be the content that is targeted. For example, in mathematics, the mathematics should be the major source of challenge rather than the wording or graphic. Students should not give an incorrect answer to a mathematics item because the reading level is too high or a graphic is flawed. Conversely, students should not give correct answers for reasons such as prior knowledge that make the answer to the question obvious (e.g., if the question asks which country has the largest population and students are to read a graph that includes China, there is no need to read the graph to answer the question).	**Y** = Yes **N** = No

Technical Design		**Options**
Correct Answer	Is there one clear, correct answer? There should be no other answer that "could" be correct. CAUTION: This does not mean that "good" distractors are unfair.	**Y** = Yes **N** = No
Distractors	Are distractors fair and appropriate? Distractors that are appropriate offer students reasonable choices that can be arrived at by making common errors. There should be no distractors that make no sense at all. It should be possible to examine each option and to reason how a student with some deficiency in knowledge or skill could choose it. The distractors should be formatted according to acceptable standards of test construction (e.g., a phrase that is common to each distractor should be placed in the stem).	**Y** = Yes **N** = No
Graphics	Are the graphics clear and accurate?	**Y** = Yes **N** = No

Universal Design		**Options**
Language Demand	Is language clear, well-formatted, and precise? Does the item use correct terminology for the content area? In order for all students to enter into the questions of the assessment, they must be able to understand them. If the items are formatted poorly, use unnecessarily complex words or phrases, or use figures or layouts that are difficult to understand, some students will give incorrect answers due to these factors rather than the content that is being assessed.	**Y** = Yes **N** = No
Bias	Is the item free of bias? All students will not be able to enter into the assessment if bias considerations are not resolved. Does the item contain clear bias problems? *A thorough, independent bias review* (separate from this meeting) *will be completed for all items.*	**Y** = Yes **N** = No

Status		**Options**
Acceptance Status	This is an overall judgment about the item. Based on the consensus of the committee, indicate whether the item was approved without revision to the content of the item or whether the item was accepted by the committee after revision of the content of the item. If there is a dissenting view (opposed to the committee consensus), record a brief explanation of the dissenting view on the back of the Item Rating Sheet.	**—Approved** as is **—Accepted** with suggested revisions **—Dissenting View**

NOTES:

- If you leave a box blank on the Item Rating Sheet, it will be recorded to indicate that you did not have any specific feedback for that item or issue.
- If you object to the consensus of the committee, please note this on the item rating sheet and then record a brief explanation of the dissenting view on the back of the Item Rating Sheet.
- **Do NOT remove any items from the item binder at any time.**
- You must sign your Item Rating Sheet.

Appendix F:

Item Statistics

Column Heading	Definition
PubID	Public ID
Form	Form
Std	Standard
DOK	Depth of knowledge
N	N
PVal	P-Value
P( )	Proportion selecting given response (-=blank)
PtBis	Point biserial
PT( )	Point biserial of repsonse
Meas	Rasch item measure
MeasSE	Rasch item measure standard error
t	t fit statistic
MS	Mean square fit statistic
M/F	Male/female DIF statistic
W/B	White/black DIF statistic

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	674745	0	E.1.2.1	2	124538	0.84	0.84	0.02	0.05	0.07	0.00	0.50	0.50	-0.15	-0.30	-0.33	0.4040	0.0088	-9.9	0.9	-9.9	0.8			
MATH	3	532063	0	A.3.1.2	2	124538	0.86	0.10	0.86	0.02	0.01	0.01	0.56	-0.49	0.56	-0.15	-0.21	0.1826	0.0093	-9.9	0.9	-9.9	0.7			
MATH	3	960234	0	A.1.3.2	2	124538	0.79	0.06	0.09	0.79	0.06	0.01	0.55	-0.27	-0.34	0.55	-0.25	0.8224	0.0081	-9.9	0.9	-9.9	0.9			
MATH	3	991299	0	B.1.1.1	1	124538	0.52	0.52	0.04	0.34	0.09	0.00	0.46	0.46	-0.29	-0.17	-0.31	2.4741	0.0067	9.9	1.1	9.9	1.1			
MATH	3	452193	0	A.1.3.3	1	124538	0.61	0.04	0.61	0.08	0.26	0.01	0.55	-0.20	0.55	-0.25	-0.36	2.0571	0.0069	-9.9	0.9	-9.9	0.9			
MATH	3	851847	0	A.1.3.2	1	124538	0.78	0.02	0.78	0.07	0.12	0.00	0.47	-0.13	0.47	-0.42	-0.20	0.9024	0.0080	1.7	1.0	9.9	1.2			
MATH	3	874933	0	A.1.3.2	2	124538	0.67	0.12	0.10	0.09	0.67	0.01	0.43	-0.29	-0.23	-0.11	0.43	1.6728	0.0071	9.9	1.1	9.9	1.3			
MATH	3	279968	0	A.1.3.3	2	124538	0.58	0.12	0.17	0.13	0.58	0.01	0.54	-0.14	-0.27	-0.35	0.54	2.3290	0.0068	-9.9	0.9	-9.2	1.0			
MATH	3	620705	0	A.2.1.3	1	124538	0.61	0.07	0.61	0.24	0.06	0.02	0.50	-0.28	0.50	-0.27	-0.20	2.0587	0.0069	-2.2	1.0	-4.4	1.0			
MATH	3	887926	0	B.2.1.1	1	124538	0.82	0.00	0.01	0.82	0.16	0.00	0.33	-0.12	-0.17	0.33	-0.27	0.5381	0.0085	9.9	1.2	9.9	1.2			
MATH	3	947296	0	A.1.2.1	1	124538	0.79	0.10	0.05	0.79	0.06	0.00	0.47	-0.21	-0.26	0.47	-0.30	0.9411	0.0079	-2.9	1.0	-9.9	0.9			
MATH	3	485860	0	A.1.2.2	1	124538	0.63	0.14	0.63	0.04	0.18	0.00	0.42	-0.32	0.42	-0.07	-0.20	1.9479	0.0069	9.9	1.1	9.9	1.1			
MATH	3	979847	0	A.1.3.3	2	124538	0.51	0.09	0.51	0.06	0.33	0.00	0.56	-0.11	0.56	-0.15	-0.45	2.6419	0.0067	-9.9	0.9	-9.9	0.9			
MATH	3	357813	0	A.2.1.3	1	124538	0.82	0.04	0.05	0.08	0.82	0.01	0.52	-0.33	-0.32	-0.22	0.52	0.5335	0.0085	-9.9	0.9	2.6	1.0			
MATH	3	769967	0	A.2.1.3	1	124538	0.71	0.08	0.06	0.71	0.14	0.01	0.57	-0.31	-0.17	0.57	-0.36	1.5227	0.0072	-9.9	0.9	-9.9	0.8			
MATH	3	635227	0	A.2.1.3	1	124538	0.43	0.25	0.43	0.13	0.18	0.01	0.41	-0.30	0.41	-0.15	-0.05	3.1413	0.0068	9.9	1.1	9.9	1.3			
MATH	3	991954	0	A.3.1.2	2	124538	0.86	0.06	0.04	0.86	0.03	0.01	0.55	-0.38	-0.26	0.55	-0.26	0.2106	0.0092	-9.9	0.8	-9.9	0.6			
MATH	3	699453	0	A.3.1.3	2	124538	0.94	0.03	0.01	0.01	0.94	0.01	0.29	-0.14	-0.19	-0.19	0.29	-1.1289	0.0138	9.9	1.2	9.9	2.2			
MATH	3	464825	0	B.1.1.1	1	124538	0.91	0.91	0.04	0.02	0.03	0.00	0.45	0.45	-0.32	-0.21	-0.21	-0.4281	0.0109	-8.7	0.9	-9.9	0.8			
MATH	3	153378	0	B.1.1.2	2	124538	0.58	0.04	0.58	0.24	0.13	0.01	0.46	-0.21	0.46	-0.22	-0.26	2.2821	0.0068	9.9	1.0	9.9	1.1			
MATH	3	250576	0	E.1.1.2	2	124538	0.88	0.04	0.02	0.88	0.06	0.00	0.46	-0.36	-0.18	0.46	-0.23	-0.0795	0.0099	-9.9	0.9	-2.2	1.0			
MATH	3	950639	0	E.1.2.2	2	124538	0.91	0.91	0.01	0.05	0.03	0.00	0.37	0.37	-0.19	-0.16	-0.28	-0.4428	0.0110	5.9	1.0	9.9	1.3			
MATH	3	182671	0	D.1.1.1	2	124538	0.95	0.01	0.02	0.95	0.02	0.01	0.35	-0.16	-0.24	0.35	-0.20	-1.1171	0.0137	-9.9	0.9	-5.8	0.8			
MATH	3	462213	0	A.2.1.3	2	124538	0.77	0.10	0.06	0.07	0.77	0.00	0.55	-0.37	-0.24	-0.25	0.55	0.8816	0.0080	-9.9	0.9	-9.9	0.9			
MATH	3	345945	0	B.2.1.1	1	124538	0.61	0.07	0.16	0.15	0.61	0.01	0.46	-0.29	-0.19	-0.22	0.46	1.9922	0.0069	9.9	1.1	9.9	1.1			
MATH	3	117858	0	D.2.2.1	1	124538	0.89	0.04	0.89	0.04	0.03	0.01	0.49	-0.28	0.49	-0.25	-0.28	-0.1279	0.0100	-9.9	0.9	-9.9	0.7			
MATH	3	143244	0	A.1.2.1	1	124538	0.76	0.14	0.07	0.76	0.03	0.01	0.48	-0.26	-0.36	0.48	-0.13	1.1707	0.0076	-1.7	1.0	-5.5	1.0			
MATH	3	896948	0	A.3.2.1	2	124538	0.71	0.16	0.71	0.09	0.03	0.01	0.57	-0.36	0.57	-0.24	-0.29	1.4059	0.0074	-9.9	0.9	-9.9	0.9			
MATH	3	119573	0	B.1.1.1	1	124538	0.85	0.07	0.03	0.85	0.05	0.01	0.50	-0.22	-0.28	0.50	-0.33	0.3245	0.0089	-9.9	0.9	-9.9	0.9			
MATH	3	452818	0	B.1.1.1	1	124538	0.84	0.84	0.04	0.05	0.06	0.01	0.53	0.53	-0.26	-0.38	-0.23	0.2827	0.0090	-9.9	0.9	-9.9	0.8			
MATH	3	538307	0	A.3.1.2	1	124538	0.89	0.04	0.03	0.89	0.04	0.01	0.46	-0.32	-0.21	0.46	-0.23	-0.0734	0.0099	-9.9	0.9	-9.9	0.8			
MATH	3	661873	0	E.1.2.1	2	124538	0.92	0.03	0.02	0.03	0.92	0.00	0.42	-0.27	-0.25	-0.21	0.42	-0.6902	0.0119	-2.2	1.0	-2.6	0.9			
MATH	3	675036	0	E.1.2.2	2	124538	0.87	0.05	0.87	0.05	0.03	0.00	0.46	-0.34	0.46	-0.22	-0.19	0.1379	0.0094	-9.9	0.9	4.4	1.1			
MATH	3	301655	0	D.2.1.1	2	124538	0.50	0.22	0.07	0.50	0.20	0.01	0.40	-0.24	-0.23	0.40	-0.09	2.7027	0.0067	9.9	1.1	9.9	1.2			
MATH	3	649628	0	A.1.3.3	2	124538	0.57	0.06	0.57	0.14	0.22	0.00	0.61	-0.11	0.61	-0.33	-0.38	2.3093	0.0068	-9.9	0.8	-9.9	0.8			
MATH	3	471760	0	A.3.2.1	2	124538	0.72	0.05	0.13	0.72	0.09	0.00	0.48	-0.27	-0.30	0.48	-0.18	1.3444	0.0074	8.4	1.0	9.9	1.1			
MATH	3	513343	0	A.1.3.2	2	124538	0.78	0.11	0.06	0.05	0.78	0.01	0.60	-0.44	-0.30	-0.18	0.60	0.9206	0.0079	-9.9	0.8	-9.9	0.7			
MATH	3	707643	0	A.1.3.2	2	124538	0.66	0.20	0.05	0.09	0.66	0.01	0.57	-0.43	-0.21	-0.16	0.57	1.6717	0.0071	-9.9	0.9	-9.9	0.9			
MATH	3	519917	0	B.1.1.2	2	124538	0.65	0.04	0.65	0.05	0.26	0.00	0.47	-0.22	0.47	-0.23	-0.30	1.9135	0.0070	8.7	1.0	-0.6	1.0			
MATH	3	444671	0	B.1.1.2	2	124538	0.58	0.06	0.58	0.26	0.08	0.01	0.47	-0.27	0.47	-0.22	-0.22	2.2371	0.0068	9.9	1.0	9.9	1.1			
MATH	3	873735	0	E.1.1.1	2	124538	0.92	0.06	0.92	0.01	0.01	0.01	0.40	-0.36	0.40	-0.12	-0.12	-0.5382	0.0113	-9.9	0.9	1.3	1.0			
MATH	3	523309	0	A.1.3.3	2	124538	0.66	0.20	0.08	0.06	0.66	0.00	0.51	-0.28	-0.26	-0.25	0.51	1.8615	0.0070	-9.9	1.0	-9.9	0.9			
MATH	3	895162	0	A.1.3.3	2	124538	0.64	0.08	0.64	0.12	0.15	0.01	0.53	-0.22	0.53	-0.32	-0.24	1.9189	0.0070	-9.9	0.9	-9.9	0.9			
MATH	3	819093	0	E.1.1.2	2	124538	0.86	0.86	0.02	0.06	0.05	0.01	0.44	0.44	-0.15	-0.33	-0.22	0.0839	0.0095	5.1	1.0	3.8	1.1			
MATH	3	425411	0	A.2.1.3	2	124538	0.78	0.07	0.09	0.06	0.78	0.01	0.52	-0.33	-0.20	-0.31	0.52	0.9350	0.0079	-9.9	0.9	2.2	1.0			
MATH	3	663403	0	A.3.1.2	2	124538	0.82	0.02	0.13	0.03	0.82	0.01	0.55	-0.20	-0.46	-0.18	0.55	0.5298	0.0086	-9.9	0.9	-9.9	0.8			
MATH	3	488771	0	A.1.1.4	1	124538	0.92	0.92	0.02	0.02	0.03	0.01	0.45	0.45	-0.21	-0.23	-0.31	-0.5275	0.0113	-9.9	0.8	-9.9	0.7			
MATH	3	360274	0	A.1.1.4	1	124538	0.88	0.02	0.04	0.05	0.88	0.00	0.47	-0.25	-0.25	-0.29	0.47	-0.0295	0.0098	-9.9	0.9	-9.9	0.8			
MATH	3	418980	0	A.3.1.3	2	124538	0.84	0.84	0.06	0.05	0.04	0.01	0.51	0.51	-0.23	-0.31	-0.30	0.3838	0.0088	-9.9	0.9	-9.9	0.8			

MATH	3	327638	0	A.2.1.3	2	124538	0.57	0.06	0.57	0.21	0.15	0.01	0.39	-0.18	0.39	-0.31	-0.05	2.2939	0.0068	9.9	1.2	9.9	1.2			
MATH	3	175998	0	A.3.1.3	2	124538	0.87	0.03	0.05	0.05	0.87	0.00	0.40	-0.23	-0.19	-0.25	0.40	0.1373	0.0094	2.7	1.0	4.7	1.1			
MATH	3	582469	0	A.3.1.3	2	124538	0.93	0.02	0.93	0.02	0.02	0.01	0.38	-0.22	0.38	-0.20	-0.23	-0.8260	0.0124	-4.9	1.0	-5.6	0.9			
MATH	3	966698	0	A.3.2.1	2	124538	0.58	0.09	0.28	0.58	0.04	0.01	0.48	-0.22	-0.28	0.48	-0.20	2.2859	0.0068	3.7	1.0	9.9	1.1			
MATH	3	421102	0	A.3.2.1	2	124538	0.46	0.46	0.10	0.14	0.29	0.01	0.49	0.49	-0.18	-0.17	-0.29	2.9897	0.0067	-9.9	0.9	9.9	1.1			
MATH	3	254800	0	D.2.1.1	2	124538	0.91	0.03	0.91	0.03	0.02	0.00	0.47	-0.30	0.47	-0.26	-0.24	-0.4796	0.0111	-6.5	1.0	-9.9	0.8			
MATH	3	980303	0	A.1.3.2	1	124538	0.61	0.25	0.61	0.04	0.08	0.01	0.49	-0.17	0.49	-0.28	-0.38	1.9291	0.0070	9.9	1.0	9.9	1.1			
MATH	3	325865	0	B.1.1.2	2	124538	0.56	0.56	0.13	0.18	0.13	0.01	0.49	0.49	-0.19	-0.29	-0.19	2.4865	0.0067	-6.3	1.0	9.1	1.1			
MATH	3	669421	0	D.2.1.2	2	124538	0.84	0.04	0.84	0.05	0.06	0.01	0.52	-0.23	0.52	-0.29	-0.32	0.3084	0.0090	-8.3	1.0	-9.9	0.8			
MATH	3	286690	0	D.2.1.2	2	124538	0.92	0.01	0.05	0.92	0.02	0.00	0.31	-0.15	-0.22	0.31	-0.16	-0.6329	0.0116	9.9	1.1	9.9	1.5			
MATH	3	469752	0	D.1.1.2	2	124538	0.85	0.85	0.04	0.05	0.06	0.01	0.50	0.50	-0.32	-0.26	-0.25	0.3147	0.0090	-9.9	0.9	-9.9	0.8			
MATH	3	333805	1	D.1.1.1	2	14148	0.92	0.02	0.92	0.04	0.02	0.01	0.38	-0.20	0.38	-0.24	-0.21	-0.6659	0.0336	-0.7	1.0	-1.9	0.9	A+	B-	A-
MATH	3	590013	1	D-M.2.1.2	2	14148	0.55	0.16	0.13	0.55	0.15	0.01	0.52	-0.21	-0.22	0.52	-0.28	2.3058	0.0202	-0.8	1.0	1.9	1.0	A+	A-	A-
MATH	3	166302	1	A-T.1.1.3	2	14148	0.52	0.12	0.21	0.52	0.14	0.01	0.52	-0.25	-0.17	0.52	-0.32	2.4579	0.0201	-5.5	1.0	0.8	1.0	A-	A-	A-
MATH	3	167575	1	D-M.1.1.2	1	14148	0.52	0.18	0.52	0.16	0.13	0.01	0.42	-0.30	0.42	-0.08	-0.19	2.4583	0.0201	9.9	1.1	9.9	1.2	A-	A+	A+
MATH	3	486180	1	C-G.1.1.1	2	14148	0.62	0.62	0.02	0.11	0.24	0.01	0.16	0.16	-0.21	-0.15	0.01	1.8827	0.0207	9.9	1.6	9.9	1.9	A-	A+	A+
MATH	3	612550	1	A-T.1.1.2	2	14148	0.61	0.11	0.61	0.15	0.12	0.00	0.52	-0.28	0.52	-0.22	-0.27	1.9365	0.0206	-1.7	1.0	-1.5	1.0	A+	A-	A-
MATH	3	989019	1	B-O.3.1.6	2	14148	0.56	0.56	0.12	0.07	0.23	0.01	0.36	0.36	-0.28	-0.27	-0.03	2.2258	0.0203	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	3	425331	1	D-M.3.1	2	14148	0.27	0.31	0.26	0.27	0.15	0.01	0.19	0.01	-0.14	0.19	-0.08	3.9946	0.0220	9.9	1.3	9.9	2.3	A-	A-	A+
MATH	3	996803	1	D-M.2.1.4	2	14148	0.44	0.34	0.18	0.44	0.04	0.01	0.49	-0.15	-0.34	0.49	-0.20	2.9426	0.0202	-0.9	1.0	3.0	1.1	A+	A-	A-
MATH	3	347605	1	B-O.1.2.2	1	14148	0.90	0.90	0.05	0.02	0.02	0.01	0.47	0.47	-0.34	-0.23	-0.23	-0.3581	0.0307	-6.9	0.9	-4.5	0.8	A+	A-	A-
MATH	3	698320	1	A-F.1.1.3	2	14148	0.15	0.17	0.15	0.28	0.39	0.00	0.33	-0.08	0.33	-0.09	-0.09	4.9482	0.0265	-5.3	0.9	9.9	1.6	A-	A-	B-
MATH	3	900691	1	B-O.2.2.1	2	14148	0.46	0.18	0.17	0.46	0.18	0.01	0.37	-0.42	-0.18	0.37	0.12	2.8443	0.0201	9.9	1.2	9.9	1.4	A+	A+	A-
MATH	3	631893	2	D-M.2.1.1	2	13840	0.88	0.88	0.03	0.04	0.04	0.00	0.50	0.50	-0.25	-0.27	-0.30	-0.1161	0.0298	-6.2	0.9	-6.0	0.7	A+	A-	A-
MATH	3	271756	2	A-T.1.1.1	1	13840	0.69	0.07	0.06	0.69	0.17	0.02	0.57	-0.24	-0.22	0.57	-0.39	1.5629	0.0215	-9.5	0.9	-9.5	0.8	A-	A-	A-
MATH	3	100501	2	A-T.1.1.2	2	13840	0.33	0.19	0.30	0.33	0.16	0.01	0.36	-0.04	-0.06	0.36	-0.33	3.6138	0.0210	4.8	1.1	9.9	1.5	A-	A-	A-
MATH	3	139531	2	D-M.4.1.1	2	13840	0.32	0.52	0.11	0.32	0.05	0.00	0.33	-0.13	-0.17	0.33	-0.15	3.7149	0.0212	9.9	1.1	9.9	1.5	A-	A-	A-
MATH	3	703181	2	B-O.1.2.2	1	13840	0.77	0.77	0.06	0.08	0.08	0.02	0.53	0.53	-0.23	-0.30	-0.33	1.0097	0.0233	-6.1	0.9	-6.6	0.8	A+	A-	A-
MATH	3	895134	2	B-O.3.1.6	2	13840	0.60	0.15	0.60	0.10	0.14	0.01	0.48	-0.21	0.48	-0.23	-0.26	2.0694	0.0206	1.9	1.0	1.8	1.0	A-	A-	A-
MATH	3	964272	2	C-G.1.1.1	2	13840	0.66	0.21	0.66	0.07	0.05	0.01	0.22	-0.10	0.22	-0.13	-0.13	1.7525	0.0211	9.9	1.4	9.9	1.7	A+	A-	A-
MATH	3	218979	2	D-M.1.1.1	2	13840	0.68	0.16	0.68	0.07	0.08	0.02	0.42	-0.25	0.42	-0.24	-0.15	1.5857	0.0215	9.9	1.1	8.3	1.2	A-	A-	A-
MATH	3	609153	2	A-F.1.1.1	2	13840	0.69	0.69	0.16	0.09	0.05	0.01	0.31	0.31	-0.12	-0.21	-0.17	1.5587	0.0216	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	3	773620	2	A-F.1.1.4	1	13840	0.05	0.26	0.65	0.03	0.05	0.02	0.06	-0.21	0.20	-0.08	0.06	6.4876	0.0429	1.0	1.0	9.9	6.9	B-	A+	A-
MATH	3	491875	2	D-M.3.1.1	1	13840	0.85	0.09	0.03	0.85	0.03	0.00	0.28	-0.19	-0.15	0.28	-0.12	0.2766	0.0270	9.9	1.2	9.9	1.6	A+	A-	A-
MATH	3	113445	2	B-O.3.1	2	13840	0.29	0.33	0.18	0.29	0.20	0.00	0.14	0.03	-0.09	0.14	-0.10	3.9208	0.0217	9.9	1.4	9.9	2.3	A-	A+	A-
MATH	3	799742	3	A-T.1.1.1	1	13835	0.81	0.07	0.07	0.81	0.03	0.02	0.54	-0.33	-0.31	0.54	-0.26	0.6517	0.0247	-8.5	0.9	-4.4	0.9	A-	A-	A-
MATH	3	287845	3	D-M.1.3.1	2	13835	0.60	0.15	0.60	0.12	0.12	0.01	0.46	-0.22	0.46	-0.32	-0.12	2.0709	0.0205	6.5	1.1	7.1	1.1	A-	A-	A-
MATH	3	426653	3	C-G.1.1.2	1	13835	0.61	0.61	0.10	0.04	0.24	0.01	0.28	0.28	-0.13	-0.09	-0.17	2.0156	0.0206	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	3	180670	3	B-O.3.1.6	1	13835	0.43	0.25	0.19	0.12	0.43	0.01	0.41	-0.27	-0.13	-0.11	0.41	3.0361	0.0202	3.8	1.0	9.9	1.3	A-	A-	A-
MATH	3	126510	3	B-O.1.2.2	1	13835	0.55	0.09	0.14	0.55	0.22	0.01	0.47	-0.25	-0.09	0.47	-0.31	2.3591	0.0202	3.5	1.0	4.0	1.1	A-	A+	A-
MATH	3	761654	3	A-T.1.1.2	2	13835	0.28	0.28	0.36	0.24	0.11	0.01	0.28	0.28	-0.28	0.08	-0.07	3.9223	0.0219	9.9	1.1	9.9	1.9	A-	A-	A-
MATH	3	860885	3	B-O.3.1.1	2	13835	0.45	0.05	0.21	0.45	0.28	0.01	0.33	-0.13	0.08	0.33	-0.36	2.9108	0.0202	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	3	759717	3	D-M.2.1.3	2	13835	0.56	0.13	0.16	0.56	0.15	0.00	0.37	-0.20	-0.18	0.37	-0.14	2.3190	0.0203	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	3	278431	3	D-M.1.1.2	1	13835	0.54	0.14	0.10	0.54	0.21	0.02	0.36	-0.23	-0.17	0.36	-0.11	2.4277	0.0202	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	3	485863	3	D-M.4.1.1	2	13835	0.53	0.53	0.10	0.11	0.25	0.02	0.24	0.24	-0.27	-0.11	-0.01	2.4481	0.0202	9.9	1.4	9.9	1.6	A-	B-	A-
MATH	3	322958	3	A-F.1.1.4	1	13835	0.22	0.22	0.06	0.16	0.54	0.01	0.26	0.26	-0.03	0.06	-0.24	4.3483	0.0234	9.1	1.1	9.9	1.9	A-	A+	A-
MATH	3	188408	3	A-F.1.1.3	1	13835	0.22	0.34	0.25	0.22	0.18	0.01	0.27	-0.24	-0.14	0.27	0.17	4.3549	0.0234	7.3	1.1	9.9	1.9	A-	A-	A-
MATH	3	725903	4	D.2.2.2	1	13799	0.86	0.09	0.02	0.86	0.02	0.01	0.40	-0.28	-0.19	0.40	-0.18	0.1545	0.0281	2.2	1.0	1.5	1.1	A-	A-	A-
MATH	3	895209	4	D-M.1.1.2	2	13799	0.71	0.07	0.05	0.71	0.16	0.01	0.45	-0.28	-0.18	0.45	-0.24	1.4487	0.0220	6.9	1.1	2.6	1.1	A-	A-	A-
MATH	3	494466	4	A-T.1.1.1	1	13799	0.73	0.17	0.73	0.06	0.03	0.01	0.37	-0.11	0.37	-0.28	-0.28	1.3151	0.0224	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	3	578998	4	D-M.3.1.2	2	13799	0.17	0.49	0.27	0.17	0.06	0.01	0.24	-0.15	0.08	0.24	-0.21	4.8155	0.0255	4.5	1.1	9.9	2.1	A-	A-	A-

MATH	3	678385	4	C-G.1.1.1	1	13799	0.53	0.16	0.53	0.15	0.15	0.01	0.32	-0.24	0.32	-0.09	-0.10	2.5030	0.0202	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	3	787335	4	B-O.1.1	2	13799	0.79	0.09	0.79	0.02	0.09	0.01	0.44	-0.33	0.44	-0.16	-0.20	0.8432	0.0242	3.0	1.0	0.3	1.0	A-	A-	A-
MATH	3	935427	4	B-O.2.1.1	1	13799	0.55	0.20	0.20	0.55	0.04	0.00	0.27	-0.22	-0.05	0.27	-0.11	2.4002	0.0203	9.9	1.3	9.9	1.5	A-	A-	A+
MATH	3	975355	4	B-O.3.1.1	2	13799	0.39	0.39	0.16	0.08	0.37	0.00	0.38	0.38	-0.18	-0.14	-0.17	3.3241	0.0205	6.3	1.1	9.9	1.3	A-	B-	A-
MATH	3	902495	4	C-G.1.1.3	2	13799	0.54	0.33	0.54	0.02	0.10	0.01	0.44	-0.31	0.44	-0.15	-0.17	2.4650	0.0202	7.1	1.1	6.6	1.1	A+	B-	A-
MATH	3	161203	4	D-M.2.1.1	2	13799	0.32	0.32	0.19	0.31	0.17	0.00	0.13	0.13	-0.18	0.02	0.01	3.7235	0.0212	9.9	1.3	9.9	2.6	A-	A-	A-
MATH	3	765601	4	A-F.1.1.2	1	13799	0.30	0.15	0.30	0.19	0.35	0.01	0.15	-0.15	0.15	-0.08	0.04	3.8547	0.0215	9.9	1.3	9.9	2.4	A-	A-	A-
MATH	3	817478	4	D-M.1.2.2	2	13799	0.38	0.14	0.28	0.38	0.20	0.01	0.36	-0.02	-0.23	0.36	-0.16	3.3650	0.0206	9.9	1.1	9.9	1.4	A-	A-	A-
MATH	3	942580	5	D.1.1.2	2	13789	0.88	0.06	0.88	0.02	0.03	0.01	0.54	-0.35	0.54	-0.26	-0.29	0.0128	0.0292	-9.1	0.8	-6.2	0.7	A+	A-	A-
MATH	3	894935	5	D-M.1.3.2	2	13789	0.55	0.55	0.08	0.09	0.28	0.00	0.55	0.55	-0.17	-0.18	-0.39	2.4410	0.0203	-9.9	0.9	-4.5	0.9	A+	A+	A+
MATH	3	242171	5	A-T.1.1.4	1	13789	0.88	0.05	0.03	0.88	0.04	0.00	0.47	-0.33	-0.24	0.47	-0.20	0.0355	0.0290	-5.5	0.9	-1.5	0.9	A+	A-	A-
MATH	3	873999	5	D-M.2.1.2	2	13789	0.27	0.56	0.27	0.12	0.05	0.01	0.15	0.03	0.15	-0.17	-0.12	4.0973	0.0222	9.9	1.2	9.9	3.0	A-	A+	A-
MATH	3	616664	5	D-M.3.1.2	1	13789	0.18	0.37	0.40	0.04	0.18	0.01	0.23	-0.31	0.21	-0.18	0.23	4.7428	0.0250	5.7	1.1	9.9	2.8	A+	A+	A-
MATH	3	636919	5	B-O.3.1.5	2	13789	0.32	0.32	0.16	0.21	0.30	0.01	0.22	0.22	-0.18	-0.09	0.01	3.7509	0.0213	9.9	1.2	9.9	2.1	A-	A-	A-
MATH	3	607757	5	A-T.1.1.1	2	13789	0.40	0.40	0.12	0.14	0.32	0.01	0.44	0.44	-0.12	-0.09	-0.29	3.3021	0.0205	-4.4	1.0	9.9	1.3	A-	A-	A-
MATH	3	764799	5	A-F.1.1.1	1	13789	0.88	0.88	0.03	0.01	0.09	0.00	0.42	0.42	-0.17	-0.12	-0.36	0.0671	0.0288	-0.5	1.0	-2.9	0.9	A+	A-	A-
MATH	3	742096	5	B-O.1.1.2	1	13789	0.71	0.18	0.04	0.05	0.71	0.01	0.23	-0.09	-0.17	-0.13	0.23	1.4211	0.0221	9.9	1.4	9.9	1.7	A+	A+	A+
MATH	3	874416	5	C-G.1.1.2	1	13789	0.69	0.16	0.07	0.09	0.69	0.00	0.34	-0.16	-0.15	-0.22	0.34	1.6021	0.0216	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	3	681267	5	D-M.1.2.1	1	13789	0.42	0.09	0.42	0.35	0.13	0.01	0.32	-0.22	0.32	-0.20	0.02	3.1655	0.0204	9.9	1.2	9.9	1.5	A-	B-	A-
MATH	3	552329	5	B-O.2.1.2	1	13789	0.61	0.14	0.14	0.10	0.61	0.01	0.51	-0.35	-0.22	-0.15	0.51	2.1061	0.0207	-1.4	1.0	-1.1	1.0	A+	A-	A-
MATH	3	767071	6	D-M.1.1.2	2	13800	0.47	0.47	0.13	0.13	0.25	0.02	0.41	0.41	-0.10	-0.07	-0.32	2.9502	0.0202	7.3	1.1	9.9	1.3	A-	A+	A+
MATH	3	189995	6	A-T.1.1.4	1	13800	0.77	0.10	0.06	0.06	0.77	0.01	0.49	-0.33	-0.25	-0.20	0.49	0.9994	0.0236	-0.9	1.0	1.2	1.0	A-	A-	A-
MATH	3	366627	6	D-M.1.3.2	2	13800	0.45	0.08	0.45	0.13	0.34	0.00	0.55	-0.08	0.55	-0.10	-0.46	3.0052	0.0202	-9.9	0.9	-6.4	0.9	A+	A+	A+
MATH	3	660515	6	A-T.1.1.2	2	13800	0.60	0.06	0.60	0.20	0.13	0.01	0.51	-0.15	0.51	-0.27	-0.30	2.1644	0.0206	-2.4	1.0	-0.9	1.0	A+	A-	A-
MATH	3	417574	6	A-F.1.1.5	1	13800	0.74	0.11	0.09	0.74	0.06	0.01	0.40	-0.24	-0.20	0.40	-0.19	1.2765	0.0226	9.9	1.1	5.8	1.2	A-	A-	A-
MATH	3	997467	6	B-O.1.2	1	13800	0.76	0.16	0.04	0.76	0.03	0.01	0.61	-0.53	-0.14	0.61	-0.19	1.0828	0.0233	-9.9	0.8	-9.9	0.7	A-	A-	A-
MATH	3	475729	6	A-F.1.1.3	2	13800	0.16	0.04	0.69	0.16	0.10	0.01	0.34	0.06	-0.30	0.34	0.03	4.9730	0.0262	-6.0	0.9	1.9	1.1	A-	B-	B-
MATH	3	379603	6	D-M.2.1.3	2	13800	0.29	0.26	0.29	0.19	0.26	0.00	0.09	-0.08	0.09	-0.02	0.01	3.9485	0.0217	9.9	1.4	9.9	2.7	A-	A-	A-
MATH	3	355027	6	C-G.1.1.1	2	13800	0.46	0.09	0.46	0.20	0.24	0.01	0.29	-0.21	0.29	-0.10	-0.09	2.9415	0.0202	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	3	356330	6	B-O.2.1.1	1	13800	0.75	0.14	0.75	0.09	0.01	0.01	0.39	-0.17	0.39	-0.29	-0.21	1.1450	0.0231	9.9	1.2	5.8	1.2	A-	A-	A-
MATH	3	332116	6	B-O.3.1.2	2	13800	0.40	0.09	0.34	0.40	0.16	0.00	0.13	-0.17	0.14	0.13	-0.22	3.2739	0.0204	9.9	1.5	9.9	2.1	A+	A+	A-
MATH	3	929177	6	D-M.3.1.1	1	13800	0.82	0.08	0.82	0.04	0.04	0.01	0.38	-0.23	0.38	-0.20	-0.18	0.6159	0.0254	7.0	1.1	6.2	1.3	A+	A-	A-
MATH	3	511474	7	B.1.1.1	1	13753	0.77	0.17	0.01	0.77	0.04	0.00	0.43	-0.24	-0.11	0.43	-0.38	1.0511	0.0236	5.1	1.1	6.7	1.2	A-	A-	A-
MATH	3	727270	7	D-M.2.1.2	2	13753	0.70	0.07	0.06	0.15	0.70	0.01	0.42	-0.20	-0.21	-0.23	0.42	1.5687	0.0218	9.3	1.1	4.3	1.1	A-	A-	A-
MATH	3	944569	7	A-T.1.1.1	1	13753	0.80	0.06	0.09	0.80	0.04	0.01	0.55	-0.26	-0.32	0.55	-0.31	0.8346	0.0245	-9.0	0.9	-8.7	0.7	A-	A-	B-
MATH	3	680285	7	A-T.1.1.3	2	13753	0.52	0.20	0.06	0.21	0.52	0.02	0.34	-0.23	-0.20	-0.06	0.34	2.6565	0.0202	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	3	102877	7	D-M.1.3.2	1	13753	0.58	0.58	0.12	0.07	0.22	0.01	0.51	0.51	-0.24	-0.17	-0.30	2.3175	0.0205	-4.9	1.0	-2.0	1.0	A-	A+	A+
MATH	3	683824	7	B-O.3.1.7	2	13753	0.65	0.20	0.09	0.65	0.04	0.02	0.39	-0.18	-0.25	0.39	-0.15	1.8977	0.0211	9.9	1.2	7.6	1.2	A-	A-	A+
MATH	3	470228	7	B-O.3.1.1	2	13753	0.51	0.20	0.19	0.08	0.51	0.03	0.55	-0.47	-0.11	-0.09	0.55	2.7159	0.0202	-9.9	0.9	-6.8	0.9	A+	A-	A-
MATH	3	320600	7	C-G.1.1.2	1	13753	0.61	0.04	0.25	0.61	0.07	0.02	0.41	-0.12	-0.30	0.41	-0.12	2.1137	0.0207	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	3	444396	7	D-M.4.1.1	1	13753	0.58	0.36	0.58	0.02	0.04	0.00	0.29	-0.14	0.29	-0.18	-0.26	2.3155	0.0205	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	3	535161	7	A-F.1.1.2	2	13753	0.24	0.09	0.24	0.35	0.32	0.01	0.06	-0.19	0.06	0.08	-0.01	4.3529	0.0230	9.9	1.4	9.9	3.2	A-	A-	A-
MATH	3	472426	7	C-G.1.1.3	2	13753	0.92	0.92	0.03	0.02	0.02	0.01	0.26	0.26	-0.17	-0.15	-0.12	-0.5252	0.0347	2.3	1.1	9.9	2.1	B+	B-	A-
MATH	3	619500	7	B-O.1.2.2	1	13753	0.68	0.68	0.17	0.10	0.05	0.00	0.41	0.41	-0.16	-0.23	-0.26	1.7043	0.0215	9.9	1.1	6.4	1.1	A+	A+	A-
MATH	3	155635	8	A-F.1.1.1	1	13825	0.49	0.39	0.49	0.05	0.07	0.00	0.45	-0.26	0.45	-0.25	-0.16	2.7939	0.0202	7.9	1.1	8.7	1.1	A-	A-	A-
MATH	3	430175	8	D-M.1.3.2	2	13825	0.63	0.11	0.13	0.12	0.63	0.01	0.43	-0.20	-0.25	-0.18	0.43	1.9593	0.0209	9.4	1.1	6.6	1.1	A+	A+	A+
MATH	3	698482	8	A-T.1.1.1	1	13825	0.66	0.66	0.07	0.16	0.11	0.01	0.49	0.49	-0.30	-0.22	-0.23	1.7966	0.0212	2.3	1.0	2.9	1.1	A-	A-	A-
MATH	3	330474	8	B-O.1.2.1	1	13825	0.79	0.79	0.13	0.04	0.03	0.02	0.38	0.38	-0.23	-0.21	-0.17	0.9033	0.0240	9.9	1.1	7.0	1.3	A+	A-	A-
MATH	3	340134	8	C-G.1.1.3	1	13825	0.95	0.95	0.01	0.02	0.02	0.00	0.25	0.25	-0.08	-0.15	-0.18	-1.0315	0.0404	1.3	1.0	3.0	1.3	B+	A-	A-
MATH	3	128805	8	D-M.4.1.1	2	13825	0.21	0.21	0.19	0.28	0.31	0.01	0.24	0.24	0.01	0.02	-0.23	4.5480	0.0239	4.4	1.1	9.9	2.7	A-	A-	A-
MATH	3	548116	8	B-O.2.1.2	2	13825	0.47	0.22	0.47	0.16	0.14	0.01	0.34	-0.25	0.34	-0.09	-0.08	2.9135	0.0202	9.9	1.2	9.9	1.4	A+	A+	A+

MATH	3	586008	8	A-F.1.1.3	1	13825	0.14	0.27	0.26	0.14	0.32	0.01	0.03	-0.08	-0.09	0.03	0.15	5.1194	0.0271	9.9	1.3	9.9	4.9	A-	A+	A-
MATH	3	973187	8	D-M.1.1.2	1	13825	0.66	0.06	0.10	0.66	0.16	0.01	0.54	-0.23	-0.31	0.54	-0.27	1.7889	0.0212	-5.2	1.0	-7.6	0.9	B-	A-	A-
MATH	3	392263	8	D-M.2.1.1	2	13825	0.30	0.23	0.20	0.26	0.30	0.01	0.32	-0.30	-0.08	0.04	0.32	3.8940	0.0216	7.3	1.1	9.9	1.7	A-	A-	A-
MATH	3	404273	8	A-T.1.1.2	2	13825	0.82	0.04	0.04	0.09	0.82	0.01	0.45	-0.27	-0.23	-0.24	0.45	0.6249	0.0253	1.0	1.0	-2.8	0.9	A+	A-	A-
MATH	3	281028	8	B-O.3.1.5	2	13825	0.42	0.22	0.42	0.22	0.12	0.01	0.25	-0.10	0.25	-0.07	-0.14	3.1545	0.0204	9.9	1.3	9.9	1.7	A+	A-	A+
MATH	3	238455	9	A.3.2.1	2	13731	0.80	0.04	0.12	0.80	0.04	0.00	0.57	-0.28	-0.36	0.57	-0.27	0.7965	0.0244	-9.2	0.9	-8.7	0.7	A+	A-	A-
MATH	3	998880	9	A.1.3.2	2	13731	0.63	0.10	0.13	0.12	0.63	0.01	0.45	-0.21	-0.35	-0.10	0.45	1.9324	0.0209	6.5	1.1	7.4	1.1	A-	A-	A+
MATH	3	297732	9	A-F.1.1.5	1	13731	0.77	0.09	0.06	0.07	0.77	0.01	0.31	-0.18	-0.16	-0.15	0.31	1.0067	0.0235	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	3	129013	9	B-O.3.1	2	13731	0.74	0.11	0.07	0.74	0.06	0.01	0.56	-0.35	-0.24	0.56	-0.28	1.2369	0.0227	-9.1	0.9	-9.5	0.8	A-	A-	A-
MATH	3	393976	9	B-O.1	2	13731	0.38	0.38	0.25	0.26	0.10	0.01	0.25	0.25	0.01	-0.11	-0.24	3.3509	0.0205	9.9	1.2	9.9	1.8	A-	A-	A-
MATH	3	890440	9	D-M.1.2.1	1	13731	0.79	0.06	0.10	0.79	0.04	0.01	0.27	-0.20	-0.08	0.27	-0.17	0.8702	0.0241	9.9	1.3	9.9	1.8	A+	B-	A-
MATH	3	912265	9	B-O.3.1.5	2	13731	0.66	0.09	0.13	0.11	0.66	0.00	0.51	-0.29	-0.24	-0.25	0.51	1.7576	0.0212	-2.4	1.0	-5.1	0.9	A-	A-	A-
MATH	3	438412	9	A-T.1.1.4	1	13731	0.92	0.92	0.02	0.01	0.04	0.01	0.42	0.42	-0.20	-0.18	-0.31	-0.5581	0.0345	-4.9	0.9	-2.2	0.9	A+	C-	B-
MATH	3	538271	9	C-G.1.1.2	1	13731	0.92	0.02	0.92	0.01	0.04	0.01	0.34	-0.21	0.34	-0.15	-0.21	-0.4752	0.0336	0.2	1.0	0.0	1.0	A+	B-	B-
MATH	3	274218	9	D-M.2.1.2	2	13731	0.52	0.27	0.09	0.52	0.12	0.00	0.30	-0.11	-0.15	0.30	-0.18	2.5711	0.0202	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	3	605161	9	A-F.1.1.2	2	13731	0.57	0.10	0.15	0.18	0.57	0.01	0.30	-0.21	-0.14	-0.09	0.30	2.3070	0.0204	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	3	110156	9	D-M.4.1	2	13731	0.33	0.34	0.33	0.25	0.08	0.01	0.01	-0.08	0.01	0.11	-0.04	3.6713	0.0211	9.9	1.6	9.9	2.7	A+	A+	A-
MATH	4	647544	0	A.3.2.2	1	126616	0.85	0.12	0.85	0.02	0.02	0.00	0.43	-0.36	0.43	-0.16	-0.13	-1.0358	0.0087	-4.1	1.0	-9.9	0.9			
MATH	4	898396	0	A.1.3.2	2	126616	0.72	0.12	0.09	0.06	0.72	0.00	0.46	-0.31	-0.20	-0.18	0.46	0.0563	0.0070	-9.9	1.0	-9.9	0.9			
MATH	4	367329	0	A.1.2.2	1	126616	0.88	0.03	0.03	0.06	0.88	0.00	0.43	-0.23	-0.26	-0.23	0.43	-1.3110	0.0094	-9.9	0.9	-4.1	0.9			
MATH	4	546630	0	A.3.1.3	2	126616	0.71	0.07	0.16	0.71	0.06	0.00	0.50	-0.27	-0.34	0.50	-0.13	-0.0465	0.0071	-7.2	1.0	-2.0	1.0			
MATH	4	399252	0	B.1.1.2	1	126616	0.88	0.04	0.04	0.88	0.04	0.00	0.48	-0.31	-0.25	0.48	-0.23	-1.2342	0.0092	-9.9	0.9	-9.9	0.6			
MATH	4	666215	0	D.1.1.3	2	126616	0.87	0.05	0.03	0.04	0.87	0.01	0.41	-0.26	-0.19	-0.21	0.41	-1.1122	0.0089	-9.9	0.9	-9.9	0.8			
MATH	4	431075	0	A.1.3.1	2	126616	0.76	0.04	0.03	0.76	0.17	0.00	0.54	-0.25	-0.22	0.54	-0.38	-0.2421	0.0073	-9.9	0.9	-9.9	0.8			
MATH	4	809640	0	A.3.1.1	1	126616	0.67	0.14	0.08	0.11	0.67	0.00	0.48	-0.19	-0.21	-0.32	0.48	0.3312	0.0068	-9.9	1.0	-9.9	0.9			
MATH	4	703068	0	C.1.2.1	1	126616	0.55	0.21	0.55	0.07	0.17	0.01	0.26	-0.23	0.26	-0.12	-0.01	0.9997	0.0065	9.9	1.2	9.9	1.3			
MATH	4	984999	0	D.2.2.2	1	126616	0.80	0.13	0.04	0.80	0.03	0.00	0.29	-0.13	-0.19	0.29	-0.21	-0.4354	0.0076	9.9	1.1	9.9	1.2			
MATH	4	660497	0	A.1.1.4	1	126616	0.67	0.07	0.67	0.08	0.18	0.00	0.52	-0.25	0.52	-0.22	-0.31	0.2658	0.0068	-9.9	0.9	-9.9	0.9			
MATH	4	389957	0	A.1.3.1		126616	0.60	0.06	0.60	0.28	0.06	0.00	0.41	-0.23	0.41	-0.24	-0.17	0.6533	0.0066	9.9	1.1	9.9	1.1			
MATH	4	568689	0	A.2.1.1	1	126616	0.86	0.86	0.04	0.04	0.06	0.00	0.48	0.48	-0.21	-0.22	-0.34	-1.0807	0.0089	-9.9	0.9	-9.9	0.7			
MATH	4	552533	0	A.3.1.3	2	126616	0.72	0.08	0.13	0.72	0.06	0.00	0.51	-0.34	-0.24	0.51	-0.23	-0.0461	0.0071	-9.9	0.9	-9.9	0.9			
MATH	4	195255	0	A.1.3.1		126616	0.46	0.26	0.46	0.12	0.15	0.00	0.45	-0.32	0.45	-0.12	-0.10	1.4231	0.0065	-9.9	1.0	1.1	1.0			
MATH	4	581385	0	A.1.3.2	2	126616	0.74	0.74	0.12	0.08	0.06	0.00	0.45	0.45	-0.29	-0.19	-0.21	-0.0719	0.0071	-5.3	1.0	-9.9	0.9			
MATH	4	423999	0	A.3.1.1	1	126616	0.61	0.61	0.10	0.11	0.18	0.00	0.40	0.40	-0.12	-0.28	-0.18	0.6382	0.0066	9.9	1.1	9.9	1.1			
MATH	4	313496	0	C.1.2.1	1	126616	0.72	0.20	0.72	0.01	0.07	0.00	0.36	-0.26	0.36	-0.09	-0.17	0.0023	0.0071	9.9	1.1	8.7	1.1			
MATH	4	247756	0	C.2.1.1	2	126616	0.65	0.09	0.65	0.18	0.08	0.00	0.45	-0.25	0.45	-0.22	-0.21	0.4210	0.0067	-0.1	1.0	-4.2	1.0			
MATH	4	429674	0	D.1.2.2	2	126616	0.77	0.10	0.06	0.77	0.07	0.01	0.45	-0.22	-0.30	0.45	-0.20	-0.3513	0.0075	-5.7	1.0	-4.5	1.0			
MATH	4	416139	0	D.1.2.2		126616	0.61	0.07	0.04	0.28	0.61	0.00	0.33	-0.27	-0.24	-0.10	0.33	0.7494	0.0065	9.9	1.2	9.9	1.2			
MATH	4	583983	0	B.1.1.2	1	126616	0.69	0.08	0.19	0.04	0.69	0.00	0.45	-0.23	-0.30	-0.13	0.45	0.2606	0.0068	-3.6	1.0	-9.9	0.9			
MATH	4	323547	0	A.3.1.1	1	126616	0.71	0.08	0.71	0.12	0.09	0.00	0.55	-0.21	0.55	-0.34	-0.29	0.0867	0.0070	-9.9	0.9	-9.9	0.8			
MATH	4	556430	0	B.1.1.4	1	126616	0.74	0.04	0.07	0.14	0.74	0.00	0.44	-0.10	-0.26	-0.29	0.44	-0.1400	0.0072	-3.1	1.0	3.5	1.0			
MATH	4	694791	0	A.3.1.1	1	126616	0.72	0.05	0.10	0.72	0.13	0.00	0.47	-0.26	-0.28	0.47	-0.20	-0.0255	0.0071	-8.1	1.0	-5.9	1.0			
MATH	4	313878	0	A.1.1.4	1	126616	0.85	0.07	0.03	0.85	0.04	0.00	0.42	-0.29	-0.15	0.42	-0.23	-0.9950	0.0087	-9.9	0.9	-9.9	0.9			
MATH	4	914465	0	A.3.1.1	1	126616	0.60	0.05	0.60	0.24	0.11	0.00	0.50	-0.18	0.50	-0.25	-0.31	0.7001	0.0066	-9.9	0.9	-9.9	0.9			
MATH	4	780118	0	A.1.1.4	1	126616	0.82	0.02	0.04	0.82	0.12	0.00	0.29	-0.22	-0.25	0.29	-0.10	-0.7091	0.0081	9.9	1.1	9.9	1.4			
MATH	4	350743	0	D.1.2.1	1	126616	0.85	0.04	0.85	0.08	0.03	0.00	0.43	-0.27	0.43	-0.24	-0.21	-0.8969	0.0084	-9.9	0.9	-9.9	0.9			
MATH	4	637737	0	A.1.3.2	1	126616	0.68	0.24	0.68	0.05	0.03	0.00	0.56	-0.42	0.56	-0.18	-0.22	0.2232	0.0069	-9.9	0.9	-9.9	0.8			
MATH	4	928189	0	A.3.2.2	1	126616	0.86	0.03	0.08	0.03	0.86	0.01	0.34	-0.20	-0.17	-0.22	0.34	-0.8613	0.0084	-9.9	0.9	-9.9	0.9			
MATH	4	205161	0	C.1.2.2	1	126616	0.56	0.24	0.11	0.08	0.56	0.00	0.34	-0.29	-0.07	-0.08	0.34	0.8779	0.0065	9.9	1.1	9.9	1.2			
MATH	4	993438	0	C.1.2.2	1	126616	0.64	0.64	0.11	0.16	0.09	0.00	0.43	0.43	-0.30	-0.18	-0.15	0.5513	0.0066	3.1	1.0	-0.5	1.0			
MATH	4	449305	0	D.2.2.2	1	126616	0.86	0.05	0.86	0.02	0.07	0.00	0.33	-0.20	0.33	-0.16	-0.18	-1.1854	0.0091	9.9	1.1	9.9	1.3			

MATH	4	143307	0	C.1.2.1	1	126616	0.61	0.14	0.16	0.08	0.61	0.00	0.40	-0.16	-0.23	-0.19	0.40	0.6687	0.0066	9.9	1.1	9.9	1.1			
MATH	4	661519	0	C.1.2.1	1	126616	0.80	0.07	0.08	0.80	0.05	0.00	0.42	-0.25	-0.23	0.42	-0.18	-0.5334	0.0078	-0.7	1.0	-7.0	0.9			
MATH	4	458381	0	A.2.1.1	2	126616	0.55	0.29	0.08	0.55	0.08	0.00	0.55	-0.46	-0.12	0.55	-0.13	0.9069	0.0065	-9.9	0.9	-9.9	0.8			
MATH	4	864558	0	D.1.1.1	2	126616	0.67	0.11	0.07	0.67	0.15	0.00	0.51	-0.25	-0.24	0.51	-0.28	0.3115	0.0068	-9.9	0.9	-9.9	0.8			
MATH	4	850394	0	E.1.2.2	2	126616	0.84	0.13	0.84	0.01	0.02	0.00	0.48	-0.43	0.48	-0.12	-0.14	-0.9306	0.0085	-9.9	0.9	-9.9	0.8			
MATH	4	970082	0	E.1.2.2	2	126616	0.76	0.21	0.02	0.76	0.02	0.00	0.59	-0.54	-0.15	0.59	-0.10	-0.2881	0.0074	-9.9	0.8	-9.9	0.7			
MATH	4	700531	0	B.1.1.4	2	126616	0.82	0.82	0.07	0.05	0.05	0.00	0.45	0.45	-0.30	-0.24	-0.17	-0.6407	0.0080	-9.9	0.9	-5.8	0.9			
MATH	4	872174	0	A.3.1.1	1	126616	0.63	0.12	0.63	0.07	0.18	0.00	0.61	-0.26	0.61	-0.25	-0.37	0.5106	0.0066	-9.9	0.8	-9.9	0.7			
MATH	4	838889	0	D.1.1.3	2	126616	0.75	0.04	0.08	0.75	0.13	0.00	0.50	-0.15	-0.27	0.50	-0.34	-0.1376	0.0072	-9.9	0.9	-9.9	0.8			
MATH	4	337018	0	A.3.1.3	2	126616	0.69	0.21	0.69	0.06	0.05	0.00	0.53	-0.38	0.53	-0.23	-0.19	0.2500	0.0068	-9.9	0.9	-9.9	0.8			
MATH	4	503028	0	A.1.1.4	1	126616	0.86	0.02	0.08	0.03	0.86	0.00	0.46	-0.22	-0.30	-0.24	0.46	-1.0521	0.0088	-9.9	0.9	-9.9	0.7			
MATH	4	898218	0	A.1.2.2	1	126616	0.90	0.04	0.90	0.02	0.04	0.00	0.40	-0.28	0.40	-0.16	-0.22	-1.5807	0.0103	-9.0	0.9	-6.6	0.9			
MATH	4	608761	0	A.1.3.1	1	126616	0.87	0.03	0.04	0.87	0.06	0.00	0.46	-0.18	-0.16	0.46	-0.38	-1.2817	0.0094	-9.9	0.9	-9.9	0.8			
MATH	4	367428	0	D.1.2.1	2	126616	0.68	0.14	0.68	0.09	0.08	0.00	0.47	-0.22	0.47	-0.22	-0.28	0.2676	0.0068	-9.9	1.0	-4.5	1.0			
MATH	4	103280	0	A.1.2.2	1	126616	0.85	0.07	0.05	0.03	0.85	0.00	0.40	-0.21	-0.20	-0.26	0.40	-1.0668	0.0088	5.1	1.0	9.9	1.3			
MATH	4	845991	0	A.1.2.2	1	126616	0.86	0.08	0.02	0.86	0.04	0.00	0.39	-0.18	-0.21	0.39	-0.29	-1.1082	0.0089	-5.7	1.0	9.9	1.1			
MATH	4	413467	0	A.3.2.2	1	126616	0.72	0.02	0.12	0.14	0.72	0.00	0.33	-0.16	-0.14	-0.23	0.33	0.0195	0.0070	9.9	1.1	9.9	1.3			
MATH	4	379825	0	C.2.1.1	2	126616	0.53	0.53	0.09	0.12	0.26	0.00	0.45	0.45	-0.11	-0.20	-0.29	1.0827	0.0064	0.4	1.0	0.2	1.0			
MATH	4	595254	0	E.1.2.2	2	126616	0.87	0.07	0.04	0.02	0.87	0.00	0.46	-0.29	-0.27	-0.20	0.46	-1.2531	0.0093	-8.7	1.0	-6.7	0.9			
MATH	4	520900	0	B.1.1.3	2	126616	0.58	0.14	0.58	0.24	0.04	0.00	0.40	-0.35	0.40	-0.10	-0.16	0.8063	0.0065	9.9	1.1	9.9	1.1			
MATH	4	679981	0	B.1.1.3	2	126616	0.62	0.10	0.07	0.62	0.21	0.00	0.49	-0.24	-0.23	0.49	-0.26	0.6030	0.0066	-9.9	1.0	-9.9	0.9			
MATH	4	269498	0	D.1.1.1	2	126616	0.82	0.05	0.07	0.82	0.05	0.00	0.43	-0.27	-0.25	0.43	-0.17	-0.7057	0.0081	-7.3	1.0	-9.9	0.9			
MATH	4	221331	0	A.1.3.2	1	126616	0.70	0.05	0.13	0.70	0.12	0.00	0.52	-0.18	-0.39	0.52	-0.20	0.1202	0.0069	-9.9	0.9	-9.9	0.8			
MATH	4	632516	0	C.2.1.1	2	126616	0.74	0.03	0.11	0.74	0.12	0.00	0.38	-0.19	-0.13	0.38	-0.29	-0.0857	0.0072	9.9	1.0	9.9	1.1			
MATH	4	621243	0	A.2.1.1	2	126616	0.86	0.86	0.04	0.04	0.06	0.00	0.47	0.47	-0.15	-0.27	-0.34	-1.0661	0.0088	-9.9	0.9	-9.9	0.8			
MATH	4	853667	0	C.1.2.2	1	126616	0.47	0.47	0.16	0.24	0.12	0.00	0.33	0.33	-0.05	-0.24	-0.13	1.3895	0.0064	9.9	1.1	9.9	1.2			
MATH	4	583093	1	A-T.1.1.2	2	14431	0.50	0.17	0.50	0.27	0.07	0.00	0.35	-0.21	0.35	-0.08	-0.23	1.1742	0.0191	9.9	1.1	9.9	1.2	A+	A-	A+
MATH	4	724331	1	C-G.1.1.3	2	14431	0.69	0.08	0.05	0.69	0.18	0.00	0.38	-0.15	-0.22	0.38	-0.21	0.0797	0.0204	9.2	1.1	7.3	1.2	A+	A-	A-
MATH	4	237291	1	A-F.2.1.7	2	14431	0.35	0.35	0.13	0.19	0.32	0.01	0.18	0.18	-0.17	0.08	-0.12	1.9516	0.0199	9.9	1.3	9.9	1.7	A+	A-	A-
MATH	4	342929	1	B-O.3.1.2	2	14431	0.55	0.20	0.09	0.15	0.55	0.00	0.27	-0.09	-0.18	-0.12	0.27	0.8528	0.0192	9.9	1.2	9.9	1.4	A-	A+	A+
MATH	4	588801	1	A-F.1.1.2	2	14431	0.41	0.28	0.23	0.41	0.08	0.00	0.37	-0.14	-0.17	0.37	-0.18	1.6369	0.0194	2.2	1.0	9.9	1.2	A-	A-	A-
MATH	4	656916	1	D-M.2.1.2	2	14431	0.43	0.12	0.24	0.21	0.43	0.00	0.31	-0.13	-0.24	-0.02	0.31	1.5140	0.0193	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	4	873992	1	B-O.1.1.2	2	14431	0.57	0.18	0.07	0.18	0.57	0.00	0.57	-0.41	-0.23	-0.17	0.57	0.7674	0.0193	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	4	659127	1	D-M.1.1.1	2	14431	0.41	0.12	0.29	0.18	0.41	0.00	0.35	-0.28	-0.15	-0.04	0.35	1.6188	0.0194	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	4	482187	1	B-O.1.1.4	1	14431	0.79	0.13	0.05	0.79	0.03	0.00	0.42	-0.27	-0.21	0.42	-0.18	-0.6011	0.0229	-0.3	1.0	-3.3	0.9	A+	A+	A+
MATH	4	238043	1	A-T.2.1.1	2	14431	0.30	0.59	0.06	0.30	0.05	0.00	0.26	0.03	-0.26	0.26	-0.30	2.2504	0.0206	9.9	1.1	9.9	1.5	A-	A-	A+
MATH	4	338353	1	A-T.1.1.1	2	14431	0.29	0.42	0.18	0.29	0.11	0.00	0.27	-0.03	-0.22	0.27	-0.07	2.3099	0.0208	6.8	1.1	9.9	1.5	A-	A-	A-
MATH	4	650939	1	C-G.1.1.2	2	14431	0.34	0.31	0.20	0.14	0.34	0.00	0.30	-0.07	-0.15	-0.14	0.30	1.9905	0.0200	9.9	1.1	9.9	1.4	A+	A-	A-
MATH	4	165433	2	A-T.1.1.2	1	14024	0.91	0.91	0.03	0.04	0.02	0.00	0.34	0.34	-0.19	-0.19	-0.19	-1.6630	0.0312	-0.7	1.0	-0.7	1.0	A+	A-	A-
MATH	4	374368	2	D-M.2.1.3	2	14024	0.63	0.27	0.02	0.63	0.08	0.00	0.54	-0.51	-0.16	0.54	-0.03	0.5219	0.0199	-9.9	0.9	-6.6	0.9	A-	A-	A-
MATH	4	801378	2	A-T.2.1.3	2	14024	0.38	0.11	0.38	0.34	0.16	0.00	0.29	-0.19	0.29	0.02	-0.24	1.8410	0.0199	9.9	1.2	9.9	1.4	A-	A+	A-
MATH	4	710013	2	B-O.3.1.2	2	14024	0.72	0.10	0.72	0.08	0.10	0.00	0.43	-0.33	0.43	-0.20	-0.12	-0.0192	0.0212	1.8	1.0	0.9	1.0	A-	A-	A-
MATH	4	319766	2	D-M.1.1.2	2	14024	0.56	0.16	0.19	0.56	0.09	0.00	0.50	-0.23	-0.32	0.50	-0.12	0.8584	0.0195	-8.3	0.9	-5.4	0.9	A-	A-	A-
MATH	4	822726	2	D-M.3.1.2	2	14024	0.42	0.24	0.14	0.20	0.42	0.00	0.35	-0.07	-0.26	-0.14	0.35	1.5969	0.0196	9.9	1.1	9.9	1.2	A+	A+	A-
MATH	4	910269	2	A-F.3.1.3	2	14024	0.31	0.21	0.12	0.36	0.31	0.00	0.32	-0.25	-0.15	0.00	0.32	2.2696	0.0208	3.7	1.0	9.9	1.4	A-	A-	A-
MATH	4	406527	2	B-O.1.1.4	1	14024	0.86	0.03	0.04	0.06	0.86	0.00	0.38	-0.23	-0.25	-0.18	0.38	-1.1616	0.0269	-1.9	1.0	-0.3	1.0	A+	A-	A-
MATH	4	156928	2	C-G.1.1.2	2	14024	0.63	0.16	0.14	0.63	0.07	0.00	0.12	-0.08	-0.02	0.12	-0.08	0.4880	0.0200	9.9	1.4	9.9	1.7	A+	A-	A-
MATH	4	675726	2	B-O.2.1.1	2	14024	0.66	0.10	0.66	0.11	0.13	0.00	0.54	-0.31	0.54	-0.29	-0.22	0.3175	0.0203	-9.9	0.9	-9.9	0.8	A+	A+	A+
MATH	4	953494	2	A-T.1.1.1	2	14024	0.19	0.12	0.18	0.19	0.50	0.01	0.16	-0.14	-0.14	0.16	0.08	3.0637	0.0240	9.6	1.1	9.9	2.2	A+	A-	A+
MATH	4	353127	2	B-O.1.1.3	2	14024	0.30	0.48	0.30	0.13	0.09	0.00	0.27	-0.13	0.27	-0.04	-0.14	2.3278	0.0210	9.6	1.1	9.9	1.5	A+	A-	A-
MATH	4	265611	3	D.1.1.3	2	14070	0.77	0.05	0.06	0.77	0.12	0.00	0.59	-0.23	-0.25	0.59	-0.42	-0.2960	0.0223	-9.9	0.8	-9.9	0.7	A-	A-	A-

MATH	4	196245	3	A-T.2.1.4	2	14070	0.54	0.26	0.16	0.54	0.04	0.00	0.49	-0.41	-0.10	0.49	-0.16	1.0448	0.0194	-6.7	1.0	-4.5	0.9	A-	A-	A-
MATH	4	174119	3	A-F.1.1.1	2	14070	0.41	0.27	0.41	0.09	0.23	0.00	0.34	-0.19	0.34	-0.08	-0.13	1.7403	0.0197	6.2	1.1	9.9	1.3	A-	A-	A-
MATH	4	367043	3	A-T.1.1.4	1	14070	0.65	0.13	0.65	0.09	0.13	0.00	0.43	-0.27	0.43	-0.26	-0.12	0.4108	0.0202	3.8	1.0	3.5	1.1	A-	A-	A+
MATH	4	644451	3	C-G.1.1.3	2	14070	0.85	0.02	0.01	0.85	0.11	0.01	0.29	-0.13	-0.12	0.29	-0.22	-1.0056	0.0261	5.4	1.1	6.7	1.3	A+	A-	A+
MATH	4	505173	3	D-M.3.1.1	1	14070	0.39	0.26	0.21	0.39	0.14	0.00	0.23	-0.05	-0.17	0.23	-0.06	1.8371	0.0198	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	4	411659	3	A-F.3.1.3	2	14070	0.44	0.28	0.44	0.19	0.08	0.00	0.33	-0.20	0.33	-0.11	-0.11	1.5620	0.0195	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	4	109173	3	C-G.1.1.1	2	14070	0.50	0.16	0.11	0.50	0.22	0.00	0.36	-0.20	-0.16	0.36	-0.13	1.2528	0.0194	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	4	948342	3	B-O.1	2	14070	0.41	0.22	0.41	0.23	0.14	0.00	0.39	-0.08	0.39	-0.17	-0.25	1.7298	0.0196	2.1	1.0	8.9	1.1	A-	A-	A-
MATH	4	408154	3	D-M.1.1.4	2	14070	0.56	0.56	0.22	0.14	0.08	0.00	0.44	0.44	-0.20	-0.23	-0.21	0.9294	0.0195	-0.4	1.0	1.6	1.0	A-	B-	A-
MATH	4	583310	3	B-O.2.1.1	2	14070	0.40	0.16	0.26	0.40	0.18	0.00	0.32	-0.10	-0.12	0.32	-0.17	1.8008	0.0197	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	4	770705	3	A-F.2.1.4	2	14070	0.86	0.09	0.03	0.86	0.03	0.00	0.40	-0.28	-0.23	0.40	-0.15	-1.0325	0.0263	-2.2	1.0	-2.2	0.9	A+	A-	A+
MATH	4	491963	4	A.1.3.1	1	14050	0.76	0.76	0.09	0.09	0.06	0.00	0.51	0.51	-0.23	-0.26	-0.32	-0.2394	0.0221	-9.2	0.9	-6.9	0.8	A+	A-	A-
MATH	4	215838	4	D-M.2.1.3	2	14050	0.91	0.02	0.02	0.04	0.91	0.00	0.42	-0.24	-0.23	-0.25	0.42	-1.6012	0.0311	-5.0	0.9	-5.4	0.7	A+	A-	A+
MATH	4	474408	4	A-T.1.1.2	2	14050	0.46	0.19	0.17	0.18	0.46	0.00	0.32	-0.12	-0.16	-0.13	0.32	1.4392	0.0194	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	4	778895	4	C-G.1.1.3	2	14050	0.41	0.06	0.05	0.47	0.41	0.01	0.26	-0.22	-0.24	-0.03	0.26	1.7421	0.0196	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	4	437327	4	A-T.1.1.4	1	14050	0.56	0.10	0.56	0.07	0.26	0.00	0.49	-0.22	0.49	-0.26	-0.24	0.9240	0.0194	-7.0	0.9	-4.6	0.9	A-	A-	A+
MATH	4	955358	4	D-M.3	1	14050	0.36	0.30	0.23	0.11	0.36	0.00	0.37	-0.29	-0.04	-0.08	0.37	1.9786	0.0200	0.4	1.0	9.9	1.2	A-	A-	A-
MATH	4	720658	4	B-O.3	2	14050	0.59	0.59	0.11	0.19	0.11	0.00	0.15	0.15	-0.08	-0.01	-0.14	0.7736	0.0196	9.9	1.4	9.9	1.6	A+	A+	A+
MATH	4	238084	4	A-F.2.1.3	2	14050	0.60	0.60	0.11	0.06	0.23	0.00	0.46	0.46	-0.19	-0.23	-0.27	0.7251	0.0196	-2.9	1.0	-2.4	1.0	A+	A-	A-
MATH	4	988038	4	B-O.1.1.2	2	14050	0.77	0.04	0.04	0.15	0.77	0.00	0.56	-0.18	-0.22	-0.44	0.56	-0.3053	0.0224	-9.9	0.8	-9.9	0.7	A-	B-	A-
MATH	4	849686	4	A-F.1	2	14050	0.56	0.21	0.56	0.15	0.08	0.00	0.45	-0.29	0.45	-0.18	-0.14	0.9225	0.0194	-0.7	1.0	0.7	1.0	A-	A-	A-
MATH	4	481645	4	A-F.3.1.2	1	14050	0.45	0.24	0.15	0.45	0.16	0.00	0.31	-0.25	-0.08	0.31	-0.06	1.4985	0.0194	9.9	1.1	9.9	1.3	A-	A+	A+
MATH	4	466230	4	D-M.3.1	2	14050	0.24	0.09	0.24	0.45	0.21	0.00	0.17	-0.17	0.17	0.06	-0.13	2.7035	0.0221	9.9	1.2	9.9	1.9	A-	A+	A-
MATH	4	640227	5	C.1.2.2	1	14038	0.77	0.03	0.16	0.77	0.03	0.00	0.45	-0.26	-0.28	0.45	-0.22	-0.3218	0.0226	-2.3	1.0	-5.4	0.9	A+	A-	A-
MATH	4	183725	5	A-T.1.1.3	1	14038	0.80	0.10	0.07	0.80	0.04	0.00	0.45	-0.26	-0.23	0.45	-0.23	-0.4804	0.0233	-3.6	1.0	-2.3	0.9	A+	A-	A-
MATH	4	223444	5	A-F.2.1.1	2	14038	0.85	0.07	0.04	0.85	0.04	0.00	0.42	-0.21	-0.27	0.42	-0.23	-0.9649	0.0261	-3.8	0.9	-3.8	0.9	A+	A-	A-
MATH	4	814788	5	A-T.2.1.1	1	14038	0.78	0.14	0.04	0.04	0.78	0.00	0.30	-0.12	-0.21	-0.21	0.30	-0.3681	0.0228	9.4	1.1	9.9	1.4	A+	A-	A-
MATH	4	976090	5	C-G.1.1.3	2	14038	0.86	0.86	0.05	0.06	0.03	0.00	0.32	0.32	-0.22	-0.17	-0.12	-1.0160	0.0265	3.2	1.1	2.8	1.1	A+	A-	A-
MATH	4	315130	5	D-M.1.1.3	2	14038	0.21	0.08	0.21	0.22	0.50	0.00	0.21	-0.04	0.21	-0.04	-0.11	2.9930	0.0231	7.0	1.1	9.9	1.8	A-	A-	A-
MATH	4	400117	5	B-O.1.1.2	2	14038	0.19	0.08	0.07	0.65	0.19	0.00	0.24	-0.35	-0.17	0.10	0.24	3.1059	0.0237	3.2	1.0	9.9	1.7	A-	A-	A-
MATH	4	370373	5	A-F.2.1.5	2	14038	0.35	0.07	0.26	0.35	0.31	0.01	0.25	-0.10	0.15	0.25	-0.33	2.0603	0.0200	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	4	641380	5	A-F.2.1.7	1	14038	0.31	0.09	0.25	0.31	0.34	0.00	0.27	-0.16	0.15	0.27	-0.30	2.2983	0.0205	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	4	619251	5	B-O.3.1.3	2	14038	0.33	0.51	0.11	0.33	0.05	0.00	0.21	0.05	-0.28	0.21	-0.17	2.1781	0.0202	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	4	446532	5	A-T.1.1.2	2	14038	0.80	0.08	0.80	0.06	0.05	0.00	0.43	-0.21	0.43	-0.21	-0.28	-0.5103	0.0235	-2.5	1.0	-1.6	1.0	A+	A-	A+
MATH	4	301012	5	D-M.2.1.1	2	14038	0.39	0.17	0.26	0.39	0.18	0.00	0.18	0.01	0.03	0.18	-0.27	1.8514	0.0197	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	4	708265	6	C.1.2.1	1	14041	0.66	0.08	0.18	0.08	0.66	0.00	0.42	-0.21	-0.23	-0.20	0.42	0.4079	0.0201	3.1	1.0	-1.2	1.0	A-	A-	A-
MATH	4	621075	6	B-O.1.1.4	1	14041	0.26	0.03	0.26	0.68	0.03	0.00	0.32	-0.21	0.32	-0.16	-0.17	2.6643	0.0219	5.6	1.1	9.9	1.3	A+	A-	A-
MATH	4	885583	6	B-O.1.1.1	2	14041	0.66	0.66	0.22	0.09	0.03	0.00	0.47	0.47	-0.18	-0.37	-0.23	0.3926	0.0201	-3.9	1.0	-5.4	0.9	A-	B-	B-
MATH	4	513174	6	D-M.2.1.1	2	14041	0.42	0.36	0.42	0.12	0.09	0.00	0.32	-0.04	0.32	-0.14	-0.32	1.6541	0.0194	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	4	241781	6	C-G.1.1.2	2	14041	0.61	0.12	0.15	0.61	0.11	0.00	0.33	-0.29	-0.02	0.33	-0.18	0.6617	0.0197	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	4	825105	6	A-F.2.1.6	2	14041	0.63	0.16	0.63	0.08	0.14	0.00	0.36	-0.23	0.36	-0.21	-0.10	0.5713	0.0198	9.9	1.1	7.9	1.1	A+	A+	A+
MATH	4	848323	6	B-O.3.1.2	2	14041	0.80	0.08	0.80	0.05	0.06	0.00	0.45	-0.32	0.45	-0.25	-0.14	-0.5376	0.0234	-3.9	1.0	-2.6	0.9	A-	A+	A+
MATH	4	355620	6	D-M.1.1.3	1	14041	0.63	0.14	0.21	0.63	0.02	0.00	0.30	-0.31	-0.03	0.30	-0.16	0.5498	0.0198	9.9	1.2	9.9	1.2	A+	A+	A+
MATH	4	208026	6	A-T.2.1.1	1	14041	0.60	0.21	0.60	0.08	0.10	0.01	0.44	-0.22	0.44	-0.16	-0.27	0.6979	0.0196	0.5	1.0	0.6	1.0	A-	A-	A-
MATH	4	878760	6	A-T.1.1.3	1	14041	0.82	0.06	0.04	0.08	0.82	0.00	0.42	-0.24	-0.21	-0.23	0.42	-0.6595	0.0240	-2.6	1.0	-1.2	1.0	A-	A-	A-
MATH	4	671638	6	A-F.2.1.7	2	14041	0.38	0.10	0.27	0.38	0.25	0.00	0.29	-0.22	0.07	0.29	-0.24	1.8946	0.0198	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	4	874530	6	B-O.2	2	14041	0.32	0.10	0.32	0.15	0.43	0.00	0.07	-0.17	0.07	-0.19	0.17	2.1905	0.0204	9.9	1.4	9.9	1.9	A+	A-	A-
MATH	4	923557	7	A.3.1.1	1	14004	0.78	0.78	0.15	0.03	0.04	0.00	0.46	0.46	-0.29	-0.21	-0.26	-0.4194	0.0228	-4.5	1.0	-5.4	0.9	A-	A-	A-
MATH	4	292210	7	B-O.2.1.1	1	14004	0.71	0.13	0.08	0.07	0.71	0.01	0.49	-0.29	-0.22	-0.25	0.49	0.0629	0.0210	-6.5	0.9	-8.1	0.8	A+	A+	A-
MATH	4	959783	7	B-O.1.1.1	2	14004	0.40	0.06	0.05	0.49	0.40	0.00	0.26	-0.28	-0.27	-0.01	0.26	1.7610	0.0197	9.9	1.2	9.9	1.4	A-	A+	A+
MATH	4	108983	7	A-F.1.1.2	2	14004	0.36	0.18	0.25	0.36	0.20	0.00	0.29	-0.11	-0.11	0.29	-0.12	1.9963	0.0201	9.9	1.1	9.9	1.4	A-	A-	A-

MATH	4	234794	7	A-F.2.1.2	2	14004	0.65	0.21	0.08	0.65	0.06	0.00	0.41	-0.24	-0.23	0.41	-0.15	0.4570	0.0201	3.8	1.0	0.6	1.0	A+	A-	A+
MATH	4	751838	7	C-G.1.1.2	2	14004	0.45	0.16	0.21	0.18	0.45	0.00	0.36	-0.19	-0.14	-0.14	0.36	1.4879	0.0194	7.9	1.1	9.9	1.2	A-	A-	A+
MATH	4	506029	7	A-T.2.1.3	1	14004	0.71	0.07	0.08	0.71	0.14	0.00	0.46	-0.17	-0.20	0.46	-0.32	0.1002	0.0209	-3.4	1.0	-2.9	0.9	A-	A+	A+
MATH	4	899817	7	B-O.3.1.1	2	14004	0.71	0.08	0.07	0.13	0.71	0.00	0.25	-0.17	-0.20	-0.04	0.25	0.0571	0.0210	9.9	1.2	9.9	1.5	A+	A+	A-
MATH	4	326514	7	D-M.1.1.1	1	14004	0.67	0.07	0.19	0.06	0.67	0.00	0.62	-0.36	-0.41	-0.15	0.62	0.2905	0.0204	-9.9	0.8	-9.9	0.7	A-	B-	B-
MATH	4	335326	7	A-T.1.1.1	2	14004	0.65	0.17	0.65	0.06	0.11	0.00	0.32	-0.07	0.32	-0.23	-0.23	0.4174	0.0201	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	4	648480	7	C-G.1.1	2	14004	0.26	0.12	0.26	0.36	0.26	0.00	0.11	-0.02	0.11	-0.03	-0.06	2.5828	0.0217	9.9	1.3	9.9	2.0	A-	A-	A-
MATH	4	246439	7	B-O.1.1	2	14004	0.31	0.17	0.31	0.24	0.28	0.00	0.18	-0.27	0.18	-0.03	0.07	2.3008	0.0208	9.9	1.2	9.9	1.7	A+	A+	A-
MATH	4	124410	8	D.1.2.1	2	13965	0.84	0.03	0.08	0.84	0.04	0.00	0.42	-0.25	-0.22	0.42	-0.24	-0.8975	0.0256	-2.8	1.0	-4.8	0.8	A+	A-	A-
MATH	4	596572	8	D-M.1.1.2	1	13965	0.60	0.14	0.15	0.60	0.09	0.01	0.50	-0.17	-0.36	0.50	-0.18	0.7156	0.0197	-8.0	0.9	-6.0	0.9	A-	A-	A-
MATH	4	385951	8	A-F.2.1.4	2	13965	0.75	0.04	0.75	0.05	0.15	0.00	0.47	-0.21	0.47	-0.21	-0.31	-0.1732	0.0219	-4.8	1.0	-0.3	1.0	A+	A-	A-
MATH	4	733823	8	C-G.1.1.3	2	13965	0.96	0.01	0.96	0.02	0.01	0.00	0.19	-0.11	0.19	-0.13	-0.07	-2.7144	0.0473	0.1	1.0	1.7	1.2	A+	B-	B-
MATH	4	712165	8	A-F.3.1.2	1	13965	0.38	0.32	0.22	0.08	0.38	0.00	0.38	-0.13	-0.18	-0.17	0.38	1.8954	0.0198	0.9	1.0	8.3	1.1	A-	A-	A-
MATH	4	314655	8	D-M.3.1.2	2	13965	0.55	0.55	0.12	0.26	0.07	0.00	0.17	0.17	-0.10	0.00	-0.19	1.0033	0.0194	9.9	1.3	9.9	1.5	A-	A+	A-
MATH	4	518316	8	A-T.2.1.2	1	13965	0.74	0.17	0.04	0.06	0.74	0.00	0.56	-0.50	-0.18	-0.11	0.56	-0.0847	0.0216	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	4	678826	8	B-O.1.1.4	1	13965	0.31	0.08	0.07	0.53	0.31	0.00	0.29	-0.37	-0.25	0.06	0.29	2.2581	0.0206	8.8	1.1	9.9	1.3	A-	A-	A-
MATH	4	239431	8	B-O.2.1.1	1	13965	0.40	0.17	0.40	0.28	0.15	0.00	0.32	-0.14	0.32	-0.12	-0.13	1.7707	0.0197	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	4	969513	8	A-T.2.1	2	13965	0.17	0.18	0.61	0.17	0.03	0.00	0.23	-0.47	0.25	0.23	-0.17	3.2314	0.0247	3.0	1.0	9.9	1.6	A+	A-	A-
MATH	4	975211	8	C-G.1	1	13965	0.56	0.56	0.13	0.15	0.16	0.00	0.31	0.31	-0.16	-0.13	-0.15	0.9131	0.0195	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	4	315535	8	D-M.2.1	2	13965	0.34	0.29	0.15	0.34	0.21	0.00	0.10	0.02	-0.04	0.10	-0.11	2.0794	0.0202	9.9	1.3	9.9	1.9	A+	A-	A+
MATH	4	241848	9	B.1.1.2	1	13965	0.61	0.06	0.08	0.61	0.25	0.00	0.40	-0.16	-0.23	0.40	-0.22	0.6569	0.0199	5.8	1.1	2.5	1.0	A-	A-	B-
MATH	4	353941	9	A.2.1.1	2	13965	0.78	0.78	0.14	0.06	0.02	0.00	0.55	0.55	-0.37	-0.31	-0.18	-0.3859	0.0228	-9.9	0.9	-9.9	0.7	A-	A-	A-
MATH	4	345622	9	B-O.1.1.1	2	13965	0.75	0.11	0.75	0.08	0.05	0.00	0.43	-0.28	0.43	-0.20	-0.18	-0.1932	0.0221	0.1	1.0	-1.3	1.0	A+	A-	A-
MATH	4	655450	9	A-T.1.1.2	1	13965	0.89	0.05	0.89	0.04	0.02	0.00	0.41	-0.26	0.41	-0.25	-0.14	-1.3739	0.0292	-4.5	0.9	-3.3	0.9	A-	A-	A-
MATH	4	605197	9	B-O.2.1	2	13965	0.56	0.11	0.12	0.56	0.20	0.01	0.42	-0.20	-0.25	0.42	-0.14	0.9420	0.0196	5.0	1.0	4.3	1.1	A+	A-	A-
MATH	4	969013	9	A-T.2.1.1	2	13965	0.53	0.12	0.17	0.53	0.18	0.00	0.41	-0.18	-0.30	0.41	-0.09	1.1233	0.0195	5.8	1.1	7.4	1.1	A+	A-	A-
MATH	4	252798	9	A-F.2.1.3	2	13965	0.79	0.11	0.04	0.05	0.79	0.00	0.48	-0.28	-0.25	-0.24	0.48	-0.4687	0.0232	-6.0	0.9	-7.1	0.8	A+	A-	A+
MATH	4	216808	9	D-M.2.1	2	13965	0.48	0.14	0.12	0.25	0.48	0.00	0.37	-0.18	-0.17	-0.15	0.37	1.3400	0.0194	9.6	1.1	9.9	1.2	A+	A+	A+
MATH	4	324068	9	C-G.1.1.1	1	13965	0.67	0.22	0.67	0.07	0.04	0.00	0.33	-0.15	0.33	-0.24	-0.15	0.3568	0.0204	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	4	646056	9	B-O.3.1.3	2	13965	0.55	0.13	0.14	0.18	0.55	0.00	0.44	-0.20	-0.21	-0.19	0.44	0.9923	0.0195	2.4	1.0	1.9	1.0	A+	A+	A+
MATH	4	614489	9	A-F.3.1.1	2	13965	0.40	0.05	0.47	0.08	0.40	0.00	0.22	-0.21	-0.01	-0.19	0.22	1.8117	0.0198	9.9	1.2	9.9	1.5	A-	A-	A+
MATH	4	284642	9	C-G.1.1.3	2	13965	0.79	0.08	0.06	0.07	0.79	0.00	0.43	-0.27	-0.26	-0.15	0.43	-0.4865	0.0233	-1.4	1.0	-2.8	0.9	A+	A-	A-
MATH	5	384712	0	A.1.1.1	1	126268	0.79	0.79	0.07	0.06	0.07	0.00	0.49	0.49	-0.25	-0.29	-0.23	-0.0410	0.0076	-9.9	0.9	-9.9	0.8			
MATH	5	377418	0	A.1.2.1	1	126268	0.84	0.09	0.84	0.06	0.02	0.00	0.47	-0.27	0.47	-0.31	-0.19	-0.5177	0.0084	-9.9	0.9	-9.9	0.7			
MATH	5	895449	0	A.1.2.1	1	126268	0.79	0.04	0.15	0.79	0.03	0.00	0.49	-0.30	-0.32	0.49	-0.20	-0.0993	0.0077	-9.9	0.9	-9.9	0.9			
MATH	5	610298	0	A.2.1.2	2	126268	0.65	0.65	0.07	0.08	0.20	0.00	0.54	0.54	-0.23	-0.21	-0.35	0.7961	0.0067	-9.9	0.9	-9.9	0.8			
MATH	5	367532	0	E.1.1.1	1	126268	0.62	0.13	0.16	0.62	0.09	0.00	0.50	-0.30	-0.24	0.50	-0.18	1.0771	0.0066	-9.9	1.0	-9.9	0.9			
MATH	5	973348	0	D.1.1.2	2	126268	0.36	0.57	0.04	0.36	0.02	0.00	0.35	-0.18	-0.24	0.35	-0.20	2.3919	0.0068	9.9	1.1	9.9	1.3			
MATH	5	122875	0	A.3.2.1	1	126268	0.68	0.68	0.13	0.15	0.03	0.00	0.46	0.46	-0.22	-0.29	-0.20	0.4880	0.0070	8.9	1.0	-0.7	1.0			
MATH	5	918309	0	A.3.2.1	1	126268	0.58	0.07	0.14	0.21	0.58	0.00	0.41	-0.21	-0.16	-0.23	0.41	1.1772	0.0066	9.9	1.1	9.9	1.1			
MATH	5	250063	0	B.1.2.1	1	126268	0.71	0.03	0.71	0.18	0.08	0.00	0.51	-0.12	0.51	-0.33	-0.31	0.4093	0.0070	-9.9	0.9	-9.9	0.9			
MATH	5	510174	0	A.1.1.1	2	126268	0.68	0.26	0.68	0.03	0.03	0.00	0.48	-0.38	0.48	-0.20	-0.13	0.6612	0.0068	-9.9	1.0	-7.1	1.0			
MATH	5	513370	0	A.1.3.2	1	126268	0.62	0.62	0.24	0.13	0.01	0.00	0.51	0.51	-0.28	-0.34	-0.12	0.9487	0.0067	-9.9	1.0	-9.9	0.9			
MATH	5	594088	0	A.1.3.2	1	126268	0.92	0.03	0.02	0.02	0.92	0.00	0.28	-0.21	-0.11	-0.15	0.28	-1.5328	0.0114	7.9	1.1	6.0	1.1			
MATH	5	192808	0	A.2.1.3	1	126268	0.82	0.09	0.06	0.02	0.82	0.00	0.49	-0.25	-0.34	-0.21	0.49	-0.3696	0.0081	-9.9	0.9	-9.9	0.7			
MATH	5	127241	0	A.3.1.1	1	126268	0.65	0.17	0.12	0.65	0.06	0.00	0.44	-0.17	-0.30	0.44	-0.20	0.7918	0.0067	8.8	1.0	0.0	1.0			
MATH	5	217611	0	A.2.1.1	2	126268	0.87	0.06	0.87	0.04	0.02	0.00	0.40	-0.31	0.40	-0.16	-0.18	-0.8217	0.0091	-9.9	0.9	-2.1	1.0			
MATH	5	754663	0	C.1.1.2	1	126268	0.85	0.85	0.06	0.06	0.03	0.00	0.34	0.34	-0.16	-0.21	-0.20	-0.5487	0.0085	-1.4	1.0	-0.9	1.0			
MATH	5	539810	0	A.1.3.2	2	126268	0.50	0.27	0.09	0.14	0.50	0.00	0.55	-0.17	-0.30	-0.33	0.55	1.6254	0.0065	-9.9	0.9	-9.9	0.9			
MATH	5	404863	0	A.2.1.2	2	126268	0.65	0.08	0.14	0.13	0.65	0.00	0.51	-0.25	-0.34	-0.17	0.51	0.8001	0.0067	-9.9	0.9	-9.9	0.9			
MATH	5	200289	0	A.3.1.1	2	126268	0.65	0.06	0.65	0.18	0.11	0.00	0.58	-0.17	0.58	-0.39	-0.27	0.8092	0.0067	-9.9	0.9	-9.9	0.8			

MATH	5	308028	0	B.1.2.1	2	126268	0.55	0.21	0.20	0.04	0.55	0.00	0.47	0.06	-0.52	-0.23	0.47	1.3381	0.0065	5.2	1.0	-0.9	1.0			
MATH	5	931348	0	C.1.1.2	1	126268	0.59	0.06	0.20	0.59	0.15	0.00	0.34	-0.24	-0.21	0.34	-0.07	1.0808	0.0066	9.9	1.2	9.9	1.3			
MATH	5	371693	0	D.1.1.2	2	126268	0.77	0.08	0.77	0.09	0.06	0.00	0.49	-0.27	0.49	-0.24	-0.28	0.0313	0.0075	-9.9	0.9	-9.9	0.9			
MATH	5	815145	0	D.1.1.2	2	126268	0.53	0.28	0.13	0.53	0.05	0.00	0.60	-0.43	-0.23	0.60	-0.12	1.4527	0.0065	-9.9	0.8	-9.9	0.8			
MATH	5	840387	0	E.1.1.1	2	126268	0.78	0.03	0.05	0.14	0.78	0.00	0.47	-0.22	-0.23	-0.30	0.47	0.0680	0.0074	-9.9	0.9	-9.9	0.8			
MATH	5	527417	0	E.1.1.1	2	126268	0.85	0.01	0.02	0.85	0.11	0.00	0.53	-0.10	-0.17	0.53	-0.48	-0.6760	0.0087	-9.9	0.8	-9.9	0.6			
MATH	5	893918	0	A.2.1.3	2	126268	0.63	0.17	0.10	0.11	0.63	0.00	0.53	-0.28	-0.27	-0.23	0.53	0.9815	0.0066	-9.9	0.9	-9.9	0.8			
MATH	5	397546	0	A.2.1.2	2	126268	0.66	0.66	0.09	0.06	0.18	0.00	0.40	0.40	-0.22	-0.23	-0.18	0.7669	0.0068	9.9	1.1	9.9	1.1			
MATH	5	917794	0	B.1.2.1	2	126268	0.59	0.59	0.06	0.20	0.14	0.00	0.56	0.56	-0.20	-0.50	-0.07	1.1849	0.0066	-9.9	0.9	-9.9	0.9			
MATH	5	715702	0	B.1.2.1	2	126268	0.82	0.07	0.08	0.82	0.03	0.00	0.46	-0.34	-0.21	0.46	-0.19	-0.4017	0.0082	-9.9	0.9	-9.9	0.9			
MATH	5	283581	0	A.2.1.3	2	126268	0.67	0.67	0.13	0.10	0.09	0.00	0.52	0.52	-0.31	-0.25	-0.21	0.6843	0.0068	-9.9	0.9	-9.9	0.8			
MATH	5	435411	0	A.3.1.1	1	126268	0.68	0.11	0.09	0.11	0.68	0.00	0.54	-0.17	-0.22	-0.41	0.54	0.5897	0.0069	-9.9	0.9	-9.9	0.9			
MATH	5	871900	0	A.3.1.1	2	126268	0.66	0.19	0.66	0.06	0.09	0.00	0.52	-0.30	0.52	-0.23	-0.26	0.7219	0.0068	-9.9	0.9	-9.9	0.9			
MATH	5	747711	0	A.1.2.1	1	126268	0.70	0.07	0.17	0.07	0.70	0.00	0.52	-0.36	-0.35	-0.06	0.52	0.4786	0.0070	-9.9	0.9	-9.9	0.9			
MATH	5	424351	0	A.1.1.1	1	126268	0.82	0.82	0.04	0.10	0.04	0.00	0.45	0.45	-0.21	-0.28	-0.25	-0.3974	0.0082	-9.9	0.9	-9.9	0.9			
MATH	5	973852	0	A.1.2.1	1	126268	0.78	0.15	0.03	0.04	0.78	0.00	0.51	-0.37	-0.20	-0.25	0.51	-0.1413	0.0077	-9.9	0.9	-9.9	0.8			
MATH	5	844327	0	E.1.1.1	2	126268	0.73	0.07	0.06	0.73	0.14	0.00	0.50	-0.25	-0.31	0.50	-0.25	0.2737	0.0072	-9.9	0.9	-9.9	0.9			
MATH	5	232238	0	C.1.1.2	1	126268	0.60	0.60	0.11	0.10	0.18	0.00	0.49	0.49	-0.22	-0.22	-0.27	1.0564	0.0066	-9.9	1.0	-9.9	0.9			
MATH	5	775594	0	D.1.1.2	2	126268	0.82	0.82	0.04	0.05	0.10	0.00	0.35	0.35	-0.20	-0.31	-0.10	-0.3107	0.0080	1.1	1.0	9.9	1.4			
MATH	5	795251	0	D.1.1.2	2	126268	0.69	0.07	0.69	0.16	0.08	0.00	0.54	-0.25	0.54	-0.33	-0.23	0.4960	0.0070	-9.9	0.9	-9.9	0.8			
MATH	5	895721	0	C.1.1.2	1	126268	0.78	0.04	0.04	0.78	0.15	0.00	0.41	-0.23	-0.26	0.41	-0.21	-0.0218	0.0075	1.4	1.0	1.2	1.0			
MATH	5	228514	0	C.1.1.2	1	126268	0.69	0.69	0.12	0.11	0.09	0.00	0.44	0.44	-0.19	-0.23	-0.25	0.5806	0.0069	5.2	1.0	-4.0	1.0			
MATH	5	628043	0	B.1.2.1	2	126268	0.63	0.19	0.12	0.06	0.63	0.00	0.43	0.01	-0.45	-0.26	0.43	0.8544	0.0067	9.9	1.1	9.9	1.1			
MATH	5	200037	0	A.2.1.1	2	126268	0.66	0.07	0.66	0.23	0.04	0.00	0.56	-0.20	0.56	-0.39	-0.25	0.6583	0.0068	-9.9	0.9	-9.9	0.8			
MATH	5	418653	0	A.2.1.2	1	126268	0.75	0.07	0.07	0.75	0.11	0.00	0.40	-0.21	-0.14	0.40	-0.26	0.1644	0.0073	9.9	1.1	2.2	1.0			
MATH	5	971657	0	A.3.1.1	1	126268	0.65	0.04	0.65	0.22	0.10	0.00	0.35	-0.23	0.35	-0.19	-0.15	0.7826	0.0068	9.9	1.2	9.9	1.2			
MATH	5	680498	0	A.2.1.1	2	126268	0.64	0.64	0.07	0.13	0.16	0.00	0.51	0.51	-0.26	-0.24	-0.26	0.7140	0.0068	-9.9	1.0	1.2	1.0			
MATH	5	576731	0	A.1.2.1	1	126268	0.84	0.02	0.03	0.84	0.12	0.00	0.43	-0.19	-0.18	0.43	-0.32	-0.5272	0.0084	-7.9	1.0	-9.9	0.9			
MATH	5	725423	0	A.1.3.2	2	126268	0.66	0.13	0.66	0.13	0.07	0.00	0.50	-0.22	0.50	-0.28	-0.25	0.6904	0.0068	-9.9	1.0	-9.9	0.9			
MATH	5	853933	0	A.1.1.1	1	126268	0.75	0.13	0.06	0.06	0.75	0.00	0.52	-0.40	-0.15	-0.22	0.52	0.1892	0.0073	-9.9	0.9	-9.9	0.8			
MATH	5	169730	0	A.1.3.2	1	126268	0.83	0.83	0.09	0.06	0.03	0.00	0.33	0.33	-0.22	-0.15	-0.17	-0.4452	0.0082	9.9	1.1	9.9	1.1			
MATH	5	317675	0	E.1.1.1	2	126268	0.55	0.55	0.18	0.06	0.20	0.00	0.42	0.42	-0.31	-0.10	-0.16	1.4308	0.0065	9.9	1.1	9.9	1.1			
MATH	5	216359	0	A.1.1.1	1	126268	0.85	0.85	0.07	0.04	0.03	0.00	0.45	0.45	-0.32	-0.21	-0.19	-0.6534	0.0087	-9.9	0.9	-9.9	0.7			
MATH	5	189745	0	B.1.2.1	2	126268	0.69	0.07	0.16	0.08	0.69	0.00	0.50	-0.30	-0.24	-0.24	0.50	0.5915	0.0069	-9.9	0.9	-9.9	0.9			
MATH	5	443198	0	A.2.1.1	2	126268	0.47	0.02	0.47	0.30	0.21	0.00	0.52	-0.15	0.52	-0.32	-0.22	1.7276	0.0065	-9.9	0.9	-9.9	0.9			
MATH	5	299593	0	B.1.2.2	2	126268	0.44	0.28	0.44	0.20	0.07	0.00	0.26	0.08	0.26	-0.30	-0.17	1.9675	0.0066	9.9	1.3	9.9	1.4			
MATH	5	402845	0	D.1.1.1	2	126268	0.64	0.15	0.14	0.07	0.64	0.00	0.51	-0.26	-0.27	-0.23	0.51	0.8514	0.0067	-9.9	0.9	-9.9	0.9			
MATH	5	208441	0	D.1.2.1	2	126268	0.63	0.15	0.07	0.63	0.15	0.00	0.32	-0.11	-0.25	0.32	-0.14	0.8924	0.0067	9.9	1.2	9.9	1.3			
MATH	5	811767	0	B.1.2.1	2	126268	0.50	0.22	0.23	0.50	0.05	0.00	0.45	-0.27	-0.20	0.45	-0.12	1.6583	0.0065	7.2	1.0	9.9	1.1			
MATH	5	543140	0	B.1.2.1	2	126268	0.42	0.18	0.27	0.42	0.12	0.00	0.51	-0.36	-0.21	0.51	-0.05	2.1493	0.0066	-9.9	0.9	-9.9	1.0			
MATH	5	516108	0	D.1.1.1	1	126268	0.68	0.11	0.12	0.08	0.68	0.00	0.47	-0.29	-0.20	-0.22	0.47	0.5822	0.0069	-5.3	1.0	-4.1	1.0			
MATH	5	371751	1	A-F.1.1.1	2	14390	0.65	0.18	0.11	0.65	0.05	0.01	0.41	-0.24	-0.21	0.41	-0.17	0.7312	0.0199	6.6	1.1	2.3	1.0	A+	A+	A+
MATH	5	917077	1	B-O.1.1.2	2	14390	0.56	0.13	0.18	0.56	0.13	0.00	0.31	-0.24	-0.15	0.31	-0.05	1.2217	0.0193	9.9	1.2	9.9	1.3	A+	A+	A-
MATH	5	893160	1	C-G.2.1.1	1	14390	0.38	0.46	0.05	0.38	0.11	0.00	0.15	0.05	-0.14	0.15	-0.22	2.1749	0.0197	9.9	1.4	9.9	1.7	A-	A+	A-
MATH	5	977525	1	A-T.2.1.1	2	14390	0.56	0.21	0.56	0.11	0.11	0.00	0.51	-0.28	0.51	-0.21	-0.23	1.1931	0.0193	-7.5	0.9	-7.3	0.9	A-	A+	A+
MATH	5	908988	1	A-T.1.1	2	14390	0.28	0.28	0.21	0.30	0.22	0.00	0.05	0.05	-0.05	-0.08	0.09	2.8042	0.0211	9.9	1.4	9.9	2.2	A-	A+	A+
MATH	5	885941	1	A-F.2.1.3	2	14390	0.17	0.21	0.26	0.35	0.17	0.00	0.10	-0.15	-0.07	0.12	0.10	3.5557	0.0244	9.9	1.3	9.9	2.2	A-	A+	A+
MATH	5	450441	1	D-M.1.1.1	2	14390	0.51	0.51	0.28	0.14	0.06	0.00	0.31	0.31	-0.13	-0.13	-0.21	1.4626	0.0192	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	5	261464	1	D-M.2.1.2	2	14390	0.47	0.31	0.47	0.12	0.10	0.00	0.24	0.03	0.24	-0.24	-0.18	1.6945	0.0192	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	5	779991	1	A-T.2	2	14390	0.25	0.26	0.18	0.31	0.25	0.00	0.19	-0.04	-0.08	-0.07	0.19	2.9624	0.0217	9.9	1.2	9.9	1.8	A-	A-	A-
MATH	5	520789	1	A-F.1	2	14390	0.35	0.24	0.19	0.22	0.35	0.00	0.34	-0.09	-0.21	-0.09	0.34	2.3527	0.0200	8.4	1.1	9.9	1.3	A+	A+	A+

MATH	5	452226	1	C-G.1	2	14390	0.43	0.22	0.12	0.23	0.43	0.00	0.19	-0.02	-0.17	-0.07	0.19	1.9057	0.0194	9.9	1.4	9.9	1.6	A+	A-	A-
MATH	5	347871	1	B-O.2.1	2	14390	0.36	0.27	0.29	0.08	0.36	0.00	0.37	-0.34	-0.02	-0.06	0.37	2.3137	0.0199	6.6	1.1	9.9	1.2	A+	A-	A+
MATH	5	672459	2	C-G.2.1.1	2	14012	0.57	0.12	0.57	0.15	0.16	0.00	0.31	-0.16	0.31	-0.18	-0.10	1.2137	0.0197	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	5	799232	2	A-F.1.1.1	2	14012	0.51	0.17	0.18	0.51	0.13	0.01	0.37	-0.14	-0.20	0.37	-0.16	1.5613	0.0196	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	5	972102	2	A-T.1.1.2	2	14012	0.34	0.26	0.34	0.27	0.13	0.00	0.29	-0.14	0.29	-0.14	-0.04	2.4792	0.0205	9.9	1.2	9.9	1.4	A-	A-	A+
MATH	5	868851	2	A-F.1	2	14012	0.37	0.31	0.14	0.37	0.18	0.00	0.27	-0.16	-0.12	0.27	-0.04	2.3007	0.0202	9.9	1.2	9.9	1.4	A-	A+	A+
MATH	5	169789	2	A-T.2.1.1	2	14012	0.50	0.21	0.13	0.15	0.50	0.00	0.47	-0.10	-0.24	-0.31	0.47	1.5799	0.0196	-3.1	1.0	-0.7	1.0	A-	A-	A-
MATH	5	342935	2	A-F.2.1.2	1	14012	0.27	0.08	0.27	0.11	0.54	0.00	0.20	-0.13	0.20	-0.13	-0.03	2.9111	0.0217	9.9	1.2	9.9	1.8	A-	A-	A-
MATH	5	892071	2	A-F.2.1.4	2	14012	0.43	0.16	0.12	0.29	0.43	0.00	0.38	-0.14	-0.21	-0.15	0.38	1.9954	0.0198	9.9	1.1	9.9	1.2	A-	A+	A+
MATH	5	751543	2	B-O.1.1.1	1	14012	0.26	0.38	0.21	0.26	0.15	0.00	0.03	0.11	-0.05	0.03	-0.13	3.0020	0.0220	9.9	1.5	9.9	2.4	A-	A+	A-
MATH	5	155551	2	C-G.1.1.2	2	14012	0.64	0.64	0.13	0.10	0.13	0.00	0.36	0.36	-0.22	-0.15	-0.15	0.8376	0.0201	9.9	1.1	9.6	1.2	A+	A-	A+
MATH	5	129658	2	B-O.2.1.1	2	14012	0.40	0.18	0.19	0.22	0.40	0.00	0.38	-0.13	-0.22	-0.11	0.38	2.1228	0.0199	8.1	1.1	9.9	1.2	A-	A-	A-
MATH	5	363520	2	D-M.1.1.1	2	14012	0.44	0.24	0.18	0.44	0.14	0.00	0.41	-0.28	-0.07	0.41	-0.16	1.9315	0.0197	6.3	1.1	9.4	1.1	A-	A-	A-
MATH	5	132987	2	D-M.2.1.1	2	14012	0.55	0.11	0.22	0.12	0.55	0.00	0.38	-0.23	-0.15	-0.17	0.38	1.3284	0.0196	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	5	425225	3	A-F.1.1.1	2	14019	0.74	0.05	0.08	0.74	0.14	0.00	0.45	-0.23	-0.24	0.45	-0.25	0.2608	0.0216	-1.2	1.0	-5.4	0.9	A+	A+	A+
MATH	5	685276	3	C-G.2.1.1	2	14019	0.64	0.64	0.13	0.13	0.09	0.00	0.28	0.28	-0.12	-0.13	-0.18	0.8602	0.0201	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	5	910289	3	A-F.2.1.2	2	14019	0.16	0.16	0.36	0.21	0.27	0.00	0.04	0.04	0.02	-0.08	0.02	3.7168	0.0251	9.9	1.3	9.9	2.7	A+	A-	A-
MATH	5	196959	3	A-T.1.1.1	1	14019	0.43	0.09	0.33	0.43	0.15	0.01	0.35	-0.13	-0.25	0.35	-0.04	2.0214	0.0197	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	5	844920	3	A-T.2.1.2	1	14019	0.77	0.04	0.77	0.08	0.11	0.00	0.58	-0.18	0.58	-0.31	-0.40	0.0488	0.0224	-9.9	0.8	-9.9	0.6	A+	A-	A-
MATH	5	911604	3	A-F.2	2	14019	0.10	0.12	0.10	0.59	0.18	0.00	0.00	-0.12	0.00	0.24	-0.20	4.3719	0.0301	9.9	1.2	9.9	3.5	B-	A-	A-
MATH	5	372878	3	B-O.2.1	2	14019	0.41	0.11	0.41	0.36	0.12	0.00	0.35	-0.18	0.35	0.02	-0.37	2.0994	0.0198	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	5	667797	3	D-M.2.1.1	2	14019	0.28	0.28	0.15	0.46	0.11	0.00	0.25	0.25	-0.12	-0.05	-0.14	2.8397	0.0212	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	5	411707	3	D-M.3	2	14019	0.28	0.28	0.35	0.17	0.20	0.00	0.09	0.09	0.03	-0.12	-0.02	2.8837	0.0214	9.9	1.4	9.9	2.0	A-	A-	A-
MATH	5	210948	3	A-T.1.1.5	2	14019	0.55	0.13	0.24	0.08	0.55	0.00	0.54	-0.10	-0.40	-0.24	0.54	1.3641	0.0196	-9.9	0.9	-9.1	0.9	A+	A-	A-
MATH	5	775728	3	C-G.2	1	14019	0.50	0.22	0.10	0.18	0.50	0.00	0.41	-0.33	-0.15	-0.05	0.41	1.6142	0.0195	9.4	1.1	8.3	1.1	A-	A-	A-
MATH	5	351458	3	C-G.1	2	14019	0.26	0.12	0.26	0.32	0.29	0.00	0.19	-0.10	0.19	-0.09	-0.01	2.9864	0.0217	9.9	1.2	9.9	1.9	A-	A-	A-
MATH	5	309375	4	B-O.1.1.2	2	14028	0.74	0.74	0.09	0.10	0.07	0.00	0.48	0.48	-0.25	-0.27	-0.22	0.2129	0.0217	-4.9	1.0	-8.0	0.8	A+	A-	A-
MATH	5	886968	4	C-G.2.1.1	2	14028	0.36	0.13	0.21	0.30	0.36	0.00	0.32	-0.15	-0.25	0.01	0.32	2.4257	0.0202	9.9	1.1	9.9	1.4	A+	A+	A-
MATH	5	986478	4	B-O.2.1.1	2	14028	0.70	0.18	0.06	0.70	0.05	0.00	0.56	-0.40	-0.25	0.56	-0.18	0.4778	0.0209	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	5	926676	4	A-T.1.1.2	1	14028	0.47	0.15	0.29	0.47	0.08	0.00	0.19	-0.17	0.04	0.19	-0.17	1.7619	0.0195	9.9	1.4	9.9	1.5	A-	A-	A-
MATH	5	181373	4	A-T.2.1	2	14028	0.51	0.51	0.24	0.14	0.11	0.00	0.33	0.33	-0.09	-0.18	-0.19	1.5536	0.0195	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	5	607485	4	A-F.1.1.1	1	14028	0.38	0.27	0.24	0.12	0.38	0.00	0.35	-0.17	-0.11	-0.13	0.35	2.2686	0.0200	9.9	1.1	9.9	1.2	A+	A+	A+
MATH	5	807353	4	A-F.2.1.2	2	14028	0.20	0.29	0.33	0.18	0.20	0.00	0.04	0.06	-0.05	-0.05	0.04	3.4209	0.0236	9.9	1.3	9.9	2.6	A-	A+	A-
MATH	5	228621	4	C-G.2.1.1	2	14028	0.35	0.28	0.20	0.18	0.35	0.00	0.19	-0.04	-0.06	-0.13	0.19	2.4287	0.0203	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	5	474894	4	D-M.3.1	2	14028	0.22	0.25	0.22	0.15	0.38	0.00	-0.08	-0.25	-0.08	-0.13	0.38	3.2590	0.0229	9.9	1.6	9.9	2.8	A-	A-	A-
MATH	5	786299	4	D-M.1.1.1	2	14028	0.40	0.11	0.18	0.40	0.31	0.00	0.27	-0.17	-0.12	0.27	-0.08	2.1152	0.0198	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	5	706967	4	A-F.2.1.4	2	14028	0.35	0.35	0.12	0.41	0.11	0.00	0.14	0.14	-0.09	-0.02	-0.09	2.3895	0.0202	9.9	1.3	9.9	1.8	A-	A+	A+
MATH	5	136361	4	B-O.1.1	1	14028	0.50	0.50	0.19	0.14	0.16	0.01	0.22	0.22	-0.01	-0.19	-0.10	1.6013	0.0195	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	5	715368	5	A-F.1.1.1	2	13972	0.52	0.52	0.15	0.11	0.23	0.00	0.37	0.37	-0.26	-0.26	-0.03	1.5511	0.0196	9.9	1.1	9.9	1.2	A+	A-	A+
MATH	5	166797	5	A-T.1.1.3	1	13972	0.52	0.05	0.10	0.33	0.52	0.00	0.54	-0.21	-0.16	-0.37	0.54	1.5380	0.0196	-9.9	0.9	-8.9	0.9	A-	A-	A-
MATH	5	578609	5	A-T.1.1.5	1	13972	0.60	0.07	0.60	0.18	0.15	0.00	0.54	-0.25	0.54	-0.18	-0.37	1.0700	0.0199	-9.9	0.9	-9.9	0.9	A-	A-	A-
MATH	5	779291	5	A-T.1.1.1	2	13972	0.25	0.12	0.14	0.50	0.25	0.00	0.31	-0.15	-0.21	-0.03	0.31	3.1046	0.0222	3.2	1.0	9.9	1.5	A-	A-	A-
MATH	5	919218	5	A-F.2	2	13972	0.57	0.07	0.18	0.57	0.18	0.00	0.36	-0.23	-0.12	0.36	-0.18	1.2599	0.0197	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	5	405130	5	C-G.1.1.1	1	13972	0.48	0.18	0.48	0.15	0.19	0.00	0.41	-0.21	0.41	-0.25	-0.09	1.7575	0.0196	7.0	1.1	6.8	1.1	A-	A-	A-
MATH	5	271053	5	B-O.1.1.2	2	13972	0.44	0.20	0.15	0.21	0.44	0.00	0.38	-0.24	-0.17	-0.07	0.38	1.9715	0.0197	9.9	1.1	9.9	1.2	A+	A+	A+
MATH	5	658991	5	C-G.2.1.1	1	13972	0.61	0.09	0.17	0.61	0.12	0.00	0.35	-0.21	-0.11	0.35	-0.20	1.0267	0.0200	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	5	250905	5	D-M.2.1.2	2	13972	0.47	0.12	0.10	0.30	0.47	0.00	0.49	-0.11	-0.23	-0.29	0.49	1.7668	0.0196	-3.8	1.0	-1.4	1.0	A-	A-	A-
MATH	5	551709	5	D-M.3.1.2	2	13972	0.39	0.39	0.25	0.20	0.14	0.01	0.13	0.13	-0.05	-0.03	-0.08	2.2036	0.0200	9.9	1.4	9.9	1.7	A+	A+	A+
MATH	5	358304	5	A-T.2.1.1	2	13972	0.32	0.27	0.22	0.18	0.32	0.00	0.25	-0.01	-0.18	-0.10	0.25	2.6105	0.0207	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	5	303739	5	A-F.2.1.2	2	13972	0.14	0.14	0.41	0.28	0.17	0.00	-0.10	-0.10	0.26	-0.08	-0.16	4.0066	0.0270	9.9	1.4	9.9	3.9	A-	A+	A-
MATH	5	676151	6	B-O.1.1.1	2	13947	0.55	0.55	0.12	0.22	0.11	0.00	0.32	0.32	-0.17	-0.04	-0.27	1.3802	0.0197	9.9	1.2	9.9	1.3	A+	A+	A+

MATH	5	272867	6	C-G.2.1.1	1	13947	0.64	0.17	0.64	0.07	0.11	0.00	0.33	-0.07	0.33	-0.25	-0.22	0.8473	0.0203	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	5	259159	6	A-T.1.1.4	2	13947	0.53	0.13	0.53	0.19	0.15	0.00	0.49	-0.09	0.49	-0.33	-0.23	1.4574	0.0197	-3.9	1.0	-3.5	1.0	A-	A-	A-
MATH	5	729985	6	A-T.2.1.3	2	13947	0.17	0.17	0.17	0.42	0.25	0.00	0.01	0.01	-0.11	0.18	-0.11	3.7291	0.0253	9.9	1.4	9.9	3.1	A-	A-	A-
MATH	5	410152	6	A-F.1.1.1	2	13947	0.48	0.48	0.07	0.28	0.18	0.00	0.45	0.45	-0.16	-0.31	-0.12	1.7608	0.0197	0.7	1.0	3.0	1.0	A+	A+	A+
MATH	5	351821	6	A-F.2.1.2	1	13947	0.22	0.37	0.22	0.16	0.26	0.00	0.06	0.08	0.06	-0.08	-0.08	3.2972	0.0231	9.9	1.3	9.9	2.6	A-	A-	A-
MATH	5	568227	6	A-F.2.1.4	1	13947	0.46	0.22	0.19	0.12	0.46	0.00	0.45	-0.25	-0.18	-0.14	0.45	1.8327	0.0197	0.7	1.0	2.9	1.0	A-	A-	A-
MATH	5	958194	6	B-O.1.1.2	2	13947	0.58	0.58	0.09	0.05	0.28	0.00	0.46	0.46	-0.26	-0.24	-0.22	1.2011	0.0198	2.2	1.0	0.2	1.0	A-	A-	A-
MATH	5	488762	6	B-O.2.1.2	2	13947	0.44	0.25	0.17	0.44	0.13	0.00	0.37	-0.14	-0.28	0.37	-0.06	1.9609	0.0198	9.9	1.1	9.9	1.2	A-	A-	A-
MATH	5	132229	6	C-G.1.1.2	2	13947	0.46	0.12	0.28	0.14	0.46	0.00	0.29	-0.24	0.10	-0.31	0.29	1.8459	0.0197	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	5	740845	6	D-M.1.1.1	2	13947	0.33	0.42	0.13	0.33	0.12	0.00	0.37	-0.19	-0.22	0.37	-0.02	2.6006	0.0208	2.6	1.0	9.9	1.3	A+	A-	A-
MATH	5	530757	6	D-M.3.1.1	2	13947	0.28	0.48	0.17	0.07	0.28	0.01	0.37	-0.29	0.00	-0.09	0.37	2.9035	0.0216	1.4	1.0	9.9	1.3	A+	A-	A+
MATH	5	746127	7	C-G.2.1.1	2	13977	0.46	0.23	0.15	0.16	0.46	0.00	0.43	-0.16	-0.22	-0.19	0.43	1.8778	0.0196	3.3	1.0	4.8	1.1	A+	A-	A+
MATH	5	712211	7	A-T.2.1.3	1	13977	0.70	0.09	0.70	0.10	0.11	0.00	0.52	-0.22	0.52	-0.16	-0.41	0.5066	0.0210	-9.7	0.9	-5.4	0.9	A+	A-	A-
MATH	5	199445	7	A-T.1.1.3	1	13977	0.50	0.50	0.14	0.19	0.17	0.00	0.36	0.36	-0.16	-0.11	-0.22	1.6406	0.0195	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	5	588917	7	A-T.2.1.2	2	13977	0.34	0.14	0.38	0.34	0.14	0.00	0.14	-0.02	0.02	0.14	-0.20	2.5319	0.0205	9.9	1.3	9.9	1.8	A-	A-	A-
MATH	5	598093	7	A-F.2.1.2	1	13977	0.60	0.60	0.14	0.15	0.11	0.00	0.24	0.24	-0.15	-0.12	-0.08	1.0839	0.0198	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	5	723716	7	A-F.1.1.1	2	13977	0.29	0.51	0.29	0.13	0.07	0.00	0.23	-0.19	0.23	-0.07	0.05	2.8231	0.0212	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	5	399834	7	A-F.2.1.4	1	13977	0.50	0.50	0.10	0.32	0.08	0.00	0.46	0.46	-0.21	-0.28	-0.14	1.6598	0.0195	-1.8	1.0	-0.6	1.0	A-	A-	A-
MATH	5	110971	7	B-O.1.1.2	2	13977	0.39	0.18	0.28	0.39	0.14	0.00	0.22	-0.18	-0.04	0.22	-0.06	2.2185	0.0199	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	5	473301	7	B-O.2.1.2	2	13977	0.62	0.08	0.62	0.16	0.14	0.00	0.38	-0.20	0.38	-0.17	-0.19	1.0009	0.0200	9.9	1.1	6.5	1.1	A-	A+	A-
MATH	5	137783	7	D-M.3.1	2	13977	0.37	0.16	0.37	0.23	0.24	0.00	0.23	-0.05	0.23	-0.03	-0.19	2.3531	0.0202	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	5	158667	7	C-G.2.1.1	2	13977	0.44	0.14	0.15	0.44	0.27	0.00	0.26	-0.09	-0.14	0.26	-0.11	1.9701	0.0197	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	5	609467	7	C-G.1.1	2	13977	0.54	0.54	0.09	0.11	0.26	0.01	0.39	0.39	-0.24	-0.23	-0.12	1.4307	0.0196	9.9	1.1	9.9	1.1	A+	A-	A-
MATH	5	894633	8	A-T.2.1.3	2	13903	0.61	0.10	0.61	0.22	0.07	0.00	0.51	-0.24	0.51	-0.26	-0.28	1.0066	0.0201	-6.1	1.0	-6.0	0.9	A-	A-	A-
MATH	5	323536	8	B-O.1.1.2	2	13903	0.35	0.17	0.24	0.24	0.35	0.00	0.33	-0.15	-0.05	-0.19	0.33	2.4688	0.0206	9.9	1.1	9.9	1.4	A+	A+	A-
MATH	5	282489	8	A-T.1.1.4	2	13903	0.61	0.19	0.61	0.06	0.14	0.00	0.48	-0.25	0.48	-0.26	-0.21	1.0010	0.0201	-0.8	1.0	-2.4	1.0	A+	A-	A-
MATH	5	658345	8	A-T.2.1.2	2	13903	0.41	0.23	0.41	0.14	0.21	0.01	0.33	-0.06	0.33	-0.25	-0.12	2.0999	0.0200	9.9	1.1	9.9	1.3	A+	A-	A-
MATH	5	442542	8	A-F.1.1.1	1	13903	0.65	0.16	0.65	0.13	0.06	0.00	0.46	-0.23	0.46	-0.27	-0.19	0.7856	0.0204	0.4	1.0	-1.6	1.0	A+	A+	A+
MATH	5	328692	8	B-O.1.1.1	1	13903	0.50	0.13	0.08	0.50	0.29	0.00	0.17	-0.26	-0.24	0.17	0.15	1.6144	0.0197	9.9	1.4	9.9	1.6	A+	A+	A+
MATH	5	336025	8	B-O.2.1.2	2	13903	0.64	0.15	0.14	0.64	0.08	0.00	0.47	-0.30	-0.21	0.47	-0.18	0.8605	0.0203	0.1	1.0	-1.0	1.0	A+	A-	A-
MATH	5	932292	8	C-G.2.1.1	1	13903	0.73	0.06	0.03	0.73	0.17	0.00	0.47	-0.23	-0.20	0.47	-0.31	0.2878	0.0216	-3.1	1.0	-5.4	0.9	A+	A-	A-
MATH	5	283189	8	D-M.3	2	13903	0.40	0.40	0.27	0.15	0.18	0.00	0.14	0.14	0.00	-0.11	-0.07	2.1768	0.0201	9.9	1.5	9.9	1.7	A+	A-	A-
MATH	5	304385	8	A-F.2	2	13903	0.39	0.19	0.26	0.16	0.39	0.00	0.24	-0.17	-0.05	-0.08	0.24	2.2079	0.0201	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	5	125638	8	C-G.1.1.2	2	13903	0.34	0.34	0.34	0.14	0.18	0.00	0.23	-0.11	0.23	0.01	-0.15	2.5051	0.0206	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	5	572385	8	A-F.2.1.4	2	13903	0.32	0.30	0.20	0.18	0.32	0.00	0.21	0.07	-0.11	-0.22	0.21	2.5979	0.0208	9.9	1.2	9.9	1.8	A+	A-	A-
MATH	5	957672	9	A-T.2.1.2	1	13994	0.52	0.07	0.52	0.24	0.17	0.00	0.46	-0.17	0.46	-0.13	-0.34	1.5694	0.0196	1.1	1.0	1.6	1.0	A-	A-	A-
MATH	5	704106	9	B-O.1.1.1	2	13994	0.65	0.10	0.13	0.12	0.65	0.00	0.32	-0.16	-0.11	-0.21	0.32	0.8151	0.0203	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	5	860285	9	A-F.1.1.1	2	13994	0.37	0.19	0.22	0.22	0.37	0.00	0.47	-0.24	-0.15	-0.17	0.47	2.3659	0.0202	-7.8	0.9	-1.0	1.0	A+	A-	A-
MATH	5	553508	9	D-M.1.1	2	13994	0.08	0.06	0.61	0.25	0.08	0.00	0.05	-0.16	-0.12	0.20	0.05	4.7146	0.0333	6.3	1.2	9.9	3.6	A-	A+	A+
MATH	5	155587	9	B-O.1.1.2	1	13994	0.59	0.59	0.09	0.16	0.16	0.00	0.29	0.29	-0.19	-0.13	-0.11	1.1492	0.0198	9.9	1.2	9.9	1.3	A+	A+	A-
MATH	5	832567	9	A-T.1.1.3	2	13994	0.27	0.34	0.14	0.26	0.27	0.00	0.28	-0.04	-0.14	-0.13	0.28	2.9716	0.0217	7.5	1.1	9.9	1.6	A-	A+	A+
MATH	5	854789	9	A-T.2.1.3	2	13994	0.71	0.10	0.09	0.10	0.71	0.00	0.54	-0.31	-0.27	-0.25	0.54	0.4424	0.0212	-9.9	0.9	-9.8	0.8	A+	A+	A-
MATH	5	923877	9	A-F.2.1.3	1	13994	0.62	0.14	0.62	0.19	0.05	0.00	0.44	-0.22	0.44	-0.29	-0.13	0.9569	0.0201	3.5	1.0	-0.9	1.0	A+	A-	A+
MATH	5	928140	9	A-F.2.1.3	2	13994	0.16	0.18	0.37	0.28	0.16	0.01	0.02	-0.11	0.16	-0.08	0.02	3.7842	0.0255	9.9	1.3	9.9	3.1	A-	A+	A+
MATH	5	124830	9	B-O.2.1.2	2	13994	0.16	0.55	0.17	0.12	0.16	0.00	0.06	0.06	-0.08	-0.06	0.06	3.7972	0.0255	9.9	1.2	9.9	3.0	A-	A+	A+
MATH	5	972289	9	C-G.1.1.2	2	13994	0.25	0.25	0.21	0.23	0.31	0.00	0.04	0.04	-0.10	-0.05	0.10	3.0778	0.0221	9.9	1.5	9.9	2.3	A-	A-	A+
MATH	5	618917	9	D-M.2.1.2	2	13994	0.41	0.41	0.19	0.29	0.11	0.00	0.41	0.41	-0.12	-0.21	-0.17	2.1476	0.0199	3.3	1.0	9.9	1.2	A-	A+	A-
MATH	6	839284	0	A.1.1.1	1	124870	0.67	0.27	0.01	0.05	0.67	0.00	0.62	-0.55	-0.13	-0.15	0.62	0.4864	0.0068	-9.9	0.8	-9.9	0.7			
MATH	6	597296	0	A.1.3.1	2	124870	0.54	0.12	0.54	0.12	0.21	0.00	0.41	-0.20	0.41	-0.20	-0.18	1.1991	0.0065	9.9	1.1	9.9	1.1			
MATH	6	416987	0	E.1.1.1	2	124870	0.72	0.16	0.08	0.72	0.04	0.00	0.46	-0.28	-0.19	0.46	-0.24	0.0635	0.0071	-3.2	1.0	-3.0	1.0			
MATH	6	980667	0	D.2.2.1	2	124870	0.78	0.78	0.13	0.06	0.03	0.00	0.49	0.49	-0.28	-0.32	-0.20	-0.2629	0.0075	-9.9	0.9	-9.9	0.8			

MATH	6	880407	0	A.1.3.2	2	124870	0.69	0.22	0.05	0.03	0.69	0.00	0.35	-0.18	-0.24	-0.17	0.35	0.0553	0.0071	9.9	1.2	9.9	1.3			
MATH	6	200581	0	C.3.1.1	2	124870	0.87	0.11	0.87	0.01	0.01	0.00	0.44	-0.41	0.44	-0.11	-0.10	-1.1242	0.0092	-9.9	0.9	-9.9	0.7			
MATH	6	211343	0	A.1.1.3	1	124870	0.81	0.08	0.06	0.81	0.06	0.00	0.44	-0.24	-0.22	0.44	-0.25	-0.5833	0.0081	-7.1	1.0	-9.9	0.9			
MATH	6	894568	0	C.3.1.1	1	124870	0.89	0.89	0.01	0.01	0.10	0.00	0.42	0.42	-0.14	-0.14	-0.37	-1.2788	0.0097	-9.8	0.9	-9.9	0.7			
MATH	6	840065	0	E.2.1.1	2	124870	0.75	0.06	0.75	0.05	0.13	0.00	0.37	-0.13	0.37	-0.17	-0.26	-0.1228	0.0074	9.9	1.1	9.9	1.1			
MATH	6	900690	0	D.2.2.1	1	124870	0.80	0.05	0.80	0.08	0.07	0.00	0.47	-0.22	0.47	-0.22	-0.32	-0.3690	0.0077	-9.9	0.9	-9.9	0.8			
MATH	6	647268	0	E.2.1.1	2	124870	0.75	0.16	0.06	0.75	0.02	0.00	0.41	-0.29	-0.16	0.41	-0.20	-0.1613	0.0074	7.0	1.0	9.9	1.1			
MATH	6	719709	0	E.2.1.1	1	124870	0.72	0.72	0.12	0.07	0.09	0.00	0.56	0.56	-0.35	-0.27	-0.22	0.0730	0.0071	-9.9	0.9	-9.9	0.8			
MATH	6	839487	0	E.2.1.1	2	124870	0.62	0.07	0.23	0.08	0.62	0.00	0.55	-0.19	-0.43	-0.13	0.55	0.6328	0.0067	-9.9	0.9	-9.9	0.8			
MATH	6	964620	0	A.2.1.1	1	124870	0.56	0.56	0.15	0.18	0.11	0.00	0.43	0.43	-0.14	-0.24	-0.21	1.1203	0.0065	9.9	1.0	6.5	1.0			
MATH	6	686081	0	A.1.3.1	1	124870	0.71	0.07	0.16	0.71	0.05	0.00	0.40	-0.21	-0.19	0.40	-0.24	0.2070	0.0070	9.9	1.0	8.6	1.1			
MATH	6	111714	0	A.1.3.2	1	124870	0.59	0.31	0.59	0.04	0.05	0.00	0.39	-0.25	0.39	-0.16	-0.18	0.9192	0.0066	9.9	1.1	9.9	1.1			
MATH	6	824223	0	A.1.3.1	1	124870	0.56	0.07	0.15	0.56	0.22	0.00	0.43	-0.14	-0.26	0.43	-0.20	1.1503	0.0065	9.9	1.0	9.9	1.1			
MATH	6	822711	0	A.2.1.1	2	124870	0.55	0.25	0.15	0.05	0.55	0.00	0.47	-0.33	-0.12	-0.20	0.47	1.1638	0.0065	-4.8	1.0	-5.3	1.0			
MATH	6	649248	0	C.3.1.1	1	124870	0.69	0.27	0.02	0.02	0.69	0.00	0.37	-0.27	-0.13	-0.25	0.37	0.3022	0.0069	9.9	1.1	9.9	1.3			
MATH	6	678641	0	A.1.1.1	1	124870	0.57	0.11	0.57	0.04	0.28	0.00	0.39	-0.22	0.39	-0.21	-0.19	0.9649	0.0066	9.9	1.1	9.9	1.1			
MATH	6	731435	0	A.1.3.1	2	124870	0.60	0.60	0.12	0.16	0.11	0.00	0.47	0.47	-0.19	-0.21	-0.28	0.8185	0.0066	-1.6	1.0	8.5	1.0			
MATH	6	432635	0	C.3.1.1	1	124870	0.85	0.12	0.01	0.02	0.85	0.00	0.45	-0.37	-0.16	-0.15	0.45	-0.9148	0.0087	-9.9	0.9	-9.9	0.8			
MATH	6	670133	0	D.2.1.2	1	124870	0.84	0.84	0.08	0.04	0.04	0.00	0.50	0.50	-0.32	-0.29	-0.21	-0.7725	0.0084	-9.9	0.9	-9.9	0.7			
MATH	6	210808	0	D.2.2.1	1	124870	0.71	0.71	0.18	0.06	0.05	0.00	0.36	0.36	-0.16	-0.22	-0.22	0.2076	0.0070	9.9	1.1	8.7	1.1			
MATH	6	828147	0	A.3.2.1	2	124870	0.56	0.24	0.09	0.12	0.56	0.00	0.50	-0.17	-0.29	-0.30	0.50	1.0158	0.0065	-9.9	0.9	-9.9	0.9			
MATH	6	710745	0	D.2.2.1	2	124870	0.80	0.10	0.80	0.05	0.06	0.00	0.43	-0.24	0.43	-0.24	-0.22	-0.4024	0.0077	-9.9	1.0	-9.9	0.9			
MATH	6	440657	0	E.2.1.1	2	124870	0.82	0.04	0.06	0.07	0.82	0.00	0.38	-0.18	-0.27	-0.17	0.38	-0.5852	0.0081	-1.9	1.0	-3.5	1.0			
MATH	6	524263	0	D.2.1.2	1	124870	0.87	0.87	0.04	0.02	0.07	0.00	0.45	0.45	-0.24	-0.22	-0.29	-1.1478	0.0093	-9.9	0.9	-9.9	0.7			
MATH	6	888950	0	E.2.1.1	2	124870	0.72	0.72	0.15	0.07	0.06	0.00	0.52	0.52	-0.37	-0.22	-0.19	0.0212	0.0072	-9.9	0.9	-9.9	0.8			
MATH	6	282166	0	E.2.1.1	2	124870	0.53	0.23	0.15	0.53	0.08	0.00	0.51	-0.30	-0.15	0.51	-0.26	1.1127	0.0065	-9.9	0.9	-9.9	0.9			
MATH	6	387053	0	E.2.1.1	2	124870	0.60	0.12	0.60	0.07	0.21	0.00	0.49	-0.38	0.49	-0.08	-0.23	0.8296	0.0066	-9.9	1.0	-9.9	0.9			
MATH	6	152587	0	E.2.1.1	1	124870	0.53	0.08	0.53	0.31	0.07	0.00	0.47	-0.31	0.47	-0.21	-0.20	1.2284	0.0065	-4.5	1.0	0.6	1.0			
MATH	6	976535	0	E.2.1.1	1	124870	0.85	0.06	0.02	0.85	0.06	0.00	0.28	-0.16	-0.12	0.28	-0.17	-0.8102	0.0085	9.9	1.1	9.9	1.4			
MATH	6	584434	0	D.2.2.1	2	124870	0.66	0.15	0.08	0.11	0.66	0.00	0.55	-0.36	-0.19	-0.26	0.55	0.4297	0.0068	-9.9	0.9	-9.9	0.8			
MATH	6	362990	0	C.3.1.1	1	124870	0.88	0.00	0.01	0.11	0.88	0.00	0.41	-0.12	-0.12	-0.37	0.41	-1.1396	0.0093	-9.9	0.9	-9.9	0.7			
MATH	6	440139	0	C.3.1.1	1	124870	0.75	0.75	0.02	0.13	0.11	0.00	0.37	0.37	-0.13	-0.24	-0.20	-0.0436	0.0073	9.9	1.1	9.9	1.2			
MATH	6	225357	0	A.3.2.1	2	124870	0.67	0.16	0.67	0.10	0.06	0.00	0.48	-0.32	0.48	-0.20	-0.19	0.2883	0.0069	-6.4	1.0	-9.9	0.9			
MATH	6	229425	0	A.3.2.1	2	124870	0.50	0.09	0.04	0.50	0.37	0.00	0.50	-0.20	-0.21	0.50	-0.31	1.2998	0.0065	-9.9	0.9	-9.9	0.9			
MATH	6	585634	0	A.1.3.1	2	124870	0.58	0.15	0.19	0.08	0.58	0.00	0.20	-0.06	-0.06	-0.19	0.20	0.8907	0.0066	9.9	1.3	9.9	1.4			
MATH	6	555221	0	A.1.1.1	1	124870	0.89	0.05	0.04	0.89	0.01	0.00	0.48	-0.34	-0.26	0.48	-0.17	-1.3937	0.0100	-9.9	0.9	-9.9	0.6			
MATH	6	937016	0	A.2.1.1	1	124870	0.56	0.56	0.15	0.14	0.15	0.00	0.47	0.47	-0.24	-0.26	-0.16	1.0823	0.0065	-9.5	1.0	-9.5	1.0			
MATH	6	955729	0	A.1.1.3	1	124870	0.72	0.17	0.72	0.08	0.03	0.00	0.39	-0.18	0.39	-0.26	-0.22	0.0743	0.0071	9.9	1.1	9.9	1.2			
MATH	6	710630	0	A.1.1.1	1	124870	0.64	0.03	0.64	0.16	0.17	0.00	0.52	-0.08	0.52	-0.21	-0.42	0.5956	0.0067	-9.9	0.9	-9.9	0.8			
MATH	6	813057	0	A.3.2.1	2	124870	0.55	0.22	0.16	0.55	0.07	0.00	0.53	-0.38	-0.18	0.53	-0.17	1.0750	0.0065	-9.9	0.9	-9.9	0.9			
MATH	6	473751	0	A.1.1.3	1	124870	0.91	0.04	0.02	0.91	0.03	0.00	0.40	-0.28	-0.17	0.40	-0.20	-1.6832	0.0110	-7.3	0.9	-9.9	0.7			
MATH	6	685308	0	A.3.2.1	2	124870	0.59	0.04	0.59	0.21	0.16	0.00	0.52	-0.18	0.52	-0.25	-0.33	0.8233	0.0066	-9.9	0.9	-9.9	0.9			
MATH	6	187865	0	E.1.1.3	2	124870	0.86	0.07	0.86	0.04	0.03	0.00	0.41	-0.25	0.41	-0.22	-0.21	-1.1318	0.0093	1.5	1.0	-7.9	0.9			
MATH	6	644647	0	E.1.1.1	2	124870	0.65	0.65	0.10	0.06	0.19	0.00	0.46	0.46	-0.16	-0.23	-0.29	0.4622	0.0068	2.1	1.0	-1.4	1.0			
MATH	6	954958	0	E.2.1.1	2	124870	0.57	0.13	0.16	0.57	0.14	0.00	0.57	-0.25	-0.39	0.57	-0.15	0.9631	0.0066	-9.9	0.9	-9.9	0.8			
MATH	6	786314	0	E.2.1.1	2	124870	0.49	0.17	0.49	0.23	0.11	0.00	0.44	-0.13	0.44	-0.25	-0.20	1.3268	0.0065	1.1	1.0	9.1	1.0			
MATH	6	443753	0	D.2.2.1	2	124870	0.76	0.76	0.09	0.04	0.10	0.00	0.44	0.44	-0.27	-0.26	-0.18	-0.1434	0.0074	-4.4	1.0	-9.9	0.9			
MATH	6	737783	0	D.2.1.2	1	124870	0.85	0.03	0.11	0.85	0.01	0.00	0.35	-0.19	-0.23	0.35	-0.17	-1.0291	0.0090	9.9	1.1	5.8	1.1			
MATH	6	913782	0	D.2.1.2	1	124870	0.87	0.87	0.04	0.03	0.05	0.00	0.49	0.49	-0.27	-0.29	-0.26	-1.1071	0.0092	-9.9	0.8	-9.9	0.6			
MATH	6	345097	0	D.2.2.1	2	124870	0.52	0.30	0.52	0.11	0.06	0.00	0.39	-0.09	0.39	-0.33	-0.20	1.2466	0.0065	9.9	1.1	9.9	1.1			
MATH	6	725977	0	C.3.1.1	1	124870	0.87	0.11	0.01	0.01	0.87	0.00	0.46	-0.38	-0.19	-0.14	0.46	-1.0248	0.0090	-9.9	0.9	-9.9	0.7			

MATH	6	694712	0	A.3.2.1	2	124870	0.69	0.07	0.69	0.14	0.10	0.00	0.49	-0.26	0.49	-0.19	-0.31	0.2865	0.0069	-9.9	1.0	-9.9	0.9			
MATH	6	412145	0	A.1.1.1	1	124870	0.78	0.01	0.17	0.78	0.04	0.00	0.27	-0.06	-0.16	0.27	-0.23	-0.2234	0.0075	9.9	1.1	9.9	1.1			
MATH	6	403759	0	A.1.3.1	2	124870	0.70	0.14	0.70	0.11	0.05	0.00	0.32	-0.15	0.32	-0.12	-0.27	0.2934	0.0069	9.9	1.1	9.9	1.2			
MATH	6	495719	0	A.1.1.3	1	124870	0.91	0.04	0.04	0.02	0.91	0.00	0.41	-0.28	-0.21	-0.19	0.41	-1.5919	0.0107	-4.8	1.0	-9.9	0.8			
MATH	6	580220	0	A.3.2.1	1	124870	0.87	0.01	0.07	0.05	0.87	0.00	0.38	-0.13	-0.23	-0.25	0.38	-1.1083	0.0092	2.9	1.0	-7.7	0.9			
MATH	6	243080	1	D.2.1.2	1	12843	0.85	0.03	0.85	0.06	0.05	0.00	0.51	-0.22	0.51	-0.30	-0.30	-0.9898	0.0273	-9.9	0.8	-9.9	0.6	A+	A-	A-
MATH	6	296941	1	E.1.1.3	2	12843	0.50	0.20	0.15	0.15	0.50	0.00	0.35	-0.14	-0.07	-0.26	0.35	1.3180	0.0204	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	6	535721	1	A-N.2.1.1	1	6646	0.32	0.26	0.32	0.13	0.29	0.00	0.38	-0.18	0.38	0.05	-0.25	2.2430	0.0303	2.1	1.0	8.9	1.3	A-	A-	A-
MATH	6	417120	1	A-R.1.1.1	1	6646	0.76	0.13	0.05	0.76	0.06	0.00	0.29	-0.18	-0.16	0.29	-0.10	-0.3118	0.0322	8.5	1.1	7.8	1.3	A+	A+	A-
MATH	6	250624	1	B-E.2.1.4	2	6646	0.19	0.11	0.19	0.32	0.39	0.00	0.17	-0.03	0.17	-0.23	0.11	3.1208	0.0351	7.3	1.2	9.9	2.2	A-	A-	A+
MATH	6	148261	1	D-S.1.1.2	1	6646	0.15	0.04	0.15	0.17	0.63	0.00	-0.25	-0.17	-0.25	-0.15	0.37	3.4643	0.0380	9.9	1.6	9.9	4.7	A-	A-	A+
MATH	6	437169	1	C-G.1.1.3	2	6646	0.23	0.31	0.29	0.17	0.23	0.00	0.29	-0.17	-0.07	-0.02	0.29	2.7955	0.0329	2.6	1.1	9.9	1.7	A+	A+	A+
MATH	6	910731	1	A-R.1.1.2	2	6646	0.38	0.38	0.12	0.36	0.13	0.00	0.24	0.24	-0.20	0.04	-0.21	1.8875	0.0292	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	776441	1	D-S.1	2	6646	0.09	0.59	0.16	0.16	0.09	0.00	-0.17	0.29	-0.10	-0.16	-0.17	4.1094	0.0455	9.9	1.4	9.9	5.2	A-	A+	A+
MATH	6	406749	1	C-G.1.1.6	2	6646	0.41	0.06	0.27	0.41	0.25	0.00	0.01	-0.13	0.05	0.01	0.01	1.6848	0.0288	9.9	1.6	9.9	1.9	A+	A-	A+
MATH	6	650060	1	A-N.3.1	2	6646	0.68	0.68	0.12	0.10	0.09	0.00	0.47	0.47	-0.26	-0.23	-0.21	0.2309	0.0299	-1.7	1.0	-2.6	0.9	A-	A-	A-
MATH	6	500739	1	B-E.1.1.5	2	6646	0.16	0.14	0.16	0.18	0.52	0.00	0.01	-0.01	0.01	0.04	-0.03	3.4033	0.0374	9.9	1.3	9.9	3.0	A-	A-	A-
MATH	6	192047	2	E.2.1.1	1	12406	0.75	0.14	0.75	0.06	0.05	0.00	0.51	-0.35	0.51	-0.16	-0.29	-0.1197	0.0233	-9.1	0.9	-5.4	0.9	A+	A+	A+
MATH	6	284332	2	D.2.2.1	2	12406	0.71	0.71	0.06	0.19	0.04	0.00	0.23	0.23	-0.22	-0.04	-0.19	0.1572	0.0223	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	348470	2	A-N.1.1.1	1	6197	0.36	0.20	0.27	0.17	0.36	0.00	0.52	-0.13	-0.41	-0.05	0.52	2.0546	0.0304	-9.9	0.9	-5.7	0.9	A-	B-	A-
MATH	6	971923	2	A-N.3	2	6197	0.33	0.33	0.27	0.30	0.11	0.00	0.17	0.17	-0.11	0.05	-0.18	2.2679	0.0311	9.9	1.3	9.9	1.7	A+	A+	A-
MATH	6	775126	2	A-R.1.1.3	2	6197	0.39	0.16	0.39	0.34	0.11	0.00	0.21	-0.01	0.21	-0.10	-0.16	1.8762	0.0300	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	955449	2	B-E.1	2	6197	0.45	0.26	0.45	0.15	0.14	0.00	0.24	-0.12	0.24	-0.18	-0.01	1.5921	0.0295	9.9	1.3	9.9	1.4	A-	A-	A+
MATH	6	380409	2	C-G.1.1.3	1	6197	0.51	0.19	0.13	0.17	0.51	0.00	0.49	-0.31	-0.19	-0.15	0.49	1.2557	0.0293	-3.7	1.0	-3.0	0.9	A+	A-	A-
MATH	6	771977	2	D-S.1.1.2	1	6197	0.55	0.15	0.14	0.16	0.55	0.00	0.48	-0.28	-0.19	-0.20	0.48	1.0190	0.0294	-2.8	1.0	-3.3	0.9	A+	A-	A-
MATH	6	456560	2	B-E.2.1.3	2	6197	0.77	0.06	0.08	0.77	0.09	0.00	0.42	-0.27	-0.26	0.42	-0.15	-0.2847	0.0337	-0.9	1.0	-0.1	1.0	A+	A-	A+
MATH	6	755501	2	C-G.1	2	6197	0.46	0.31	0.46	0.18	0.05	0.00	0.20	-0.03	0.20	-0.11	-0.19	1.4933	0.0294	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	6	434256	2	A-R.1.1	2	6197	0.14	0.43	0.14	0.37	0.06	0.00	0.02	-0.31	0.02	0.37	-0.14	3.6567	0.0406	9.9	1.3	9.9	3.1	A-	A-	A-
MATH	6	635504	2	D-S.1.1.4	2	6197	0.30	0.30	0.45	0.14	0.10	0.00	0.13	0.13	0.19	-0.26	-0.20	2.4224	0.0317	9.9	1.4	9.9	1.9	A+	A+	A-
MATH	6	733205	3	E.2.1.1	2	12448	0.65	0.10	0.65	0.09	0.15	0.00	0.55	-0.23	0.55	-0.20	-0.38	0.4914	0.0215	-9.9	0.9	-9.9	0.8	A+	A+	A-
MATH	6	926746	3	D.2.1.2	1	12448	0.91	0.03	0.91	0.04	0.02	0.00	0.37	-0.19	0.37	-0.24	-0.18	-1.6058	0.0340	-3.0	0.9	-4.5	0.8	A+	A-	A-
MATH	6	164700	3	A-N.2.1.1	1	6205	0.87	0.01	0.06	0.06	0.87	0.00	0.34	-0.14	-0.22	-0.19	0.34	-1.0848	0.0407	0.2	1.0	0.3	1.0	A+	A-	A+
MATH	6	671885	3	C-G.1.1.4	2	6205	0.20	0.20	0.38	0.21	0.21	0.00	0.08	0.08	0.03	-0.06	-0.05	3.1558	0.0358	9.9	1.3	9.9	2.4	A+	A-	A-
MATH	6	167756	3	D-S.1.1.2	2	6205	0.28	0.15	0.25	0.32	0.28	0.00	0.10	-0.13	-0.05	0.05	0.10	2.5725	0.0323	9.9	1.4	9.9	2.2	A+	A-	A-
MATH	6	430652	3	D-S.1.1.2	1	6205	0.72	0.72	0.07	0.16	0.05	0.00	0.52	0.52	-0.15	-0.38	-0.27	0.0925	0.0318	-7.3	0.9	-5.0	0.8	A+	A-	A-
MATH	6	886225	3	A-R.1.1.3	2	6205	0.56	0.56	0.13	0.12	0.19	0.00	0.30	0.30	-0.16	-0.18	-0.09	0.9805	0.0295	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	6	332368	3	A-R.1.1.5	2	6205	0.21	0.36	0.21	0.35	0.08	0.00	0.07	-0.25	0.07	0.22	-0.06	3.0319	0.0349	9.9	1.4	9.9	2.3	A-	A-	A-
MATH	6	599563	3	B-E.2.1.3	2	6205	0.73	0.04	0.10	0.13	0.73	0.00	0.42	-0.19	-0.36	-0.14	0.42	0.0022	0.0323	0.3	1.0	3.2	1.1	A+	A-	A-
MATH	6	479649	3	B-E.3.1.2	2	6205	0.46	0.46	0.06	0.35	0.13	0.00	0.47	0.47	-0.18	-0.22	-0.26	1.5285	0.0295	-2.5	1.0	-0.2	1.0	A-	A-	A-
MATH	6	481242	3	C-G.1.1	2	6205	0.23	0.38	0.18	0.23	0.22	0.00	0.08	0.04	-0.17	0.08	0.02	2.9114	0.0342	9.9	1.3	9.9	2.4	A-	A-	A-
MATH	6	387796	3	B-E.1.1.1	2	6205	0.48	0.21	0.16	0.48	0.14	0.00	0.21	-0.09	-0.09	0.21	-0.11	1.3995	0.0294	9.9	1.3	9.9	1.5	A+	A+	A+
MATH	6	970600	4	D.2.2.1	2	12426	0.67	0.67	0.19	0.07	0.06	0.00	0.54	0.54	-0.41	-0.21	-0.16	0.4001	0.0217	-9.9	0.9	-9.9	0.8	A+	A-	A-
MATH	6	702875	4	A.1.3.2	1	12426	0.77	0.08	0.08	0.77	0.07	0.00	0.47	-0.35	-0.25	0.47	-0.14	-0.2102	0.0237	-5.7	0.9	-4.1	0.9	A+	A-	A+
MATH	6	602185	4	A-N.1.1.1	1	6200	0.55	0.55	0.21	0.11	0.13	0.00	0.40	0.40	-0.27	-0.29	0.02	1.0547	0.0293	6.0	1.1	4.9	1.1	A+	A-	A-
MATH	6	366015	4	A-R.1.1.3	2	6200	0.72	0.72	0.04	0.19	0.04	0.00	0.47	0.47	-0.21	-0.29	-0.25	0.0873	0.0319	-2.9	1.0	-2.9	0.9	A+	A-	A-
MATH	6	681097	4	A-R.1.1.3	2	6200	0.07	0.08	0.81	0.04	0.07	0.00	0.17	0.01	-0.08	-0.07	0.17	4.5294	0.0528	-0.5	1.0	9.9	2.6	A-	A-	A+
MATH	6	637608	4	C-G.1	2	6200	0.32	0.44	0.10	0.32	0.13	0.00	0.03	0.09	-0.10	0.03	-0.08	2.3059	0.0309	9.9	1.5	9.9	2.0	A-	A+	A+
MATH	6	847789	4	B-E.1.1.5	1	6200	0.46	0.14	0.14	0.26	0.46	0.00	0.08	-0.09	-0.01	-0.01	0.08	1.5412	0.0293	9.9	1.5	9.9	1.7	A-	A+	A-
MATH	6	391670	4	D-S.1.1.4	2	6200	0.51	0.19	0.51	0.17	0.12	0.00	0.33	-0.15	0.33	-0.12	-0.18	1.2533	0.0292	9.9	1.2	9.9	1.2	A-	A-	A+
MATH	6	752296	4	D-S.1	2	6200	0.25	0.25	0.21	0.34	0.20	0.00	0.04	0.04	-0.02	0.05	-0.07	2.7633	0.0331	9.9	1.5	9.9	2.2	A-	A-	A-
MATH	6	700707	4	C-G.1.1.3	2	6200	0.34	0.34	0.23	0.24	0.18	0.00	0.13	0.13	-0.01	-0.13	0.00	2.1738	0.0305	9.9	1.4	9.9	1.7	A+	A+	A-

MATH	6	803210	4	A-R.1.1	2	6200	0.66	0.08	0.66	0.14	0.11	0.00	0.31	-0.07	0.31	-0.16	-0.21	0.4689	0.0304	9.9	1.2	6.7	1.2	A-	A-	A-
MATH	6	469442	4	D-S.1.1.3	2	6200	0.89	0.02	0.04	0.05	0.89	0.00	0.42	-0.21	-0.26	-0.24	0.42	-1.2343	0.0429	-4.2	0.9	-4.5	0.7	A+	A-	B-
MATH	6	567630	5	E.2.1.1	1	12513	0.63	0.14	0.63	0.13	0.10	0.00	0.55	-0.38	0.55	-0.18	-0.24	0.6467	0.0212	-9.9	0.9	-9.9	0.8	A+	A+	A+
MATH	6	720166	5	A.1.1.3	1	12513	0.85	0.11	0.03	0.85	0.01	0.00	0.50	-0.42	-0.21	0.50	-0.13	-0.8497	0.0273	-8.5	0.9	-9.6	0.7	A+	A-	A-
MATH	6	740990	5	A-N.2.2.2	2	6271	0.53	0.53	0.18	0.19	0.11	0.00	0.42	0.42	-0.14	-0.20	-0.25	1.1841	0.0291	4.1	1.1	3.7	1.1	A+	A-	A+
MATH	6	453025	5	A-N.1.1.1	1	6271	0.46	0.46	0.15	0.08	0.31	0.00	0.35	0.35	-0.23	-0.19	-0.09	1.5312	0.0292	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	6	669328	5	A-R.1.1.2	1	6271	0.68	0.68	0.15	0.08	0.08	0.00	0.40	0.40	-0.25	-0.18	-0.18	0.3302	0.0308	3.4	1.1	2.8	1.1	A-	A-	A-
MATH	6	413549	5	C-G.1	2	6271	0.30	0.31	0.30	0.19	0.20	0.00	0.12	-0.13	0.12	-0.06	0.07	2.4659	0.0315	9.9	1.3	9.9	2.0	A-	A+	A+
MATH	6	358544	5	D-S.1.1.2	2	6271	0.52	0.30	0.05	0.52	0.13	0.00	-0.02	0.26	-0.21	-0.02	-0.18	1.2324	0.0291	9.9	1.7	9.9	2.1	A+	A-	A-
MATH	6	851683	5	C-G.1.1.3	2	6271	0.28	0.47	0.19	0.28	0.06	0.00	0.22	-0.09	-0.09	0.22	-0.08	2.5940	0.0321	9.9	1.2	9.9	1.7	A-	A+	A+
MATH	6	767574	5	B-E.2.1.3	2	6271	0.67	0.67	0.10	0.12	0.11	0.00	0.55	0.55	-0.28	-0.27	-0.27	0.4324	0.0305	-9.1	0.9	-9.0	0.8	A+	A-	A+
MATH	6	925080	5	D-S.1.1.4	2	6271	0.25	0.27	0.18	0.25	0.29	0.00	0.01	-0.08	-0.11	0.01	0.16	2.7650	0.0329	9.9	1.5	9.9	2.4	A-	A-	A-
MATH	6	817221	5	A-R.1.1	2	6271	0.28	0.22	0.26	0.24	0.28	0.00	0.32	-0.16	-0.09	-0.08	0.32	2.6023	0.0321	3.4	1.1	9.9	1.4	A-	A-	A-
MATH	6	443090	5	B-E.1.1.5	2	6271	0.51	0.23	0.10	0.51	0.16	0.00	0.37	-0.14	-0.26	0.37	-0.12	1.2757	0.0291	8.5	1.1	7.4	1.2	A+	A+	A+
MATH	6	891680	6	D.2.2.1	2	18630	0.73	0.04	0.11	0.12	0.73	0.00	0.42	-0.21	-0.28	-0.19	0.42	0.0211	0.0186	1.1	1.0	-4.2	0.9	A-	A-	A-
MATH	6	200442	6	C.3.1.1	1	18630	0.88	0.10	0.01	0.88	0.01	0.00	0.44	-0.38	-0.14	0.44	-0.13	-1.1463	0.0241	-5.9	0.9	-8.0	0.7	A+	A-	A-
MATH	6	664940	6	A-N.1.1.1	1	6198	0.51	0.14	0.24	0.51	0.10	0.00	0.40	-0.16	-0.20	0.40	-0.20	1.2631	0.0292	5.4	1.1	3.9	1.1	A-	A-	A-
MATH	6	247819	6	D-S.1.1.2	2	6198	0.11	0.10	0.11	0.65	0.14	0.00	-0.06	-0.19	-0.06	0.35	-0.26	4.0417	0.0449	9.9	1.3	9.9	4.0	A-	A+	A-
MATH	6	391405	6	D-S.1.1.4	2	6198	0.43	0.28	0.43	0.11	0.17	0.00	0.21	-0.01	0.21	-0.21	-0.09	1.6805	0.0294	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	873085	6	B-E.2.1.2	2	6198	0.50	0.50	0.11	0.19	0.20	0.00	0.26	0.26	-0.22	-0.14	-0.02	1.3201	0.0292	9.9	1.3	9.9	1.3	A-	A-	A-
MATH	6	399803	6	A-R.1.1.3	2	6198	0.46	0.46	0.16	0.09	0.29	0.00	0.43	0.43	-0.13	-0.21	-0.23	1.5411	0.0293	0.6	1.0	1.7	1.0	A-	A-	A-
MATH	6	236072	6	C-G.1.1.4	2	6198	0.52	0.17	0.21	0.52	0.09	0.00	0.37	-0.23	-0.21	0.37	-0.04	1.2248	0.0292	7.9	1.1	7.0	1.1	A+	A-	A-
MATH	6	644000	6	C-G.1.1	2	6198	0.36	0.21	0.15	0.36	0.27	0.00	0.15	0.03	-0.15	0.15	-0.07	2.0619	0.0302	9.9	1.4	9.9	1.7	A-	A-	A-
MATH	6	148174	6	B-E.1.1.1	1	6198	0.55	0.16	0.55	0.11	0.18	0.00	0.29	-0.25	0.29	-0.19	0.02	1.0496	0.0293	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	6	682788	6	A-R.1	2	6198	0.32	0.32	0.20	0.25	0.22	0.00	0.23	0.23	-0.12	-0.14	0.01	2.2948	0.0309	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	6	431106	6	B-E.1.1.4	1	6198	0.57	0.23	0.57	0.06	0.14	0.00	0.31	-0.32	0.31	-0.23	0.11	0.9592	0.0294	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	6	638517	7	D.2.2.1	2	12446	0.48	0.06	0.06	0.39	0.48	0.00	0.47	-0.22	-0.22	-0.26	0.47	1.4383	0.0207	-3.0	1.0	0.2	1.0	A+	A-	A+
MATH	6	911392	7	A.1.3.1	1	12446	0.80	0.11	0.05	0.80	0.05	0.00	0.41	-0.21	-0.23	0.41	-0.24	-0.4714	0.0249	-0.9	1.0	-0.9	1.0	A-	A+	A-
MATH	6	609714	7	A-R.1.1.1	2	6215	0.50	0.19	0.50	0.14	0.17	0.00	0.37	-0.05	0.37	-0.28	-0.18	1.3516	0.0292	8.0	1.1	6.8	1.1	A-	A-	A-
MATH	6	719622	7	A-N.1.1.1	1	6215	0.40	0.16	0.25	0.19	0.40	0.00	0.43	-0.07	-0.24	-0.20	0.43	1.8844	0.0297	0.5	1.0	3.5	1.1	A+	A-	A-
MATH	6	370375	7	A-R.1.1.4	2	6215	0.56	0.22	0.56	0.08	0.14	0.00	0.23	-0.17	0.23	-0.19	0.03	1.0436	0.0293	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	6	552269	7	C-G.1.1.1	2	6215	0.22	0.53	0.14	0.22	0.11	0.00	0.27	-0.29	0.06	0.27	0.04	3.0126	0.0345	3.2	1.1	9.9	1.5	A-	A-	A+
MATH	6	915923	7	B-E.3.1.2	2	6215	0.50	0.50	0.16	0.25	0.09	0.00	0.37	0.37	-0.25	-0.10	-0.18	1.3499	0.0292	7.4	1.1	7.1	1.2	A-	A-	A-
MATH	6	687113	7	A-N.3.2.3	2	6215	0.10	0.18	0.50	0.22	0.10	0.00	-0.11	-0.23	0.30	-0.08	-0.11	4.2081	0.0468	9.9	1.4	9.9	4.6	A+	A+	A-
MATH	6	840717	7	B-E.2.1.2	2	6215	0.65	0.13	0.65	0.10	0.12	0.00	0.47	-0.25	0.47	-0.22	-0.23	0.5454	0.0302	-2.3	1.0	-4.8	0.9	A-	A-	A-
MATH	6	305042	7	C-G.1.1.4	2	6215	0.47	0.15	0.18	0.19	0.47	0.00	0.45	-0.24	-0.16	-0.19	0.45	1.5230	0.0292	-0.3	1.0	0.1	1.0	A-	A-	A-
MATH	6	873471	7	D-S.1.1.1	2	6215	0.42	0.15	0.24	0.42	0.19	0.00	0.20	-0.09	-0.10	0.20	-0.06	1.7965	0.0296	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	6	766781	7	D-S.1.1.3	2	6215	0.35	0.31	0.35	0.20	0.14	0.00	0.05	0.10	0.05	-0.09	-0.09	2.1798	0.0305	9.9	1.5	9.9	1.9	A+	A-	A+
MATH	6	104071	8	B-E.3.1.2	2	6197	0.24	0.31	0.29	0.24	0.17	0.00	0.03	0.07	-0.02	0.03	-0.09	2.8759	0.0336	9.9	1.4	9.9	2.4	A-	A-	A-
MATH	6	313981	8	A-R.1.1.1	2	6197	0.45	0.31	0.19	0.45	0.06	0.00	0.35	-0.16	-0.13	0.35	-0.22	1.6207	0.0293	7.7	1.1	9.7	1.2	A-	A+	A-
MATH	6	740536	8	A-N.2.1.1	1	6197	0.75	0.10	0.75	0.09	0.07	0.00	0.46	-0.07	0.46	-0.28	-0.39	-0.0476	0.0327	-2.5	1.0	-2.9	0.9	A-	A-	A-
MATH	6	545395	8	A-R.1.1.4	2	6197	0.66	0.03	0.66	0.04	0.26	0.00	0.49	-0.25	0.49	-0.24	-0.32	0.4659	0.0305	-4.2	0.9	-3.0	0.9	A-	A-	A-
MATH	6	219164	8	C-G.1.1.5	2	6197	0.73	0.16	0.05	0.73	0.05	0.00	0.33	-0.15	-0.24	0.33	-0.18	0.0557	0.0322	6.6	1.1	6.2	1.2	A-	A-	A-
MATH	6	406765	8	A-N.2.1.1	2	6197	0.76	0.06	0.10	0.76	0.08	0.00	0.48	-0.24	-0.19	0.48	-0.33	-0.1135	0.0331	-5.0	0.9	-4.4	0.9	A+	A-	A-
MATH	6	773935	8	B-E.1.1.4	1	6197	0.53	0.13	0.20	0.14	0.53	0.00	0.47	-0.28	-0.23	-0.14	0.47	1.2175	0.0292	-2.2	1.0	-2.0	1.0	A-	A-	A-
MATH	6	711876	8	C-G.1.1.1	2	6197	0.21	0.15	0.47	0.16	0.21	0.00	0.15	-0.23	0.14	-0.12	0.15	3.0822	0.0349	9.9	1.2	9.9	1.9	A-	A+	A-
MATH	6	398504	8	D-S.1.1.3	2	6197	0.26	0.08	0.26	0.24	0.43	0.00	-0.09	-0.07	-0.09	-0.06	0.17	2.7480	0.0328	9.9	1.6	9.9	2.7	A-	A+	A-
MATH	6	792295	8	B-E.1.1.4	1	6197	0.51	0.27	0.51	0.11	0.11	0.00	0.26	-0.19	0.26	-0.18	0.04	1.2985	0.0292	9.9	1.3	9.9	1.4	A+	A-	A+
MATH	6	102381	9	A-N.1.1.1	2	6228	0.55	0.06	0.13	0.55	0.26	0.00	0.35	-0.12	-0.21	0.35	-0.17	1.0466	0.0292	9.9	1.1	6.2	1.1	A-	A-	A-
MATH	6	328806	9	B-E.2.1.2	2	6228	0.16	0.56	0.18	0.10	0.16	0.00	0.20	-0.03	-0.10	-0.06	0.20	3.4672	0.0383	4.6	1.1	9.9	1.9	A+	A-	A+
MATH	6	339582	9	A-R.1.1.4	2	6228	0.41	0.08	0.23	0.41	0.28	0.00	0.17	-0.16	-0.08	0.17	-0.02	1.8230	0.0296	9.9	1.4	9.9	1.7	A-	A-	A-

MATH	6	691416	9	C-G.1.1.5	2	6228	0.56	0.28	0.06	0.56	0.10	0.00	0.21	-0.15	-0.16	0.21	0.00	1.0073	0.0292	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	6	922143	9	A-N.2.1.1	2	6228	0.54	0.09	0.54	0.13	0.23	0.00	0.47	-0.18	0.47	-0.18	-0.29	1.1224	0.0292	-3.3	1.0	-2.8	0.9	A-	A-	A-
MATH	6	859400	9	D-S.1.1.2	2	6228	0.16	0.16	0.24	0.14	0.47	0.00	0.13	0.13	-0.10	-0.07	0.04	3.4894	0.0386	8.4	1.2	9.9	2.3	A+	A+	A-
MATH	6	621442	9	B-E.1.1.4	1	6228	0.34	0.27	0.26	0.34	0.13	0.00	0.23	-0.09	-0.15	0.23	-0.01	2.2094	0.0306	9.9	1.2	9.9	1.6	A+	A-	A+
MATH	6	990098	9	A-R.1.1.1	2	6228	0.55	0.55	0.12	0.11	0.22	0.00	0.49	0.49	-0.24	-0.23	-0.22	1.0824	0.0292	-3.6	1.0	-3.2	0.9	A-	B-	A-
MATH	6	137759	9	B-E.1.1.1	2	6228	0.80	0.80	0.07	0.07	0.05	0.00	0.33	0.33	-0.12	-0.23	-0.19	-0.4359	0.0349	2.6	1.1	4.2	1.2	B+	A+	A-
MATH	6	434303	9	C-G.1.1.1	1	6228	0.48	0.48	0.28	0.11	0.13	0.00	0.23	0.23	-0.09	-0.17	-0.07	1.4617	0.0292	9.9	1.3	9.9	1.4	A+	A-	A+
MATH	6	478729	10	A-N.3.1.2	1	6231	0.69	0.07	0.13	0.69	0.11	0.00	0.44	-0.24	-0.23	0.44	-0.21	0.2780	0.0310	0.3	1.0	-0.8	1.0	A-	A-	A-
MATH	6	195777	10	A-N.1.1.1	1	6231	0.37	0.21	0.18	0.24	0.37	0.00	0.44	-0.21	-0.24	-0.09	0.44	2.0330	0.0304	-0.6	1.0	1.8	1.0	A+	A-	A-
MATH	6	396141	10	A-R.1.1.2	2	6231	0.65	0.08	0.65	0.11	0.15	0.00	0.50	-0.19	0.50	-0.22	-0.32	0.4676	0.0304	-4.5	0.9	-4.7	0.9	A-	A-	A+
MATH	6	394202	10	B-E.2.1	2	6231	0.43	0.10	0.13	0.34	0.43	0.00	0.26	-0.17	-0.16	-0.05	0.26	1.7156	0.0297	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	6	451307	10	D-S.1.1.3	2	6231	0.65	0.65	0.12	0.11	0.11	0.00	0.44	0.44	-0.20	-0.24	-0.21	0.4824	0.0304	1.7	1.0	1.2	1.0	A+	A-	A-
MATH	6	566380	10	D-S.1.1.1	2	6231	0.33	0.33	0.21	0.14	0.32	0.00	0.21	0.21	-0.10	-0.08	-0.06	2.2491	0.0311	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	6	636984	10	B-E.1.1.3	1	6231	0.66	0.11	0.66	0.10	0.12	0.00	0.30	-0.26	0.30	-0.14	-0.06	0.4202	0.0306	9.9	1.2	9.9	1.4	A+	A+	A+
MATH	6	752526	10	C-G.1.1.2	2	6231	0.40	0.40	0.18	0.26	0.16	0.00	0.29	0.29	-0.17	-0.07	-0.11	1.8707	0.0300	9.9	1.2	9.9	1.4	A-	A-	A+
MATH	6	386569	10	A-R.1.1.4	2	6231	0.44	0.33	0.44	0.16	0.07	0.00	0.39	-0.19	0.39	-0.11	-0.26	1.6198	0.0296	6.1	1.1	6.9	1.2	A-	A-	A-
MATH	6	641451	10	C-G.1.1.6	1	6231	0.27	0.15	0.10	0.27	0.48	0.00	0.30	-0.21	-0.09	0.30	-0.06	2.6621	0.0329	5.8	1.1	9.9	1.5	A+	A-	A-
MATH	6	838401	11	A.1.3.1	1	18667	0.63	0.10	0.21	0.63	0.06	0.00	0.38	-0.21	-0.15	0.38	-0.24	0.6536	0.0172	9.8	1.1	6.5	1.1	A+	A+	A+
MATH	6	874990	11	A.1.1.3	1	18667	0.82	0.82	0.05	0.07	0.05	0.00	0.47	0.47	-0.20	-0.29	-0.26	-0.5989	0.0210	-7.7	0.9	-7.3	0.8	A+	A+	A+
MATH	6	488073	11	A-R.1.1.1	2	6191	0.46	0.26	0.16	0.46	0.12	0.00	0.29	-0.03	-0.24	0.29	-0.13	1.5662	0.0293	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	6	537109	11	A-R.1.1.4	2	6191	0.59	0.11	0.59	0.18	0.12	0.00	0.25	-0.03	0.25	-0.22	-0.09	0.8594	0.0295	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	6	399199	11	B-E.2.1.1	1	6191	0.60	0.17	0.15	0.60	0.08	0.00	0.49	-0.29	-0.24	0.49	-0.18	0.8062	0.0296	-4.7	0.9	-4.5	0.9	A+	A-	A+
MATH	6	322822	11	A-N.3.2.1	2	6191	0.38	0.08	0.45	0.38	0.09	0.00	0.27	-0.17	-0.01	0.27	-0.28	2.0127	0.0300	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	6	840199	11	A-N.2.1.1	1	6191	0.52	0.19	0.52	0.12	0.17	0.00	0.17	-0.16	0.17	-0.09	0.02	1.2367	0.0292	9.9	1.3	9.9	1.5	A-	A+	A+
MATH	6	429718	11	C-G.1.1.5	2	6191	0.36	0.27	0.36	0.15	0.21	0.00	0.31	-0.16	0.31	-0.13	-0.08	2.0808	0.0302	7.7	1.1	9.9	1.3	A-	A+	A+
MATH	6	476956	11	D-S.1.1.1	2	6191	0.51	0.51	0.21	0.17	0.11	0.00	0.41	0.41	-0.27	-0.10	-0.18	1.2902	0.0291	4.7	1.1	6.6	1.1	A+	A-	A-
MATH	6	178366	11	D-S.1.1.3	2	6191	0.28	0.14	0.28	0.13	0.44	0.00	0.14	-0.12	0.14	-0.20	0.09	2.5597	0.0320	9.9	1.3	9.9	1.9	A-	A-	A-
MATH	6	456796	11	B-E.3.1.1	2	6191	0.42	0.25	0.42	0.19	0.13	0.00	0.32	-0.14	0.32	-0.19	-0.06	1.7586	0.0295	9.9	1.1	9.9	1.3	A-	A-	A+
MATH	6	396810	11	C-G.1.1.1	2	6191	0.21	0.10	0.21	0.27	0.42	0.00	0.05	-0.17	0.05	0.08	-0.01	3.0458	0.0349	9.9	1.4	9.9	2.3	A-	A-	A+
MATH	6	541501	12	B-E.1.1.4	1	6209	0.37	0.18	0.24	0.20	0.37	0.00	0.39	-0.08	-0.21	-0.17	0.39	2.0336	0.0304	3.6	1.1	8.0	1.2	A+	A-	A-
MATH	6	411462	12	A-N.3.2.1	1	6209	0.57	0.25	0.11	0.07	0.57	0.00	0.49	-0.20	-0.26	-0.30	0.49	0.9396	0.0296	-2.7	1.0	-2.3	0.9	A-	A-	A-
MATH	6	347625	12	A-N.1.1.1	1	6209	0.45	0.32	0.14	0.45	0.09	0.00	0.41	-0.27	-0.10	0.41	-0.16	1.6085	0.0296	5.8	1.1	6.6	1.2	A+	A-	A-
MATH	6	997775	12	A-N.2	2	6209	0.40	0.30	0.40	0.18	0.12	0.00	0.24	-0.15	0.24	0.03	-0.18	1.8637	0.0300	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	6	186543	12	A-R.1.1.1	2	6209	0.23	0.23	0.17	0.29	0.30	0.00	0.35	0.35	0.18	-0.15	-0.32	2.9259	0.0343	2.8	1.1	7.6	1.3	A-	A-	A-
MATH	6	836312	12	A-R.1.1.4	2	6209	0.76	0.76	0.09	0.09	0.05	0.00	0.44	0.44	-0.28	-0.18	-0.23	-0.1624	0.0332	-1.5	1.0	2.0	1.1	A-	A-	A+
MATH	6	269807	12	B-E.2.1.1	1	6209	0.43	0.12	0.43	0.26	0.18	0.00	0.45	-0.22	0.45	-0.20	-0.16	1.7170	0.0298	0.0	1.0	3.0	1.1	A-	A-	A-
MATH	6	433867	12	D-S.1.1.1	2	6209	0.67	0.67	0.21	0.05	0.07	0.00	0.50	0.50	-0.31	-0.24	-0.23	0.4143	0.0307	-4.7	0.9	-1.4	1.0	A+	A-	A-
MATH	6	389752	12	C-G.1.1.5	2	6209	0.66	0.20	0.05	0.08	0.66	0.00	0.31	-0.16	-0.13	-0.19	0.31	0.4668	0.0306	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	6	553210	12	C-G.1.1.1	2	6209	0.37	0.44	0.09	0.37	0.09	0.00	0.46	-0.34	-0.07	0.46	-0.12	2.0438	0.0305	-3.2	1.0	1.1	1.0	B-	A-	A-
MATH	6	231385	13	A.1.3.2	2	12460	0.62	0.12	0.09	0.62	0.16	0.00	0.51	-0.29	-0.18	0.51	-0.26	0.7030	0.0211	-6.9	0.9	-4.0	0.9	A-	A-	A-
MATH	6	521588	13	A.2.1.1	1	12460	0.61	0.09	0.19	0.10	0.61	0.00	0.50	-0.23	-0.33	-0.15	0.50	0.7516	0.0210	-6.2	1.0	-6.0	0.9	A+	A+	A+
MATH	6	354243	13	C-G.1.1.4	2	6224	0.29	0.21	0.29	0.21	0.29	0.00	0.22	0.00	0.22	-0.20	-0.04	2.5186	0.0317	9.9	1.2	9.9	1.6	A+	A-	A+
MATH	6	628398	13	B-E.1.1.5	1	6224	0.25	0.43	0.21	0.25	0.10	0.00	0.08	-0.08	0.08	0.08	-0.10	2.7768	0.0330	9.9	1.4	9.9	2.1	A-	A+	A-
MATH	6	341529	13	A-N.2.2.1	1	6224	0.45	0.45	0.09	0.30	0.17	0.00	0.30	0.30	-0.20	-0.08	-0.15	1.6415	0.0293	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	6	938984	13	A-N.2.1.1	1	6224	0.63	0.15	0.12	0.63	0.09	0.00	0.36	-0.17	-0.24	0.36	-0.11	0.6422	0.0299	8.3	1.1	7.0	1.2	A+	A-	A-
MATH	6	784477	13	D-S.1.1.2	1	6224	0.67	0.13	0.10	0.67	0.09	0.00	0.49	-0.34	-0.15	0.49	-0.25	0.3992	0.0307	-4.5	0.9	-3.3	0.9	A+	A-	A-
MATH	6	537869	13	D-S.1.1.4	2	6224	0.26	0.30	0.26	0.26	0.18	0.00	0.08	-0.03	0.08	0.01	-0.07	2.7260	0.0327	9.9	1.4	9.9	2.1	A-	A-	A+
MATH	6	294321	13	B-E.1.1.1	1	6224	0.82	0.11	0.05	0.82	0.02	0.00	0.49	-0.38	-0.22	0.49	-0.16	-0.5691	0.0361	-6.4	0.9	-3.7	0.8	A+	A-	A-
MATH	6	559341	13	A-R.1.1	1	6224	0.20	0.20	0.21	0.38	0.21	0.00	0.28	0.28	-0.01	-0.13	-0.11	3.1319	0.0354	1.5	1.0	9.9	1.6	A-	A+	A+
MATH	6	445570	13	B-E.3.1.2	2	6224	0.55	0.17	0.55	0.11	0.18	0.00	0.32	-0.15	0.32	-0.15	-0.16	1.1057	0.0292	9.9	1.2	8.9	1.2	A-	A-	A+
MATH	6	570297	13	C-G.1	2	6224	0.27	0.27	0.33	0.27	0.12	0.00	0.10	-0.09	0.03	0.10	-0.05	2.6248	0.0322	9.9	1.3	9.9	2.1	A-	A-	A-

MATH	6	111516	14	C-G.1.1.2	2	6242	0.24	0.43	0.24	0.22	0.12	0.00	0.04	0.01	0.04	-0.02	-0.03	2.8858	0.0336	9.9	1.4	9.9	2.4	A-	A-	A-
MATH	6	702718	14	A-N.2	2	6242	0.25	0.27	0.22	0.26	0.25	0.00	0.17	0.00	-0.13	-0.04	0.17	2.8199	0.0332	9.9	1.2	9.9	2.0	A-	A-	A-
MATH	6	134281	14	A-N.2.1.1	2	6242	0.54	0.09	0.11	0.54	0.25	0.00	0.47	-0.18	-0.24	0.47	-0.24	1.1463	0.0292	-1.9	1.0	-0.4	1.0	A-	B-	A-
MATH	6	835690	14	A-R.1.1.1	1	6242	0.53	0.18	0.53	0.11	0.17	0.00	0.33	-0.11	0.33	-0.16	-0.19	1.1796	0.0292	9.9	1.2	9.7	1.2	A-	A-	A-
MATH	6	739083	14	B-E.3.1.1	2	6242	0.54	0.54	0.13	0.22	0.11	0.00	0.40	0.40	-0.24	-0.17	-0.16	1.1472	0.0292	5.6	1.1	4.2	1.1	A-	A-	A-
MATH	6	903011	14	A-N.3.1.3	2	6242	0.55	0.14	0.11	0.55	0.20	0.00	0.40	-0.17	-0.32	0.40	-0.10	1.0830	0.0293	6.1	1.1	5.4	1.1	A-	A-	A-
MATH	6	426887	14	D-S.1.1.1	2	6242	0.89	0.03	0.89	0.03	0.06	0.00	0.38	-0.16	0.38	-0.21	-0.26	-1.2102	0.0428	-2.6	0.9	0.0	1.0	B+	A-	A-
MATH	6	370038	14	D-S.1.1.3	2	6242	0.37	0.20	0.20	0.37	0.23	0.00	0.20	-0.07	-0.02	0.20	-0.14	2.0615	0.0301	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	6	665670	14	C-G.1.1.5	2	6242	0.43	0.04	0.05	0.43	0.48	0.00	0.14	-0.20	-0.21	0.14	0.04	1.7626	0.0295	9.9	1.4	9.9	1.7	A-	A-	A+
MATH	6	562788	14	B-E.1.1.3	2	6242	0.46	0.46	0.13	0.30	0.11	0.00	0.15	0.15	-0.08	-0.05	-0.07	1.5512	0.0293	9.9	1.4	9.9	1.6	A+	A-	A-
MATH	6	378204	15	A-N.3.1.3	1	6226	0.88	0.05	0.04	0.88	0.03	0.00	0.30	-0.13	-0.21	0.30	-0.15	-1.0978	0.0414	0.8	1.0	3.6	1.3	A+	A-	A+
MATH	6	781930	15	A-N.1.1.1	2	6226	0.27	0.26	0.26	0.21	0.27	0.00	0.36	-0.04	-0.12	-0.22	0.36	2.6726	0.0325	-0.1	1.0	7.9	1.3	A-	A-	A-
MATH	6	764123	15	C-G.1.1.6	2	6226	0.32	0.35	0.32	0.20	0.14	0.00	0.03	-0.01	0.03	0.00	-0.04	2.3989	0.0313	9.9	1.5	9.9	2.2	A-	A-	A-
MATH	6	620969	15	C-G.1.1.2	2	6226	0.32	0.35	0.32	0.19	0.14	0.00	0.20	-0.09	0.20	-0.10	-0.04	2.3600	0.0311	9.9	1.3	9.9	1.7	A-	A-	A-
MATH	6	600497	15	A-R.1.1.1	1	6226	0.47	0.17	0.19	0.17	0.47	0.00	0.38	-0.20	-0.16	-0.14	0.38	1.5156	0.0294	6.9	1.1	6.1	1.1	A-	A-	A+
MATH	6	217937	15	B-E.2.1	2	6226	0.59	0.10	0.59	0.09	0.23	0.00	0.48	-0.18	0.48	-0.22	-0.28	0.9090	0.0296	-2.1	1.0	-2.5	0.9	A-	A-	A-
MATH	6	674929	15	A-R.1.1.4	2	6226	0.71	0.10	0.71	0.11	0.09	0.00	0.50	-0.25	0.50	-0.22	-0.29	0.2144	0.0315	-4.7	0.9	-4.0	0.9	A-	A-	A-
MATH	6	319196	15	D-S.1.1.1	2	6226	0.31	0.27	0.21	0.20	0.31	0.00	0.24	-0.13	-0.15	0.01	0.24	2.4117	0.0313	9.9	1.2	9.9	1.6	A-	A-	A+
MATH	6	653572	15	D-S.1.1.3	2	6226	0.32	0.32	0.09	0.31	0.27	0.00	0.26	0.26	-0.14	0.01	-0.19	2.3446	0.0311	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	6	867330	15	B-E.1.1.3	2	6226	0.53	0.26	0.11	0.10	0.53	0.00	0.41	-0.12	-0.26	-0.24	0.41	1.1890	0.0293	4.1	1.1	2.9	1.1	A-	A-	A-
MATH	6	679939	16	A-N.1.1.1	2	6243	0.25	0.35	0.25	0.25	0.15	0.00	-0.07	0.15	-0.07	-0.08	-0.02	2.8365	0.0333	9.9	1.6	9.9	2.8	A-	A-	A-
MATH	6	184241	16	A-N.3.1.2	2	6243	0.76	0.07	0.08	0.76	0.08	0.00	0.43	-0.30	-0.14	0.43	-0.24	-0.1433	0.0332	-0.7	1.0	-1.2	1.0	A-	B-	B-
MATH	6	991985	16	B-E.3.1.1	2	6243	0.37	0.37	0.16	0.29	0.18	0.00	0.33	0.33	-0.28	0.07	-0.23	2.0751	0.0302	9.7	1.1	9.9	1.3	A+	A+	A-
MATH	6	366029	16	C-G.1.1.6	2	6243	0.20	0.27	0.20	0.16	0.37	0.00	0.17	-0.25	0.17	0.18	-0.04	3.2198	0.0358	8.9	1.2	9.9	2.0	A-	B-	A-
MATH	6	832821	16	D-S.1.1.1	2	6243	0.13	0.18	0.10	0.13	0.58	0.00	0.09	-0.07	-0.05	0.09	0.02	3.8064	0.0412	5.9	1.2	9.9	3.0	A-	A-	A-
MATH	6	283431	16	C-G.1.1.2	2	6243	0.14	0.30	0.14	0.21	0.34	0.00	0.08	-0.20	0.08	0.06	0.08	3.6990	0.0401	7.3	1.2	9.9	3.0	A-	A-	A-
MATH	6	261704	16	B-E.2.1	2	6243	0.51	0.51	0.20	0.14	0.14	0.00	0.17	0.17	-0.11	-0.09	-0.02	1.2914	0.0293	9.9	1.4	9.9	1.6	A-	A-	A-
MATH	6	351542	16	A-R.1.1.1	2	6243	0.53	0.11	0.08	0.53	0.29	0.00	0.35	-0.22	-0.24	0.35	-0.09	1.2116	0.0293	9.9	1.1	8.5	1.2	A-	A-	A+
MATH	6	730525	16	A-R.1.1.4	2	6243	0.67	0.11	0.10	0.67	0.12	0.00	0.48	-0.26	-0.30	0.48	-0.16	0.4448	0.0306	-2.9	1.0	-4.1	0.9	A-	A-	A-
MATH	6	185321	16	A-N.2.1.1	2	6243	0.66	0.05	0.66	0.13	0.17	0.00	0.44	-0.19	0.44	-0.16	-0.30	0.5147	0.0304	2.2	1.0	2.8	1.1	A+	A-	A-
MATH	6	141448	17	A-R.1	2	6256	0.12	0.28	0.36	0.24	0.12	0.00	-0.01	-0.05	0.00	0.06	-0.01	3.9258	0.0431	7.1	1.2	9.9	3.7	A-	A+	A+
MATH	6	729898	17	A-N.2.1.1	1	6256	0.58	0.05	0.21	0.58	0.16	0.00	0.17	-0.11	-0.07	0.17	-0.09	0.9412	0.0292	9.9	1.3	9.9	1.5	A+	A-	A-
MATH	6	791506	17	B-E.2.1.2	2	6256	0.21	0.27	0.35	0.21	0.17	0.00	0.03	0.03	0.01	0.03	-0.09	3.0351	0.0345	9.9	1.3	9.9	2.5	A+	A-	A-
MATH	6	947120	17	C-G.1.1.1	2	6256	0.46	0.17	0.46	0.27	0.10	0.00	0.30	-0.23	0.30	-0.12	-0.03	1.5775	0.0290	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	6	613726	17	D-S.1.1.2	2	6256	0.12	0.12	0.12	0.21	0.54	0.00	0.09	0.09	-0.11	-0.28	0.25	3.9054	0.0429	6.1	1.2	9.9	2.6	A+	A+	A-
MATH	6	663009	17	D-S.1.1.4	2	6256	0.38	0.19	0.19	0.23	0.38	0.00	0.26	-0.06	-0.08	-0.18	0.26	1.9931	0.0297	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	6	151156	17	B-E.1.1.2	2	6256	0.49	0.49	0.41	0.05	0.05	0.00	0.32	0.32	-0.10	-0.26	-0.21	1.4232	0.0289	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	6	283627	17	A-N.3.2.2	2	6256	0.44	0.28	0.14	0.14	0.44	0.00	0.09	0.00	-0.08	-0.05	0.09	1.6551	0.0291	9.9	1.4	9.9	1.7	A-	A+	A+
MATH	6	932106	17	A-R.1.1.3	2	6256	0.16	0.40	0.16	0.18	0.26	0.00	0.12	-0.13	0.12	0.15	-0.07	3.4785	0.0382	6.4	1.2	9.9	2.5	A+	A-	A+
MATH	6	529131	17	C-G.1.1.4	2	6256	0.56	0.12	0.09	0.23	0.56	0.00	0.47	-0.23	-0.24	-0.21	0.47	1.0243	0.0291	-2.2	1.0	-2.9	0.9	A-	A-	B-
MATH	6	332149	18	A-R.1.1.2	2	6220	0.32	0.19	0.32	0.20	0.29	0.00	0.22	-0.10	0.22	-0.19	0.03	2.3502	0.0310	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	6	377489	18	A-N.1	2	6220	0.45	0.17	0.45	0.13	0.25	0.00	-0.06	0.01	-0.06	-0.12	0.16	1.6124	0.0292	9.9	1.7	9.9	2.1	A+	A+	A+
MATH	6	986709	18	C-G.1.1.3	2	6220	0.47	0.16	0.20	0.47	0.16	0.00	0.24	-0.16	-0.11	0.24	-0.03	1.4824	0.0291	9.9	1.3	9.9	1.3	A-	A-	A-
MATH	6	471207	18	A-N.1.1.1	2	6220	0.50	0.50	0.32	0.10	0.07	0.00	0.30	0.30	-0.18	-0.20	-0.02	1.3119	0.0290	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	6	179736	18	A-R.1.1.5	2	6220	0.44	0.14	0.17	0.25	0.44	0.00	0.35	-0.26	-0.08	-0.12	0.35	1.6517	0.0292	7.1	1.1	9.3	1.2	B-	A-	A-
MATH	6	138230	18	B-E.1.1.2	2	6220	0.58	0.58	0.20	0.14	0.08	0.00	0.44	0.44	-0.19	-0.22	-0.24	0.9048	0.0293	0.3	1.0	-1.5	1.0	A-	A-	A-
MATH	6	703957	18	B-E.2.1.4	1	6220	0.46	0.23	0.11	0.46	0.21	0.00	0.00	0.16	-0.16	0.00	-0.03	1.5571	0.0291	9.9	1.6	9.9	1.8	A+	A-	A+
MATH	6	863471	18	D-S.1	3	6220	0.44	0.24	0.44	0.19	0.13	0.00	0.25	-0.03	0.25	-0.12	-0.19	1.6320	0.0292	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	6	506675	18	D-S.1.1.2	2	6220	0.20	0.30	0.29	0.20	0.20	0.00	0.03	0.20	-0.11	-0.13	0.03	3.0881	0.0351	9.9	1.3	9.9	2.6	A+	A-	A+
MATH	6	729417	18	D-S.1.1.2	2	6220	0.64	0.18	0.12	0.05	0.64	0.00	0.44	-0.18	-0.28	-0.21	0.44	0.5634	0.0300	0.4	1.0	-2.1	1.0	A+	A-	A-
MATH	6	159354	19	A-N.3.1.1	1	6236	0.80	0.03	0.80	0.15	0.02	0.00	0.36	-0.20	0.36	-0.23	-0.19	-0.4488	0.0352	1.4	1.0	2.9	1.1	A-	C-	A-

MATH	6	549055	19	A-R.1.1.2	2	6236	0.55	0.55	0.08	0.12	0.24	0.00	0.29	0.29	-0.26	-0.11	-0.09	1.0700	0.0293	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	6	695144	19	B-E.2	2	6236	0.57	0.36	0.05	0.57	0.02	0.00	0.54	-0.39	-0.27	0.54	-0.15	0.9960	0.0294	-8.9	0.9	-6.6	0.9	A+	A-	A-
MATH	6	720504	19	C-G.1.1.3	2	6236	0.34	0.43	0.13	0.10	0.34	0.00	0.48	-0.27	-0.18	-0.11	0.48	2.2528	0.0307	-8.9	0.9	-1.8	1.0	A-	A-	B-
MATH	6	896638	19	A-R.1.1.5	2	6236	0.34	0.48	0.34	0.15	0.03	0.00	0.36	-0.26	0.36	-0.06	-0.11	2.2461	0.0307	3.6	1.1	8.7	1.2	C-	B-	A-
MATH	6	979817	19	B-E.2.1.4	2	6236	0.39	0.24	0.20	0.39	0.17	0.00	0.15	-0.02	-0.13	0.15	-0.04	1.9603	0.0299	9.9	1.4	9.9	1.7	A+	A+	A-
MATH	6	648560	19	D-S.1.1.4	2	6236	0.18	0.27	0.41	0.13	0.18	0.00	0.00	0.09	0.02	-0.13	0.00	3.3066	0.0366	9.9	1.5	9.9	2.7	A-	A-	A-
MATH	6	419253	19	C-G.1.1.6	2	6236	0.25	0.23	0.21	0.31	0.25	0.00	0.33	-0.20	-0.15	0.01	0.33	2.8106	0.0332	0.1	1.0	9.9	1.4	A+	A-	B-
MATH	6	153384	19	A-N.2.1.1	1	6236	0.56	0.20	0.56	0.07	0.16	0.00	0.42	-0.19	0.42	-0.17	-0.22	1.0175	0.0293	3.9	1.1	0.8	1.0	A+	A-	A-
MATH	6	528485	19	D-S.1.1.4	2	6236	0.26	0.21	0.26	0.33	0.21	0.00	-0.01	-0.03	-0.01	0.05	-0.02	2.7690	0.0330	9.9	1.5	9.9	2.4	A-	A-	A-
MATH	6	158579	20	A-N.1.1.1	2	6204	0.54	0.11	0.22	0.13	0.54	0.00	0.52	-0.21	-0.30	-0.20	0.52	1.0945	0.0292	-6.8	0.9	-5.4	0.9	A+	A-	A-
MATH	6	411359	20	A-N.3.1.1	1	6204	0.81	0.09	0.81	0.07	0.03	0.00	0.43	-0.28	0.43	-0.24	-0.18	-0.5465	0.0358	-3.0	0.9	-2.3	0.9	A-	A-	A-
MATH	6	186320	20	A-R.1.1.2	2	6204	0.65	0.65	0.15	0.10	0.10	0.00	0.48	0.48	-0.18	-0.33	-0.20	0.5098	0.0303	-2.8	1.0	-4.5	0.9	A-	A-	A-
MATH	6	988435	20	A-R.1.1.5	2	6204	0.20	0.36	0.27	0.16	0.20	0.00	0.09	-0.04	0.02	-0.06	0.09	3.1380	0.0356	9.9	1.3	9.9	2.3	A-	A-	A-
MATH	6	205104	20	B-E.3	2	6204	0.41	0.15	0.20	0.24	0.41	0.00	0.16	-0.08	0.03	-0.14	0.16	1.7824	0.0296	9.9	1.4	9.9	1.6	A+	A+	A-
MATH	6	488324	20	D-S.1.1.3	2	6204	0.42	0.12	0.07	0.42	0.39	0.00	0.02	-0.04	-0.20	0.02	0.11	1.7414	0.0295	9.9	1.6	9.9	1.9	A-	A-	A-
MATH	6	505649	20	D-S.1.1.1	2	6204	0.93	0.93	0.03	0.02	0.02	0.00	0.37	0.37	-0.22	-0.21	-0.18	-1.8800	0.0529	-3.0	0.9	-3.6	0.7	A+	A-	A-
MATH	6	947650	20	D-S.1.1.4	2	6204	0.42	0.42	0.17	0.25	0.17	0.00	0.12	0.12	-0.09	-0.02	-0.03	1.7667	0.0295	9.9	1.4	9.9	1.7	A-	A-	A-
MATH	6	526268	20	B-E.2	2	6204	0.37	0.19	0.36	0.37	0.08	0.00	0.30	-0.14	-0.13	0.30	-0.11	2.0148	0.0300	9.3	1.1	9.9	1.3	A-	A+	A-
MATH	6	346881	20	A-N.2.1.1	1	6204	0.55	0.13	0.55	0.23	0.08	0.00	0.24	-0.08	0.24	-0.12	-0.15	1.0458	0.0293	9.9	1.3	9.9	1.4	A+	A+	A-
MATH	7	984768	0	A.1.1.1	2	128295	0.78	0.03	0.12	0.78	0.07	0.00	0.40	-0.12	-0.21	0.40	-0.29	-0.3526	0.0075	5.5	1.0	-4.9	1.0			
MATH	7	409847	0	A.3.2.1	1	128295	0.81	0.81	0.03	0.09	0.08	0.00	0.39	0.39	-0.12	-0.19	-0.29	-0.4911	0.0077	-4.9	1.0	-1.8	1.0			
MATH	7	813466	0	A.3.1.1	2	128295	0.75	0.09	0.13	0.75	0.03	0.00	0.32	-0.10	-0.23	0.32	-0.18	-0.1429	0.0072	9.9	1.1	9.9	1.3			
MATH	7	924117	0	E.4.1.1	2	128295	0.57	0.28	0.11	0.57	0.03	0.00	0.56	-0.44	-0.16	0.56	-0.15	1.0073	0.0064	-9.9	0.9	-9.9	0.8			
MATH	7	724314	0	D.3.1.1	1	128295	0.85	0.07	0.03	0.05	0.85	0.00	0.49	-0.25	-0.23	-0.32	0.49	-1.0327	0.0088	-7.4	1.0	-9.9	0.7			
MATH	7	618060	0	D.2.2.1	2	128295	0.61	0.13	0.13	0.61	0.12	0.00	0.51	-0.30	-0.19	0.51	-0.25	0.7636	0.0065	-9.9	0.9	-9.9	0.9			
MATH	7	493311	0	D.3.1.1	2	128295	0.83	0.08	0.83	0.05	0.04	0.00	0.40	-0.14	0.40	-0.28	-0.26	-0.5806	0.0079	-9.9	0.9	-1.6	1.0			
MATH	7	378024	0	B.2.1.1	2	128295	0.63	0.18	0.10	0.63	0.09	0.00	0.49	-0.36	-0.26	0.49	-0.08	0.5692	0.0066	-9.9	1.0	-9.9	0.9			
MATH	7	465595	0	B.2.1.2	1	128295	0.62	0.12	0.18	0.62	0.08	0.00	0.47	-0.30	-0.23	0.47	-0.14	0.6263	0.0066	-3.4	1.0	-1.4	1.0			
MATH	7	766990	0	B.2.2.1	1	128295	0.79	0.09	0.06	0.05	0.79	0.00	0.55	-0.37	-0.27	-0.22	0.55	-0.4569	0.0077	-9.9	0.9	-9.9	0.7			
MATH	7	725149	0	B.2.2.2	1	128295	0.78	0.09	0.78	0.11	0.03	0.00	0.51	-0.28	0.51	-0.37	-0.09	-0.2423	0.0073	-9.9	0.9	-9.9	0.8			
MATH	7	896757	0	B.2.2.2	1	128295	0.73	0.06	0.14	0.73	0.07	0.00	0.53	-0.17	-0.37	0.53	-0.25	-0.0034	0.0071	-9.9	0.9	-9.9	0.8			
MATH	7	282881	0	D.3.1.2	2	128295	0.51	0.26	0.08	0.15	0.51	0.00	0.40	-0.15	-0.28	-0.16	0.40	1.3528	0.0064	9.9	1.1	9.9	1.1			
MATH	7	961381	0	B.2.2.1	2	128295	0.79	0.07	0.10	0.79	0.04	0.00	0.51	-0.31	-0.30	0.51	-0.19	-0.3720	0.0075	-9.9	0.9	-9.9	0.7			
MATH	7	869200	0	A.1.1.1		128295	0.89	0.04	0.03	0.89	0.03	0.00	0.44	-0.29	-0.24	0.44	-0.19	-1.2333	0.0094	-9.9	0.8	-9.9	0.6			
MATH	7	640425	0	A.1.1.1	1	128295	0.77	0.07	0.14	0.02	0.77	0.00	0.48	-0.09	-0.46	-0.14	0.48	-0.2874	0.0074	-9.9	0.9	-9.9	0.9			
MATH	7	578285	0	A.2.2.5	2	128295	0.62	0.05	0.62	0.18	0.15	0.00	0.38	-0.26	0.38	-0.30	-0.03	0.7028	0.0065	9.9	1.1	9.9	1.1			
MATH	7	845125	0	B.2.2.1	2	128295	0.57	0.14	0.17	0.13	0.57	0.00	0.53	-0.42	-0.13	-0.21	0.53	0.9607	0.0064	-9.9	0.9	-9.9	0.9			
MATH	7	181619	0	D.2.2.1	2	128295	0.73	0.11	0.10	0.73	0.06	0.00	0.52	-0.27	-0.28	0.52	-0.26	-0.0118	0.0071	-9.9	0.9	-9.9	0.8			
MATH	7	856306	0	D.3.1.1	2	128295	0.60	0.60	0.10	0.04	0.27	0.00	0.56	0.56	-0.28	-0.20	-0.35	0.8383	0.0065	-9.9	0.9	-9.9	0.8			
MATH	7	862529	0	E.3.1.1	2	128295	0.77	0.11	0.77	0.10	0.01	0.00	0.17	0.05	0.17	-0.23	-0.15	-0.2962	0.0074	9.9	1.2	9.9	2.6			
MATH	7	962688	0	E.3.1.1	2	128295	0.88	0.88	0.08	0.03	0.01	0.00	0.37	0.37	-0.25	-0.21	-0.17	-1.3064	0.0096	-0.4	1.0	1.0	1.0			
MATH	7	695146	0	D.3.1.2	2	128295	0.53	0.53	0.13	0.27	0.07	0.00	0.43	0.43	-0.14	-0.31	-0.11	1.2319	0.0064	9.0	1.0	9.9	1.0			
MATH	7	288763	0	E.3.1.2	2	128295	0.61	0.14	0.18	0.07	0.61	0.00	0.56	-0.45	-0.17	-0.19	0.56	0.7459	0.0065	-9.9	0.9	-9.9	0.8			
MATH	7	587903	0	E.3.1.3	2	128295	0.81	0.08	0.07	0.81	0.04	0.00	0.35	-0.25	-0.14	0.35	-0.15	-0.4161	0.0076	-7.1	1.0	7.1	1.1			
MATH	7	859631	0	E.4.1.1	2	128295	0.59	0.16	0.59	0.15	0.09	0.00	0.49	-0.24	0.49	-0.26	-0.20	0.7979	0.0065	-9.9	1.0	-9.9	0.9			
MATH	7	556718	0	D.2.2.1	2	128295	0.50	0.50	0.30	0.11	0.08	0.00	0.40	0.40	-0.15	-0.23	-0.22	1.3545	0.0064	9.9	1.1	9.9	1.1			
MATH	7	614460	0	D.3.1.1	2	128295	0.78	0.05	0.07	0.78	0.09	0.00	0.55	-0.26	-0.32	0.55	-0.29	-0.3333	0.0075	-9.9	0.8	-9.9	0.7			
MATH	7	661497	0	D.2.2.1	2	128295	0.76	0.76	0.07	0.13	0.04	0.00	0.50	0.50	-0.20	-0.37	-0.20	-0.1523	0.0072	-9.9	0.9	-9.9	0.8			
MATH	7	961851	0	B.2.1.1	2	128295	0.47	0.02	0.36	0.47	0.15	0.00	0.59	-0.15	-0.52	0.59	-0.06	1.4425	0.0064	-9.9	0.8	-9.9	0.8			
MATH	7	265280	0	A.1.1.1	1	128295	0.80	0.02	0.11	0.07	0.80	0.00	0.54	-0.16	-0.39	-0.28	0.54	-0.4851	0.0077	-9.9	0.8	-9.9	0.6			
MATH	7	694206	0	A.3.2.1	2	128295	0.57	0.57	0.08	0.27	0.08	0.00	0.53	0.53	-0.21	-0.35	-0.19	0.9623	0.0064	-9.9	0.9	-9.9	0.9			

MATH	7	762726	0	A.3.2.2	1	128295	0.82	0.06	0.82	0.06	0.06	0.00	0.31	-0.25	0.31	-0.10	-0.15	-0.6356	0.0080	7.7	1.0	9.9	1.3			
MATH	7	775276	0	A.3.2.1	2	128295	0.47	0.14	0.47	0.18	0.21	0.00	0.43	-0.28	0.43	-0.24	-0.06	1.5571	0.0064	6.9	1.0	9.9	1.1			
MATH	7	220604	0	A.3.2.2	1	128295	0.75	0.06	0.09	0.75	0.10	0.00	0.27	-0.16	-0.15	0.27	-0.12	-0.1921	0.0073	9.9	1.2	9.9	1.5			
MATH	7	212362	0	A.1.1.1	1	128295	0.73	0.12	0.73	0.09	0.05	0.00	0.47	-0.25	0.47	-0.36	-0.10	-0.0010	0.0071	-9.9	0.9	-9.9	0.9			
MATH	7	825165	0	A.1.1.1	1	128295	0.78	0.15	0.05	0.78	0.02	0.00	0.54	-0.44	-0.22	0.54	-0.14	-0.3745	0.0075	-9.9	0.9	-9.9	0.7			
MATH	7	563947	0	E.3.1.2	2	128295	0.75	0.19	0.03	0.03	0.75	0.00	0.48	-0.35	-0.23	-0.21	0.48	-0.0081	0.0071	-9.9	0.9	-9.9	0.8			
MATH	7	156412	0	D.3.1.2	2	128295	0.80	0.03	0.10	0.07	0.80	0.00	0.40	-0.21	-0.25	-0.19	0.40	-0.4982	0.0077	-2.1	1.0	2.2	1.0			
MATH	7	884249	0	D.3.1.2	2	128295	0.71	0.21	0.04	0.71	0.04	0.00	0.50	-0.39	-0.18	0.50	-0.17	0.1617	0.0069	-9.9	0.9	-9.9	0.8			
MATH	7	544758	0	E.3.1.3	2	128295	0.67	0.17	0.10	0.67	0.05	0.00	0.48	-0.38	-0.16	0.48	-0.15	0.3875	0.0067	-9.9	1.0	-9.9	0.9			
MATH	7	607867	0	E.4.1.1	2	128295	0.48	0.20	0.48	0.17	0.14	0.00	0.36	-0.14	0.36	-0.11	-0.23	1.3763	0.0064	9.9	1.1	9.9	1.2			
MATH	7	953328	0	E.4.1.1	2	128295	0.78	0.08	0.78	0.07	0.07	0.00	0.33	-0.13	0.33	-0.19	-0.19	-0.2564	0.0074	9.9	1.1	7.6	1.1			
MATH	7	132775	0	D.3.1.1	2	128295	0.51	0.23	0.17	0.51	0.08	0.00	0.42	-0.13	-0.25	0.42	-0.21	1.2942	0.0064	9.9	1.0	9.9	1.1			
MATH	7	424920	0	D.2.2.1	2	128295	0.49	0.22	0.49	0.17	0.12	0.00	0.45	-0.31	0.45	-0.22	-0.05	1.3086	0.0064	1.8	1.0	2.7	1.0			
MATH	7	726063	0	D.3.1.1	2	128295	0.67	0.05	0.67	0.23	0.05	0.00	0.53	-0.20	0.53	-0.36	-0.24	0.4271	0.0067	-9.9	0.9	-9.9	0.8			
MATH	7	396881	0	D.3.1.2	2	128295	0.35	0.20	0.35	0.09	0.36	0.00	0.46	-0.17	0.46	-0.05	-0.28	2.1534	0.0067	-9.9	0.9	4.6	1.0			
MATH	7	640367	0	D.2.2.1	2	128295	0.46	0.10	0.23	0.20	0.46	0.00	0.46	-0.23	-0.16	-0.23	0.46	1.3726	0.0064	-6.8	1.0	-2.3	1.0			
MATH	7	300637	0	B.2.1.2	1	128295	0.53	0.16	0.24	0.53	0.08	0.00	0.48	-0.36	-0.20	0.48	-0.08	1.1726	0.0064	-7.7	1.0	-3.1	1.0			
MATH	7	604894	0	B.2.1.2	2	128295	0.60	0.20	0.60	0.11	0.09	0.00	0.37	-0.30	0.37	-0.17	-0.02	0.7960	0.0065	9.9	1.1	9.9	1.1			
MATH	7	292260	0	B.2.2.2	2	128295	0.76	0.12	0.76	0.05	0.07	0.00	0.54	-0.28	0.54	-0.28	-0.30	-0.1700	0.0073	-9.9	0.9	-9.9	0.7			
MATH	7	310524	0	B.2.1.1	2	128295	0.54	0.09	0.54	0.16	0.22	0.00	0.40	-0.23	0.40	0.02	-0.34	1.0717	0.0064	9.9	1.1	9.9	1.1			
MATH	7	773381	0	A.2.2.5	2	128295	0.75	0.75	0.09	0.08	0.07	0.00	0.33	0.33	-0.23	-0.15	-0.13	-0.2092	0.0073	9.9	1.1	9.9	1.3			
MATH	7	962921	0	A.2.2.4	1	128295	0.61	0.26	0.61	0.06	0.06	0.00	0.45	-0.27	0.45	-0.30	-0.11	0.5962	0.0066	7.5	1.0	1.0	1.0			
MATH	7	576228	0	A.2.1.1	1	128295	0.72	0.72	0.15	0.07	0.05	0.00	0.27	0.27	-0.13	-0.13	-0.18	0.0407	0.0070	9.9	1.2	9.9	1.4			
MATH	7	511630	0	A.1.1.1	1	128295	0.45	0.10	0.45	0.38	0.07	0.00	0.43	-0.16	0.43	-0.21	-0.24	1.5200	0.0064	2.6	1.0	8.1	1.0			
MATH	7	913171	0	D.3.1.2	2	128295	0.69	0.69	0.05	0.19	0.07	0.00	0.42	0.42	-0.30	-0.23	-0.14	0.3166	0.0068	3.4	1.0	-5.9	1.0			
MATH	7	374399	0	D.2.2.1	2	128295	0.58	0.58	0.11	0.21	0.10	0.00	0.41	0.41	-0.27	-0.12	-0.23	0.9424	0.0064	9.9	1.1	7.5	1.0			
MATH	7	657157	0	D.2.2.1	2	128295	0.50	0.12	0.11	0.27	0.50	0.00	0.45	-0.21	-0.15	-0.25	0.45	1.2936	0.0064	-2.1	1.0	1.5	1.0			
MATH	7	299437	0	A.3.1.1	2	128295	0.69	0.14	0.69	0.11	0.06	0.00	0.33	-0.27	0.33	-0.14	-0.07	0.2289	0.0068	9.9	1.1	9.9	1.2			
MATH	7	639934	1	D.3.1.2	2	13219	0.40	0.27	0.14	0.20	0.40	0.00	0.17	-0.04	-0.03	-0.13	0.17	1.8226	0.0204	9.9	1.4	9.9	1.5	A-	A-	A-
MATH	7	597701	1	A.2.1.1	1	13219	0.78	0.78	0.06	0.12	0.03	0.00	0.33	0.33	-0.24	-0.13	-0.18	-0.4036	0.0233	5.2	1.1	6.2	1.2	A+	A-	A+
MATH	7	287364	1	A-R.1	2	6821	0.57	0.12	0.17	0.57	0.14	0.00	0.51	-0.17	-0.30	0.51	-0.23	0.8359	0.0279	-5.7	0.9	-5.6	0.9	A-	A-	A-
MATH	7	539151	1	B-E.1.1.1	1	6821	0.26	0.18	0.26	0.32	0.24	0.00	0.12	0.01	0.12	-0.13	0.01	2.5642	0.0312	9.9	1.3	9.9	1.9	A-	A+	A-
MATH	7	492791	1	B-E.2.2.1	2	6821	0.61	0.06	0.61	0.08	0.25	0.00	0.49	-0.26	0.49	-0.24	-0.25	0.5987	0.0283	-3.5	1.0	-5.7	0.9	A-	A-	A-
MATH	7	838248	1	A-N.1.1.3	1	6821	0.45	0.12	0.25	0.45	0.17	0.00	0.34	-0.02	-0.18	0.34	-0.20	1.4813	0.0279	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	7	529316	1	D-S.1.1.2	1	6821	0.63	0.08	0.12	0.63	0.17	0.00	0.41	-0.25	-0.02	0.41	-0.34	0.5063	0.0284	2.9	1.0	7.6	1.2	A+	A+	A-
MATH	7	871771	1	A-R.1.1.5	2	6821	0.27	0.34	0.26	0.13	0.27	0.00	0.14	-0.04	-0.02	-0.10	0.14	2.4827	0.0308	9.9	1.3	9.9	1.8	A-	A-	A+
MATH	7	869367	1	B-E.2.2.2	2	6821	0.25	0.34	0.30	0.25	0.11	0.00	0.00	0.18	-0.09	0.00	-0.15	2.6340	0.0315	9.9	1.4	9.9	2.3	A+	A+	A+
MATH	7	148582	1	C-G.2.1.2	2	6821	0.40	0.22	0.28	0.40	0.09	0.00	0.30	-0.26	-0.05	0.30	-0.06	1.7278	0.0283	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	344217	1	C-G.1.1.3	2	6821	0.14	0.21	0.25	0.40	0.14	0.00	0.10	-0.18	-0.03	0.10	0.10	3.5135	0.0383	8.4	1.2	9.9	2.3	A-	A-	A-
MATH	7	756276	1	D-S.3.2.1	2	6821	0.62	0.09	0.19	0.10	0.62	0.00	0.42	-0.30	-0.14	-0.21	0.42	0.5635	0.0283	3.0	1.0	2.2	1.1	A+	A-	A-
MATH	7	699865	2	B.2.2.1	2	19188	0.80	0.07	0.06	0.07	0.80	0.00	0.51	-0.21	-0.30	-0.31	0.51	-0.5024	0.0200	-9.9	0.9	-9.9	0.7	A-	A-	A-
MATH	7	647149	2	D.3.1.1	2	19188	0.61	0.13	0.61	0.08	0.18	0.00	0.54	-0.31	0.54	-0.23	-0.24	0.7502	0.0169	-9.9	0.9	-9.9	0.9	A+	A-	A-
MATH	7	577153	2	A-R.1.1.1	2	6413	0.38	0.30	0.15	0.17	0.38	0.00	0.40	-0.01	-0.23	-0.28	0.40	1.9273	0.0296	4.8	1.1	6.3	1.1	A-	A-	A-
MATH	7	313524	2	A-N.1.1.2	1	6413	0.31	0.31	0.23	0.18	0.28	0.00	0.33	0.33	-0.11	-0.11	-0.14	2.3511	0.0309	5.7	1.1	9.9	1.4	A-	A-	A-
MATH	7	562948	2	D-S.1.1.2	2	6413	0.38	0.34	0.19	0.38	0.09	0.00	0.36	-0.05	-0.28	0.36	-0.14	1.9247	0.0296	7.5	1.1	9.9	1.2	A-	A-	A-
MATH	7	837348	2	A-R.1.1.3	1	6413	0.56	0.14	0.13	0.56	0.16	0.00	0.28	-0.08	-0.10	0.28	-0.22	0.9512	0.0289	9.9	1.2	9.9	1.4	A+	A-	A+
MATH	7	413005	2	B-E.2.2.2	2	6413	0.31	0.14	0.10	0.46	0.31	0.00	0.09	-0.16	-0.15	0.11	0.09	2.3578	0.0309	9.9	1.4	9.9	2.0	A+	A-	A-
MATH	7	596708	2	C-G.2.1.2	1	6413	0.83	0.04	0.83	0.06	0.06	0.00	0.40	-0.21	0.40	-0.21	-0.22	-0.7334	0.0363	-2.1	1.0	-0.4	1.0	A-	A-	A-
MATH	7	461053	2	B-E.2.1.1	2	6413	0.51	0.19	0.17	0.14	0.51	0.00	0.50	-0.24	-0.24	-0.19	0.50	1.2539	0.0288	-3.9	1.0	-3.1	0.9	A-	A+	A-
MATH	7	420842	2	C-G.1.1.3	2	6413	0.40	0.40	0.27	0.20	0.13	0.00	0.21	0.21	0.00	-0.15	-0.13	1.8325	0.0294	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	7	572371	2	D-S.3.2.1	2	6413	0.63	0.16	0.12	0.09	0.63	0.00	0.47	-0.15	-0.32	-0.23	0.47	0.5921	0.0295	-1.0	1.0	0.3	1.0	A-	B-	B-

MATH	7	609158	2	B-E.1	2	6413	0.36	0.36	0.13	0.17	0.33	0.00	0.22	0.22	-0.11	-0.14	-0.03	2.0307	0.0299	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	7	539072	3	A-N.1.1.1	1	6383	0.55	0.55	0.12	0.23	0.10	0.00	0.46	0.46	-0.36	-0.20	-0.08	1.0845	0.0287	-0.5	1.0	-2.2	1.0	A-	A-	A-
MATH	7	220095	3	A-R.1.1.3	2	6383	0.49	0.49	0.21	0.25	0.05	0.00	0.25	0.25	-0.15	-0.07	-0.17	1.3793	0.0286	9.9	1.3	9.9	1.3	A+	A+	A-
MATH	7	205998	3	B-E.2.2.2	2	6383	0.28	0.28	0.44	0.15	0.13	0.00	0.07	0.07	0.33	-0.30	-0.25	2.5952	0.0315	9.9	1.4	9.9	2.0	A-	A+	A-
MATH	7	785399	3	C-G.1.1.1	2	6383	0.21	0.21	0.28	0.13	0.37	0.00	-0.03	-0.03	-0.15	-0.05	0.20	3.0136	0.0339	9.9	1.5	9.9	2.5	A+	A-	A-
MATH	7	724630	3	A-R.1.1	2	6383	0.23	0.16	0.13	0.47	0.23	0.00	0.21	-0.02	-0.26	0.02	0.21	2.8805	0.0330	9.6	1.2	9.9	1.6	A-	A+	A-
MATH	7	625467	3	D-S.1.1.2	2	6383	0.49	0.27	0.14	0.49	0.10	0.00	0.33	-0.10	-0.22	0.33	-0.15	1.4218	0.0286	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	7	328179	3	B-E.2.1.1	2	6383	0.27	0.20	0.30	0.23	0.27	0.00	0.28	-0.11	-0.16	-0.02	0.28	2.6061	0.0315	6.4	1.1	9.9	1.4	A+	A-	A-
MATH	7	929899	3	C-G.1.1.3	2	6383	0.38	0.22	0.38	0.17	0.24	0.00	0.25	-0.08	0.25	-0.21	-0.02	1.9802	0.0293	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	7	610404	3	D-S.3.2.1	2	6383	0.63	0.20	0.12	0.63	0.05	0.00	0.53	-0.41	-0.17	0.53	-0.16	0.6770	0.0293	-7.8	0.9	-5.2	0.9	A+	A-	A-
MATH	7	632765	3	B-E.1	2	6383	0.32	0.24	0.32	0.34	0.10	0.00	0.13	-0.02	0.13	-0.03	-0.12	2.3401	0.0304	9.9	1.3	9.9	1.7	A-	A-	A+
MATH	7	401175	4	E.3.1.2	2	19168	0.62	0.04	0.62	0.06	0.28	0.00	0.34	-0.26	0.34	-0.21	-0.14	0.6780	0.0168	9.9	1.1	9.9	1.2	A+	A-	A-
MATH	7	130947	4	D.2.2.1	2	19168	0.34	0.34	0.27	0.23	0.16	0.00	0.37	0.37	-0.14	-0.10	-0.19	2.2078	0.0174	4.8	1.0	9.9	1.2	A-	A-	A-
MATH	7	165023	4	A-N.1.1.3	1	6371	0.26	0.26	0.24	0.30	0.20	0.00	0.09	0.09	0.07	-0.08	-0.08	2.6466	0.0321	9.9	1.3	9.9	1.9	A+	A+	A+
MATH	7	503222	4	A-N.1.1.2	2	6371	0.25	0.25	0.38	0.12	0.24	0.00	0.18	0.18	-0.11	-0.13	0.05	2.6694	0.0322	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	7	488059	4	A-R.1.1.1	1	6371	0.39	0.30	0.23	0.39	0.08	0.00	0.31	-0.15	-0.11	0.31	-0.12	1.8890	0.0293	9.6	1.1	9.9	1.3	A-	A-	A+
MATH	7	383445	4	C-G.2.1.2	2	6371	0.44	0.20	0.11	0.24	0.44	0.00	0.38	-0.14	-0.32	-0.08	0.38	1.5860	0.0287	5.7	1.1	5.4	1.1	A-	A-	A-
MATH	7	423649	4	B-E.1.1.1	2	6371	0.33	0.33	0.33	0.18	0.15	0.00	0.23	0.23	-0.06	-0.14	-0.06	2.1879	0.0301	9.9	1.2	9.9	1.5	A+	A+	A+
MATH	7	268526	4	B-E.2.2.1	1	6371	0.39	0.26	0.18	0.17	0.39	0.00	0.36	-0.26	-0.09	-0.07	0.36	1.8667	0.0292	5.5	1.1	8.5	1.2	A+	A-	A+
MATH	7	187765	4	C-G.1.1.3	2	6371	0.19	0.17	0.41	0.19	0.22	0.00	-0.05	0.03	0.01	-0.05	0.02	3.0998	0.0350	9.9	1.4	9.9	2.6	A-	A-	A+
MATH	7	251779	4	A-R.1.1.5	2	6371	0.25	0.26	0.25	0.23	0.26	0.00	0.09	-0.13	0.09	0.01	0.03	2.7165	0.0325	9.9	1.3	9.9	1.9	A-	A+	A+
MATH	7	137863	4	A-R.1.1.3	2	6371	0.54	0.06	0.54	0.31	0.08	0.00	0.30	-0.23	0.30	-0.06	-0.23	1.0861	0.0286	9.9	1.2	9.9	1.2	A-	A+	A+
MATH	7	828560	4	D-S.1.1.1	2	6371	0.55	0.09	0.18	0.55	0.18	0.00	0.27	-0.17	-0.19	0.27	-0.03	1.0223	0.0286	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	7	117162	5	D.3.1.2	2	12799	0.71	0.71	0.07	0.18	0.04	0.00	0.37	0.37	-0.25	-0.15	-0.22	0.1806	0.0219	6.9	1.1	8.6	1.2	A-	A-	A-
MATH	7	664667	5	B.2.1.2	1	12799	0.64	0.23	0.64	0.07	0.06	0.00	0.48	-0.33	0.48	-0.25	-0.12	0.5581	0.0210	-2.8	1.0	-2.1	1.0	A+	A-	A-
MATH	7	877277	5	A-R.1.1.4	2	6406	0.20	0.21	0.20	0.45	0.13	0.00	0.06	-0.03	0.06	0.05	-0.11	3.1306	0.0349	9.9	1.3	9.9	2.5	A-	A-	A-
MATH	7	921595	5	A-N.1.1.2	2	6406	0.60	0.12	0.60	0.20	0.08	0.00	0.43	-0.18	0.43	-0.21	-0.26	0.7799	0.0292	2.4	1.0	0.3	1.0	A-	A-	A+
MATH	7	123946	5	A-N.1.1.3	2	6406	0.42	0.18	0.15	0.42	0.25	0.00	0.39	-0.15	-0.21	0.39	-0.14	1.7777	0.0291	5.5	1.1	7.8	1.2	A-	A-	A-
MATH	7	395194	5	B-E.1.1.1	2	6406	0.58	0.21	0.58	0.10	0.11	0.00	0.31	-0.07	0.31	-0.19	-0.22	0.9325	0.0289	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	7	437944	5	A-R.1.1.1	2	6406	0.56	0.31	0.06	0.07	0.56	0.00	0.40	-0.17	-0.29	-0.19	0.40	1.0326	0.0288	6.3	1.1	4.8	1.1	A+	A-	A+
MATH	7	824338	5	D-S.1.1.1	2	6406	0.54	0.34	0.04	0.54	0.08	0.00	0.27	-0.07	-0.25	0.27	-0.19	1.1494	0.0288	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	7	572971	5	B-E.2.2.1	2	6406	0.57	0.10	0.57	0.12	0.20	0.00	0.48	-0.15	0.48	-0.30	-0.22	0.9484	0.0289	-2.7	1.0	-3.8	0.9	A-	A-	A-
MATH	7	380817	5	B-E.2.2.2	2	6406	0.59	0.09	0.11	0.21	0.59	0.00	0.41	-0.27	-0.23	-0.13	0.41	0.8611	0.0290	4.3	1.1	1.6	1.0	A-	B-	A-
MATH	7	182431	5	D-S.3.2.2	2	6406	0.75	0.16	0.75	0.04	0.05	0.00	0.60	-0.48	0.60	-0.18	-0.23	-0.0803	0.0321	-9.9	0.8	-9.9	0.7	A+	B-	A-
MATH	7	191114	5	C-G.1.1.2	1	6406	0.69	0.09	0.19	0.69	0.02	0.00	0.23	-0.15	-0.08	0.23	-0.20	0.2661	0.0306	9.9	1.2	9.9	1.6	A+	A-	A-
MATH	7	623395	6	A-N.1.1.1	1	6405	0.34	0.25	0.27	0.14	0.34	0.00	0.47	-0.44	-0.05	-0.03	0.47	2.1721	0.0301	-6.9	0.9	0.2	1.0	A-	A-	A-
MATH	7	223138	6	A-R.1.1.1	2	6405	0.33	0.06	0.33	0.12	0.49	0.00	0.35	-0.11	0.35	-0.25	-0.11	2.2663	0.0304	4.2	1.1	9.9	1.3	A+	A-	A-
MATH	7	448273	6	C-G.2.1.2	2	6405	0.58	0.58	0.10	0.20	0.12	0.00	0.34	0.34	-0.24	-0.05	-0.23	0.8780	0.0289	9.9	1.2	9.9	1.3	A+	B-	A-
MATH	7	868906	6	B-E.1.1.1	2	6405	0.28	0.28	0.18	0.37	0.16	0.00	0.30	0.30	-0.14	-0.03	-0.17	2.5275	0.0315	4.7	1.1	9.9	1.4	A-	A-	A-
MATH	7	529073	6	D-S.1.1.2	2	6405	0.27	0.60	0.05	0.07	0.27	0.00	0.35	-0.22	-0.14	-0.08	0.35	2.5764	0.0317	-1.1	1.0	9.9	1.4	A-	A-	A-
MATH	7	679589	6	A-R.1.1.5	2	6405	0.57	0.57	0.16	0.18	0.09	0.00	0.37	0.37	-0.29	-0.02	-0.24	0.9570	0.0288	8.4	1.1	9.9	1.3	A-	A-	A-
MATH	7	597122	6	A-R.1.1.3	2	6405	0.44	0.19	0.44	0.23	0.14	0.00	0.38	-0.38	0.38	0.04	-0.15	1.6202	0.0289	8.0	1.1	8.2	1.2	A+	A-	A-
MATH	7	694310	6	B-E.2.2.2	2	6405	0.51	0.30	0.05	0.13	0.51	0.00	0.42	-0.16	-0.21	-0.26	0.42	1.2476	0.0286	3.8	1.1	3.7	1.1	A+	A-	A-
MATH	7	268384	6	C-G.1.1.3	2	6405	0.39	0.15	0.39	0.39	0.07	0.00	0.04	-0.14	0.04	0.08	-0.03	1.9003	0.0294	9.9	1.5	9.9	1.8	A-	A+	A+
MATH	7	255987	6	A-N.1.1.3	2	6405	0.39	0.39	0.19	0.33	0.09	0.00	0.28	0.28	-0.15	-0.05	-0.19	1.8797	0.0293	9.9	1.2	9.9	1.4	A+	A+	A-
MATH	7	788527	7	A.2.2.4	1	12786	0.84	0.05	0.03	0.84	0.07	0.00	0.43	-0.12	-0.21	0.43	-0.35	-0.8307	0.0265	-5.6	0.9	-3.1	0.9	A+	A-	A-
MATH	7	139076	7	E.4.1.1	2	12786	0.48	0.19	0.48	0.21	0.12	0.00	0.40	-0.20	0.40	-0.18	-0.16	1.4123	0.0202	5.5	1.1	6.5	1.1	A-	A+	A-
MATH	7	884191	7	B-E.2.3.1	2	6417	0.36	0.16	0.25	0.23	0.36	0.00	0.25	-0.08	-0.04	-0.17	0.25	2.0633	0.0297	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	7	981204	7	C-G.2.1.2	2	6417	0.32	0.24	0.21	0.32	0.23	0.00	0.26	-0.05	-0.14	0.26	-0.11	2.2856	0.0304	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	7	971855	7	A-R.1.1.4	2	6417	0.60	0.12	0.11	0.60	0.16	0.00	0.48	-0.21	-0.30	0.48	-0.20	0.7779	0.0290	-3.1	1.0	-3.8	0.9	A+	A-	A-
MATH	7	877849	7	A-N.1.1.2	2	6417	0.30	0.30	0.11	0.40	0.18	0.00	0.27	0.27	-0.21	0.01	-0.16	2.3988	0.0308	8.7	1.1	9.9	1.5	B-	A-	A-

MATH	7	161615	7	A-N.1.1.2	2	6417	0.20	0.10	0.49	0.20	0.20	0.00	0.38	-0.02	-0.07	-0.27	0.38	3.1050	0.0348	-4.1	0.9	3.1	1.1	A-	A-	A-
MATH	7	805483	7	D-S.1	2	6417	0.76	0.08	0.76	0.06	0.10	0.00	0.32	-0.18	0.32	-0.22	-0.12	-0.1657	0.0324	5.5	1.1	4.0	1.2	A+	A-	A-
MATH	7	528509	7	B-E.1.1.1	2	6417	0.21	0.16	0.21	0.29	0.34	0.00	0.02	-0.16	0.02	-0.02	0.13	3.0218	0.0342	9.9	1.4	9.9	2.5	A-	A-	A+
MATH	7	792789	7	B-E.2.2.1	2	6417	0.52	0.14	0.52	0.20	0.14	0.00	0.51	-0.10	0.51	-0.35	-0.23	1.2160	0.0286	-6.1	0.9	-5.0	0.9	A-	A-	A+
MATH	7	497580	7	C-G.1.1.2	2	6417	0.31	0.27	0.19	0.31	0.23	0.00	0.00	0.15	-0.01	0.00	-0.15	2.3292	0.0305	9.9	1.5	9.9	2.1	A-	A+	A+
MATH	7	427122	7	A-R.1.1.1	2	6417	0.32	0.17	0.30	0.21	0.32	0.00	0.25	-0.10	-0.21	0.05	0.25	2.2948	0.0304	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	7	477095	8	D.2.2.1	2	12762	0.70	0.11	0.11	0.08	0.70	0.00	0.57	-0.31	-0.30	-0.26	0.57	0.2208	0.0218	-9.9	0.9	-9.9	0.7	A+	A+	A+
MATH	7	356004	8	B.2.1.1	2	12762	0.26	0.29	0.26	0.13	0.32	0.00	0.30	-0.11	0.30	-0.17	-0.04	2.7525	0.0230	5.8	1.1	9.9	1.5	A-	B-	A-
MATH	7	999180	8	D-S.2.1.1	2	6422	0.22	0.35	0.26	0.18	0.22	0.00	0.14	0.11	-0.18	-0.07	0.14	2.9951	0.0339	9.9	1.3	9.9	2.0	A-	A-	A-
MATH	7	282252	8	A-R.1.1.2	2	6422	0.14	0.07	0.69	0.14	0.10	0.00	-0.05	-0.19	0.27	-0.05	-0.19	3.6744	0.0397	9.9	1.4	9.9	3.4	A-	A-	A-
MATH	7	785136	8	A-N.1.1.1	2	6422	0.44	0.20	0.18	0.18	0.44	0.00	0.28	-0.11	-0.17	-0.08	0.28	1.6609	0.0289	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	7	198811	8	A-R.1.1.6	2	6422	0.31	0.14	0.36	0.31	0.20	0.00	0.42	-0.18	-0.25	0.42	-0.03	2.4069	0.0309	-3.4	1.0	3.5	1.1	A-	A-	A-
MATH	7	671410	8	C-G.1.1.2	2	6422	0.64	0.64	0.12	0.13	0.10	0.00	0.37	0.37	-0.20	-0.16	-0.18	0.5950	0.0295	7.3	1.1	9.7	1.3	A-	A-	A-
MATH	7	989339	8	A-R.1.1.4	2	6422	0.61	0.07	0.15	0.17	0.61	0.00	0.49	-0.26	-0.12	-0.33	0.49	0.7620	0.0292	-2.7	1.0	-1.5	1.0	A+	A+	A+
MATH	7	217559	8	B-E.1.1.1	1	6422	0.44	0.44	0.32	0.09	0.15	0.00	0.24	0.24	-0.21	-0.13	0.04	1.6316	0.0289	9.9	1.3	9.9	1.4	A+	A+	A+
MATH	7	275530	8	B-E.2.3.1	2	6422	0.77	0.77	0.10	0.06	0.07	0.00	0.48	0.48	-0.21	-0.27	-0.28	-0.2106	0.0328	-4.9	0.9	-4.1	0.9	A+	A-	A-
MATH	7	771431	8	C-G.2.1.1	2	6422	0.24	0.42	0.24	0.16	0.19	0.00	0.25	-0.06	0.25	-0.26	0.05	2.8549	0.0331	5.6	1.1	9.9	1.7	A-	A-	A-
MATH	7	639068	8	A-N.1.1.1	1	6422	0.67	0.08	0.14	0.67	0.10	0.00	0.50	-0.28	-0.28	0.50	-0.19	0.3764	0.0301	-5.2	0.9	-5.9	0.9	A+	A+	A+
MATH	7	380081	9	E.3.1.1	2	12791	0.73	0.15	0.10	0.73	0.03	0.00	0.60	-0.47	-0.23	0.60	-0.18	0.0497	0.0222	-9.9	0.8	-9.9	0.7	A+	A-	B-
MATH	7	105804	9	B.2.2.2	2	12791	0.78	0.78	0.09	0.05	0.07	0.00	0.57	0.57	-0.30	-0.28	-0.33	-0.3426	0.0238	-9.9	0.8	-9.9	0.6	A-	A-	A-
MATH	7	150594	9	A-R.1.1.2	2	6409	0.44	0.44	0.32	0.10	0.15	0.00	0.51	0.51	-0.30	-0.21	-0.15	1.6773	0.0289	-7.8	0.9	-3.3	0.9	A-	A+	A-
MATH	7	694761	9	A-N.1.1.3	2	6409	0.35	0.21	0.31	0.35	0.13	0.00	0.26	-0.05	-0.16	0.26	-0.09	2.1717	0.0300	9.9	1.2	9.9	1.4	A+	A-	A+
MATH	7	683628	9	A-R.1.1.4	2	6409	0.65	0.14	0.65	0.15	0.07	0.00	0.51	-0.28	0.51	-0.23	-0.26	0.5457	0.0297	-5.6	0.9	-5.5	0.9	A+	A+	A-
MATH	7	852352	9	C-G.2.1.1	2	6409	0.30	0.30	0.39	0.13	0.18	0.00	0.28	0.28	-0.02	-0.18	-0.15	2.4392	0.0309	8.0	1.1	9.9	1.4	A+	A+	A-
MATH	7	200830	9	B-E.1.1.1	1	6409	0.19	0.14	0.15	0.51	0.19	0.00	0.04	-0.07	-0.08	0.07	0.04	3.1936	0.0353	9.9	1.4	9.9	2.4	A+	A+	A+
MATH	7	470907	9	B-E.2.3.1	2	6409	0.37	0.23	0.11	0.28	0.37	0.00	0.29	-0.03	-0.26	-0.09	0.29	2.0132	0.0295	9.9	1.2	9.9	1.4	A+	A-	A-
MATH	7	816196	9	B-E.2.2.1	2	6409	0.17	0.10	0.62	0.12	0.17	0.00	0.04	-0.10	0.20	-0.24	0.04	3.4138	0.0372	9.9	1.2	9.9	2.8	A-	A-	A-
MATH	7	809250	9	C-G.2.2.2	2	6409	0.36	0.21	0.29	0.36	0.13	0.00	0.36	-0.29	-0.13	0.36	0.01	2.0791	0.0297	4.9	1.1	9.7	1.2	A-	A-	A-
MATH	7	602230	9	D-S.2.1.1	2	6409	0.20	0.26	0.10	0.20	0.43	0.00	0.11	-0.33	-0.07	0.11	0.25	3.1066	0.0347	9.9	1.3	9.9	2.1	A-	A+	A-
MATH	7	202373	9	A-N.1.1.1	2	6409	0.87	0.87	0.06	0.04	0.03	0.00	0.43	0.43	-0.26	-0.23	-0.23	-1.0451	0.0399	-4.5	0.9	-5.3	0.7	C+	A-	A-
MATH	7	883492	10	E.3.1.3	2	12809	0.69	0.13	0.69	0.06	0.12	0.00	0.58	-0.35	0.58	-0.16	-0.35	0.2914	0.0215	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	7	622721	10	A.2.2.5	2	12809	0.76	0.09	0.76	0.09	0.06	0.00	0.56	-0.28	0.56	-0.30	-0.32	-0.2171	0.0232	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	7	327284	10	D-S.1	2	6408	0.39	0.17	0.17	0.26	0.39	0.00	0.36	-0.18	-0.18	-0.09	0.36	1.9172	0.0292	5.1	1.1	8.9	1.2	A-	A-	A-
MATH	7	766567	10	A-N.1.1.2	1	6408	0.38	0.38	0.37	0.05	0.19	0.00	0.42	0.42	-0.13	-0.14	-0.28	1.9428	0.0292	1.0	1.0	4.3	1.1	B-	A-	A-
MATH	7	446184	10	B-E.2.3.1	2	6408	0.60	0.10	0.13	0.60	0.17	0.00	0.38	-0.15	-0.27	0.38	-0.13	0.8040	0.0290	7.0	1.1	4.6	1.1	A-	A-	A-
MATH	7	217598	10	B-E.1.1.1	1	6408	0.22	0.23	0.39	0.22	0.16	0.00	0.01	0.00	0.08	0.01	-0.11	2.9569	0.0336	9.9	1.4	9.9	2.3	A-	A-	A+
MATH	7	347468	10	B-E.2.2.1	2	6408	0.30	0.12	0.18	0.40	0.30	0.00	-0.02	-0.13	-0.07	0.17	-0.02	2.4206	0.0307	9.9	1.5	9.9	2.1	A+	A-	A+
MATH	7	305309	10	C-G.1.1.2	2	6408	0.09	0.38	0.09	0.44	0.09	0.00	-0.12	-0.03	-0.15	0.18	-0.12	4.2102	0.0470	8.1	1.3	9.9	4.2	A-	A-	A+
MATH	7	233234	10	C-G.2.1.1	2	6408	0.19	0.43	0.19	0.28	0.10	0.00	-0.16	0.19	-0.16	0.00	-0.12	3.1876	0.0353	9.9	1.5	9.9	3.2	A-	A-	A+
MATH	7	374942	10	A-R.1.1.5	2	6408	0.37	0.32	0.15	0.37	0.15	0.00	0.25	0.09	-0.30	0.25	-0.14	2.0064	0.0294	9.9	1.2	9.9	1.5	A-	A+	A+
MATH	7	308205	10	A-R.1.1.1	2	6408	0.37	0.27	0.37	0.16	0.20	0.00	0.31	-0.16	0.31	-0.01	-0.19	2.0013	0.0294	9.9	1.1	9.9	1.3	A-	A-	A-
MATH	7	682675	10	A-N.1.1.1	1	6408	0.69	0.08	0.12	0.11	0.69	0.00	0.41	-0.18	-0.25	-0.20	0.41	0.2864	0.0304	2.0	1.0	-0.6	1.0	A+	A+	A+
MATH	7	305012	11	A-N.1.1.1	2	6393	0.68	0.08	0.68	0.11	0.13	0.00	0.55	-0.26	0.55	-0.31	-0.26	0.3661	0.0302	-9.5	0.9	-9.0	0.8	A-	B-	A-
MATH	7	360355	11	B-E.2.1.1	2	6393	0.54	0.08	0.19	0.54	0.19	0.00	0.32	-0.13	-0.21	0.32	-0.10	1.1168	0.0289	9.9	1.2	8.9	1.2	A-	A+	A-
MATH	7	400435	11	C-G.1.1.1	2	6393	0.31	0.30	0.23	0.17	0.31	0.00	0.34	-0.32	0.00	-0.02	0.34	2.3979	0.0309	3.1	1.1	9.9	1.3	A-	A-	B-
MATH	7	809384	11	A-R.1.1.2	2	6393	0.70	0.04	0.17	0.70	0.09	0.00	0.43	-0.22	-0.31	0.43	-0.12	0.2334	0.0307	1.2	1.0	-0.1	1.0	A+	A+	A+
MATH	7	972126	11	A-N.1.1.1	1	6393	0.68	0.11	0.10	0.68	0.11	0.00	0.50	-0.24	-0.25	0.50	-0.26	0.3524	0.0303	-4.8	0.9	-3.2	0.9	A-	A-	A-
MATH	7	817703	11	B-E.2.3.1	2	6393	0.47	0.47	0.06	0.40	0.08	0.00	0.42	0.42	-0.28	-0.16	-0.23	1.5103	0.0289	4.1	1.1	5.0	1.1	A+	A-	A-
MATH	7	704010	11	D-S.3	1	6393	0.34	0.18	0.34	0.29	0.19	0.00	0.12	-0.06	0.12	-0.04	-0.03	2.2254	0.0303	9.9	1.4	9.9	1.8	A-	A-	A-
MATH	7	702280	11	C-G.2	2	6393	0.34	0.21	0.34	0.33	0.12	0.00	0.04	-0.10	0.04	0.08	-0.05	2.2107	0.0303	9.9	1.5	9.9	2.0	A-	A-	A-
MATH	7	150803	11	B-E.2.2.1	2	6393	0.30	0.11	0.11	0.30	0.48	0.00	0.30	-0.28	-0.14	0.30	-0.01	2.4539	0.0312	7.7	1.1	9.9	1.5	B-	A-	B-

MATH	7	296220	11	A-R.1.1.4	2	6393	0.17	0.16	0.35	0.32	0.17	0.00	0.23	-0.07	-0.21	0.09	0.23	3.3872	0.0371	2.5	1.1	9.9	1.9	A-	A-	A-
MATH	7	962649	12	A-N.1.1.3	2	6401	0.53	0.17	0.53	0.15	0.15	0.00	0.42	-0.13	0.42	-0.24	-0.21	1.1616	0.0288	3.3	1.0	2.0	1.0	A-	A-	A-
MATH	7	580325	12	A-R.1.1.6	2	6401	0.39	0.17	0.18	0.26	0.39	0.00	0.49	-0.22	-0.20	-0.18	0.49	1.9074	0.0295	-9.0	0.9	0.7	1.0	B-	A-	A-
MATH	7	917521	12	A-R.1.1.4	2	6401	0.44	0.44	0.13	0.20	0.23	0.00	0.46	0.46	-0.11	-0.26	-0.20	1.6152	0.0290	-1.3	1.0	0.7	1.0	A-	A+	A+
MATH	7	322702	12	B-E.2.3.1	2	6401	0.34	0.16	0.27	0.34	0.23	0.00	0.21	-0.13	-0.09	0.21	-0.02	2.1911	0.0302	9.9	1.2	9.9	1.6	A-	A+	A-
MATH	7	159702	12	A-R.1.1.4	1	6401	0.68	0.13	0.12	0.68	0.06	0.00	0.52	-0.30	-0.25	0.52	-0.24	0.3165	0.0303	-7.4	0.9	-6.8	0.8	A+	A+	A+
MATH	7	766714	12	B-E.2.2.1	2	6401	0.31	0.44	0.31	0.08	0.17	0.00	0.26	-0.03	0.26	-0.22	-0.12	2.3750	0.0309	9.9	1.2	9.9	1.5	A-	A-	A+
MATH	7	958869	12	A-N.1.1.1	2	6401	0.48	0.48	0.10	0.10	0.32	0.00	0.39	0.39	-0.26	-0.25	-0.09	1.4079	0.0288	6.6	1.1	6.8	1.1	A+	A-	A+
MATH	7	215213	12	C-G.2.2.2	2	6401	0.29	0.20	0.26	0.29	0.25	0.00	0.08	0.03	-0.05	0.08	-0.05	2.5100	0.0315	9.9	1.4	9.9	2.0	A-	A-	A-
MATH	7	556221	12	D-S.2.1.1	2	6401	0.42	0.12	0.35	0.10	0.42	0.00	0.27	-0.10	-0.10	-0.17	0.27	1.7079	0.0291	9.9	1.3	9.9	1.4	A-	A+	A+
MATH	7	352345	12	C-G.2	2	6401	0.17	0.22	0.17	0.45	0.16	0.00	-0.06	0.00	-0.06	0.11	-0.09	3.3792	0.0371	9.9	1.4	9.9	3.1	A-	A+	A+
MATH	7	936906	13	A-N.1.1.1	1	6340	0.41	0.14	0.41	0.35	0.09	0.00	0.24	-0.09	0.24	-0.10	-0.12	1.7927	0.0292	9.9	1.3	9.9	1.4	A-	A+	A-
MATH	7	304630	13	A-R.1.1.2	2	6340	0.44	0.32	0.44	0.17	0.07	0.00	0.23	0.04	0.23	-0.21	-0.19	1.6325	0.0290	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	7	831210	13	A-R.1.1.6	2	6340	0.41	0.22	0.15	0.41	0.21	0.00	0.20	-0.12	-0.02	0.20	-0.10	1.7996	0.0293	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	7	857225	13	D-S.3	2	6340	0.31	0.31	0.40	0.21	0.09	0.00	0.06	0.06	-0.06	-0.04	0.06	2.3920	0.0310	9.9	1.4	9.9	2.0	A-	A-	A-
MATH	7	150068	13	C-G.1.1.1	2	6340	0.88	0.04	0.05	0.88	0.03	0.00	0.43	-0.26	-0.24	0.43	-0.21	-1.1048	0.0409	-4.4	0.9	-6.6	0.6	A+	A-	A-
MATH	7	835405	13	B-E.1.1.1	1	6340	0.34	0.19	0.15	0.32	0.34	0.00	0.32	-0.15	-0.20	-0.04	0.32	2.2286	0.0304	5.4	1.1	9.9	1.3	A+	A-	A+
MATH	7	888279	13	B-E.1.1.1	2	6340	0.34	0.14	0.34	0.40	0.12	0.00	0.22	-0.15	0.22	-0.09	-0.02	2.2065	0.0303	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	7	627788	13	B-E.2.3.1	2	6340	0.51	0.12	0.16	0.51	0.21	0.00	0.46	-0.30	-0.13	0.46	-0.21	1.2734	0.0288	-0.7	1.0	-0.6	1.0	A-	B-	A-
MATH	7	306466	13	A-N.1.1.2	1	6340	0.74	0.74	0.21	0.04	0.01	0.00	0.48	0.48	-0.35	-0.29	-0.12	-0.0091	0.0319	-4.9	0.9	-3.2	0.9	A-	B-	B-
MATH	7	142828	13	C-G.2.2.2	2	6340	0.24	0.15	0.20	0.40	0.24	0.00	0.29	-0.14	-0.07	-0.08	0.29	2.8114	0.0330	4.7	1.1	9.9	1.4	A+	A-	A-
MATH	7	845226	14	A-N.1.1.1	2	6392	0.52	0.18	0.14	0.16	0.52	0.00	0.57	-0.27	-0.28	-0.22	0.57	1.1854	0.0285	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	7	532126	14	C-G.1.1.1	2	6392	0.18	0.30	0.30	0.22	0.18	0.00	-0.04	0.05	0.09	-0.11	-0.04	3.2658	0.0361	9.9	1.4	9.9	2.8	A-	A-	A-
MATH	7	152123	14	B-E.2.1.1	2	6392	0.43	0.29	0.09	0.43	0.19	0.00	0.41	-0.37	-0.23	0.41	0.09	1.6737	0.0288	2.6	1.0	4.0	1.1	A-	A-	A-
MATH	7	350777	14	A-R.1.1.2	2	6392	0.36	0.36	0.39	0.11	0.14	0.00	0.27	0.27	-0.06	-0.21	-0.09	2.0799	0.0297	9.9	1.2	9.9	1.3	A-	A+	A-
MATH	7	546560	14	A-R.1.1.6	2	6392	0.35	0.21	0.22	0.21	0.35	0.00	0.23	0.00	-0.19	-0.07	0.23	2.0852	0.0297	9.9	1.3	9.9	1.4	A+	A+	A-
MATH	7	669595	14	C-G.1.1.4	2	6392	0.43	0.06	0.23	0.28	0.43	0.00	0.03	-0.12	0.04	-0.01	0.03	1.6995	0.0288	9.9	1.5	9.9	1.8	A+	A+	A-
MATH	7	957498	14	C-G.2.2.2	2	6392	0.40	0.40	0.26	0.25	0.09	0.00	0.12	0.12	-0.11	0.01	-0.06	1.8352	0.0291	9.9	1.4	9.9	1.6	A+	A-	A-
MATH	7	590624	14	B-E.2.3.1	2	6392	0.40	0.35	0.20	0.40	0.05	0.00	0.41	-0.25	-0.12	0.41	-0.14	1.8522	0.0291	0.1	1.0	5.6	1.1	A+	A-	A-
MATH	7	915647	14	A-R.1.1.4	2	6392	0.62	0.15	0.62	0.13	0.10	0.00	0.31	-0.14	0.31	-0.16	-0.15	0.6590	0.0292	9.9	1.2	7.6	1.2	A+	A+	A+
MATH	7	653500	14	A-N.1.1.1	2	6392	0.32	0.34	0.14	0.20	0.32	0.00	0.40	-0.08	-0.22	-0.18	0.40	2.2923	0.0304	0.8	1.0	3.3	1.1	A-	A-	A-
MATH	7	660272	15	A-N.1.1.2	2	6392	0.49	0.24	0.22	0.49	0.05	0.00	0.51	-0.22	-0.28	0.51	-0.18	1.3687	0.0289	-6.3	0.9	-4.9	0.9	A-	A-	A-
MATH	7	500829	15	A-N.1.1.1	1	6392	0.62	0.13	0.12	0.62	0.14	0.00	0.48	-0.25	-0.25	0.48	-0.19	0.6706	0.0294	-1.8	1.0	-3.4	0.9	B-	A-	A-
MATH	7	303697	15	B-E.2.3.1	2	6392	0.57	0.18	0.57	0.14	0.10	0.00	0.43	-0.13	0.43	-0.23	-0.27	0.9112	0.0290	3.1	1.0	1.0	1.0	A-	A-	A-
MATH	7	960413	15	D-S.1	2	6392	0.38	0.15	0.08	0.38	0.40	0.00	0.23	-0.32	-0.26	0.23	0.15	1.9769	0.0297	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	7	979402	15	D-S.3.2.3	2	6392	0.23	0.57	0.14	0.23	0.06	0.00	-0.02	0.19	-0.18	-0.02	-0.10	2.8676	0.0334	9.9	1.5	9.9	2.6	A-	A-	A+
MATH	7	197253	15	A-R.1.1.4	2	6392	0.41	0.41	0.24	0.24	0.10	0.00	0.23	0.23	0.08	-0.23	-0.15	1.7982	0.0293	9.9	1.3	9.9	1.5	A+	A-	A+
MATH	7	980820	15	B-E.1.1.1	1	6392	0.26	0.26	0.28	0.24	0.21	0.00	0.21	0.21	-0.07	0.01	-0.17	2.6732	0.0323	9.9	1.2	9.9	1.7	A+	A-	A-
MATH	7	214028	15	A-R.1.1.5	1	6392	0.41	0.26	0.09	0.24	0.41	0.00	0.50	-0.24	-0.18	-0.21	0.50	1.8008	0.0293	-6.6	0.9	-3.4	0.9	B-	A-	A-
MATH	7	454913	15	B-E.2.2.1	2	6392	0.57	0.57	0.24	0.13	0.06	0.00	0.45	0.45	-0.18	-0.26	-0.25	0.9398	0.0290	0.9	1.0	-1.3	1.0	A-	A-	A-
MATH	7	294358	15	C-G.2.1.1	2	6392	0.40	0.25	0.40	0.26	0.09	0.00	0.31	-0.25	0.31	-0.05	-0.08	1.8302	0.0294	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	7	135834	16	A-N.1	2	6382	0.41	0.22	0.24	0.41	0.13	0.00	0.09	0.03	-0.04	0.09	-0.11	1.7598	0.0290	9.9	1.5	9.9	1.7	A-	A+	A+
MATH	7	924251	16	C-G.1	2	6382	0.53	0.24	0.14	0.53	0.09	0.00	0.35	-0.16	-0.16	0.35	-0.18	1.1635	0.0286	9.8	1.1	8.5	1.2	A+	A-	A-
MATH	7	376951	16	B-E.2.1.1	2	6382	0.36	0.16	0.22	0.26	0.36	0.00	0.51	-0.29	-0.21	-0.12	0.51	2.0484	0.0296	-9.9	0.9	-4.8	0.9	A-	A-	A-
MATH	7	473479	16	A-R.1.1.2	2	6382	0.46	0.46	0.17	0.16	0.20	0.00	0.44	0.44	-0.20	-0.17	-0.20	1.5012	0.0287	-1.1	1.0	0.6	1.0	A+	A+	A+
MATH	7	486855	16	A-R.1.1.6	2	6382	0.29	0.18	0.27	0.29	0.26	0.00	0.08	0.07	-0.13	0.08	-0.01	2.4619	0.0311	9.9	1.4	9.9	1.9	A-	A+	A+
MATH	7	943740	16	A-N.1.1.3	1	6382	0.40	0.40	0.07	0.12	0.40	0.00	0.33	0.33	-0.05	-0.18	-0.18	1.8139	0.0291	7.6	1.1	9.9	1.2	A-	A-	A-
MATH	7	724833	16	D-S.2	2	6382	0.20	0.21	0.20	0.45	0.14	0.00	-0.18	0.06	-0.18	0.19	-0.12	3.0820	0.0347	9.9	1.6	9.9	3.3	A+	A+	A+
MATH	7	761888	16	C-G.2.2.1	2	6382	0.34	0.24	0.17	0.34	0.24	0.00	0.28	-0.07	-0.10	0.28	-0.14	2.1522	0.0300	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	7	277650	16	B-E.2.2.1	2	6382	0.29	0.13	0.35	0.23	0.29	0.00	0.19	-0.13	-0.02	-0.07	0.19	2.4882	0.0312	9.9	1.2	9.9	1.7	A-	A+	A+
MATH	7	899363	16	A-R.1.1.4	2	6382	0.39	0.39	0.21	0.22	0.18	0.00	0.19	0.19	-0.04	-0.05	-0.13	1.8794	0.0292	9.9	1.3	9.9	1.5	A+	A-	A-

MATH	7	946828	17	D.3.1.1	2	12746	0.38	0.38	0.19	0.21	0.22	0.00	0.22	0.22	-0.08	-0.18	-0.01	1.9832	0.0208	9.9	1.3	9.9	1.5	A+	A+	A+
MATH	7	625607	17	A.2.1.1	1	12746	0.75	0.10	0.07	0.08	0.75	0.00	0.48	-0.25	-0.22	-0.27	0.48	-0.1013	0.0228	-6.6	0.9	-6.8	0.8	A+	A+	A+
MATH	7	713894	17	D-S.3.1.1	2	6398	0.62	0.04	0.14	0.21	0.62	0.00	0.36	-0.23	-0.22	-0.14	0.36	0.7004	0.0292	8.3	1.1	8.0	1.2	A+	A-	A+
MATH	7	321471	17	A-N.1.1.3	2	6398	0.33	0.16	0.23	0.28	0.33	0.00	0.41	-0.30	-0.25	0.05	0.41	2.2264	0.0302	-0.5	1.0	2.9	1.1	A-	A-	A-
MATH	7	109178	17	D-S.2	2	6398	0.56	0.22	0.08	0.14	0.56	0.00	0.48	-0.16	-0.26	-0.31	0.48	0.9910	0.0287	-3.1	1.0	-2.2	1.0	A-	A-	A-
MATH	7	864573	17	B-E.2.1.1	2	6398	0.27	0.23	0.37	0.12	0.27	0.00	0.29	-0.17	-0.01	-0.15	0.29	2.6170	0.0318	3.1	1.1	9.9	1.5	A-	A-	A-
MATH	7	207265	17	A-R.1.1.6	2	6398	0.20	0.20	0.42	0.20	0.18	0.00	0.02	0.02	0.27	-0.17	-0.19	3.0882	0.0347	9.9	1.3	9.9	2.3	A-	A-	A+
MATH	7	388309	17	C-G.1	2	6398	0.16	0.09	0.41	0.33	0.16	0.00	0.08	-0.25	-0.15	0.25	0.08	3.3996	0.0372	9.9	1.3	9.9	2.2	A-	A-	A-
MATH	7	630200	17	C-G.2.2.1	1	6398	0.38	0.20	0.38	0.20	0.22	0.00	0.41	-0.13	0.41	-0.28	-0.08	1.9878	0.0295	0.7	1.0	6.5	1.1	A+	A+	A+
MATH	7	498316	17	C-G.1.1.4	1	6398	0.33	0.31	0.02	0.33	0.33	0.00	0.15	-0.12	-0.10	0.15	0.01	2.2446	0.0302	9.9	1.3	9.9	1.7	A+	A+	A+
MATH	7	222997	17	B-E.2.2.1	2	6398	0.37	0.12	0.37	0.25	0.26	0.00	0.24	-0.14	0.24	-0.11	-0.06	1.9947	0.0295	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	7	373431	17	A-R.1.1.2	2	6398	0.50	0.50	0.12	0.30	0.08	0.00	0.25	0.25	-0.28	0.05	-0.20	1.3395	0.0286	9.9	1.3	9.9	1.4	A-	A+	A-
MATH	7	797208	18	A-N.1.1.3	1	6348	0.26	0.17	0.26	0.34	0.23	0.00	0.10	-0.08	0.10	0.03	-0.06	2.7117	0.0323	9.9	1.3	9.9	1.9	A-	A-	A-
MATH	7	315230	18	A-R.1.1.1	2	6348	0.43	0.24	0.13	0.43	0.19	0.00	0.34	-0.16	-0.25	0.34	-0.03	1.6800	0.0290	9.1	1.1	9.9	1.2	A-	A-	A-
MATH	7	989448	18	C-G.2.1.2	2	6348	0.32	0.12	0.18	0.32	0.38	0.00	0.14	-0.14	-0.14	0.14	0.08	2.3182	0.0305	9.9	1.3	9.9	1.7	A-	A-	A-
MATH	7	516296	18	B-E.1.1.1	2	6348	0.29	0.29	0.35	0.16	0.20	0.00	0.22	0.22	-0.08	-0.08	-0.06	2.5143	0.0313	9.7	1.2	9.9	1.7	A-	A-	A+
MATH	7	165808	18	C-G.1.1.3	2	6348	0.32	0.14	0.25	0.32	0.28	0.00	-0.01	-0.19	0.00	-0.01	0.16	2.3145	0.0305	9.9	1.6	9.9	2.1	A-	A+	A+
MATH	7	689036	18	D-S.3.2.2	2	6348	0.64	0.09	0.07	0.64	0.20	0.00	0.59	-0.21	-0.33	0.59	-0.34	0.5735	0.0296	-9.9	0.8	-9.9	0.8	B-	A-	A-
MATH	7	681423	18	A-R.1.1.5	2	6348	0.23	0.23	0.34	0.11	0.33	0.00	0.13	0.13	0.03	-0.27	0.03	2.9097	0.0335	9.9	1.2	9.9	1.9	A-	A-	A-
MATH	7	276041	18	B-E.2.2.1	2	6348	0.57	0.57	0.20	0.09	0.14	0.00	0.54	0.54	-0.33	-0.33	-0.12	0.9652	0.0289	-9.2	0.9	-7.7	0.9	A+	A-	A-
MATH	7	766395	18	D-S.1.1.1	1	6348	0.66	0.16	0.07	0.66	0.11	0.00	0.42	-0.30	-0.23	0.42	-0.10	0.4707	0.0299	2.1	1.0	0.0	1.0	A+	A-	A-
MATH	7	165869	18	B-E.2.2.2	2	6348	0.47	0.11	0.12	0.47	0.30	0.00	0.32	-0.20	-0.23	0.32	-0.04	1.4927	0.0288	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	7	632382	19	A-R.1.1.3	2	6398	0.66	0.06	0.66	0.12	0.16	0.00	0.55	-0.19	0.55	-0.32	-0.30	0.4825	0.0297	-9.9	0.9	-9.6	0.8	A+	A-	A-
MATH	7	308485	19	C-G.1.1.4	2	6398	0.18	0.27	0.34	0.20	0.18	0.00	0.11	-0.07	-0.06	0.04	0.11	3.2430	0.0359	9.9	1.3	9.9	2.1	A+	A-	A-
MATH	7	324761	19	B-E.2.2.2	2	6398	0.27	0.21	0.40	0.11	0.27	0.00	0.27	-0.12	-0.03	-0.18	0.27	2.5907	0.0317	8.5	1.1	9.9	1.5	A-	A-	A-
MATH	7	654695	19	A-N.1.1.3	2	6398	0.46	0.09	0.46	0.33	0.12	0.00	0.43	-0.15	0.43	-0.24	-0.18	1.5308	0.0287	-0.1	1.0	2.4	1.0	A-	A-	A+
MATH	7	525677	19	B-E.2.1.1	2	6398	0.35	0.10	0.35	0.34	0.21	0.00	0.35	-0.08	0.35	-0.21	-0.10	2.1181	0.0299	3.2	1.0	9.7	1.2	A-	A-	A-
MATH	7	700444	19	C-G.1	2	6398	0.39	0.39	0.26	0.17	0.18	0.00	0.14	0.14	0.05	-0.14	-0.10	1.9149	0.0293	9.9	1.4	9.9	1.6	A-	A+	A-
MATH	7	373348	19	C-G.2.2.1	2	6398	0.27	0.22	0.44	0.27	0.07	0.00	0.14	0.03	-0.09	0.14	-0.12	2.6109	0.0318	9.9	1.3	9.9	1.8	A-	A-	A-
MATH	7	833436	19	A-R.1.1.6	2	6398	0.39	0.06	0.39	0.15	0.39	0.00	0.50	-0.16	-0.34	-0.12	0.50	1.8780	0.0293	-8.0	0.9	-4.2	0.9	A-	B-	A-
MATH	7	730386	19	D-S.1.1.2	2	6398	0.44	0.21	0.44	0.29	0.06	0.00	0.28	-0.33	0.28	0.08	-0.16	1.6485	0.0289	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	7	644539	19	D-S.3.1.1	2	6398	0.57	0.14	0.25	0.57	0.04	0.00	0.43	-0.27	-0.17	0.43	-0.23	0.9377	0.0288	2.1	1.0	1.1	1.0	A-	A-	B-
MATH	7	728082	20	A-N.1.1	2	6369	0.41	0.17	0.21	0.22	0.41	0.00	0.45	-0.24	-0.27	-0.05	0.45	1.7963	0.0290	-3.0	1.0	0.9	1.0	A-	A-	A-
MATH	7	333183	20	B-E.2.2.2	2	6369	0.28	0.19	0.48	0.28	0.05	0.00	0.22	-0.22	0.04	0.22	-0.14	2.5392	0.0315	9.9	1.2	9.9	1.6	A-	A-	A-
MATH	7	234846	20	A-R.1.1.5	2	6369	0.80	0.11	0.05	0.04	0.80	0.00	0.46	-0.30	-0.22	-0.22	0.46	-0.4251	0.0341	-5.4	0.9	-4.7	0.8	A-	B-	B-
MATH	7	424950	20	C-G.1.1.4	2	6369	0.37	0.11	0.37	0.30	0.22	0.00	0.21	-0.20	0.21	0.08	-0.18	1.9862	0.0295	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	7	514669	20	D-S.2	2	6369	0.45	0.15	0.15	0.26	0.45	0.00	0.34	-0.19	-0.22	-0.05	0.34	1.5746	0.0287	9.8	1.1	9.9	1.2	A-	A-	A-
MATH	7	913954	20	A-N.1.1.3	2	6369	0.38	0.30	0.38	0.15	0.17	0.00	0.18	0.05	0.18	-0.19	-0.11	1.9481	0.0294	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	7	839357	20	B-E.2.1.1	2	6369	0.41	0.41	0.11	0.27	0.21	0.00	0.33	0.33	-0.20	-0.09	-0.15	1.7458	0.0290	9.1	1.1	9.9	1.2	A+	A-	A+
MATH	7	548365	20	C-G.1.1	2	6369	0.22	0.25	0.35	0.17	0.22	0.00	0.00	0.01	0.14	-0.19	0.00	2.9013	0.0335	9.9	1.4	9.9	2.3	A+	A+	A+
MATH	7	567954	20	A-R.1.1.6	2	6369	0.11	0.30	0.36	0.22	0.11	0.00	-0.01	-0.15	0.01	0.15	-0.01	3.8847	0.0429	7.4	1.2	9.9	3.1	A-	A+	A+
MATH	7	444506	20	C-G.2.2.1	2	6369	0.35	0.43	0.35	0.19	0.04	0.00	-0.02	0.07	-0.02	0.00	-0.12	2.1278	0.0299	9.9	1.6	9.9	1.9	A-	A-	A-
MATH	8	112008	0	C.1.2.1	1	128678	0.64	0.13	0.64	0.20	0.03	0.00	0.59	-0.20	0.59	-0.47	-0.17	0.7070	0.0068	-9.9	0.9	-9.9	0.8			
MATH	8	412087	0	E.4.1.2	1	128678	0.86	0.02	0.03	0.09	0.86	0.00	0.43	-0.21	-0.23	-0.28	0.43	-1.0792	0.0094	6.1	1.0	1.8	1.0			
MATH	8	111557	0	D.4.1.3	2	128678	0.78	0.78	0.11	0.06	0.04	0.00	0.54	0.54	-0.35	-0.28	-0.23	-0.3075	0.0078	-9.9	0.9	-9.9	0.8			
MATH	8	148322	0	E.4.1.1	2	128678	0.87	0.07	0.02	0.04	0.87	0.00	0.47	-0.34	-0.21	-0.21	0.47	-0.9504	0.0091	-9.9	0.9	-9.9	0.7			
MATH	8	956071	0	C.1.2.1	1	128678	0.62	0.62	0.08	0.05	0.24	0.00	0.62	0.62	-0.18	-0.20	-0.48	0.8304	0.0067	-9.9	0.8	-9.9	0.7			
MATH	8	189778	0	D.2.2.1	2	128678	0.81	0.04	0.11	0.81	0.03	0.00	0.55	-0.29	-0.37	0.55	-0.22	-0.4924	0.0081	-9.9	0.9	-9.9	0.7			
MATH	8	932280	0	C.1.2.1	1	128678	0.72	0.05	0.05	0.72	0.18	0.00	0.61	-0.28	-0.18	0.61	-0.45	0.1589	0.0072	-9.9	0.9	-9.9	0.7			
MATH	8	352961	0	D.1.1.3	1	128678	0.84	0.05	0.84	0.07	0.05	0.00	0.53	-0.27	0.53	-0.28	-0.32	-0.6649	0.0084	-9.9	0.9	-9.9	0.8			
MATH	8	480517	0	D.4.1.2	2	128678	0.69	0.69	0.11	0.07	0.13	0.00	0.45	0.45	-0.21	-0.26	-0.23	0.4436	0.0070	9.9	1.0	6.3	1.0			

MATH	8	503133	0	C.1.2.1	2	128678	0.71	0.03	0.06	0.71	0.20	0.00	0.61	-0.21	-0.26	0.61	-0.45	0.2271	0.0072	-9.9	0.8	-9.9	0.7			
MATH	8	924147	0	D.2.2.2	2	128678	0.72	0.11	0.72	0.09	0.08	0.00	0.45	-0.17	0.45	-0.30	-0.23	0.2271	0.0072	9.9	1.0	-2.7	1.0			
MATH	8	329776	0	E.4.1.1	1	128678	0.86	0.07	0.03	0.04	0.86	0.00	0.45	-0.24	-0.24	-0.27	0.45	-0.7765	0.0087	-9.9	0.9	-9.9	0.7			
MATH	8	953556	0	D.2.2.2	1	128678	0.82	0.08	0.05	0.05	0.82	0.00	0.54	-0.27	-0.35	-0.28	0.54	-0.5143	0.0082	-9.9	0.8	-9.9	0.7			
MATH	8	112071	0	D.2.1.1	1	128678	0.88	0.03	0.05	0.88	0.03	0.00	0.45	-0.27	-0.24	0.45	-0.25	-0.9749	0.0091	-9.9	0.8	-9.9	0.8			
MATH	8	527490	0	D.4.1.2	1	128678	0.79	0.08	0.07	0.79	0.06	0.00	0.55	-0.32	-0.31	0.55	-0.24	-0.2560	0.0078	-9.9	0.9	-9.9	0.7			
MATH	8	201457	0	D.1.1.3	2	128678	0.71	0.11	0.10	0.08	0.71	0.00	0.60	-0.31	-0.33	-0.28	0.60	0.2911	0.0071	-9.9	0.8	-9.9	0.7			
MATH	8	589675	0	A.2.1.1	1	128678	0.63	0.13	0.63	0.09	0.15	0.00	0.45	-0.18	0.45	-0.20	-0.27	0.8383	0.0067	9.9	1.1	6.6	1.0			
MATH	8	993641	0	D.4.1.3	1	128678	0.84	0.06	0.04	0.84	0.07	0.00	0.53	-0.30	-0.28	0.53	-0.29	-0.7510	0.0086	-9.9	0.9	-9.9	0.7			
MATH	8	355499	0	D.4.1.1	1	128678	0.79	0.79	0.10	0.04	0.07	0.00	0.50	0.50	-0.29	-0.22	-0.30	-0.2373	0.0077	-9.9	0.9	-9.9	0.9			
MATH	8	563360	0	D.4.1.3	1	128678	0.59	0.06	0.25	0.09	0.59	0.00	0.47	-0.29	-0.19	-0.26	0.47	1.0319	0.0066	8.0	1.0	3.6	1.0			
MATH	8	526447	0	E.4.1.2	2	128678	0.85	0.09	0.03	0.85	0.04	0.00	0.29	-0.12	-0.21	0.29	-0.19	-0.6120	0.0083	9.9	1.1	9.9	1.3			
MATH	8	593255	0	D.2.1.1	1	128678	0.80	0.06	0.80	0.09	0.05	0.00	0.39	-0.20	0.39	-0.32	-0.07	-0.3233	0.0079	7.5	1.0	9.9	1.2			
MATH	8	100448	0	A.1.1.1	1	128678	0.78	0.78	0.10	0.06	0.07	0.00	0.44	0.44	-0.23	-0.21	-0.27	-0.1975	0.0077	5.8	1.0	-1.6	1.0			
MATH	8	330093	0	D.2.2.2	2	128678	0.75	0.06	0.12	0.75	0.07	0.00	0.46	-0.28	-0.29	0.46	-0.14	-0.0324	0.0075	9.9	1.1	2.4	1.0			
MATH	8	902469	0	E.4.1.2	2	128678	0.81	0.04	0.13	0.81	0.02	0.00	0.50	-0.21	-0.39	0.50	-0.15	-0.4835	0.0081	-9.9	0.9	-9.9	0.8			
MATH	8	943592	0	C.1.2.1	2	128678	0.63	0.13	0.63	0.13	0.12	0.00	0.55	-0.29	0.55	-0.14	-0.38	0.9565	0.0066	-9.9	0.9	-9.9	0.8			
MATH	8	165100	0	C.1.2.1	2	128678	0.72	0.14	0.72	0.08	0.06	0.00	0.53	-0.37	0.53	-0.10	-0.35	0.1983	0.0072	-9.9	1.0	-9.9	0.8			
MATH	8	452857	0	D.2.1.1	1	128678	0.64	0.64	0.18	0.11	0.07	0.00	0.39	0.39	-0.19	-0.22	-0.17	0.6685	0.0068	9.9	1.2	9.9	1.2			
MATH	8	752458	0	D.2.2.2	2	128678	0.61	0.13	0.18	0.61	0.08	0.00	0.46	-0.23	-0.19	0.46	-0.26	0.8476	0.0067	9.9	1.1	8.9	1.1			
MATH	8	924590	0	D.4.1.2	1	128678	0.76	0.15	0.04	0.05	0.76	0.00	0.48	-0.26	-0.27	-0.26	0.48	-0.0378	0.0075	-7.6	1.0	0.0	1.0			
MATH	8	249703	0	D.4.1.3	2	128678	0.78	0.78	0.10	0.06	0.07	0.00	0.58	0.58	-0.36	-0.26	-0.29	-0.1293	0.0076	-9.9	0.8	-9.9	0.7			
MATH	8	366955	0	E.4.1.2	2	128678	0.57	0.07	0.24	0.57	0.12	0.00	0.38	-0.17	-0.24	0.38	-0.13	1.1195	0.0066	9.9	1.2	9.9	1.2			
MATH	8	315053	0	D.4.1.1	1	128678	0.77	0.05	0.77	0.15	0.03	0.00	0.55	-0.23	0.55	-0.39	-0.23	0.0076	0.0074	-9.9	0.9	-9.9	0.7			
MATH	8	254319	0	E.4.1.1	2	128678	0.66	0.05	0.24	0.04	0.66	0.00	0.41	-0.22	-0.22	-0.25	0.41	0.5541	0.0069	9.9	1.1	9.9	1.2			
MATH	8	405120	0	D.4.1.1	1	128678	0.70	0.08	0.14	0.70	0.08	0.00	0.50	-0.22	-0.31	0.50	-0.23	0.4158	0.0070	-9.9	1.0	-9.9	0.9			
MATH	8	860734	0	D.1.1.3	2	128678	0.80	0.05	0.07	0.08	0.80	0.00	0.61	-0.31	-0.31	-0.36	0.61	-0.2992	0.0078	-9.9	0.8	-9.9	0.6			
MATH	8	997129	0	D.2.2.1	2	128678	0.73	0.10	0.73	0.06	0.11	0.00	0.49	-0.24	0.49	-0.24	-0.29	0.1045	0.0073	-1.6	1.0	-7.2	0.9			
MATH	8	584381	0	D.2.2.2	2	128678	0.77	0.77	0.12	0.06	0.04	0.00	0.48	0.48	-0.25	-0.27	-0.26	-0.0279	0.0074	-9.9	0.9	-7.6	0.9			
MATH	8	126911	0	C.1.2.1	1	128678	0.72	0.10	0.72	0.03	0.15	0.00	0.50	-0.23	0.50	-0.17	-0.35	0.2458	0.0071	-4.5	1.0	-9.9	0.9			
MATH	8	676077	0	C.1.2.1	2	128678	0.52	0.38	0.52	0.03	0.06	0.00	0.54	-0.45	0.54	-0.15	-0.08	1.3816	0.0065	-9.9	0.9	-9.9	0.9			
MATH	8	900640	0	A.1.1.1	1	128678	0.82	0.82	0.04	0.11	0.02	0.00	0.48	0.48	-0.21	-0.38	-0.14	-0.5640	0.0083	-9.8	1.0	-9.9	0.9			
MATH	8	779369	0	A.1.1.1	1	128678	0.81	0.10	0.81	0.06	0.03	0.00	0.53	-0.37	0.53	-0.28	-0.16	-0.5000	0.0081	-9.9	0.9	-9.9	0.8			
MATH	8	196171	0	A.1.1.1	1	128678	0.65	0.09	0.65	0.07	0.20	0.00	0.52	-0.22	0.52	-0.19	-0.35	0.7184	0.0068	-9.9	1.0	-9.9	0.9			
MATH	8	503627	0	E.4.1.1	1	128678	0.80	0.80	0.05	0.08	0.07	0.00	0.49	0.49	-0.27	-0.29	-0.22	-0.3327	0.0079	-9.9	0.9	-9.9	0.8			
MATH	8	565441	0	D.4.1.3	2	128678	0.79	0.10	0.06	0.79	0.04	0.00	0.56	-0.35	-0.33	0.56	-0.21	-0.3150	0.0078	-9.9	0.9	-9.9	0.7			
MATH	8	820302	0	E.4.1.2	2	128678	0.48	0.06	0.38	0.48	0.08	0.00	0.25	-0.30	-0.05	0.25	-0.10	1.5886	0.0065	9.9	1.3	9.9	1.5			
MATH	8	834155	0	D.4.1.2	1	128678	0.74	0.74	0.10	0.12	0.05	0.00	0.43	0.43	-0.23	-0.26	-0.18	0.1686	0.0072	8.5	1.0	9.9	1.2			
MATH	8	532860	0	D.2.2.2	2	128678	0.71	0.04	0.13	0.71	0.13	0.00	0.40	-0.24	-0.23	0.40	-0.18	0.3110	0.0071	9.9	1.1	9.9	1.1			
MATH	8	836223	0	D.2.1.1	1	128678	0.86	0.05	0.05	0.04	0.86	0.00	0.42	-0.32	-0.24	-0.11	0.42	-0.8180	0.0088	-9.9	0.9	3.5	1.1			
MATH	8	976452	0	D.2.2.2	2	128678	0.75	0.06	0.75	0.10	0.09	0.00	0.46	-0.29	0.46	-0.27	-0.16	0.0255	0.0074	5.4	1.0	-4.8	1.0			
MATH	8	498857	0	D.4.1.1	1	128678	0.65	0.08	0.08	0.19	0.65	0.00	0.51	-0.16	-0.17	-0.39	0.51	0.7184	0.0068	-9.9	1.0	-9.9	0.9			
MATH	8	257210	0	D.2.2.1	2	128678	0.50	0.30	0.06	0.50	0.14	0.00	0.37	-0.17	-0.26	0.37	-0.13	1.5589	0.0065	9.9	1.1	9.9	1.2			
MATH	8	992574	0	C.1.2.1	2	128678	0.72	0.11	0.72	0.10	0.07	0.00	0.45	-0.34	0.45	-0.24	-0.10	0.1593	0.0072	9.9	1.1	-5.3	1.0			
MATH	8	494718	0	A.1.1.2	1	128678	0.86	0.11	0.02	0.86	0.01	0.00	0.53	-0.47	-0.18	0.53	-0.07	-0.9746	0.0091	-9.9	0.9	-9.9	0.6			
MATH	8	658440	0	A.2.1.1	1	128678	0.56	0.11	0.27	0.06	0.56	0.00	0.54	-0.37	-0.23	-0.20	0.54	1.1746	0.0066	-9.9	0.9	-9.9	0.9			
MATH	8	509340	0	A.1.1.1	1	128678	0.78	0.11	0.06	0.78	0.05	0.00	0.53	-0.34	-0.24	0.53	-0.26	-0.2065	0.0077	-9.9	0.9	-9.9	0.8			
MATH	8	778422	0	A.1.1.2	1	128678	0.88	0.88	0.04	0.03	0.04	0.00	0.37	0.37	-0.23	-0.22	-0.17	-1.2487	0.0098	9.9	1.1	-3.6	0.9			
MATH	8	464302	0	C.1.2.1	2	128678	0.53	0.53	0.10	0.20	0.17	0.00	0.37	0.37	-0.17	-0.20	-0.14	1.2860	0.0065	9.9	1.1	9.9	1.2			
MATH	8	269085	0	E.4.1.1	2	128678	0.73	0.73	0.11	0.12	0.04	0.00	0.49	0.49	-0.25	-0.29	-0.22	0.1492	0.0072	-3.2	1.0	-4.9	1.0			
MATH	8	258223	0	E.4.1.1	2	128678	0.43	0.32	0.10	0.43	0.15	0.00	0.32	-0.02	-0.26	0.32	-0.19	2.3130	0.0067	9.9	1.2	9.9	1.7			

MATH	8	736416	1	E.4.1.1	2	13223	0.83	0.04	0.08	0.05	0.83	0.00	0.49	-0.26	-0.28	-0.25	0.49	-0.7398	0.0264	-4.5	0.9	-7.4	0.7	A-	C-	A-
MATH	8	674903	1	D.1.1.3	1	13223	0.66	0.12	0.11	0.11	0.66	0.00	0.57	-0.24	-0.34	-0.27	0.57	0.5706	0.0214	-9.9	0.9	-9.4	0.8	A+	A+	A+
MATH	8	886928	1	D-S.1.1.3	2	6807	0.69	0.14	0.69	0.08	0.09	0.00	0.41	-0.18	0.41	-0.29	-0.18	0.3155	0.0304	6.9	1.1	3.0	1.1	B-	A-	B-
MATH	8	203641	1	C-G.3.1.1	2	6807	0.32	0.32	0.26	0.23	0.19	0.00	0.36	0.36	-0.10	-0.08	-0.23	2.4221	0.0300	2.0	1.0	9.9	1.5	A+	A-	A+
MATH	8	428249	1	B-E.3.1.2	2	6807	0.43	0.36	0.14	0.43	0.07	0.00	0.26	-0.07	-0.16	0.26	-0.16	1.7889	0.0287	9.9	1.3	9.9	1.6	A-	A+	A-
MATH	8	396917	1	B-E.3.1.5	2	6807	0.52	0.23	0.52	0.16	0.10	0.00	0.33	-0.15	0.33	-0.13	-0.19	1.2951	0.0286	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	8	822443	1	C-G.1.1	2	6807	0.24	0.14	0.24	0.34	0.28	0.00	-0.03	0.05	-0.03	-0.06	0.06	2.9474	0.0323	9.9	1.6	9.9	3.1	A+	A-	A-
MATH	8	825327	1	B-E.1.1.4	1	6807	0.46	0.46	0.21	0.24	0.09	0.00	0.21	0.21	-0.16	-0.03	-0.09	1.6274	0.0286	9.9	1.4	9.9	1.7	A+	A+	A+
MATH	8	871854	1	A-N.1.1.4	2	6807	0.34	0.25	0.22	0.19	0.34	0.00	0.34	-0.01	-0.20	-0.19	0.34	2.3203	0.0297	6.4	1.1	9.9	1.5	A-	A-	A-
MATH	8	172210	1	B-E.1.1.1	2	6807	0.70	0.04	0.70	0.20	0.05	0.00	0.38	-0.07	0.38	-0.29	-0.18	0.2286	0.0307	9.5	1.2	6.9	1.2	A-	A-	A-
MATH	8	934340	1	B-F.1.1.1	1	6807	0.34	0.21	0.34	0.13	0.31	0.00	0.20	0.04	0.20	-0.24	-0.06	2.2886	0.0296	9.9	1.4	9.9	1.8	A+	A-	A-
MATH	8	335816	1	B-F.2.1	2	6807	0.56	0.11	0.56	0.10	0.22	0.00	0.27	-0.08	0.27	-0.22	-0.10	1.0491	0.0288	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	8	119505	2	D.4.1.3	1	19225	0.79	0.11	0.79	0.08	0.03	0.00	0.52	-0.33	0.52	-0.26	-0.25	-0.2723	0.0200	-9.6	0.9	-4.9	0.9	A+	A-	A-
MATH	8	540785	2	C.1.2.1	2	19225	0.41	0.11	0.38	0.41	0.10	0.00	0.25	-0.13	-0.05	0.25	-0.20	2.0752	0.0170	9.9	1.2	9.9	1.6	A-	A-	A+
MATH	8	402093	2	B-F.1.1.1	2	6397	0.37	0.36	0.37	0.13	0.14	0.00	0.09	-0.03	0.09	-0.11	0.02	2.2049	0.0298	9.9	1.5	9.9	2.0	A+	A-	A+
MATH	8	590863	2	A-N.1.1.4	1	6397	0.24	0.41	0.20	0.14	0.24	0.00	0.13	0.10	-0.12	-0.16	0.13	2.9737	0.0328	9.9	1.3	9.9	2.2	A-	A-	A-
MATH	8	799326	2	B-E.1.1.1	2	6397	0.29	0.29	0.14	0.40	0.17	0.00	0.36	0.36	-0.02	-0.19	-0.18	2.6482	0.0312	2.9	1.0	7.9	1.3	A-	A+	A-
MATH	8	413039	2	C-G.1.1.3	2	6397	0.17	0.31	0.31	0.21	0.17	0.00	0.05	0.10	-0.10	-0.04	0.05	3.5121	0.0366	9.9	1.3	9.9	3.0	A-	A-	A-
MATH	8	362892	2	B-E.1.1.3	2	6397	0.24	0.24	0.39	0.17	0.21	0.00	0.14	0.14	0.02	-0.15	-0.03	3.0161	0.0331	9.9	1.2	9.9	2.3	A-	A-	A-
MATH	8	222929	2	B-F.2.1.2	2	6397	0.75	0.03	0.06	0.75	0.15	0.00	0.50	-0.26	-0.28	0.50	-0.28	0.0112	0.0329	-3.2	1.0	-4.5	0.8	A-	A-	B-
MATH	8	543757	2	B-F.1.1.3	1	6397	0.24	0.10	0.24	0.48	0.18	0.00	0.14	-0.16	0.14	0.05	-0.09	2.9997	0.0330	9.9	1.3	9.9	2.2	A-	A-	A-
MATH	8	855399	2	D-S.1.1.2	2	6397	0.42	0.19	0.42	0.20	0.18	0.00	0.23	-0.10	0.23	-0.14	-0.04	1.9037	0.0293	9.9	1.3	9.9	1.6	A-	A+	A+
MATH	8	818969	2	B-E.3.1.2	1	6397	0.62	0.12	0.07	0.62	0.19	0.00	0.32	-0.17	-0.16	0.32	-0.15	0.8142	0.0299	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	8	989084	2	C-G.3.1.1	2	6397	0.36	0.13	0.22	0.30	0.36	0.00	0.36	-0.21	-0.22	-0.03	0.36	2.2800	0.0300	4.3	1.1	9.9	1.3	A-	A-	A-
MATH	8	464563	3	C-G.1.1.1	2	6416	0.42	0.14	0.42	0.21	0.22	0.00	0.33	-0.13	0.33	-0.24	-0.05	1.9843	0.0296	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	8	490698	3	A-N.1.1.5	1	6416	0.55	0.32	0.55	0.08	0.04	0.00	0.36	-0.11	0.36	-0.27	-0.25	1.2498	0.0295	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	850623	3	B-E.1.1.1	1	6416	0.36	0.08	0.27	0.36	0.29	0.00	0.24	-0.10	0.11	0.24	-0.30	2.3181	0.0302	9.9	1.3	9.9	1.7	A-	A+	A+
MATH	8	398905	3	D-S.1.2.1	2	6416	0.62	0.15	0.18	0.62	0.04	0.00	0.41	-0.26	-0.18	0.41	-0.17	0.8319	0.0301	8.2	1.1	5.6	1.2	A-	A-	A-
MATH	8	341338	3	B-F.2.1.1	2	6416	0.49	0.49	0.19	0.14	0.19	0.00	0.53	0.53	-0.21	-0.21	-0.27	1.5979	0.0293	-6.6	0.9	-3.5	0.9	A-	A+	A-
MATH	8	298401	3	B-F.1.1.2	2	6416	0.42	0.21	0.29	0.08	0.42	0.00	0.32	-0.06	-0.12	-0.29	0.32	1.9503	0.0295	9.9	1.2	9.9	1.5	A+	A+	A-
MATH	8	641758	3	B-E.1.1.4	1	6416	0.66	0.08	0.10	0.66	0.16	0.00	0.38	-0.18	-0.23	0.38	-0.16	0.6248	0.0307	9.9	1.2	6.4	1.2	A-	A+	A-
MATH	8	399386	3	B-E.3.1.4	2	6416	0.37	0.13	0.37	0.35	0.15	0.00	0.24	-0.03	0.24	-0.06	-0.23	2.2590	0.0301	9.9	1.2	9.9	1.7	A+	A-	A-
MATH	8	396180	3	A-N.1.1.1	2	6416	0.37	0.11	0.41	0.11	0.37	0.00	0.26	-0.24	0.03	-0.20	0.26	2.2762	0.0301	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	8	437224	3	C-G.2.1.2	2	6416	0.31	0.38	0.23	0.31	0.08	0.00	0.21	0.00	-0.10	0.21	-0.19	2.6169	0.0311	9.9	1.2	9.9	1.9	A-	A-	A-
MATH	8	780009	4	D.4.1.1	1	19271	0.80	0.80	0.12	0.05	0.04	0.00	0.49	0.49	-0.30	-0.26	-0.25	-0.3218	0.0204	-5.4	0.9	-2.0	1.0	A+	A-	A-
MATH	8	391024	4	A.1.1.1	1	19271	0.78	0.11	0.06	0.78	0.05	0.00	0.52	-0.40	-0.20	0.52	-0.19	-0.2117	0.0200	-7.9	0.9	-5.8	0.9	A+	A-	A-
MATH	8	109111	4	C-G.3.1.1	2	6423	0.40	0.15	0.40	0.29	0.15	0.00	0.23	-0.16	0.23	-0.01	-0.14	2.0830	0.0295	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	8	961930	4	B-F.1.1.2	2	6423	0.51	0.08	0.08	0.33	0.51	0.00	0.33	-0.26	-0.31	-0.02	0.33	1.4866	0.0291	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	8	878203	4	A-N.1.1.1	1	6423	0.71	0.08	0.71	0.12	0.09	0.00	0.40	-0.23	0.40	-0.20	-0.18	0.3049	0.0319	6.8	1.1	1.8	1.1	A+	A-	A-
MATH	8	445060	4	B-E.2.1.1	2	6423	0.71	0.71	0.13	0.07	0.09	0.00	0.45	0.45	-0.25	-0.22	-0.22	0.3201	0.0318	2.2	1.0	-0.3	1.0	A+	A-	A-
MATH	8	638522	4	B-E.3.1.5	2	6423	0.41	0.41	0.25	0.17	0.16	0.00	0.36	0.36	-0.07	-0.19	-0.20	2.0414	0.0294	6.9	1.1	9.9	1.3	A-	A-	A-
MATH	8	187913	4	A-N.1.1.3	1	6423	0.25	0.40	0.27	0.25	0.08	0.00	0.21	0.00	-0.19	0.21	-0.02	3.0406	0.0328	6.5	1.1	9.9	2.2	A-	A-	A-
MATH	8	624626	4	A-N.1.1.4	2	6423	0.28	0.18	0.36	0.17	0.28	0.00	0.17	-0.15	0.09	-0.17	0.17	2.8153	0.0317	9.9	1.3	9.9	2.0	A+	A-	A+
MATH	8	173789	4	C-G.1.1	2	6423	0.25	0.20	0.25	0.34	0.21	0.00	-0.04	0.02	-0.04	0.02	0.00	3.0011	0.0326	9.9	1.6	9.9	3.0	A-	A-	A-
MATH	8	816600	4	D-S.1.1.3	2	6423	0.25	0.26	0.26	0.25	0.23	0.00	0.07	0.02	-0.10	0.07	0.02	2.9862	0.0325	9.9	1.3	9.9	2.7	A+	A+	A+
MATH	8	115946	4	D-S.1.1.1	2	6423	0.68	0.68	0.08	0.09	0.14	0.00	0.49	0.49	-0.28	-0.29	-0.20	0.4962	0.0311	-0.7	1.0	-1.8	1.0	A-	B-	A-
MATH	8	429494	5	D.4.1.3	1	12811	0.70	0.13	0.09	0.07	0.70	0.00	0.51	-0.23	-0.29	-0.26	0.51	0.3749	0.0223	-3.3	1.0	-2.1	1.0	A+	A+	A+
MATH	8	286559	5	C.1.2.1	2	12811	0.57	0.57	0.23	0.09	0.11	0.00	0.32	0.32	-0.21	-0.19	-0.06	1.1345	0.0209	9.9	1.2	9.9	1.3	A+	A-	A+
MATH	8	679985	5	B-F.2.1.1	2	6425	0.49	0.19	0.13	0.49	0.18	0.00	0.32	-0.07	-0.17	0.32	-0.18	1.5503	0.0291	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	8	958342	5	A-N.1.1.1	1	6425	0.68	0.08	0.68	0.16	0.08	0.00	0.46	-0.20	0.46	-0.29	-0.18	0.5065	0.0308	2.2	1.0	0.9	1.0	A+	A+	A-
MATH	8	672344	5	B-E.2.1.1	2	6425	0.48	0.12	0.24	0.48	0.16	0.00	0.35	-0.07	-0.24	0.35	-0.13	1.6464	0.0292	9.9	1.2	9.9	1.3	A-	A+	A-

MATH	8	626442	5	C-G.1.1.1	2	6425	0.36	0.31	0.16	0.36	0.16	0.00	0.20	0.01	-0.17	0.20	-0.10	2.2678	0.0301	9.9	1.3	9.9	1.7	A-	A-	A+
MATH	8	459988	5	B-E.3.1.5	2	6425	0.49	0.16	0.49	0.24	0.11	0.00	0.27	-0.20	0.27	-0.09	-0.08	1.5715	0.0292	9.9	1.3	9.9	1.4	A-	A-	A+
MATH	8	455161	5	B-E.3.1.1	2	6425	0.53	0.30	0.53	0.10	0.07	0.00	0.40	-0.17	0.40	-0.23	-0.21	1.3301	0.0292	7.6	1.1	6.1	1.1	A+	A+	A-
MATH	8	813873	5	B-E.1.1.2	1	6425	0.14	0.10	0.09	0.67	0.14	0.00	0.15	-0.29	-0.17	0.19	0.15	3.9245	0.0403	5.5	1.2	9.9	2.6	A+	A-	A-
MATH	8	849071	5	A-N.1.1.4	2	6425	0.40	0.15	0.33	0.40	0.12	0.00	0.18	-0.20	0.00	0.18	-0.06	2.0601	0.0296	9.9	1.4	9.9	1.7	A+	A-	A-
MATH	8	936301	5	D-S.1.1.3	2	6425	0.55	0.25	0.12	0.55	0.07	0.00	0.28	0.01	-0.28	0.28	-0.20	1.2223	0.0293	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	8	116869	5	D-S.1.1.1	2	6425	0.50	0.17	0.50	0.18	0.15	0.00	0.32	-0.01	0.32	-0.25	-0.16	1.5189	0.0291	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	720723	6	E.4.1.2	2	12828	0.59	0.11	0.24	0.59	0.06	0.00	0.38	-0.31	-0.13	0.38	-0.15	1.0810	0.0209	9.9	1.2	9.9	1.2	A-	A-	A-
MATH	8	713265	6	D.4.1.1	1	12828	0.74	0.07	0.74	0.09	0.10	0.00	0.54	-0.23	0.54	-0.31	-0.30	0.0789	0.0232	-8.4	0.9	-7.2	0.8	A+	A-	A-
MATH	8	682971	6	B-F.2.1.1	2	6391	0.49	0.29	0.49	0.15	0.07	0.00	0.34	-0.11	0.34	-0.16	-0.24	1.5802	0.0293	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	189944	6	A-N.1.1.1	2	6391	0.37	0.21	0.34	0.37	0.08	0.00	0.13	-0.15	0.08	0.13	-0.15	2.2535	0.0301	9.9	1.4	9.9	1.9	A+	A+	A+
MATH	8	291283	6	B-E.3.1.5	1	6391	0.68	0.07	0.13	0.12	0.68	0.00	0.20	-0.10	-0.19	-0.01	0.20	0.5089	0.0310	9.9	1.4	9.9	1.7	A+	A-	A-
MATH	8	259577	6	B-E.3.1.1	2	6391	0.54	0.08	0.54	0.30	0.08	0.00	0.46	-0.23	0.46	-0.22	-0.22	1.3061	0.0294	2.6	1.0	2.6	1.1	A+	A-	A-
MATH	8	776369	6	B-F.1.1.2	2	6391	0.57	0.57	0.15	0.15	0.13	0.00	0.41	0.41	-0.22	-0.24	-0.11	1.1369	0.0296	7.5	1.1	5.0	1.1	A-	A-	A-
MATH	8	882558	6	C-G.1.1.3	2	6391	0.40	0.28	0.19	0.12	0.40	0.00	0.35	-0.19	-0.12	-0.13	0.35	2.0833	0.0298	9.9	1.1	9.9	1.3	A-	A-	A+
MATH	8	226804	6	B-E.1.1.1	2	6391	0.48	0.48	0.15	0.25	0.12	0.00	0.19	0.19	-0.04	-0.11	-0.10	1.6429	0.0293	9.9	1.4	9.9	1.7	A-	A+	A-
MATH	8	356386	6	A-N.1.1.4	1	6391	0.70	0.09	0.10	0.70	0.11	0.00	0.47	-0.18	-0.37	0.47	-0.16	0.3562	0.0316	0.6	1.0	0.6	1.0	A+	A+	A+
MATH	8	316986	6	C-G.2.1.3	2	6391	0.42	0.10	0.31	0.42	0.17	0.00	0.52	-0.20	-0.26	0.52	-0.20	1.9724	0.0296	-9.9	0.9	-0.9	1.0	A-	A-	A-
MATH	8	567862	6	D-S.1.1.3	2	6391	0.62	0.11	0.62	0.19	0.08	0.00	0.44	-0.22	0.44	-0.22	-0.21	0.8269	0.0301	4.9	1.1	2.3	1.1	A+	A-	A+
MATH	8	640982	7	C-G.1.1.1	2	6411	0.32	0.22	0.22	0.23	0.32	0.00	0.19	-0.13	-0.10	0.02	0.19	2.4889	0.0306	9.9	1.3	9.9	1.8	A-	A-	A+
MATH	8	944645	7	D-S.1.2.1	2	6411	0.34	0.19	0.22	0.25	0.34	0.00	0.29	-0.14	-0.20	0.00	0.29	2.3641	0.0302	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	8	999963	7	A-N.1.1.5	2	6411	0.44	0.43	0.44	0.07	0.05	0.00	0.21	0.07	0.21	-0.30	-0.26	1.8208	0.0291	9.9	1.4	9.9	1.6	A+	A+	A-
MATH	8	748556	7	B-F.2.1.1	2	6411	0.15	0.09	0.15	0.23	0.53	0.00	-0.01	-0.17	-0.01	-0.22	0.29	3.7656	0.0388	9.9	1.3	9.9	3.9	C-	A+	A+
MATH	8	697163	7	B-E.1.1.2	2	6411	0.24	0.24	0.49	0.10	0.17	0.00	0.35	0.35	-0.04	-0.16	-0.22	3.0303	0.0331	-1.9	1.0	7.7	1.3	A-	A+	A-
MATH	8	616198	7	A-N.1.1.1	1	6411	0.59	0.59	0.07	0.30	0.05	0.00	0.25	0.25	-0.26	-0.02	-0.22	1.0286	0.0294	9.9	1.3	9.9	1.5	A-	A-	A-
MATH	8	995358	7	D-S.1.1.1	1	6411	0.78	0.08	0.08	0.78	0.06	0.00	0.48	-0.24	-0.27	0.48	-0.26	-0.2040	0.0342	-3.0	1.0	-3.8	0.8	A-	B-	B-
MATH	8	915350	7	B-F.1.1.2	2	6411	0.43	0.43	0.19	0.23	0.16	0.00	0.30	0.30	-0.17	-0.09	-0.12	1.8983	0.0292	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	8	183580	7	B-E.1.1.4	2	6411	0.30	0.25	0.30	0.19	0.25	0.00	0.21	0.06	0.21	-0.11	-0.17	2.6057	0.0310	9.9	1.2	9.9	1.8	A-	A+	A-
MATH	8	955067	7	B-E.3.1.4	1	6411	0.44	0.44	0.18	0.22	0.15	0.00	0.32	0.32	-0.18	-0.13	-0.10	1.8192	0.0291	9.9	1.2	9.9	1.4	A+	A-	A+
MATH	8	410959	8	B-E.3.1.5	2	6453	0.43	0.10	0.43	0.21	0.26	0.00	0.38	-0.17	0.38	-0.16	-0.16	1.9260	0.0295	8.0	1.1	9.9	1.3	A-	A+	A+
MATH	8	484704	8	A-N.1.1.5	1	6453	0.78	0.78	0.04	0.09	0.09	0.00	0.57	0.57	-0.22	-0.31	-0.36	-0.2153	0.0343	-9.0	0.8	-7.3	0.7	A+	A-	A-
MATH	8	286377	8	A-N.1.1.3	1	6453	0.63	0.63	0.19	0.09	0.09	0.00	0.53	0.53	-0.24	-0.29	-0.27	0.8003	0.0301	-3.7	1.0	-4.9	0.9	A-	A-	A-
MATH	8	108739	8	C-G.2.1.3	1	6453	0.48	0.09	0.32	0.48	0.11	0.00	0.36	-0.22	-0.13	0.36	-0.17	1.6316	0.0293	9.8	1.1	9.9	1.3	A-	A-	A-
MATH	8	892753	8	D-S.1.2.1	2	6453	0.22	0.61	0.11	0.07	0.22	0.00	0.23	0.05	-0.21	-0.22	0.23	3.2562	0.0345	6.3	1.1	9.9	2.1	B-	A-	A+
MATH	8	954628	8	A-N.1.1.1	2	6453	0.41	0.41	0.27	0.16	0.16	0.00	0.28	0.28	-0.14	-0.19	-0.02	2.0223	0.0297	9.9	1.2	9.9	1.5	A+	A+	A-
MATH	8	170474	8	B-E.2	2	6453	0.34	0.34	0.14	0.30	0.22	0.00	0.30	0.30	-0.27	-0.12	0.02	2.4144	0.0305	9.9	1.2	9.9	1.5	A-	A-	A-
MATH	8	145024	8	C-G.1.1.1	2	6453	0.48	0.14	0.48	0.15	0.23	0.00	0.35	-0.22	0.35	-0.16	-0.10	1.6239	0.0293	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	833657	8	B-F.1.1.2	2	6453	0.27	0.25	0.18	0.27	0.30	0.00	0.17	-0.04	-0.13	0.17	-0.01	2.8734	0.0323	9.9	1.3	9.9	2.2	A-	A-	A-
MATH	8	214520	8	D-S.1.1.1	2	6453	0.31	0.31	0.11	0.30	0.28	0.00	0.20	0.20	-0.14	0.03	-0.13	2.5873	0.0311	9.9	1.3	9.9	1.9	A-	A-	A-
MATH	8	850619	9	D.4.1.2	1	12842	0.79	0.10	0.06	0.79	0.05	0.00	0.53	-0.29	-0.31	0.53	-0.25	-0.2546	0.0246	-6.9	0.9	-7.6	0.8	A+	A-	A-
MATH	8	772493	9	D.1.1.3	1	12842	0.78	0.08	0.08	0.78	0.05	0.00	0.60	-0.36	-0.33	0.60	-0.26	-0.2254	0.0244	-9.9	0.8	-9.9	0.7	A+	A+	A+
MATH	8	873177	9	C-G.1.1.2	2	6418	0.28	0.28	0.14	0.42	0.16	0.00	0.15	0.15	-0.25	0.01	0.04	2.7540	0.0315	9.9	1.3	9.9	2.1	A-	A-	A+
MATH	8	190083	9	B-E.1.1	2	6418	0.49	0.49	0.13	0.17	0.21	0.00	0.08	0.08	-0.04	-0.11	0.04	1.5613	0.0290	9.9	1.6	9.9	1.8	A+	A-	A+
MATH	8	810038	9	B-E.3.1.4	2	6418	0.22	0.08	0.37	0.22	0.32	0.00	-0.04	-0.18	0.08	-0.04	0.06	3.1457	0.0336	9.9	1.4	9.9	3.3	A-	A+	A-
MATH	8	660551	9	D-S.1.1.1	2	6418	0.25	0.26	0.35	0.25	0.14	0.00	0.18	-0.08	-0.01	0.18	-0.12	2.9869	0.0326	9.9	1.2	9.9	2.1	A-	A-	A-
MATH	8	709916	9	B-E.1.1.2	1	6418	0.51	0.06	0.16	0.51	0.26	0.00	0.22	-0.09	0.01	0.22	-0.22	1.4415	0.0291	9.9	1.4	9.9	1.6	A-	A+	A-
MATH	8	810164	9	A-N.1.1.2	1	6418	0.29	0.43	0.29	0.23	0.06	0.00	0.27	-0.15	0.27	0.02	-0.25	2.7097	0.0313	9.9	1.2	9.9	1.6	A-	A-	A+
MATH	8	425625	9	C-G.2.1.2	2	6418	0.51	0.08	0.19	0.51	0.22	0.00	0.49	-0.27	-0.14	0.49	-0.28	1.4694	0.0290	-2.3	1.0	0.1	1.0	A-	A-	A-
MATH	8	465854	9	B-F.1.1.1	1	6418	0.52	0.21	0.52	0.13	0.14	0.00	0.21	-0.05	0.21	-0.17	-0.09	1.4060	0.0291	9.9	1.4	9.9	1.6	A-	A+	A+
MATH	8	703958	9	B-F.2.1.1	2	6418	0.10	0.10	0.14	0.55	0.21	0.00	-0.02	-0.02	-0.15	0.07	0.06	4.3434	0.0457	4.2	1.1	9.9	5.3	A-	A-	A+
MATH	8	609390	9	D-S.1.2.1	1	6418	0.94	0.02	0.03	0.94	0.02	0.00	0.38	-0.21	-0.23	0.38	-0.20	-1.8743	0.0539	-2.6	0.9	-4.6	0.6	B+	A-	A-

MATH	8	193123	10	C-G.1.1.4	2	6424	0.30	0.30	0.17	0.31	0.22	0.00	0.16	0.16	-0.14	-0.06	0.03	2.6805	0.0312	9.9	1.3	9.9	2.1	A-	A-	A-
MATH	8	254922	10	B-E.1.1.4	2	6424	0.22	0.22	0.28	0.16	0.33	0.00	0.15	0.15	-0.15	-0.11	0.10	3.1908	0.0338	9.9	1.2	9.9	2.4	A-	A+	A+
MATH	8	607624	10	C-G.3.1.1	2	6424	0.30	0.23	0.28	0.30	0.19	0.00	0.19	0.00	-0.01	0.19	-0.20	2.6689	0.0311	9.9	1.2	9.9	2.0	A+	A+	A+
MATH	8	870998	10	A-N.1.1.3	1	6424	0.71	0.16	0.07	0.71	0.06	0.00	0.52	-0.33	-0.24	0.52	-0.21	0.3470	0.0316	-3.6	1.0	-5.5	0.8	A-	A+	A-
MATH	8	752981	10	C-G.2.1	2	6424	0.45	0.35	0.45	0.16	0.04	0.00	0.04	0.08	0.04	-0.07	-0.17	1.7881	0.0291	9.9	1.6	9.9	2.1	A-	A-	A+
MATH	8	803598	10	A-N.1.1.2	1	6424	0.73	0.07	0.12	0.08	0.73	0.00	0.50	-0.24	-0.28	-0.26	0.50	0.2181	0.0322	-2.6	1.0	-4.3	0.9	A+	A+	A+
MATH	8	172707	10	B-F.1	2	6424	0.52	0.52	0.11	0.31	0.06	0.00	0.24	0.24	-0.24	0.00	-0.19	1.4037	0.0291	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	8	422777	10	B-E.3.1.1	2	6424	0.51	0.18	0.20	0.11	0.51	0.00	0.36	-0.26	-0.08	-0.15	0.36	1.4800	0.0291	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	8	453550	10	B-F.2.1.2	2	6424	0.48	0.16	0.48	0.04	0.32	0.00	0.39	-0.15	0.39	-0.16	-0.23	1.6306	0.0291	8.8	1.1	8.4	1.2	B-	B-	A-
MATH	8	539719	10	D-S.1.1.2	2	6424	0.35	0.08	0.39	0.35	0.18	0.00	0.40	-0.24	-0.22	0.40	-0.03	2.3660	0.0301	-0.7	1.0	9.0	1.3	A-	B-	B-
MATH	8	739696	11	C-G.1.1.2	2	6437	0.38	0.21	0.20	0.21	0.38	0.00	0.31	-0.13	-0.13	-0.11	0.31	2.2320	0.0298	9.9	1.2	9.9	1.5	A+	A-	A+
MATH	8	848639	11	B-E.2.1.1	2	6437	0.14	0.14	0.72	0.05	0.09	0.00	0.03	0.03	0.27	-0.27	-0.25	3.9650	0.0402	7.1	1.2	9.9	4.2	B-	A-	A-
MATH	8	330291	11	B-E.1.1.2	1	6437	0.67	0.67	0.06	0.22	0.05	0.00	0.41	0.41	-0.04	-0.36	-0.17	0.5862	0.0308	6.7	1.1	7.0	1.2	A-	A+	A-
MATH	8	745115	11	A-N.1.1.2	1	6437	0.55	0.05	0.55	0.14	0.27	0.00	0.32	-0.23	0.32	-0.21	-0.08	1.2816	0.0293	9.9	1.2	9.9	1.4	A-	A+	A-
MATH	8	161739	11	B-E.1.1.4	1	6437	0.55	0.55	0.16	0.08	0.21	0.00	0.40	0.40	-0.14	-0.23	-0.21	1.2979	0.0293	9.0	1.1	6.4	1.1	A+	A+	A+
MATH	8	664968	11	B-E.3.1.4	1	6437	0.69	0.14	0.10	0.69	0.06	0.00	0.27	-0.16	-0.14	0.27	-0.10	0.4349	0.0313	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	8	753749	11	A-N.1.1.5	1	6437	0.71	0.12	0.08	0.71	0.09	0.00	0.49	-0.17	-0.31	0.49	-0.28	0.3458	0.0317	-0.8	1.0	-1.7	1.0	A-	A+	A-
MATH	8	943247	11	D-S.1.2.1	2	6437	0.58	0.14	0.08	0.20	0.58	0.00	0.36	-0.15	-0.24	-0.15	0.36	1.1287	0.0295	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	8	809787	11	C-G.2.1.2	2	6437	0.30	0.23	0.16	0.30	0.31	0.00	0.28	-0.13	-0.07	0.28	-0.10	2.7000	0.0313	9.9	1.2	9.9	1.7	A-	A-	A-
MATH	8	703628	11	B-F.2.1.1	2	6437	0.51	0.12	0.18	0.51	0.19	0.00	0.46	-0.12	-0.30	0.46	-0.19	1.4933	0.0292	0.6	1.0	2.7	1.1	A-	A-	A-
MATH	8	847361	12	B-F.1.1.1	2	6417	0.36	0.19	0.24	0.36	0.20	0.00	0.16	-0.09	-0.08	0.16	-0.01	2.2624	0.0298	9.9	1.3	9.9	1.8	A-	A-	A-
MATH	8	800506	12	C-G.1.1.4	2	6417	0.42	0.30	0.42	0.18	0.10	0.00	0.19	0.00	0.19	-0.13	-0.16	1.9481	0.0292	9.9	1.3	9.9	1.6	A-	A+	A-
MATH	8	852605	12	B-E.1.1.4	2	6417	0.55	0.08	0.19	0.55	0.18	0.00	0.40	-0.23	-0.22	0.40	-0.13	1.2249	0.0291	7.2	1.1	5.9	1.1	A+	A-	A-
MATH	8	584159	12	A-N.1.1.4	2	6417	0.53	0.10	0.17	0.21	0.53	0.00	0.18	-0.02	-0.07	-0.14	0.18	1.3776	0.0290	9.9	1.4	9.9	1.6	A-	A+	A+
MATH	8	118862	12	B-E.3.1	2	6417	0.20	0.29	0.33	0.18	0.20	0.00	0.03	0.00	0.04	-0.08	0.03	3.3363	0.0349	9.9	1.3	9.9	2.9	A+	A-	A+
MATH	8	112683	12	C-G.3.1.1	2	6417	0.17	0.17	0.24	0.44	0.15	0.00	-0.15	-0.15	-0.14	0.28	-0.06	3.5542	0.0366	9.9	1.5	9.9	4.1	A+	A+	A+
MATH	8	483389	12	B-E.1.1.2	1	6417	0.87	0.01	0.04	0.87	0.07	0.00	0.41	-0.12	-0.22	0.41	-0.31	-0.9754	0.0410	-1.7	1.0	-4.4	0.8	A-	A+	A-
MATH	8	573021	12	B-F.1.1	2	6417	0.51	0.26	0.09	0.51	0.14	0.00	0.31	-0.14	-0.06	0.31	-0.22	1.4691	0.0289	9.9	1.2	9.9	1.3	A-	A-	A+
MATH	8	980281	12	B-F.1.1.3	1	6417	0.47	0.15	0.15	0.22	0.47	0.00	0.28	-0.13	-0.15	-0.08	0.28	1.6691	0.0289	9.9	1.3	9.9	1.4	A+	A+	A+
MATH	8	624148	12	D-S.1.1.2	2	6417	0.29	0.29	0.50	0.15	0.06	0.00	0.13	0.13	0.05	-0.11	-0.17	2.7144	0.0313	9.9	1.3	9.9	2.0	A-	A-	A+
MATH	8	344814	13	D.4.1.3	1	12828	0.72	0.12	0.06	0.11	0.72	0.00	0.59	-0.34	-0.29	-0.28	0.59	0.2545	0.0226	-9.9	0.9	-8.9	0.8	A+	A+	A+
MATH	8	857749	13	D.4.1.1	1	12828	0.74	0.10	0.11	0.05	0.74	0.00	0.44	-0.18	-0.28	-0.22	0.44	0.0788	0.0231	2.7	1.0	3.0	1.1	A+	A-	A-
MATH	8	410592	13	C-G.1.1.3	2	6410	0.45	0.45	0.13	0.33	0.10	0.00	0.36	0.36	-0.22	-0.12	-0.18	1.7743	0.0291	7.7	1.1	9.9	1.3	A-	A-	A-
MATH	8	962049	13	B-F.1.1.1	1	6410	0.26	0.11	0.24	0.26	0.39	0.00	0.20	-0.13	-0.14	0.20	0.03	2.8872	0.0322	9.9	1.2	9.9	1.9	A-	A-	A-
MATH	8	166638	13	C-G.2.1.2	2	6410	0.33	0.39	0.16	0.33	0.12	0.00	0.07	0.18	-0.19	0.07	-0.15	2.4620	0.0305	9.9	1.5	9.9	2.2	A-	A+	A-
MATH	8	547982	13	B-F.1.1.3	1	6410	0.52	0.21	0.52	0.15	0.12	0.00	0.34	-0.05	0.34	-0.25	-0.19	1.4013	0.0291	9.9	1.2	9.9	1.2	A+	A-	A-
MATH	8	149701	13	D-S.1.1.2	2	6410	0.70	0.09	0.13	0.08	0.70	0.00	0.47	-0.21	-0.24	-0.27	0.47	0.3524	0.0314	0.6	1.0	-2.3	0.9	A-	C-	B-
MATH	8	809324	13	B-E.1.1.1	1	6410	0.29	0.39	0.23	0.29	0.09	0.00	-0.06	0.16	-0.04	-0.06	-0.12	2.6799	0.0313	9.9	1.6	9.9	2.8	A+	A+	A+
MATH	8	351680	13	B-E.3.1.3	2	6410	0.46	0.46	0.13	0.20	0.21	0.00	0.36	0.36	-0.20	-0.18	-0.09	1.7327	0.0291	9.9	1.1	9.9	1.2	A+	A+	A+
MATH	8	306735	13	A-N.1.1.2	1	6410	0.19	0.19	0.34	0.25	0.22	0.00	0.06	0.06	-0.15	0.15	-0.03	3.4253	0.0357	9.9	1.3	9.9	2.8	A-	A+	A+
MATH	8	679996	13	C-G.3.1.1	1	6410	0.74	0.16	0.74	0.07	0.03	0.00	0.51	-0.34	0.51	-0.24	-0.21	0.0859	0.0326	-3.6	0.9	-3.7	0.9	A+	A-	A-
MATH	8	749819	13	D-S.1.2.1	2	6410	0.18	0.20	0.55	0.18	0.07	0.00	0.03	-0.13	0.16	0.03	-0.16	3.4897	0.0362	9.9	1.3	9.9	3.3	A-	A-	A-
MATH	8	290208	14	D.4.1.2	1	12838	0.74	0.05	0.09	0.12	0.74	0.00	0.56	-0.26	-0.35	-0.27	0.56	0.1393	0.0231	-9.9	0.9	-7.5	0.8	A-	A-	A-
MATH	8	260948	14	C.1.2.1	1	12838	0.62	0.12	0.12	0.62	0.14	0.00	0.60	-0.21	-0.23	0.60	-0.42	0.8834	0.0212	-9.9	0.9	-9.9	0.8	A-	A-	A-
MATH	8	206642	14	A-N.1.1.2	1	6422	0.73	0.11	0.08	0.73	0.08	0.00	0.37	-0.16	-0.25	0.37	-0.16	0.1575	0.0326	8.4	1.2	6.8	1.3	A+	A+	A+
MATH	8	995116	14	D-S.1.1.1	2	6422	0.42	0.25	0.42	0.14	0.19	0.00	0.25	-0.02	0.25	-0.23	-0.09	2.0009	0.0295	9.9	1.3	9.9	1.6	A-	A-	A-
MATH	8	849155	14	B-E.1.1.4	1	6422	0.53	0.07	0.33	0.53	0.08	0.00	0.33	-0.22	-0.08	0.33	-0.26	1.3838	0.0293	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	8	259520	14	B-E.3.1.4	1	6422	0.40	0.25	0.18	0.17	0.40	0.00	0.46	-0.28	-0.19	-0.09	0.46	2.1007	0.0297	-2.5	1.0	3.3	1.1	A+	A+	A-
MATH	8	461953	14	D-S.1.2.1	2	6422	0.74	0.74	0.10	0.09	0.07	0.00	0.43	0.43	-0.20	-0.27	-0.21	0.0921	0.0329	3.1	1.1	3.4	1.1	A+	B-	A-
MATH	8	932818	14	A-N.1.1.5	1	6422	0.72	0.09	0.11	0.72	0.08	0.00	0.51	-0.26	-0.27	0.51	-0.24	0.2558	0.0321	-2.2	1.0	-2.6	0.9	A-	A-	A-
MATH	8	259770	14	C-G.1.1.1	2	6422	0.41	0.41	0.24	0.07	0.28	0.00	0.31	0.31	-0.12	-0.22	-0.11	2.0437	0.0296	9.9	1.2	9.9	1.4	A-	A-	A-

MATH	8	460773	14	B-F.1.1.2	2	6422	0.25	0.25	0.32	0.07	0.35	0.00	0.07	0.07	0.03	-0.16	0.00	2.9926	0.0326	9.9	1.4	9.9	2.5	A-	A-	A-
MATH	8	974776	14	B-E.2.1.3	1	6422	0.28	0.28	0.43	0.04	0.24	0.00	0.26	0.26	0.02	-0.23	-0.18	2.7992	0.0317	9.9	1.2	9.9	1.7	A-	A+	A+
MATH	8	943919	14	B-E.1.1.1	2	6422	0.24	0.17	0.24	0.42	0.17	0.00	0.20	0.08	0.20	-0.16	-0.11	3.1066	0.0333	9.9	1.2	9.9	2.0	A-	A-	A-
MATH	8	515093	15	A-N.1.1.3	1	6416	0.51	0.21	0.51	0.18	0.09	0.00	0.40	-0.26	0.40	-0.10	-0.19	1.4945	0.0291	6.1	1.1	7.7	1.2	A-	A+	A-
MATH	8	839436	15	B-E.1.1.4	2	6416	0.48	0.23	0.14	0.48	0.15	0.00	0.41	-0.07	-0.20	0.41	-0.29	1.6772	0.0291	5.5	1.1	7.3	1.2	B-	A-	A-
MATH	8	675643	15	A-N.1.1.4	1	6416	0.64	0.14	0.09	0.64	0.14	0.00	0.43	-0.22	-0.22	0.43	-0.20	0.7783	0.0302	5.5	1.1	3.9	1.1	A+	A-	A-
MATH	8	447377	15	B-E.3.1.2	1	6416	0.30	0.17	0.15	0.38	0.30	0.00	0.17	-0.07	-0.08	-0.05	0.17	2.6560	0.0310	9.9	1.3	9.9	2.0	A+	A-	A-
MATH	8	397029	15	B-E.2.1.2	2	6416	0.23	0.23	0.37	0.11	0.28	0.00	0.04	0.04	0.01	-0.23	0.11	3.1038	0.0331	9.9	1.4	9.9	2.8	A-	A+	A+
MATH	8	447045	15	B-F.1.1.3	1	6416	0.18	0.48	0.14	0.19	0.18	0.00	0.14	0.22	-0.24	-0.19	0.14	3.4840	0.0357	8.4	1.2	9.9	2.5	A+	A+	A+
MATH	8	687243	15	B-F.2.1.2	2	6416	0.53	0.29	0.53	0.11	0.08	0.00	0.27	-0.04	0.27	-0.23	-0.17	1.3866	0.0292	9.9	1.3	9.9	1.4	A-	A-	A-
MATH	8	214362	15	D-S.1.1.2	2	6416	0.32	0.35	0.32	0.21	0.12	0.00	0.04	0.12	0.04	-0.10	-0.11	2.5584	0.0306	9.9	1.5	9.9	2.4	A-	A+	A+
MATH	8	419383	15	C-G.1.1.3	2	6416	0.28	0.20	0.19	0.33	0.28	0.00	0.21	-0.11	-0.19	0.06	0.21	2.7738	0.0314	9.9	1.2	9.9	1.8	A-	A-	A-
MATH	8	649379	15	C-G.3.1.1	2	6416	0.15	0.12	0.09	0.15	0.64	0.00	-0.01	-0.32	-0.25	-0.01	0.38	3.7755	0.0383	9.9	1.3	9.9	3.6	A-	A-	A-
MATH	8	345510	16	B-E.3.1.5	2	6395	0.35	0.24	0.35	0.22	0.19	0.00	0.15	0.01	0.15	-0.04	-0.15	2.4030	0.0305	9.9	1.4	9.9	2.0	A+	A+	A-
MATH	8	419172	16	B-F.2.1.1	2	6395	0.74	0.74	0.06	0.16	0.04	0.00	0.55	0.55	-0.29	-0.35	-0.22	0.1355	0.0328	-6.1	0.9	-7.5	0.7	A-	A-	A-
MATH	8	327852	16	A-N.1.1.1	1	6395	0.61	0.19	0.11	0.61	0.09	0.00	0.34	-0.12	-0.19	0.34	-0.21	0.9249	0.0301	9.9	1.2	9.9	1.3	A+	A+	A+
MATH	8	730957	16	A-N.1.1.3	1	6395	0.48	0.09	0.48	0.18	0.25	0.00	0.36	-0.16	0.36	-0.04	-0.28	1.6871	0.0294	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	8	694909	16	B-E.2.1	2	6395	0.54	0.09	0.54	0.27	0.09	0.00	0.35	-0.24	0.35	-0.13	-0.16	1.3186	0.0295	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	808885	16	C-G.2.1.3	2	6395	0.28	0.51	0.28	0.18	0.03	0.00	0.36	-0.20	0.36	-0.08	-0.18	2.8194	0.0320	-0.2	1.0	9.9	1.5	A-	A-	A-
MATH	8	965231	16	B-F.1.1.2	2	6395	0.22	0.22	0.26	0.20	0.32	0.00	0.20	0.20	-0.10	-0.11	0.02	3.2480	0.0343	8.0	1.2	9.9	2.3	A-	A-	A+
MATH	8	126325	16	D-S.1.1.1	2	6395	0.77	0.09	0.06	0.77	0.08	0.00	0.41	-0.23	-0.26	0.41	-0.16	-0.0835	0.0339	3.2	1.1	4.2	1.2	A+	A-	B-
MATH	8	223571	16	A-N.1.1.4	2	6395	0.50	0.25	0.50	0.17	0.08	0.00	0.35	-0.08	0.35	-0.24	-0.19	1.5524	0.0294	9.9	1.2	9.9	1.3	A+	A-	A-
MATH	8	297969	16	D-S.1.1.3	2	6395	0.36	0.10	0.16	0.37	0.36	0.00	0.20	-0.21	-0.21	0.10	0.20	2.3384	0.0303	9.9	1.4	9.9	1.8	A+	A-	A-
MATH	8	599996	17	C-G.1.1.2	2	6386	0.26	0.17	0.40	0.17	0.26	0.00	0.18	-0.17	0.08	-0.14	0.18	2.9447	0.0327	9.9	1.3	9.9	2.0	A-	A-	A-
MATH	8	159100	17	A-N.1.1.3	1	6386	0.47	0.47	0.15	0.21	0.17	0.00	0.47	0.47	-0.04	-0.27	-0.30	1.6792	0.0295	1.2	1.0	1.5	1.0	A-	A+	A+
MATH	8	505390	17	D-S.1.1.1	2	6386	0.51	0.19	0.13	0.51	0.17	0.00	0.32	-0.07	-0.26	0.32	-0.11	1.4856	0.0295	9.9	1.2	9.9	1.3	A-	A-	A-
MATH	8	255962	17	B-E.2.1.3	1	6386	0.59	0.59	0.15	0.17	0.10	0.00	0.45	0.45	-0.14	-0.30	-0.20	1.0481	0.0299	4.0	1.1	2.7	1.1	A+	A-	A-
MATH	8	258462	17	B-F.1.1.2	2	6386	0.57	0.14	0.13	0.16	0.57	0.00	0.52	-0.23	-0.28	-0.23	0.52	1.1457	0.0297	-4.3	0.9	-2.6	0.9	A+	A-	A+
MATH	8	624820	17	B-E.1.1.3	1	6386	0.61	0.13	0.15	0.11	0.61	0.00	0.39	-0.18	-0.22	-0.16	0.39	0.9423	0.0300	9.9	1.2	7.0	1.2	A-	A+	A-
MATH	8	795031	17	A-N.1.1.2	1	6386	0.67	0.14	0.12	0.67	0.07	0.00	0.43	-0.27	-0.14	0.43	-0.23	0.5565	0.0310	5.9	1.1	1.8	1.1	A-	A+	A-
MATH	8	614061	17	B-E.1.1.3	2	6386	0.33	0.07	0.33	0.16	0.44	0.00	0.38	-0.03	0.38	-0.10	-0.27	2.5251	0.0310	2.4	1.0	9.9	1.3	A-	A-	A-
MATH	8	743815	17	B-E.3.1.3	2	6386	0.76	0.13	0.05	0.76	0.06	0.00	0.51	-0.34	-0.26	0.51	-0.18	-0.0473	0.0336	-3.8	0.9	-4.0	0.8	A-	B-	A-
MATH	8	883973	17	B-F.2.1.1	2	6386	0.22	0.18	0.18	0.41	0.22	0.00	0.13	-0.12	-0.21	0.15	0.13	3.2265	0.0343	9.9	1.3	9.9	2.5	A-	A-	A+
MATH	8	816944	18	C-G.3.1.1	2	6418	0.45	0.45	0.21	0.20	0.15	0.00	0.30	0.30	-0.14	-0.17	-0.05	1.8233	0.0292	9.9	1.2	9.9	1.4	A-	A-	A-
MATH	8	980171	18	D-S.1.1.3	2	6418	0.23	0.17	0.20	0.39	0.23	0.00	0.15	-0.10	-0.21	0.13	0.15	3.1085	0.0333	9.9	1.3	9.9	2.2	A-	A-	A-
MATH	8	244635	18	B-E.1.1.4	1	6418	0.71	0.71	0.16	0.08	0.05	0.00	0.37	0.37	-0.18	-0.21	-0.20	0.3397	0.0316	8.4	1.1	4.0	1.1	A-	A+	A+
MATH	8	470895	18	B-E.3.1.2	1	6418	0.63	0.09	0.19	0.63	0.09	0.00	0.37	-0.17	-0.17	0.37	-0.20	0.8024	0.0301	9.9	1.2	6.3	1.2	A-	A-	A-
MATH	8	678484	18	A-N.1.1.4	2	6418	0.29	0.18	0.13	0.39	0.29	0.00	0.31	-0.12	-0.08	-0.14	0.31	2.7032	0.0313	8.2	1.1	9.9	1.5	A-	A+	A+
MATH	8	980404	18	B-E.2.1.1	2	6418	0.84	0.05	0.84	0.02	0.09	0.00	0.49	-0.22	0.49	-0.18	-0.38	-0.6440	0.0378	-5.3	0.9	-3.7	0.8	A-	A-	A-
MATH	8	831485	18	B-E.1.1.1	1	6418	0.32	0.32	0.12	0.28	0.28	0.00	0.35	0.35	-0.19	-0.12	-0.10	2.5677	0.0308	3.4	1.1	9.9	1.4	A-	A-	A-
MATH	8	365658	18	B-F.1.1.1	1	6418	0.32	0.27	0.32	0.24	0.18	0.00	0.14	0.01	0.14	-0.05	-0.13	2.5488	0.0307	9.9	1.4	9.9	2.0	A-	A-	A-
MATH	8	120141	18	B-F.2.1.2	2	6418	0.44	0.09	0.32	0.15	0.44	0.00	0.33	-0.30	-0.08	-0.11	0.33	1.8711	0.0292	9.9	1.2	9.9	1.3	A-	A-	B-
MATH	8	890384	18	C-G.1.1.4	2	6418	0.28	0.21	0.21	0.28	0.30	0.00	0.03	-0.07	-0.04	0.03	0.07	2.8265	0.0318	9.9	1.4	9.9	2.7	A-	A+	A+
MATH	8	984208	19	D.4.1.2	1	12783	0.79	0.79	0.09	0.06	0.06	0.00	0.57	0.57	-0.34	-0.29	-0.27	-0.2516	0.0247	-9.9	0.9	-9.9	0.7	A+	A-	A+
MATH	8	975224	19	D.1.1.3	1	12783	0.82	0.08	0.07	0.82	0.04	0.00	0.57	-0.35	-0.32	0.57	-0.25	-0.4690	0.0258	-9.9	0.8	-9.9	0.7	A+	A-	A-
MATH	8	152877	19	B-F.1.1.1	2	6392	0.41	0.16	0.17	0.25	0.41	0.00	0.24	-0.07	-0.19	-0.03	0.24	2.0362	0.0296	9.9	1.3	9.9	1.6	A+	A-	A-
MATH	8	373871	19	B-F.1.1.3	2	6392	0.27	0.30	0.27	0.08	0.35	0.00	0.02	-0.08	0.02	-0.18	0.16	2.9163	0.0323	9.9	1.5	9.9	2.7	A-	A+	A+
MATH	8	769342	19	D-S.1.1.1	2	6392	0.79	0.07	0.08	0.06	0.79	0.00	0.51	-0.25	-0.31	-0.25	0.51	-0.2033	0.0347	-4.7	0.9	-5.9	0.8	A-	B-	A-
MATH	8	339165	19	B-E.1.1.2	1	6392	0.65	0.65	0.15	0.13	0.06	0.00	0.50	0.50	-0.24	-0.25	-0.27	0.7168	0.0305	-0.9	1.0	-1.2	1.0	A-	A+	A+
MATH	8	240515	19	B-E.1.1.3	2	6392	0.58	0.09	0.15	0.17	0.58	0.00	0.39	-0.21	-0.18	-0.17	0.39	1.0867	0.0297	9.7	1.1	7.5	1.2	A-	A+	A+
MATH	8	429063	19	B-E.3.1.3	1	6392	0.29	0.29	0.17	0.10	0.43	0.00	0.20	0.20	-0.18	-0.24	0.11	2.7620	0.0316	9.9	1.2	9.9	2.1	A-	A-	A-

MATH	8	151650	19	A-N.1.1.2	1	6392	0.29	0.16	0.07	0.48	0.29	0.00	0.27	-0.26	-0.16	0.03	0.27	2.7600	0.0316	9.9	1.2	9.9	1.7	A+	A+	A+
MATH	8	377646	19	C-G.1.1.2	2	6392	0.14	0.29	0.39	0.18	0.14	0.00	0.07	-0.02	-0.03	0.01	0.07	3.9137	0.0397	9.5	1.3	9.9	3.5	A-	A+	A-
MATH	8	119611	19	C-G.2.1.1	1	6392	0.46	0.16	0.17	0.21	0.46	0.00	0.44	-0.25	-0.17	-0.16	0.44	1.7671	0.0293	1.6	1.0	3.6	1.1	A+	A+	A+
MATH	8	119918	19	D-S.1.2.1	2	6392	0.70	0.12	0.70	0.12	0.06	0.00	0.38	-0.18	0.38	-0.23	-0.18	0.3902	0.0316	7.8	1.1	5.4	1.2	A-	A-	A-
MATH	8	647639	20	B-E.3.1	2	6391	0.34	0.27	0.23	0.34	0.16	0.00	0.18	-0.05	-0.12	0.18	-0.03	2.4154	0.0304	9.9	1.3	9.9	1.9	A+	A-	A+
MATH	8	578824	20	B-E.1.1.4	1	6391	0.67	0.11	0.08	0.14	0.67	0.00	0.38	-0.24	-0.20	-0.14	0.38	0.5670	0.0308	8.5	1.1	6.2	1.2	A-	A+	A+
MATH	8	513635	20	B-F.1.1.1	1	6391	0.30	0.15	0.30	0.34	0.21	0.00	0.14	-0.15	0.14	0.01	-0.03	2.6239	0.0311	9.9	1.3	9.9	2.1	A-	A-	A-
MATH	8	496256	20	C-G.1.1.4	2	6391	0.37	0.37	0.13	0.33	0.17	0.00	0.20	0.20	-0.16	0.00	-0.12	2.2168	0.0299	9.9	1.3	9.9	1.7	A-	A-	A-
MATH	8	770379	20	A-N.1.1.4	2	6391	0.39	0.18	0.29	0.39	0.13	0.00	0.20	-0.14	-0.06	0.20	-0.04	2.1238	0.0297	9.9	1.3	9.9	1.7	A+	A+	A+
MATH	8	770978	20	B-E.1.1.2	1	6391	0.24	0.50	0.24	0.19	0.07	0.00	0.18	0.13	0.18	-0.27	-0.14	3.0484	0.0331	9.9	1.2	9.9	2.2	A+	A-	A+
MATH	8	582392	20	C-G.3.1.1	1	6391	0.76	0.14	0.76	0.08	0.03	0.00	0.47	-0.38	0.47	-0.16	-0.17	-0.0027	0.0333	-1.1	1.0	-1.7	0.9	A+	A-	A-
MATH	8	818157	20	D-S.1.1.2	2	6391	0.58	0.05	0.58	0.27	0.09	0.00	0.30	-0.25	0.30	-0.01	-0.29	1.0590	0.0296	9.9	1.3	9.9	1.4	A+	A-	A-
MATH	8	883624	20	B-F.1.1.3	1	6391	0.52	0.52	0.17	0.18	0.12	0.00	0.46	0.46	-0.13	-0.24	-0.25	1.4189	0.0292	1.1	1.0	2.9	1.1	A+	A-	A+
MATH	8	528884	20	C-G.2.1	2	6391	0.74	0.10	0.74	0.07	0.10	0.00	0.25	-0.08	0.25	-0.15	-0.15	0.1401	0.0325	9.9	1.3	9.9	1.8	A+	A+	A-
READING	3	300690	0	A.1.1.1		124495	0.41	0.33	0.16	0.10	0.41	0.00	0.40	-0.09	-0.20	-0.26	0.40	1.4406	0.0066	-8.3	1.0	9.9	1.1			
READING	3	308022	0	A.1.3.1		124495	0.72	0.09	0.72	0.11	0.08	0.01	0.50	-0.25	0.50	-0.23	-0.28	-0.3042	0.0072	-9.9	1.0	-9.9	0.9			
READING	3	570670	0	A.1.2.2		124495	0.76	0.76	0.06	0.04	0.14	0.00	0.35	0.35	-0.30	-0.25	-0.09	-0.4353	0.0074	9.9	1.1	9.9	1.2			
READING	3	781773	0	B.1.1.1		124495	0.73	0.14	0.07	0.73	0.05	0.01	0.59	-0.39	-0.25	0.59	-0.26	-0.2814	0.0072	-9.9	0.8	-9.9	0.7			
READING	3	193034	0	B.1.1.1		124495	0.70	0.13	0.06	0.70	0.10	0.01	0.56	-0.26	-0.28	0.56	-0.33	-0.2511	0.0072	-9.9	0.9	-9.9	0.8			
READING	3	454920	0	A.1.3.1		124495	0.60	0.12	0.14	0.12	0.60	0.01	0.54	-0.30	-0.29	-0.19	0.54	0.4937	0.0066	-9.9	0.9	-9.9	0.8			
READING	3	548838	0	A.1.5.1		124495	0.55	0.55	0.15	0.20	0.10	0.01	0.39	0.39	-0.29	-0.06	-0.22	0.7767	0.0066	9.9	1.1	9.9	1.1			
READING	3	594347	0	A.1.3.1		124495	0.69	0.05	0.10	0.69	0.15	0.01	0.55	-0.29	-0.25	0.55	-0.31	-0.0637	0.0070	-9.9	0.9	-9.9	0.8			
READING	3	690957	0	A.2.4.1		124495	0.56	0.09	0.28	0.56	0.06	0.01	0.30	-0.29	0.01	0.30	-0.29	0.5052	0.0066	9.9	1.2	9.9	1.4			
READING	3	137818	0	A.2.4.1		124495	0.63	0.12	0.63	0.12	0.13	0.01	0.51	-0.31	0.51	-0.23	-0.20	0.3287	0.0067	-9.9	0.9	-9.9	0.9			
READING	3	674645	0	A.2.3.1		124495	0.64	0.09	0.13	0.14	0.64	0.01	0.46	-0.20	-0.22	-0.24	0.46	0.2136	0.0068	1.7	1.0	0.6	1.0			
READING	3	595530	0	A.2.4.1		124495	0.70	0.08	0.70	0.04	0.17	0.01	0.51	-0.27	0.51	-0.28	-0.27	-0.1604	0.0071	-9.9	0.9	-9.9	0.9			
READING	3	452768	0	A.2.6.1		124495	0.66	0.04	0.66	0.18	0.12	0.01	0.43	-0.29	0.43	-0.18	-0.24	0.0451	0.0069	9.9	1.1	9.9	1.1			
READING	3	331600	0	A.2.4.1		124495	0.63	0.63	0.05	0.16	0.15	0.01	0.50	0.50	-0.26	-0.19	-0.30	0.3112	0.0067	-9.9	1.0	-6.0	1.0			
READING	3	606300	0	A.2.4.1		124495	0.67	0.12	0.13	0.67	0.07	0.01	0.52	-0.23	-0.27	0.52	-0.29	0.0292	0.0069	-9.9	0.9	-9.9	0.9			
READING	3	986607	0	A.2.4.1		124495	0.57	0.16	0.15	0.11	0.57	0.01	0.48	-0.29	-0.10	-0.28	0.48	0.6072	0.0066	-8.1	1.0	-9.1	1.0			
READING	3	408330	0	B.1.1.1	2	124495	0.86	0.02	0.08	0.03	0.86	0.00	0.46	-0.25	-0.30	-0.22	0.46	-1.2824	0.0088	-9.9	0.8	-9.9	0.7			
READING	3	560275	0	A.1.4.1	2	124495	0.59	0.04	0.05	0.59	0.31	0.00	0.43	-0.30	-0.32	0.43	-0.17	0.4523	0.0067	9.9	1.1	9.9	1.1			
READING	3	766875	0	A.1.3.1	2	124495	0.92	0.02	0.02	0.03	0.92	0.00	0.47	-0.27	-0.24	-0.28	0.47	-1.9994	0.0108	-9.9	0.8	-9.9	0.5			
READING	3	725011	0	B.1.1.1	2	124495	0.85	0.85	0.02	0.09	0.04	0.00	0.41	0.41	-0.23	-0.23	-0.24	-1.5135	0.0093	9.9	1.1	8.0	1.1			
READING	3	663978	0	A.1.4.1	1	124495	0.68	0.13	0.68	0.14	0.04	0.00	0.53	-0.27	0.53	-0.27	-0.30	-0.0133	0.0069	-9.9	0.9	-9.9	0.9			
READING	3	473939	0	A.1.4.1	1	124495	0.68	0.11	0.68	0.16	0.05	0.00	0.49	-0.33	0.49	-0.18	-0.26	-0.0231	0.0069	-9.9	1.0	-9.9	0.9			
READING	3	425466	0	B.1.1.1	2	124495	0.82	0.82	0.11	0.03	0.03	0.00	0.41	0.41	-0.21	-0.25	-0.26	-0.9320	0.0081	-9.9	1.0	-7.1	0.9			
READING	3	513157	0	A.2.2.1	2	124495	0.64	0.64	0.03	0.03	0.30	0.00	0.16	0.16	-0.25	-0.24	0.01	0.1770	0.0068	9.9	1.4	9.9	1.8			
READING	3	420408	0	A.2.2.2	2	124495	0.77	0.07	0.77	0.07	0.09	0.01	0.56	-0.26	0.56	-0.32	-0.30	-0.5211	0.0075	-9.9	0.8	-9.9	0.7			
READING	3	227069	0	B.3.3.1	2	124495	0.60	0.21	0.60	0.07	0.11	0.01	0.49	-0.25	0.49	-0.23	-0.23	0.3190	0.0067	-6.0	1.0	-9.9	0.9			
READING	3	243649	0	B.3.3.2	2	124495	0.74	0.08	0.09	0.09	0.74	0.01	0.49	-0.28	-0.24	-0.24	0.49	-0.3010	0.0072	-9.9	0.9	-9.9	0.9			
READING	3	565461	0	B.3.3.2	2	124495	0.75	0.75	0.07	0.09	0.09	0.01	0.44	0.44	-0.26	-0.19	-0.23	-0.4314	0.0074	-3.0	1.0	3.2	1.0			
READING	3	502971	0	A.2.4.1	2	124495	0.72	0.07	0.13	0.72	0.07	0.01	0.37	-0.14	-0.25	0.37	-0.16	-0.1736	0.0071	9.9	1.1	5.0	1.0			
READING	3	254463	0	A.2.4.1	2	124495	0.63	0.15	0.63	0.10	0.11	0.01	0.52	-0.27	0.52	-0.27	-0.22	0.3359	0.0067	-9.9	0.9	-9.9	0.9			
READING	3	221842	0	A.2.4.1	1	124495	0.74	0.18	0.05	0.74	0.03	0.01	0.41	-0.23	-0.24	0.41	-0.24	-0.3603	0.0073	5.4	1.0	7.3	1.1			
READING	3	367922	0	A.2.4.1	2	124495	0.66	0.16	0.66	0.06	0.12	0.01	0.50	-0.28	0.50	-0.20	-0.26	0.1509	0.0068	-9.9	0.9	-9.9	0.9			
READING	3	387722	0	B.1.2.1	2	124495	0.65	0.06	0.15	0.65	0.13	0.01	0.34	-0.26	-0.14	0.34	-0.14	0.1699	0.0068	9.9	1.1	9.9	1.2			
READING	3	981019	0	A.1.4.1	2	124495	0.49	0.16	0.21	0.13	0.49	0.01	0.45	-0.22	-0.13	-0.26	0.45	1.2221	0.0065	-3.1	1.0	9.9	1.1			
READING	3	947312	0	A.1.3.1	2	124495	0.77	0.77	0.11	0.04	0.07	0.00	0.46	0.46	-0.24	-0.25	-0.25	-0.5469	0.0075	-9.9	0.9	-9.9	0.8			
READING	3	378581	0	A.1.3.1	2	124495	0.82	0.82	0.07	0.06	0.04	0.01	0.48	0.48	-0.28	-0.24	-0.25	-0.9496	0.0081	-9.9	0.9	-9.9	0.7			
READING	3	613387	0	A.1.1.1	2	124495	0.78	0.10	0.05	0.78	0.06	0.01	0.43	-0.25	-0.21	0.43	-0.22	-0.5477	0.0075	-9.9	0.9	-9.9	0.9			

READING	3	596772	0	A.1.4.1	2	124495	0.82	0.09	0.82	0.05	0.04	0.00	0.43	-0.26	0.43	-0.22	-0.21	-1.2020	0.0086	9.9	1.1	1.6	1.0			
READING	3	396081	0	A.1.1.1	2	124495	0.70	0.11	0.10	0.70	0.08	0.01	0.41	-0.21	-0.19	0.41	-0.22	-0.1068	0.0070	9.9	1.0	7.0	1.1			
READING	3	749852	0	A.1.6.1	2	124495	0.62	0.10	0.62	0.18	0.09	0.00	0.36	-0.23	0.36	-0.11	-0.21	0.2297	0.0068	9.9	1.1	9.9	1.2			
ELA	3	133694	1	B.2.1.1	2	69320	0.62	0.08	0.09	0.62	0.20	0.00	0.46	-0.27	-0.19	0.46	-0.22	0.3023	0.0090	-2.5	1.0	-5.7	1.0	A-	A-	A-
ELA	3	629142	1	B.1.1.1	2	69320	0.52	0.08	0.19	0.21	0.52	0.00	0.46	-0.16	-0.14	-0.31	0.46	0.8699	0.0087	-4.7	1.0	-2.9	1.0	A-	A-	A-
ELA	3	653437	1	A.1.4.1	1	69320	0.72	0.72	0.09	0.08	0.11	0.00	0.53	0.53	-0.27	-0.28	-0.28	-0.2493	0.0095	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	3	155970	1	A.1.3.1	2	69320	0.69	0.14	0.11	0.69	0.05	0.01	0.37	-0.17	-0.18	0.37	-0.25	-0.1223	0.0094	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	3	452627	1	A.1.5.1	3	69320	0.54	0.16	0.54	0.19	0.11	0.00	0.35	-0.30	0.35	-0.10	-0.07	0.7414	0.0088	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	3	412268	1	A.1.3.1	2	69320	0.76	0.11	0.04	0.08	0.76	0.00	0.44	-0.30	-0.30	-0.10	0.44	-0.5408	0.0100	-6.1	1.0	8.3	1.1	A+	A-	A-
ELA	3	863036	1	B.1.1.1	2	69320	0.57	0.57	0.03	0.33	0.07	0.01	0.38	0.38	-0.23	-0.18	-0.25	0.6154	0.0088	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	3	814418	1	A.1.2.2	2	69320	0.84	0.84	0.03	0.06	0.06	0.01	0.48	0.48	-0.27	-0.26	-0.26	-1.1910	0.0114	-9.9	0.9	-9.9	0.7	A-	A-	C-
ELA	3	949839	1	B-C.3.1.1	2	14010	0.55	0.11	0.17	0.55	0.15	0.02	0.44	-0.26	-0.11	0.44	-0.24	0.6463	0.0195	1.1	1.0	0.4	1.0	A+	A-	A-
ELA	3	395870	1	B-K.1.1.2	2	14010	0.66	0.66	0.14	0.12	0.08	0.01	0.40	0.40	-0.19	-0.25	-0.14	0.0468	0.0203	5.1	1.1	9.9	1.2	A-	A-	A-
ELA	3	354965	1	B-C.2.1.1	2	14010	0.29	0.30	0.29	0.19	0.20	0.02	0.16	0.06	0.16	-0.16	-0.07	2.0685	0.0209	9.9	1.2	9.9	1.8	A-	A-	A+
ELA	3	257948	1	B-V.4.1.2	2	14010	0.81	0.81	0.09	0.06	0.03	0.01	0.34	0.34	-0.17	-0.20	-0.18	-0.9999	0.0240	1.8	1.0	9.9	1.3	A-	A-	A-
ELA	3	426811	1	B-K.1.1.1	2	14010	0.51	0.14	0.24	0.10	0.51	0.01	0.26	-0.26	0.01	-0.14	0.26	0.8349	0.0194	9.9	1.2	9.9	1.3	A-	A+	A+
ELA	3	241873	1	B-K.1.1.3	2	14010	0.59	0.09	0.59	0.12	0.19	0.01	0.40	-0.32	0.40	-0.18	-0.11	0.4132	0.0197	6.8	1.1	6.2	1.1	A-	A-	A-
ELA	3	787269	1	B-V.4.1.1	2	14010	0.79	0.06	0.10	0.04	0.79	0.00	0.55	-0.34	-0.29	-0.25	0.55	-0.8319	0.0231	-9.9	0.8	-9.9	0.7	A+	A-	B-
ELA	3	535997	1	B-V.4.1.1	2	14010	0.58	0.12	0.20	0.58	0.10	0.01	0.44	-0.25	-0.12	0.44	-0.28	0.4749	0.0196	0.7	1.0	0.4	1.0	A-	A-	A-
ELA	3	371653	2	B-V.4.1.2	2	13860	0.73	0.11	0.08	0.73	0.08	0.01	0.52	-0.22	-0.29	0.52	-0.30	-0.3168	0.0215	-9.9	0.9	-9.9	0.8	A-	A+	A-
ELA	3	809221	2	B-K.1.1.3	2	13860	0.50	0.26	0.08	0.50	0.14	0.01	0.43	-0.21	-0.25	0.43	-0.15	0.9594	0.0195	-1.2	1.0	0.6	1.0	A-	A-	A-
ELA	3	856560	2	B-V.4.1.2	2	13860	0.50	0.50	0.36	0.05	0.07	0.01	0.32	0.32	-0.04	-0.29	-0.29	0.9445	0.0195	9.9	1.1	9.9	1.2	B-	A-	B-
ELA	3	884745	2	B-C.3.1.1	3	13860	0.43	0.33	0.43	0.10	0.13	0.01	0.31	-0.06	0.31	-0.25	-0.13	1.3230	0.0197	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	3	575066	2	B-C.3.1.2	3	13860	0.35	0.20	0.27	0.18	0.35	0.00	0.34	-0.11	-0.20	-0.06	0.34	1.8016	0.0203	6.0	1.1	9.9	1.2	A-	A-	A-
ELA	3	888679	2	B-C.3.1.2	3	13860	0.62	0.62	0.12	0.13	0.12	0.00	0.44	0.44	-0.24	-0.25	-0.15	0.2954	0.0201	1.4	1.0	-0.5	1.0	A-	A-	A-
ELA	3	740987	2	B-V.4.1.1	2	13860	0.75	0.09	0.08	0.08	0.75	0.00	0.59	-0.34	-0.30	-0.28	0.59	-0.4751	0.0221	-9.9	0.8	-9.9	0.6	A-	A-	A+
ELA	3	723334	2	B-C.3.1.3	3	13860	0.50	0.23	0.50	0.13	0.14	0.01	0.40	-0.21	0.40	-0.14	-0.18	0.9694	0.0195	4.1	1.0	5.7	1.1	A-	A-	A-
ELA	3	676052	3	B-K.1.1.3	2	13843	0.48	0.48	0.12	0.13	0.26	0.01	0.30	0.30	-0.14	-0.17	-0.11	1.0557	0.0195	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	3	859893	3	B-C.2.1.1	2	13843	0.42	0.19	0.26	0.42	0.13	0.01	0.29	-0.14	-0.05	0.29	-0.20	1.3628	0.0197	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	3	664936	3	B-C.3.1.1	2	13843	0.36	0.37	0.11	0.36	0.15	0.01	0.24	-0.02	-0.28	0.24	-0.03	1.7087	0.0202	9.9	1.2	9.9	1.5	A-	A+	A-
ELA	3	956674	3	B-V.4.1.1	2	13843	0.72	0.72	0.13	0.07	0.07	0.00	0.45	0.45	-0.18	-0.28	-0.26	-0.3152	0.0215	-2.8	1.0	-3.2	0.9	A+	A-	A-
ELA	3	912895	3	B-V.4.1.2	2	13843	0.69	0.15	0.09	0.06	0.69	0.01	0.52	-0.23	-0.30	-0.30	0.52	-0.1118	0.0209	-9.9	0.9	-9.3	0.8	A+	A-	A-
ELA	3	942203	3	B-K.1.1.1	2	13843	0.60	0.19	0.60	0.12	0.08	0.02	0.54	-0.28	0.54	-0.24	-0.27	0.4164	0.0199	-9.9	0.9	-9.9	0.8	A+	A+	A+
ELA	3	737743	3	B-K.1.1.1	2	13843	0.50	0.22	0.13	0.15	0.50	0.01	0.34	-0.15	-0.17	-0.14	0.34	0.9530	0.0195	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	3	630429	3	B-V.4.1.1	2	13843	0.80	0.80	0.08	0.07	0.05	0.00	0.39	0.39	-0.24	-0.19	-0.20	-0.8846	0.0237	0.2	1.0	-2.5	0.9	A+	A-	A-
ELA	3	645442	4	B-C.2.1.1	3	13810	0.56	0.19	0.56	0.15	0.09	0.00	0.46	-0.19	0.46	-0.22	-0.24	0.6761	0.0199	0.3	1.0	-0.9	1.0	A-	A+	A-
ELA	3	665554	4	B-C.3.1.1	2	13810	0.61	0.61	0.10	0.13	0.15	0.00	0.40	0.40	-0.18	-0.21	-0.19	0.4045	0.0202	8.4	1.1	4.8	1.1	A-	A-	A-
ELA	3	757358	4	B-C.3.1.3	2	13810	0.63	0.08	0.63	0.09	0.18	0.01	0.45	-0.31	0.45	-0.19	-0.18	0.2940	0.0204	1.7	1.0	0.0	1.0	A-	A-	A-
ELA	3	730567	4	B-K.1.1.2	3	13810	0.71	0.71	0.14	0.09	0.06	0.00	0.45	0.45	-0.20	-0.28	-0.22	-0.2027	0.0215	0.1	1.0	-2.4	1.0	A-	A-	A-
ELA	3	712013	4	B-K.1.1.3	2	13810	0.51	0.17	0.21	0.51	0.11	0.01	0.41	-0.21	-0.13	0.41	-0.21	0.9812	0.0198	6.4	1.1	7.5	1.1	A-	A-	A-
ELA	3	461288	4	B-V.4.1.1	2	13810	0.73	0.07	0.10	0.09	0.73	0.01	0.58	-0.28	-0.30	-0.31	0.58	-0.3295	0.0219	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	989692	4	B-V.4.1.2	2	13810	0.84	0.03	0.09	0.03	0.84	0.01	0.53	-0.26	-0.36	-0.24	0.53	-1.1515	0.0256	-9.9	0.8	-8.3	0.7	A-	A-	A-
ELA	3	641181	4	B-C.2.1.2	1	13810	0.64	0.09	0.06	0.64	0.20	0.01	0.42	-0.23	-0.23	0.42	-0.18	0.2427	0.0205	5.8	1.1	5.5	1.1	A-	A-	A-
ELA	3	826954	5	B-C.2.1.2	2	13797	0.58	0.13	0.58	0.20	0.08	0.00	0.46	-0.32	0.46	-0.11	-0.27	0.5339	0.0197	-2.7	1.0	-3.5	1.0	A-	A-	A-
ELA	3	780145	5	B-C.3.1.3	2	13797	0.41	0.41	0.36	0.08	0.15	0.01	0.24	0.24	0.00	-0.17	-0.19	1.4729	0.0197	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	3	574860	5	B-C.3.1.1	3	13797	0.80	0.80	0.06	0.11	0.03	0.01	0.43	0.43	-0.24	-0.26	-0.18	-0.7774	0.0235	-2.8	1.0	-4.0	0.9	A-	A-	A-
ELA	3	737335	5	B-C.3.1.2	3	13797	0.56	0.22	0.10	0.12	0.56	0.00	0.42	-0.17	-0.28	-0.16	0.42	0.6742	0.0196	3.0	1.0	5.3	1.1	A-	A-	A-
ELA	3	503317	5	B-C.3.1.2	3	13797	0.70	0.09	0.08	0.70	0.12	0.00	0.52	-0.30	-0.27	0.52	-0.23	-0.1222	0.0210	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	3	951046	5	B-V.4.1.1	2	13797	0.40	0.10	0.31	0.40	0.18	0.00	0.17	-0.34	0.06	0.17	-0.02	1.4903	0.0197	9.9	1.3	9.9	1.5	A+	A-	A-
ELA	3	217284	5	B-V.4.1.2	2	13797	0.90	0.06	0.90	0.02	0.01	0.00	0.51	-0.41	0.51	-0.22	-0.18	-1.8110	0.0308	-9.9	0.8	-9.9	0.4	A+	B-	B-
ELA	3	446530	5	B-C.2.1.1	2	13797	0.43	0.24	0.18	0.12	0.43	0.03	0.26	-0.07	-0.10	-0.17	0.26	1.3398	0.0196	9.9	1.2	9.9	1.3	A-	A-	A-

ELA	3	263141	6	A.2.3.1	2	55157	0.72	0.10	0.09	0.72	0.09	0.01	0.55	-0.30	-0.26	0.55	-0.29	-0.2093	0.0108	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	3	953947	6	A.2.3.1	2	55157	0.56	0.08	0.56	0.14	0.21	0.01	0.39	-0.30	0.39	-0.23	-0.07	0.7143	0.0099	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	3	206864	6	B.3.1.1	2	55157	0.65	0.09	0.15	0.10	0.65	0.01	0.47	-0.29	-0.17	-0.24	0.47	0.1857	0.0103	-3.5	1.0	-5.1	1.0	A+	A-	A-
ELA	3	463075	6	A.2.4.1	2	55157	0.82	0.82	0.05	0.08	0.05	0.00	0.55	0.55	-0.26	-0.32	-0.30	-0.9368	0.0122	-9.9	0.8	-9.9	0.6	A-	B-	B-
ELA	3	486678	6	A.2.4.1	2	55157	0.77	0.14	0.05	0.77	0.04	0.00	0.58	-0.41	-0.25	0.58	-0.22	-0.5446	0.0113	-9.9	0.8	-9.9	0.7	A-	A-	B-
ELA	3	740323	6	A.2.3.1	2	55157	0.77	0.06	0.08	0.77	0.08	0.01	0.54	-0.27	-0.26	0.54	-0.33	-0.5778	0.0114	-9.9	0.9	-9.9	0.7	A-	A-	A-
ELA	3	552250	6	B.1.2.1	2	55157	0.67	0.16	0.04	0.67	0.11	0.00	0.49	-0.28	-0.26	0.49	-0.23	0.0498	0.0104	-9.9	1.0	-9.9	0.9	A+	A-	A-
ELA	3	688099	6	B.1.2.1	2	55157	0.48	0.17	0.48	0.17	0.17	0.01	0.29	-0.10	0.29	-0.15	-0.13	1.1560	0.0098	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	3	376582	6	A-K.1.1.3	2	13824	0.63	0.63	0.15	0.17	0.05	0.01	0.46	0.46	-0.25	-0.21	-0.25	0.2960	0.0204	-1.0	1.0	-4.0	0.9	A-	A-	A+
ELA	3	657974	6	A-C.2.1.1	3	13824	0.48	0.15	0.48	0.22	0.14	0.01	0.28	-0.20	0.28	-0.03	-0.15	1.1506	0.0197	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	3	415621	6	A-V.4.1.1	2	13824	0.71	0.10	0.08	0.11	0.71	0.01	0.56	-0.29	-0.33	-0.23	0.56	-0.1761	0.0214	-9.9	0.9	-9.9	0.8	A-	A-	B-
ELA	3	262561	6	A-V.4.1.1	2	13824	0.79	0.08	0.09	0.79	0.03	0.01	0.56	-0.33	-0.32	0.56	-0.25	-0.7028	0.0233	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	580542	6	A-V.4.1.2	2	13824	0.79	0.08	0.07	0.79	0.06	0.01	0.53	-0.29	-0.34	0.53	-0.21	-0.7357	0.0234	-9.9	0.9	-9.9	0.7	A-	A-	A-
ELA	3	346861	6	A-K.1.1.1	2	13824	0.60	0.60	0.07	0.10	0.23	0.01	0.31	0.31	-0.24	-0.16	-0.10	0.5049	0.0201	9.9	1.2	9.9	1.3	A-	A+	A-
ELA	3	696922	6	A-K.1.1.2	3	13824	0.62	0.14	0.62	0.13	0.10	0.00	0.49	-0.30	0.49	-0.23	-0.18	0.3434	0.0203	-4.4	1.0	-6.3	0.9	A-	A-	A-
ELA	3	680021	6	A-V.4.1.2	2	13824	0.77	0.09	0.05	0.07	0.77	0.02	0.51	-0.30	-0.24	-0.27	0.51	-0.5758	0.0228	-9.5	0.9	-9.9	0.8	A+	A-	A-
ELA	3	756645	7	A-K.1.1.1	2	13752	0.43	0.12	0.14	0.43	0.30	0.00	0.34	-0.22	-0.23	0.34	-0.04	1.3907	0.0198	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	3	918930	7	A-C.2.1.1	3	13752	0.56	0.56	0.08	0.19	0.17	0.00	0.31	0.31	-0.20	-0.11	-0.13	0.7306	0.0199	9.9	1.2	9.9	1.3	A-	A+	A-
ELA	3	916489	7	A-C.2.1.1	2	13752	0.46	0.12	0.09	0.30	0.46	0.02	0.42	-0.19	-0.17	-0.20	0.42	1.2302	0.0197	0.5	1.0	6.1	1.1	A-	A-	A-
ELA	3	422859	7	A-K.1.1.1	2	13752	0.62	0.14	0.10	0.14	0.62	0.01	0.46	-0.16	-0.24	-0.27	0.46	0.4036	0.0202	-0.9	1.0	-0.7	1.0	A+	A-	A-
ELA	3	196262	7	A-V.4.1.2	2	13752	0.51	0.18	0.22	0.51	0.09	0.01	0.41	-0.18	-0.08	0.41	-0.34	1.0039	0.0197	5.3	1.1	6.2	1.1	A+	A+	A-
ELA	3	192090	7	A-V.4.1.1	2	13752	0.78	0.08	0.78	0.05	0.09	0.01	0.49	-0.27	0.49	-0.25	-0.25	-0.6273	0.0231	-7.7	0.9	-5.6	0.9	A-	A-	A-
ELA	3	398866	7	A-V.4.1.1	2	13752	0.79	0.79	0.05	0.08	0.07	0.01	0.55	0.55	-0.30	-0.29	-0.30	-0.7116	0.0235	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	591957	7	A-V.4.1.2	2	13752	0.70	0.12	0.70	0.11	0.06	0.01	0.49	-0.23	0.49	-0.22	-0.33	-0.1192	0.0214	-5.1	1.0	-6.0	0.9	A-	A-	B-
ELA	3	405580	8	A-K.1.1.2	3	13843	0.47	0.12	0.47	0.28	0.13	0.00	0.26	-0.19	0.26	-0.10	-0.06	1.1773	0.0195	9.9	1.2	9.9	1.3	A-	A+	A-
ELA	3	664922	8	A-K.1.1.1	2	13843	0.52	0.52	0.19	0.05	0.24	0.01	0.13	0.13	-0.06	-0.23	0.03	0.9158	0.0195	9.9	1.4	9.9	1.6	A+	A-	A-
ELA	3	232809	8	A-C.2.1.1	2	13843	0.60	0.15	0.15	0.10	0.60	0.01	0.47	-0.31	-0.16	-0.19	0.47	0.4951	0.0198	-3.8	1.0	-5.0	0.9	A+	A-	A-
ELA	3	763464	8	A-V.4.1.2	2	13843	0.80	0.80	0.05	0.04	0.10	0.00	0.35	0.35	-0.27	-0.19	-0.13	-0.7846	0.0236	3.1	1.0	5.4	1.2	A+	A-	B-
ELA	3	638944	8	A-V.4.1.2	2	13843	0.76	0.12	0.76	0.06	0.05	0.01	0.45	-0.20	0.45	-0.29	-0.24	-0.5033	0.0224	-4.8	1.0	0.9	1.0	A+	A-	A-
ELA	3	898350	8	A-V.4.1.1	2	13843	0.72	0.10	0.14	0.04	0.72	0.01	0.40	-0.27	-0.13	-0.27	0.40	-0.1913	0.0213	2.6	1.0	3.0	1.1	A+	A-	A-
ELA	3	150082	8	A-V.4.1.1	2	13843	0.49	0.08	0.13	0.49	0.29	0.01	0.35	-0.25	-0.23	0.35	-0.05	1.0679	0.0195	9.9	1.1	9.9	1.1	A-	A+	A+
ELA	3	293151	8	A-C.2.1.1	2	13843	0.36	0.15	0.29	0.19	0.36	0.01	0.22	-0.20	-0.01	-0.07	0.22	1.7834	0.0201	9.9	1.2	9.9	1.5	A+	A-	A-
ELA	3	849706	9	A-K.1.1.1	2	13738	0.63	0.15	0.12	0.09	0.63	0.00	0.47	-0.32	-0.23	-0.13	0.47	0.3007	0.0204	-2.0	1.0	-3.3	1.0	A-	A+	A-
ELA	3	925126	9	A-V.4.1.1	2	13738	0.69	0.13	0.09	0.69	0.09	0.01	0.45	-0.24	-0.19	0.45	-0.25	-0.0377	0.0211	-0.4	1.0	-1.5	1.0	A+	A-	A-
ELA	3	572665	9	A-V.4.1.1	2	13738	0.80	0.08	0.06	0.06	0.80	0.01	0.53	-0.26	-0.31	-0.29	0.53	-0.8251	0.0239	-9.9	0.9	-9.9	0.7	A-	A-	A-
ELA	3	613018	9	A-K.1.1.1	2	13738	0.76	0.05	0.76	0.06	0.12	0.01	0.57	-0.30	0.57	-0.32	-0.30	-0.5373	0.0227	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	581726	9	A-K.1.1.1	1	13738	0.66	0.66	0.11	0.11	0.12	0.00	0.60	0.60	-0.41	-0.29	-0.20	0.1130	0.0208	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	3	724823	9	A-K.1.1.2	3	13738	0.52	0.11	0.25	0.52	0.11	0.00	0.34	-0.26	-0.04	0.34	-0.22	0.8827	0.0198	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	3	154891	9	A-C.2.1.1	2	13738	0.54	0.24	0.54	0.10	0.11	0.00	0.34	-0.07	0.34	-0.21	-0.25	0.7802	0.0199	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	3	184426	9	A-K.1.1.2	3	13738	0.45	0.45	0.18	0.26	0.09	0.03	0.34	0.34	-0.11	-0.14	-0.24	1.2892	0.0199	9.9	1.1	9.9	1.3	A-	A-	A-
READING	4	684037	0	A.2.5.1		126593	0.73	0.10	0.11	0.06	0.73	0.00	0.52	-0.27	-0.29	-0.23	0.52	-0.2269	0.0070	-9.9	0.9	-9.9	0.8			
READING	4	455230	0	B.3.3.3		126593	0.62	0.09	0.62	0.09	0.19	0.01	0.41	-0.27	0.41	-0.24	-0.13	0.4115	0.0065	-1.8	1.0	-2.9	1.0			
READING	4	497464	0	A.2.2.2		126593	0.80	0.80	0.12	0.05	0.03	0.00	0.39	0.39	-0.21	-0.23	-0.23	-0.6730	0.0076	-8.4	1.0	-9.9	0.9			
READING	4	124780	0	A.2.2.1		126593	0.72	0.05	0.72	0.12	0.11	0.00	0.41	-0.24	0.41	-0.21	-0.20	-0.2256	0.0070	4.2	1.0	-1.3	1.0			
READING	4	957687	0	A.2.4.1		126593	0.74	0.06	0.07	0.74	0.12	0.01	0.52	-0.29	-0.32	0.52	-0.22	-0.3832	0.0072	-9.9	0.9	-9.9	0.8			
READING	4	233178	0	A.2.3.1		126593	0.58	0.11	0.14	0.17	0.58	0.00	0.45	-0.28	-0.26	-0.11	0.45	0.6088	0.0064	-9.9	1.0	-8.3	1.0			
READING	4	461518	0	A.2.3.1		126593	0.71	0.71	0.12	0.09	0.08	0.00	0.37	0.37	-0.13	-0.21	-0.25	-0.1784	0.0070	9.9	1.1	9.9	1.1			
READING	4	651740	0	B.3.3.3		126593	0.80	0.08	0.07	0.80	0.05	0.00	0.55	-0.32	-0.30	0.55	-0.26	-0.8201	0.0079	-9.9	0.9	-9.9	0.7			
READING	4	130045	0	A.1.3.1		126593	0.79	0.07	0.06	0.79	0.07	0.00	0.47	-0.28	-0.23	0.47	-0.25	-0.6389	0.0076	-9.9	0.9	-9.9	0.8			
READING	4	728295	0	A.1.3.1		126593	0.41	0.14	0.41	0.17	0.27	0.00	0.18	-0.14	0.18	-0.14	0.03	1.2507	0.0063	9.9	1.2	9.9	1.4			
READING	4	431563	0	A.1.3.1		126593	0.54	0.09	0.25	0.12	0.54	0.00	0.27	-0.27	-0.04	-0.13	0.27	0.9220	0.0063	9.9	1.2	9.9	1.2			

READING	4	659609	0	A.1.4.1		126593	0.72	0.06	0.07	0.15	0.72	0.00	0.43	-0.22	-0.20	-0.25	0.43	-0.3395	0.0072	9.3	1.0	-3.3	1.0			
READING	4	244615	0	A.1.4.1		126593	0.67	0.20	0.67	0.04	0.08	0.00	0.43	-0.24	0.43	-0.21	-0.24	-0.1833	0.0070	9.9	1.1	7.0	1.0			
READING	4	126038	0	A.1.4.1		126593	0.71	0.06	0.10	0.13	0.71	0.00	0.44	-0.24	-0.24	-0.21	0.44	-0.0997	0.0069	-9.9	1.0	-9.9	0.9			
READING	4	213205	0	A.1.2.1		126593	0.59	0.59	0.09	0.21	0.11	0.00	0.15	0.15	-0.17	0.06	-0.15	0.5137	0.0064	9.9	1.3	9.9	1.4			
READING	4	784267	0	B.3.3.4	2	126593	0.58	0.14	0.15	0.58	0.12	0.01	0.35	-0.13	-0.18	0.35	-0.17	0.6728	0.0064	9.9	1.1	9.9	1.1			
READING	4	986107	0	A.2.4.1	2	126593	0.68	0.09	0.08	0.68	0.15	0.01	0.37	-0.23	-0.24	0.37	-0.10	-0.0288	0.0068	9.9	1.1	9.9	1.1			
READING	4	129718	0	A.2.3.1	2	126593	0.76	0.05	0.12	0.06	0.76	0.01	0.56	-0.29	-0.29	-0.30	0.56	-0.4059	0.0072	-9.9	0.8	-9.9	0.7			
READING	4	731885	0	A.2.4.1	1	126593	0.60	0.27	0.60	0.04	0.08	0.01	0.49	-0.26	0.49	-0.23	-0.26	0.3712	0.0065	-9.9	0.9	-9.9	0.9			
READING	4	179797	0	A.2.2.1	2	126593	0.87	0.05	0.03	0.04	0.87	0.01	0.50	-0.29	-0.28	-0.24	0.50	-1.4248	0.0092	-9.9	0.9	-9.9	0.7			
READING	4	463444	0	A.2.4.1	2	126593	0.70	0.06	0.70	0.13	0.10	0.01	0.46	-0.24	0.46	-0.24	-0.20	-0.0999	0.0069	-9.9	1.0	-7.2	1.0			
READING	4	751467	0	A.2.4.1	1	126593	0.50	0.50	0.16	0.07	0.25	0.01	0.42	0.42	-0.28	-0.28	-0.06	0.9262	0.0063	-8.7	1.0	0.2	1.0			
READING	4	439585	0	A.2.3.1	2	126593	0.62	0.21	0.05	0.62	0.10	0.01	0.44	-0.21	-0.26	0.44	-0.19	0.3216	0.0065	-3.7	1.0	-9.1	1.0			
READING	4	883614	0	A.1.2.1	2	126593	0.80	0.80	0.12	0.05	0.03	0.01	0.42	0.42	-0.19	-0.25	-0.28	-0.7030	0.0077	-9.9	0.9	-9.9	0.9			
READING	4	854674	0	A.1.1.1	2	126593	0.75	0.03	0.17	0.05	0.75	0.01	0.47	-0.27	-0.24	-0.27	0.47	-0.3533	0.0072	-9.9	0.9	-9.9	0.9			
READING	4	708540	0	A.1.3.1	2	126593	0.61	0.19	0.13	0.06	0.61	0.01	0.41	-0.26	-0.13	-0.20	0.41	0.3070	0.0066	9.9	1.0	9.9	1.1			
READING	4	654724	0	A.1.3.1	2	126593	0.77	0.12	0.77	0.03	0.06	0.01	0.40	-0.14	0.40	-0.24	-0.28	-0.5910	0.0075	-0.1	1.0	9.0	1.1			
READING	4	764523	0	A.1.4.1	2	126593	0.56	0.10	0.08	0.56	0.25	0.01	0.48	-0.29	-0.24	0.48	-0.17	0.8649	0.0063	-9.9	0.9	-9.9	0.9			
READING	4	672759	0	B.2.1.2	2	126593	0.72	0.72	0.07	0.16	0.04	0.01	0.44	0.44	-0.19	-0.23	-0.26	-0.2222	0.0070	-4.1	1.0	-6.5	1.0			
READING	4	872821	0	B.1.1.1	2	126593	0.87	0.06	0.04	0.87	0.02	0.01	0.48	-0.28	-0.28	0.48	-0.21	-1.3221	0.0089	-9.9	0.9	-9.9	0.7			
READING	4	597614	0	A.1.3.1	2	126593	0.65	0.10	0.05	0.65	0.20	0.00	0.51	-0.37	-0.24	0.51	-0.20	0.2404	0.0066	-9.9	0.9	-9.9	0.9			
READING	4	338279	0	B.1.1.1	2	126593	0.77	0.77	0.05	0.14	0.03	0.00	0.23	0.23	-0.26	0.01	-0.22	-0.5390	0.0074	9.9	1.2	9.9	1.5			
READING	4	970286	0	A.1.3.1	2	126593	0.82	0.05	0.06	0.07	0.82	0.00	0.51	-0.28	-0.26	-0.29	0.51	-0.8808	0.0080	-9.9	0.8	-9.9	0.7			
READING	4	406179	0	A.1.3.1	2	126593	0.69	0.02	0.03	0.69	0.25	0.00	0.25	-0.25	-0.27	0.25	-0.07	-0.0465	0.0068	9.9	1.2	9.9	1.4			
READING	4	833841	0	B.1.1.1	2	126593	0.78	0.06	0.78	0.12	0.04	0.00	0.32	-0.25	0.32	-0.11	-0.19	-0.6541	0.0076	9.9	1.1	9.9	1.2			
READING	4	127210	0	B.1.1.1	2	126593	0.77	0.14	0.04	0.04	0.77	0.00	0.39	-0.18	-0.29	-0.19	0.39	-0.4515	0.0073	-4.9	1.0	9.9	1.1			
READING	4	280998	0	A.1.3.1	2	126593	0.67	0.17	0.67	0.05	0.10	0.00	0.42	-0.23	0.42	-0.27	-0.16	0.2424	0.0066	-9.9	1.0	-9.9	0.9			
READING	4	867821	0	B.1.1.1	2	126593	0.80	0.80	0.04	0.11	0.04	0.00	0.33	0.33	-0.23	-0.10	-0.24	-0.7053	0.0077	8.9	1.0	9.9	1.1			
READING	4	177316	0	A.1.4.1	2	126593	0.74	0.09	0.04	0.12	0.74	0.00	0.41	-0.27	-0.20	-0.19	0.41	-0.3091	0.0071	-5.7	1.0	-8.2	1.0			
READING	4	939681	0	A.1.4.1	1	126593	0.58	0.15	0.22	0.58	0.04	0.01	0.38	-0.30	-0.04	0.38	-0.26	0.5045	0.0064	9.9	1.1	9.9	1.1			
ELA	4	759480	1	A.2.2.1	2	70599	0.85	0.06	0.05	0.85	0.04	0.00	0.52	-0.28	-0.29	0.52	-0.27	-1.1684	0.0114	-9.9	0.8	-9.9	0.6	A+	A-	A-
ELA	4	900812	1	A.2.4.1	1	70599	0.82	0.05	0.82	0.04	0.09	0.00	0.48	-0.21	0.48	-0.20	-0.35	-0.9442	0.0108	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	4	528286	1	A.2.3.1	2	70599	0.84	0.08	0.05	0.03	0.84	0.00	0.44	-0.28	-0.21	-0.23	0.44	-1.0841	0.0112	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	4	618002	1	A.2.3.1	2	70599	0.64	0.13	0.64	0.12	0.11	0.00	0.42	-0.28	0.42	-0.14	-0.19	0.2171	0.0088	0.2	1.0	-5.4	1.0	A-	A-	A-
ELA	4	578503	1	A.2.6.1	2	70599	0.62	0.12	0.10	0.62	0.16	0.00	0.46	-0.25	-0.24	0.46	-0.20	0.3190	0.0088	-9.9	1.0	-9.9	0.9	A-	A-	A-
ELA	4	369749	1	A.2.3.1	2	70599	0.53	0.20	0.05	0.53	0.22	0.00	0.21	-0.14	-0.23	0.21	0.01	0.8178	0.0085	9.9	1.2	9.9	1.3	A+	A+	A-
ELA	4	133219	1	A.2.2.1	2	70599	0.81	0.81	0.09	0.06	0.03	0.00	0.47	0.47	-0.24	-0.27	-0.27	-0.8728	0.0106	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	4	936696	1	B.3.2.1	2	70599	0.55	0.15	0.05	0.24	0.55	0.00	0.36	-0.18	-0.29	-0.10	0.36	0.6903	0.0085	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	4	537274	1	A-K.1.1.2	3	14428	0.45	0.28	0.15	0.11	0.45	0.00	0.33	-0.08	-0.15	-0.23	0.33	1.1578	0.0188	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	4	439880	1	A-K.1.1.3	2	14428	0.81	0.03	0.08	0.07	0.81	0.00	0.53	-0.28	-0.32	-0.26	0.53	-0.9417	0.0236	-9.9	0.8	-9.9	0.7	A-	A-	B-
ELA	4	702874	1	A-K.1.1.1	2	14428	0.64	0.11	0.13	0.64	0.12	0.00	0.46	-0.26	-0.24	0.46	-0.17	0.1644	0.0196	-4.5	1.0	-5.8	0.9	A-	A-	A-
ELA	4	995706	1	A-K.1.1.3	2	14428	0.84	0.84	0.07	0.04	0.04	0.00	0.48	0.48	-0.29	-0.25	-0.24	-1.2149	0.0251	-8.4	0.9	-9.9	0.7	A+	A-	A-
ELA	4	832833	1	A-V.4.1.1	2	14428	0.44	0.42	0.44	0.10	0.04	0.00	0.05	0.13	0.05	-0.16	-0.21	1.2274	0.0189	9.9	1.4	9.9	1.7	A-	A+	A+
ELA	4	468511	1	A-V.4.1.1	1	14428	0.88	0.06	0.03	0.88	0.03	0.00	0.46	-0.25	-0.26	0.46	-0.27	-1.5624	0.0276	-9.0	0.9	-8.2	0.7	A+	A-	B-
ELA	4	311393	1	A-V.4.1.2	2	14428	0.81	0.07	0.81	0.09	0.03	0.00	0.42	-0.27	0.42	-0.20	-0.22	-0.9064	0.0234	-3.5	1.0	-0.6	1.0	A-	A-	A-
ELA	4	978841	1	A-V.4.1.2	1	14428	0.28	0.28	0.38	0.19	0.15	0.00	0.10	0.10	0.05	-0.08	-0.10	2.0771	0.0204	9.9	1.2	9.9	1.9	A+	A+	A+
ELA	4	496694	2	A-C.3.1.1	3	14024	0.54	0.23	0.54	0.15	0.08	0.00	0.40	-0.17	0.40	-0.15	-0.25	0.7776	0.0191	1.0	1.0	3.4	1.0	A+	A-	A-
ELA	4	692344	2	A-V.4.1.2	1	14024	0.72	0.72	0.09	0.11	0.08	0.00	0.46	0.46	-0.29	-0.22	-0.19	-0.2523	0.0211	-5.0	1.0	-5.7	0.9	A-	B-	A-
ELA	4	267749	2	A-K.1.1.3	2	14024	0.75	0.07	0.11	0.75	0.07	0.00	0.50	-0.23	-0.26	0.50	-0.29	-0.4430	0.0218	-9.9	0.9	-8.8	0.8	A-	B-	B-
ELA	4	434844	2	A-K.1.1.1	2	14024	0.63	0.10	0.12	0.15	0.63	0.00	0.45	-0.26	-0.22	-0.18	0.45	0.2716	0.0197	-3.7	1.0	-1.6	1.0	A-	B-	A-
ELA	4	865642	2	A-V.4.1.2	2	14024	0.64	0.16	0.64	0.11	0.09	0.00	0.43	-0.25	0.43	-0.14	-0.25	0.2133	0.0198	-1.9	1.0	-2.7	1.0	A+	A-	A-
ELA	4	738372	2	A-V.4.1.2	1	14024	0.42	0.24	0.24	0.42	0.09	0.00	0.38	-0.19	-0.16	0.38	-0.12	1.3557	0.0192	-0.6	1.0	6.4	1.1	A-	A-	B-

ELA	4	236232	2	A-K.1.1.2	3	14024	0.62	0.62	0.12	0.19	0.06	0.00	0.40	0.40	-0.20	-0.15	-0.28	0.3206	0.0196	2.7	1.0	3.0	1.0	A+	A-	A-
ELA	4	827857	2	A-K.1.1.3	2	14024	0.78	0.10	0.08	0.04	0.78	0.00	0.54	-0.29	-0.30	-0.26	0.54	-0.6037	0.0224	-9.9	0.8	-9.9	0.8	A+	A-	A-
ELA	4	113229	3	A-K.1.1.1	2	14061	0.63	0.25	0.63	0.06	0.06	0.01	0.38	-0.15	0.38	-0.25	-0.24	0.3101	0.0195	1.9	1.0	1.7	1.0	A+	A-	A-
ELA	4	353390	3	A-K.1.1.3	2	14061	0.58	0.08	0.24	0.58	0.09	0.00	0.33	-0.28	-0.06	0.33	-0.20	0.5416	0.0191	9.9	1.1	9.6	1.1	A+	A-	A-
ELA	4	615675	3	A-K.1.1.3	2	14061	0.64	0.64	0.18	0.08	0.09	0.00	0.38	0.38	-0.07	-0.24	-0.29	0.2570	0.0196	3.1	1.0	2.6	1.0	A-	A+	A-
ELA	4	753015	3	A-V.4.1.1	2	14061	0.64	0.06	0.64	0.11	0.18	0.00	0.34	-0.22	0.34	-0.19	-0.12	0.2494	0.0196	8.1	1.1	5.0	1.1	A+	A+	A-
ELA	4	870447	3	A-V.4.1.1	2	14061	0.78	0.78	0.08	0.08	0.06	0.00	0.36	0.36	-0.14	-0.18	-0.26	-0.6207	0.0225	0.9	1.0	3.6	1.1	A+	A-	A-
ELA	4	236306	3	A-V.4.1.2	2	14061	0.54	0.15	0.16	0.54	0.15	0.00	0.40	-0.18	-0.17	0.40	-0.19	0.7754	0.0189	-2.6	1.0	-1.2	1.0	A-	C-	C-
ELA	4	910545	3	A-K.1.1.1	2	14061	0.52	0.13	0.28	0.07	0.52	0.01	0.39	-0.22	-0.09	-0.30	0.39	0.8548	0.0188	-1.0	1.0	1.6	1.0	A-	A-	A-
ELA	4	900285	3	A-K.1.1.1	2	14061	0.32	0.15	0.26	0.26	0.32	0.00	0.16	-0.12	0.04	-0.11	0.16	1.8679	0.0198	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	4	278602	4	A-V.4.1.2	1	14050	0.71	0.13	0.08	0.71	0.07	0.00	0.41	-0.12	-0.30	0.41	-0.24	-0.1878	0.0209	0.2	1.0	-0.4	1.0	A-	C-	C-
ELA	4	516158	4	A-V.4.1.1	2	14050	0.78	0.06	0.09	0.06	0.78	0.00	0.54	-0.30	-0.31	-0.24	0.54	-0.6614	0.0228	-9.9	0.8	-9.9	0.7	A-	C-	C-
ELA	4	452279	4	A-V.4.1.2	2	14050	0.82	0.82	0.04	0.05	0.09	0.00	0.49	0.49	-0.28	-0.31	-0.23	-0.9482	0.0242	-9.4	0.9	-9.9	0.7	A+	B-	C-
ELA	4	503942	4	A-K.1.1.1	2	14050	0.46	0.21	0.16	0.17	0.46	0.01	0.33	-0.08	-0.18	-0.16	0.33	1.1995	0.0191	7.1	1.1	9.9	1.2	A-	A-	A-
ELA	4	348590	4	A-K.1.1.1	1	14050	0.55	0.21	0.55	0.10	0.14	0.00	0.44	-0.25	0.44	-0.25	-0.11	0.7185	0.0191	-5.1	1.0	-2.6	1.0	A-	A-	A-
ELA	4	563651	4	A-K.1.1.1	2	14050	0.49	0.17	0.29	0.49	0.05	0.00	0.27	-0.20	-0.01	0.27	-0.23	1.0462	0.0190	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	4	116338	4	A-K.1.1.2	3	14050	0.61	0.14	0.61	0.15	0.09	0.01	0.51	-0.24	0.51	-0.25	-0.25	0.3799	0.0196	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	4	714390	4	A-V.4.1.1	2	14050	0.83	0.83	0.08	0.04	0.06	0.00	0.52	0.52	-0.27	-0.30	-0.29	-0.9752	0.0244	-9.9	0.8	-9.9	0.7	A-	B-	A-
ELA	4	858852	5	B-K.1.1.3	2	14036	0.69	0.16	0.07	0.07	0.69	0.00	0.55	-0.34	-0.26	-0.23	0.55	-0.0133	0.0206	-9.9	0.9	-9.9	0.8	A-	B-	B-
ELA	4	584869	5	B-C.3.1.1	2	14036	0.77	0.07	0.77	0.10	0.07	0.00	0.48	-0.29	0.48	-0.19	-0.29	-0.5037	0.0223	-8.5	0.9	-9.4	0.8	A-	B-	A-
ELA	4	597411	5	B-C.2.1.2	2	14036	0.69	0.69	0.10	0.13	0.08	0.00	0.49	0.49	-0.30	-0.20	-0.26	-0.0213	0.0206	-9.6	0.9	-7.7	0.9	A-	A-	A-
ELA	4	957832	5	B-V.4.1.1	2	14036	0.75	0.04	0.11	0.09	0.75	0.00	0.50	-0.28	-0.31	-0.21	0.50	-0.3794	0.0218	-9.1	0.9	-8.0	0.9	A+	A-	A-
ELA	4	205985	5	B-V.4.1.1	2	14036	0.88	0.04	0.88	0.04	0.04	0.00	0.51	-0.30	0.51	-0.25	-0.28	-1.4161	0.0277	-9.9	0.8	-9.9	0.6	A-	A-	A-
ELA	4	725583	5	B-V.4.1.2	2	14036	0.78	0.07	0.12	0.78	0.02	0.00	0.50	-0.27	-0.30	0.50	-0.23	-0.6121	0.0228	-9.6	0.9	-9.9	0.8	A-	B-	B-
ELA	4	716767	5	B-V.4.1.2	1	14036	0.72	0.72	0.10	0.05	0.12	0.00	0.43	0.43	-0.21	-0.27	-0.21	-0.1800	0.0211	-1.4	1.0	-3.0	1.0	A-	C-	C-
ELA	4	346289	5	B-K.1.1.1	1	14036	0.61	0.12	0.17	0.61	0.09	0.01	0.41	-0.23	-0.11	0.41	-0.27	0.4575	0.0195	1.7	1.0	0.7	1.0	A-	A-	A-
ELA	4	238608	6	B.2.1.3	2	55966	0.57	0.57	0.18	0.18	0.07	0.00	0.35	0.35	-0.24	-0.08	-0.19	0.6678	0.0096	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	4	300963	6	B.1.1.1	2	55966	0.79	0.10	0.06	0.05	0.79	0.00	0.53	-0.23	-0.33	-0.30	0.53	-0.6270	0.0114	-9.9	0.8	-9.9	0.7	A-	B-	B-
ELA	4	460994	6	B.1.1.1	2	55966	0.66	0.23	0.03	0.66	0.07	0.00	0.47	-0.26	-0.24	0.47	-0.28	0.1463	0.0101	-9.9	0.9	-9.9	0.9	A+	A-	A-
ELA	4	344704	6	B.1.1.1	2	55966	0.86	0.07	0.86	0.04	0.03	0.00	0.41	-0.23	0.41	-0.22	-0.24	-1.2563	0.0133	-9.9	0.9	-9.7	0.9	A+	A-	A-
ELA	4	648875	6	A.1.1.1	2	55966	0.81	0.81	0.05	0.05	0.09	0.00	0.48	0.48	-0.26	-0.29	-0.23	-0.7958	0.0118	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	4	271213	6	A.1.6.1	2	55966	0.79	0.79	0.06	0.09	0.05	0.00	0.44	0.44	-0.21	-0.19	-0.33	-0.6548	0.0115	-9.7	0.9	-9.9	0.9	A+	A-	A-
ELA	4	592663	6	A.1.4.1	2	55966	0.83	0.07	0.83	0.05	0.05	0.00	0.40	-0.21	0.40	-0.19	-0.25	-0.9833	0.0124	-7.4	1.0	-4.2	0.9	A-	B-	B-
ELA	4	123022	6	B.1.1.1	2	55966	0.46	0.19	0.31	0.46	0.04	0.00	0.35	-0.33	-0.03	0.35	-0.17	1.2015	0.0095	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	4	849769	6	B-K.1.1.3	2	14040	0.71	0.08	0.09	0.71	0.11	0.00	0.48	-0.21	-0.30	0.48	-0.23	-0.1444	0.0209	-7.8	0.9	-9.9	0.8	A+	B-	A-
ELA	4	197018	6	B-C.2.1.2	2	14040	0.57	0.21	0.10	0.12	0.57	0.00	0.44	-0.20	-0.25	-0.19	0.44	0.6742	0.0192	-4.3	1.0	-4.8	0.9	A+	A-	A-
ELA	4	536207	6	B-C.3.1.3	2	14040	0.70	0.13	0.70	0.08	0.07	0.01	0.44	-0.17	0.44	-0.24	-0.28	-0.0634	0.0207	-2.2	1.0	-4.2	0.9	A+	A-	A-
ELA	4	951190	6	B-V.4.1.1	2	14040	0.90	0.02	0.04	0.90	0.04	0.00	0.49	-0.27	-0.28	0.49	-0.27	-1.6576	0.0298	-9.4	0.8	-9.9	0.6	A+	A-	A-
ELA	4	745048	6	B-V.4.1.2	2	14040	0.83	0.83	0.07	0.08	0.02	0.00	0.44	0.44	-0.22	-0.29	-0.22	-0.9573	0.0246	-5.1	0.9	-8.5	0.8	A+	B-	C-
ELA	4	253362	6	B-K.1.1.1	2	14040	0.48	0.24	0.12	0.15	0.48	0.00	0.41	-0.20	-0.21	-0.13	0.41	1.1085	0.0190	-4.9	1.0	1.6	1.0	A+	A-	A-
ELA	4	598821	6	B-C.3.1.1	2	14040	0.83	0.83	0.06	0.06	0.04	0.01	0.50	0.50	-0.27	-0.28	-0.28	-1.0123	0.0249	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	4	315533	6	B-K.1.1.2	3	14040	0.63	0.16	0.63	0.10	0.12	0.00	0.46	-0.26	0.46	-0.26	-0.15	0.3676	0.0197	-5.1	1.0	-5.6	0.9	A+	A-	A-
ELA	4	986344	7	B-C.3.1.2	3	14009	0.73	0.09	0.06	0.73	0.12	0.00	0.50	-0.31	-0.26	0.50	-0.22	-0.3018	0.0214	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	4	532331	7	B-V.4.1.2	2	14009	0.66	0.24	0.07	0.66	0.04	0.00	0.48	-0.30	-0.21	0.48	-0.23	0.1693	0.0200	-8.8	0.9	-9.2	0.9	A+	A-	B-
ELA	4	257371	7	B-C.2.1.2	2	14009	0.45	0.16	0.45	0.27	0.12	0.00	0.25	-0.19	0.25	0.02	-0.19	1.2301	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	4	173201	7	B-K.1.1.3	2	14009	0.85	0.85	0.06	0.04	0.04	0.01	0.55	0.55	-0.31	-0.30	-0.31	-1.1898	0.0259	-9.9	0.8	-9.9	0.6	A+	A-	B-
ELA	4	974547	7	B-K.1.1.2	3	14009	0.73	0.07	0.11	0.10	0.73	0.00	0.44	-0.33	-0.15	-0.22	0.44	-0.2533	0.0212	-3.9	1.0	-1.5	1.0	A+	A-	A-
ELA	4	638588	7	B-K.1.1.1	2	14009	0.75	0.09	0.11	0.75	0.06	0.00	0.54	-0.29	-0.32	0.54	-0.24	-0.3720	0.0216	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	4	331789	7	B-C.2.1.1	3	14009	0.56	0.12	0.19	0.12	0.56	0.00	0.42	-0.19	-0.18	-0.22	0.42	0.6595	0.0192	-2.2	1.0	-2.0	1.0	A+	A-	A-
ELA	4	456481	7	B-C.2.1.1	3	14009	0.45	0.20	0.45	0.18	0.16	0.01	0.34	-0.15	0.34	-0.14	-0.14	1.2133	0.0191	4.8	1.0	9.9	1.1	A+	A+	A-
ELA	4	534698	8	B-C.3.1.1	2	13958	0.68	0.19	0.06	0.07	0.68	0.00	0.42	-0.14	-0.32	-0.25	0.42	0.0634	0.0203	-1.2	1.0	0.2	1.0	A+	A-	A-

ELA	4	145863	8	B-V.4.1.2	1	13958	0.92	0.92	0.02	0.03	0.03	0.00	0.38	0.38	-0.25	-0.20	-0.20	-1.9831	0.0334	-4.8	0.9	-5.8	0.7	A+	A-	A-
ELA	4	511897	8	B-C.3.1.3	2	13958	0.59	0.18	0.10	0.12	0.59	0.00	0.45	-0.13	-0.28	-0.26	0.45	0.5400	0.0193	-6.3	1.0	-6.8	0.9	A+	A-	A-
ELA	4	811805	8	B-C.2.1.1	3	13958	0.36	0.40	0.10	0.36	0.13	0.01	0.20	0.09	-0.29	0.20	-0.13	1.7354	0.0196	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	4	525907	8	B-C.3.1.1	2	13958	0.68	0.06	0.16	0.68	0.10	0.00	0.43	-0.23	-0.22	0.43	-0.20	0.0539	0.0203	-2.9	1.0	-5.2	0.9	A+	A-	A-
ELA	4	828772	8	B-C.3.1.2	3	13958	0.51	0.21	0.51	0.11	0.16	0.00	0.35	-0.10	0.35	-0.19	-0.19	0.9669	0.0190	4.9	1.0	7.3	1.1	A-	A-	A+
ELA	4	723630	8	B-V.4.1.1	2	13958	0.82	0.82	0.07	0.08	0.03	0.00	0.44	0.44	-0.23	-0.28	-0.21	-0.9072	0.0243	-5.2	0.9	-7.9	0.8	A-	A+	A-
ELA	4	361588	8	B-C.2.1.2	2	13958	0.55	0.17	0.55	0.11	0.17	0.00	0.38	-0.20	0.38	-0.22	-0.12	0.7608	0.0191	1.0	1.0	1.7	1.0	A-	A-	A-
ELA	4	845561	9	B-V.4.1.2	2	13959	0.68	0.15	0.09	0.68	0.07	0.00	0.52	-0.28	-0.26	0.52	-0.25	0.0516	0.0204	-9.9	0.9	-9.9	0.8	A+	B-	C-
ELA	4	809314	9	B-K.1.1.3	3	13959	0.76	0.76	0.10	0.09	0.05	0.00	0.39	0.39	-0.17	-0.21	-0.26	-0.4075	0.0220	1.1	1.0	-1.5	1.0	A-	A-	A-
ELA	4	535883	9	B-C.2.1.2	3	13959	0.63	0.13	0.08	0.16	0.63	0.01	0.50	-0.16	-0.28	-0.30	0.50	0.3511	0.0197	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	4	353067	9	B-K.1.1.1	2	13959	0.74	0.19	0.74	0.03	0.03	0.00	0.45	-0.29	0.45	-0.23	-0.21	-0.2684	0.0214	-4.4	1.0	-4.0	0.9	A+	A-	A-
ELA	4	383599	9	B-C.3.1.1	2	13959	0.68	0.68	0.16	0.09	0.06	0.00	0.45	0.45	-0.18	-0.27	-0.26	0.0633	0.0204	-5.3	1.0	-7.8	0.9	A-	A-	A-
ELA	4	887916	9	A-V.4.1.2	1	13959	0.95	0.02	0.02	0.95	0.01	0.00	0.35	-0.19	-0.21	0.35	-0.19	-2.4992	0.0404	-3.9	0.9	-6.3	0.6	A+	B-	B-
ELA	4	687574	9	B-V.4.1.1	2	13959	0.88	0.06	0.03	0.03	0.88	0.00	0.34	-0.12	-0.25	-0.22	0.34	-1.4462	0.0281	-2.6	1.0	7.1	1.3	A+	A-	A-
ELA	4	387409	9	B-C.3.1.3	3	13959	0.46	0.14	0.46	0.27	0.12	0.00	0.26	-0.27	0.26	0.02	-0.14	1.2327	0.0191	9.9	1.2	9.9	1.3	A-	A-	A-
READING	5	682227	0	A.1.3.1	3	126213	0.68	0.68	0.08	0.06	0.18	0.00	0.42	0.42	-0.28	-0.29	-0.13	0.1754	0.0067	-3.1	1.0	-0.5	1.0			
READING	5	332538	0	B.2.1.2	2	126213	0.58	0.30	0.58	0.06	0.06	0.00	0.28	-0.09	0.28	-0.21	-0.19	0.7540	0.0064	9.9	1.1	9.9	1.2			
READING	5	118204	0	B.1.1.1	2	126213	0.90	0.02	0.03	0.90	0.04	0.00	0.42	-0.26	-0.19	0.42	-0.25	-1.4498	0.0098	-9.9	0.8	-9.9	0.8			
READING	5	101865	0	B.1.1.1	2	126213	0.69	0.05	0.69	0.21	0.05	0.00	0.45	-0.21	0.45	-0.29	-0.20	0.2208	0.0067	-9.9	0.9	-9.9	0.9			
READING	5	268619	0	A.1.3.1	2	126213	0.75	0.75	0.07	0.06	0.11	0.00	0.31	0.31	-0.24	-0.17	-0.09	-0.1410	0.0071	9.9	1.1	9.9	1.1			
READING	5	635347	0	A.1.4.1	1	126213	0.79	0.08	0.79	0.04	0.09	0.00	0.52	-0.31	0.52	-0.26	-0.26	-0.5037	0.0076	-9.9	0.9	-9.9	0.7			
READING	5	325098	0	B.1.1.1	2	126213	0.79	0.04	0.09	0.79	0.08	0.00	0.46	-0.31	-0.29	0.46	-0.14	-0.6003	0.0078	-5.6	1.0	-0.7	1.0			
READING	5	535902	0	A.1.3.1	2	126213	0.88	0.03	0.88	0.03	0.05	0.00	0.50	-0.28	0.50	-0.26	-0.27	-1.0668	0.0087	-9.9	0.7	-9.9	0.6			
READING	5	193815	0	A.1.6.2	3	126213	0.47	0.08	0.29	0.47	0.16	0.00	0.28	-0.20	-0.05	0.28	-0.15	1.2156	0.0063	9.9	1.1	9.9	1.2			
READING	5	609030	0	B.2.1.1	2	126213	0.72	0.08	0.72	0.11	0.09	0.01	0.48	-0.28	0.48	-0.22	-0.24	-0.0017	0.0069	-9.9	0.9	-9.9	0.9			
READING	5	476551	0	B.1.1.1	3	126213	0.80	0.80	0.08	0.04	0.08	0.00	0.44	0.44	-0.17	-0.31	-0.25	-0.5065	0.0076	-9.9	0.9	-9.9	0.9			
READING	5	949759	0	A.1.4.1	1	126213	0.65	0.17	0.13	0.65	0.05	0.00	0.38	-0.28	-0.12	0.38	-0.17	0.2401	0.0067	9.9	1.1	5.0	1.0			
READING	5	991301	0	A.1.4.1	1	126213	0.93	0.03	0.02	0.02	0.93	0.00	0.40	-0.24	-0.24	-0.21	0.40	-2.0460	0.0120	0.5	1.0	-9.9	0.7			
READING	5	333336	0	A.1.4.1	1	126213	0.64	0.64	0.06	0.06	0.24	0.00	0.36	0.36	-0.24	-0.29	-0.09	0.5710	0.0065	9.9	1.0	9.9	1.1			
READING	5	668391	0	B.1.1.1	2	126213	0.61	0.61	0.13	0.07	0.19	0.00	0.32	0.32	-0.17	-0.19	-0.10	0.5844	0.0064	9.9	1.1	9.9	1.1			
READING	5	838111	0	A.1.3.1	2	126213	0.68	0.10	0.19	0.68	0.02	0.00	0.28	-0.17	-0.14	0.28	-0.15	0.2703	0.0067	9.9	1.1	9.9	1.1			
READING	5	316373	0	A.1.2.1	1	126213	0.69	0.09	0.16	0.69	0.05	0.00	0.42	-0.23	-0.21	0.42	-0.21	-0.0274	0.0070	9.9	1.0	-2.2	1.0			
READING	5	275811	0	B.1.1.1	2	126213	0.76	0.08	0.10	0.76	0.07	0.00	0.48	-0.31	-0.25	0.48	-0.18	-0.3649	0.0074	-9.9	1.0	-9.9	0.9			
READING	5	734964	0	A.1.2.2	2	126213	0.85	0.05	0.06	0.85	0.04	0.00	0.50	-0.31	-0.26	0.50	-0.25	-0.9116	0.0084	-9.9	0.8	-9.9	0.6			
READING	5	768330	0	B.1.1.1	2	126213	0.52	0.17	0.09	0.52	0.21	0.01	0.30	-0.08	-0.19	0.30	-0.16	0.9970	0.0063	9.9	1.1	9.9	1.2			
READING	5	552586	0	A.1.4.1	1	126213	0.82	0.82	0.04	0.05	0.09	0.00	0.49	0.49	-0.27	-0.30	-0.24	-0.7185	0.0080	-9.9	0.9	-9.9	0.8			
READING	5	832201	0	A.1.1.1	2	126213	0.77	0.07	0.11	0.05	0.77	0.00	0.41	-0.24	-0.19	-0.23	0.41	-0.3250	0.0073	-7.9	1.0	-2.0	1.0			
READING	5	853310	0	B.2.1.1	2	126213	0.69	0.69	0.11	0.12	0.08	0.00	0.45	0.45	-0.24	-0.23	-0.21	0.1746	0.0067	-9.9	0.9	-9.9	0.9			
READING	5	200556	0	A.1.4.1	3	126213	0.77	0.04	0.77	0.13	0.06	0.00	0.46	-0.27	0.46	-0.23	-0.26	-0.3884	0.0074	-9.9	0.9	-9.9	0.9			
READING	5	644413	0	B.1.1.1	2	126213	0.72	0.13	0.72	0.10	0.04	0.00	0.30	-0.06	0.30	-0.26	-0.17	-0.0250	0.0069	9.9	1.1	9.9	1.2			
READING	5	243200	0	A.2.1.2	2	126213	0.84	0.06	0.02	0.07	0.84	0.00	0.43	-0.23	-0.24	-0.24	0.43	-0.8114	0.0082	-9.9	0.9	-9.9	0.8			
READING	5	902691	0	A.2.3.2	3	126213	0.63	0.21	0.10	0.63	0.05	0.00	0.40	-0.15	-0.24	0.40	-0.24	0.4508	0.0065	5.0	1.0	7.1	1.0			
READING	5	464639	0	A.2.4.1	1	126213	0.43	0.43	0.29	0.19	0.08	0.00	0.32	0.32	-0.01	-0.18	-0.28	1.5145	0.0063	9.9	1.1	9.9	1.1			
READING	5	287990	0	A.2.4.1	2	126213	0.46	0.05	0.12	0.46	0.37	0.00	0.29	-0.28	-0.20	0.29	-0.03	1.1938	0.0063	9.9	1.1	9.9	1.2			
READING	5	693619	0	B.3.1.1	2	126213	0.79	0.04	0.05	0.11	0.79	0.00	0.50	-0.30	-0.26	-0.26	0.50	-0.5183	0.0076	-9.9	0.9	-9.9	0.8			
READING	5	227701	0	A.2.3.1	2	126213	0.75	0.07	0.11	0.06	0.75	0.00	0.30	-0.15	-0.17	-0.14	0.30	-0.0473	0.0070	9.9	1.0	9.9	1.1			
READING	5	975221	0	A.2.2.1	2	126213	0.76	0.08	0.09	0.76	0.07	0.00	0.51	-0.26	-0.22	0.51	-0.30	-0.3080	0.0073	-9.9	0.9	-9.9	0.8			
READING	5	419875	0	A.2.3.2	3	126213	0.55	0.17	0.20	0.55	0.08	0.01	0.35	-0.06	-0.25	0.35	-0.17	0.8727	0.0063	9.9	1.1	9.9	1.1			
READING	5	701665	0	A.2.3.1	2	126213	0.64	0.12	0.12	0.64	0.12	0.01	0.38	-0.25	-0.10	0.38	-0.20	0.4189	0.0066	9.2	1.0	2.5	1.0			
READING	5	537149	0	B.1.2.1	3	126213	0.69	0.10	0.15	0.05	0.69	0.01	0.45	-0.21	-0.24	-0.22	0.45	0.1279	0.0068	-9.9	1.0	-9.9	0.9			
READING	5	548528	0	A.2.2.2	2	126213	0.73	0.73	0.14	0.07	0.06	0.00	0.42	0.42	-0.20	-0.22	-0.25	0.1746	0.0067	-9.9	0.9	-9.9	0.9			

READING	5	216472	0	A.2.3.1	2	126213	0.66	0.20	0.66	0.08	0.05	0.00	0.36	-0.11	0.36	-0.24	-0.24	0.2585	0.0067	9.9	1.1	9.9	1.1			
READING	5	574862	0	A.2.6.2	3	126213	0.68	0.68	0.12	0.07	0.12	0.00	0.39	0.39	-0.27	-0.26	-0.07	0.2526	0.0067	-1.0	1.0	0.8	1.0			
READING	5	655072	0	A.2.4.1	2	126213	0.82	0.06	0.07	0.04	0.82	0.00	0.50	-0.26	-0.28	-0.27	0.50	-0.7555	0.0081	-9.9	0.9	-9.9	0.7			
READING	5	542019	0	A.1.2.2	2	126213	0.62	0.19	0.62	0.15	0.04	0.01	0.35	-0.13	0.35	-0.21	-0.20	0.5374	0.0065	9.9	1.1	9.9	1.1			
ELA	5	897782	1	A.1.3.1	2	70391	0.75	0.04	0.19	0.03	0.75	0.00	0.33	-0.31	-0.10	-0.25	0.33	-0.1990	0.0096	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	5	874871	1	A.2.3.2	2	70391	0.74	0.07	0.08	0.11	0.74	0.00	0.56	-0.29	-0.30	-0.28	0.56	-0.1337	0.0095	-9.9	0.8	-9.9	0.7	A-	A-	A-
ELA	5	497968	1	A.1.6.1	3	70391	0.73	0.73	0.06	0.06	0.14	0.00	0.46	0.46	-0.25	-0.26	-0.23	-0.1114	0.0094	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	5	802898	1	A.1.4.1	1	70391	0.81	0.14	0.02	0.81	0.03	0.00	0.43	-0.28	-0.24	0.43	-0.23	-0.6253	0.0104	-9.8	0.9	-9.9	0.9	A+	A-	A-
ELA	5	880493	1	B.2.2.2	3	70391	0.49	0.32	0.06	0.49	0.13	0.00	0.32	-0.01	-0.27	0.32	-0.28	1.1878	0.0084	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	5	391700	1	A.1.5.1	2	70391	0.65	0.20	0.65	0.09	0.05	0.00	0.42	-0.18	0.42	-0.25	-0.24	0.3627	0.0088	-5.7	1.0	-6.5	1.0	A+	A-	A-
ELA	5	998708	1	A.1.2.1	2	70391	0.89	0.89	0.03	0.03	0.05	0.00	0.44	0.44	-0.26	-0.26	-0.23	-1.4189	0.0129	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	5	411647	1	B.1.1.1	2	70391	0.65	0.18	0.65	0.03	0.14	0.00	0.40	-0.23	0.40	-0.23	-0.18	0.3744	0.0088	-2.9	1.0	-4.8	1.0	A+	A-	A-
ELA	5	504896	1	B-K.1.1.2	3	14378	0.49	0.23	0.15	0.49	0.12	0.00	0.40	-0.23	-0.15	0.40	-0.14	1.1335	0.0187	-3.3	1.0	-0.4	1.0	A+	A-	A-
ELA	5	350361	1	B-K.1.1.3	3	14378	0.44	0.24	0.44	0.14	0.18	0.00	0.31	-0.18	0.31	-0.09	-0.11	1.3860	0.0187	8.2	1.1	9.9	1.2	A-	A-	A-
ELA	5	732411	1	B-C.3.1.1	3	14378	0.47	0.47	0.09	0.25	0.19	0.00	0.35	0.35	-0.29	-0.13	-0.09	1.2393	0.0187	3.7	1.0	6.4	1.1	A-	A-	A+
ELA	5	245996	1	B-C.3.1.3	2	14378	0.49	0.15	0.13	0.22	0.49	0.01	0.31	-0.19	-0.18	-0.06	0.31	1.1419	0.0187	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	5	379301	1	B-C.3.1.3	2	14378	0.61	0.20	0.61	0.09	0.10	0.00	0.40	-0.20	0.40	-0.23	-0.16	0.5593	0.0191	1.2	1.0	0.4	1.0	A+	A-	A-
ELA	5	570518	1	B-V.4.1.2	2	14378	0.36	0.36	0.15	0.15	0.35	0.00	0.21	0.21	-0.16	-0.23	0.08	1.8278	0.0192	9.9	1.1	9.9	1.4	A+	A+	A-
ELA	5	536593	1	B-V.4.1.2	2	14378	0.38	0.14	0.23	0.38	0.25	0.00	0.09	-0.21	0.05	0.09	0.02	1.6942	0.0190	9.9	1.3	9.9	1.6	A+	A+	A+
ELA	5	527846	1	B-V.4.1.2	1	14378	0.65	0.10	0.08	0.17	0.65	0.00	0.41	-0.20	-0.18	-0.23	0.41	0.3147	0.0196	-1.1	1.0	-3.5	1.0	A+	A-	A-
ELA	5	243977	2	B-V.4.1.1	2	14008	0.66	0.22	0.05	0.06	0.66	0.01	0.47	-0.30	-0.21	-0.20	0.47	0.3230	0.0198	-9.4	0.9	-9.9	0.9	A-	A-	A-
ELA	5	392015	2	B-V.4.1.2	2	14008	0.34	0.40	0.10	0.15	0.34	0.01	0.18	0.00	-0.13	-0.12	0.18	1.9272	0.0196	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	5	883509	2	B-C.3.1.1	3	14008	0.40	0.36	0.18	0.40	0.06	0.00	0.37	-0.20	-0.11	0.37	-0.19	1.6164	0.0191	-7.9	0.9	4.7	1.1	A-	A-	A-
ELA	5	224966	2	B-C.3.1.3	2	14008	0.49	0.49	0.17	0.11	0.23	0.00	0.30	0.30	-0.19	-0.14	-0.08	1.1919	0.0188	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	896122	2	B-V.4.1.1	2	14008	0.55	0.55	0.11	0.13	0.21	0.00	0.26	0.26	-0.17	-0.20	-0.01	0.8635	0.0190	9.9	1.2	9.9	1.2	A-	A+	A+
ELA	5	733324	2	B-C.2.1.1	3	14008	0.38	0.18	0.38	0.17	0.26	0.00	0.25	-0.12	0.25	-0.18	-0.02	1.7048	0.0192	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	5	145102	2	B-C.2.1.2	3	14008	0.39	0.23	0.39	0.17	0.21	0.00	0.20	-0.15	0.20	-0.10	0.01	1.6732	0.0192	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	5	484807	2	B-C.3.1.2	3	14008	0.72	0.15	0.06	0.72	0.06	0.01	0.47	-0.19	-0.28	0.47	-0.31	-0.0693	0.0209	-8.2	0.9	-8.4	0.9	A-	B-	A-
ELA	5	369795	3	B-C.3.1.3	2	14016	0.46	0.17	0.46	0.22	0.15	0.00	0.35	-0.15	0.35	-0.15	-0.15	1.3499	0.0189	4.1	1.0	9.9	1.1	A+	A-	A-
ELA	5	214353	3	B-C.3.1.3	2	14016	0.75	0.10	0.08	0.75	0.07	0.00	0.53	-0.27	-0.29	0.53	-0.27	-0.2365	0.0218	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	5	912734	3	B-K.1.1.3	1	14016	0.74	0.13	0.06	0.74	0.07	0.00	0.43	-0.26	-0.26	0.43	-0.15	-0.1336	0.0214	-2.5	1.0	-5.2	0.9	A+	A-	A-
ELA	5	556770	3	B-K.1.1.2	3	14016	0.67	0.11	0.67	0.08	0.14	0.00	0.43	-0.28	0.43	-0.26	-0.12	0.2945	0.0201	-2.3	1.0	-4.6	0.9	A+	A+	A-
ELA	5	256797	3	B-V.4.1.1	2	14016	0.55	0.22	0.20	0.03	0.55	0.00	0.31	-0.23	-0.05	-0.23	0.31	0.9321	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	614868	3	B-V.4.1.1	2	14016	0.78	0.78	0.06	0.11	0.04	0.00	0.48	0.48	-0.29	-0.25	-0.23	-0.4566	0.0227	-8.0	0.9	-6.6	0.9	A-	A-	A-
ELA	5	575411	3	B-V.4.1.2	2	14016	0.73	0.04	0.15	0.08	0.73	0.01	0.50	-0.28	-0.23	-0.31	0.50	-0.0645	0.0211	-9.9	0.9	-9.9	0.8	A+	A-	A+
ELA	5	197489	3	B-V.4.1.2	1	14016	0.90	0.90	0.03	0.04	0.04	0.00	0.49	0.49	-0.28	-0.26	-0.29	-1.5001	0.0298	-9.1	0.8	-9.9	0.6	A+	A-	A-
ELA	5	584424	4	B-K.1.1.3	2	14022	0.85	0.85	0.08	0.02	0.05	0.00	0.48	0.48	-0.31	-0.23	-0.26	-0.9757	0.0256	-8.7	0.9	-9.9	0.7	A-	A-	A-
ELA	5	893247	4	B-V.4.1.1	2	14022	0.68	0.08	0.08	0.16	0.68	0.00	0.49	-0.29	-0.24	-0.23	0.49	0.2209	0.0200	-9.9	0.9	-9.9	0.9	A-	A-	B-
ELA	5	239968	4	B-K.1.1.2	3	14022	0.33	0.28	0.24	0.33	0.14	0.00	0.19	-0.15	0.00	0.19	-0.06	1.9778	0.0195	9.9	1.1	9.9	1.4	A+	A-	A-
ELA	5	170308	4	B-C.3.1.1	3	14022	0.52	0.14	0.25	0.08	0.52	0.00	0.32	-0.15	-0.07	-0.26	0.32	1.0245	0.0187	9.3	1.1	9.9	1.1	A+	A-	A-
ELA	5	284702	4	B-C.3.1.3	2	14022	0.53	0.04	0.53	0.27	0.15	0.00	0.30	-0.26	0.30	-0.10	-0.15	0.9947	0.0188	9.9	1.1	9.9	1.1	A-	A-	A+
ELA	5	405227	4	B-C.3.1.3	3	14022	0.59	0.17	0.59	0.13	0.10	0.01	0.42	-0.19	0.42	-0.20	-0.21	0.6712	0.0191	-4.6	1.0	-4.5	1.0	A-	A-	A-
ELA	5	208047	4	B-V.4.1.2	2	14022	0.62	0.23	0.08	0.62	0.08	0.00	0.32	-0.06	-0.26	0.32	-0.23	0.5494	0.0193	9.3	1.1	9.9	1.1	A+	A-	A-
ELA	5	203525	4	B-K.1.1.3	2	14022	0.38	0.38	0.43	0.09	0.09	0.00	0.22	0.22	0.04	-0.22	-0.20	1.7118	0.0190	9.9	1.1	9.9	1.3	A+	A+	A-
ELA	5	266442	5	B-V.4.1.2	1	13967	0.68	0.11	0.12	0.09	0.68	0.00	0.53	-0.21	-0.26	-0.33	0.53	0.2081	0.0202	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	5	672291	5	B-C.3.1.3	2	13967	0.28	0.16	0.46	0.28	0.10	0.00	0.18	-0.21	0.08	0.18	-0.14	2.3231	0.0206	9.9	1.1	9.9	1.4	A+	A-	A-
ELA	5	787911	5	B-K.1.1.3	2	13967	0.51	0.51	0.31	0.06	0.12	0.00	0.30	0.30	-0.06	-0.25	-0.17	1.1304	0.0188	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	5	277226	5	B-K.1.1.3	2	13967	0.56	0.27	0.56	0.08	0.08	0.00	0.44	-0.20	0.44	-0.28	-0.19	0.8338	0.0190	-8.6	0.9	-7.5	0.9	A+	A+	A-
ELA	5	981465	5	B-C.2.1.2	3	13967	0.49	0.33	0.49	0.06	0.11	0.01	0.33	-0.09	0.33	-0.28	-0.15	1.1952	0.0188	5.7	1.0	8.9	1.1	A+	A-	A-
ELA	5	903999	5	B-C.3.1.3	2	13967	0.66	0.15	0.09	0.09	0.66	0.00	0.49	-0.22	-0.24	-0.29	0.49	0.3156	0.0199	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	5	454283	5	B-V.4.1.1	2	13967	0.78	0.78	0.05	0.05	0.12	0.00	0.46	0.46	-0.25	-0.26	-0.24	-0.4120	0.0225	-7.2	0.9	-8.5	0.8	A-	A-	B-

ELA	5	239760	5	B-V.4.1.1	2	13967	0.41	0.05	0.05	0.41	0.50	0.00	0.11	-0.26	-0.28	0.11	0.13	1.6246	0.0190	9.9	1.3	9.9	1.5	A-	A-	A-
ELA	5	240596	6	A.2.1.1	2	55796	0.71	0.14	0.71	0.10	0.05	0.00	0.43	-0.19	0.43	-0.22	-0.29	0.0166	0.0104	-7.6	1.0	-9.6	0.9	A+	B-	B-
ELA	5	316080	6	A.2.2.2	2	55796	0.74	0.03	0.20	0.74	0.03	0.00	0.29	-0.22	-0.16	0.29	-0.17	-0.1467	0.0107	9.9	1.1	9.9	1.2	B-	B-	A-
ELA	5	211022	6	A.2.4.1	2	55796	0.47	0.11	0.14	0.47	0.28	0.00	0.32	-0.18	-0.18	0.32	-0.09	1.3042	0.0095	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	413897	6	A.2.1.1	1	55796	0.68	0.07	0.20	0.05	0.68	0.00	0.49	-0.32	-0.22	-0.28	0.49	0.2252	0.0101	-9.9	0.9	-9.9	0.9	A+	A-	A-
ELA	5	893276	6	B.3.1.1	2	55796	0.86	0.86	0.04	0.06	0.04	0.00	0.44	0.44	-0.24	-0.25	-0.23	-1.0580	0.0131	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	5	944661	6	A.2.3.1	3	55796	0.73	0.03	0.16	0.73	0.07	0.00	0.49	-0.23	-0.31	0.49	-0.23	-0.1003	0.0106	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	5	762101	6	B.3.2.2	2	55796	0.57	0.23	0.57	0.09	0.12	0.00	0.40	-0.22	0.40	-0.25	-0.10	0.8246	0.0095	-0.3	1.0	0.3	1.0	A-	A-	A-
ELA	5	414008	6	A.2.4.1	3	55796	0.54	0.10	0.15	0.54	0.20	0.00	0.35	-0.14	-0.21	0.35	-0.14	0.9447	0.0095	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	764059	6	A-K.1.1.1	2	13935	0.70	0.06	0.13	0.70	0.11	0.00	0.45	-0.23	-0.27	0.45	-0.21	0.1322	0.0205	-6.2	0.9	-6.9	0.9	A-	A-	A-
ELA	5	608362	6	A-K.1.1.1	2	13935	0.72	0.72	0.04	0.07	0.16	0.00	0.33	0.33	-0.27	-0.22	-0.09	0.0019	0.0210	7.0	1.1	4.7	1.1	A-	A-	A-
ELA	5	162647	6	A-V.4.1.2	1	13935	0.79	0.10	0.06	0.06	0.79	0.00	0.50	-0.25	-0.25	-0.30	0.50	-0.4626	0.0228	-9.9	0.9	-9.9	0.7	A+	A-	A-
ELA	5	711824	6	A-V.4.1.1	2	13935	0.83	0.83	0.09	0.04	0.03	0.00	0.39	0.39	-0.15	-0.28	-0.26	-0.8043	0.0247	-2.7	1.0	-0.4	1.0	A+	A-	B-
ELA	5	220532	6	A-V.4.1.2	2	13935	0.68	0.10	0.13	0.09	0.68	0.00	0.48	-0.29	-0.20	-0.24	0.48	0.2480	0.0202	-9.9	0.9	-9.9	0.8	A-	A-	B-
ELA	5	638365	6	A-C.2.1.1	2	13935	0.38	0.29	0.38	0.16	0.16	0.00	0.21	-0.03	0.21	-0.19	-0.04	1.8034	0.0193	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	5	736680	6	A-C.2.1.1	2	13935	0.76	0.08	0.76	0.08	0.07	0.00	0.47	-0.25	0.47	-0.26	-0.23	-0.2875	0.0221	-7.5	0.9	-9.9	0.8	A+	A-	A-
ELA	5	945582	6	A-K.1.1.3	2	13935	0.45	0.23	0.22	0.45	0.09	0.01	0.23	-0.01	-0.12	0.23	-0.19	1.4118	0.0189	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	5	328206	7	A-K.1.1.2	3	13980	0.43	0.17	0.31	0.08	0.43	0.00	0.16	-0.23	0.10	-0.15	0.16	1.4903	0.0189	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	5	748990	7	A-K.1.1.3	3	13980	0.66	0.08	0.66	0.18	0.08	0.00	0.47	-0.20	0.47	-0.21	-0.32	0.3447	0.0199	-8.8	0.9	-9.9	0.9	A-	A+	A-
ELA	5	986315	7	A-C.2.1.1	3	13980	0.59	0.14	0.59	0.19	0.08	0.00	0.29	-0.11	0.29	-0.15	-0.15	0.7047	0.0192	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	5	271393	7	A-V.4.1.1	2	13980	0.90	0.03	0.05	0.90	0.02	0.00	0.45	-0.24	-0.30	0.45	-0.21	-1.5080	0.0301	-7.5	0.9	-9.9	0.6	A+	A-	A-
ELA	5	971791	7	A-V.4.1.1	2	13980	0.88	0.05	0.04	0.03	0.88	0.00	0.48	-0.26	-0.27	-0.27	0.48	-1.2614	0.0279	-9.5	0.8	-9.9	0.6	A+	A-	A-
ELA	5	812699	7	A-V.4.1.2	2	13980	0.85	0.85	0.07	0.04	0.03	0.00	0.42	0.42	-0.21	-0.27	-0.23	-0.9788	0.0257	-5.6	0.9	-7.1	0.8	A+	A-	A+
ELA	5	383587	7	A-V.4.1.2	1	13980	0.95	0.95	0.01	0.01	0.03	0.00	0.28	0.28	-0.21	-0.13	-0.13	-2.2239	0.0387	-1.4	1.0	-1.9	0.9	A-	A-	A-
ELA	5	303929	7	A-C.2.1.1	2	13980	0.64	0.05	0.21	0.64	0.09	0.00	0.38	-0.30	-0.07	0.38	-0.29	0.4225	0.0197	2.6	1.0	2.1	1.0	A+	A-	A-
ELA	5	192138	8	A-V.4.1.1	1	13888	0.44	0.19	0.11	0.26	0.44	0.00	0.30	-0.14	-0.11	-0.13	0.30	1.4661	0.0191	8.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	689276	8	A-V.4.1.2	1	13888	0.67	0.67	0.09	0.09	0.15	0.00	0.25	0.25	-0.15	-0.12	-0.11	0.2830	0.0201	9.9	1.2	9.9	1.2	A+	A-	A+
ELA	5	752013	8	A-V.4.1.2	1	13888	0.48	0.17	0.11	0.24	0.48	0.00	0.29	-0.09	-0.18	-0.13	0.29	1.2762	0.0191	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	5	784960	8	A-C.2.1.1	3	13888	0.56	0.14	0.11	0.56	0.19	0.01	0.39	-0.17	-0.19	0.39	-0.19	0.8618	0.0192	1.1	1.0	1.9	1.0	A-	A+	A-
ELA	5	339415	8	A-K.1.1.2	3	13888	0.51	0.25	0.17	0.51	0.07	0.00	0.41	-0.18	-0.21	0.41	-0.19	1.0982	0.0191	-6.6	1.0	-3.9	1.0	A-	A-	A-
ELA	5	180171	8	A-K.1.1.1	2	13888	0.66	0.07	0.66	0.07	0.20	0.01	0.46	-0.27	0.46	-0.30	-0.18	0.3482	0.0200	-8.1	0.9	-8.6	0.9	A-	A-	A-
ELA	5	740793	8	A-C.2.1.1	3	13888	0.74	0.74	0.12	0.08	0.06	0.00	0.48	0.48	-0.22	-0.26	-0.29	-0.1220	0.0213	-9.2	0.9	-9.9	0.8	A+	A-	A-
ELA	5	237720	8	A-K.1.1.3	3	13888	0.64	0.06	0.64	0.13	0.16	0.00	0.38	-0.20	0.38	-0.07	-0.30	0.4104	0.0198	3.2	1.0	2.3	1.0	A-	A-	A-
ELA	5	615249	9	A-V.4.1.2	2	13993	0.35	0.41	0.11	0.13	0.35	0.00	0.05	0.14	-0.11	-0.17	0.05	1.8996	0.0195	9.9	1.3	9.9	1.6	A+	A+	A+
ELA	5	221160	9	A-V.4.1.2	2	13993	0.72	0.09	0.12	0.72	0.07	0.00	0.45	-0.31	-0.18	0.45	-0.21	-0.0117	0.0207	-6.9	0.9	-7.9	0.9	A-	A-	A-
ELA	5	648802	9	A-V.4.1.1	2	13993	0.67	0.67	0.13	0.16	0.04	0.00	0.35	0.35	-0.16	-0.20	-0.19	0.2380	0.0200	5.4	1.1	5.4	1.1	A-	A-	A-
ELA	5	256095	9	A-K.1.1.1	2	13993	0.51	0.22	0.17	0.51	0.09	0.01	0.35	-0.14	-0.12	0.35	-0.23	1.0964	0.0188	3.3	1.0	5.8	1.1	A+	A+	A-
ELA	5	442908	9	A-C.2.1.1	3	13993	0.70	0.08	0.70	0.12	0.09	0.00	0.50	-0.23	0.50	-0.28	-0.25	0.0966	0.0204	-9.9	0.9	-9.9	0.8	A+	A+	A-
ELA	5	188357	9	A-K.1.1.2	3	13993	0.31	0.23	0.31	0.30	0.16	0.00	0.22	-0.07	0.22	-0.02	-0.17	2.1002	0.0200	7.1	1.1	9.9	1.3	A+	A+	A-
ELA	5	396964	9	A-V.4.1.1	2	13993	0.84	0.84	0.08	0.03	0.04	0.00	0.41	0.41	-0.18	-0.28	-0.25	-0.9241	0.0251	-5.1	0.9	-3.0	0.9	A+	A-	A-
ELA	5	497098	9	A-K.1.1.3	3	13993	0.52	0.15	0.19	0.14	0.52	0.00	0.33	-0.17	-0.15	-0.12	0.33	1.0342	0.0188	8.6	1.1	8.2	1.1	A+	A+	A+
READING	6	242399	0	A.2.3.1		124788	0.59	0.59	0.08	0.19	0.13	0.00	0.39	0.39	-0.25	-0.14	-0.19	0.5817	0.0065	9.9	1.0	9.9	1.0			
READING	6	410966	0	A.2.3.1		124788	0.78	0.78	0.07	0.05	0.09	0.00	0.45	0.45	-0.31	-0.29	-0.12	-0.6407	0.0076	-9.9	0.9	3.7	1.0			
READING	6	730274	0	A.2.3.2		124788	0.79	0.06	0.79	0.05	0.09	0.00	0.47	-0.27	0.47	-0.27	-0.22	-0.8066	0.0079	-9.9	1.0	-9.9	0.9			
READING	6	915381	0	A.2.4.1		124788	0.73	0.10	0.10	0.73	0.06	0.00	0.54	-0.33	-0.29	0.54	-0.20	-0.3595	0.0072	-9.9	0.9	-9.9	0.8			
READING	6	121596	0	A.2.3.1		124788	0.61	0.61	0.13	0.11	0.14	0.00	0.40	0.40	-0.22	-0.19	-0.15	0.3950	0.0066	9.9	1.0	8.6	1.0			
READING	6	120427	0	B.1.2.1	3	124788	0.76	0.03	0.12	0.08	0.76	0.00	0.28	-0.29	-0.04	-0.19	0.28	-0.4682	0.0074	9.9	1.1	9.9	1.4			
READING	6	815163	0	A.1.4.1	3	124788	0.84	0.03	0.84	0.10	0.02	0.00	0.39	-0.23	0.39	-0.23	-0.22	-1.1409	0.0085	-8.0	1.0	-6.7	0.9			
READING	6	796952	0	A.1.4.1	1	124788	0.46	0.36	0.11	0.46	0.07	0.00	0.29	-0.01	-0.17	0.29	-0.32	1.1536	0.0064	9.9	1.2	9.9	1.2			
READING	6	922509	0	B.3.3.4	2	124788	0.81	0.04	0.81	0.04	0.12	0.00	0.34	-0.23	0.34	-0.27	-0.12	-0.9548	0.0081	9.9	1.1	9.9	1.2			
READING	6	909043	0	B.3.3.4	2	124788	0.64	0.08	0.23	0.64	0.05	0.00	0.37	-0.26	-0.15	0.37	-0.20	0.2230	0.0067	9.9	1.1	9.9	1.1			

READING	6	272064	0	A.2.3.1	2	124788	0.73	0.07	0.05	0.15	0.73	0.00	0.46	-0.20	-0.24	-0.28	0.46	-0.4314	0.0073	0.1	1.0	-6.6	1.0			
READING	6	420028	0	A.2.4.1	2	124788	0.56	0.56	0.05	0.32	0.06	0.00	0.32	0.32	-0.26	-0.12	-0.18	0.7269	0.0064	9.9	1.1	9.9	1.2			
READING	6	231121	0	A.2.3.1	2	124788	0.61	0.61	0.14	0.12	0.12	0.01	0.47	0.47	-0.23	-0.24	-0.20	0.4273	0.0065	-9.9	0.9	-9.9	0.9			
READING	6	439265	0	A.2.3.1	2	124788	0.65	0.15	0.13	0.07	0.65	0.00	0.35	-0.22	-0.13	-0.16	0.35	0.2606	0.0066	9.9	1.1	9.9	1.2			
READING	6	329529	0	B.3.3.2	2	124788	0.57	0.25	0.57	0.12	0.04	0.01	0.35	-0.04	0.35	-0.30	-0.23	0.5586	0.0065	9.9	1.1	9.9	1.1			
READING	6	179259	0	B.3.3.3	1	124788	0.84	0.84	0.06	0.04	0.06	0.00	0.42	0.42	-0.23	-0.26	-0.19	-1.1198	0.0085	-9.9	1.0	-9.9	0.9			
READING	6	194915	0	B.3.1.1	2	124788	0.53	0.14	0.13	0.53	0.19	0.01	0.35	-0.13	-0.23	0.35	-0.12	0.9232	0.0064	9.9	1.1	9.9	1.1			
READING	6	781196	0	A.2.4.1	1	124788	0.71	0.12	0.08	0.71	0.08	0.00	0.48	-0.20	-0.25	0.48	-0.27	-0.4831	0.0074	9.9	1.1	1.9	1.0			
READING	6	402108	0	A.2.1.1	2	124788	0.81	0.12	0.05	0.81	0.02	0.00	0.45	-0.29	-0.22	0.45	-0.22	-0.7237	0.0077	-9.9	0.9	-9.9	0.8			
READING	6	728061	0	A.2.3.1	2	124788	0.76	0.18	0.04	0.02	0.76	0.00	0.45	-0.30	-0.26	-0.20	0.45	-0.6199	0.0076	-0.4	1.0	-7.8	0.9			
READING	6	562530	0	A.2.3.2	2	124788	0.86	0.04	0.86	0.06	0.04	0.00	0.48	-0.27	0.48	-0.26	-0.27	-1.1804	0.0086	-9.9	0.8	-9.9	0.7			
READING	6	655934	0	A.2.4.1	2	124788	0.70	0.70	0.12	0.10	0.09	0.00	0.33	0.33	-0.19	-0.17	-0.13	-0.1092	0.0069	9.9	1.1	9.9	1.2			
READING	6	456400	0	B.3.1.1	2	124788	0.89	0.04	0.03	0.89	0.04	0.00	0.47	-0.25	-0.27	0.47	-0.26	-1.5843	0.0097	-9.9	0.9	-9.9	0.6			
READING	6	594273	0	A.2.4.1	2	124788	0.85	0.85	0.07	0.04	0.03	0.00	0.45	0.45	-0.25	-0.28	-0.21	-1.2216	0.0087	-9.9	0.9	-9.9	0.8			
READING	6	757922	0	A.2.3.1	2	124788	0.78	0.04	0.78	0.13	0.04	0.00	0.51	-0.27	0.51	-0.29	-0.30	-0.5898	0.0075	-9.9	0.9	-9.9	0.7			
READING	6	309585	0	B.3.1.1	2	124788	0.72	0.12	0.04	0.12	0.72	0.00	0.43	-0.18	-0.19	-0.31	0.43	-0.2956	0.0071	1.6	1.0	-0.2	1.0			
READING	6	485256	0	B.1.1.1	2	124788	0.77	0.07	0.77	0.08	0.09	0.00	0.32	-0.14	0.32	-0.18	-0.17	-0.4105	0.0073	9.9	1.0	9.9	1.2			
READING	6	653212	0	B.2.2.2	3	124788	0.75	0.11	0.07	0.06	0.75	0.00	0.52	-0.29	-0.30	-0.21	0.52	-0.4184	0.0073	-9.9	0.9	-9.9	0.8			
READING	6	742861	0	A.1.4.1	1	124788	0.69	0.69	0.11	0.11	0.09	0.00	0.55	0.55	-0.29	-0.25	-0.29	-0.0446	0.0069	-9.9	0.9	-9.9	0.8			
READING	6	296977	0	B.1.1.1	2	124788	0.71	0.08	0.71	0.09	0.11	0.00	0.55	-0.29	0.55	-0.29	-0.27	-0.1702	0.0070	-9.9	0.9	-9.9	0.7			
READING	6	739315	0	B.2.1.2	2	124788	0.55	0.06	0.10	0.55	0.28	0.00	0.29	-0.30	-0.21	0.29	-0.01	0.7570	0.0064	9.9	1.2	9.9	1.2			
READING	6	859839	0	B.2.2.2	3	124788	0.50	0.14	0.09	0.26	0.50	0.00	0.39	-0.19	-0.29	-0.09	0.39	1.0996	0.0064	9.9	1.0	9.9	1.1			
READING	6	156314	0	A.1.2.2	2	124788	0.78	0.07	0.78	0.11	0.04	0.00	0.51	-0.30	0.51	-0.26	-0.26	-0.5505	0.0075	-9.9	0.9	-9.9	0.7			
READING	6	530717	0	B.1.1.1	3	124788	0.70	0.12	0.08	0.70	0.10	0.00	0.56	-0.33	-0.30	0.56	-0.22	0.0107	0.0068	-9.9	0.8	-9.9	0.7			
READING	6	951500	0	A.1.3.1	2	124788	0.66	0.66	0.05	0.23	0.05	0.01	0.54	0.54	-0.31	-0.30	-0.25	0.1824	0.0067	-9.9	0.9	-9.9	0.8			
READING	6	682170	0	A.1.4.1	1	124788	0.62	0.62	0.03	0.24	0.12	0.00	0.53	0.53	-0.20	-0.36	-0.21	0.2900	0.0066	-9.9	0.9	-9.9	0.8			
READING	6	601787	0	B.1.1.1	3	124788	0.60	0.08	0.12	0.60	0.19	0.00	0.44	-0.28	-0.22	0.44	-0.15	0.4690	0.0065	-2.6	1.0	4.4	1.0			
READING	6	676693	0	B.2.1.2	2	124788	0.54	0.06	0.54	0.32	0.08	0.00	0.43	-0.25	0.43	-0.21	-0.19	0.8525	0.0064	-9.2	1.0	-2.9	1.0			
READING	6	622705	0	A.1.1.1	2	124788	0.44	0.12	0.18	0.44	0.26	0.00	0.37	-0.10	-0.05	0.37	-0.29	1.3584	0.0064	9.9	1.0	9.9	1.1			
READING	6	592774	0	A.2.3.2	2	124788	0.56	0.37	0.02	0.56	0.05	0.00	0.47	-0.35	-0.18	0.47	-0.18	0.6940	0.0064	-9.9	0.9	-9.9	0.9			
ELA	6	736776	1	A.2.2.2	2	62534	0.43	0.14	0.07	0.43	0.36	0.00	0.45	-0.01	-0.18	0.45	-0.36	1.3788	0.0091	-9.9	0.9	-2.1	1.0	A-	A+	A-
ELA	6	918673	1	A.2.3.1	2	62534	0.71	0.71	0.08	0.03	0.17	0.00	0.45	0.45	-0.24	-0.25	-0.24	-0.2111	0.0100	-5.8	1.0	-8.8	0.9	A-	A-	A-
ELA	6	214360	1	A.2.3.2	2	62534	0.73	0.14	0.05	0.09	0.73	0.00	0.53	-0.24	-0.29	-0.33	0.53	-0.3198	0.0102	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	6	271402	1	A.2.4.1	1	62534	0.77	0.13	0.77	0.05	0.05	0.00	0.42	-0.20	0.42	-0.26	-0.25	-0.6087	0.0107	-3.2	1.0	-1.0	1.0	A+	B-	A-
ELA	6	729246	1	A.2.4.1	3	62534	0.81	0.06	0.05	0.81	0.08	0.00	0.41	-0.27	-0.27	0.41	-0.14	-0.8703	0.0113	-4.3	1.0	0.0	1.0	A+	A-	A-
ELA	6	226511	1	B.3.1.1	1	62534	0.91	0.03	0.91	0.04	0.03	0.00	0.43	-0.25	0.43	-0.23	-0.24	-1.8771	0.0149	-9.9	0.9	-9.9	0.7	A+	B-	B-
ELA	6	800769	1	B.3.3.1	3	62534	0.75	0.13	0.05	0.75	0.06	0.00	0.41	-0.15	-0.28	0.41	-0.25	-0.4668	0.0104	1.1	1.0	2.7	1.0	A+	A-	A-
ELA	6	164014	1	A.2.3.1	2	62534	0.87	0.87	0.04	0.03	0.07	0.00	0.43	0.43	-0.22	-0.26	-0.24	-1.4106	0.0129	-9.5	0.9	-9.9	0.7	A+	A-	A-
ELA	6	976617	1	A-V.4.1.2	2	6628	0.74	0.74	0.08	0.07	0.12	0.00	0.50	0.50	-0.24	-0.28	-0.27	-0.4886	0.0315	-5.4	0.9	-3.8	0.9	A-	A-	A-
ELA	6	691978	1	A-K.1.1.1	2	6628	0.63	0.09	0.06	0.63	0.21	0.00	0.30	-0.27	-0.26	0.30	-0.01	0.1260	0.0292	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	306700	1	A-C.2.1.1	3	6628	0.69	0.69	0.13	0.08	0.09	0.00	0.45	0.45	-0.28	-0.25	-0.15	-0.2231	0.0303	-1.1	1.0	-0.8	1.0	A+	A-	A-
ELA	6	506456	1	A-C.2.1.2	2	6628	0.33	0.21	0.33	0.13	0.33	0.00	0.36	-0.35	0.08	-0.20	0.36	1.7768	0.0294	1.0	1.0	6.1	1.2	A+	A-	A+
ELA	6	585631	1	A-C.2.1.2	2	6628	0.23	0.40	0.25	0.12	0.23	0.00	-0.01	0.21	-0.01	-0.29	-0.01	2.3681	0.0321	9.9	1.4	9.9	2.5	A-	A-	A-
ELA	6	929313	1	A-V.4.1.1	2	6628	0.64	0.16	0.64	0.07	0.13	0.01	0.41	-0.08	0.41	-0.27	-0.28	0.1080	0.0292	4.2	1.1	3.4	1.1	A-	A-	A-
ELA	6	254148	1	A-V.4.1.2	2	6628	0.63	0.05	0.14	0.63	0.17	0.00	0.43	-0.31	-0.25	0.43	-0.14	0.1379	0.0292	2.8	1.0	0.9	1.0	A+	A-	A-
ELA	6	305352	1	A-C.2.1.3	2	6628	0.60	0.13	0.60	0.16	0.11	0.00	0.44	-0.20	0.44	-0.21	-0.23	0.3279	0.0287	0.8	1.0	-0.4	1.0	A-	A-	A-
ELA	6	486799	2	A-C.3.1.1	3	6197	0.34	0.25	0.13	0.28	0.34	0.00	0.25	-0.17	-0.15	0.02	0.25	1.7896	0.0298	7.6	1.1	9.9	1.4	A+	A-	A+
ELA	6	300608	2	A-C.2.1.3	2	6197	0.28	0.28	0.18	0.20	0.33	0.00	0.09	0.09	-0.16	-0.03	0.08	2.1293	0.0311	9.9	1.2	9.9	1.9	A+	A-	A-
ELA	6	286476	2	A-V.4.1.1	2	6197	0.56	0.06	0.32	0.56	0.06	0.00	0.43	-0.31	-0.22	0.43	-0.15	0.6554	0.0289	-0.9	1.0	-0.9	1.0	A+	A-	A-
ELA	6	254276	2	A-V.4.1.2	2	6197	0.34	0.15	0.23	0.27	0.34	0.01	0.16	-0.21	0.13	-0.13	0.16	1.7665	0.0297	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	6	202490	2	A-C.2.1.1	3	6197	0.74	0.74	0.11	0.08	0.07	0.00	0.51	0.51	-0.27	-0.26	-0.27	-0.3557	0.0322	-7.0	0.9	-7.2	0.8	A+	A+	A-

ELA	6	986989	2	A-C.2.1.2	2	6197	0.55	0.15	0.55	0.11	0.19	0.00	0.40	-0.18	0.40	-0.26	-0.14	0.7078	0.0288	0.4	1.0	1.0	1.0	A+	A-	A-
ELA	6	116116	2	A-C.2.1.2	2	6197	0.29	0.29	0.29	0.29	0.14	0.00	0.13	-0.09	0.04	0.13	-0.09	2.0850	0.0309	9.9	1.2	9.9	1.7	A+	A+	A+
ELA	6	275281	2	A-V.4.1.2	2	6197	0.58	0.17	0.58	0.12	0.12	0.00	0.43	-0.21	0.43	-0.20	-0.20	0.5126	0.0291	-0.8	1.0	-1.6	1.0	A-	A-	A-
ELA	6	541837	3	A-C.2.1.1	2	6202	0.72	0.15	0.72	0.07	0.05	0.00	0.51	-0.24	0.51	-0.28	-0.32	-0.2493	0.0319	-7.2	0.9	-7.4	0.8	A-	A-	A-
ELA	6	491646	3	A-V.4.1.1	2	6202	0.76	0.12	0.08	0.76	0.04	0.00	0.40	-0.26	-0.21	0.40	-0.14	-0.5070	0.0333	-0.3	1.0	1.7	1.1	A+	A-	A-
ELA	6	638370	3	A-K.1.1.2	3	6202	0.70	0.16	0.10	0.70	0.03	0.00	0.45	-0.24	-0.21	0.45	-0.28	-0.1256	0.0313	-1.7	1.0	-2.5	0.9	A+	A+	A-
ELA	6	661440	3	A-C.2.1.2	2	6202	0.36	0.36	0.17	0.28	0.19	0.00	0.17	0.17	-0.05	-0.16	0.02	1.7116	0.0296	9.9	1.3	9.9	1.6	A+	A-	A+
ELA	6	839294	3	A-K.1.1.3	2	6202	0.82	0.06	0.08	0.05	0.82	0.00	0.57	-0.28	-0.34	-0.29	0.57	-0.9327	0.0364	-9.9	0.8	-9.9	0.6	A-	A-	A-
ELA	6	648732	3	A-V.4.1.2	2	6202	0.64	0.64	0.09	0.22	0.05	0.00	0.41	0.41	-0.26	-0.15	-0.29	0.2319	0.0300	1.4	1.0	4.8	1.1	A-	A-	A-
ELA	6	785745	3	A-C.2.1.3	3	6202	0.42	0.09	0.20	0.28	0.42	0.00	0.19	-0.26	-0.07	0.02	0.19	1.4132	0.0290	9.9	1.2	9.9	1.5	A+	A-	A-
ELA	6	738640	3	A-V.4.1.1	2	6202	0.71	0.12	0.71	0.12	0.05	0.00	0.46	-0.31	0.46	-0.17	-0.23	-0.1730	0.0315	-3.2	1.0	-2.9	0.9	B-	C-	C-
ELA	6	983782	4	A-C.2.1.1	3	6194	0.33	0.33	0.14	0.45	0.08	0.00	0.13	0.13	-0.16	0.10	-0.21	1.9127	0.0302	9.9	1.3	9.9	1.6	A-	A-	A-
ELA	6	833459	4	A-C.2.1.2	2	6194	0.58	0.14	0.58	0.19	0.09	0.00	0.40	-0.17	0.40	-0.18	-0.24	0.5540	0.0293	3.0	1.0	2.6	1.1	A+	A-	A-
ELA	6	700501	4	A-C.2.1.3	2	6194	0.77	0.09	0.07	0.07	0.77	0.01	0.52	-0.28	-0.30	-0.24	0.52	-0.5206	0.0335	-7.8	0.9	-8.6	0.7	A-	A-	A+
ELA	6	160169	4	A-V.4.1.1	2	6194	0.90	0.90	0.04	0.03	0.03	0.00	0.45	0.45	-0.29	-0.22	-0.24	-1.7829	0.0460	-4.9	0.9	-7.9	0.6	A+	A-	A-
ELA	6	567028	4	A-V.4.1.2	2	6194	0.66	0.07	0.06	0.22	0.66	0.00	0.41	-0.25	-0.22	-0.19	0.41	0.1573	0.0303	2.4	1.0	0.1	1.0	A-	A-	A-
ELA	6	137618	4	A-K.1.1.1	2	6194	0.85	0.07	0.85	0.07	0.02	0.00	0.42	-0.23	0.42	-0.24	-0.23	-1.1550	0.0385	-2.6	0.9	-3.2	0.9	A-	A+	A-
ELA	6	250734	4	A-K.1.1.2	3	6194	0.78	0.07	0.07	0.78	0.08	0.00	0.48	-0.31	-0.25	0.48	-0.21	-0.6189	0.0341	-5.7	0.9	-5.0	0.8	A+	A-	A-
ELA	6	680031	4	A-C.2.1.1	2	6194	0.52	0.29	0.11	0.52	0.08	0.00	0.31	-0.10	-0.20	0.31	-0.17	0.8957	0.0289	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	6	133354	5	A-C.2.1.1	2	6264	0.33	0.17	0.33	0.33	0.16	0.00	0.15	-0.21	0.15	0.07	-0.05	1.8881	0.0301	9.9	1.3	9.9	1.6	A-	A+	A-
ELA	6	288657	5	A-C.2.1.2	2	6264	0.55	0.55	0.09	0.12	0.24	0.00	0.29	0.29	-0.21	-0.22	-0.03	0.7127	0.0288	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	6	675225	5	A-C.2.1.2	2	6264	0.68	0.15	0.09	0.68	0.09	0.00	0.44	-0.31	-0.28	0.44	-0.07	0.0308	0.0305	-1.5	1.0	-2.0	1.0	A-	A-	A+
ELA	6	697585	5	A-C.2.1.3	2	6264	0.64	0.18	0.11	0.07	0.64	0.00	0.43	-0.14	-0.24	-0.28	0.43	0.2521	0.0298	0.4	1.0	0.6	1.0	A+	A+	A+
ELA	6	883071	5	A-V.4.1.1	2	6264	0.57	0.57	0.17	0.07	0.19	0.00	0.32	0.32	-0.15	-0.19	-0.14	0.5931	0.0290	9.9	1.1	9.7	1.2	A-	A+	A-
ELA	6	949349	5	A-V.4.1.1	2	6264	0.78	0.06	0.78	0.06	0.10	0.00	0.48	-0.27	0.48	-0.25	-0.24	-0.6056	0.0337	-4.9	0.9	-5.0	0.8	A-	A-	A-
ELA	6	809446	5	A-V.4.1.2	2	6264	0.57	0.12	0.21	0.57	0.09	0.01	0.41	-0.16	-0.23	0.41	-0.18	0.6007	0.0290	1.9	1.0	1.8	1.0	A-	A-	A-
ELA	6	844910	5	A-K.1.1.2	3	6264	0.47	0.14	0.17	0.21	0.47	0.01	0.40	-0.18	-0.21	-0.14	0.40	1.1125	0.0287	0.9	1.0	4.0	1.1	A-	A-	A-
ELA	6	364267	6	A-K.1.1.3	2	6196	0.75	0.10	0.06	0.09	0.75	0.00	0.52	-0.21	-0.28	-0.32	0.52	-0.3593	0.0329	-7.8	0.9	-5.9	0.8	A+	A-	B-
ELA	6	793928	6	A-C.2.1.2	3	6196	0.78	0.78	0.07	0.10	0.06	0.00	0.47	0.47	-0.27	-0.25	-0.22	-0.5682	0.0342	-3.8	0.9	-3.6	0.9	A+	A-	A-
ELA	6	185348	6	A-C.2.1.2	2	6196	0.51	0.24	0.51	0.18	0.07	0.00	0.19	0.00	0.19	-0.11	-0.20	0.9891	0.0288	9.9	1.3	9.9	1.4	A+	A+	A-
ELA	6	696070	6	A-C.2.1.3	2	6196	0.79	0.06	0.07	0.79	0.08	0.00	0.45	-0.26	-0.29	0.45	-0.17	-0.6404	0.0347	-3.0	0.9	-2.3	0.9	A+	A-	A-
ELA	6	604044	6	A-V.4.1.1	2	6196	0.83	0.04	0.05	0.08	0.83	0.00	0.41	-0.19	-0.23	-0.24	0.41	-0.9890	0.0374	-1.8	1.0	0.0	1.0	A+	A-	A-
ELA	6	512901	6	A-V.4.1.1	2	6196	0.89	0.89	0.04	0.03	0.03	0.00	0.49	0.49	-0.28	-0.29	-0.25	-1.6269	0.0443	-6.2	0.8	-8.2	0.6	A+	A-	B-
ELA	6	131530	6	A-V.4.1.2	2	6196	0.72	0.03	0.17	0.72	0.08	0.00	0.46	-0.27	-0.31	0.46	-0.16	-0.1848	0.0320	-2.5	1.0	-2.7	0.9	A+	A-	B-
ELA	6	391992	6	A-K.1.1.1	3	6196	0.80	0.06	0.80	0.08	0.05	0.00	0.55	-0.25	0.55	-0.33	-0.30	-0.7724	0.0356	-9.2	0.8	-9.9	0.7	A+	A-	A-
ELA	6	420671	7	A-C.2.1.1	3	6214	0.62	0.17	0.62	0.10	0.10	0.01	0.48	-0.20	0.48	-0.29	-0.23	0.3218	0.0296	-4.3	0.9	-5.6	0.9	A+	A-	A+
ELA	6	662800	7	A-K.1.1.2	3	6214	0.50	0.50	0.20	0.12	0.18	0.00	0.32	0.32	-0.16	-0.27	-0.02	0.9852	0.0287	9.9	1.1	9.9	1.2	A+	A-	A+
ELA	6	134605	7	A-V.4.1.1	2	6214	0.68	0.11	0.12	0.09	0.68	0.00	0.48	-0.24	-0.30	-0.18	0.48	-0.0084	0.0307	-4.7	0.9	-6.0	0.9	A-	C-	C-
ELA	6	730591	7	A-V.4.1.1	2	6214	0.63	0.16	0.16	0.05	0.63	0.00	0.45	-0.27	-0.17	-0.24	0.45	0.2901	0.0297	-1.5	1.0	-2.9	0.9	A-	B-	C-
ELA	6	500510	7	A-K.1.1.3	2	6214	0.62	0.62	0.16	0.11	0.11	0.00	0.41	0.41	-0.20	-0.28	-0.10	0.3261	0.0296	1.6	1.0	1.7	1.0	A+	A+	A+
ELA	6	581833	7	A-V.4.1.2	2	6214	0.62	0.11	0.19	0.62	0.07	0.01	0.39	-0.23	-0.12	0.39	-0.27	0.3358	0.0296	3.6	1.1	3.3	1.1	A+	A-	A+
ELA	6	588157	7	A-K.1.1.1	2	6214	0.66	0.13	0.66	0.16	0.05	0.00	0.46	-0.27	0.46	-0.21	-0.24	0.0930	0.0303	-2.7	1.0	-3.1	0.9	A-	A-	A-
ELA	6	932910	7	A-C.2.1.2	2	6214	0.33	0.09	0.43	0.33	0.14	0.00	0.04	-0.17	0.10	0.04	-0.05	1.8411	0.0299	9.9	1.4	9.9	1.8	A-	A-	A+
ELA	6	933993	8	A-C.2.1.1	3	6188	0.68	0.11	0.07	0.14	0.68	0.00	0.50	-0.25	-0.29	-0.24	0.50	0.0660	0.0309	-6.3	0.9	-6.5	0.9	A+	A-	A-
ELA	6	940539	8	A-C.2.1.2	2	6188	0.82	0.07	0.05	0.82	0.05	0.00	0.48	-0.24	-0.27	0.48	-0.26	-0.9116	0.0366	-5.5	0.9	-5.9	0.8	A+	A-	A-
ELA	6	961609	8	A-C.2.1.2	2	6188	0.51	0.51	0.21	0.18	0.10	0.00	0.30	0.30	-0.26	-0.10	-0.03	0.9591	0.0290	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	773066	8	A-C.2.1.3	3	6188	0.68	0.20	0.68	0.07	0.04	0.00	0.54	-0.29	0.54	-0.31	-0.26	0.0220	0.0310	-9.1	0.9	-9.6	0.8	A+	A-	A-
ELA	6	833856	8	A-V.4.1.1	2	6188	0.76	0.12	0.07	0.76	0.05	0.00	0.46	-0.25	-0.28	0.46	-0.19	-0.4327	0.0332	-2.4	1.0	-3.2	0.9	A-	B-	B-
ELA	6	861828	8	A-V.4.1.1	2	6188	0.83	0.06	0.04	0.06	0.83	0.00	0.49	-0.25	-0.26	-0.28	0.49	-0.9810	0.0372	-6.0	0.9	-7.4	0.7	A+	A-	A-
ELA	6	211067	8	A-V.4.1.2	2	6188	0.57	0.57	0.15	0.21	0.06	0.00	0.26	0.26	-0.18	-0.02	-0.23	0.6446	0.0293	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	374874	8	A-K.1.1.1	2	6188	0.86	0.08	0.86	0.03	0.03	0.00	0.43	-0.23	0.43	-0.27	-0.23	-1.2305	0.0396	-4.1	0.9	-2.7	0.9	A+	A-	A-

ELA	6	176338	9	A-C.2.1.2	2	6227	0.47	0.19	0.23	0.47	0.11	0.00	0.27	-0.10	-0.11	0.27	-0.15	1.1162	0.0285	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	6	279312	9	A-K.1.1.3	3	6227	0.18	0.13	0.18	0.37	0.33	0.00	-0.12	-0.05	-0.12	0.02	0.12	2.8686	0.0359	9.9	1.3	9.9	2.9	A-	A+	A+
ELA	6	525066	9	A-C.2.1.1	3	6227	0.57	0.18	0.57	0.17	0.06	0.01	0.17	-0.03	0.17	0.00	-0.29	0.5978	0.0289	9.9	1.3	9.9	1.5	A-	A-	A-
ELA	6	202599	9	A-C.2.1.2	2	6227	0.54	0.54	0.13	0.16	0.17	0.00	0.31	0.31	-0.30	-0.17	0.03	0.7681	0.0287	9.9	1.1	9.1	1.2	A-	A+	A+
ELA	6	347384	9	A-V.4.1.2	2	6227	0.74	0.10	0.09	0.08	0.74	0.00	0.47	-0.36	-0.23	-0.13	0.47	-0.3422	0.0321	-5.3	0.9	-6.4	0.8	A-	A-	A-
ELA	6	354283	9	A-V.4.1.1	2	6227	0.40	0.09	0.26	0.40	0.25	0.00	0.29	-0.24	-0.13	0.29	-0.04	1.4929	0.0289	8.0	1.1	9.9	1.2	A-	A+	A-
ELA	6	947832	9	A-C.2.1.3	2	6227	0.56	0.14	0.19	0.11	0.56	0.00	0.46	-0.21	-0.20	-0.24	0.46	0.6833	0.0287	-4.3	1.0	-2.9	1.0	A-	A-	A-
ELA	6	336504	9	A-V.4.1.2	2	6227	0.67	0.67	0.05	0.18	0.11	0.00	0.41	0.41	-0.24	-0.27	-0.12	0.1089	0.0301	0.5	1.0	-0.2	1.0	A-	A-	A-
ELA	6	599715	10	A-C.3.1.1	3	6224	0.69	0.05	0.69	0.12	0.14	0.00	0.40	-0.25	0.40	-0.22	-0.16	-0.0276	0.0309	1.8	1.0	1.6	1.0	A-	A-	A-
ELA	6	482543	10	A-C.2.1.3	2	6224	0.79	0.12	0.05	0.04	0.79	0.01	0.52	-0.28	-0.28	-0.29	0.52	-0.6934	0.0346	-7.9	0.9	-8.8	0.7	A+	B-	A-
ELA	6	174950	10	A-V.4.1.1	2	6224	0.63	0.63	0.21	0.07	0.09	0.00	0.49	0.49	-0.30	-0.25	-0.18	0.3329	0.0296	-5.9	0.9	-5.5	0.9	A+	A-	A-
ELA	6	306811	10	A-K.1.1.3	2	6224	0.67	0.06	0.08	0.67	0.19	0.00	0.49	-0.24	-0.23	0.49	-0.28	0.0703	0.0305	-5.0	0.9	-5.3	0.9	A-	A-	A-
ELA	6	625233	10	A-K.1.1.2	3	6224	0.76	0.06	0.14	0.76	0.04	0.00	0.41	-0.27	-0.16	0.41	-0.28	-0.4501	0.0330	-0.6	1.0	3.4	1.1	A+	A-	A-
ELA	6	218293	10	A-C.2.1.1	3	6224	0.55	0.55	0.20	0.07	0.18	0.00	0.26	0.26	0.02	-0.26	-0.18	0.7480	0.0288	9.9	1.2	9.9	1.3	A-	A+	A+
ELA	6	919706	10	A-C.2.1.2	2	6224	0.69	0.09	0.05	0.16	0.69	0.00	0.49	-0.28	-0.26	-0.23	0.49	-0.0467	0.0310	-5.1	0.9	-4.7	0.9	A+	A-	A-
ELA	6	122700	10	A-V.4.1.2	2	6224	0.76	0.04	0.76	0.16	0.04	0.00	0.39	-0.25	0.39	-0.20	-0.22	-0.5041	0.0334	0.5	1.0	1.4	1.1	A+	B-	A-
ELA	6	545467	11	B.1.1.1	2	62223	0.81	0.10	0.04	0.81	0.04	0.00	0.24	-0.17	-0.08	0.24	-0.12	-0.8381	0.0112	9.9	1.1	9.9	1.3	A+	A-	A-
ELA	6	643441	11	A.1.3.1	2	62223	0.57	0.20	0.57	0.12	0.11	0.00	0.37	-0.21	0.37	-0.16	-0.14	0.6367	0.0091	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	6	310909	11	A.1.1.1	2	62223	0.82	0.82	0.02	0.08	0.08	0.00	0.30	0.30	-0.24	-0.11	-0.18	-0.9072	0.0114	8.3	1.1	9.9	1.2	A+	A-	A-
ELA	6	685349	11	A.1.3.2	2	62223	0.74	0.04	0.06	0.16	0.74	0.00	0.52	-0.29	-0.32	-0.26	0.52	-0.3420	0.0102	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	6	785357	11	B.1.1.1	3	62223	0.73	0.08	0.13	0.05	0.73	0.00	0.49	-0.25	-0.30	-0.20	0.49	-0.3008	0.0101	-9.9	0.9	-9.9	0.8	A+	A-	A-
ELA	6	592058	11	B.1.1.1	2	62223	0.64	0.13	0.08	0.15	0.64	0.00	0.24	-0.05	-0.16	-0.15	0.24	0.2547	0.0094	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	6	903416	11	B.1.1.1	2	62223	0.56	0.03	0.39	0.56	0.02	0.00	0.36	-0.23	-0.20	0.36	-0.24	0.7135	0.0091	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	6	854740	11	B.1.1.1	2	62223	0.74	0.05	0.04	0.74	0.18	0.00	0.29	-0.20	-0.16	0.29	-0.15	-0.3099	0.0101	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	6	509453	11	B-C.2.1.2	2	6191	0.69	0.69	0.07	0.04	0.20	0.00	0.34	0.34	-0.23	-0.28	-0.11	-0.0342	0.0306	3.8	1.1	3.7	1.1	A+	A+	A-
ELA	6	113430	11	B-C.2.1.3	2	6191	0.50	0.50	0.16	0.10	0.24	0.00	0.28	0.28	-0.25	-0.24	0.06	0.9772	0.0284	9.9	1.1	9.9	1.2	A-	A-	A+
ELA	6	488797	11	B-V.4.1.1	2	6191	0.56	0.10	0.15	0.19	0.56	0.00	0.39	-0.17	-0.18	-0.19	0.39	0.6647	0.0286	1.1	1.0	0.6	1.0	A-	A+	A+
ELA	6	570330	11	B-V.4.1.1	2	6191	0.46	0.15	0.46	0.32	0.07	0.00	0.17	-0.26	0.17	0.13	-0.20	1.1598	0.0284	9.9	1.3	9.9	1.4	A+	A-	A+
ELA	6	488038	11	B-V.4.1.2	2	6191	0.53	0.28	0.53	0.10	0.09	0.00	0.18	0.06	0.18	-0.28	-0.10	0.8345	0.0284	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	6	850686	11	B-K.1.1.1	2	6191	0.61	0.14	0.05	0.20	0.61	0.00	0.42	-0.26	-0.27	-0.13	0.42	0.4239	0.0291	-1.9	1.0	-1.7	1.0	A-	A-	A-
ELA	6	350319	11	B-K.1.1.1	2	6191	0.56	0.10	0.22	0.56	0.11	0.01	0.42	-0.24	-0.16	0.42	-0.22	0.6900	0.0286	-2.6	1.0	-2.3	1.0	A-	A-	A-
ELA	6	735473	11	B-C.2.1.1	2	6191	0.60	0.10	0.16	0.60	0.13	0.00	0.38	-0.27	-0.11	0.38	-0.17	0.4668	0.0290	2.7	1.0	1.1	1.0	A+	A-	A-
ELA	6	215865	12	B-V.4.1.2	2	6209	0.64	0.64	0.15	0.06	0.15	0.00	0.40	0.40	-0.22	-0.18	-0.19	0.2507	0.0298	1.7	1.0	0.8	1.0	A-	A-	A-
ELA	6	354533	12	B-C.3.1.1	3	6209	0.41	0.31	0.18	0.10	0.41	0.00	0.25	-0.06	-0.07	-0.21	0.25	1.4467	0.0290	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	161336	12	B-C.3.1.1	2	6209	0.33	0.11	0.48	0.33	0.08	0.00	0.34	-0.18	-0.12	0.34	-0.15	1.8954	0.0301	0.5	1.0	6.0	1.2	B-	A-	A-
ELA	6	458961	12	B-V.4.1.1	2	6209	0.80	0.80	0.04	0.11	0.05	0.00	0.45	0.45	-0.27	-0.25	-0.21	-0.7472	0.0348	-4.3	0.9	-3.9	0.9	A-	A-	A-
ELA	6	710299	12	B-K.1.1.2	3	6209	0.65	0.05	0.65	0.17	0.13	0.00	0.48	-0.26	0.48	-0.25	-0.24	0.2008	0.0299	-5.7	0.9	-6.7	0.9	A-	A-	A-
ELA	6	648522	12	B-C.2.1.2	2	6209	0.76	0.14	0.05	0.04	0.76	0.01	0.44	-0.22	-0.27	-0.27	0.44	-0.5008	0.0331	-3.7	0.9	-2.8	0.9	A+	A-	A-
ELA	6	377630	12	B-V.4.1.2	2	6209	0.91	0.03	0.02	0.91	0.03	0.00	0.45	-0.26	-0.25	0.45	-0.25	-1.8624	0.0473	-5.2	0.8	-7.8	0.6	A-	B-	B-
ELA	6	196834	12	B-K.1.1.1	2	6209	0.66	0.07	0.66	0.13	0.13	0.00	0.47	-0.32	0.47	-0.28	-0.13	0.1195	0.0302	-4.2	0.9	-3.3	0.9	A+	A-	A-
ELA	6	162939	13	B-C.3.1.1	2	6215	0.60	0.15	0.60	0.08	0.17	0.00	0.37	-0.13	0.37	-0.28	-0.15	0.4658	0.0292	4.5	1.1	3.0	1.1	A-	A-	A-
ELA	6	162785	13	B-K.1.1.3	2	6215	0.62	0.62	0.08	0.07	0.23	0.00	0.27	0.27	-0.19	-0.23	-0.05	0.3817	0.0294	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	161622	13	B-K.1.1.3	2	6215	0.32	0.28	0.33	0.32	0.06	0.00	0.21	-0.09	0.02	0.21	-0.27	1.9360	0.0302	9.0	1.1	9.9	1.5	A-	A+	A-
ELA	6	118628	13	B-C.3.1.1	2	6215	0.49	0.49	0.21	0.14	0.16	0.00	0.48	0.48	-0.31	-0.26	-0.07	1.0287	0.0286	-9.8	0.9	-6.0	0.9	A-	A-	A-
ELA	6	834109	13	B-C.2.1.2	3	6215	0.30	0.30	0.20	0.30	0.21	0.00	0.19	0.11	-0.22	0.19	-0.12	2.0765	0.0308	9.7	1.1	9.9	1.5	A+	A-	A-
ELA	6	344990	13	B-V.4.1.2	2	6215	0.74	0.15	0.05	0.06	0.74	0.00	0.51	-0.23	-0.29	-0.31	0.51	-0.2973	0.0320	-7.8	0.9	-7.2	0.8	A-	A-	A-
ELA	6	685982	13	B-K.1.1.2	3	6215	0.59	0.12	0.59	0.07	0.21	0.01	0.41	-0.15	0.41	-0.26	-0.20	0.5109	0.0291	1.6	1.0	3.0	1.1	A+	A+	A+
ELA	6	751816	13	B-C.2.1.3	2	6215	0.37	0.24	0.24	0.15	0.37	0.00	0.39	-0.10	-0.21	-0.16	0.39	1.6725	0.0294	-6.0	0.9	2.7	1.1	A-	A-	A-
ELA	6	514877	14	B-K.1.1.2	3	6241	0.71	0.11	0.71	0.09	0.09	0.00	0.52	-0.26	0.52	-0.28	-0.26	-0.1748	0.0313	-8.3	0.9	-9.4	0.8	A+	A-	A-
ELA	6	105943	14	B-K.1.1.3	2	6241	0.68	0.09	0.11	0.12	0.68	0.00	0.52	-0.26	-0.23	-0.28	0.52	0.0373	0.0304	-8.3	0.9	-7.1	0.8	A+	A-	A-
ELA	6	335872	14	B-C.2.1.1	3	6241	0.76	0.76	0.11	0.06	0.06	0.01	0.50	0.50	-0.24	-0.29	-0.27	-0.4682	0.0328	-6.6	0.9	-7.2	0.8	A+	A-	A-

ELA	6	251141	14	B-C.2.1.2	2	6241	0.56	0.56	0.18	0.15	0.10	0.00	0.35	0.35	-0.16	-0.17	-0.17	0.6492	0.0289	6.4	1.1	5.8	1.1	A-	A-	A-
ELA	6	450704	14	B-C.2.1.3	2	6241	0.55	0.13	0.55	0.15	0.16	0.01	0.47	-0.22	0.47	-0.22	-0.20	0.7223	0.0288	-5.1	0.9	-4.6	0.9	A-	A-	A-
ELA	6	633049	14	B-V.4.1.1	1	6241	0.45	0.08	0.23	0.24	0.45	0.00	0.31	-0.14	-0.23	-0.04	0.31	1.2496	0.0287	9.5	1.1	9.3	1.2	A-	A-	A-
ELA	6	116752	14	B-V.4.1.1	2	6241	0.72	0.07	0.17	0.72	0.04	0.00	0.36	-0.20	-0.15	0.36	-0.28	-0.2172	0.0315	3.7	1.1	4.3	1.1	A-	A-	A-
ELA	6	701601	14	A-V.4.1.1	2	6241	0.44	0.26	0.13	0.44	0.17	0.00	0.24	-0.05	-0.17	0.24	-0.10	1.2818	0.0287	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	944000	15	B-C.2.1.1	2	6224	0.45	0.31	0.15	0.08	0.45	0.00	0.24	0.00	-0.12	-0.27	0.24	1.2248	0.0283	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	6	912671	15	B-C.2.1.2	2	6224	0.26	0.26	0.26	0.10	0.38	0.00	0.01	-0.18	0.01	-0.13	0.23	2.2539	0.0313	9.9	1.3	9.9	1.9	A-	A+	A-
ELA	6	291224	15	B-K.1.1.2	3	6224	0.40	0.24	0.16	0.40	0.19	0.00	0.21	-0.11	-0.14	0.21	-0.01	1.4809	0.0286	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	6	684391	15	B-K.1.1.3	2	6224	0.43	0.43	0.22	0.19	0.15	0.00	0.33	0.33	-0.16	-0.08	-0.17	1.3227	0.0284	4.3	1.1	6.0	1.1	A+	A+	A+
ELA	6	364739	15	B-V.4.1.1	2	6224	0.92	0.03	0.04	0.92	0.01	0.00	0.43	-0.27	-0.26	0.43	-0.18	-1.8563	0.0481	-4.3	0.9	-7.9	0.6	A-	A-	B-
ELA	6	775702	15	B-V.4.1.2	1	6224	0.63	0.11	0.20	0.07	0.63	0.00	0.42	-0.26	-0.14	-0.26	0.42	0.3617	0.0292	-1.8	1.0	-2.8	1.0	B-	C-	B-
ELA	6	288292	15	B-C.2.1.3	2	6224	0.24	0.26	0.24	0.13	0.36	0.00	0.06	-0.15	0.06	-0.16	0.21	2.3943	0.0321	9.9	1.2	9.9	1.8	A-	A+	A+
ELA	6	997935	15	B-K.1.1.2	2	6224	0.35	0.35	0.51	0.08	0.06	0.00	0.15	0.15	0.11	-0.22	-0.27	1.7656	0.0293	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	6	590572	16	B-V.4.1.1	2	6244	0.41	0.41	0.07	0.11	0.41	0.00	0.18	0.08	-0.24	-0.23	0.18	1.4495	0.0290	9.9	1.3	9.9	1.5	A-	A+	A-
ELA	6	518733	16	B-K.1.1.2	2	6244	0.61	0.14	0.15	0.61	0.10	0.00	0.40	-0.16	-0.14	0.40	-0.30	0.4112	0.0295	3.0	1.0	4.4	1.1	A+	A-	A-
ELA	6	428338	16	B-K.1.1.3	3	6244	0.68	0.08	0.11	0.12	0.68	0.00	0.40	-0.23	-0.16	-0.21	0.40	0.0600	0.0305	1.7	1.0	3.1	1.1	A-	A-	A-
ELA	6	535012	16	B-C.3.1.1	2	6244	0.73	0.73	0.08	0.13	0.07	0.00	0.54	0.54	-0.26	-0.30	-0.28	-0.2411	0.0318	-9.6	0.9	-9.9	0.7	A-	A-	A-
ELA	6	267013	16	B-C.2.1.3	2	6244	0.73	0.73	0.10	0.06	0.11	0.00	0.40	0.40	-0.23	-0.29	-0.12	-0.2665	0.0319	-0.1	1.0	0.9	1.0	A-	A-	A-
ELA	6	921319	16	B-V.4.1.2	2	6244	0.82	0.10	0.82	0.04	0.04	0.00	0.49	-0.29	0.49	-0.25	-0.26	-0.9073	0.0362	-6.5	0.9	-6.7	0.7	A-	C-	C-
ELA	6	868301	16	B-V.4.1.1	2	6244	0.77	0.05	0.11	0.77	0.07	0.00	0.48	-0.29	-0.26	0.48	-0.22	-0.5609	0.0336	-5.6	0.9	-6.0	0.8	B-	A-	A-
ELA	6	561935	16	B-C.2.1.2	2	6244	0.69	0.07	0.69	0.16	0.07	0.00	0.41	-0.22	0.41	-0.17	-0.27	-0.0342	0.0309	1.1	1.0	0.2	1.0	A+	A-	A+
ELA	6	871011	17	B-K.1.1.3	2	6257	0.70	0.70	0.10	0.11	0.09	0.00	0.50	0.50	-0.28	-0.27	-0.21	-0.0855	0.0311	-7.2	0.9	-7.0	0.8	A+	A+	A-
ELA	6	768334	17	B-C.2.1.3	2	6257	0.55	0.12	0.55	0.21	0.11	0.00	0.33	-0.27	0.33	0.00	-0.25	0.7261	0.0288	9.3	1.1	9.9	1.2	A+	A+	A-
ELA	6	983928	17	B-V.4.1.2	1	6257	0.72	0.19	0.05	0.72	0.04	0.00	0.32	-0.12	-0.24	0.32	-0.22	-0.2061	0.0316	6.7	1.1	7.4	1.2	A-	A-	A-
ELA	6	357401	17	B-C.3.1.1	2	6257	0.56	0.56	0.14	0.19	0.11	0.00	0.46	0.46	-0.35	-0.08	-0.25	0.6962	0.0289	-4.5	1.0	-4.2	0.9	A-	A-	A-
ELA	6	772677	17	B-C.2.1.2	3	6257	0.58	0.29	0.07	0.06	0.58	0.00	0.47	-0.23	-0.30	-0.21	0.47	0.5739	0.0290	-4.9	0.9	-4.5	0.9	A+	A-	A-
ELA	6	712964	17	B-V.4.1.1	2	6257	0.74	0.16	0.74	0.06	0.04	0.00	0.48	-0.30	0.48	-0.28	-0.18	-0.3179	0.0322	-4.9	0.9	-5.3	0.9	A-	A-	B-
ELA	6	715954	17	B-V.4.1.2	2	6257	0.75	0.06	0.05	0.75	0.13	0.00	0.42	-0.27	-0.30	0.42	-0.15	-0.4137	0.0327	-1.7	1.0	-2.3	0.9	A+	A-	A-
ELA	6	416867	17	B-K.1.1.2	3	6257	0.75	0.09	0.06	0.08	0.75	0.01	0.50	-0.27	-0.29	-0.23	0.50	-0.3691	0.0325	-7.0	0.9	-8.0	0.8	A+	A-	A-
ELA	6	313995	18	B-C.2.1.1	2	6217	0.71	0.71	0.07	0.16	0.06	0.00	0.40	0.40	-0.25	-0.16	-0.24	-0.1653	0.0314	0.8	1.0	1.7	1.1	A+	A-	A-
ELA	6	396502	18	B-C.2.1.3	2	6217	0.50	0.05	0.08	0.37	0.50	0.00	0.31	-0.27	-0.34	-0.01	0.31	0.9947	0.0286	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	6	819823	18	B-V.4.1.1	2	6217	0.53	0.20	0.53	0.14	0.13	0.00	0.26	-0.10	0.26	-0.09	-0.18	0.8360	0.0287	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	503874	18	B-V.4.1.2	2	6217	0.81	0.81	0.05	0.07	0.08	0.00	0.38	0.38	-0.26	-0.19	-0.17	-0.8274	0.0354	-1.2	1.0	2.6	1.1	A+	A-	A-
ELA	6	193341	18	B-C.2.1.2	2	6217	0.71	0.12	0.09	0.71	0.08	0.01	0.52	-0.24	-0.27	0.52	-0.28	-0.1272	0.0312	-8.1	0.9	-8.5	0.8	A+	A+	A-
ELA	6	683285	18	B-K.1.1.3	2	6217	0.53	0.22	0.16	0.53	0.09	0.00	0.37	-0.12	-0.17	0.37	-0.25	0.8508	0.0287	5.1	1.1	4.9	1.1	A+	A-	A-
ELA	6	669522	18	B-C.3.1.2	3	6217	0.65	0.06	0.20	0.09	0.65	0.00	0.52	-0.31	-0.26	-0.24	0.52	0.1837	0.0300	-8.7	0.9	-8.9	0.8	A+	A-	A-
ELA	6	872165	18	B-C.3.1.2	3	6217	0.50	0.21	0.50	0.21	0.08	0.00	0.37	-0.11	0.37	-0.17	-0.27	0.9808	0.0286	3.1	1.0	4.5	1.1	A+	A-	A-
ELA	6	128420	19	B-K.1.1.3	2	6231	0.58	0.58	0.16	0.12	0.13	0.01	0.36	0.36	-0.16	-0.18	-0.17	0.5435	0.0287	3.7	1.0	2.6	1.0	A-	A-	A-
ELA	6	954539	19	B-C.2.1.2	2	6231	0.49	0.21	0.49	0.22	0.08	0.00	0.27	-0.06	0.27	-0.10	-0.24	1.0168	0.0283	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	6	523250	19	B-C.2.1.3	2	6231	0.31	0.14	0.31	0.45	0.10	0.00	0.12	-0.23	0.12	0.13	-0.14	1.9444	0.0300	9.9	1.2	9.9	1.6	A-	A-	A+
ELA	6	118307	19	B-C.3.1.1	3	6231	0.25	0.25	0.22	0.15	0.38	0.00	-0.12	-0.12	0.06	-0.20	0.21	2.3164	0.0319	9.9	1.5	9.9	2.3	A-	A+	A+
ELA	6	663675	19	B-C.2.1.1	3	6231	0.70	0.09	0.13	0.70	0.07	0.00	0.46	-0.23	-0.29	0.46	-0.19	-0.1009	0.0307	-5.5	0.9	-6.7	0.9	A-	A-	A+
ELA	6	453381	19	B-V.4.1.1	2	6231	0.74	0.16	0.06	0.74	0.04	0.00	0.52	-0.31	-0.28	0.52	-0.24	-0.2960	0.0317	-8.9	0.9	-9.9	0.8	A-	A-	A-
ELA	6	605495	19	B-V.4.1.2	2	6231	0.33	0.24	0.27	0.15	0.33	0.00	0.18	-0.02	-0.06	-0.13	0.18	1.8288	0.0296	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	6	466430	19	B-C.3.1.2	3	6231	0.35	0.15	0.36	0.13	0.35	0.00	0.22	-0.21	0.03	-0.13	0.22	1.7316	0.0293	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	6	733087	20	B-V.4.1.2	1	6194	0.41	0.05	0.45	0.41	0.08	0.00	0.11	-0.26	0.11	0.11	-0.17	1.4097	0.0286	9.9	1.3	9.9	1.5	A-	A+	A-
ELA	6	506395	20	B-K.1.1.3	2	6194	0.47	0.08	0.24	0.20	0.47	0.00	0.29	-0.23	-0.14	-0.05	0.29	1.1201	0.0284	9.8	1.1	9.9	1.2	A-	A+	A-
ELA	6	591787	20	B-C.2.1.1	3	6194	0.74	0.74	0.10	0.09	0.07	0.00	0.47	0.47	-0.23	-0.26	-0.24	-0.3036	0.0319	-5.5	0.9	-8.1	0.8	A-	A+	A-
ELA	6	246977	20	B-C.2.1.2	2	6194	0.39	0.18	0.08	0.39	0.35	0.00	0.25	-0.17	-0.27	0.25	0.04	1.5461	0.0289	8.6	1.1	9.9	1.3	A-	A-	A-
ELA	6	436366	20	B-C.3.1.1	2	6194	0.24	0.13	0.18	0.45	0.24	0.00	0.05	-0.20	-0.11	0.18	0.05	2.3991	0.0324	9.9	1.3	9.9	1.9	A-	A-	A-
ELA	6	551424	20	B-C.3.1.2	3	6194	0.65	0.11	0.65	0.11	0.13	0.01	0.47	-0.19	0.47	-0.27	-0.23	0.2249	0.0296	-5.8	0.9	-7.4	0.9	A-	A-	A+

ELA	6	223215	20	B-C.2.1.3	2	6194	0.37	0.37	0.09	0.21	0.33	0.01	0.14	0.14	-0.26	-0.04	0.05	1.6522	0.0291	9.9	1.3	9.9	1.5	A-	A+	A-
ELA	6	474205	20	B-V.4.1.1	2	6194	0.71	0.18	0.71	0.09	0.03	0.00	0.39	-0.23	0.39	-0.21	-0.20	-0.1114	0.0309	-0.1	1.0	-0.8	1.0	A-	A-	A-
READING	7	749994	0	A.1.1.2		128162	0.61	0.27	0.06	0.61	0.05	0.01	0.36	-0.19	-0.17	0.36	-0.19	0.4698	0.0064	9.9	1.1	9.9	1.1			
READING	7	738425	0	A.1.2.2		128162	0.74	0.74	0.12	0.04	0.09	0.01	0.48	0.48	-0.26	-0.26	-0.23	-0.2572	0.0071	-9.9	0.9	-9.9	0.8			
READING	7	883245	0	A.1.3.1		128162	0.72	0.17	0.03	0.72	0.07	0.01	0.45	-0.22	-0.21	0.45	-0.30	-0.2408	0.0070	-0.8	1.0	-9.7	0.9			
READING	7	317278	0	B.2.1.1		128162	0.73	0.73	0.13	0.07	0.06	0.01	0.50	0.50	-0.32	-0.23	-0.18	-0.1649	0.0069	-9.9	0.9	-9.9	0.8			
READING	7	796610	0	B.1.1.1		128162	0.67	0.67	0.09	0.04	0.18	0.01	0.33	0.33	-0.20	-0.24	-0.09	0.1084	0.0067	9.9	1.1	9.9	1.2			
READING	7	790625	0	B.1.1.1		128162	0.48	0.19	0.22	0.10	0.48	0.01	0.34	-0.09	-0.18	-0.17	0.34	1.0225	0.0062	9.9	1.1	9.9	1.1			
READING	7	327074	0	B.2.1.1		128162	0.88	0.04	0.88	0.06	0.02	0.01	0.45	-0.28	0.45	-0.23	-0.23	-1.2130	0.0089	-9.9	0.8	-9.9	0.7			
READING	7	425483	0	A.2.2.2	2	128162	0.84	0.84	0.09	0.04	0.03	0.00	0.43	0.43	-0.22	-0.27	-0.24	-1.0583	0.0085	-8.5	1.0	-9.9	0.8			
READING	7	421896	0	A.2.3.1	2	128162	0.70	0.70	0.21	0.03	0.05	0.00	0.47	0.47	-0.28	-0.23	-0.25	0.0761	0.0067	-9.9	0.9	-9.9	0.9			
READING	7	182302	0	A.2.3.1	2	128162	0.47	0.16	0.23	0.14	0.47	0.00	0.28	-0.13	-0.09	-0.15	0.28	1.2973	0.0062	9.9	1.1	9.9	1.2			
READING	7	643922	0	B.3.3.1	3	128162	0.54	0.12	0.54	0.14	0.19	0.00	0.35	-0.22	0.35	-0.15	-0.10	0.9696	0.0062	9.9	1.1	9.9	1.1			
READING	7	471381	0	A.2.4.1	1	128162	0.82	0.10	0.82	0.05	0.02	0.00	0.50	-0.34	0.50	-0.24	-0.21	-0.9632	0.0083	-9.9	0.9	-9.9	0.8			
READING	7	558631	0	B.2.1.1	2	128162	0.67	0.03	0.67	0.25	0.04	0.00	0.33	-0.23	0.33	-0.17	-0.20	0.1932	0.0066	9.9	1.1	9.9	1.1			
READING	7	526169	0	A.1.3.1	2	128162	0.73	0.02	0.08	0.73	0.17	0.00	0.27	-0.21	-0.15	0.27	-0.13	-0.2814	0.0071	9.9	1.2	9.9	1.3			
READING	7	900308	0	A.1.4.1	2	128162	0.93	0.93	0.02	0.03	0.02	0.00	0.36	0.36	-0.19	-0.21	-0.22	-1.8796	0.0110	-9.9	0.9	-9.9	0.7			
READING	7	572561	0	A.2.3.1	2	128162	0.82	0.09	0.82	0.05	0.03	0.00	0.46	-0.29	0.46	-0.26	-0.18	-0.7471	0.0078	-9.9	0.9	-9.9	0.8			
READING	7	225227	0	B.2.1.1	2	128162	0.63	0.02	0.05	0.30	0.63	0.00	0.32	-0.22	-0.30	-0.13	0.32	0.4314	0.0064	9.9	1.1	9.9	1.1			
READING	7	342449	0	A.1.6.2	2	128162	0.84	0.11	0.03	0.84	0.02	0.00	0.35	-0.19	-0.25	0.35	-0.19	-0.9988	0.0083	-0.1	1.0	2.1	1.0			
READING	7	825972	0	B.1.2.1	3	128162	0.68	0.68	0.04	0.09	0.18	0.01	0.35	0.35	-0.25	-0.19	-0.14	0.1216	0.0067	9.9	1.1	9.9	1.1			
READING	7	392347	0	B.3.3.4	2	128162	0.60	0.12	0.60	0.15	0.12	0.00	0.37	-0.15	0.37	-0.22	-0.17	0.6238	0.0063	6.6	1.0	5.3	1.0			
READING	7	744035	0	A.2.6.2	2	128162	0.63	0.12	0.05	0.19	0.63	0.00	0.49	-0.21	-0.21	-0.30	0.49	0.3651	0.0065	-9.9	0.9	-9.9	0.9			
READING	7	738834	0	A.1.3.1	2	128162	0.71	0.71	0.14	0.07	0.08	0.01	0.34	0.34	-0.17	-0.26	-0.09	-0.0252	0.0068	9.9	1.1	9.9	1.1			
READING	7	271336	0	A.1.1.2	1	128162	0.88	0.04	0.03	0.04	0.88	0.01	0.48	-0.25	-0.28	-0.24	0.48	-1.3729	0.0093	-9.9	0.8	-9.9	0.6			
READING	7	574582	0	B.1.1.1	2	128162	0.52	0.07	0.05	0.34	0.52	0.01	0.39	-0.25	-0.24	-0.14	0.39	1.0707	0.0062	4.3	1.0	8.0	1.0			
READING	7	751432	0	A.1.4.1	1	128162	0.59	0.15	0.59	0.23	0.02	0.01	0.43	-0.25	0.43	-0.20	-0.21	0.5241	0.0064	-3.3	1.0	-4.5	1.0			
READING	7	744377	0	B.1.2.1	3	128162	0.66	0.08	0.10	0.16	0.66	0.01	0.48	-0.25	-0.26	-0.22	0.48	0.2876	0.0065	-9.9	0.9	-9.9	0.9			
READING	7	835943	0	B.2.1.1	2	128162	0.68	0.68	0.11	0.08	0.12	0.01	0.41	0.41	-0.16	-0.23	-0.22	0.2239	0.0066	-9.9	1.0	-9.4	1.0			
READING	7	185394	0	A.2.1.2	2	128162	0.65	0.65	0.10	0.16	0.09	0.00	0.30	0.30	-0.14	-0.21	-0.07	0.2893	0.0065	9.9	1.1	9.9	1.1			
READING	7	492898	0	A.2.2.2	2	128162	0.61	0.07	0.61	0.27	0.05	0.00	0.34	-0.28	0.34	-0.08	-0.27	0.5139	0.0064	9.9	1.1	9.9	1.1			
READING	7	190974	0	A.2.4.1	1	128162	0.69	0.22	0.05	0.69	0.05	0.00	0.36	-0.20	-0.22	0.36	-0.19	0.0051	0.0068	9.9	1.1	9.9	1.1			
READING	7	118710	0	A.2.4.1	2	128162	0.85	0.05	0.85	0.04	0.06	0.00	0.43	-0.27	0.43	-0.25	-0.19	-1.0865	0.0085	-9.9	0.9	-9.9	0.8			
READING	7	719128	0	B.2.1.1	2	128162	0.59	0.15	0.59	0.21	0.05	0.01	0.33	-0.25	0.33	-0.05	-0.21	0.5773	0.0063	9.9	1.1	9.9	1.1			
READING	7	568446	0	B.1.1.1	2	128162	0.83	0.08	0.83	0.02	0.07	0.00	0.52	-0.33	0.52	-0.21	-0.29	-0.8907	0.0081	-9.9	0.9	-9.9	0.7			
READING	7	635822	0	B.1.1.1	2	128162	0.69	0.69	0.06	0.09	0.16	0.00	0.30	0.30	-0.26	-0.23	-0.03	0.1132	0.0067	9.9	1.1	9.9	1.2			
READING	7	520684	0	A.2.2.2	2	128162	0.69	0.19	0.04	0.07	0.69	0.00	0.49	-0.26	-0.29	-0.24	0.49	0.1309	0.0066	-9.9	0.9	-9.9	0.8			
READING	7	881302	0	A.2.3.1	2	128162	0.84	0.08	0.06	0.84	0.02	0.00	0.39	-0.21	-0.23	0.39	-0.21	-0.9501	0.0082	-9.9	0.9	1.0	1.0			
READING	7	417288	0	A.2.3.2	2	128162	0.58	0.26	0.58	0.11	0.05	0.00	0.38	-0.12	0.38	-0.29	-0.21	0.6093	0.0063	8.5	1.0	4.8	1.0			
READING	7	140255	0	A.2.5.1	3	128162	0.55	0.16	0.07	0.21	0.55	0.00	0.35	-0.06	-0.27	-0.20	0.35	0.9666	0.0062	9.9	1.1	9.9	1.1			
READING	7	923405	0	A.2.4.1	1	128162	0.78	0.09	0.09	0.78	0.03	0.00	0.40	-0.19	-0.24	0.40	-0.24	-0.3754	0.0072	-9.9	0.9	-9.9	0.9			
READING	7	100589	0	B.2.1.2	2	128162	0.76	0.09	0.76	0.06	0.09	0.00	0.40	-0.14	0.40	-0.27	-0.23	-0.3693	0.0072	-4.4	1.0	6.5	1.0			
ELA	7	145769	1	A.2.2.2	2	64383	0.72	0.72	0.04	0.16	0.08	0.00	0.33	0.33	-0.25	-0.08	-0.25	-0.0964	0.0097	9.9	1.1	9.9	1.1	A-	A+	A-
ELA	7	220066	1	A.2.3.2	2	64383	0.48	0.43	0.03	0.48	0.06	0.00	0.33	-0.20	-0.16	0.33	-0.18	1.1837	0.0088	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	7	457503	1	A.2.6.2	3	64383	0.79	0.79	0.08	0.04	0.08	0.00	0.37	0.37	-0.17	-0.30	-0.16	-0.5678	0.0106	-3.2	1.0	3.1	1.0	A+	A+	A-
ELA	7	751921	1	A.2.1.2	2	64383	0.88	0.88	0.04	0.04	0.04	0.00	0.37	0.37	-0.17	-0.21	-0.23	-1.3622	0.0130	-9.9	0.9	-2.8	1.0	A-	A-	B-
ELA	7	246392	1	B.3.1.1	2	64383	0.79	0.04	0.79	0.14	0.03	0.00	0.44	-0.21	0.44	-0.27	-0.24	-0.5421	0.0106	-9.9	0.9	-9.9	0.9	A-	A-	A-
ELA	7	298431	1	B.3.3.3	2	64383	0.58	0.17	0.08	0.58	0.16	0.00	0.44	-0.25	-0.18	0.44	-0.20	0.6697	0.0089	-9.9	1.0	-9.9	0.9	A-	A-	A+
ELA	7	680613	1	B.3.3.3	2	64383	0.58	0.09	0.28	0.05	0.58	0.00	0.34	-0.22	-0.12	-0.23	0.34	0.6975	0.0089	9.9	1.1	9.9	1.1	A-	A+	A+
ELA	7	765209	1	A.2.1.2	2	64383	0.93	0.03	0.93	0.03	0.01	0.00	0.36	-0.23	0.36	-0.22	-0.15	-2.0903	0.0167	-9.3	0.9	-9.9	0.7	A+	A-	A-
ELA	7	384178	1	A-K.1.1.2	3	6800	0.49	0.28	0.08	0.49	0.14	0.00	0.30	-0.05	-0.28	0.30	-0.13	1.0306	0.0273	9.9	1.1	9.9	1.2	A+	A-	A-

ELA	7	726652	1	A-K.1.1.3	3	6800	0.68	0.13	0.10	0.09	0.68	0.00	0.49	-0.22	-0.27	-0.25	0.49	0.0232	0.0291	-6.1	0.9	-5.3	0.9	A+	A-	A-
ELA	7	567849	1	A-C.2.1.1	3	6800	0.28	0.19	0.08	0.28	0.44	0.00	0.14	-0.09	-0.26	0.14	0.10	2.1119	0.0296	9.9	1.2	9.9	1.7	A+	A-	A-
ELA	7	108090	1	A-C.2.1.3	2	6800	0.65	0.24	0.65	0.06	0.05	0.00	0.37	-0.17	0.37	-0.27	-0.18	0.1755	0.0286	4.8	1.1	4.0	1.1	A+	A-	A-
ELA	7	498672	1	A-V.4.1.1	2	6800	0.61	0.61	0.04	0.18	0.16	0.00	0.37	0.37	-0.25	-0.17	-0.16	0.4135	0.0280	5.7	1.1	5.6	1.1	A-	A-	B-
ELA	7	105274	1	A-V.4.1.2	1	6800	0.48	0.09	0.29	0.14	0.48	0.00	0.40	-0.29	-0.09	-0.22	0.40	1.0611	0.0273	0.3	1.0	3.5	1.1	A-	A-	B-
ELA	7	682887	1	A-K.1.1.1	2	6800	0.64	0.11	0.64	0.10	0.16	0.00	0.26	-0.29	0.26	-0.13	0.02	0.2582	0.0284	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	7	907461	1	A-K.1.1.2	3	6800	0.74	0.74	0.14	0.07	0.05	0.00	0.40	0.40	-0.13	-0.31	-0.22	-0.3239	0.0306	-0.4	1.0	3.0	1.1	A+	A-	A-
ELA	7	150140	2	A-K.1.1.3	3	6405	0.48	0.48	0.20	0.22	0.09	0.00	0.31	0.31	-0.11	-0.11	-0.22	1.1352	0.0279	6.9	1.1	7.6	1.1	A-	A-	A-
ELA	7	659024	2	A-C.2.1.1	2	6405	0.57	0.18	0.57	0.13	0.11	0.00	0.37	-0.19	0.37	-0.26	-0.06	0.6893	0.0282	1.7	1.0	1.0	1.0	A-	A-	A-
ELA	7	539293	2	A-C.2.1.3	2	6405	0.47	0.08	0.31	0.15	0.47	0.00	0.35	-0.26	-0.09	-0.17	0.35	1.1977	0.0280	3.8	1.0	5.7	1.1	A+	A-	A-
ELA	7	661320	2	A-C.2.1.1	3	6405	0.35	0.16	0.21	0.35	0.27	0.01	0.28	-0.26	-0.08	0.28	-0.01	1.8030	0.0290	4.3	1.1	9.1	1.2	A+	A+	A-
ELA	7	812509	2	A-V.4.1.2	2	6405	0.59	0.11	0.16	0.59	0.13	0.01	0.46	-0.22	-0.22	0.46	-0.22	0.5701	0.0284	-6.5	0.9	-6.9	0.9	A-	A-	A-
ELA	7	480720	2	A-V.4.1.2	2	6405	0.50	0.13	0.05	0.50	0.32	0.00	0.20	-0.18	-0.23	0.20	0.03	1.0596	0.0279	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	7	944066	2	A-C.2.1.2	2	6405	0.63	0.63	0.12	0.13	0.12	0.00	0.36	0.36	-0.11	-0.28	-0.13	0.3671	0.0289	3.5	1.0	4.5	1.1	A+	A-	A+
ELA	7	525515	2	A-V.4.1.1	2	6405	0.77	0.07	0.14	0.02	0.77	0.00	0.44	-0.35	-0.20	-0.19	0.44	-0.4240	0.0324	-4.1	0.9	-4.2	0.9	A+	A+	A+
ELA	7	173593	3	A-K.1.1.3	3	6373	0.59	0.20	0.10	0.59	0.11	0.00	0.44	-0.16	-0.28	0.44	-0.22	0.6503	0.0284	-5.2	0.9	-5.0	0.9	A-	A-	A-
ELA	7	558016	3	A-C.2.1.1	2	6373	0.39	0.07	0.39	0.34	0.20	0.00	0.29	-0.26	0.29	-0.12	-0.04	1.6525	0.0284	5.3	1.1	9.3	1.2	A+	A-	A-
ELA	7	520602	3	A-C.2.1.2	3	6373	0.49	0.49	0.16	0.30	0.06	0.00	0.24	0.24	-0.17	-0.01	-0.22	1.1716	0.0279	9.9	1.2	9.9	1.3	A+	A+	A-
ELA	7	859552	3	A-C.2.1.1	2	6373	0.69	0.08	0.06	0.17	0.69	0.00	0.46	-0.25	-0.24	-0.23	0.46	0.1392	0.0299	-5.8	0.9	-5.0	0.9	A+	A+	A-
ELA	7	663744	3	A-V.4.1.2	2	6373	0.84	0.05	0.84	0.05	0.05	0.00	0.50	-0.28	0.50	-0.26	-0.27	-0.9187	0.0371	-7.5	0.8	-9.9	0.6	A+	B-	A-
ELA	7	154302	3	A-V.4.1.2	1	6373	0.43	0.26	0.09	0.43	0.21	0.00	0.12	0.02	-0.15	0.12	-0.06	1.4467	0.0280	9.9	1.3	9.9	1.5	A-	A-	A-
ELA	7	818646	3	A-K.1.1.1	2	6373	0.57	0.09	0.25	0.09	0.57	0.00	0.38	-0.22	-0.17	-0.18	0.38	0.7478	0.0282	0.8	1.0	1.4	1.0	A+	A-	A-
ELA	7	482747	3	A-K.1.1.1	2	6373	0.86	0.86	0.05	0.06	0.03	0.00	0.49	0.49	-0.28	-0.27	-0.26	-1.0689	0.0386	-7.4	0.8	-9.6	0.6	A+	A-	A-
ELA	7	900720	4	A-K.1.1.2	3	6365	0.56	0.56	0.11	0.06	0.25	0.01	0.31	0.31	-0.31	-0.23	0.01	0.7640	0.0282	7.6	1.1	6.7	1.1	A-	A-	A-
ELA	7	211296	4	A-K.1.1.1	2	6365	0.58	0.25	0.58	0.09	0.09	0.00	0.29	-0.16	0.29	-0.13	-0.13	0.6828	0.0283	9.5	1.1	9.9	1.2	A+	A+	A+
ELA	7	326843	4	A-C.2.1.3	2	6365	0.60	0.11	0.08	0.60	0.20	0.00	0.37	-0.25	-0.19	0.37	-0.13	0.5691	0.0285	1.8	1.0	1.6	1.0	A+	A-	A-
ELA	7	606783	4	A-V.4.1.1	2	6365	0.77	0.77	0.03	0.08	0.11	0.00	0.43	0.43	-0.18	-0.22	-0.28	-0.4148	0.0327	-3.6	0.9	-4.9	0.9	A-	A-	A-
ELA	7	292306	4	A-V.4.1.2	2	6365	0.80	0.06	0.10	0.80	0.03	0.00	0.44	-0.30	-0.19	0.44	-0.24	-0.6229	0.0342	-5.1	0.9	-0.4	1.0	A-	A-	A-
ELA	7	147457	4	A-C.2.1.3	2	6365	0.41	0.13	0.36	0.10	0.41	0.00	0.20	-0.16	0.05	-0.22	0.20	1.5265	0.0282	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	7	335499	4	A-C.2.1.1	3	6365	0.67	0.11	0.11	0.10	0.67	0.00	0.53	-0.21	-0.35	-0.24	0.53	0.1772	0.0297	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	7	216742	4	A-C.2.1.3	2	6365	0.58	0.18	0.58	0.04	0.21	0.00	0.40	-0.24	0.40	-0.26	-0.14	0.6788	0.0283	-1.6	1.0	-1.4	1.0	A-	B-	A-
ELA	7	370207	5	A-C.2.1.3	2	6398	0.40	0.15	0.20	0.40	0.26	0.00	0.26	-0.15	-0.18	0.26	0.00	1.5907	0.0284	6.2	1.1	9.9	1.3	A-	A+	A-
ELA	7	365688	5	A-V.4.1.2	2	6398	0.62	0.20	0.62	0.07	0.11	0.00	0.30	-0.09	0.30	-0.21	-0.17	0.4505	0.0287	8.1	1.1	9.1	1.2	A-	A-	A-
ELA	7	557243	5	A-K.1.1.3	3	6398	0.69	0.12	0.69	0.10	0.10	0.00	0.41	-0.29	0.41	-0.19	-0.12	0.1059	0.0298	-1.9	1.0	-2.7	0.9	A-	A-	A-
ELA	7	302543	5	A-V.4.1.1	2	6398	0.56	0.21	0.18	0.56	0.04	0.00	0.27	-0.07	-0.14	0.27	-0.22	0.7602	0.0281	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	919087	5	A-K.1.1.2	3	6398	0.40	0.32	0.06	0.40	0.21	0.01	0.24	-0.04	-0.28	0.24	-0.06	1.5843	0.0283	9.9	1.1	9.9	1.3	A-	A+	A+
ELA	7	766162	5	A-C.2.1.1	2	6398	0.47	0.19	0.14	0.19	0.47	0.00	0.33	-0.12	-0.20	-0.12	0.33	1.1947	0.0279	3.9	1.0	5.0	1.1	A-	A-	A+
ELA	7	552518	5	A-V.4.1.2	2	6398	0.72	0.72	0.10	0.06	0.12	0.00	0.39	0.39	-0.21	-0.22	-0.19	-0.0967	0.0307	-1.2	1.0	-1.3	1.0	A-	A-	A-
ELA	7	579114	5	A-K.1.1.2	3	6398	0.67	0.67	0.13	0.10	0.10	0.00	0.47	0.47	-0.23	-0.28	-0.19	0.2135	0.0294	-7.0	0.9	-7.4	0.9	A+	A+	A+
ELA	7	648416	6	A-K.1.1.3	3	6402	0.49	0.21	0.11	0.20	0.49	0.00	0.33	-0.15	-0.21	-0.10	0.33	1.1548	0.0279	6.5	1.1	6.7	1.1	A+	A-	A-
ELA	7	489494	6	A-C.2.1.1	2	6402	0.73	0.73	0.05	0.15	0.07	0.00	0.46	0.46	-0.29	-0.25	-0.20	-0.1332	0.0311	-5.8	0.9	-6.0	0.9	A+	A-	A-
ELA	7	787781	6	A-C.2.1.1	2	6402	0.46	0.18	0.29	0.46	0.07	0.00	0.20	-0.04	-0.09	0.20	-0.16	1.3088	0.0279	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	7	270024	6	A-C.2.1.3	2	6402	0.47	0.32	0.13	0.47	0.07	0.00	0.32	-0.09	-0.19	0.32	-0.20	1.2177	0.0279	6.7	1.1	9.6	1.2	A+	A+	A-
ELA	7	610002	6	A-K.1.1.1	2	6402	0.77	0.77	0.05	0.07	0.11	0.00	0.54	0.54	-0.28	-0.30	-0.28	-0.3832	0.0325	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	7	698740	6	A-V.4.1.1	2	6402	0.79	0.14	0.79	0.05	0.02	0.00	0.54	-0.35	0.54	-0.29	-0.24	-0.5562	0.0337	-9.9	0.8	-9.9	0.7	A-	B-	C-
ELA	7	808111	6	A-V.4.1.2	2	6402	0.83	0.06	0.04	0.06	0.83	0.00	0.52	-0.29	-0.29	-0.26	0.52	-0.8561	0.0362	-9.1	0.8	-9.9	0.7	A+	A-	A-
ELA	7	712563	6	A-K.1.1.2	3	6402	0.54	0.23	0.54	0.10	0.13	0.01	0.23	0.00	0.23	-0.19	-0.15	0.9028	0.0280	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	7	723333	7	A-C.2.1.2	2	6418	0.47	0.47	0.16	0.17	0.19	0.00	0.10	0.10	0.00	-0.10	-0.03	1.1800	0.0276	9.9	1.3	9.9	1.4	A+	A-	A-
ELA	7	290456	7	A-K.1.1.1	3	6418	0.53	0.10	0.14	0.22	0.53	0.00	0.50	-0.25	-0.25	-0.20	0.50	0.8904	0.0277	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	7	725159	7	A-V.4.1.1	2	6418	0.66	0.19	0.10	0.66	0.05	0.00	0.34	-0.14	-0.25	0.34	-0.15	0.2242	0.0292	3.2	1.0	2.7	1.1	B-	A-	A-
ELA	7	355679	7	A-V.4.1.1	2	6418	0.79	0.09	0.79	0.07	0.05	0.00	0.39	-0.24	0.39	-0.18	-0.19	-0.5388	0.0333	-2.0	1.0	-1.9	0.9	A+	A-	A-

ELA	7	899607	7	A-V.4.1.2	2	6418	0.55	0.55	0.06	0.11	0.27	0.00	0.32	0.32	-0.16	-0.16	-0.16	0.7965	0.0278	5.7	1.1	5.5	1.1	A+	A-	A-
ELA	7	335769	7	A-C.3.1.1	2	6418	0.31	0.13	0.31	0.31	0.25	0.00	-0.04	-0.06	-0.04	0.06	0.02	2.0190	0.0294	9.9	1.4	9.9	1.9	A-	A-	A+
ELA	7	952825	7	A-C.2.1.3	2	6418	0.66	0.11	0.11	0.66	0.13	0.00	0.49	-0.28	-0.21	0.49	-0.25	0.2699	0.0290	-9.4	0.9	-9.9	0.8	A-	A-	A-
ELA	7	406061	7	A-K.1.1.3	3	6418	0.67	0.15	0.10	0.09	0.67	0.00	0.49	-0.22	-0.28	-0.24	0.49	0.2140	0.0292	-9.1	0.9	-8.5	0.8	A+	A-	A-
ELA	7	638763	8	A-K.1.1.3	2	6412	0.65	0.14	0.65	0.14	0.07	0.00	0.39	-0.24	0.39	-0.16	-0.20	0.3138	0.0292	0.4	1.0	-0.8	1.0	A-	A-	A-
ELA	7	920939	8	A-V.4.1.1	2	6412	0.78	0.09	0.11	0.78	0.03	0.00	0.44	-0.22	-0.30	0.44	-0.18	-0.4659	0.0331	-4.0	0.9	-5.1	0.8	A-	A-	A-
ELA	7	583634	8	A-V.4.1.2	2	6412	0.65	0.17	0.10	0.08	0.65	0.00	0.47	-0.26	-0.22	-0.22	0.47	0.3198	0.0292	-5.9	0.9	-6.4	0.9	A-	A-	B-
ELA	7	685953	8	A-C.3.1.1	3	6412	0.47	0.47	0.17	0.18	0.17	0.00	0.27	0.27	-0.07	-0.15	-0.14	1.2477	0.0279	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	7	712992	8	A-C.3.1.1	3	6412	0.26	0.26	0.18	0.50	0.07	0.00	0.09	0.09	-0.09	0.13	-0.26	2.3912	0.0312	9.9	1.2	9.9	1.8	A-	A-	A-
ELA	7	664387	8	A-K.1.1.1	3	6412	0.61	0.13	0.14	0.61	0.12	0.00	0.53	-0.33	-0.27	0.53	-0.16	0.5614	0.0285	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	7	302615	8	A-K.1.1.2	3	6412	0.64	0.10	0.12	0.13	0.64	0.00	0.48	-0.27	-0.25	-0.19	0.48	0.3545	0.0291	-7.8	0.9	-6.5	0.9	A-	A-	A-
ELA	7	301834	8	A-V.4.1.1	2	6412	0.75	0.05	0.75	0.12	0.07	0.00	0.32	-0.23	0.32	-0.06	-0.25	-0.2552	0.0318	3.6	1.1	6.1	1.2	A-	A-	A-
ELA	7	273757	9	A-K.1.1.2	2	6408	0.76	0.76	0.07	0.12	0.04	0.00	0.46	0.46	-0.24	-0.26	-0.24	-0.3579	0.0325	-5.3	0.9	-4.3	0.9	A+	A-	A-
ELA	7	133424	9	A-C.2.1.3	2	6408	0.86	0.08	0.86	0.04	0.02	0.00	0.48	-0.33	0.48	-0.27	-0.20	-1.1223	0.0389	-6.8	0.8	-7.6	0.7	A-	A-	A-
ELA	7	115387	9	A-V.4.1.1	2	6408	0.46	0.11	0.39	0.46	0.04	0.01	0.35	-0.25	-0.10	0.35	-0.22	1.3297	0.0281	3.0	1.0	5.5	1.1	A-	A-	A-
ELA	7	472716	9	A-V.4.1.1	2	6408	0.57	0.24	0.06	0.13	0.57	0.00	0.39	-0.21	-0.30	-0.10	0.39	0.7293	0.0284	1.3	1.0	1.8	1.0	A+	A-	A-
ELA	7	416428	9	A-V.4.1.2	2	6408	0.78	0.78	0.10	0.06	0.06	0.00	0.50	0.50	-0.27	-0.25	-0.27	-0.4637	0.0332	-7.3	0.9	-8.0	0.8	A+	A-	A-
ELA	7	437892	9	A-C.3.1.1	3	6408	0.23	0.09	0.23	0.33	0.35	0.00	0.06	-0.18	0.06	-0.01	0.06	2.5982	0.0324	9.9	1.3	9.9	2.0	A+	A-	A-
ELA	7	242281	9	A-C.3.1.1	2	6408	0.58	0.11	0.16	0.58	0.14	0.00	0.43	-0.19	-0.21	0.43	-0.22	0.6776	0.0285	-3.5	1.0	-4.2	0.9	A+	A+	A-
ELA	7	307300	9	A-K.1.1.1	2	6408	0.78	0.10	0.07	0.04	0.78	0.00	0.44	-0.23	-0.19	-0.31	0.44	-0.4714	0.0333	-4.0	0.9	-4.2	0.9	A+	B-	A-
ELA	7	247414	10	A-C.2.1.1	3	6402	0.53	0.06	0.53	0.12	0.29	0.00	0.33	-0.23	0.33	-0.21	-0.09	0.9437	0.0281	6.8	1.1	9.2	1.2	A+	A-	A-
ELA	7	488110	10	A-V.4.1.2	2	6402	0.51	0.17	0.28	0.51	0.03	0.00	0.32	-0.07	-0.22	0.32	-0.20	1.0223	0.0280	8.0	1.1	7.9	1.1	A+	A-	A-
ELA	7	385406	10	A-C.2.1.3	2	6402	0.79	0.79	0.09	0.10	0.03	0.00	0.38	0.38	-0.20	-0.23	-0.19	-0.5423	0.0337	-0.2	1.0	0.4	1.0	A+	A-	A+
ELA	7	356262	10	A-V.4.1.2	2	6402	0.71	0.14	0.71	0.10	0.05	0.00	0.47	-0.28	0.47	-0.22	-0.22	-0.0453	0.0308	-5.6	0.9	-2.9	0.9	A-	B-	A-
ELA	7	862070	10	A-K.1.1.1	3	6402	0.66	0.08	0.18	0.07	0.66	0.00	0.48	-0.28	-0.19	-0.28	0.48	0.2334	0.0296	-7.0	0.9	-6.8	0.9	A+	A-	A-
ELA	7	153171	10	A-K.1.1.1	2	6402	0.83	0.83	0.07	0.08	0.03	0.00	0.43	0.43	-0.22	-0.24	-0.27	-0.8507	0.0361	-4.8	0.9	-2.2	0.9	A+	A-	A-
ELA	7	320079	10	A-K.1.1.2	3	6402	0.76	0.07	0.07	0.10	0.76	0.00	0.49	-0.27	-0.27	-0.25	0.49	-0.3483	0.0324	-6.8	0.9	-7.8	0.8	B+	A-	A-
ELA	7	806905	10	A-K.1.1.1	3	6402	0.85	0.04	0.06	0.85	0.06	0.00	0.46	-0.26	-0.24	0.46	-0.26	-1.0012	0.0376	-6.3	0.9	-5.9	0.8	A-	B-	A-
ELA	7	178148	11	A.1.1.1	2	63752	0.75	0.06	0.07	0.12	0.75	0.00	0.32	-0.19	-0.17	-0.16	0.32	-0.2590	0.0100	9.5	1.1	9.9	1.1	B+	A+	A+
ELA	7	324863	11	A.1.2.2	2	63752	0.85	0.03	0.10	0.85	0.02	0.00	0.46	-0.25	-0.30	0.46	-0.21	-1.0093	0.0119	-9.9	0.9	-9.9	0.7	A-	B-	B-
ELA	7	256893	11	B.2.1.2	2	63752	0.68	0.20	0.68	0.09	0.03	0.00	0.25	-0.06	0.25	-0.17	-0.25	0.1403	0.0094	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	7	747544	11	B.1.1.1	3	63752	0.62	0.18	0.13	0.08	0.62	0.00	0.26	-0.05	-0.10	-0.27	0.26	0.4773	0.0090	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	7	426783	11	B.1.1.1	2	63752	0.77	0.77	0.06	0.09	0.07	0.00	0.43	0.43	-0.23	-0.18	-0.28	-0.4234	0.0103	-9.9	0.9	-9.9	0.9	A-	A-	B-
ELA	7	160367	11	A.1.4.1	3	63752	0.55	0.11	0.22	0.55	0.12	0.00	0.30	-0.21	-0.07	0.30	-0.17	0.8142	0.0088	9.9	1.1	9.9	1.1	A+	A-	A-
ELA	7	979903	11	A.1.3.1	2	63752	0.65	0.21	0.04	0.65	0.09	0.00	0.31	-0.06	-0.26	0.31	-0.24	0.2979	0.0092	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	7	249512	11	A.1.3.1	2	63752	0.78	0.15	0.78	0.05	0.02	0.00	0.30	-0.10	0.30	-0.26	-0.23	-0.4841	0.0105	8.0	1.1	9.9	1.2	A+	A-	A-
ELA	7	351613	11	B-K.1.1.2	3	6379	0.66	0.09	0.08	0.66	0.17	0.00	0.38	-0.24	-0.24	0.38	-0.12	0.2424	0.0293	0.8	1.0	0.4	1.0	A+	A-	A-
ELA	7	743629	11	B-K.1.1.3	2	6379	0.40	0.25	0.26	0.08	0.40	0.01	0.20	-0.02	-0.04	-0.26	0.20	1.5445	0.0282	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	7	188087	11	B-C.2.1.1	3	6379	0.55	0.55	0.13	0.14	0.18	0.00	0.25	0.25	-0.14	-0.19	-0.02	0.8392	0.0279	9.9	1.2	9.9	1.2	A-	A+	A-
ELA	7	367681	11	B-C.2.1.2	3	6379	0.51	0.21	0.14	0.51	0.14	0.00	0.34	-0.17	-0.16	0.34	-0.13	1.0253	0.0278	3.4	1.0	4.5	1.1	A+	A+	A-
ELA	7	743945	11	B-C.2.1.3	2	6379	0.69	0.10	0.69	0.12	0.09	0.00	0.41	-0.27	0.41	-0.15	-0.20	0.0729	0.0300	-2.0	1.0	-1.1	1.0	A-	A+	A-
ELA	7	725845	11	B-C.3.1.1	2	6379	0.77	0.10	0.77	0.09	0.03	0.00	0.48	-0.31	0.48	-0.22	-0.24	-0.4207	0.0327	-7.3	0.9	-7.4	0.8	A+	A-	A-
ELA	7	230081	11	B-V.4.1.1	2	6379	0.72	0.72	0.12	0.08	0.08	0.01	0.34	0.34	-0.16	-0.23	-0.12	-0.1006	0.0308	2.9	1.0	3.2	1.1	A+	A-	A-
ELA	7	444451	11	B-V.4.1.1	2	6379	0.82	0.05	0.06	0.07	0.82	0.00	0.49	-0.28	-0.30	-0.23	0.49	-0.7380	0.0350	-7.1	0.9	-8.4	0.7	A-	A-	A-
ELA	7	947586	12	B-V.4.1.1	2	6401	0.64	0.13	0.11	0.64	0.11	0.01	0.45	-0.24	-0.21	0.45	-0.21	0.3778	0.0289	-5.1	0.9	-6.0	0.9	A+	A+	A+
ELA	7	635997	12	B-K.1.1.3	2	6401	0.57	0.13	0.57	0.19	0.09	0.01	0.40	-0.22	0.40	-0.15	-0.21	0.7026	0.0282	-0.4	1.0	0.1	1.0	A-	A-	A-
ELA	7	972206	12	B-K.1.1.3	2	6401	0.55	0.15	0.14	0.55	0.15	0.00	0.41	-0.13	-0.28	0.41	-0.17	0.8308	0.0281	-1.6	1.0	-0.7	1.0	A-	A-	A+
ELA	7	346786	12	B-C.2.1.1	3	6401	0.78	0.06	0.06	0.10	0.78	0.00	0.52	-0.31	-0.29	-0.26	0.52	-0.4910	0.0331	-9.5	0.8	-9.9	0.7	A-	A-	A-
ELA	7	175759	12	B-C.2.1.2	2	6401	0.61	0.16	0.12	0.11	0.61	0.00	0.45	-0.21	-0.20	-0.24	0.45	0.5174	0.0286	-5.2	0.9	-4.3	0.9	A+	A+	A+
ELA	7	809352	12	B-K.1.1.1	2	6401	0.67	0.67	0.10	0.10	0.12	0.00	0.45	0.45	-0.18	-0.29	-0.20	0.1987	0.0295	-5.0	0.9	-4.3	0.9	A-	A-	A+
ELA	7	746092	12	B-V.4.1.2	2	6401	0.76	0.13	0.76	0.04	0.07	0.00	0.39	-0.33	0.39	-0.14	-0.11	-0.3396	0.0321	-0.9	1.0	-1.4	1.0	A-	A-	A-

ELA	7	175920	12	B-V.4.1.1	2	6401	0.32	0.32	0.16	0.29	0.23	0.00	0.25	0.25	-0.10	-0.08	-0.10	2.0167	0.0296	6.9	1.1	9.9	1.3	A+	A+	A+
ELA	7	564767	13	B-K.1.1.1	2	6337	0.76	0.08	0.07	0.09	0.76	0.00	0.51	-0.29	-0.26	-0.25	0.51	-0.3622	0.0322	-8.9	0.9	-9.7	0.7	A-	A-	A-
ELA	7	351489	13	B-K.1.1.2	3	6337	0.63	0.63	0.05	0.09	0.22	0.00	0.26	0.26	-0.29	-0.24	0.02	0.3896	0.0288	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	534826	13	B-K.1.1.3	2	6337	0.65	0.08	0.16	0.11	0.65	0.00	0.46	-0.17	-0.22	-0.29	0.46	0.2897	0.0291	-5.9	0.9	-6.2	0.9	A+	A-	A-
ELA	7	768319	13	B-C.2.1.2	2	6337	0.49	0.14	0.23	0.49	0.14	0.00	0.26	-0.12	-0.08	0.26	-0.16	1.1002	0.0278	9.9	1.1	9.9	1.2	A+	A+	A+
ELA	7	583231	13	B-C.2.1.3	2	6337	0.89	0.04	0.89	0.03	0.04	0.00	0.46	-0.31	0.46	-0.22	-0.23	-1.4402	0.0426	-5.8	0.8	-7.4	0.7	A+	B-	A-
ELA	7	389899	13	B-C.3.1.1	3	6337	0.64	0.07	0.19	0.64	0.10	0.00	0.40	-0.34	-0.12	0.40	-0.18	0.3487	0.0289	-0.4	1.0	0.1	1.0	A-	A-	A-
ELA	7	666989	13	B-V.4.1.2	2	6337	0.74	0.13	0.74	0.09	0.03	0.00	0.43	-0.31	0.43	-0.19	-0.17	-0.2563	0.0316	-3.1	1.0	-4.2	0.9	A-	A-	A-
ELA	7	565703	13	B-V.4.1.2	2	6337	0.53	0.53	0.08	0.15	0.24	0.00	0.38	0.38	-0.20	-0.24	-0.12	0.8910	0.0279	-0.3	1.0	0.5	1.0	A+	A+	A-
ELA	7	739173	14	B-C.2.1.1	2	6389	0.46	0.22	0.46	0.25	0.07	0.00	0.30	-0.16	0.30	-0.07	-0.20	1.2457	0.0278	7.4	1.1	8.8	1.1	A+	A-	A+
ELA	7	172086	14	B-C.2.1.2	2	6389	0.58	0.15	0.13	0.14	0.58	0.00	0.51	-0.29	-0.14	-0.29	0.51	0.6308	0.0282	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	7	570444	14	B-C.2.1.3	2	6389	0.68	0.16	0.09	0.68	0.07	0.00	0.42	-0.24	-0.18	0.42	-0.21	0.1391	0.0296	-2.6	1.0	-1.7	1.0	A+	A-	A-
ELA	7	878402	14	B-V.4.1.1	2	6389	0.70	0.18	0.04	0.70	0.08	0.01	0.44	-0.26	-0.19	0.44	-0.22	0.0319	0.0300	-4.2	0.9	-5.2	0.9	A-	A-	A-
ELA	7	121454	14	B-V.4.1.1	2	6389	0.65	0.17	0.65	0.03	0.15	0.00	0.46	-0.29	0.46	-0.22	-0.20	0.3052	0.0290	-6.0	0.9	-6.9	0.9	A-	A-	C-
ELA	7	740350	14	B-K.1.1.1	2	6389	0.44	0.44	0.26	0.10	0.19	0.00	0.28	0.28	-0.09	-0.22	-0.09	1.3308	0.0279	9.6	1.1	9.9	1.2	A-	A-	A+
ELA	7	118728	14	B-K.1.1.3	2	6389	0.71	0.11	0.11	0.07	0.71	0.00	0.46	-0.23	-0.25	-0.22	0.46	-0.0520	0.0304	-5.4	0.9	-7.4	0.8	A+	A+	A-
ELA	7	987739	14	B-V.4.1.2	2	6389	0.46	0.46	0.05	0.16	0.31	0.01	0.14	0.14	-0.24	0.00	-0.02	1.2294	0.0278	9.9	1.3	9.9	1.4	A-	A-	B-
ELA	7	362754	15	B-C.2.1.2	3	6384	0.63	0.17	0.13	0.63	0.06	0.00	0.37	-0.09	-0.22	0.37	-0.28	0.3978	0.0288	2.3	1.0	2.2	1.0	A+	A-	A-
ELA	7	198742	15	B-V.4.1.1	2	6384	0.37	0.37	0.28	0.18	0.17	0.01	0.19	0.19	-0.03	-0.12	-0.08	1.7195	0.0286	9.9	1.2	9.9	1.4	A-	A-	A+
ELA	7	584738	15	B-K.1.1.2	2	6384	0.55	0.09	0.24	0.11	0.55	0.00	0.43	-0.22	-0.12	-0.31	0.43	0.8104	0.0280	-4.7	1.0	-3.8	0.9	A+	A-	A+
ELA	7	760136	15	B-C.2.1.1	2	6384	0.62	0.18	0.62	0.12	0.08	0.00	0.41	-0.19	0.41	-0.21	-0.21	0.4565	0.0287	-2.0	1.0	-3.0	1.0	A+	A-	A-
ELA	7	215708	15	B-V.4.1.2	2	6384	0.77	0.06	0.05	0.77	0.11	0.01	0.53	-0.33	-0.31	0.53	-0.22	-0.4024	0.0325	-9.7	0.8	-9.9	0.7	A+	B-	A-
ELA	7	864505	15	B-C.3.1.2	3	6384	0.35	0.17	0.19	0.29	0.35	0.00	0.28	-0.13	-0.19	-0.02	0.28	1.8425	0.0289	3.4	1.0	9.9	1.2	A-	A-	A-
ELA	7	407532	15	B-C.3.1.2	3	6384	0.47	0.47	0.15	0.20	0.18	0.00	0.27	0.27	-0.15	-0.08	-0.12	1.2391	0.0279	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	7	154014	15	B-C.2.1.3	2	6384	0.52	0.24	0.52	0.21	0.04	0.00	0.25	-0.10	0.25	-0.12	-0.17	0.9835	0.0279	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	7	739653	16	B-C.2.1.2	2	6376	0.57	0.15	0.14	0.13	0.57	0.01	0.48	-0.23	-0.26	-0.19	0.48	0.7123	0.0280	-9.1	0.9	-7.8	0.9	A+	A-	A-
ELA	7	177633	16	B-V.4.1.1	2	6376	0.85	0.05	0.85	0.06	0.04	0.00	0.41	-0.24	0.41	-0.17	-0.27	-1.0436	0.0378	-4.0	0.9	-4.7	0.8	B-	B-	B-
ELA	7	603714	16	B-K.1.1.3	2	6376	0.55	0.22	0.08	0.15	0.55	0.00	0.47	-0.15	-0.23	-0.30	0.47	0.8122	0.0279	-9.9	0.9	-8.5	0.9	A-	A-	A-
ELA	7	111394	16	B-C.2.1.1	2	6376	0.67	0.67	0.08	0.08	0.17	0.00	0.51	0.51	-0.31	-0.29	-0.21	0.1767	0.0294	-9.8	0.9	-9.9	0.8	A-	A-	A-
ELA	7	877392	16	B-C.3.1.1	3	6376	0.34	0.39	0.34	0.11	0.17	0.00	0.17	0.04	0.17	-0.20	-0.09	1.8793	0.0290	9.9	1.2	9.9	1.4	A-	A-	A-
ELA	7	934810	16	B-C.3.1.2	3	6376	0.67	0.67	0.12	0.11	0.10	0.00	0.53	0.53	-0.29	-0.30	-0.21	0.1767	0.0294	-9.9	0.8	-9.9	0.8	A-	A-	A-
ELA	7	952129	16	B-C.3.1.2	3	6376	0.38	0.24	0.23	0.38	0.15	0.00	0.22	-0.05	-0.02	0.22	-0.21	1.6501	0.0284	9.9	1.1	9.9	1.3	A-	A-	A-
ELA	7	157361	16	B-K.1.1.3	3	6376	0.58	0.14	0.13	0.58	0.15	0.00	0.40	-0.26	-0.24	0.40	-0.08	0.6714	0.0281	-2.1	1.0	-2.0	1.0	A-	A-	A-
ELA	7	628454	17	B-V.4.1.1	2	6393	0.73	0.73	0.15	0.06	0.06	0.00	0.39	0.39	-0.18	-0.24	-0.21	-0.1181	0.0309	-0.6	1.0	-3.3	0.9	A-	A-	A-
ELA	7	794071	17	B-V.4.1.2	2	6393	0.36	0.08	0.39	0.36	0.16	0.00	0.04	-0.17	0.20	0.04	-0.18	1.7798	0.0286	9.9	1.3	9.9	1.6	A-	A+	A-
ELA	7	434085	17	B-K.1.1.1	2	6393	0.26	0.22	0.26	0.33	0.19	0.00	0.05	-0.07	0.05	0.14	-0.14	2.3425	0.0310	9.9	1.3	9.9	1.8	A-	A-	A-
ELA	7	762250	17	B-K.1.1.1	2	6393	0.66	0.05	0.09	0.66	0.19	0.00	0.42	-0.26	-0.27	0.42	-0.15	0.2491	0.0293	-2.8	1.0	-4.1	0.9	A-	A-	A-
ELA	7	652443	17	B-K.1.1.3	2	6393	0.63	0.14	0.63	0.09	0.13	0.00	0.38	-0.17	0.38	-0.20	-0.19	0.4031	0.0288	0.2	1.0	-1.8	1.0	B-	A-	A-
ELA	7	506222	17	B-C.2.1.2	2	6393	0.63	0.09	0.06	0.22	0.63	0.01	0.45	-0.29	-0.25	-0.18	0.45	0.4345	0.0287	-5.5	0.9	-6.4	0.9	A-	A-	A-
ELA	7	661582	17	B-C.3.1.1	2	6393	0.69	0.09	0.09	0.13	0.69	0.00	0.54	-0.29	-0.29	-0.25	0.54	0.0766	0.0299	-9.9	0.8	-9.9	0.8	A-	A-	A-
ELA	7	997058	17	B-C.2.1.3	2	6393	0.65	0.65	0.14	0.09	0.12	0.00	0.41	0.41	-0.22	-0.25	-0.16	0.3272	0.0290	-2.6	1.0	-3.8	0.9	A-	A-	A-
ELA	7	593274	18	B-K.1.1.1	2	6337	0.83	0.11	0.83	0.03	0.03	0.00	0.48	-0.31	0.48	-0.24	-0.24	-0.8251	0.0363	-6.5	0.9	-7.3	0.7	A+	A-	A-
ELA	7	628106	18	B-C.2.1.2	2	6337	0.40	0.21	0.29	0.09	0.40	0.00	0.25	-0.24	0.14	-0.30	0.25	1.5957	0.0282	9.3	1.1	9.9	1.2	A+	A-	A-
ELA	7	820131	18	B-C.2.1.2	2	6337	0.57	0.25	0.57	0.10	0.09	0.00	0.28	-0.05	0.28	-0.21	-0.19	0.7761	0.0281	9.9	1.1	9.5	1.2	A+	A-	A-
ELA	7	823267	18	B-C.3.1.1	3	6337	0.52	0.52	0.05	0.36	0.07	0.00	0.25	0.25	-0.24	-0.03	-0.22	0.9955	0.0279	9.9	1.2	9.9	1.2	A-	B-	A-
ELA	7	578673	18	B-V.4.1.1	2	6337	0.74	0.06	0.04	0.74	0.15	0.01	0.42	-0.21	-0.19	0.42	-0.26	-0.1871	0.0316	-3.1	1.0	-3.1	0.9	A+	A-	A-
ELA	7	258523	18	B-V.4.1.2	2	6337	0.87	0.03	0.03	0.87	0.07	0.00	0.45	-0.26	-0.26	0.45	-0.25	-1.2389	0.0406	-5.8	0.9	-6.7	0.7	A+	A-	A-
ELA	7	718105	18	B-C.2.1.3	2	6337	0.51	0.23	0.14	0.12	0.51	0.00	0.33	-0.04	-0.25	-0.19	0.33	1.0405	0.0279	5.0	1.1	5.2	1.1	A-	A-	A-
ELA	7	299591	18	B-K.1.1.3	2	6337	0.36	0.36	0.29	0.22	0.12	0.00	0.19	0.19	0.05	-0.22	-0.09	1.7818	0.0287	9.9	1.1	9.9	1.4	A-	A-	A-
ELA	7	532169	19	B-K.1.1.2	3	6399	0.64	0.64	0.14	0.09	0.11	0.00	0.38	0.38	-0.18	-0.22	-0.17	0.3239	0.0289	0.6	1.0	0.3	1.0	A+	A-	A+
ELA	7	257407	19	B-K.1.1.3	2	6399	0.71	0.09	0.13	0.06	0.71	0.00	0.38	-0.17	-0.21	-0.22	0.38	-0.0529	0.0304	-0.5	1.0	-1.4	1.0	A+	A-	A+

ELA	7	906618	19	B-C.2.1.3	2	6399	0.40	0.22	0.23	0.40	0.15	0.00	0.12	0.00	-0.10	0.12	-0.04	1.5388	0.0281	9.9	1.3	9.9	1.5	A-	A+	A+
ELA	7	221692	19	B-C.3.1.1	2	6399	0.70	0.70	0.04	0.16	0.10	0.00	0.41	0.41	-0.28	-0.16	-0.24	0.0201	0.0300	-2.0	1.0	0.1	1.0	A+	A-	A-
ELA	7	469347	19	B-C.3.1.1	3	6399	0.47	0.25	0.47	0.08	0.19	0.01	0.19	-0.06	0.19	-0.26	0.00	1.1843	0.0277	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	7	969224	19	B-V.4.1.1	2	6399	0.80	0.06	0.03	0.11	0.80	0.00	0.50	-0.29	-0.27	-0.26	0.50	-0.6265	0.0340	-7.6	0.9	-9.6	0.7	A-	A-	A-
ELA	7	826756	19	B-V.4.1.2	2	6399	0.40	0.47	0.40	0.10	0.03	0.00	0.18	0.06	0.18	-0.27	-0.21	1.5428	0.0281	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	7	828969	19	B-V.4.1.2	2	6399	0.50	0.16	0.30	0.50	0.04	0.00	0.38	-0.13	-0.22	0.38	-0.20	1.0695	0.0277	-0.9	1.0	1.6	1.0	B-	A+	A-
ELA	7	374873	20	B-V.4.1.2	2	6357	0.68	0.68	0.04	0.22	0.06	0.00	0.41	0.41	-0.22	-0.23	-0.22	0.1451	0.0296	-1.5	1.0	-2.3	1.0	A-	A-	A-
ELA	7	741780	20	B-C.2.1.3	2	6357	0.80	0.80	0.06	0.08	0.06	0.01	0.47	0.47	-0.26	-0.26	-0.22	-0.5918	0.0338	-5.9	0.9	-8.5	0.7	A-	B-	A-
ELA	7	891799	20	B-C.2.1.2	2	6357	0.76	0.07	0.08	0.09	0.76	0.00	0.57	-0.32	-0.31	-0.27	0.57	-0.3245	0.0320	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	7	323399	20	B-C.3.1.2	3	6357	0.45	0.27	0.45	0.10	0.18	0.00	0.32	-0.08	0.32	-0.21	-0.16	1.3125	0.0279	3.8	1.0	6.5	1.1	A-	A-	A-
ELA	7	913447	20	B-C.3.1.1	3	6357	0.44	0.26	0.21	0.44	0.09	0.00	0.33	-0.06	-0.21	0.33	-0.17	1.3523	0.0279	3.6	1.0	6.0	1.1	A-	A-	A-
ELA	7	279453	20	B-C.3.1.2	3	6357	0.24	0.15	0.24	0.31	0.29	0.00	0.03	-0.13	0.03	-0.06	0.13	2.4463	0.0318	9.9	1.3	9.9	1.8	A-	A-	A+
ELA	7	545944	20	B-V.4.1.2	1	6357	0.90	0.03	0.05	0.90	0.02	0.00	0.36	-0.26	-0.18	0.36	-0.17	-1.5031	0.0435	-3.0	0.9	-1.1	0.9	A+	A-	A-
ELA	7	751779	20	B-C.2.1.1	2	6357	0.45	0.10	0.19	0.27	0.45	0.00	0.34	-0.25	-0.22	-0.02	0.34	1.3157	0.0279	2.7	1.0	5.8	1.1	A+	A-	A-
READING	8	198106	0	B.1.1.1		128535	0.74	0.74	0.05	0.11	0.10	0.00	0.41	0.41	-0.28	-0.14	-0.24	0.3517	0.0070	-8.8	1.0	-7.3	1.0			
READING	8	536311	0	A.2.3.1		128535	0.79	0.79	0.05	0.12	0.03	0.00	0.38	0.38	-0.27	-0.17	-0.20	-0.1125	0.0077	7.7	1.0	6.2	1.1			
READING	8	351014	0	A.2.3.1		128535	0.75	0.09	0.75	0.09	0.06	0.00	0.49	-0.28	0.49	-0.24	-0.22	0.3189	0.0070	-9.9	0.9	-9.9	0.8			
READING	8	988764	0	A.2.2.1		128535	0.82	0.06	0.82	0.09	0.04	0.00	0.43	-0.25	0.43	-0.20	-0.25	-0.3118	0.0081	-3.0	1.0	-9.7	0.9			
READING	8	655303	0	A.2.1.1		128535	0.82	0.06	0.05	0.07	0.82	0.00	0.46	-0.24	-0.30	-0.20	0.46	-0.2114	0.0079	-9.9	0.9	-9.9	0.8			
READING	8	761475	0	B.2.1.2	3	128535	0.90	0.03	0.90	0.04	0.03	0.00	0.44	-0.27	0.44	-0.25	-0.22	-1.0042	0.0099	-9.9	0.9	-9.9	0.6			
READING	8	686884	0	B.1.1.1	2	128535	0.62	0.13	0.62	0.15	0.10	0.00	0.38	-0.26	0.38	-0.23	-0.05	1.1567	0.0063	-0.2	1.0	-1.3	1.0			
READING	8	217296	0	B.1.1.1	2	128535	0.66	0.13	0.06	0.15	0.66	0.00	0.25	-0.03	-0.23	-0.15	0.25	0.7653	0.0066	9.9	1.2	9.9	1.2			
READING	8	837247	0	B.1.1.1	2	128535	0.68	0.18	0.11	0.68	0.03	0.00	0.33	-0.21	-0.15	0.33	-0.15	0.6903	0.0066	9.9	1.1	9.9	1.1			
READING	8	490058	0	B.2.1.1	3	128535	0.76	0.06	0.76	0.10	0.07	0.00	0.44	-0.26	0.44	-0.28	-0.14	0.2014	0.0072	-9.9	1.0	-9.9	0.9			
READING	8	741839	0	A.1.3.1	2	128535	0.77	0.77	0.09	0.08	0.06	0.00	0.44	0.44	-0.17	-0.29	-0.24	0.0501	0.0074	-7.4	1.0	-9.9	0.9			
READING	8	233947	0	B.1.1.1	1	128535	0.82	0.09	0.05	0.03	0.82	0.00	0.49	-0.31	-0.28	-0.19	0.49	-0.2170	0.0079	-9.9	0.9	-9.9	0.7			
READING	8	543804	0	B.2.1.1	3	128535	0.77	0.05	0.06	0.77	0.12	0.00	0.50	-0.30	-0.32	0.50	-0.20	0.1900	0.0072	-9.9	0.9	-9.9	0.8			
READING	8	433712	0	A.2.3.1	2	128535	0.72	0.06	0.72	0.10	0.11	0.00	0.40	-0.24	0.40	-0.21	-0.16	0.4794	0.0068	-1.4	1.0	-3.2	1.0			
READING	8	834538	0	A.2.4.1	2	128535	0.75	0.04	0.11	0.75	0.09	0.00	0.43	-0.30	-0.18	0.43	-0.21	0.2287	0.0072	-5.2	1.0	-1.8	1.0			
READING	8	974364	0	A.2.4.1	1	128535	0.88	0.88	0.05	0.03	0.03	0.00	0.51	0.51	-0.29	-0.29	-0.25	-0.8474	0.0094	-9.9	0.8	-9.9	0.5			
READING	8	307964	0	B.1.2.1	3	128535	0.75	0.04	0.13	0.07	0.75	0.01	0.46	-0.30	-0.20	-0.25	0.46	0.2418	0.0071	-9.9	0.9	-9.9	0.9			
READING	8	704916	0	B.3.1.1	2	128535	0.45	0.45	0.07	0.36	0.12	0.00	0.39	0.39	-0.28	-0.13	-0.17	1.8622	0.0062	-9.9	1.0	6.4	1.0			
READING	8	907745	0	B.3.3.2	2	128535	0.39	0.32	0.10	0.20	0.39	0.01	0.30	-0.04	-0.21	-0.15	0.30	2.1812	0.0063	9.9	1.0	9.9	1.2			
READING	8	608950	0	A.2.1.2	2	128535	0.72	0.06	0.72	0.15	0.06	0.00	0.43	-0.22	0.43	-0.21	-0.24	0.4940	0.0068	-9.9	1.0	-9.9	0.9			
READING	8	535153	0	A.1.3.1	2	128535	0.50	0.24	0.10	0.16	0.50	0.00	0.37	-0.15	-0.18	-0.18	0.37	1.8279	0.0062	1.5	1.0	9.9	1.1			
READING	8	576562	0	A.1.3.1	2	128535	0.59	0.20	0.08	0.12	0.59	0.00	0.32	-0.15	-0.18	-0.14	0.32	1.4120	0.0062	9.9	1.1	9.9	1.1			
READING	8	789958	0	A.1.3.2	2	128535	0.61	0.19	0.61	0.12	0.08	0.00	0.20	-0.06	0.20	-0.11	-0.13	0.8071	0.0065	9.9	1.3	9.9	1.5			
READING	8	661243	0	B.1.1.1	2	128535	0.54	0.07	0.33	0.54	0.05	0.00	0.27	-0.17	-0.12	0.27	-0.14	1.2936	0.0063	9.9	1.2	9.9	1.2			
READING	8	755603	0	B.1.1.1	2	128535	0.54	0.08	0.14	0.54	0.23	0.00	0.26	-0.13	-0.19	0.26	-0.06	1.0732	0.0064	9.9	1.2	9.9	1.3			
READING	8	205065	0	B.2.2.2	2	128535	0.47	0.34	0.10	0.47	0.09	0.00	0.20	0.03	-0.20	0.20	-0.19	1.8562	0.0062	9.9	1.2	9.9	1.3			
READING	8	899053	0	A.1.1.2	1	128535	0.66	0.19	0.66	0.05	0.10	0.00	0.31	-0.09	0.31	-0.23	-0.21	0.8530	0.0065	9.9	1.1	9.9	1.1			
READING	8	870546	0	B.1.1.1	2	128535	0.69	0.06	0.17	0.08	0.69	0.00	0.37	-0.21	-0.13	-0.27	0.37	0.6256	0.0067	6.5	1.0	9.9	1.1			
READING	8	107467	0	B.1.1.1	3	128535	0.77	0.06	0.14	0.77	0.03	0.00	0.45	-0.29	-0.22	0.45	-0.26	0.1566	0.0073	-9.9	0.9	-9.9	0.9			
READING	8	516540	0	B.1.1.1	3	128535	0.66	0.66	0.13	0.15	0.05	0.00	0.44	0.44	-0.19	-0.28	-0.18	1.0450	0.0064	-9.9	0.9	-9.9	0.9			
READING	8	636450	0	B.2.1.2	2	128535	0.86	0.86	0.05	0.07	0.02	0.00	0.45	0.45	-0.22	-0.29	-0.23	-0.5525	0.0086	-9.9	0.9	-9.9	0.8			
READING	8	524754	0	A.1.3.1	2	128535	0.62	0.14	0.14	0.10	0.62	0.00	0.36	-0.22	-0.17	-0.13	0.36	0.9300	0.0064	9.9	1.1	9.9	1.1			
READING	8	906965	0	A.2.4.1	3	128535	0.54	0.28	0.03	0.54	0.15	0.00	0.17	-0.08	-0.27	0.17	0.01	1.4117	0.0062	9.9	1.2	9.9	1.3			
READING	8	414679	0	B.2.1.1	2	128535	0.80	0.04	0.08	0.08	0.80	0.00	0.49	-0.31	-0.26	-0.24	0.49	-0.0963	0.0077	-9.9	0.9	-9.9	0.8			
READING	8	493998	0	B.3.2.1	2	128535	0.71	0.71	0.15	0.07	0.07	0.00	0.52	0.52	-0.28	-0.29	-0.24	0.4198	0.0069	-9.9	0.9	-9.9	0.8			
READING	8	854037	0	B.3.3.3	3	128535	0.71	0.13	0.71	0.13	0.03	0.00	0.46	-0.26	0.46	-0.22	-0.27	0.5861	0.0067	-9.9	0.9	-9.9	0.9			
READING	8	392894	0	A.2.2.1	2	128535	0.64	0.14	0.12	0.64	0.11	0.00	0.34	-0.10	-0.24	0.34	-0.17	1.0349	0.0064	9.9	1.0	9.9	1.1			

READING	8	676311	0	A.2.3.1	3	128535	0.76	0.76	0.07	0.08	0.09	0.00	0.47	0.47	-0.24	-0.26	-0.23	0.3095	0.0071	-9.9	0.9	-9.9	0.8			
READING	8	825998	0	A.2.4.1	2	128535	0.71	0.18	0.71	0.03	0.07	0.00	0.46	-0.27	0.46	-0.26	-0.22	0.4779	0.0068	-9.9	0.9	-9.9	0.9			
READING	8	407026	0	B.1.1.1	3	128535	0.69	0.13	0.69	0.08	0.10	0.00	0.37	-0.15	0.37	-0.17	-0.25	0.7251	0.0066	2.0	1.0	8.1	1.0			
ELA	8	930586	1	A.2.1.2	2	64480	0.67	0.15	0.09	0.09	0.67	0.00	0.44	-0.20	-0.21	-0.25	0.44	0.7499	0.0093	-9.9	1.0	-9.9	0.9	A-	A-	A-
ELA	8	403700	1	A.2.3.2	3	64480	0.83	0.12	0.83	0.03	0.03	0.00	0.43	-0.27	0.43	-0.24	-0.22	-0.2759	0.0113	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	8	276204	1	A.2.3.1	2	64480	0.69	0.69	0.06	0.19	0.06	0.00	0.27	0.27	-0.23	-0.01	-0.29	0.6334	0.0095	9.9	1.1	9.9	1.3	A+	A+	A-
ELA	8	620506	1	A.2.5.1	3	64480	0.70	0.07	0.12	0.70	0.11	0.00	0.40	-0.19	-0.22	0.40	-0.19	0.5950	0.0095	-1.2	1.0	-2.9	1.0	A+	A-	A-
ELA	8	902533	1	A.2.4.1	1	64480	0.77	0.06	0.77	0.07	0.09	0.00	0.47	-0.25	0.47	-0.26	-0.23	0.1219	0.0103	-9.9	0.9	-9.9	0.8	A-	B-	B-
ELA	8	317932	1	B.3.1.1	2	64480	0.53	0.23	0.53	0.20	0.05	0.00	0.38	-0.18	0.38	-0.13	-0.29	1.4970	0.0088	1.2	1.0	5.5	1.0	A-	A-	A-
ELA	8	165705	1	B.3.2.1	2	64480	0.52	0.13	0.25	0.52	0.10	0.00	0.38	-0.28	-0.22	0.38	-0.01	1.5153	0.0088	1.6	1.0	6.1	1.0	A-	A-	A-
ELA	8	493358	1	A.2.4.1	1	64480	0.79	0.07	0.09	0.05	0.79	0.00	0.47	-0.23	-0.25	-0.26	0.47	-0.0306	0.0107	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	8	845996	1	A-K.1.1.3	2	6795	0.72	0.72	0.18	0.05	0.04	0.00	0.37	0.37	-0.14	-0.26	-0.26	0.3603	0.0303	3.7	1.1	4.4	1.1	A+	A-	A-
ELA	8	186875	1	A-C.2.1.1	3	6795	0.77	0.77	0.11	0.09	0.03	0.00	0.51	0.51	-0.28	-0.31	-0.23	0.0308	0.0320	-7.2	0.9	-8.1	0.8	A+	A-	A-
ELA	8	806048	1	A-V.4.1.1	2	6795	0.73	0.07	0.16	0.73	0.04	0.00	0.44	-0.28	-0.22	0.44	-0.22	0.2824	0.0306	-1.6	1.0	-3.5	0.9	A-	A-	A-
ELA	8	658410	1	A-C.2.1.3	2	6795	0.70	0.11	0.15	0.70	0.04	0.00	0.39	-0.14	-0.22	0.39	-0.28	0.4454	0.0299	2.7	1.0	3.5	1.1	A+	A-	B-
ELA	8	448688	1	A-C.3.1.1	3	6795	0.81	0.09	0.81	0.05	0.05	0.00	0.47	-0.26	0.47	-0.26	-0.22	-0.2697	0.0340	-5.3	0.9	-4.8	0.8	A+	A+	A-
ELA	8	742317	1	A-V.4.1.2	2	6795	0.74	0.10	0.08	0.08	0.74	0.00	0.48	-0.19	-0.24	-0.30	0.48	0.2332	0.0309	-4.5	0.9	-5.4	0.9	A+	A-	B-
ELA	8	338672	1	A-V.4.1.2	2	6795	0.69	0.23	0.04	0.04	0.69	0.00	0.53	-0.32	-0.31	-0.26	0.53	0.5030	0.0297	-9.2	0.9	-8.8	0.8	A+	A-	B-
ELA	8	312938	1	A-V.4.1.1	2	6795	0.84	0.02	0.84	0.11	0.03	0.00	0.48	-0.25	0.48	-0.29	-0.27	-0.5279	0.0361	-6.4	0.9	-7.1	0.7	A-	B-	C-
ELA	8	696131	2	A-K.1.1.2	2	6387	0.73	0.05	0.11	0.11	0.73	0.00	0.57	-0.28	-0.29	-0.31	0.57	0.4249	0.0311	-9.9	0.8	-9.9	0.7	A+	A-	A-
ELA	8	667965	2	A-V.4.1.1	2	6387	0.93	0.93	0.02	0.03	0.02	0.00	0.42	0.42	-0.23	-0.28	-0.20	-1.5378	0.0530	-4.1	0.8	-7.4	0.5	A+	A-	A-
ELA	8	561963	2	A-V.4.1.2	2	6387	0.52	0.11	0.52	0.10	0.26	0.01	0.32	-0.16	0.32	-0.26	-0.06	1.5307	0.0280	6.9	1.1	6.7	1.1	A-	A+	A+
ELA	8	550019	2	A-C.2.1.3	2	6387	0.60	0.10	0.24	0.60	0.06	0.00	0.33	-0.21	-0.14	0.33	-0.17	1.1579	0.0285	6.6	1.1	8.3	1.2	A-	A-	A-
ELA	8	133851	2	A-K.1.1.1	2	6387	0.71	0.08	0.15	0.06	0.71	0.00	0.51	-0.30	-0.22	-0.28	0.51	0.5296	0.0306	-8.4	0.9	-7.8	0.8	A-	A-	B-
ELA	8	102232	2	A-V.4.1.1	2	6387	0.52	0.17	0.11	0.19	0.52	0.00	0.34	-0.17	-0.14	-0.14	0.34	1.5417	0.0280	5.6	1.1	5.8	1.1	B-	A-	A-
ELA	8	693898	2	A-K.1.1.2	2	6387	0.72	0.72	0.17	0.06	0.05	0.01	0.39	0.39	-0.11	-0.26	-0.29	0.4882	0.0308	0.2	1.0	1.1	1.0	A+	A+	A+
ELA	8	201970	2	A-C.2.1.2	3	6387	0.74	0.08	0.10	0.74	0.07	0.00	0.48	-0.24	-0.26	0.48	-0.25	0.3235	0.0317	-6.2	0.9	-6.4	0.8	A+	A+	A+
ELA	8	644601	3	A-C.2.1.1	2	6413	0.71	0.07	0.14	0.08	0.71	0.00	0.37	-0.21	-0.20	-0.17	0.37	0.5545	0.0305	1.9	1.0	0.7	1.0	A-	A-	A-
ELA	8	211767	3	A-K.1.1.2	3	6413	0.73	0.10	0.07	0.73	0.10	0.00	0.44	-0.25	-0.32	0.44	-0.12	0.4106	0.0312	-2.9	1.0	-3.2	0.9	A+	A+	A+
ELA	8	144867	3	A-K.1.1.1	2	6413	0.57	0.12	0.21	0.57	0.09	0.00	0.43	-0.21	-0.21	0.43	-0.20	1.2749	0.0283	-3.1	1.0	-3.0	1.0	A-	A-	A-
ELA	8	966900	3	A-V.4.1.2	1	6413	0.87	0.87	0.04	0.05	0.04	0.00	0.49	0.49	-0.29	-0.26	-0.26	-0.6792	0.0399	-6.7	0.8	-9.2	0.6	A+	A-	A-
ELA	8	958113	3	A-V.4.1.2	2	6413	0.87	0.04	0.87	0.06	0.03	0.00	0.45	-0.27	0.45	-0.25	-0.23	-0.6823	0.0400	-5.1	0.9	-5.8	0.7	A-	A-	A-
ELA	8	588960	3	A-C.3.1.1	2	6413	0.69	0.69	0.06	0.09	0.16	0.00	0.48	0.48	-0.24	-0.26	-0.23	0.6736	0.0300	-5.7	0.9	-6.1	0.9	A-	A+	A-
ELA	8	712694	3	A-C.2.1.2	3	6413	0.59	0.18	0.59	0.09	0.14	0.00	0.35	-0.03	0.35	-0.33	-0.18	1.2161	0.0284	6.2	1.1	7.4	1.1	A+	A-	A-
ELA	8	345363	3	A-K.1.1.3	2	6413	0.69	0.23	0.69	0.04	0.04	0.00	0.42	-0.22	0.42	-0.25	-0.24	0.6646	0.0301	-1.1	1.0	-2.5	0.9	A-	A-	A-
ELA	8	141240	4	A-C.3.1.1	3	6419	0.61	0.61	0.23	0.12	0.04	0.00	0.33	0.33	-0.14	-0.19	-0.23	1.0671	0.0288	6.5	1.1	4.1	1.1	A+	A-	A-
ELA	8	474904	4	A-V.4.1.1	2	6419	0.69	0.14	0.69	0.09	0.08	0.00	0.40	-0.17	0.40	-0.25	-0.20	0.6678	0.0301	0.0	1.0	-2.6	0.9	A+	A-	A-
ELA	8	735275	4	A-V.4.1.2	2	6419	0.68	0.16	0.11	0.68	0.04	0.00	0.47	-0.21	-0.27	0.47	-0.27	0.6804	0.0300	-5.4	0.9	-6.8	0.9	A+	A-	A+
ELA	8	679427	4	A-V.4.1.2	2	6419	0.81	0.06	0.06	0.08	0.81	0.00	0.46	-0.30	-0.30	-0.14	0.46	-0.1224	0.0347	-5.3	0.9	-4.0	0.9	A+	A-	A-
ELA	8	787789	4	A-K.1.1.1	2	6419	0.71	0.08	0.10	0.11	0.71	0.00	0.50	-0.25	-0.30	-0.22	0.50	0.5020	0.0308	-7.9	0.9	-7.5	0.8	A+	A-	A-
ELA	8	877304	4	A-K.1.1.3	2	6419	0.86	0.03	0.86	0.05	0.06	0.00	0.51	-0.25	0.51	-0.31	-0.29	-0.5855	0.0389	-7.9	0.8	-9.8	0.6	A+	A-	A+
ELA	8	450679	4	A-K.1.1.3	2	6419	0.67	0.67	0.17	0.08	0.07	0.00	0.49	0.49	-0.20	-0.31	-0.25	0.7377	0.0298	-6.9	0.9	-6.8	0.9	A+	A-	A-
ELA	8	307443	4	A-C.2.1.3	2	6419	0.65	0.19	0.08	0.65	0.08	0.00	0.44	-0.22	-0.29	0.44	-0.17	0.8937	0.0293	-3.2	1.0	-4.8	0.9	A+	A-	A+
ELA	8	934365	5	A-K.1.1.3	2	6418	0.71	0.04	0.07	0.71	0.17	0.00	0.30	-0.29	-0.26	0.30	-0.02	0.5287	0.0306	6.5	1.1	7.4	1.2	A-	A-	A-
ELA	8	531417	5	A-V.4.1.1	2	6418	0.64	0.08	0.07	0.20	0.64	0.00	0.45	-0.25	-0.25	-0.20	0.45	0.9209	0.0290	-5.4	0.9	-7.1	0.9	A+	A-	A-
ELA	8	351316	5	A-V.4.1.1	2	6418	0.24	0.24	0.52	0.06	0.17	0.01	0.06	0.06	0.29	-0.25	-0.29	3.0304	0.0316	9.9	1.2	9.9	1.9	A-	A-	A+
ELA	8	669749	5	A-V.4.1.2	2	6418	0.63	0.16	0.14	0.63	0.07	0.00	0.35	-0.21	-0.17	0.35	-0.12	1.0187	0.0288	3.7	1.1	1.5	1.0	A-	A-	A-
ELA	8	498299	5	A-K.1.1.1	2	6418	0.74	0.07	0.74	0.06	0.12	0.00	0.51	-0.31	0.51	-0.31	-0.20	0.3575	0.0315	-9.3	0.9	-9.9	0.7	B-	B-	B-
ELA	8	192241	5	A-K.1.1.1	2	6418	0.71	0.09	0.11	0.08	0.71	0.00	0.56	-0.32	-0.28	-0.25	0.56	0.5641	0.0304	-9.9	0.8	-9.9	0.7	B-	A-	A-
ELA	8	642298	5	A-K.1.1.2	3	6418	0.42	0.17	0.42	0.19	0.21	0.00	0.21	-0.08	0.21	-0.11	-0.07	2.0436	0.0280	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	8	975292	5	A-K.1.1.3	3	6418	0.72	0.72	0.06	0.17	0.04	0.00	0.45	0.45	-0.30	-0.25	-0.18	0.4539	0.0310	-5.1	0.9	-7.0	0.8	A-	A-	A-

ELA	8	402281	6	A-K.1.1.3	2	6375	0.37	0.35	0.37	0.19	0.08	0.00	0.19	0.03	0.19	-0.09	-0.24	2.3176	0.0286	9.9	1.2	9.9	1.4	A-	A-	A+
ELA	8	908503	6	A-C.3.1.1	2	6375	0.79	0.11	0.79	0.05	0.05	0.00	0.45	-0.21	0.45	-0.25	-0.29	0.0579	0.0336	-5.1	0.9	-4.8	0.9	A-	A-	A-
ELA	8	604429	6	A-V.4.1.1	2	6375	0.74	0.74	0.07	0.09	0.09	0.00	0.36	0.36	-0.27	-0.18	-0.13	0.3584	0.0317	1.9	1.0	-1.1	1.0	A+	A-	A+
ELA	8	779360	6	A-K.1.1.1	2	6375	0.76	0.09	0.08	0.76	0.07	0.00	0.43	-0.26	-0.25	0.43	-0.17	0.2526	0.0323	-3.5	0.9	-2.5	0.9	A+	A-	A-
ELA	8	660576	6	A-C.2.1.1	3	6375	0.77	0.04	0.15	0.04	0.77	0.00	0.39	-0.25	-0.16	-0.28	0.39	0.1848	0.0328	-1.1	1.0	-0.3	1.0	A+	A-	A-
ELA	8	172621	6	A-C.2.1.3	2	6375	0.83	0.83	0.05	0.07	0.06	0.00	0.51	0.51	-0.25	-0.27	-0.30	-0.2448	0.0361	-8.1	0.8	-9.2	0.7	A+	A-	A-
ELA	8	722796	6	A-V.4.1.2	2	6375	0.81	0.05	0.06	0.08	0.81	0.00	0.52	-0.26	-0.29	-0.29	0.52	-0.1321	0.0351	-8.6	0.8	-9.3	0.7	A+	A-	A-
ELA	8	419317	6	A-V.4.1.2	2	6375	0.61	0.29	0.07	0.61	0.03	0.00	0.33	-0.11	-0.28	0.33	-0.20	1.1279	0.0286	6.5	1.1	5.0	1.1	A+	A+	A+
ELA	8	725032	7	A-C.2.1.1	2	6400	0.47	0.13	0.47	0.28	0.11	0.00	0.19	-0.13	0.19	-0.03	-0.13	1.7815	0.0277	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	8	843212	7	A-C.2.1.3	2	6400	0.29	0.11	0.29	0.20	0.40	0.00	0.10	-0.19	0.10	-0.16	0.15	2.7353	0.0299	9.9	1.2	9.9	1.6	A-	A+	A-
ELA	8	963439	7	A-V.4.1.1	2	6400	0.87	0.87	0.04	0.05	0.04	0.00	0.39	0.39	-0.24	-0.20	-0.20	-0.6628	0.0401	-3.1	0.9	-3.3	0.9	A+	B-	A-
ELA	8	498393	7	A-V.4.1.2	2	6400	0.92	0.92	0.03	0.03	0.02	0.00	0.41	0.41	-0.23	-0.26	-0.20	-1.1849	0.0474	-4.3	0.9	-5.9	0.7	A+	B-	A-
ELA	8	590496	7	A-V.4.1.2	3	6400	0.78	0.05	0.13	0.03	0.78	0.00	0.41	-0.21	-0.23	-0.26	0.41	0.1136	0.0330	-2.9	1.0	-2.1	0.9	A-	B-	B-
ELA	8	446105	7	A-K.1.1.1	2	6400	0.72	0.06	0.18	0.72	0.03	0.00	0.45	-0.28	-0.23	0.45	-0.25	0.4940	0.0307	-5.0	0.9	-5.8	0.9	A-	A+	A-
ELA	8	728268	7	A-K.1.1.2	3	6400	0.43	0.15	0.27	0.15	0.43	0.00	0.25	-0.18	-0.04	-0.10	0.25	2.0106	0.0279	9.9	1.1	9.9	1.2	A+	A-	A-
ELA	8	694393	7	A-K.1.1.3	2	6400	0.81	0.05	0.05	0.81	0.08	0.00	0.44	-0.22	-0.27	0.44	-0.22	-0.1392	0.0349	-4.5	0.9	-5.0	0.8	A+	A-	A-
ELA	8	939798	8	A-K.1.1.2	3	6447	0.77	0.04	0.13	0.05	0.77	0.00	0.33	-0.27	-0.10	-0.22	0.33	0.1473	0.0322	0.8	1.0	2.5	1.1	A+	A-	A-
ELA	8	959283	8	A-K.1.1.3	2	6447	0.76	0.06	0.76	0.06	0.12	0.00	0.44	-0.23	0.44	-0.30	-0.19	0.2238	0.0317	-4.8	0.9	-4.8	0.9	A-	B-	A-
ELA	8	402744	8	A-C.2.1.3	2	6447	0.32	0.22	0.09	0.32	0.37	0.00	0.10	-0.01	-0.20	0.10	0.03	2.5329	0.0291	9.9	1.2	9.9	1.5	A-	A+	A+
ELA	8	562792	8	A-C.2.1.3	2	6447	0.78	0.03	0.78	0.11	0.07	0.00	0.41	-0.26	0.41	-0.22	-0.21	0.0541	0.0329	-3.8	0.9	-3.4	0.9	A+	A-	A-
ELA	8	542045	8	A-V.4.1.1	2	6447	0.54	0.54	0.22	0.07	0.17	0.00	0.29	0.29	-0.14	-0.17	-0.12	1.4321	0.0275	6.3	1.1	6.3	1.1	A+	A-	A+
ELA	8	193536	8	A-V.4.1.2	2	6447	0.59	0.59	0.12	0.20	0.09	0.00	0.23	0.23	-0.21	0.04	-0.21	1.1811	0.0279	9.9	1.2	9.9	1.2	A-	A+	A-
ELA	8	300948	8	A-V.4.1.2	2	6447	0.61	0.14	0.08	0.61	0.17	0.00	0.33	-0.22	-0.24	0.33	-0.05	1.0879	0.0281	3.8	1.0	2.4	1.0	A-	A+	A-
ELA	8	421990	8	A-V.4.1.2	2	6447	0.44	0.25	0.10	0.20	0.44	0.00	0.33	-0.18	-0.18	-0.07	0.33	1.8908	0.0275	1.0	1.0	3.8	1.1	A-	A-	A-
ELA	8	336088	9	A-K.1.1.3	2	6407	0.57	0.57	0.08	0.18	0.17	0.00	0.40	0.40	-0.28	-0.16	-0.18	1.2731	0.0280	-1.9	1.0	-1.3	1.0	A-	A+	A-
ELA	8	431354	9	A-C.2.1.1	3	6407	0.44	0.29	0.44	0.12	0.14	0.00	0.17	0.02	0.17	-0.23	-0.05	1.9279	0.0278	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	8	663128	9	A-V.4.1.1	2	6407	0.79	0.12	0.79	0.05	0.03	0.00	0.33	-0.12	0.33	-0.25	-0.23	-0.0141	0.0337	1.1	1.0	1.3	1.0	B-	A-	A-
ELA	8	296613	9	A-V.4.1.2	2	6407	0.70	0.70	0.19	0.06	0.05	0.00	0.38	0.38	-0.14	-0.32	-0.20	0.5881	0.0301	0.4	1.0	-0.4	1.0	A-	B-	A-
ELA	8	336290	9	A-V.4.1.2	2	6407	0.62	0.28	0.07	0.62	0.02	0.00	0.41	-0.26	-0.21	0.41	-0.19	1.0302	0.0285	-2.2	1.0	-3.1	1.0	B-	A-	C-
ELA	8	978148	9	A-K.1.1.1	2	6407	0.60	0.18	0.17	0.05	0.60	0.01	0.21	-0.06	-0.03	-0.29	0.21	1.1372	0.0282	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	8	384291	9	A-K.1.1.1	2	6407	0.38	0.25	0.20	0.16	0.38	0.00	0.24	-0.11	-0.06	-0.12	0.24	2.2156	0.0282	7.0	1.1	9.9	1.2	A-	A-	A-
ELA	8	938727	9	A-K.1.1.2	3	6407	0.63	0.29	0.05	0.63	0.03	0.00	0.24	-0.02	-0.31	0.24	-0.25	0.9549	0.0287	9.9	1.2	9.9	1.2	A+	A+	A+
ELA	8	461454	10	A-K.1.1.2	3	6419	0.69	0.12	0.10	0.09	0.69	0.00	0.46	-0.22	-0.25	-0.23	0.46	0.6488	0.0299	-5.7	0.9	-6.7	0.9	A+	A-	A-
ELA	8	198489	10	A-V.4.1.2	2	6419	0.77	0.05	0.05	0.77	0.13	0.00	0.42	-0.28	-0.26	0.42	-0.17	0.1442	0.0326	-3.0	1.0	-4.0	0.9	A-	A-	A-
ELA	8	569419	10	A-C.3.1.1	3	6419	0.50	0.19	0.10	0.21	0.50	0.01	0.28	-0.10	-0.25	-0.06	0.28	1.6338	0.0276	9.2	1.1	9.9	1.2	A+	A-	A+
ELA	8	695950	10	A-V.4.1.1	2	6419	0.56	0.56	0.25	0.12	0.07	0.00	0.33	0.33	-0.18	-0.11	-0.20	1.3288	0.0279	4.8	1.1	3.6	1.1	A-	A-	A-
ELA	8	414292	10	A-C.2.1.1	3	6419	0.68	0.68	0.16	0.07	0.09	0.00	0.35	0.35	-0.18	-0.18	-0.18	0.7256	0.0296	2.3	1.0	2.6	1.1	A+	A-	A-
ELA	8	428432	10	A-C.2.1.3	2	6419	0.62	0.15	0.62	0.07	0.16	0.00	0.36	-0.22	0.36	-0.29	-0.06	1.0627	0.0284	2.1	1.0	0.9	1.0	A-	A+	A-
ELA	8	437283	10	A-V.4.1.2	2	6419	0.70	0.11	0.04	0.70	0.15	0.00	0.31	-0.18	-0.28	0.31	-0.08	0.6112	0.0300	5.5	1.1	3.8	1.1	A-	A-	A-
ELA	8	735658	10	A-V.4.1.1	2	6419	0.80	0.06	0.80	0.08	0.06	0.00	0.44	-0.26	0.44	-0.24	-0.21	-0.0144	0.0338	-4.1	0.9	-6.0	0.8	A-	A-	B-
ELA	8	163020	11	A.1.1.2	1	64027	0.81	0.12	0.81	0.04	0.04	0.00	0.48	-0.32	0.48	-0.24	-0.20	-0.1312	0.0109	-9.9	0.9	-9.9	0.7	A+	A+	A-
ELA	8	799707	11	A.1.4.1	1	64027	0.78	0.78	0.06	0.12	0.04	0.00	0.34	0.34	-0.17	-0.19	-0.19	0.1014	0.0104	1.7	1.0	9.9	1.1	A+	A+	A+
ELA	8	281704	11	A.1.3.1	2	64027	0.80	0.02	0.05	0.80	0.13	0.00	0.41	-0.26	-0.27	0.41	-0.20	-0.0429	0.0107	-9.7	0.9	-9.4	0.9	A-	A+	A-
ELA	8	543473	11	A.1.4.1	3	64027	0.61	0.27	0.61	0.05	0.07	0.00	0.22	-0.10	0.22	-0.16	-0.11	1.0668	0.0090	9.9	1.2	9.9	1.3	A+	A+	A+
ELA	8	169939	11	B.1.1.1	2	64027	0.77	0.05	0.13	0.05	0.77	0.00	0.39	-0.34	-0.17	-0.16	0.39	0.1216	0.0103	-4.2	1.0	-5.5	1.0	A+	A+	A-
ELA	8	233686	11	B.1.1.1	3	64027	0.65	0.17	0.12	0.06	0.65	0.00	0.38	-0.21	-0.10	-0.28	0.38	0.8825	0.0091	1.7	1.0	1.7	1.0	A+	A-	A-
ELA	8	226587	11	A.1.3.1	2	64027	0.78	0.15	0.05	0.78	0.03	0.00	0.39	-0.24	-0.22	0.39	-0.19	0.1201	0.0103	-4.6	1.0	-6.1	0.9	A+	A+	A-
ELA	8	849389	11	B.2.2.1	2	64027	0.61	0.61	0.08	0.23	0.08	0.00	0.29	0.29	-0.23	-0.04	-0.22	1.0616	0.0090	9.9	1.1	9.9	1.2	A+	A+	A-
ELA	8	331486	11	B-V.4.1.1	2	6432	0.29	0.29	0.29	0.20	0.22	0.00	0.14	-0.06	0.14	-0.13	0.05	2.7022	0.0298	9.9	1.1	9.9	1.5	A-	A+	A-
ELA	8	853724	11	B-K.1.1.3	2	6432	0.74	0.74	0.04	0.08	0.14	0.00	0.46	0.46	-0.26	-0.22	-0.25	0.3391	0.0312	-5.3	0.9	-6.5	0.8	A-	A-	A-
ELA	8	181062	11	B-C.2.1.1	3	6432	0.46	0.28	0.20	0.46	0.05	0.00	0.33	-0.15	-0.09	0.33	-0.27	1.7986	0.0276	1.5	1.0	5.6	1.1	A-	A-	A+

ELA	8	107310	11	B-C.2.1.2	2	6432	0.43	0.06	0.43	0.16	0.35	0.00	0.25	-0.23	0.25	-0.18	-0.01	1.9741	0.0277	8.6	1.1	9.9	1.2	A-	A-	A-
ELA	8	398818	11	B-V.4.1.2	2	6432	0.73	0.73	0.05	0.19	0.02	0.00	0.34	0.34	-0.19	-0.25	-0.07	0.3893	0.0309	2.8	1.0	2.6	1.1	A+	B-	A-
ELA	8	223530	11	B-K.1.1.1	2	6432	0.73	0.15	0.08	0.73	0.04	0.00	0.45	-0.23	-0.28	0.45	-0.20	0.4273	0.0307	-5.4	0.9	-6.9	0.8	A-	A-	A-
ELA	8	621238	11	B-V.4.1.1	2	6432	0.68	0.14	0.10	0.07	0.68	0.00	0.44	-0.22	-0.20	-0.26	0.44	0.6714	0.0296	-4.6	0.9	-5.9	0.9	B-	A-	A-
ELA	8	171636	11	B-C.2.1.3	2	6432	0.29	0.14	0.11	0.46	0.29	0.01	0.09	-0.09	-0.27	0.16	0.09	2.6853	0.0298	9.9	1.2	9.9	1.6	A+	A-	A-
ELA	8	107287	12	B-V.4.1.1	2	6414	0.80	0.02	0.06	0.80	0.12	0.00	0.49	-0.26	-0.31	0.49	-0.26	-0.0358	0.0339	-7.2	0.9	-8.7	0.8	B-	A-	B-
ELA	8	945997	12	B-V.4.1.2	2	6414	0.59	0.27	0.08	0.06	0.59	0.00	0.48	-0.21	-0.27	-0.28	0.48	1.1944	0.0281	-9.3	0.9	-8.8	0.9	B-	A-	A-
ELA	8	923988	12	B-V.4.1.2	2	6414	0.34	0.45	0.14	0.34	0.07	0.00	0.25	-0.02	-0.12	0.25	-0.25	2.4353	0.0288	5.5	1.1	9.9	1.3	A-	B-	A-
ELA	8	165742	12	B-C.2.1.3	2	6414	0.70	0.70	0.19	0.06	0.05	0.00	0.47	0.47	-0.21	-0.32	-0.25	0.5995	0.0301	-7.0	0.9	-7.3	0.9	A+	A-	A-
ELA	8	131057	12	B-K.1.1.2	2	6414	0.66	0.08	0.05	0.20	0.66	0.00	0.37	-0.16	-0.27	-0.16	0.37	0.7973	0.0293	1.5	1.0	2.7	1.1	A+	A+	A+
ELA	8	130748	12	B-K.1.1.2	2	6414	0.65	0.07	0.65	0.12	0.16	0.00	0.46	-0.27	0.46	-0.26	-0.18	0.8433	0.0291	-6.1	0.9	-6.6	0.9	A-	A+	A-
ELA	8	217285	12	B-C.2.1.2	2	6414	0.60	0.60	0.20	0.07	0.13	0.00	0.41	0.41	-0.23	-0.27	-0.12	1.1451	0.0282	-2.2	1.0	-2.5	1.0	A-	A-	A-
ELA	8	341066	12	B-C.2.1.1	3	6414	0.58	0.16	0.58	0.18	0.08	0.00	0.24	-0.17	0.24	0.01	-0.22	1.2457	0.0280	9.9	1.2	9.9	1.2	A+	A+	A+
ELA	8	898747	13	B-C.2.1.1	2	6405	0.50	0.32	0.50	0.05	0.13	0.00	0.25	-0.04	0.25	-0.25	-0.13	1.6251	0.0275	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	8	148973	13	B-V.4.1.2	2	6405	0.57	0.08	0.16	0.18	0.57	0.00	0.27	-0.24	-0.08	-0.09	0.27	1.2640	0.0278	9.6	1.1	9.5	1.2	A-	A-	A+
ELA	8	432043	13	B-C.2.1.3	2	6405	0.42	0.42	0.17	0.14	0.27	0.00	0.17	0.17	-0.09	-0.17	0.03	1.9811	0.0277	9.9	1.2	9.9	1.3	A-	A+	A+
ELA	8	304889	13	B-K.1.1.2	2	6405	0.35	0.40	0.13	0.35	0.12	0.00	0.23	-0.01	-0.07	0.23	-0.26	2.3691	0.0286	6.0	1.1	9.9	1.3	B-	B-	A-
ELA	8	234976	13	B-V.4.1.1	2	6405	0.74	0.74	0.10	0.08	0.08	0.00	0.51	0.51	-0.24	-0.26	-0.29	0.3415	0.0311	-8.8	0.9	-9.9	0.8	C-	C-	B-
ELA	8	696881	13	B-V.4.1.1	2	6405	0.40	0.17	0.27	0.15	0.40	0.00	0.17	-0.02	-0.07	-0.11	0.17	2.0799	0.0279	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	8	926534	13	B-C.2.1.2	2	6405	0.61	0.22	0.11	0.61	0.06	0.00	0.31	-0.10	-0.22	0.31	-0.16	1.0459	0.0283	5.5	1.1	4.0	1.1	A-	A-	A-
ELA	8	516208	13	B-K.1.1.1	2	6405	0.47	0.13	0.47	0.12	0.28	0.00	0.23	-0.14	0.23	-0.21	0.01	1.7574	0.0275	9.9	1.1	9.9	1.2	A-	A-	A-
ELA	8	631490	14	B-C.2.1.2	3	6417	0.64	0.64	0.11	0.08	0.16	0.00	0.36	0.36	-0.20	-0.28	-0.08	0.9292	0.0288	2.3	1.0	5.1	1.1	A-	A-	A-
ELA	8	397076	14	B-K.1.1.1	3	6417	0.37	0.37	0.09	0.13	0.41	0.00	0.12	0.12	-0.24	-0.19	0.15	2.2839	0.0284	9.9	1.2	9.9	1.5	A-	A-	A-
ELA	8	546386	14	B-V.4.1.1	2	6417	0.46	0.06	0.20	0.27	0.46	0.00	0.26	-0.20	-0.13	-0.06	0.26	1.8165	0.0277	9.9	1.1	9.9	1.2	C-	B-	A-
ELA	8	977768	14	B-V.4.1.1	2	6417	0.56	0.06	0.22	0.56	0.15	0.00	0.40	-0.23	-0.24	0.40	-0.12	1.3322	0.0279	-2.0	1.0	-2.0	1.0	A-	A-	B-
ELA	8	624501	14	B-K.1.1.1	2	6417	0.59	0.16	0.59	0.20	0.04	0.00	0.33	-0.26	0.33	-0.09	-0.16	1.1662	0.0282	4.6	1.1	4.4	1.1	A-	A+	A-
ELA	8	586707	14	B-K.1.1.2	2	6417	0.71	0.11	0.71	0.09	0.09	0.00	0.43	-0.22	0.43	-0.23	-0.20	0.5628	0.0302	-3.1	1.0	-3.3	0.9	A-	A-	A+
ELA	8	945487	14	B-K.1.1.3	2	6417	0.58	0.20	0.07	0.15	0.58	0.00	0.36	-0.11	-0.24	-0.20	0.36	1.2556	0.0280	1.8	1.0	1.5	1.0	A+	A-	A-
ELA	8	940928	14	B-K.1.1.3	2	6417	0.22	0.26	0.30	0.22	0.22	0.00	0.12	0.04	-0.03	0.12	-0.13	3.1468	0.0324	5.6	1.1	9.9	1.8	A-	A-	A-
ELA	8	349293	15	B-K.1.1.1	2	6403	0.20	0.20	0.30	0.10	0.40	0.00	0.17	0.17	-0.10	-0.14	0.04	3.2940	0.0335	1.2	1.0	9.9	1.6	A-	A-	A-
ELA	8	457706	15	B-K.1.1.2	2	6403	0.66	0.06	0.12	0.66	0.16	0.00	0.34	-0.25	-0.19	0.34	-0.10	0.8544	0.0290	3.1	1.0	3.8	1.1	A-	A-	A-
ELA	8	901618	15	B-C.2.1.1	2	6403	0.59	0.18	0.11	0.11	0.59	0.01	0.45	-0.19	-0.21	-0.25	0.45	1.2009	0.0281	-7.6	0.9	-7.0	0.9	A-	A-	A-
ELA	8	690765	15	B-C.2.1.2	2	6403	0.62	0.06	0.62	0.05	0.27	0.00	0.35	-0.30	0.35	-0.25	-0.10	1.0495	0.0284	2.4	1.0	0.9	1.0	A-	A-	A-
ELA	8	691677	15	B-C.2.1.3	2	6403	0.46	0.17	0.46	0.21	0.16	0.00	0.29	-0.13	0.29	-0.09	-0.16	1.8224	0.0276	5.8	1.1	9.0	1.1	A-	A-	A-
ELA	8	599360	15	B-C.3.1.1	2	6403	0.42	0.20	0.12	0.42	0.26	0.00	0.18	-0.02	-0.26	0.18	0.00	2.0532	0.0279	9.9	1.2	9.9	1.3	A-	A-	A+
ELA	8	935495	15	B-V.4.1.1	2	6403	0.82	0.82	0.07	0.08	0.03	0.00	0.41	0.41	-0.22	-0.24	-0.20	-0.2211	0.0354	-3.3	0.9	-2.8	0.9	A-	A-	B-
ELA	8	988328	15	B-V.4.1.2	2	6403	0.46	0.27	0.13	0.12	0.46	0.00	0.35	-0.01	-0.16	-0.34	0.35	1.8201	0.0276	-0.3	1.0	2.4	1.0	A-	A-	A-
ELA	8	133772	16	B-K.1.1.2	2	6389	0.54	0.14	0.15	0.16	0.54	0.01	0.36	-0.10	-0.24	-0.14	0.36	1.4357	0.0277	2.2	1.0	1.7	1.0	A+	A+	A+
ELA	8	748704	16	B-K.1.1.3	2	6389	0.34	0.30	0.11	0.26	0.34	0.00	0.13	0.01	-0.19	-0.02	0.13	2.4382	0.0289	9.9	1.2	9.9	1.4	A+	A-	A+
ELA	8	384522	16	B-C.2.1.1	2	6389	0.29	0.54	0.13	0.29	0.03	0.00	0.21	0.02	-0.16	0.21	-0.25	2.7151	0.0301	4.3	1.1	9.9	1.4	A-	A-	A-
ELA	8	944914	16	B-C.2.1.2	2	6389	0.65	0.11	0.65	0.14	0.11	0.00	0.33	-0.14	0.33	-0.27	-0.06	0.8641	0.0289	3.8	1.1	3.7	1.1	A-	A+	A+
ELA	8	256840	16	B-C.2.1.3	3	6389	0.34	0.34	0.28	0.14	0.23	0.00	0.35	0.35	-0.23	-0.19	0.01	2.4207	0.0289	-4.1	1.0	3.0	1.1	A-	A+	A-
ELA	8	176390	16	B-V.4.1.2	2	6389	0.63	0.63	0.18	0.07	0.13	0.00	0.27	0.27	-0.14	-0.22	-0.07	0.9731	0.0286	9.0	1.1	7.4	1.1	B-	A-	A-
ELA	8	591173	16	B-V.4.1.1	2	6389	0.58	0.14	0.04	0.58	0.24	0.00	0.26	-0.16	-0.25	0.26	-0.05	1.2208	0.0280	9.9	1.1	8.8	1.1	A-	A-	A-
ELA	8	410203	16	B-V.4.1.2	2	6389	0.43	0.06	0.43	0.07	0.44	0.00	0.18	-0.33	0.18	-0.24	0.10	1.9690	0.0278	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	8	562603	17	B-C.2.1.2	2	6382	0.60	0.60	0.10	0.14	0.16	0.00	0.36	0.36	-0.24	-0.20	-0.09	1.1427	0.0283	2.5	1.0	1.9	1.0	A-	A-	A-
ELA	8	866979	17	B-C.2.1.3	2	6382	0.53	0.23	0.13	0.53	0.11	0.01	0.39	-0.13	-0.21	0.39	-0.21	1.4793	0.0278	-2.6	1.0	-1.4	1.0	A+	A-	A-
ELA	8	877689	17	B-C.3.1.1	2	6382	0.58	0.58	0.27	0.06	0.09	0.00	0.41	0.41	-0.15	-0.27	-0.24	1.2661	0.0281	-3.0	1.0	-2.0	1.0	A-	A+	A+
ELA	8	669149	17	B-C.3.1.2	3	6382	0.42	0.17	0.06	0.35	0.42	0.01	0.29	-0.27	-0.24	0.03	0.29	2.0422	0.0280	5.4	1.1	9.1	1.2	A-	A-	A-
ELA	8	676568	17	B-V.4.1.1	2	6382	0.88	0.04	0.88	0.02	0.06	0.00	0.47	-0.27	0.47	-0.23	-0.28	-0.7191	0.0406	-5.8	0.9	-7.6	0.7	A-	A-	A-
ELA	8	861722	17	B-K.1.1.1	2	6382	0.55	0.11	0.16	0.17	0.55	0.00	0.39	-0.26	-0.19	-0.10	0.39	1.3798	0.0279	-1.9	1.0	-1.4	1.0	A-	A-	A-

ELA	8	683726	17	B-K.1.1.3	2	6382	0.56	0.30	0.10	0.56	0.04	0.00	0.36	-0.17	-0.19	0.36	-0.24	1.3361	0.0280	1.0	1.0	1.6	1.0	A-	A-	A-
ELA	8	622472	17	B-C.2.1.1	2	6382	0.73	0.07	0.73	0.16	0.04	0.00	0.30	-0.24	0.30	-0.06	-0.26	0.4161	0.0310	4.4	1.1	7.6	1.2	A+	A-	A-
ELA	8	816859	18	B-C.3.1.1	3	6419	0.29	0.19	0.29	0.34	0.18	0.00	0.11	-0.08	0.11	0.05	-0.11	2.6741	0.0298	9.9	1.2	9.9	1.6	A-	A-	A+
ELA	8	476821	18	B-K.1.1.2	2	6419	0.74	0.07	0.74	0.10	0.09	0.00	0.45	-0.27	0.45	-0.30	-0.13	0.3613	0.0310	-5.3	0.9	-5.8	0.9	A-	A-	A-
ELA	8	521797	18	B-C.2.1.3	2	6419	0.37	0.29	0.15	0.37	0.19	0.00	0.23	-0.05	-0.17	0.23	-0.06	2.2457	0.0283	8.9	1.1	9.9	1.2	A-	A+	A-
ELA	8	811561	18	B-V.4.1.2	1	6419	0.61	0.04	0.04	0.30	0.61	0.00	0.50	-0.29	-0.30	-0.27	0.50	1.0731	0.0282	-9.9	0.9	-9.9	0.8	A-	A-	A-
ELA	8	162610	18	B-C.2.1.2	2	6419	0.57	0.57	0.15	0.17	0.12	0.00	0.32	0.32	-0.16	-0.19	-0.08	1.2896	0.0278	5.2	1.1	4.3	1.1	A-	A-	A-
ELA	8	838246	18	B-C.3.1.2	3	6419	0.43	0.18	0.22	0.43	0.17	0.00	0.28	-0.12	-0.07	0.28	-0.16	1.9420	0.0277	5.7	1.1	9.2	1.2	A-	A-	A-
ELA	8	363683	18	B-V.4.1.1	2	6419	0.74	0.10	0.07	0.09	0.74	0.00	0.44	-0.23	-0.24	-0.22	0.44	0.3699	0.0310	-4.7	0.9	-6.4	0.9	A-	A-	A-
ELA	8	118510	18	B-K.1.1.3	2	6419	0.65	0.65	0.10	0.09	0.16	0.00	0.29	0.29	-0.20	-0.20	-0.07	0.8342	0.0289	7.2	1.1	6.6	1.1	A-	A-	A+
ELA	8	207284	19	B-V.4.1.1	2	6383	0.48	0.20	0.26	0.48	0.06	0.00	0.31	-0.13	-0.16	0.31	-0.14	1.7393	0.0277	5.0	1.1	6.3	1.1	A+	A-	A+
ELA	8	788646	19	B-C.3.1.1	3	6383	0.67	0.67	0.13	0.13	0.06	0.00	0.46	0.46	-0.22	-0.25	-0.24	0.7889	0.0293	-6.9	0.9	-7.6	0.9	A-	A+	A-
ELA	8	994245	19	B-K.1.1.3	2	6383	0.53	0.20	0.53	0.15	0.12	0.00	0.34	-0.09	0.34	-0.21	-0.16	1.5099	0.0277	2.9	1.0	3.0	1.0	A-	A-	A+
ELA	8	196772	19	B-C.2.1.1	2	6383	0.48	0.10	0.20	0.48	0.21	0.00	0.29	-0.22	-0.17	0.29	-0.02	1.7239	0.0277	6.4	1.1	8.0	1.1	A+	A+	A+
ELA	8	638700	19	B-C.2.1.3	2	6383	0.66	0.07	0.16	0.10	0.66	0.00	0.42	-0.27	-0.17	-0.22	0.42	0.8291	0.0292	-3.4	1.0	-4.0	0.9	A-	A-	A+
ELA	8	619983	19	B-C.3.1.2	3	6383	0.55	0.55	0.24	0.13	0.07	0.00	0.39	0.39	-0.13	-0.21	-0.25	1.4274	0.0278	-2.0	1.0	-2.0	1.0	A+	A+	A+
ELA	8	591771	19	B-C.2.1.2	2	6383	0.48	0.15	0.48	0.20	0.17	0.00	0.21	-0.29	0.21	-0.02	0.02	1.7400	0.0277	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	8	743703	19	B-V.4.1.2	2	6383	0.55	0.06	0.13	0.26	0.55	0.00	0.38	-0.22	-0.20	-0.15	0.38	1.4127	0.0278	0.0	1.0	0.4	1.0	A-	A-	A-
ELA	8	775894	20	B-C.2.1.1	2	6383	0.78	0.04	0.78	0.10	0.08	0.00	0.45	-0.25	0.45	-0.26	-0.21	0.1207	0.0330	-5.2	0.9	-6.1	0.8	A+	A-	A-
ELA	8	355148	20	B-C.2.1.2	2	6383	0.49	0.21	0.13	0.17	0.49	0.00	0.39	-0.18	-0.22	-0.12	0.39	1.7031	0.0277	-0.9	1.0	-0.1	1.0	A-	A-	A-
ELA	8	389720	20	B-C.2.1.3	2	6383	0.83	0.83	0.04	0.06	0.07	0.00	0.48	0.48	-0.25	-0.30	-0.24	-0.2774	0.0362	-6.2	0.9	-8.8	0.7	A-	B-	A-
ELA	8	268233	20	B-V.4.1.2	2	6383	0.56	0.19	0.56	0.12	0.11	0.01	0.34	-0.16	0.34	-0.16	-0.16	1.3442	0.0280	3.2	1.0	3.1	1.1	A-	A-	A-
ELA	8	404546	20	B-K.1.1.1	2	6383	0.69	0.10	0.10	0.69	0.11	0.00	0.49	-0.29	-0.30	0.49	-0.16	0.6493	0.0300	-7.6	0.9	-8.4	0.8	B-	B-	A-
ELA	8	280924	20	B-V.4.1.1	2	6383	0.80	0.04	0.07	0.80	0.09	0.00	0.40	-0.20	-0.21	0.40	-0.22	-0.0685	0.0344	-1.9	1.0	-4.1	0.9	A-	B-	B-
ELA	8	644418	20	B-C.3.1.2	3	6383	0.67	0.67	0.10	0.07	0.16	0.00	0.41	0.41	-0.27	-0.27	-0.11	0.7913	0.0294	-2.5	1.0	-2.9	0.9	A-	A-	A+
ELA	8	864466	20	B-C.3.1.2	3	6383	0.17	0.58	0.06	0.18	0.17	0.00	0.06	0.20	-0.26	-0.14	0.06	3.5340	0.0355	5.2	1.1	9.9	2.2	A-	A-	A-
SCIENCE	4	873117	0	D.1.1.3	2	126348	0.72	0.04	0.15	0.09	0.72	0.00	0.42	-0.23	-0.25	-0.18	0.42	-0.0865	0.0072	9.9	1.1	7.3	1.1			
SCIENCE	4	792329	0	C.2.1.4	2	126348	0.61	0.61	0.12	0.17	0.10	0.00	0.35	0.35	-0.18	-0.13	-0.21	0.6209	0.0065	9.9	1.1	9.9	1.1			
SCIENCE	4	202096	0	A.1.3.4	3	126348	0.62	0.20	0.62	0.13	0.06	0.00	0.48	-0.25	0.48	-0.19	-0.27	0.6370	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	4	977880	0	A.3.1.3	1	126348	0.94	0.02	0.02	0.94	0.02	0.00	0.32	-0.17	-0.16	0.32	-0.19	-1.8914	0.0117	-9.9	0.9	-9.9	0.8			
SCIENCE	4	498566	0	A.2.1.3	2	126348	0.80	0.05	0.80	0.03	0.11	0.00	0.29	-0.13	0.29	-0.13	-0.19	-0.5591	0.0079	9.9	1.1	9.9	1.3			
SCIENCE	4	984952	0	A.2.2.1	2	126348	0.72	0.11	0.10	0.06	0.72	0.00	0.43	-0.24	-0.19	-0.24	0.43	0.0471	0.0070	-4.8	1.0	-7.1	1.0			
SCIENCE	4	636145	0	A.1.1.2	2	126348	0.77	0.08	0.10	0.05	0.77	0.00	0.40	-0.22	-0.22	-0.20	0.40	-0.2827	0.0074	1.7	1.0	-5.6	1.0			
SCIENCE	4	715634	0	A.1.3.2	2	126348	0.87	0.05	0.04	0.03	0.87	0.00	0.50	-0.29	-0.29	-0.24	0.50	-1.2404	0.0094	-9.9	0.9	-9.9	0.7			
SCIENCE	4	223677	0	A.2.1.1	2	126348	0.58	0.10	0.58	0.18	0.14	0.00	0.40	-0.26	0.40	-0.18	-0.14	0.9364	0.0064	3.5	1.0	4.7	1.0			
SCIENCE	4	967419	0	A.2.1.2	2	126348	0.67	0.06	0.67	0.11	0.16	0.00	0.43	-0.28	0.43	-0.18	-0.21	0.3531	0.0067	-1.0	1.0	-1.7	1.0			
SCIENCE	4	946127	0	A.3.1.1	2	126348	0.41	0.26	0.26	0.07	0.41	0.00	0.36	-0.13	-0.16	-0.19	0.36	1.2709	0.0063	9.9	1.0	9.9	1.1			
SCIENCE	4	617465	0	A.3.1.1	2	126348	0.83	0.06	0.83	0.06	0.05	0.00	0.55	-0.31	0.55	-0.29	-0.30	-0.6789	0.0081	-9.9	0.8	-9.9	0.6			
SCIENCE	4	431619	0	B.3.3.2	2	126348	0.80	0.07	0.06	0.80	0.06	0.00	0.51	-0.26	-0.30	0.51	-0.26	-0.6402	0.0080	-9.9	0.9	-9.9	0.8			
SCIENCE	4	581655	0	B.3.2.1	2	126348	0.81	0.05	0.06	0.81	0.08	0.00	0.52	-0.28	-0.27	0.52	-0.28	-0.5837	0.0079	-9.9	0.9	-9.9	0.7			
SCIENCE	4	804905	0	B.3.2.3	2	126348	0.55	0.55	0.05	0.15	0.24	0.00	0.34	0.34	-0.19	-0.13	-0.18	1.0190	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	723826	0	C.1.1.1	2	126348	0.76	0.07	0.11	0.05	0.76	0.00	0.42	-0.21	-0.16	-0.31	0.42	-0.2311	0.0073	0.1	1.0	0.2	1.0			
SCIENCE	4	166788	0	B.2.2.1	2	126348	0.32	0.32	0.27	0.20	0.21	0.00	0.28	0.28	-0.04	-0.15	-0.13	2.1914	0.0067	9.9	1.1	9.9	1.3			
SCIENCE	4	317104	0	D.1.3.3	2	126348	0.72	0.09	0.10	0.09	0.72	0.00	0.46	-0.24	-0.27	-0.20	0.46	0.0265	0.0070	-9.6	1.0	-9.9	0.9			
SCIENCE	4	631407	0	D.2.1.2	2	126348	0.86	0.03	0.07	0.86	0.04	0.00	0.43	-0.26	-0.23	0.43	-0.22	-0.8476	0.0084	-9.9	0.9	-9.9	0.8			
SCIENCE	4	351911	0	C.3.1.2	3	126348	0.88	0.03	0.88	0.06	0.04	0.00	0.43	-0.24	0.43	-0.24	-0.24	-1.1898	0.0093	-9.9	0.9	-9.9	0.8			
SCIENCE	4	608218	0	C.3.1.3	2	126348	0.76	0.07	0.76	0.06	0.10	0.00	0.35	-0.20	0.35	-0.15	-0.20	-0.1840	0.0073	9.8	1.0	9.9	1.1			
SCIENCE	4	859060	0	A.1.3.1	2	126348	0.81	0.03	0.12	0.81	0.04	0.00	0.50	-0.26	-0.32	0.50	-0.25	-0.6652	0.0081	-9.9	0.9	-9.9	0.8			
SCIENCE	4	938478	0	D.1.1.1	2	126348	0.55	0.55	0.20	0.13	0.12	0.00	0.35	0.35	-0.11	-0.21	-0.18	0.9388	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	278887	0	B.1.1.3	2	126348	0.89	0.04	0.03	0.03	0.89	0.00	0.40	-0.25	-0.20	-0.21	0.40	-1.2138	0.0093	-9.9	0.8	-9.9	0.7			
SCIENCE	4	655420	0	D.1.2.3	2	126348	0.59	0.59	0.09	0.16	0.16	0.00	0.38	0.38	-0.13	-0.21	-0.19	0.8231	0.0064	9.9	1.1	9.9	1.1			

SCIENCE	4	878558	0	B.1.1.5	1	126348	0.93	0.03	0.02	0.93	0.02	0.00	0.40	-0.21	-0.25	0.40	-0.20	-1.8682	0.0116	-9.9	0.9	-9.9	0.7			
SCIENCE	4	844519	0	A.2.1.2	3	126348	0.54	0.31	0.54	0.07	0.08	0.00	0.32	-0.18	0.32	-0.10	-0.18	1.1568	0.0064	9.9	1.1	9.9	1.2			
SCIENCE	4	609015	0	A.1.3.3	2	126348	0.76	0.05	0.09	0.76	0.10	0.00	0.44	-0.25	-0.22	0.44	-0.23	-0.1168	0.0072	-9.9	0.9	-9.9	0.9			
SCIENCE	4	126529	0	C.1.1.1	1	126348	0.85	0.02	0.85	0.04	0.08	0.00	0.39	-0.19	0.39	-0.22	-0.24	-1.0367	0.0089	1.9	1.0	-2.7	1.0			
SCIENCE	4	621121	0	B.3.1.1	2	126348	0.78	0.09	0.09	0.04	0.78	0.00	0.49	-0.28	-0.23	-0.29	0.49	-0.4775	0.0077	-8.0	1.0	-9.9	0.9			
SCIENCE	4	637707	0	A.1.1.1	2	126348	0.77	0.09	0.77	0.06	0.08	0.00	0.51	-0.28	0.51	-0.31	-0.22	-0.2748	0.0074	-9.9	0.9	-9.9	0.8			
SCIENCE	4	245129	0	A.3.2.1	1	126348	0.82	0.09	0.04	0.82	0.05	0.00	0.50	-0.28	-0.28	0.50	-0.26	-0.7027	0.0081	-9.9	0.9	-9.9	0.8			
SCIENCE	4	562486	0	B.3.3.3	2	126348	0.67	0.67	0.17	0.04	0.13	0.00	0.44	0.44	-0.24	-0.25	-0.21	0.3945	0.0067	-9.5	1.0	-4.4	1.0			
SCIENCE	4	709678	0	B.3.3.4	1	126348	0.81	0.05	0.07	0.81	0.07	0.00	0.49	-0.27	-0.27	0.49	-0.26	-0.5638	0.0079	-9.9	0.9	-9.9	0.8			
SCIENCE	4	792776	0	D.1.3.4	2	126348	0.51	0.51	0.11	0.15	0.22	0.00	0.39	0.39	-0.18	-0.27	-0.10	1.1865	0.0064	4.9	1.0	9.9	1.1			
SCIENCE	4	996813	0	A.1.3.5	2	126348	0.72	0.72	0.09	0.08	0.11	0.00	0.51	0.51	-0.27	-0.24	-0.27	0.0409	0.0070	-9.9	0.9	-9.9	0.8			
SCIENCE	4	277029	0	A.2.2.1	2	126348	0.69	0.10	0.14	0.69	0.07	0.00	0.48	-0.21	-0.22	0.48	-0.31	0.2755	0.0068	-9.9	0.9	-9.9	0.9			
SCIENCE	4	605492	0	A.2.1.4	2	126348	0.71	0.71	0.08	0.15	0.05	0.00	0.53	0.53	-0.17	-0.37	-0.27	0.0425	0.0070	-9.9	0.9	-9.9	0.8			
SCIENCE	4	403198	0	A.1.3.4	2	126348	0.71	0.09	0.07	0.71	0.12	0.00	0.47	-0.17	-0.28	0.47	-0.28	0.0516	0.0070	-9.9	1.0	-9.9	0.9			
SCIENCE	4	250346	0	A.1.1.2	2	126348	0.61	0.07	0.61	0.10	0.21	0.00	0.39	-0.25	0.39	-0.20	-0.15	0.7568	0.0065	9.9	1.0	9.9	1.1			
SCIENCE	4	748591	0	A.1.3.1	2	126348	0.56	0.05	0.56	0.14	0.25	0.00	0.44	-0.13	0.44	-0.15	-0.31	0.9884	0.0064	-9.9	1.0	-7.1	1.0			
SCIENCE	4	434653	0	A.3.2.1	2	126348	0.79	0.08	0.79	0.04	0.09	0.00	0.44	-0.24	0.44	-0.20	-0.25	-0.3336	0.0075	-9.9	0.9	-9.9	0.9			
SCIENCE	4	350312	0	A.3.2.3	2	126348	0.55	0.14	0.05	0.26	0.55	0.00	0.39	-0.31	-0.15	-0.12	0.39	0.9029	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	205060	0	A.3.1.4	2	126348	0.79	0.09	0.07	0.06	0.79	0.00	0.54	-0.29	-0.30	-0.26	0.54	-0.4092	0.0076	-9.9	0.9	-9.9	0.7			
SCIENCE	4	432879	0	A.3.1.1	2	126348	0.87	0.05	0.04	0.03	0.87	0.00	0.50	-0.28	-0.27	-0.27	0.50	-1.0867	0.0090	-9.9	0.8	-9.9	0.7			
SCIENCE	4	494584	0	A.3.1.2	2	126348	0.49	0.10	0.29	0.11	0.49	0.00	0.43	-0.29	-0.12	-0.22	0.43	1.2296	0.0064	-9.9	1.0	-6.5	1.0			
SCIENCE	4	708985	0	A.3.2.3	3	126348	0.50	0.50	0.12	0.17	0.22	0.00	0.40	0.40	-0.15	-0.12	-0.25	1.3664	0.0064	4.5	1.0	9.9	1.1			
SCIENCE	4	186276	0	A.3.3.1	2	126348	0.77	0.11	0.06	0.77	0.07	0.00	0.42	-0.24	-0.23	0.42	-0.19	-0.2710	0.0074	-1.1	1.0	-2.1	1.0			
SCIENCE	4	804287	0	A.3.3.2	2	126348	0.75	0.02	0.09	0.75	0.14	0.00	0.18	-0.15	-0.12	0.18	-0.06	0.0379	0.0070	9.9	1.2	9.9	1.3			
SCIENCE	4	986166	0	D.3.1.1	2	126348	0.61	0.16	0.09	0.61	0.14	0.00	0.43	-0.20	-0.26	0.43	-0.17	0.7418	0.0065	-9.1	1.0	-9.9	1.0			
SCIENCE	4	190692	0	C.3.1.1	2	126348	0.71	0.71	0.06	0.14	0.09	0.00	0.40	0.40	-0.28	-0.15	-0.22	0.1130	0.0069	5.2	1.0	-2.4	1.0			
SCIENCE	4	153783	0	D.1.3.2	2	126348	0.67	0.07	0.08	0.18	0.67	0.00	0.42	-0.29	-0.27	-0.13	0.42	0.2510	0.0068	7.5	1.0	8.6	1.1			
SCIENCE	4	877187	0	D.1.3.4	3	126348	0.58	0.58	0.08	0.21	0.14	0.00	0.34	0.34	-0.25	-0.13	-0.14	0.8327	0.0064	9.9	1.1	9.9	1.1			
SCIENCE	4	928433	0	C.2.1.1	2	126348	0.84	0.84	0.04	0.09	0.03	0.00	0.35	0.35	-0.21	-0.17	-0.22	-0.7813	0.0083	0.1	1.0	7.9	1.1			
SCIENCE	4	243383	0	B.3.3.5	2	126348	0.80	0.80	0.04	0.04	0.12	0.00	0.51	0.51	-0.27	-0.28	-0.29	-0.4023	0.0076	-9.9	0.8	-9.9	0.8			
SCIENCE	4	530823	0	D.1.2.2	2	126348	0.60	0.60	0.15	0.11	0.14	0.00	0.30	0.30	-0.11	-0.09	-0.23	0.7645	0.0065	9.9	1.1	9.9	1.2			
SCIENCE	4	156731	0	C.2.1.2	2	126348	0.63	0.09	0.15	0.13	0.63	0.00	0.44	-0.26	-0.19	-0.22	0.44	0.6484	0.0065	-9.9	1.0	-9.9	0.9			
SCIENCE	4	969822	0	C.1.1.2	2	126348	0.83	0.05	0.09	0.83	0.03	0.00	0.50	-0.29	-0.29	0.50	-0.24	-0.7795	0.0083	-9.9	0.9	-9.9	0.8			
SCIENCE	4	662398	1	C.2.1.2	2	10897	0.53	0.13	0.09	0.53	0.25	0.00	0.40	-0.15	-0.24	0.40	-0.17	1.0434	0.0218	2.9	1.0	3.3	1.1	A-	A-	A-
SCIENCE	4	827046	1	A.1.1.4	2	10897	0.74	0.74	0.07	0.05	0.13	0.00	0.52	0.52	-0.26	-0.25	-0.30	-0.1976	0.0246	-8.6	0.9	-9.1	0.8	A+	A-	A-
SCIENCE	4	603810	1	A.1.2.3	2	10897	0.66	0.09	0.66	0.06	0.18	0.00	0.41	-0.21	0.41	-0.27	-0.17	0.3231	0.0228	2.6	1.0	0.2	1.0	A+	A+	A+
SCIENCE	4	191864	1	D.1.2.1	2	10897	0.81	0.81	0.07	0.05	0.06	0.01	0.49	0.49	-0.19	-0.31	-0.30	-0.6764	0.0270	-7.5	0.9	-8.4	0.8	A+	A-	A-
SCIENCE	4	420181	1	B.2.1.1	2	10897	0.52	0.04	0.37	0.07	0.52	0.00	0.27	-0.29	-0.03	-0.24	0.27	1.0855	0.0218	9.9	1.2	9.9	1.3	A+	A+	A-
SCIENCE	4	475223	1	C.3.1.2	2	10897	0.79	0.05	0.08	0.79	0.08	0.01	0.51	-0.27	-0.28	0.51	-0.27	-0.4828	0.0259	-9.1	0.9	-6.6	0.8	A+	A+	A-
SCIENCE	4	837668	1	C.1.1.3	2	10897	0.86	0.86	0.03	0.03	0.07	0.00	0.42	0.42	-0.22	-0.23	-0.24	-1.1260	0.0302	-3.9	0.9	-6.4	0.8	A+	A-	A-
SCIENCE	4	927884	1	D.4.1.2	2	10897	0.39	0.22	0.26	0.39	0.13	0.00	0.36	-0.21	-0.08	0.36	-0.15	1.7601	0.0222	0.9	1.0	9.9	1.2	A+	A-	A-
SCIENCE	4	240355	1	D.4.1.3	2	10897	0.89	0.04	0.04	0.89	0.03	0.00	0.50	-0.30	-0.27	0.50	-0.26	-1.3941	0.0326	-9.1	0.8	-9.9	0.6	A+	B-	B-
SCIENCE	4	140673	1	D.1.1.3	2	10897	0.34	0.22	0.34	0.20	0.23	0.00	0.14	-0.05	0.14	-0.05	-0.04	2.0104	0.0227	9.9	1.3	9.9	1.7	A+	A-	A-
SCIENCE	4	716558	2	C.1.1.2	2	10404	0.42	0.17	0.27	0.42	0.13	0.00	0.30	-0.13	-0.03	0.30	-0.25	1.6110	0.0222	8.5	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	213442	2	A.1.1.1	2	10404	0.62	0.09	0.11	0.16	0.62	0.00	0.50	-0.25	-0.23	-0.24	0.50	0.6065	0.0226	-9.8	0.9	-9.3	0.9	A+	A-	A-
SCIENCE	4	730877	2	A.3.2.1	2	10404	0.66	0.12	0.10	0.66	0.12	0.00	0.50	-0.20	-0.30	0.50	-0.24	0.4081	0.0231	-9.2	0.9	-9.7	0.9	A+	A-	A-
SCIENCE	4	781288	2	C.1.2.1	2	10404	0.28	0.53	0.28	0.09	0.10	0.00	0.09	0.18	0.09	-0.22	-0.20	2.4239	0.0241	9.9	1.3	9.9	1.8	A-	A+	A-
SCIENCE	4	936606	2	C.2.1.2	2	10404	0.40	0.14	0.38	0.40	0.09	0.00	0.22	-0.21	0.06	0.22	-0.23	1.7485	0.0223	9.9	1.2	9.9	1.4	A-	A-	A-
SCIENCE	4	569146	2	B.3.1.3	2	10404	0.51	0.51	0.44	0.02	0.03	0.00	0.24	0.24	-0.15	-0.15	-0.14	1.1785	0.0220	9.9	1.2	9.9	1.3	A-	A-	A+
SCIENCE	4	424312	2	B.2.2.1	2	10404	0.74	0.09	0.74	0.10	0.07	0.00	0.28	-0.13	0.28	-0.12	-0.19	-0.0649	0.0247	9.0	1.1	9.9	1.3	A+	A+	A+
SCIENCE	4	547347	2	D.4.1.2	2	10404	0.45	0.26	0.15	0.45	0.13	0.01	0.29	-0.12	-0.12	0.29	-0.14	1.4574	0.0220	9.9	1.1	9.9	1.2	A+	A-	A+

SCIENCE	4	394813	2	B.2.1.1	2	10404	0.50	0.26	0.12	0.11	0.50	0.01	0.32	-0.07	-0.17	-0.23	0.32	1.2094	0.0220	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	698110	2	A.3.2.3	2	10404	0.35	0.35	0.20	0.24	0.21	0.00	0.25	0.25	-0.14	-0.01	-0.15	1.9920	0.0228	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	4	607477	3	D.1.1.1	1	10477	0.70	0.07	0.08	0.70	0.15	0.00	0.36	-0.25	-0.15	0.36	-0.17	0.1536	0.0239	4.8	1.1	1.7	1.0	A-	A-	A-
SCIENCE	4	152659	3	A.2.1.3	2	10477	0.45	0.05	0.17	0.45	0.32	0.00	0.34	-0.30	-0.20	0.34	-0.06	1.5184	0.0220	5.9	1.1	9.6	1.1	A-	A-	A-
SCIENCE	4	725878	3	B.1.1.2	2	10477	0.47	0.06	0.33	0.12	0.47	0.01	0.29	-0.27	-0.06	-0.14	0.29	1.4086	0.0220	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	832027	3	A.1.2.3	2	10477	0.57	0.17	0.06	0.57	0.20	0.00	0.44	-0.19	-0.27	0.44	-0.19	0.9015	0.0222	-2.9	1.0	-2.5	1.0	A+	A-	A-
SCIENCE	4	948109	3	D.1.2.2	2	10477	0.44	0.18	0.19	0.44	0.18	0.00	0.30	-0.22	-0.08	0.30	-0.09	1.5715	0.0221	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	4	153780	3	D.2.1.2	2	10477	0.82	0.03	0.82	0.07	0.08	0.00	0.56	-0.26	0.56	-0.29	-0.34	-0.6435	0.0279	-9.9	0.8	-9.9	0.6	A+	A-	A-
SCIENCE	4	784134	3	D.3.1.1	2	10477	0.52	0.23	0.13	0.12	0.52	0.01	0.29	-0.10	-0.14	-0.17	0.29	1.1678	0.0220	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	203924	3	C.3.1.1	2	10477	0.52	0.13	0.52	0.26	0.09	0.00	0.36	-0.24	0.36	-0.06	-0.24	1.1654	0.0220	5.9	1.1	7.7	1.1	A-	A+	A+
SCIENCE	4	489070	3	C.1.2.1	2	10477	0.56	0.16	0.20	0.08	0.56	0.00	0.16	-0.05	-0.06	-0.12	0.16	0.9502	0.0221	9.9	1.3	9.9	1.4	A-	A+	A+
SCIENCE	4	205375	3	B.3.2.3	3	10477	0.42	0.28	0.14	0.42	0.15	0.00	0.26	-0.03	-0.15	0.26	-0.17	1.6370	0.0221	9.9	1.1	9.9	1.3	A+	A-	A-
SCIENCE	4	785462	4	A.2.1.1	3	10460	0.68	0.13	0.68	0.10	0.10	0.00	0.39	-0.12	0.39	-0.25	-0.23	0.2887	0.0236	4.6	1.1	2.2	1.0	A+	A-	A-
SCIENCE	4	674538	4	C.2.2.1	2	10460	0.80	0.05	0.10	0.05	0.80	0.00	0.48	-0.22	-0.28	-0.28	0.48	-0.5338	0.0271	-6.8	0.9	-6.0	0.8	A+	A-	A-
SCIENCE	4	818522	4	A.1.3.1	2	10460	0.65	0.16	0.65	0.09	0.10	0.00	0.50	-0.27	0.50	-0.27	-0.19	0.4629	0.0231	-7.8	0.9	-7.9	0.9	A+	A-	A-
SCIENCE	4	710834	4	C.1.2.2	2	10460	0.52	0.52	0.15	0.18	0.14	0.00	0.26	0.26	-0.20	-0.06	-0.09	1.1117	0.0222	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	836489	4	D.3.1.2	2	10460	0.53	0.20	0.11	0.16	0.53	0.00	0.38	-0.18	-0.17	-0.16	0.38	1.1004	0.0222	7.0	1.1	8.3	1.1	A-	A-	A-
SCIENCE	4	174520	4	E.2.1.1	2	10460	0.62	0.10	0.13	0.62	0.15	0.00	0.45	-0.22	-0.25	0.45	-0.19	0.6128	0.0228	-2.5	1.0	-2.6	1.0	A-	A-	A-
SCIENCE	4	539328	4	D.2.2.1	2	10460	0.77	0.10	0.05	0.77	0.07	0.01	0.53	-0.31	-0.28	0.53	-0.26	-0.3312	0.0260	-9.9	0.9	-9.9	0.7	A-	A-	A-
SCIENCE	4	409005	4	D.2.2.1	2	10460	0.85	0.85	0.05	0.06	0.04	0.00	0.48	0.48	-0.29	-0.27	-0.21	-0.9632	0.0300	-7.4	0.9	-7.7	0.7	A+	A-	A-
SCIENCE	4	878080	4	B.2.2.2	2	10460	0.57	0.57	0.34	0.04	0.03	0.01	0.33	0.33	-0.21	-0.12	-0.20	0.8479	0.0224	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	338594	4	A.1.2.3	2	10460	0.56	0.06	0.23	0.14	0.56	0.00	0.43	-0.24	-0.15	-0.27	0.43	0.9050	0.0224	0.3	1.0	-0.2	1.0	A-	A-	A-
SCIENCE	4	655464	5	C.2.1.3	3	10431	0.57	0.57	0.11	0.22	0.10	0.00	0.35	0.35	-0.30	-0.09	-0.14	0.9483	0.0222	8.5	1.1	7.6	1.1	A-	A-	A-
SCIENCE	4	695038	5	A.1.2.3	2	10431	0.61	0.09	0.08	0.21	0.61	0.00	0.39	-0.20	-0.30	-0.11	0.39	0.7057	0.0226	4.3	1.0	2.3	1.0	A-	A-	A-
SCIENCE	4	470077	5	B.1.1.1	2	10431	0.87	0.05	0.04	0.03	0.87	0.01	0.51	-0.36	-0.23	-0.25	0.51	-1.1036	0.0318	-8.4	0.8	-9.9	0.6	A+	B-	A-
SCIENCE	4	702333	5	A.3.3.1	3	10431	0.74	0.09	0.09	0.74	0.07	0.00	0.44	-0.23	-0.21	0.44	-0.24	-0.0569	0.0249	-2.9	1.0	-2.1	1.0	A+	A-	A-
SCIENCE	4	448370	5	A.2.1.1	1	10431	0.60	0.06	0.60	0.20	0.13	0.00	0.41	-0.24	0.41	-0.13	-0.25	0.7443	0.0225	1.9	1.0	2.3	1.0	A+	A-	A-
SCIENCE	4	471616	5	E.4.1.1	2	10431	0.28	0.28	0.26	0.31	0.15	0.00	0.13	0.13	-0.09	0.02	-0.07	2.4694	0.0241	9.9	1.2	9.9	1.8	B-	A-	A+
SCIENCE	4	500656	5	D.3.1.1	2	10431	0.89	0.05	0.02	0.03	0.89	0.00	0.38	-0.24	-0.21	-0.17	0.38	-1.3146	0.0338	-3.2	0.9	-2.9	0.9	A+	B-	A-
SCIENCE	4	322386	5	D.1.1.3	2	10431	0.66	0.04	0.20	0.10	0.66	0.00	0.36	-0.28	-0.05	-0.32	0.36	0.4239	0.0232	6.3	1.1	8.9	1.2	A+	A-	A+
SCIENCE	4	192176	5	A.2.1.1	2	10431	0.30	0.24	0.22	0.23	0.30	0.01	0.16	-0.10	-0.03	-0.03	0.16	2.3260	0.0236	9.9	1.2	9.9	1.6	A+	A-	A+
SCIENCE	4	572938	5	C.3.1.3	2	10431	0.33	0.38	0.11	0.18	0.33	0.00	0.26	0.01	-0.22	-0.13	0.26	2.1951	0.0232	8.4	1.1	9.9	1.3	A-	A-	A-
SCIENCE	4	170578	6	C.2.2.2	2	10429	0.55	0.25	0.14	0.06	0.55	0.00	0.38	-0.07	-0.28	-0.25	0.38	1.0041	0.0221	4.1	1.0	4.7	1.1	A+	A-	A-
SCIENCE	4	475058	6	E.2.1.1	2	10429	0.60	0.10	0.15	0.60	0.14	0.01	0.45	-0.24	-0.24	0.45	-0.17	0.7219	0.0224	-4.9	1.0	-4.1	0.9	A-	A-	A-
SCIENCE	4	244439	6	A.2.1.5	2	10429	0.61	0.08	0.61	0.13	0.17	0.00	0.37	-0.27	0.37	-0.16	-0.13	0.6472	0.0225	5.7	1.1	7.3	1.1	A+	A-	A-
SCIENCE	4	787415	6	D.1.1.2	2	10429	0.52	0.52	0.08	0.21	0.19	0.01	0.35	0.35	-0.19	-0.20	-0.10	1.1167	0.0220	6.3	1.1	6.5	1.1	A-	A-	A-
SCIENCE	4	664136	6	E.3.1.3	1	10429	0.39	0.24	0.18	0.18	0.39	0.00	0.22	-0.04	-0.11	-0.11	0.22	1.7700	0.0223	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	664441	6	D.2.2.1	2	10429	0.53	0.28	0.10	0.53	0.08	0.01	0.37	-0.12	-0.21	0.37	-0.25	1.0605	0.0220	4.7	1.0	4.9	1.1	A-	A-	A-
SCIENCE	4	539314	6	D.3.1.2	2	10429	0.54	0.14	0.18	0.54	0.14	0.00	0.37	-0.12	-0.16	0.37	-0.23	1.0095	0.0221	3.3	1.0	4.2	1.1	A-	A-	A-
SCIENCE	4	884578	6	D.2.1.2	2	10429	0.35	0.19	0.35	0.16	0.31	0.00	0.30	0.03	0.30	-0.18	-0.19	2.0198	0.0228	3.9	1.0	9.9	1.2	A-	A-	A-
SCIENCE	4	290429	6	C.1.2.1	2	10429	0.24	0.37	0.27	0.12	0.24	0.00	-0.03	0.11	0.05	-0.18	-0.03	2.6737	0.0252	9.9	1.4	9.9	2.2	A-	A-	A+
SCIENCE	4	892163	6	D.1.1.3	2	10429	0.26	0.08	0.19	0.26	0.46	0.00	0.22	-0.12	-0.29	0.22	0.11	2.4937	0.0244	7.7	1.1	9.9	1.4	A-	A-	A-
SCIENCE	4	109448	7	B.2.1.5	2	10458	0.53	0.15	0.19	0.53	0.12	0.00	0.38	-0.15	-0.18	0.38	-0.19	1.1178	0.0220	2.0	1.0	3.2	1.0	A+	A-	A-
SCIENCE	4	208030	7	C.3.1.1	2	10458	0.83	0.83	0.07	0.06	0.04	0.00	0.50	0.50	-0.27	-0.28	-0.25	-0.6823	0.0282	-7.8	0.9	-9.0	0.7	A+	A-	A-
SCIENCE	4	745027	7	B.3.3.2	1	10458	0.72	0.07	0.72	0.09	0.11	0.00	0.50	-0.27	0.50	-0.25	-0.26	0.0693	0.0242	-8.8	0.9	-9.5	0.8	A-	A-	A-
SCIENCE	4	144577	7	A.2.1.4	2	10458	0.59	0.22	0.59	0.09	0.10	0.00	0.46	-0.30	0.46	-0.17	-0.16	0.7865	0.0223	-5.4	1.0	-5.3	0.9	A-	A-	A-
SCIENCE	4	224512	7	E.4.1.2	2	10458	0.44	0.16	0.29	0.11	0.44	0.00	0.26	-0.27	0.06	-0.18	0.26	1.5562	0.0220	9.9	1.1	9.9	1.3	A+	A-	A-
SCIENCE	4	346720	7	E.3.1.1	2	10458	0.85	0.85	0.08	0.03	0.04	0.01	0.41	0.41	-0.22	-0.25	-0.22	-0.8385	0.0293	-3.2	0.9	-4.5	0.9	A-	A-	A+
SCIENCE	4	168647	7	D.1.1.3	1	10458	0.46	0.20	0.22	0.12	0.46	0.00	0.27	-0.07	-0.05	-0.26	0.27	1.4788	0.0220	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	4	670360	7	C.1.2.1	2	10458	0.44	0.17	0.44	0.19	0.19	0.00	0.21	-0.12	0.21	-0.04	-0.10	1.5673	0.0220	9.9	1.2	9.9	1.4	A-	A-	A-
SCIENCE	4	281277	7	A.1.3.2	3	10458	0.36	0.36	0.32	0.09	0.23	0.00	0.18	0.18	-0.01	-0.18	-0.07	1.9979	0.0227	9.9	1.2	9.9	1.5	A+	A+	A-

SCIENCE	4	847376	7	A.2.1.1	2	10458	0.46	0.34	0.06	0.46	0.13	0.00	0.30	-0.08	-0.21	0.30	-0.18	1.4402	0.0219	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	4	662423	8	D.2.2.2	2	10459	0.69	0.69	0.11	0.07	0.13	0.00	0.24	0.24	-0.12	-0.17	-0.09	0.2516	0.0237	9.9	1.2	9.9	1.4	A-	A-	A-
SCIENCE	4	966968	8	D.1.1.4	2	10459	0.56	0.09	0.56	0.18	0.16	0.00	0.35	-0.26	0.35	-0.11	-0.16	0.9548	0.0222	8.7	1.1	8.6	1.1	A-	A-	A-
SCIENCE	4	934665	8	B.3.3.1	2	10459	0.83	0.05	0.83	0.06	0.06	0.00	0.28	-0.18	0.28	-0.16	-0.11	-0.7112	0.0284	4.9	1.1	9.0	1.3	A+	A-	A-
SCIENCE	4	120861	8	A.1.1.2	1	10459	0.79	0.07	0.03	0.10	0.79	0.01	0.46	-0.29	-0.27	-0.21	0.46	-0.4161	0.0266	-5.0	0.9	-6.5	0.8	A+	A-	A-
SCIENCE	4	988169	8	D.2.2.1	2	10459	0.40	0.40	0.24	0.14	0.21	0.01	0.17	0.17	-0.03	-0.16	-0.03	1.7546	0.0223	9.9	1.3	9.9	1.5	A-	A-	A+
SCIENCE	4	451536	8	E.4.1.1	2	10459	0.28	0.44	0.13	0.28	0.15	0.00	0.13	-0.01	-0.15	0.13	0.01	2.4635	0.0241	9.9	1.2	9.9	1.7	A-	A-	A-
SCIENCE	4	716851	8	D.4.1.1	1	10459	0.87	0.04	0.04	0.05	0.87	0.00	0.54	-0.28	-0.26	-0.33	0.54	-1.0736	0.0313	-9.9	0.8	-9.9	0.6	A+	B-	A-
SCIENCE	4	747899	8	A.1.1.3	2	10459	0.64	0.12	0.64	0.15	0.09	0.00	0.41	-0.23	0.41	-0.19	-0.18	0.5204	0.0229	2.4	1.0	4.4	1.1	A-	A-	A-
SCIENCE	4	721567	8	A.1.1.1	2	10459	0.65	0.13	0.08	0.13	0.65	0.00	0.40	-0.11	-0.26	-0.24	0.40	0.4627	0.0231	2.8	1.0	2.5	1.0	A+	A-	A-
SCIENCE	4	386797	8	D.1.1.4	2	10459	0.63	0.05	0.63	0.26	0.06	0.00	0.45	-0.24	0.45	-0.25	-0.23	0.5951	0.0228	-3.2	1.0	-4.1	0.9	A+	A-	A-
SCIENCE	4	474520	9	A.2.2.3	3	10436	0.43	0.43	0.19	0.22	0.16	0.01	0.30	0.30	-0.05	-0.16	-0.17	1.6576	0.0223	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	4	944928	9	A.1.3.2	2	10436	0.65	0.17	0.09	0.65	0.09	0.00	0.47	-0.19	-0.24	0.47	-0.27	0.4774	0.0230	-4.9	1.0	-6.1	0.9	A+	A-	A+
SCIENCE	4	180980	9	A.1.2.4	2	10436	0.64	0.14	0.05	0.64	0.17	0.00	0.42	-0.18	-0.27	0.42	-0.21	0.5027	0.0230	0.8	1.0	0.1	1.0	A+	A-	A-
SCIENCE	4	742130	9	D.1.1.4	2	10436	0.28	0.15	0.28	0.13	0.44	0.00	0.24	-0.21	0.24	-0.19	0.07	2.4216	0.0241	7.2	1.1	9.9	1.5	A-	A-	A-
SCIENCE	4	972462	9	E.1.1.3	2	10436	0.63	0.63	0.15	0.12	0.10	0.00	0.37	0.37	-0.08	-0.24	-0.24	0.5855	0.0228	6.0	1.1	6.0	1.1	A-	A-	A-
SCIENCE	4	549254	9	D.4.1.3	2	10436	0.37	0.19	0.27	0.17	0.37	0.00	0.35	-0.24	-0.01	-0.19	0.35	1.9153	0.0227	-1.0	1.0	9.9	1.2	A-	A+	A+
SCIENCE	4	990137	9	D.2.2.1	2	10436	0.66	0.11	0.10	0.66	0.13	0.00	0.36	-0.18	-0.15	0.36	-0.19	0.4204	0.0232	7.8	1.1	6.3	1.1	A+	A-	A+
SCIENCE	4	224788	9	D.4.1.1	2	10436	0.29	0.05	0.51	0.15	0.29	0.00	0.11	-0.25	0.14	-0.17	0.11	2.3777	0.0240	9.9	1.3	9.9	1.7	A+	A+	A+
SCIENCE	4	855409	9	A.1.3.2	2	10436	0.56	0.56	0.17	0.15	0.12	0.01	0.39	0.39	-0.13	-0.16	-0.27	0.9596	0.0222	3.6	1.0	3.7	1.1	A+	A-	A+
SCIENCE	4	876197	9	A.1.3.1	1	10436	0.79	0.05	0.11	0.79	0.05	0.00	0.54	-0.30	-0.29	0.54	-0.27	-0.4087	0.0264	-9.9	0.9	-9.9	0.7	A+	A-	A-
SCIENCE	4	923858	10	A.1.3.2	2	10473	0.63	0.63	0.26	0.06	0.05	0.00	0.29	0.29	-0.07	-0.22	-0.26	0.5840	0.0227	9.9	1.2	9.9	1.2	A-	A-	A-
SCIENCE	4	135048	10	A.2.1.1	2	10473	0.63	0.06	0.10	0.20	0.63	0.01	0.44	-0.30	-0.25	-0.15	0.44	0.5447	0.0228	-1.2	1.0	-1.0	1.0	A+	A-	A+
SCIENCE	4	699174	10	D.1.1.1	2	10473	0.82	0.06	0.04	0.08	0.82	0.00	0.45	-0.25	-0.28	-0.22	0.45	-0.6796	0.0280	-5.3	0.9	-3.8	0.9	A-	A-	A-
SCIENCE	4	677933	10	A.3.1.4	2	10473	0.79	0.08	0.06	0.79	0.06	0.00	0.45	-0.24	-0.26	0.45	-0.22	-0.4323	0.0265	-4.4	0.9	-2.8	0.9	A-	A-	A-
SCIENCE	4	531099	10	D.1.1.1	2	10473	0.55	0.55	0.07	0.10	0.27	0.00	0.35	0.35	-0.20	-0.18	-0.14	0.9544	0.0222	9.9	1.1	9.9	1.1	A+	A-	A-
SCIENCE	4	120100	10	A.3.1.2	2	10473	0.42	0.21	0.15	0.42	0.22	0.00	0.38	-0.22	-0.14	0.38	-0.11	1.6363	0.0222	-0.5	1.0	6.8	1.1	A-	A-	A+
SCIENCE	4	868538	10	E.2.1.1	2	10473	0.61	0.12	0.61	0.09	0.18	0.01	0.41	-0.23	0.41	-0.16	-0.21	0.6910	0.0225	1.6	1.0	0.7	1.0	A+	A-	A-
SCIENCE	4	795222	10	A.1.3.1	2	10473	0.77	0.77	0.06	0.12	0.05	0.00	0.33	0.33	-0.23	-0.13	-0.19	-0.2913	0.0257	4.5	1.1	7.7	1.2	A+	A-	A-
SCIENCE	4	933841	10	A.1.1.3	2	10473	0.22	0.32	0.36	0.22	0.09	0.00	0.21	-0.12	-0.02	0.21	-0.06	2.8016	0.0258	5.4	1.1	9.9	1.7	A-	A-	A-
SCIENCE	4	967045	10	A.2.2.5	2	10473	0.40	0.23	0.40	0.23	0.13	0.00	0.24	0.04	0.24	-0.19	-0.15	1.7287	0.0224	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	966923	11	C.1.1.1	2	10454	0.87	0.06	0.03	0.04	0.87	0.01	0.38	-0.20	-0.23	-0.22	0.38	-1.1166	0.0315	-2.8	1.0	0.7	1.0	A+	B-	B-
SCIENCE	4	139856	11	D.2.1.1	2	10454	0.58	0.18	0.06	0.58	0.17	0.01	0.43	-0.17	-0.23	0.43	-0.24	0.8605	0.0223	-1.4	1.0	-0.5	1.0	A-	B-	A-
SCIENCE	4	460113	11	B.1.1.4	2	10454	0.59	0.25	0.10	0.59	0.06	0.00	0.53	-0.31	-0.27	0.53	-0.19	0.8036	0.0224	-9.9	0.9	-9.9	0.8	A-	A+	A-
SCIENCE	4	350517	11	D.1.1.3	3	10454	0.50	0.50	0.20	0.16	0.14	0.00	0.29	0.29	-0.13	-0.15	-0.10	1.2730	0.0221	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	910321	11	A.3.3.2	2	10454	0.36	0.12	0.34	0.18	0.36	0.00	0.21	-0.24	0.12	-0.21	0.21	1.9904	0.0228	9.9	1.2	9.9	1.4	A-	A-	A+
SCIENCE	4	587920	11	D.2.2.1	2	10454	0.75	0.06	0.06	0.13	0.75	0.00	0.44	-0.31	-0.24	-0.18	0.44	-0.1234	0.0250	-2.7	1.0	-3.1	0.9	A+	A-	A+
SCIENCE	4	947598	11	A.2.2.4	1	10454	0.82	0.06	0.82	0.03	0.08	0.00	0.45	-0.29	0.45	-0.24	-0.22	-0.6457	0.0279	-5.0	0.9	-6.0	0.8	A+	A-	A-
SCIENCE	4	514655	11	E.3.1.2	2	10454	0.30	0.47	0.05	0.18	0.30	0.00	0.21	-0.02	-0.23	-0.10	0.21	2.2885	0.0236	9.9	1.1	9.9	1.5	A+	A-	A-
SCIENCE	4	573253	11	B.2.1.2	3	10454	0.31	0.20	0.14	0.31	0.35	0.00	0.07	-0.15	-0.12	0.07	0.15	2.2679	0.0235	9.9	1.3	9.9	1.8	A-	A-	A+
SCIENCE	4	662081	11	A.2.1.1	2	10454	0.71	0.04	0.15	0.71	0.10	0.00	0.49	-0.26	-0.25	0.49	-0.26	0.1378	0.0240	-6.7	0.9	-8.4	0.8	A-	B-	B-
SCIENCE	4	632478	12	C.1.1.2	2	10482	0.60	0.23	0.07	0.60	0.10	0.00	0.40	-0.14	-0.25	0.40	-0.24	0.7726	0.0225	2.0	1.0	0.4	1.0	A-	A-	A-
SCIENCE	4	752124	12	A.3.1.1	2	10482	0.81	0.05	0.81	0.08	0.05	0.00	0.47	-0.27	0.47	-0.25	-0.24	-0.5698	0.0274	-6.2	0.9	-5.0	0.9	A+	A-	A-
SCIENCE	4	760658	12	B.1.1.1	2	10482	0.44	0.30	0.16	0.44	0.10	0.00	0.35	-0.18	-0.09	0.35	-0.19	1.5763	0.0222	5.4	1.1	9.9	1.2	A-	A-	A-
SCIENCE	4	129614	12	D.1.1.2	2	10482	0.63	0.11	0.15	0.63	0.11	0.00	0.47	-0.26	-0.19	0.47	-0.23	0.5884	0.0228	-4.4	1.0	-4.5	0.9	A-	A-	A-
SCIENCE	4	227108	12	D.4.1.3	2	10482	0.49	0.49	0.25	0.12	0.14	0.00	0.26	0.26	-0.07	-0.18	-0.11	1.3340	0.0221	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	4	635165	12	D.4.1.2	2	10482	0.78	0.78	0.05	0.06	0.10	0.01	0.41	0.41	-0.22	-0.20	-0.24	-0.3033	0.0259	-0.5	1.0	-0.2	1.0	A+	A-	A-
SCIENCE	4	249215	12	D.4.1.1	2	10482	0.68	0.16	0.68	0.06	0.09	0.00	0.48	-0.19	0.48	-0.29	-0.28	0.2898	0.0236	-6.3	0.9	-7.6	0.9	A+	A-	A-
SCIENCE	4	787639	12	B.1.1.1	2	10482	0.60	0.18	0.10	0.60	0.11	0.00	0.46	-0.21	-0.23	0.46	-0.23	0.7494	0.0225	-4.4	1.0	-5.8	0.9	A-	A-	A-
SCIENCE	4	366554	12	D.3.1.2	2	10482	0.58	0.58	0.10	0.21	0.11	0.00	0.42	0.42	-0.22	-0.16	-0.23	0.8351	0.0224	1.4	1.0	2.0	1.0	A-	A-	A-
SCIENCE	4	580007	12	A.1.3.3	2	10482	0.33	0.34	0.33	0.11	0.21	0.00	0.20	-0.05	0.20	-0.16	-0.04	2.1327	0.0231	9.9	1.2	9.9	1.5	A-	A-	A-

SCIENCE	8	514498	0	B.2.2.2	1	127027	0.62	0.62	0.07	0.12	0.19	0.00	0.35	0.35	-0.21	-0.30	-0.05	0.0153	0.0065	9.9	1.1	9.9	1.1			
SCIENCE	8	882506	0	C.2.1.2	2	127027	0.67	0.11	0.08	0.14	0.67	0.00	0.46	-0.23	-0.30	-0.18	0.46	-0.2283	0.0067	-9.9	1.0	-9.9	0.9			
SCIENCE	8	644318	0	D.1.1.4	2	127027	0.74	0.14	0.04	0.74	0.08	0.00	0.44	-0.24	-0.28	0.44	-0.21	-0.5325	0.0070	-9.9	0.9	-9.9	0.9			
SCIENCE	8	921811	0	C.3.1.1	2	127027	0.72	0.72	0.10	0.09	0.09	0.00	0.40	0.40	-0.26	-0.28	-0.08	-0.5455	0.0070	2.3	1.0	6.2	1.0			
SCIENCE	8	555840	0	C.2.1.3	2	127027	0.71	0.07	0.71	0.17	0.04	0.00	0.42	-0.23	0.42	-0.22	-0.22	-0.5533	0.0070	2.9	1.0	-6.7	1.0			
SCIENCE	8	838388	0	D.1.2.2	2	127027	0.59	0.59	0.14	0.13	0.14	0.00	0.41	0.41	-0.19	-0.21	-0.18	0.2593	0.0064	0.1	1.0	-0.4	1.0			
SCIENCE	8	455280	0	A.3.1.2	2	127027	0.75	0.75	0.05	0.13	0.06	0.00	0.54	0.54	-0.31	-0.30	-0.26	-0.6951	0.0072	-9.9	0.9	-9.9	0.7			
SCIENCE	8	819167	0	A.3.1.4	3	127027	0.59	0.13	0.14	0.14	0.59	0.00	0.39	-0.21	-0.14	-0.21	0.39	0.3165	0.0063	6.4	1.0	7.2	1.0			
SCIENCE	8	973106	0	D.3.1.3	2	127027	0.63	0.18	0.13	0.06	0.63	0.00	0.47	-0.21	-0.26	-0.24	0.47	0.0125	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	8	868382	0	D.3.1.3	2	127027	0.45	0.45	0.10	0.33	0.11	0.00	0.30	0.30	-0.11	-0.01	-0.35	0.9003	0.0063	9.9	1.1	9.9	1.2			
SCIENCE	8	357714	0	A.3.2.2	2	127027	0.79	0.06	0.06	0.09	0.79	0.00	0.55	-0.29	-0.32	-0.27	0.55	-1.0498	0.0077	-9.9	0.9	-9.9	0.7			
SCIENCE	8	788480	0	B.1.1.1	2	127027	0.59	0.15	0.59	0.07	0.18	0.00	0.46	-0.35	0.46	-0.14	-0.17	0.1944	0.0064	-9.9	1.0	-9.9	0.9			
SCIENCE	8	130392	0	C.2.1.1	2	127027	0.72	0.72	0.10	0.06	0.12	0.00	0.44	0.44	-0.14	-0.29	-0.26	-0.4872	0.0069	-9.9	1.0	-9.9	0.9			
SCIENCE	8	318190	0	B.2.1.1	2	127027	0.78	0.11	0.06	0.78	0.05	0.00	0.46	-0.15	-0.31	0.46	-0.29	-0.9769	0.0076	-9.9	1.0	-8.3	0.9			
SCIENCE	8	475280	0	D.1.1.4	2	127027	0.85	0.08	0.04	0.85	0.03	0.00	0.42	-0.25	-0.21	0.42	-0.24	-1.4494	0.0085	-9.9	0.9	-9.9	0.9			
SCIENCE	8	240709	0	C.1.1.1	2	127027	0.72	0.08	0.72	0.09	0.11	0.00	0.42	-0.22	0.42	-0.23	-0.19	-0.5238	0.0070	-4.6	1.0	-7.3	1.0			
SCIENCE	8	951587	0	A.1.1.3	2	127027	0.70	0.10	0.04	0.16	0.70	0.00	0.46	-0.25	-0.29	-0.21	0.46	-0.4299	0.0069	-9.9	1.0	-9.9	0.9			
SCIENCE	8	701116	0	A.1.2.3	2	127027	0.61	0.61	0.06	0.13	0.20	0.00	0.46	0.46	-0.30	-0.16	-0.24	0.0963	0.0064	-9.9	1.0	-9.9	0.9			
SCIENCE	8	366282	0	A.3.2.1	2	127027	0.81	0.03	0.04	0.13	0.81	0.00	0.41	-0.26	-0.23	-0.23	0.41	-1.2786	0.0081	8.7	1.0	8.3	1.1			
SCIENCE	8	476982	0	B.3.1.3	2	127027	0.84	0.05	0.05	0.84	0.06	0.00	0.49	-0.25	-0.27	0.49	-0.28	-1.4158	0.0084	-9.9	0.9	-9.9	0.7			
SCIENCE	8	486390	0	A.1.1.1	2	127027	0.74	0.06	0.15	0.74	0.05	0.00	0.34	-0.16	-0.18	0.34	-0.23	-0.7005	0.0072	9.9	1.1	9.9	1.2			
SCIENCE	8	238278	0	A.1.1.2	2	127027	0.80	0.80	0.06	0.04	0.10	0.00	0.53	0.53	-0.30	-0.31	-0.26	-1.0078	0.0076	-9.9	0.8	-9.9	0.7			
SCIENCE	8	769587	0	A.1.2.1	2	127027	0.63	0.22	0.06	0.63	0.09	0.00	0.44	-0.18	-0.31	0.44	-0.20	0.0207	0.0065	-9.9	1.0	-9.9	0.9			
SCIENCE	8	263931	0	A.1.1.4	2	127027	0.83	0.06	0.83	0.06	0.05	0.00	0.44	-0.25	0.44	-0.26	-0.20	-1.2743	0.0081	-9.9	0.9	-9.9	0.9			
SCIENCE	8	931017	0	B.2.1.4	2	127027	0.72	0.04	0.21	0.72	0.03	0.00	0.44	-0.29	-0.24	0.44	-0.23	-0.4539	0.0069	-9.9	1.0	-9.9	0.9			
SCIENCE	8	847050	0	A.2.2.3	2	127027	0.74	0.09	0.74	0.09	0.07	0.00	0.47	-0.21	0.47	-0.27	-0.26	-0.7346	0.0072	-9.9	1.0	-9.9	0.9			
SCIENCE	8	742950	0	B.3.3.3	2	127027	0.69	0.10	0.69	0.14	0.06	0.00	0.42	-0.24	0.42	-0.17	-0.25	-0.2272	0.0067	-9.9	1.0	-9.9	1.0			
SCIENCE	8	851347	0	A.2.1.5	2	127027	0.69	0.13	0.69	0.07	0.11	0.00	0.43	-0.17	0.43	-0.29	-0.20	-0.2976	0.0067	-6.5	1.0	-4.4	1.0			
SCIENCE	8	837499	0	A.2.1.1	2	127027	0.63	0.63	0.12	0.13	0.12	0.00	0.41	0.41	-0.22	-0.26	-0.11	0.0727	0.0065	-1.9	1.0	-1.5	1.0			
SCIENCE	8	899650	0	B.3.1.1	2	127027	0.84	0.05	0.04	0.07	0.84	0.00	0.52	-0.26	-0.29	-0.29	0.52	-1.3049	0.0082	-9.9	0.8	-9.9	0.7			
SCIENCE	8	451675	0	B.3.1.2	2	127027	0.76	0.07	0.10	0.76	0.08	0.00	0.27	-0.07	-0.25	0.27	-0.10	-0.7380	0.0072	9.9	1.1	9.9	1.3			
SCIENCE	8	288836	0	B.3.2.1	2	127027	0.67	0.11	0.12	0.10	0.67	0.00	0.53	-0.24	-0.30	-0.26	0.53	-0.1831	0.0066	-9.9	0.9	-9.9	0.8			
SCIENCE	8	654478	0	A.3.1.5	2	127027	0.68	0.08	0.08	0.17	0.68	0.00	0.41	-0.21	-0.19	-0.22	0.41	-0.3048	0.0067	6.1	1.0	7.5	1.0			
SCIENCE	8	982562	0	D.3.1.2	2	127027	0.72	0.14	0.06	0.08	0.72	0.00	0.47	-0.17	-0.29	-0.31	0.47	-0.4613	0.0069	-9.9	0.9	-9.9	0.8			
SCIENCE	8	298835	0	D.2.1.1	2	127027	0.54	0.11	0.54	0.17	0.19	0.00	0.26	-0.24	0.26	-0.07	-0.08	0.4791	0.0063	9.9	1.2	9.9	1.2			
SCIENCE	8	785295	0	A.3.1.5	2	127027	0.68	0.11	0.09	0.68	0.11	0.00	0.49	-0.24	-0.28	0.49	-0.22	-0.3857	0.0068	-9.9	1.0	-9.9	0.9			
SCIENCE	8	773976	0	A.1.1.4	2	127027	0.67	0.13	0.10	0.67	0.10	0.00	0.45	-0.19	-0.22	0.45	-0.27	-0.2280	0.0067	-9.9	1.0	-9.9	0.9			
SCIENCE	8	577084	0	B.2.1.5	2	127027	0.43	0.25	0.12	0.20	0.43	0.00	0.12	-0.08	-0.16	0.08	0.12	1.0205	0.0063	9.9	1.3	9.9	1.5			
SCIENCE	8	623536	0	D.1.2.2	2	127027	0.55	0.23	0.55	0.10	0.12	0.00	0.38	-0.09	0.38	-0.28	-0.20	0.4036	0.0063	9.9	1.0	8.9	1.0			
SCIENCE	8	551365	0	A.1.3.2	2	127027	0.59	0.14	0.14	0.59	0.13	0.00	0.38	-0.20	-0.22	0.38	-0.12	0.1906	0.0064	9.9	1.0	9.9	1.0			
SCIENCE	8	778285	0	A.3.1.1	2	127027	0.78	0.06	0.09	0.78	0.07	0.00	0.46	-0.26	-0.29	0.46	-0.18	-0.8080	0.0073	-9.9	0.9	-9.9	0.8			
SCIENCE	8	452101	0	D.1.3.1	1	127027	0.76	0.76	0.08	0.09	0.06	0.00	0.51	0.51	-0.28	-0.27	-0.26	-0.7986	0.0073	-9.9	0.9	-9.9	0.8			
SCIENCE	8	559488	0	A.3.3.2	2	127027	0.73	0.05	0.09	0.13	0.73	0.00	0.44	-0.29	-0.29	-0.14	0.44	-0.5894	0.0070	-9.1	1.0	0.5	1.0			
SCIENCE	8	618394	0	A.1.3.1	2	127027	0.74	0.10	0.09	0.74	0.07	0.00	0.49	-0.26	-0.25	0.49	-0.25	-0.6723	0.0071	-9.9	0.9	-9.9	0.8			
SCIENCE	8	325670	0	C.3.1.1	2	127027	0.59	0.19	0.59	0.07	0.15	0.00	0.26	-0.07	0.26	-0.18	-0.15	0.1659	0.0064	9.9	1.2	9.9	1.2			
SCIENCE	8	917389	0	A.1.1.1	2	127027	0.57	0.27	0.57	0.10	0.06	0.00	0.28	-0.01	0.28	-0.25	-0.25	0.3722	0.0063	9.9	1.2	9.9	1.2			
SCIENCE	8	682917	0	A.1.2.2	2	127027	0.61	0.11	0.61	0.21	0.07	0.00	0.39	-0.26	0.39	-0.12	-0.24	0.1267	0.0064	8.2	1.0	5.1	1.0			
SCIENCE	8	578398	0	A.1.2.4	2	127027	0.66	0.14	0.13	0.07	0.66	0.00	0.57	-0.28	-0.28	-0.29	0.57	-0.1249	0.0066	-9.9	0.8	-9.9	0.8			
SCIENCE	8	541135	0	D.1.2.2	2	127027	0.62	0.09	0.19	0.10	0.62	0.00	0.52	-0.30	-0.30	-0.16	0.52	0.0184	0.0065	-9.9	0.9	-9.9	0.9			
SCIENCE	8	874630	0	A.2.1.5	3	127027	0.51	0.21	0.17	0.51	0.11	0.00	0.33	-0.08	-0.20	0.33	-0.18	0.6608	0.0063	9.9	1.1	9.9	1.1			
SCIENCE	8	981393	0	A.2.2.2	2	127027	0.84	0.84	0.05	0.08	0.03	0.00	0.46	0.46	-0.26	-0.26	-0.23	-1.3955	0.0084	-9.9	0.9	-9.9	0.8			

SCIENCE	8	398279	0	A.2.2.3	2	127027	0.54	0.24	0.54	0.08	0.14	0.00	0.28	-0.03	0.28	-0.27	-0.15	0.5057	0.0063	9.9	1.1	9.9	1.2			
SCIENCE	8	444065	0	A.3.2.2	2	127027	0.74	0.74	0.07	0.06	0.12	0.00	0.44	0.44	-0.29	-0.31	-0.13	-0.8720	0.0074	9.8	1.0	9.9	1.1			
SCIENCE	8	988281	0	C.1.1.1	1	127027	0.49	0.23	0.10	0.18	0.49	0.00	0.38	-0.04	-0.29	-0.23	0.38	0.7933	0.0063	4.0	1.0	9.9	1.0			
SCIENCE	8	548651	0	C.1.1.2	2	127027	0.72	0.07	0.07	0.72	0.14	0.00	0.35	-0.19	-0.22	0.35	-0.14	-0.5397	0.0070	9.9	1.1	9.9	1.1			
SCIENCE	8	662094	0	C.2.1.1	2	127027	0.70	0.18	0.06	0.70	0.06	0.00	0.41	-0.14	-0.29	0.41	-0.27	-0.4027	0.0068	1.7	1.0	3.1	1.0			
SCIENCE	8	960881	0	C.1.1.3	2	127027	0.64	0.64	0.23	0.06	0.07	0.00	0.39	0.39	-0.14	-0.30	-0.23	-0.0020	0.0065	4.8	1.0	-3.0	1.0			
SCIENCE	8	569481	0	A.2.1.4	2	127027	0.72	0.18	0.05	0.72	0.05	0.00	0.40	-0.21	-0.25	0.40	-0.19	-0.5238	0.0070	4.4	1.0	-0.8	1.0			
SCIENCE	8	345086	1	B.3.2.3	2	10881	0.50	0.31	0.09	0.10	0.50	0.00	0.33	0.00	-0.29	-0.24	0.33	0.6064	0.0214	9.9	1.1	9.9	1.1	A+	A+	A+
SCIENCE	8	887071	1	A.1.2.3	2	10881	0.56	0.10	0.11	0.56	0.22	0.00	0.38	-0.19	-0.27	0.38	-0.10	0.3317	0.0215	2.5	1.0	2.8	1.0	A-	A+	A-
SCIENCE	8	472852	1	D.1.1.3	2	10881	0.30	0.14	0.31	0.30	0.24	0.00	0.02	-0.13	0.15	0.02	-0.07	1.6265	0.0228	9.9	1.3	9.9	1.7	A-	A-	A+
SCIENCE	8	775185	1	C.1.1.3	2	10881	0.36	0.36	0.15	0.14	0.34	0.00	0.35	0.35	-0.23	-0.20	-0.02	1.3125	0.0220	-1.0	1.0	6.9	1.1	A-	A-	A-
SCIENCE	8	464042	1	A.1.1.1	2	10881	0.64	0.64	0.10	0.08	0.18	0.00	0.44	0.44	-0.28	-0.32	-0.11	-0.1306	0.0223	-3.1	1.0	-4.4	0.9	A+	A-	A-
SCIENCE	8	137870	1	A.3.1.4	2	10881	0.37	0.21	0.15	0.27	0.37	0.00	0.21	-0.05	-0.20	-0.02	0.21	1.2488	0.0219	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	8	379194	1	B.2.2.2	1	10881	0.84	0.08	0.84	0.05	0.03	0.00	0.49	-0.27	0.49	-0.27	-0.25	-1.3828	0.0279	-8.7	0.9	-9.9	0.7	B+	A-	B-
SCIENCE	8	518723	1	A.2.1.2	2	10881	0.45	0.18	0.45	0.16	0.20	0.00	0.28	-0.14	0.28	-0.07	-0.13	0.8392	0.0214	9.9	1.1	9.9	1.2	A+	A+	A+
SCIENCE	8	616025	1	B.3.3.2	2	10881	0.19	0.43	0.19	0.17	0.21	0.00	-0.03	0.15	-0.03	-0.17	0.01	2.3698	0.0264	9.9	1.2	9.9	2.3	A+	A+	A+
SCIENCE	8	921783	1	C.2.1.1	2	10881	0.32	0.41	0.17	0.32	0.10	0.00	0.13	0.16	-0.20	0.13	-0.20	1.5180	0.0225	9.9	1.2	9.9	1.5	A-	A-	A-
SCIENCE	8	124765	1	A.1.2.1	2	10881	0.59	0.11	0.59	0.17	0.13	0.00	0.42	-0.30	0.42	-0.14	-0.17	0.1251	0.0218	-0.5	1.0	-0.8	1.0	A+	A-	A-
SCIENCE	8	398247	1	A.2.1.2	1	10881	0.58	0.58	0.26	0.08	0.07	0.00	0.33	0.33	-0.03	-0.31	-0.23	0.1907	0.0217	9.9	1.1	9.0	1.1	A+	A+	A-
SCIENCE	8	754104	2	C.2.2.1	1	10465	0.66	0.09	0.14	0.66	0.10	0.00	0.29	-0.26	-0.13	0.29	-0.04	-0.1803	0.0231	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	880699	2	D.1.1.4	2	10465	0.69	0.69	0.16	0.07	0.08	0.00	0.54	0.54	-0.27	-0.30	-0.28	-0.3030	0.0234	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	671560	2	B.2.1.1	2	10465	0.44	0.44	0.35	0.08	0.13	0.00	0.16	0.16	0.08	-0.27	-0.12	0.9753	0.0220	9.9	1.3	9.9	1.4	A+	A-	A-
SCIENCE	8	253386	2	A.2.1.2	2	10465	0.48	0.14	0.25	0.13	0.48	0.00	0.44	-0.18	-0.12	-0.29	0.44	0.7966	0.0219	-6.0	1.0	-2.7	1.0	A+	A-	A-
SCIENCE	8	220859	2	C.1.1.2	2	10465	0.61	0.09	0.16	0.13	0.61	0.00	0.50	-0.25	-0.20	-0.27	0.50	0.1031	0.0224	-9.9	0.9	-9.2	0.9	A+	A-	A-
SCIENCE	8	223582	2	A.2.1.4	2	10465	0.71	0.14	0.10	0.05	0.71	0.00	0.46	-0.24	-0.22	-0.24	0.46	-0.4299	0.0239	-4.4	1.0	-5.3	0.9	A+	A-	A-
SCIENCE	8	164315	2	A.1.1.2	2	10465	0.61	0.12	0.61	0.10	0.17	0.00	0.34	-0.24	0.34	-0.13	-0.12	0.1242	0.0224	8.8	1.1	9.9	1.2	A+	A-	A+
SCIENCE	8	567290	2	A.1.2.2	2	10465	0.58	0.06	0.58	0.06	0.29	0.00	0.28	-0.27	0.28	-0.29	-0.01	0.2485	0.0222	9.9	1.2	9.9	1.2	A-	A+	A-
SCIENCE	8	124019	2	A.2.2.2	2	10465	0.64	0.16	0.06	0.13	0.64	0.00	0.44	-0.20	-0.28	-0.19	0.44	-0.0640	0.0228	-2.4	1.0	-1.5	1.0	A-	A+	A+
SCIENCE	8	106258	2	C.1.1.1	2	10465	0.33	0.19	0.15	0.33	0.33	0.00	0.28	-0.12	-0.17	-0.05	0.28	1.5279	0.0229	3.8	1.0	9.9	1.2	A+	A+	A+
SCIENCE	8	459684	2	C.2.1.3	2	10465	0.64	0.12	0.05	0.19	0.64	0.00	0.50	-0.32	-0.28	-0.18	0.50	-0.0656	0.0228	-9.3	0.9	-9.9	0.9	A+	A-	A-
SCIENCE	8	833023	2	A.3.1.5	2	10465	0.58	0.58	0.08	0.11	0.21	0.00	0.48	0.48	-0.27	-0.26	-0.19	0.2431	0.0222	-8.8	0.9	-8.9	0.9	A-	A+	A+
SCIENCE	8	463092	3	A.1.3.2	2	10493	0.62	0.06	0.11	0.62	0.21	0.00	0.23	-0.28	-0.21	0.23	0.05	0.0694	0.0225	9.9	1.2	9.9	1.3	A+	A-	A-
SCIENCE	8	202532	3	A.1.1.1	2	10493	0.54	0.23	0.11	0.11	0.54	0.00	0.41	-0.13	-0.24	-0.23	0.41	0.4486	0.0220	1.0	1.0	0.8	1.0	A+	A+	A+
SCIENCE	8	940767	3	B.1.1.1	2	10493	0.34	0.12	0.34	0.08	0.46	0.00	0.05	-0.29	0.05	-0.25	0.28	1.4940	0.0228	9.9	1.4	9.9	1.7	A+	A+	A+
SCIENCE	8	783800	3	C.3.1.1	2	10493	0.76	0.13	0.05	0.06	0.76	0.00	0.49	-0.24	-0.27	-0.28	0.49	-0.7765	0.0252	-7.6	0.9	-8.8	0.8	A+	A-	A-
SCIENCE	8	275546	3	B.3.3.4	2	10493	0.62	0.10	0.13	0.14	0.62	0.00	0.49	-0.23	-0.20	-0.28	0.49	0.0272	0.0225	-8.5	0.9	-6.0	0.9	A+	A-	A+
SCIENCE	8	179422	3	A.2.1.1	2	10493	0.24	0.24	0.30	0.32	0.14	0.00	0.26	0.26	-0.09	-0.07	-0.11	2.0697	0.0248	-0.9	1.0	9.9	1.4	A-	A-	A-
SCIENCE	8	357503	3	C.2.1.1	2	10493	0.68	0.08	0.68	0.18	0.06	0.00	0.41	-0.19	0.41	-0.24	-0.19	-0.2971	0.0234	0.1	1.0	-2.8	1.0	B-	A-	A-
SCIENCE	8	366083	3	A.1.2.3	2	10493	0.42	0.42	0.34	0.06	0.18	0.00	0.33	0.33	-0.10	-0.29	-0.12	1.0432	0.0220	4.5	1.0	9.8	1.1	B-	A-	A-
SCIENCE	8	559284	3	A.2.1.5	2	10493	0.80	0.07	0.07	0.80	0.06	0.00	0.50	-0.27	-0.29	0.50	-0.23	-1.0787	0.0268	-9.2	0.9	-6.4	0.8	A+	A+	A-
SCIENCE	8	348373	3	B.3.1.1	2	10493	0.48	0.24	0.48	0.12	0.15	0.00	0.29	0.00	0.29	-0.23	-0.19	0.7573	0.0218	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	131478	3	A.3.2.1	2	10493	0.57	0.07	0.57	0.27	0.09	0.00	0.45	-0.28	0.45	-0.16	-0.28	0.3203	0.0221	-4.8	1.0	-4.9	0.9	A+	A-	A-
SCIENCE	8	161841	3	D.1.3.1	1	10493	0.57	0.22	0.11	0.57	0.10	0.00	0.41	-0.11	-0.22	0.41	-0.29	0.3100	0.0221	-0.2	1.0	-1.6	1.0	A-	A-	A+
SCIENCE	8	101960	4	A.2.1.1	2	10467	0.57	0.29	0.57	0.07	0.07	0.00	0.35	-0.04	0.35	-0.34	-0.26	0.3226	0.0220	7.1	1.1	6.3	1.1	A+	A+	A-
SCIENCE	8	252219	4	A.1.2.3	2	10467	0.46	0.11	0.23	0.46	0.21	0.00	0.14	-0.23	-0.02	0.14	0.04	0.8738	0.0218	9.9	1.3	9.9	1.4	A-	A-	A-
SCIENCE	8	818087	4	C.1.1.2	2	10467	0.69	0.69	0.14	0.08	0.08	0.00	0.55	0.55	-0.26	-0.31	-0.28	-0.3479	0.0236	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	187089	4	D.1.1.1	2	10467	0.48	0.48	0.27	0.13	0.11	0.00	0.23	0.23	-0.10	-0.12	-0.08	0.7599	0.0218	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	8	117232	4	C.2.1.2	2	10467	0.54	0.28	0.08	0.54	0.10	0.00	0.27	0.02	-0.26	0.27	-0.22	0.5101	0.0218	9.9	1.2	9.9	1.2	A+	A-	A-
SCIENCE	8	820471	4	A.1.3.3	3	10467	0.67	0.67	0.13	0.12	0.07	0.00	0.49	0.49	-0.29	-0.25	-0.19	-0.2287	0.0232	-7.8	0.9	-8.2	0.9	A+	A-	A-
SCIENCE	8	287949	4	C.2.1.2	2	10467	0.41	0.41	0.10	0.20	0.29	0.00	0.30	0.30	-0.26	-0.11	-0.05	1.1141	0.0220	6.2	1.1	9.9	1.2	B-	A-	A-
SCIENCE	8	580894	4	A.2.1.3	2	10467	0.39	0.23	0.21	0.39	0.17	0.00	0.28	-0.05	-0.06	0.28	-0.24	1.2462	0.0222	6.7	1.1	9.9	1.2	A+	A-	A-

SCIENCE	8	841349	4	A.1.1.4	2	10467	0.66	0.14	0.10	0.10	0.66	0.00	0.55	-0.26	-0.29	-0.27	0.55	-0.1330	0.0229	-9.9	0.9	-9.9	0.8	A-	A-	A-
SCIENCE	8	171001	4	A.3.2.2	2	10467	0.71	0.08	0.71	0.13	0.08	0.00	0.52	-0.25	0.52	-0.29	-0.24	-0.4447	0.0239	-9.9	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	200505	4	B.3.1.2	2	10467	0.40	0.40	0.14	0.14	0.32	0.00	0.23	0.23	-0.07	-0.15	-0.07	1.1972	0.0221	9.9	1.1	9.9	1.3	A-	A+	A-
SCIENCE	8	513374	4	D.1.2.2	2	10467	0.27	0.27	0.10	0.44	0.19	0.00	0.17	0.17	-0.29	0.12	-0.13	1.8765	0.0239	9.9	1.1	9.9	1.5	A-	A-	A-
SCIENCE	8	886449	5	A.1.2.3	2	10513	0.69	0.10	0.10	0.10	0.69	0.00	0.57	-0.28	-0.33	-0.25	0.57	-0.3531	0.0236	-9.9	0.8	-9.9	0.8	A-	A-	A-
SCIENCE	8	161866	5	B.3.3.1	2	10513	0.66	0.66	0.20	0.06	0.08	0.00	0.43	0.43	-0.16	-0.27	-0.27	-0.1547	0.0230	-1.4	1.0	-2.8	1.0	A+	A-	A-
SCIENCE	8	257216	5	C.2.1.3	2	10513	0.64	0.10	0.15	0.11	0.64	0.00	0.43	-0.25	-0.18	-0.20	0.43	-0.0282	0.0227	-1.1	1.0	-3.4	1.0	A-	A+	A-
SCIENCE	8	353356	5	A.2.1.1	2	10513	0.46	0.15	0.15	0.24	0.46	0.00	0.36	-0.22	-0.24	-0.03	0.36	0.8967	0.0219	5.9	1.1	6.9	1.1	A+	A-	A+
SCIENCE	8	745898	5	A.2.1.6	2	10513	0.83	0.06	0.83	0.05	0.06	0.00	0.53	-0.30	0.53	-0.29	-0.28	-1.2711	0.0281	-9.9	0.8	-9.9	0.6	A+	A-	A-
SCIENCE	8	168396	5	B.3.2.3	2	10513	0.68	0.21	0.05	0.06	0.68	0.00	0.49	-0.21	-0.31	-0.30	0.49	-0.2894	0.0234	-7.5	0.9	-5.5	0.9	A+	A-	A-
SCIENCE	8	961874	5	D.3.1.2	1	10513	0.75	0.05	0.11	0.09	0.75	0.00	0.51	-0.25	-0.28	-0.27	0.51	-0.7081	0.0250	-9.2	0.9	-9.9	0.8	A-	A-	A-
SCIENCE	8	605705	5	C.2.1.3	2	10513	0.52	0.17	0.19	0.12	0.52	0.00	0.46	-0.21	-0.14	-0.28	0.46	0.5902	0.0219	-6.8	0.9	-5.7	0.9	A+	A+	A+
SCIENCE	8	583386	5	A.1.1.1	2	10513	0.58	0.23	0.11	0.58	0.08	0.00	0.39	-0.07	-0.30	0.39	-0.25	0.2776	0.0222	3.7	1.0	4.3	1.1	A+	A-	A-
SCIENCE	8	846547	5	A.1.1.2	2	10513	0.42	0.26	0.42	0.13	0.19	0.00	0.21	0.00	0.21	-0.26	-0.03	1.0874	0.0221	9.9	1.2	9.9	1.4	A-	A-	A+
SCIENCE	8	146025	5	A.1.2.1	2	10513	0.49	0.16	0.49	0.14	0.20	0.00	0.29	-0.06	0.29	-0.26	-0.08	0.7200	0.0219	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	923923	5	D.1.3.2	2	10513	0.34	0.18	0.36	0.12	0.34	0.00	0.29	-0.16	-0.04	-0.17	0.29	1.4793	0.0227	6.0	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	416451	6	C.2.2.2	1	10480	0.41	0.11	0.13	0.41	0.35	0.00	0.29	-0.11	-0.18	0.29	-0.10	1.1593	0.0221	8.7	1.1	9.9	1.2	B-	A-	A-
SCIENCE	8	901437	6	A.2.1.6	3	10480	0.53	0.15	0.16	0.53	0.17	0.00	0.32	-0.20	-0.13	0.32	-0.11	0.5588	0.0219	9.9	1.1	9.7	1.1	A-	A-	A-
SCIENCE	8	488641	6	C.2.2.1	1	10480	0.61	0.22	0.12	0.61	0.06	0.00	0.34	-0.09	-0.25	0.34	-0.19	0.1357	0.0224	9.0	1.1	6.3	1.1	A-	A-	A-
SCIENCE	8	947344	6	A.1.2.2	2	10480	0.72	0.11	0.09	0.72	0.07	0.00	0.52	-0.25	-0.32	0.52	-0.23	-0.5231	0.0242	-9.9	0.9	-9.9	0.8	A+	A+	A+
SCIENCE	8	861746	6	B.3.3.1	2	10480	0.66	0.07	0.14	0.66	0.12	0.00	0.49	-0.25	-0.26	0.49	-0.23	-0.1553	0.0230	-7.7	0.9	-8.7	0.9	A-	A-	A-
SCIENCE	8	328135	6	D.3.1.3	2	10480	0.33	0.15	0.36	0.15	0.33	0.00	0.24	-0.20	0.08	-0.23	0.24	1.5298	0.0229	9.9	1.1	9.9	1.3	A-	A+	A+
SCIENCE	8	245072	6	A.1.3.2	3	10480	0.31	0.31	0.19	0.23	0.27	0.00	0.17	0.17	-0.16	-0.11	0.07	1.6685	0.0233	9.9	1.1	9.9	1.5	A-	A-	A+
SCIENCE	8	834603	6	A.2.2.3	2	10480	0.74	0.05	0.10	0.11	0.74	0.00	0.55	-0.28	-0.33	-0.25	0.55	-0.6220	0.0246	-9.9	0.9	-9.9	0.7	A+	A-	A+
SCIENCE	8	902815	6	C.3.1.1	2	10480	0.49	0.10	0.13	0.28	0.49	0.00	0.34	-0.29	-0.20	-0.03	0.34	0.7181	0.0219	9.1	1.1	9.9	1.1	A+	A+	A-
SCIENCE	8	178727	6	A.2.1.6	3	10480	0.85	0.85	0.05	0.06	0.04	0.00	0.49	0.49	-0.30	-0.27	-0.24	-1.4790	0.0297	-8.4	0.9	-9.9	0.7	A+	B-	A-
SCIENCE	8	396732	6	A.3.3.2	2	10480	0.20	0.06	0.20	0.56	0.17	0.00	0.19	-0.21	0.19	-0.01	-0.04	2.3422	0.0262	5.1	1.1	9.9	1.6	A-	A-	A+
SCIENCE	8	914660	6	D.1.3.3	2	10480	0.51	0.51	0.24	0.10	0.15	0.00	0.35	0.35	-0.18	-0.24	-0.07	0.6488	0.0219	5.6	1.1	5.6	1.1	B-	A-	A-
SCIENCE	8	694875	7	C.1.1.2	2	10519	0.45	0.21	0.45	0.17	0.18	0.00	0.34	-0.11	0.34	-0.19	-0.14	0.9530	0.0218	2.7	1.0	8.3	1.1	A+	A+	A+
SCIENCE	8	311975	7	C.2.1.2	2	10519	0.59	0.59	0.16	0.21	0.04	0.00	0.23	0.23	-0.06	-0.08	-0.29	0.2338	0.0222	9.9	1.2	9.9	1.3	A+	A+	A+
SCIENCE	8	552790	7	A.2.1.3	2	10519	0.35	0.21	0.25	0.35	0.18	0.00	0.12	0.04	-0.05	0.12	-0.13	1.4308	0.0225	9.9	1.3	9.9	1.5	A+	A-	A-
SCIENCE	8	405608	7	A.2.1.1	2	10519	0.62	0.17	0.62	0.13	0.08	0.00	0.45	-0.18	0.45	-0.27	-0.21	0.0802	0.0224	-4.2	1.0	-5.4	0.9	A-	A-	A-
SCIENCE	8	671215	7	D.2.1.1	2	10519	0.41	0.27	0.18	0.14	0.41	0.00	0.26	-0.01	-0.19	-0.14	0.26	1.1553	0.0220	9.9	1.1	9.9	1.2	A+	A+	A-
SCIENCE	8	954841	7	A.3.1.2	1	10519	0.50	0.27	0.09	0.50	0.14	0.00	0.36	-0.13	-0.23	0.36	-0.16	0.6626	0.0218	4.2	1.0	4.3	1.1	A-	A-	A-
SCIENCE	8	667555	7	A.2.1.4	2	10519	0.68	0.09	0.11	0.68	0.12	0.00	0.38	-0.29	-0.24	0.38	-0.05	-0.2490	0.0233	3.8	1.0	7.1	1.1	A+	A-	A-
SCIENCE	8	576543	7	C.2.2.2	2	10519	0.36	0.36	0.19	0.27	0.17	0.00	0.29	0.29	-0.09	-0.06	-0.20	1.3934	0.0224	6.7	1.1	9.9	1.2	A-	A-	A+
SCIENCE	8	822298	7	A.1.1.3	2	10519	0.70	0.08	0.18	0.70	0.05	0.00	0.36	-0.27	-0.10	0.36	-0.24	-0.3689	0.0236	4.9	1.1	9.4	1.2	A+	A-	A+
SCIENCE	8	670589	7	A.2.2.1	2	10519	0.69	0.06	0.06	0.69	0.18	0.00	0.46	-0.29	-0.32	0.46	-0.16	-0.3345	0.0235	-4.3	1.0	-3.1	1.0	A+	A-	A-
SCIENCE	8	284866	7	B.3.3.3	2	10519	0.43	0.20	0.16	0.43	0.20	0.00	0.33	-0.11	-0.26	0.33	-0.05	1.0612	0.0219	4.4	1.0	9.9	1.2	A+	A-	A-
SCIENCE	8	245499	7	A.1.1.2	2	10519	0.72	0.21	0.04	0.72	0.03	0.00	0.45	-0.24	-0.29	0.45	-0.26	-0.4727	0.0240	-4.1	1.0	-4.5	0.9	B+	A-	A-
SCIENCE	8	195716	8	C.1.1.1	2	10516	0.35	0.35	0.19	0.27	0.19	0.00	0.26	0.26	-0.17	-0.10	-0.03	1.4024	0.0225	7.6	1.1	9.9	1.3	A-	A+	A-
SCIENCE	8	261081	8	C.2.1.3	2	10516	0.48	0.27	0.10	0.15	0.48	0.00	0.34	-0.10	-0.23	-0.16	0.34	0.7718	0.0217	5.1	1.0	7.1	1.1	A-	A+	A+
SCIENCE	8	750211	8	A.1.1.4	3	10516	0.46	0.25	0.46	0.18	0.10	0.00	0.33	-0.19	0.33	-0.11	-0.13	0.8414	0.0218	4.7	1.0	8.1	1.1	A-	A+	A+
SCIENCE	8	393060	8	A.1.2.3	3	10516	0.59	0.10	0.19	0.12	0.59	0.00	0.47	-0.24	-0.21	-0.23	0.47	0.2038	0.0221	-7.8	0.9	-7.8	0.9	A+	A-	A+
SCIENCE	8	994229	8	C.3.1.2	2	10516	0.61	0.07	0.11	0.21	0.61	0.00	0.31	-0.27	-0.24	-0.01	0.31	0.0806	0.0223	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	368452	8	A.3.1.3	2	10516	0.64	0.12	0.12	0.12	0.64	0.00	0.48	-0.21	-0.22	-0.28	0.48	-0.0758	0.0226	-8.0	0.9	-8.9	0.9	A-	A-	A-
SCIENCE	8	524304	8	C.2.2.3	3	10516	0.14	0.18	0.18	0.49	0.14	0.00	-0.01	-0.11	-0.20	0.25	-0.01	2.7820	0.0296	9.9	1.2	9.9	2.4	A-	A-	A-
SCIENCE	8	541160	8	A.1.2.1	2	10516	0.47	0.47	0.08	0.27	0.18	0.00	0.31	0.31	-0.25	-0.06	-0.15	0.8239	0.0218	8.7	1.1	9.9	1.1	B-	A+	A+
SCIENCE	8	434983	8	A.2.2.2	2	10516	0.64	0.09	0.16	0.64	0.10	0.00	0.42	-0.21	-0.25	0.42	-0.16	-0.0735	0.0226	-1.3	1.0	-2.7	1.0	A+	A-	A-
SCIENCE	8	765812	8	B.3.3.4	2	10516	0.66	0.66	0.12	0.12	0.10	0.00	0.57	0.57	-0.31	-0.29	-0.25	-0.1542	0.0228	-9.9	0.8	-9.9	0.7	A+	A-	A-
SCIENCE	8	258932	8	A.1.2.4	2	10516	0.49	0.16	0.26	0.49	0.08	0.00	0.30	-0.16	-0.04	0.30	-0.27	0.7048	0.0217	9.9	1.1	9.9	1.2	A+	A-	A-

SCIENCE	8	551708	8	D.2.1.3	2	10516	0.47	0.14	0.47	0.23	0.16	0.00	0.24	-0.17	0.24	-0.07	-0.08	0.8145	0.0218	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	8	336669	9	D.1.1.1	2	10487	0.55	0.15	0.13	0.55	0.17	0.00	0.27	-0.13	-0.15	0.27	-0.10	0.4600	0.0218	9.9	1.1	9.9	1.2	A+	A+	A-
SCIENCE	8	346566	9	A.2.2.3	2	10487	0.46	0.17	0.12	0.46	0.25	0.00	0.25	-0.16	-0.16	0.25	-0.03	0.8896	0.0217	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	204821	9	B.1.1.4	2	10487	0.67	0.06	0.67	0.06	0.21	0.00	0.37	-0.25	0.37	-0.30	-0.11	-0.1870	0.0230	3.5	1.0	2.3	1.0	A+	A-	A-
SCIENCE	8	238324	9	A.3.1.5	2	10487	0.63	0.11	0.13	0.63	0.12	0.00	0.41	-0.21	-0.22	0.41	-0.16	0.0051	0.0225	-1.1	1.0	-3.2	1.0	A+	A-	A-
SCIENCE	8	790122	9	C.3.1.1	3	10487	0.41	0.41	0.13	0.31	0.16	0.00	0.23	0.23	-0.22	0.09	-0.21	1.1498	0.0219	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	8	494687	9	A.1.3.1	1	10487	0.70	0.09	0.15	0.70	0.06	0.00	0.47	-0.25	-0.20	0.47	-0.29	-0.3693	0.0236	-6.3	0.9	-7.5	0.9	A-	A-	A-
SCIENCE	8	912131	9	A.2.2.3	2	10487	0.76	0.13	0.08	0.76	0.03	0.00	0.49	-0.24	-0.28	0.49	-0.28	-0.7196	0.0250	-8.4	0.9	-8.1	0.8	B-	A-	A-
SCIENCE	8	799325	9	A.1.1.2	2	10487	0.36	0.36	0.18	0.20	0.26	0.00	0.18	0.18	-0.10	-0.11	0.00	1.3759	0.0223	9.9	1.2	9.9	1.4	A+	A+	A+
SCIENCE	8	761004	9	B.2.1.5	2	10487	0.44	0.20	0.14	0.22	0.44	0.00	0.40	-0.11	-0.25	-0.16	0.40	0.9851	0.0218	-5.8	1.0	0.0	1.0	A-	A-	A-
SCIENCE	8	972668	9	C.2.1.3	2	10487	0.30	0.28	0.20	0.30	0.22	0.00	0.11	0.03	-0.19	0.11	0.04	1.7177	0.0233	9.9	1.2	9.9	1.6	A-	A-	A-
SCIENCE	8	980125	9	A.1.3.2	3	10487	0.39	0.22	0.39	0.22	0.16	0.00	0.20	-0.06	0.20	-0.08	-0.10	1.2258	0.0221	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	8	950417	9	D.3.1.1	2	10487	0.34	0.11	0.34	0.12	0.42	0.00	0.08	-0.25	0.08	-0.26	0.25	1.4640	0.0225	9.9	1.3	9.9	1.6	A+	A-	A-
SCIENCE	8	592347	10	D.1.1.2	2	10502	0.57	0.12	0.57	0.11	0.19	0.00	0.39	-0.24	0.39	-0.23	-0.10	0.3214	0.0220	1.7	1.0	1.8	1.0	A+	A-	A-
SCIENCE	8	882081	10	A.3.2.3	2	10502	0.54	0.11	0.18	0.54	0.17	0.00	0.44	-0.26	-0.19	0.44	-0.18	0.4858	0.0218	-6.2	1.0	-5.8	0.9	A+	A-	A-
SCIENCE	8	800353	10	D.3.1.2	2	10502	0.71	0.08	0.71	0.07	0.13	0.00	0.49	-0.18	0.49	-0.30	-0.28	-0.4565	0.0238	-8.3	0.9	-7.9	0.9	A-	A-	A-
SCIENCE	8	680753	10	C.3.1.2	2	10502	0.38	0.17	0.11	0.38	0.34	0.00	0.21	-0.16	-0.21	0.21	0.06	1.2954	0.0222	9.9	1.2	9.9	1.3	A-	A+	A-
SCIENCE	8	113453	10	A.2.1.2	2	10502	0.65	0.65	0.09	0.16	0.10	0.00	0.47	0.47	-0.24	-0.20	-0.27	-0.0897	0.0227	-6.7	0.9	-8.9	0.9	A-	A-	A-
SCIENCE	8	226902	10	A.3.1.1	2	10502	0.54	0.12	0.11	0.22	0.54	0.00	0.49	-0.23	-0.35	-0.14	0.49	0.4491	0.0219	-9.9	0.9	-9.9	0.9	A+	A+	A-
SCIENCE	8	259076	10	A.1.1.4	3	10502	0.42	0.42	0.11	0.39	0.08	0.00	0.23	0.23	-0.27	0.08	-0.25	1.0625	0.0219	9.9	1.2	9.9	1.3	A-	A-	A-
SCIENCE	8	680015	10	B.1.1.1	2	10502	0.64	0.14	0.64	0.07	0.16	0.00	0.41	-0.23	0.41	-0.27	-0.14	-0.0413	0.0226	-0.1	1.0	-2.0	1.0	A-	A-	A-
SCIENCE	8	382662	10	D.2.1.2	2	10502	0.29	0.31	0.14	0.29	0.25	0.00	-0.01	0.14	-0.16	-0.01	-0.01	1.7445	0.0234	9.9	1.4	9.9	1.8	A+	A+	A-
SCIENCE	8	120517	10	B.3.1.3	2	10502	0.55	0.23	0.12	0.55	0.10	0.00	0.29	0.02	-0.27	0.29	-0.21	0.4276	0.0219	9.9	1.1	9.9	1.2	A-	A-	A+
SCIENCE	8	457290	10	B.3.3.2	1	10502	0.53	0.10	0.11	0.53	0.26	0.00	0.36	-0.23	-0.22	0.36	-0.09	0.5281	0.0218	4.9	1.0	4.6	1.1	A-	A-	A-
SCIENCE	8	448262	10	A.2.1.4	3	10502	0.44	0.18	0.44	0.23	0.15	0.00	0.29	-0.12	0.29	-0.13	-0.12	0.9817	0.0218	9.5	1.1	9.9	1.2	A+	A+	A+
SCIENCE	8	130436	11	B.2.1.5	2	10554	0.50	0.50	0.34	0.09	0.08	0.00	0.36	0.36	-0.09	-0.24	-0.24	0.6863	0.0216	3.4	1.0	5.2	1.1	A-	A-	A-
SCIENCE	8	972159	11	A.3.3.1	2	10554	0.41	0.14	0.21	0.41	0.23	0.00	0.17	-0.20	-0.09	0.17	0.06	1.0983	0.0219	9.9	1.2	9.9	1.4	A+	A+	A+
SCIENCE	8	626816	11	A.1.2.4	2	10554	0.55	0.13	0.55	0.17	0.14	0.00	0.40	-0.20	0.40	-0.25	-0.09	0.4011	0.0218	-0.8	1.0	-1.2	1.0	A-	A-	A-
SCIENCE	8	197174	11	B.3.3.2	2	10554	0.46	0.24	0.14	0.46	0.16	0.00	0.32	-0.08	-0.22	0.32	-0.13	0.8554	0.0217	6.8	1.1	9.0	1.1	A-	A-	A+
SCIENCE	8	615734	11	A.3.1.4	2	10554	0.40	0.40	0.24	0.19	0.17	0.00	0.22	0.22	-0.07	-0.17	-0.02	1.1486	0.0219	9.9	1.2	9.9	1.3	A+	A+	A-
SCIENCE	8	191756	11	C.1.1.3	2	10554	0.59	0.59	0.12	0.13	0.15	0.00	0.44	0.44	-0.25	-0.22	-0.15	0.2165	0.0220	-4.0	1.0	-4.8	0.9	A+	A-	A+
SCIENCE	8	306248	11	A.3.3.2	2	10554	0.66	0.66	0.12	0.06	0.15	0.00	0.40	0.40	-0.25	-0.29	-0.09	-0.1362	0.0228	1.2	1.0	4.2	1.1	A+	A-	A-
SCIENCE	8	165086	11	C.3.1.3	2	10554	0.26	0.11	0.54	0.26	0.08	0.00	0.16	-0.16	0.12	0.16	-0.28	1.9042	0.0239	9.9	1.1	9.9	1.5	A-	A-	A+
SCIENCE	8	273941	11	D.1.1.4	2	10554	0.60	0.10	0.60	0.09	0.21	0.00	0.30	-0.23	0.30	-0.25	-0.02	0.1776	0.0221	9.9	1.1	9.9	1.2	A-	A-	A-
SCIENCE	8	128303	11	A.1.3.4	2	10554	0.39	0.39	0.19	0.21	0.21	0.00	0.24	0.24	-0.08	-0.16	-0.05	1.2205	0.0220	9.9	1.1	9.9	1.3	A-	A-	A-
SCIENCE	8	942236	11	A.3.1.2	3	10554	0.49	0.21	0.49	0.16	0.14	0.00	0.33	-0.09	0.33	-0.20	-0.16	0.7266	0.0216	6.7	1.1	8.0	1.1	A+	A-	A-
SCIENCE	8	155629	11	D.3.1.3	2	10554	0.23	0.18	0.15	0.43	0.23	0.00	0.04	-0.07	-0.17	0.16	0.04	2.0926	0.0248	9.9	1.3	9.9	1.8	A+	A-	A+
SCIENCE	8	174171	12	B.1.1.4	2	10498	0.51	0.14	0.51	0.20	0.15	0.00	0.34	-0.18	0.34	-0.14	-0.15	0.6173	0.0219	7.0	1.1	7.0	1.1	A+	A+	A+
SCIENCE	8	880834	12	A.2.1.5	2	10498	0.61	0.61	0.23	0.08	0.07	0.00	0.40	0.40	-0.12	-0.29	-0.23	0.0959	0.0224	1.7	1.0	2.0	1.0	A+	A+	A-
SCIENCE	8	578649	12	A.1.1.2	2	10498	0.43	0.22	0.17	0.18	0.43	0.00	0.30	-0.06	-0.19	-0.12	0.30	1.0330	0.0220	9.9	1.1	9.9	1.2	A+	A-	A-
SCIENCE	8	819254	12	B.3.1.3	2	10498	0.41	0.09	0.41	0.26	0.23	0.00	0.25	-0.22	0.25	-0.12	0.00	1.1131	0.0221	9.9	1.1	9.9	1.3	A+	A-	A+
SCIENCE	8	221089	12	D.1.2.2	2	10498	0.30	0.27	0.22	0.21	0.30	0.00	0.16	0.02	-0.06	-0.13	0.16	1.7048	0.0234	9.9	1.2	9.9	1.5	A-	A-	A-
SCIENCE	8	670899	12	D.1.1.4	2	10498	0.57	0.09	0.17	0.17	0.57	0.00	0.49	-0.25	-0.18	-0.27	0.49	0.3399	0.0221	-9.9	0.9	-9.7	0.9	A+	A-	A-
SCIENCE	8	562264	12	B.1.1.1	2	10498	0.74	0.04	0.04	0.17	0.74	0.00	0.44	-0.27	-0.26	-0.22	0.44	-0.6536	0.0247	-3.2	1.0	-3.9	0.9	A+	B-	A-
SCIENCE	8	839100	12	C.1.1.1	2	10498	0.58	0.19	0.58	0.12	0.10	0.00	0.27	-0.14	0.27	-0.17	-0.07	0.2543	0.0222	9.9	1.2	9.9	1.2	A+	A-	A+
SCIENCE	8	802937	12	A.1.3.3	2	10498	0.45	0.45	0.11	0.23	0.21	0.00	0.38	0.38	-0.23	-0.18	-0.10	0.9314	0.0219	-1.7	1.0	3.8	1.1	B-	A-	A-
SCIENCE	8	278140	12	A.2.1.1	1	10498	0.75	0.16	0.05	0.04	0.75	0.01	0.45	-0.22	-0.27	-0.28	0.45	-0.6916	0.0249	-4.6	0.9	-4.8	0.9	A+	A+	A+
SCIENCE	8	837558	12	A.3.1.3	2	10498	0.71	0.71	0.08	0.08	0.12	0.00	0.50	0.50	-0.26	-0.25	-0.25	-0.4674	0.0240	-8.0	0.9	-9.9	0.8	A+	A-	A-
SCIENCE	8	453500	12	D.1.1.1	2	10498	0.25	0.17	0.34	0.24	0.25	0.00	0.15	-0.05	-0.08	-0.01	0.15	2.0405	0.0247	9.9	1.2	9.9	1.6	A+	A-	A-

WRITING	5	745699	1	B.6	1	124429	0.72	0.06	0.06	0.72	0.16	0.00	0.39	-0.25	-0.16	0.39	-0.21	0.6846	0.0083	9.9	1.7	9.9	9.9			
WRITING	5	118533	1	B.6	1	124429	0.86	0.07	0.86	0.03	0.04	0.00	0.30	-0.14	0.30	-0.16	-0.22	-0.8342	0.0105	9.9	1.6	9.9	9.9			
WRITING	5	728403	1	B.5	2	124429	0.70	0.08	0.05	0.16	0.70	0.00	0.40	-0.26	-0.26	-0.14	0.40	0.8613	0.0082	9.9	1.7	9.9	9.9			
WRITING	5	336952	1	B.5	2	124429	0.65	0.11	0.15	0.09	0.65	0.00	0.31	-0.18	-0.11	-0.17	0.31	1.2556	0.0081	9.9	2.0	9.9	9.9			
WRITING	5	657763	1	B.5	2	124429	0.82	0.82	0.09	0.02	0.06	0.00	0.44	0.44	-0.24	-0.23	-0.26	-0.3434	0.0095	9.9	1.4	9.9	9.9			
WRITING	5	597893	1	B.5	2	124429	0.88	0.06	0.88	0.03	0.03	0.00	0.37	-0.22	0.37	-0.19	-0.21	-1.0630	0.0110	9.9	1.5	9.9	9.9			
WRITING	5	613475	1	B.6	2	124429	0.66	0.09	0.11	0.66	0.13	0.00	0.33	-0.19	-0.17	0.33	-0.13	1.1318	0.0081	9.9	1.9	9.9	9.9			
WRITING	5	401704	1	B.5	2	124429	0.59	0.28	0.08	0.05	0.59	0.00	0.43	-0.21	-0.26	-0.20	0.43	1.7205	0.0080	9.9	1.8	9.9	9.9			
WRITING	5	431220	1	B.5	2	124429	0.68	0.04	0.02	0.27	0.68	0.00	0.34	-0.18	-0.21	-0.22	0.34	1.0267	0.0081	9.9	1.8	9.9	9.9			
WRITING	5	343537	1	B.6	1	124429	0.71	0.14	0.71	0.06	0.09	0.00	0.41	-0.23	0.41	-0.19	-0.21	0.7798	0.0083	9.9	1.6	9.9	9.9			
WRITING	5	176942	1	B.6	1	124429	0.65	0.65	0.15	0.09	0.11	0.00	0.37	0.37	-0.19	-0.20	-0.16	1.2462	0.0081	9.9	1.8	9.9	9.9			
WRITING	5	547148	1	B.5	2	124429	0.68	0.06	0.13	0.12	0.68	0.00	0.31	-0.22	-0.14	-0.12	0.31	0.9964	0.0081	9.9	1.9	9.9	9.9			
WRITING	8	238868	1	B.6	2	127637	0.53	0.10	0.15	0.53	0.22	0.00	0.32	-0.18	-0.12	0.32	-0.15	2.4093	0.0076	9.9	1.9	9.9	9.9			
WRITING	8	374496	1	B.5	2	127637	0.70	0.09	0.08	0.13	0.70	0.00	0.38	-0.25	-0.21	-0.13	0.38	1.1094	0.0082	9.9	1.8	9.9	9.9			
WRITING	8	873175	1	B.5	2	127637	0.48	0.04	0.48	0.30	0.18	0.00	0.35	-0.11	0.35	-0.18	-0.18	2.7813	0.0075	9.9	1.8	9.9	9.9			
WRITING	8	376527	1	B.6	1	127637	0.79	0.79	0.08	0.03	0.10	0.00	0.31	0.31	-0.19	-0.16	-0.15	0.2962	0.0089	9.9	1.8	9.9	9.9			
WRITING	8	100048	1	B.5	2	127637	0.77	0.09	0.77	0.08	0.06	0.00	0.30	-0.23	0.30	-0.18	-0.04	0.4446	0.0087	9.9	1.8	9.9	9.9			
WRITING	8	301527	1	B.6	2	127637	0.62	0.62	0.11	0.16	0.10	0.00	0.44	0.44	-0.22	-0.21	-0.22	1.6969	0.0078	9.9	1.7	9.9	9.9			
WRITING	8	759431	1	B.6	1	127637	0.75	0.03	0.75	0.07	0.15	0.00	0.41	-0.21	0.41	-0.20	-0.25	0.6314	0.0085	9.9	1.7	9.9	9.9			
WRITING	8	329565	1	B.5	2	127637	0.72	0.12	0.03	0.13	0.72	0.00	0.33	-0.20	-0.20	-0.14	0.33	0.9170	0.0083	9.9	1.9	9.9	9.9			
WRITING	8	445588	1	B.5	2	127637	0.62	0.07	0.19	0.62	0.12	0.00	0.39	-0.23	-0.19	0.39	-0.17	1.7130	0.0078	9.9	1.8	9.9	9.9			
WRITING	8	354546	1	B.6	1	127637	0.70	0.09	0.70	0.17	0.04	0.00	0.42	-0.16	0.42	-0.28	-0.20	1.1189	0.0081	9.9	1.7	9.9	9.9			
WRITING	8	928356	1	B.5	2	127637	0.61	0.27	0.04	0.08	0.61	0.00	0.38	-0.19	-0.25	-0.19	0.38	1.7694	0.0078	9.9	1.8	9.9	9.9			
WRITING	8	699346	1	B.6	1	127637	0.63	0.14	0.63	0.17	0.07	0.00	0.41	-0.22	0.41	-0.21	-0.18	1.6824	0.0078	9.9	1.8	9.9	9.9			

Item Information						Classical													Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
MATH	3	859377	0	E.1	2	124538	3.02	0.02	0.07	0.23	0.23	0.45	0.00	0.65	-0.24	-0.42	-0.31	0.04	0.51	0.9097	0.0040	9.9	1.2	9.9	1.3			
MATH	3	976687	0	D.2	3	124538	1.86	0.16	0.28	0.26	0.17	0.14	0.01	0.63	-0.55	-0.18	0.17	0.25	0.32	2.8474	0.0035	9.9	1.3	9.9	1.3			
MATH	3	142160	0	A.3	3	124538	2.08	0.14	0.21	0.21	0.30	0.14	0.00	0.72	-0.61	-0.24	0.09	0.33	0.36	2.6069	0.0035	9.9	1.1	9.9	1.0			
MATH	3	695351	1	D-M.1	3	1101	1.65	0.18	0.28	0.31	0.17	0.06	0.00	0.67	-0.59	-0.15	0.23	0.35	0.23	3.2935	0.0401	1.6	1.1	2.1	1.1	A-	A-	A+
MATH	3	801995	2	B-O.1	2	1100	2.09	0.14	0.17	0.26	0.31	0.12	0.00	0.72	-0.61	-0.21	0.04	0.38	0.32	2.6399	0.0380	0.1	1.0	-0.1	1.0	A+	B-	C-
MATH	3	751123	3	D-M.2	2	1099	1.04	0.12	0.78	0.05	0.05	0.00	0.00	0.44	-0.40	0.09	0.18	0.23	0.06	4.7239	0.0618	1.0	1.1	0.7	1.1	A+	B-	A-
MATH	3	645205	4	A-T.1	2	1099	0.54	0.61	0.24	0.13	0.01	0.00	0.01	0.55	-0.56	0.32	0.37	0.08	0.08	5.4581	0.0520	-2.1	0.9	-2.6	0.8	A-	A-	A-
MATH	3	852462	5	A-F.1	3	1101	0.91	0.51	0.25	0.11	0.08	0.05	0.00	0.49	-0.41	0.04	0.22	0.27	0.23	4.1923	0.0387	3.7	1.2	6.2	1.5	A-	B-	B-
MATH	3	822702	6	D-M.4	2	1099	1.56	0.34	0.21	0.14	0.16	0.15	0.00	0.69	-0.64	-0.04	0.18	0.31	0.39	3.2626	0.0345	1.5	1.1	0.4	1.0	A-	A-	B-
MATH	3	527751	7	D-M.3	3	1099	0.54	0.71	0.13	0.08	0.06	0.02	0.00	0.37	-0.35	0.10	0.19	0.21	0.15	4.9162	0.0445	5.1	1.3	8.2	2.6	A+	A-	A-
MATH	3	479429	8	B-O.3	2	1098	1.18	0.38	0.30	0.14	0.11	0.07	0.00	0.64	-0.61	0.09	0.25	0.32	0.28	3.8320	0.0381	-1.0	1.0	-0.7	1.0	A+	A-	A-
MATH	3	131104	9	C-G.1	2	1099	1.48	0.23	0.29	0.29	0.14	0.04	0.00	0.56	-0.48	-0.08	0.20	0.30	0.20	3.5522	0.0399	7.3	1.3	7.0	1.3	A+	A-	A-
MATH	4	611926	0	A.2		126616	2.10	0.17	0.14	0.20	0.40	0.09	0.02	0.65	-0.53	-0.19	-0.01	0.38	0.28	1.3160	0.0034	9.9	1.2	9.9	1.2			
MATH	4	959437	0	B.1	2	126616	1.65	0.27	0.21	0.23	0.17	0.11	0.00	0.68	-0.62	-0.07	0.18	0.32	0.33	1.7012	0.0032	1.4	1.0	-5.4	1.0			
MATH	4	859805	0	E.1	3	126616	2.52	0.11	0.14	0.17	0.27	0.31	0.07	0.58	-0.28	-0.41	-0.10	0.16	0.43	0.5954	0.0032	9.9	1.5	9.9	1.6			
MATH	4	816724	1	A-F.3	2	1101	1.00	0.50	0.22	0.12	0.11	0.05	0.01	0.57	-0.51	0.04	0.26	0.29	0.28	2.4684	0.0359	-1.3	0.9	-0.4	1.0	A+	A-	A-
MATH	4	553748	2	B-O.2	2	1098	1.10	0.33	0.41	0.17	0.04	0.06	0.01	0.61	-0.65	0.21	0.29	0.17	0.25	2.3340	0.0392	0.3	1.0	-0.7	1.0	A+	A-	A-
MATH	4	508531	4	B-O.1	2	1098	0.99	0.31	0.42	0.24	0.03	0.00	0.00	0.65	-0.63	0.17	0.42	0.17	0.09	3.3733	0.0473	-3.7	0.9	-4.1	0.8	A-	A-	A-
MATH	4	307003	5	A-F.1	2	1097	0.67	0.59	0.23	0.13	0.03	0.02	0.01	0.51	-0.52	0.24	0.30	0.16	0.17	3.1487	0.0437	0.3	1.0	0.5	1.0	A+	A-	A-
MATH	4	397904	6	B-O.3	2	1099	0.61	0.69	0.13	0.08	0.08	0.02	0.01	0.48	-0.47	0.15	0.24	0.30	0.15	3.1171	0.0403	-0.4	1.0	-0.2	1.0	A-	A-	A-
MATH	4	200161	7	D-M.2	2	1100	0.63	0.70	0.07	0.13	0.08	0.01	0.01	0.45	-0.43	0.08	0.23	0.30	0.14	3.2249	0.0404	1.5	1.1	2.9	1.5	A+	A-	A-
MATH	4	685772	8	A-F.2	2	1100	0.69	0.53	0.28	0.17	0.01	0.01	0.01	0.54	-0.53	0.22	0.37	0.10	0.14	3.3508	0.0466	-1.5	0.9	-1.1	0.9	A+	A-	C-
MATH	4	774735	9	D-M.1	3	1100	0.70	0.61	0.20	0.10	0.04	0.05	0.01	0.53	-0.53	0.21	0.27	0.21	0.25	2.8726	0.0402	-1.4	0.9	-2.0	0.8	A-	A-	A-
MATH	5	728077	0	C.1		126268	2.09	0.14	0.22	0.24	0.24	0.17	0.01	0.65	-0.49	-0.25	0.02	0.28	0.38	1.5023	0.0033	9.9	1.2	9.9	1.2			
MATH	5	150757	0	D.1	3	126268	1.97	0.09	0.13	0.54	0.19	0.05	0.04	0.56	-0.30	-0.24	-0.10	0.41	0.25	1.8490	0.0041	9.9	1.2	9.9	1.2			
MATH	5	370529	0	A.2	3	126268	1.46	0.28	0.30	0.18	0.18	0.07	0.01	0.69	-0.61	-0.07	0.24	0.38	0.28	2.4304	0.0034	5.0	1.0	-3.2	1.0			
MATH	5	284094	1	D-M.3	3	1098	0.51	0.62	0.27	0.09	0.01	0.01	0.01	0.54	-0.55	0.36	0.30	0.15	0.10	4.1134	0.0515	-2.5	0.9	-2.4	0.8	A+	B-	A-
MATH	5	810790	2	A-T.2	3	1100	1.33	0.20	0.37	0.33	0.10	0.00	0.00	0.64	-0.51	-0.12	0.34	0.35	0.04	3.6153	0.0446	-0.4	1.0	-0.6	1.0	B+	A-	A-
MATH	5	458852	3	D-M.1	3	1099	0.37	0.73	0.21	0.04	0.02	0.01	0.00	0.43	-0.42	0.26	0.22	0.17	0.13	4.1586	0.0539	-1.4	0.9	0.9	1.1	A+	A-	A+
MATH	5	441264	4	A-T.1	3	1100	0.20	0.86	0.09	0.05	0.00	0.00	0.00	0.39	-0.41	0.28	0.26	0.09	0.06	4.7733	0.0666	-1.4	0.9	-2.1	0.7	A+	A+	A-
MATH	5	351694	5	B-O.2	3	1100	1.23	0.26	0.35	0.29	0.09	0.01	0.00	0.61	-0.52	-0.04	0.32	0.32	0.12	3.2298	0.0434	1.6	1.1	1.2	1.1	A+	B-	B-
MATH	5	204561	6	A-F.2	3	1100	1.03	0.40	0.30	0.18	0.09	0.02	0.00	0.69	-0.65	0.11	0.35	0.35	0.18	3.1918	0.0407	-3.8	0.8	-4.4	0.8	A+	A-	A-
MATH	5	912401	7	B-O.1	3	1099	1.05	0.16	0.70	0.09	0.03	0.02	0.00	0.41	-0.34	0.05	0.18	0.19	0.13	3.1124	0.0527	2.7	1.2	3.8	1.3	A+	A+	A+
MATH	5	228146	8	D-M.2	3	1100	0.76	0.45	0.36	0.17	0.01	0.00	0.00	0.47	-0.41	0.12	0.33	0.15	0.09	4.0702	0.0488	4.7	1.2	4.3	1.2	A+	A+	A-
MATH	5	479048	9	C-G.2	2	1100	0.32	0.70	0.28	0.02	0.00	0.00	0.01	0.35	-0.34	0.30	0.14		0.05	5.3614	0.0696	2.3	1.1	3.0	1.2	A-	A-	A-

MATH	6	161458	0	C.3	3	124870	1.36	0.13	0.63	0.05	0.12	0.07	0.01	0.58	-0.46	-0.10	0.10	0.31	0.31	2.1104	0.0039	9.9	1.1	9.9	1.1			
MATH	6	175706	0	D.2	2	124870	1.56	0.17	0.34	0.27	0.20	0.02	0.06	0.63	-0.45	-0.23	0.21	0.41	0.17	2.3668	0.0038	9.9	1.1	9.9	1.1			
MATH	6	135034	0	A.1	3	124870	2.70	0.05	0.08	0.20	0.46	0.21	0.00	0.71	-0.38	-0.35	-0.26	0.16	0.49	0.4082	0.0038	-9.9	0.9	-9.9	0.9			
MATH	6	754596	1	A-N.2	3	1041	0.86	0.44	0.37	0.12	0.06	0.02	0.01	0.60	-0.62	0.28	0.30	0.23	0.18	3.0705	0.0436	-1.5	0.9	-1.4	0.9	A+	A-	B-
MATH	6	106902	2	A-N.1	3	1086	0.85	0.44	0.37	0.08	0.09	0.01	0.00	0.58	-0.55	0.20	0.26	0.33	0.12	3.2614	0.0432	0.6	1.0	-0.1	1.0	A+	A-	A+
MATH	6	227361	3	A-R.1	3	1084	0.66	0.41	0.54	0.04	0.01	0.00	0.01	0.58	-0.56	0.42	0.25	0.16	0.04	4.4073	0.0585	-3.3	0.9	-4.0	0.8	A+	B-	A-
MATH	6	602683	4	B-E.1	3	1081	0.31	0.81	0.10	0.06	0.02	0.00	0.01	0.43	-0.44	0.23	0.28	0.20	0.06	4.2032	0.0554	-0.7	1.0	-1.5	0.8	A+	A-	A+
MATH	6	548409	5	A-N.3	3	1084	1.38	0.24	0.42	0.12	0.14	0.07	0.00	0.67	-0.55	-0.09	0.24	0.34	0.31	2.1382	0.0377	-0.2	1.0	-1.4	0.9	A+	B-	A-
MATH	6	887562	6	A-N.2	3	1088	0.80	0.47	0.34	0.14	0.03	0.02	0.00	0.61	-0.59	0.22	0.36	0.22	0.18	3.1395	0.0443	-2.2	0.9	-2.9	0.9	A+	B-	A-
MATH	6	262230	7	B-E.1	3	1089	1.34	0.43	0.15	0.15	0.19	0.08	0.01	0.71	-0.65	0.00	0.22	0.38	0.35	2.2382	0.0345	-2.0	0.9	-2.6	0.8	A+	A-	B-
MATH	6	473603	8	A-R.1	3	1085	1.14	0.41	0.19	0.31	0.03	0.06	0.01	0.64	-0.59	0.06	0.33	0.21	0.32	2.5100	0.0383	-0.9	1.0	-1.0	0.9	A-	A-	A-
MATH	6	622147	9	D-S.1	3	1085	0.46	0.60	0.35	0.04	0.01	0.00	0.00	0.51	-0.51	0.41	0.22	0.12	0.05	4.5531	0.0591	-1.0	1.0	-1.6	0.9	A+	C-	A-
MATH	6	629996	10	A-R.1	3	1091	0.49	0.58	0.35	0.06	0.00	0.00	0.00	0.41	-0.36	0.22	0.29	0.08		4.5131	0.0600	2.4	1.1	3.2	1.2	B-	A-	A-
MATH	6	905662	11	B-E.2	3	1090	0.88	0.50	0.23	0.18	0.06	0.03	0.02	0.57	-0.49	0.03	0.35	0.24	0.24	2.9269	0.0404	1.9	1.1	0.1	1.0	A+	A-	A+
MATH	6	249710	13	D-S.1	3	1091	0.53	0.66	0.18	0.13	0.01	0.01	0.01	0.36	-0.32	0.11	0.24	0.14	0.13	3.8163	0.0489	8.3	1.5	8.3	1.9	A+	A+	A+
MATH	6	608240	14	A-R.1	3	1088	1.19	0.44	0.21	0.17	0.08	0.09	0.00	0.62	-0.52	-0.01	0.21	0.25	0.39	2.3034	0.0353	1.0	1.1	1.6	1.1	A-	A-	A-
MATH	6	591345	15	B-E.3	3	1085	0.50	0.64	0.26	0.08	0.03	0.00	0.01	0.56	-0.57	0.37	0.27	0.22	0.08	4.2961	0.0529	-2.2	0.9	-2.9	0.8	A+	A-	B-
MATH	6	219941	16	C-G.1	3	1081	0.59	0.60	0.26	0.10	0.04	0.01	0.01	0.56	-0.54	0.25	0.35	0.22	0.10	3.7419	0.0483	-1.0	0.9	-2.2	0.9	A-	B-	A-
MATH	6	237758	17	C-G.1	3	1085	0.56	0.62	0.22	0.14	0.01	0.01	0.00	0.52	-0.51	0.25	0.35	0.15	0.11	3.7403	0.0486	-0.8	1.0	0.3	1.0	A+	A-	A-
MATH	6	513826	18	B-E.2	3	1084	0.19	0.84	0.14	0.01	0.01	0.00	0.01	0.34	-0.33	0.26	0.16	0.11	0.05	4.9661	0.0763	-0.8	0.9	0.8	1.1	A-	A-	A-
MATH	6	391304	19	D-S.1	3	1084	0.34	0.69	0.29	0.02	0.00	0.00	0.01	0.44	-0.44	0.39	0.17	0.06		4.5523	0.0673	0.3	1.0	-0.1	1.0	B+	A+	A+
MATH	6	820145	20	C-G.1	3	1085	0.28	0.79	0.15	0.04	0.01	0.01	0.01	0.47	-0.49	0.37	0.25	0.11	0.11	4.2561	0.0621	-2.9	0.8	-3.5	0.6	A+	A-	A-
MATH	7	970842	0	D.3	2	128295	1.70	0.25	0.26	0.21	0.10	0.18	0.05	0.68	-0.51	-0.19	0.13	0.23	0.47	1.6261	0.0031	9.9	1.1	9.9	1.1			
MATH	7	694550	0	A.2	2	128295	2.12	0.19	0.08	0.27	0.36	0.10	0.01	0.67	-0.56	-0.12	-0.05	0.35	0.35	1.3763	0.0033	9.9	1.1	9.9	1.1			
MATH	7	288794	0	E.3	3	128295	1.21	0.27	0.46	0.10	0.13	0.04	0.01	0.65	-0.59	0.04	0.24	0.35	0.25	2.4684	0.0037	3.6	1.0	-3.6	1.0			
MATH	7	468972	1	D-S.2	3	1048	0.29	0.78	0.17	0.03	0.02	0.00	0.01	0.46	-0.47	0.36	0.21	0.19		3.8167	0.0623	-0.7	1.0	-2.0	0.8	A+	A-	A-
MATH	7	889230	2	A-N.1	3	1083	1.87	0.19	0.24	0.22	0.19	0.15	0.01	0.67	-0.55	-0.19	0.09	0.34	0.35	1.4923	0.0346	4.1	1.2	3.5	1.2	C+	A-	B-
MATH	7	612629	3	D-S.1	3	1080	1.40	0.40	0.16	0.19	0.13	0.12	0.01	0.72	-0.64	-0.05	0.24	0.36	0.38	2.0509	0.0337	-1.5	0.9	-2.1	0.9	A+	A-	A-
MATH	7	787480	4	D-S.2	3	1084	0.52	0.60	0.31	0.07	0.02	0.00	0.01	0.56	-0.56	0.38	0.28	0.19	0.05	4.2472	0.0524	-2.1	0.9	-2.7	0.8	A+	A+	A-
MATH	7	932107	5	B-E.1	2	1087	0.36	0.71	0.23	0.04	0.01	0.00	0.02	0.44	-0.45	0.33	0.21	0.14	0.10	4.1235	0.0580	0.3	1.0	1.2	1.1	B+	A+	A+
MATH	7	665891	6	B-E.2	3	1085	1.53	0.30	0.23	0.12	0.32	0.03	0.01	0.71	-0.59	-0.13	0.14	0.53	0.22	2.2795	0.0356	-1.0	1.0	-1.4	0.9	A-	A-	A-
MATH	7	544446	7	D-S.3	3	1090	2.32	0.04	0.21	0.28	0.32	0.15	0.00	0.66	-0.32	-0.42	-0.13	0.35	0.37	0.7814	0.0389	0.0	1.0	0.2	1.0	B+	A-	A+
MATH	7	976262	8	D-S.3	3	1087	0.32	0.80	0.13	0.04	0.03	0.01	0.01	0.48	-0.51	0.34	0.23	0.23	0.11	4.0976	0.0552	-2.4	0.8	-3.4	0.6	A+	A-	A-
MATH	7	291823	9	A-R.1	3	1076	0.37	0.80	0.07	0.11	0.01	0.01	0.01	0.49	-0.52	0.24	0.37	0.14	0.14	3.7772	0.0507	-1.2	0.9	-0.7	0.9	A+	A-	A-
MATH	7	976335	10	C-G.1	3	1088	1.42	0.28	0.28	0.18	0.25	0.01	0.01	0.56	-0.51	-0.01	0.17	0.37	0.13	2.6574	0.0371	7.7	1.4	8.2	1.5	A+	C-	B-
MATH	7	235345	11	A-R.1	3	1090	0.73	0.51	0.31	0.12	0.05	0.01	0.01	0.66	-0.62	0.22	0.40	0.30	0.11	3.4982	0.0453	-5.0	0.8	-5.5	0.7	A+	A-	A+
MATH	7	801801	12	C-G.1	3	1086	0.29	0.77	0.20	0.03	0.00	0.01	0.01	0.50	-0.52	0.44	0.19	0.11	0.12	4.3290	0.0652	-3.4	0.8	-3.5	0.7	A-	A-	A-
MATH	7	796013	13	D-S.1	3	1083	1.54	0.43	0.13	0.01	0.33	0.10	0.01	0.71	-0.63	-0.08	0.04	0.47	0.37	1.9799	0.0322	1.2	1.1	1.3	1.1	A-	A-	A-
MATH	7	201638	14	C-G.2	3	1085	0.55	0.65	0.24	0.04	0.04	0.02	0.01	0.54	-0.54	0.30	0.22	0.27	0.21	3.2666	0.0449	-2.2	0.9	-2.9	0.8	A+	A-	A-
MATH	7	384637	15	B-E.2	2	1086	0.46	0.65	0.28	0.05	0.02	0.01	0.01	0.53	-0.50	0.31	0.29	0.21	0.12	4.1917	0.0558	-2.1	0.9	-1.5	0.9	A+	A-	A-
MATH	7	504663	16	B-E.1	3	1078	0.90	0.41	0.40	0.11	0.06	0.02	0.01	0.66	-0.63	0.22	0.32	0.32	0.19	2.8820	0.0422	-4.3	0.8	-5.0	0.8	A+	A-	A-
MATH	7	799682	17	A-N.1	3	1083	1.81	0.07	0.34	0.36	0.19	0.05	0.01	0.56	-0.34	-0.31	0.11	0.32	0.25	1.6107	0.0419	3.5	1.2	3.6	1.2	A+	C-	A+
MATH	7	653144	18	A-N.1	3	1082	0.77	0.51	0.33	0.07	0.06	0.03	0.01	0.61	-0.56	0.21	0.28	0.30	0.24	3.0208	0.0423	-2.3	0.9	-3.1	0.8	A-	B-	A-
MATH	7	545795	19	C-G.1	3	1085	0.60	0.48	0.46	0.03	0.02	0.00	0.00	0.42	-0.38	0.25	0.18	0.19	0.07	3.8438	0.0542	2.2	1.1	2.0	1.1	A+	C-	A-
MATH	7	836795	20	C-G.2	3	1088	0.40	0.80	0.09	0.06	0.04	0.02	0.01	0.49	-0.48	0.18	0.27	0.25	0.22	3.4377	0.0468	-3.4	0.8	0.5	1.1	A-	A-	A-

MATH	8	389765	0	C.1	3	128678	1.43	0.44	0.06	0.27	0.09	0.14	0.01	0.66	-0.63	-0.04	0.26	0.25	0.39	2.2784	0.0031	9.9	1.1	9.9	1.2			
MATH	8	562517	0	D.1	3	128678	1.68	0.17	0.35	0.20	0.16	0.11	0.05	0.64	-0.40	-0.33	0.18	0.35	0.33	1.9387	0.0035	9.9	1.1	9.9	1.1			
MATH	8	866527	0	A.1	3	128678	1.76	0.06	0.53	0.09	0.24	0.08	0.01	0.59	-0.40	-0.33	0.12	0.33	0.30	1.6626	0.0037	9.9	1.3	9.9	1.4			
MATH	8	453808	1	D-S.1	2	1055	1.06	0.28	0.52	0.10	0.07	0.04	0.01	0.58	-0.51	0.09	0.27	0.25	0.23	2.8773	0.0440	0.0	1.0	-0.2	1.0	A+	A+	A-
MATH	8	515249	2	B-E.3	2	1086	1.07	0.42	0.36	0.05	0.08	0.09	0.01	0.59	-0.55	0.12	0.20	0.27	0.34	2.6001	0.0363	-0.2	1.0	-0.8	1.0	A+	A-	A-
MATH	8	132566	3	C-G.3	3	1078	0.81	0.39	0.45	0.13	0.02	0.01	0.01	0.60	-0.58	0.26	0.35	0.16	0.13	3.6097	0.0497	-1.9	0.9	-3.1	0.9	A-	A-	A-
MATH	8	570068	4	B-E.1	2	1085	0.88	0.39	0.44	0.08	0.08	0.01	0.01	0.57	-0.55	0.22	0.23	0.30	0.13	3.3841	0.0443	-0.9	1.0	-0.8	1.0	A+	B-	A-
MATH	8	360003	5	C-G.2	3	1090	0.58	0.54	0.38	0.04	0.03	0.01	0.02	0.57	-0.58	0.41	0.23	0.20	0.12	4.2130	0.0542	-3.1	0.8	-3.1	0.8	A-	A-	A+
MATH	8	221332	6	D-S.1	2	1079	1.39	0.17	0.41	0.29	0.13	0.00	0.00	0.63	-0.52	-0.14	0.33	0.33	0.08	3.0969	0.0448	0.4	1.0	0.2	1.0	A-	B-	A-
MATH	8	828124	7	B-E.3	2	1081	0.74	0.64	0.16	0.06	0.12	0.03	0.01	0.57	-0.57	0.19	0.20	0.38	0.20	3.3551	0.0402	-1.4	0.9	-1.3	0.9	A-	A-	A-
MATH	8	934664	8	B-F.1	3	1086	1.12	0.11	0.74	0.08	0.05	0.02	0.01	0.50	-0.42	-0.01	0.24	0.24	0.16	2.9572	0.0553	-0.9	0.9	-1.4	0.9	A+	A-	A-
MATH	8	946898	9	A-N.1	3	1084	0.81	0.42	0.42	0.11	0.05	0.01	0.01	0.62	-0.63	0.32	0.29	0.24	0.12	3.6022	0.0468	-3.3	0.9	-4.0	0.8	A-	A-	B-
MATH	8	841637	10	B-F.1	2	1086	1.07	0.40	0.27	0.24	0.05	0.04	0.01	0.59	-0.48	-0.08	0.42	0.21	0.25	2.8801	0.0403	0.6	1.0	1.8	1.1	A-	A-	A-
MATH	8	579379	11	D-S.1	3	1084	1.22	0.30	0.29	0.30	0.10	0.01	0.01	0.57	-0.55	0.06	0.30	0.27	0.09	3.2004	0.0421	4.7	1.2	4.4	1.2	A+	B-	A-
MATH	8	687020	12	C-G.1	3	1088	0.87	0.26	0.64	0.09	0.02	0.00	0.01	0.51	-0.48	0.23	0.26	0.17		2.9723	0.0572	-1.2	0.9	-1.3	0.9	A+	C-	A-
MATH	8	493224	13	B-E.2	3	1082	0.83	0.48	0.36	0.06	0.05	0.05	0.01	0.59	-0.61	0.31	0.22	0.23	0.26	3.0473	0.0404	-1.7	0.9	-1.4	0.9	A-	B-	A-
MATH	8	744403	14	B-F.2	2	1089	0.40	0.65	0.33	0.01	0.01	0.00	0.01	0.44	-0.46	0.40	0.11	0.12	0.09	4.2510	0.0595	-0.6	1.0	-0.6	1.0	A-	B-	A-
MATH	8	378698	15	B-F.2	3	1090	0.68	0.64	0.11	0.20	0.02	0.03	0.00	0.51	-0.49	0.08	0.41	0.09	0.21	3.3170	0.0413	1.9	1.1	1.2	1.1	A-	A-	A-
MATH	8	845028	16	B-E.1	3	1082	0.73	0.58	0.21	0.13	0.05	0.03	0.01	0.56	-0.55	0.21	0.30	0.25	0.21	3.3562	0.0424	0.8	1.0	-0.1	1.0	A-	B-	A-
MATH	8	505958	17	A-N.1	3	1087	0.70	0.62	0.16	0.15	0.03	0.03	0.01	0.47	-0.48	0.15	0.33	0.13	0.19	3.3071	0.0412	6.3	1.4	3.8	1.4	A-	A-	A+
MATH	8	797017	18	C-G.2	2	1089	0.96	0.42	0.24	0.30	0.02	0.01	0.01	0.63	-0.61	0.11	0.48	0.13	0.16	3.2654	0.0437	-1.9	0.9	-1.4	0.9	A+	A-	B-
MATH	8	934404	19	B-E.2	2	1084	1.95	0.09	0.28	0.30	0.27	0.07	0.01	0.66	-0.37	-0.42	0.10	0.43	0.24	1.6612	0.0407	1.4	1.1	1.1	1.0	A-	A-	A-
MATH	8	960626	20	C-G.3	3	1085	1.31	0.41	0.20	0.17	0.11	0.11	0.01	0.64	-0.61	0.03	0.26	0.24	0.36	2.3480	0.0344	2.6	1.1	1.1	1.1	A+	A-	A-
READING	3	456766	0	B.1.1.1		124495	1.48	0.10	0.41	0.41	0.09		0.01	0.58	-0.49	-0.20	0.35	0.25		1.0333	0.0046	9.0	1.0	9.1	1.0			
READING	3	104223	0	B.1.1.1	2	124495	1.56	0.07	0.41	0.42	0.10		0.01	0.52	-0.42	-0.25	0.31	0.24		0.7726	0.0047	9.9	1.1	9.9	1.1			
ELA	3	467113	1	B-K.1.1.3	3	1086	1.40	0.12	0.43	0.38	0.07		0.01	0.60	-0.49	-0.20	0.41	0.23		1.2247	0.0484	-1.7	0.9	-1.7	0.9	B+	A+	A+
ELA	3	502039	2	B-K.1.1.3	3	1090	1.27	0.17	0.46	0.31	0.07		0.01	0.59	-0.47	-0.14	0.38	0.26		1.5091	0.0479	-1.4	0.9	-1.5	0.9	A+	A-	A+
ELA	3	321816	3	B-K.1.1.3	3	1085	1.58	0.08	0.38	0.42	0.12		0.01	0.57	-0.43	-0.27	0.30	0.30		0.7473	0.0480	0.1	1.0	0.0	1.0	C+	A+	A+
ELA	3	570767	4	B-K.1.1.1	3	1088	1.22	0.19	0.47	0.25	0.08		0.01	0.55	-0.46	-0.07	0.33	0.27		1.5181	0.0463	0.7	1.0	0.8	1.0	A+	A-	A+
ELA	3	783075	5	B-K.1.1.1	2	1079	1.61	0.06	0.37	0.45	0.11		0.01	0.55	-0.40	-0.29	0.31	0.27		0.6838	0.0495	0.1	1.0	0.3	1.0	C+	A-	A-
ELA	3	173935	6	A-K.1.1.1	3	1087	1.47	0.10	0.39	0.45	0.06		0.01	0.58	-0.47	-0.21	0.39	0.21		1.1757	0.0508	0.2	1.0	0.2	1.0	A+	A-	A-
ELA	3	625562	7	A-K.1.1.2	3	1083	1.76	0.11	0.23	0.46	0.21		0.02	0.67	-0.48	-0.35	0.27	0.39		0.5349	0.0450	-2.8	0.9	-2.4	0.9	B+	A-	A-
ELA	3	857572	8	A-K.1.1.2	3	1086	1.55	0.08	0.39	0.43	0.10		0.01	0.56	-0.43	-0.24	0.31	0.28		0.8676	0.0489	-0.1	1.0	-0.1	1.0	C+	A-	A-
ELA	3	227190	9	A-K.1.1.3	3	1083	1.64	0.08	0.36	0.39	0.16		0.01	0.61	-0.43	-0.31	0.28	0.36		0.6386	0.0473	-0.7	1.0	-0.9	1.0	A+	A-	A-
READING	4	536408	0	B.1.1.1		126593	1.90	0.07	0.24	0.42	0.28		0.01	0.58	-0.42	-0.32	0.15	0.38		0.1461	0.0041	3.7	1.0	5.0	1.0			
READING	4	928682	0	A.2.5.1	3	126593	1.59	0.14	0.33	0.33	0.20		0.01	0.59	-0.47	-0.20	0.22	0.38		0.7630	0.0039	-1.2	1.0	-3.1	1.0			
READING	4	608524	0	B.1.1.1	2	126593	1.97	0.06	0.20	0.43	0.31		0.01	0.57	-0.41	-0.30	0.08	0.39		0.0484	0.0041	9.9	1.1	9.9	1.0			
READING	4	319655	0	A.1.5.1	3	126593	1.81	0.07	0.26	0.44	0.22		0.01	0.56	-0.40	-0.31	0.19	0.34		0.3204	0.0042	9.9	1.0	9.9	1.0			
READING	5	466697	0	A.1.5.1	3	126213	1.87	0.03	0.23	0.58	0.16		0.01	0.52	-0.31	-0.38	0.23	0.27		0.1991	0.0049	3.0	1.0	3.6	1.0			
READING	5	150904	0	B.1.1.1	2	126213	1.72	0.08	0.25	0.54	0.13		0.01	0.61	-0.48	-0.29	0.32	0.29		0.7613	0.0045	-9.9	0.9	-9.9	0.9			
READING	5	576832	0	B.1.1.1	3	126213	1.80	0.08	0.19	0.57	0.15		0.00	0.65	-0.50	-0.33	0.32	0.31		0.6699	0.0044	-9.9	0.9	-9.9	0.9			
READING	5	868828	0	B.1.2.1	3	126213	1.40	0.15	0.40	0.35	0.10		0.01	0.50	-0.40	-0.12	0.25	0.27		1.3265	0.0041	9.9	1.1	9.9	1.1			
READING	6	272514	0	B.1.2.1	3	124788	1.68	0.05	0.32	0.53	0.10		0.00	0.56	-0.34	-0.35	0.30	0.30		0.5489	0.0048	-7.9	1.0	-7.2	1.0			
READING	6	936206	0	A.2.3.1	3	124788	1.68	0.06	0.34	0.47	0.13		0.01	0.46	-0.36	-0.23	0.23	0.23		0.5064	0.0046	9.9	1.2	9.9	1.2			
READING	6	846051	0	B.1.1.1	3	124788	1.43	0.20	0.27	0.44	0.09		0.01	0.67	-0.53	-0.22	0.45	0.30		1.2805	0.0041	-9.9	0.9	-9.9	0.9			
READING	6	984972	0	A.2.3.1	3	124788	1.86	0.03	0.30	0.46	0.22		0.00	0.42	-0.28	-0.28	0.13	0.26		-0.0601	0.0046	9.9	1.3	9.9	1.3			
READING	7	797134	0	A.1.3.1		128162	1.71	0.08	0.31	0.44	0.18		0.02	0.61	-0.40	-0.35	0.25	0.38		0.6064	0.0041	-9.9	0.9	-9.9	0.9			
READING	7	282855	0	B.1.2.1	3	128162	1.67	0.03	0.49	0.27	0.21		0.00	0.56	-0.29	-0.43	0.22	0.39		0.2081	0.0041	-9.9	1.0	-9.9	1.0			
READING	7	750832	0	B.1.2.1	3	128162	1.62	0.12	0.36	0.31	0.21		0.01	0.53	-0.39	-0.19	0.12	0.39		0.7682	0.0038	9.9	1.1	9.9	1.1			
READING	7	114348	0	A.2.3.1	3	128162	1.82	0.07	0.30	0.36	0.26		0.01	0.61	-0.42	-0.34	0.17	0.41		0.3848	0.0039	-9.9	0.9	-9.9	0.9			
READING	8	608739	0	A.2.4.1	3	128535	1.65	0.07	0.35	0.43	0.14		0.01	0.60	-0.40	-0.33	0.28	0.35		1.2478	0.0042	-9.9	0.9	-9.9	0.9			
READING	8	920262	0	B.1.2.1	3	128535	1.61	0.11	0.37	0.33	0.19		0.01	0.56	-0.45	-0.21	0.23	0.34		1.3222	0.0039	7.3	1.0	6.6	1.0			
READING	8	252025	0	A.2.6.1	3	128535	2.04	0.04	0.15	0.54	0.27		0.01	0.56	-0.37	-0.36	0.10	0.35		0.5481	0.0045	-9.2	1.0	-9.3	1.0			
READING	8	945525	0	A.1.3.1	3	128535	1.71	0.08	0.30	0.46	0.16		0.01	0.60	-0.44	-0.29	0.26	0.33		1.2055	0.0042	-9.9	0.9	-9.9	0.9			

SCIENCE	4	236279	0	A.3.1.3	2	126348	1.34	0.14	0.38	0.48			0.01	0.59	-0.43	-0.25	0.54			0.3018	0.0049	-9.9	0.9	-9.9	0.9			
SCIENCE	4	504894	0	A.1.3.3	2	126348	1.42	0.06	0.46	0.48			0.01	0.33	-0.33	-0.08	0.24			-0.2069	0.0055	9.9	1.2	9.9	1.3			
SCIENCE	4	107340	0	A.3.1.4	2	126348	1.16	0.24	0.35	0.40			0.01	0.53	-0.48	-0.01	0.43			0.8528	0.0045	9.9	1.1	9.9	1.1			
SCIENCE	4	299002	0	B.3.2.2	2	126348	1.28	0.17	0.38	0.45			0.01	0.51	-0.45	-0.08	0.41			0.4876	0.0047	9.9	1.1	9.9	1.1			
SCIENCE	4	269449	0	C.2.1.2	2	126348	1.16	0.21	0.42	0.37			0.01	0.37	-0.33	-0.01	0.29			0.8227	0.0047	9.9	1.3	9.9	1.3			
SCIENCE	4	997963	1	C.1.1.1	3	1100	0.64	0.42	0.51	0.07			0.01	0.53	-0.52	0.39	0.25			2.5338	0.0587	-2.0	0.9	-2.0	0.9	A-	B-	A+
SCIENCE	4	760022	2	C.3.1.2	3	1100	0.89	0.32	0.46	0.22			0.01	0.40	-0.39	0.15	0.26			1.5156	0.0500	4.4	1.2	4.7	1.2	A-	A-	A-
SCIENCE	4	835261	3	A.1.2.2	2	1099	0.64	0.50	0.36	0.14			0.01	0.44	-0.40	0.17	0.33			2.1846	0.0508	1.8	1.1	1.6	1.1	A-	A-	A-
SCIENCE	4	890138	4	C.3.1.1	3	1098	1.12	0.26	0.36	0.38			0.01	0.53	-0.46	-0.01	0.44			0.9619	0.0479	1.4	1.1	1.6	1.1	A-	B-	C-
SCIENCE	4	779226	5	A.2.1.1	3	1100	0.31	0.73	0.23	0.04			0.01	0.38	-0.37	0.30	0.20			3.3665	0.0638	-0.3	1.0	-0.6	1.0	A-	A-	B-
SCIENCE	4	164707	6	D.3.1.3	3	1099	1.09	0.26	0.38	0.35			0.01	0.37	-0.28	-0.09	0.34			1.0119	0.0477	7.8	1.3	8.6	1.4	A+	C-	A-
SCIENCE	4	614669	7	A.2.1.3	3	1099	0.13	0.88	0.11	0.01			0.01	0.14	-0.13	0.12	0.06			4.4206	0.0907	2.0	1.2	3.0	1.5	A+	A-	A-
SCIENCE	4	955970	8	B.3.1.1	2	1099	0.73	0.43	0.41	0.16			0.02	0.48	-0.41	0.13	0.39			1.9741	0.0507	-0.6	1.0	0.0	1.0	A-	B+	B+
SCIENCE	4	119715	9	B.3.2.3	2	1100	1.41	0.14	0.32	0.54			0.02	0.48	-0.33	-0.26	0.47			0.1821	0.0516	2.3	1.1	2.6	1.2	A+	C-	A-
SCIENCE	4	783527	10	A.1.2.1	2	1100	1.57	0.08	0.26	0.66			0.01	0.46	-0.34	-0.25	0.43			-0.3260	0.0565	1.4	1.1	3.7	1.3	A-	C-	C-
SCIENCE	4	551508	11	D.1.1.3	3	1099	0.91	0.27	0.55	0.18			0.01	0.57	-0.53	0.19	0.37			1.5435	0.0540	-2.8	0.9	-3.1	0.9	A+	B-	A-
SCIENCE	4	707581	12	B.1.1.3	3	1099	0.71	0.54	0.22	0.25			0.01	0.51	-0.47	0.11	0.44			1.8960	0.0462	1.2	1.1	1.6	1.1	A-	A-	A-
SCIENCE	8	441214	0	A.1.3.3	3	127027	1.19	0.26	0.29	0.45			0.01	0.60	-0.57	0.01	0.49			0.2234	0.0043	-9.9	0.9	-9.9	0.9			
SCIENCE	8	477126	0	B.3.2.3	2	127027	1.50	0.12	0.27	0.61			0.01	0.42	-0.37	-0.12	0.36			-0.6193	0.0049	9.9	1.2	9.9	1.3			
SCIENCE	8	832619	0	A.2.2.1	2	127027	1.08	0.28	0.36	0.36			0.02	0.46	-0.42	0.02	0.37			0.4772	0.0044	9.9	1.2	9.9	1.2			
SCIENCE	8	966808	0	D.1.2.1	3	127027	0.94	0.36	0.34	0.30			0.03	0.55	-0.55	0.18	0.39			0.8151	0.0043	1.7	1.0	-0.4	1.0			
SCIENCE	8	791638	0	A.3.2.2	2	127027	1.35	0.14	0.36	0.49			0.02	0.53	-0.45	-0.13	0.44			-0.2704	0.0048	4.8	1.0	5.9	1.0			
SCIENCE	8	266752	1	A.1.2.1	2	1100	1.10	0.23	0.45	0.32			0.02	0.38	-0.37	0.06	0.27			0.4195	0.0490	5.2	1.2	5.3	1.2	A+	B-	A-
SCIENCE	8	457149	2	B.3.2.3	3	1098	1.25	0.23	0.29	0.48			0.02	0.56	-0.55	0.03	0.44			0.1137	0.0472	0.7	1.0	1.1	1.1	A-	C-	C-
SCIENCE	8	642918	3	B.3.1.1	3	1099	0.86	0.30	0.54	0.16			0.01	0.46	-0.40	0.11	0.34			1.0974	0.0534	0.4	1.0	0.3	1.0	A+	B-	A-
SCIENCE	8	993846	4	B.1.1.3	3	1100	0.38	0.73	0.15	0.12			0.06	0.37	-0.35	0.17	0.30			2.0640	0.0510	0.3	1.0	0.3	1.0	A+	A-	A-
SCIENCE	8	716086	5	C.3.1.2	3	1100	0.40	0.76	0.09	0.15			0.02	0.37	-0.37	0.15	0.32			1.9864	0.0491	1.7	1.1	3.3	1.5	B-	A-	A-
SCIENCE	8	261945	6	C.3.1.1	3	1100	0.36	0.68	0.27	0.04			0.01	0.39	-0.38	0.31	0.20			2.5837	0.0606	0.0	1.0	-0.2	1.0	A+	A-	B-
SCIENCE	8	523466	7	C.1.1.1	2	1100	0.25	0.80	0.15	0.05			0.02	0.36	-0.36	0.27	0.22			2.6379	0.0625	-1.2	0.9	-1.1	0.9	A+	A-	A+
SCIENCE	8	974922	8	D.3.1.3	2	1099	1.18	0.18	0.46	0.36			0.02	0.45	-0.40	-0.04	0.35			0.1574	0.0507	2.6	1.1	2.6	1.1	A-	C-	A-
SCIENCE	8	252816	9	D.1.1.3	2	1099	0.60	0.52	0.36	0.12			0.02	0.54	-0.53	0.33	0.34			1.7138	0.0511	-4.5	0.8	-3.9	0.8	A-	C-	A-
SCIENCE	8	297840	10	A.1.2.2	2	1099	1.30	0.16	0.38	0.46			0.01	0.43	-0.40	-0.05	0.33			-0.1160	0.0503	3.8	1.2	3.9	1.2	A+	C-	C-
SCIENCE	8	579171	11	A.2.1.1	3	1100	0.87	0.40	0.34	0.27			0.03	0.54	-0.51	0.12	0.43			0.9620	0.0456	-0.8	1.0	-1.0	1.0	A-	A-	A-
SCIENCE	8	430893	12	A.2.1.3	3	1099	0.63	0.51	0.35	0.14			0.03	0.53	-0.54	0.33	0.33			1.6485	0.0505	-2.9	0.9	-2.5	0.9	A+	A-	A-
WRITING	5	401156	1	A.3	3	124429	2.45		0.07	0.46	0.43	0.05		0.68		-0.44	-0.37	0.49	0.28	3.0410	0.0066	-9.9	0.6	-9.9	0.5			
WRITING	5	401156	1	B.6	3	124429	2.44		0.07	0.46	0.43	0.05		0.69		-0.45	-0.37	0.49	0.28	3.0682	0.0066	-9.9	0.6	-9.9	0.5			
WRITING	5	502220	1	A.2	3	124429	2.51		0.06	0.42	0.48	0.05		0.69		-0.42	-0.44	0.51	0.29	2.7710	0.0067	-9.9	0.6	-9.9	0.5			
WRITING	5	502220	1	B.6	3	124429	2.48		0.07	0.43	0.46	0.04		0.71		-0.44	-0.41	0.52	0.28	2.9769	0.0066	-9.9	0.7	-9.9	0.7			
WRITING	8	127031	1	A.2	3	127637	2.76		0.02	0.26	0.65	0.07		0.64		-0.29	-0.51	0.39	0.32	1.6622	0.0070	-9.9	0.6	-9.9	0.5			
WRITING	8	127031	1	B.6	3	127637	2.74		0.03	0.27	0.63	0.07		0.67		-0.31	-0.52	0.41	0.33	1.7499	0.0068	-9.9	0.8	-9.9	0.7			
WRITING	8	738344	1	A.3	3	127637	2.64		0.04	0.35	0.56	0.06		0.68		-0.35	-0.50	0.46	0.31	2.2255	0.0066	-9.9	0.6	-9.9	0.4			
WRITING	8	738344	1	B.6	3	127637	2.64		0.05	0.33	0.56	0.06		0.70		-0.38	-0.49	0.47	0.33	2.3099	0.0064	-9.9	0.8	-9.9	0.7			

Item Information						Classical												Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	3	356822	1	B-C.2.1.2	3	14010	0.63	0.50	0.36	0.13			0.19	-0.12	-0.04	0.23		1.9351	0.0147	9.9	1.5	9.9	1.9	A-	A+	A-
ELA	3	868845	1	B-K.1.1.1	3	14010	1.54	0.15	0.36	0.30	0.20		0.53	-0.32	-0.26	0.18	0.40	0.7710	0.0117	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	3	279820	2	B-K.1.1.2	3	13860	1.32	0.18	0.42	0.31	0.09		0.37	-0.21	-0.15	0.16	0.29	1.3438	0.0127	9.9	1.4	9.9	1.4	A-	A-	A-
ELA	3	491253	2	B-C.2.1.2	3	13860	0.86	0.39	0.37	0.25			0.35	-0.25	-0.05	0.34		1.3409	0.0139	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	3	923231	3	B-K.1.1.2	3	13843	2.03	0.06	0.21	0.36	0.37		0.61	-0.34	-0.39	0.03	0.47	-0.1197	0.0125	1.3	1.0	2.3	1.0	A+	A-	A-
ELA	3	827535	3	B-K.1.1.1	3	13843	1.31	0.18	0.33	0.49			0.42	-0.25	-0.28	0.45		0.1286	0.0143	9.9	1.3	9.9	1.4	A+	A+	A+
ELA	3	846989	4	B-K.1.1.1	3	13810	1.80	0.15	0.26	0.22	0.37		0.59	-0.31	-0.36	-0.01	0.56	0.4644	0.0113	9.9	1.2	9.5	1.2	A-	A-	A-
ELA	3	807622	4	B-C.2.1.2	3	13810	1.30	0.22	0.26	0.52			0.63	-0.54	-0.14	0.57		0.2494	0.0140	-5.7	0.9	-4.4	0.9	A-	A-	A-
ELA	3	647871	5	B-K.1.1.2	3	13797	0.81	0.41	0.37	0.22			0.20	-0.13	-0.06	0.22		1.4679	0.0139	9.9	1.6	9.9	1.9	A-	A-	A-
ELA	3	939411	5	B-K.1.1.1	3	13797	2.01	0.08	0.21	0.33	0.38		0.67	-0.37	-0.43	0.02	0.55	0.0192	0.0120	-9.7	0.9	-9.8	0.9	A+	A-	A-
ELA	3	967225	6	A-K.1.1.2	3	13824	0.76	0.46	0.34	0.21			0.34	-0.25	-0.03	0.34		1.6779	0.0141	9.9	1.4	9.9	1.7	A+	A-	A-
ELA	3	310673	6	A-K.1.1.3	3	13824	1.74	0.13	0.27	0.31	0.28		0.56	-0.31	-0.34	0.11	0.45	0.5538	0.0118	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	3	172776	7	A-K.1.1.2	3	13752	1.57	0.15	0.32	0.34	0.19		0.48	-0.31	-0.24	0.21	0.31	0.8901	0.0121	9.9	1.4	9.9	1.4	A+	A-	A-
ELA	3	802730	7	A-K.1.1.3	3	13752	1.34	0.17	0.33	0.51			0.60	-0.46	-0.21	0.55		0.1082	0.0147	-3.4	1.0	-3.2	1.0	A+	A-	A-
ELA	3	865207	8	A-K.1.1.3	3	13843	1.35	0.27	0.29	0.26	0.18		0.45	-0.20	-0.33	0.20	0.39	1.2686	0.0112	9.9	1.3	9.9	1.4	A-	A-	A-
ELA	3	463739	8	A-K.1.1.3	3	13843	1.10	0.32	0.26	0.42			0.52	-0.41	-0.14	0.51		0.7832	0.0131	9.9	1.1	9.9	1.2	A-	A+	A-
ELA	3	765066	9	A-K.1.1.3	3	13738	1.38	0.18	0.27	0.56			0.64	-0.49	-0.28	0.62		-0.0087	0.0145	-8.6	0.9	-9.9	0.8	A-	A-	A-
ELA	3	514395	9	A-K.1.1.1	3	13738	1.62	0.15	0.31	0.30	0.24		0.45	-0.19	-0.30	0.07	0.41	0.7422	0.0118	9.9	1.5	9.9	1.5	A-	A-	A-
ELA	4	804395	1	A-K.1.1.3	3	14428	1.24	0.15	0.46	0.39			0.55	-0.46	-0.11	0.45		0.2019	0.0145	-5.2	1.0	-6.1	0.9	A+	B-	C-
ELA	4	446807	1	A-K.1.1.1	3	14428	1.65	0.12	0.36	0.28	0.24		0.53	-0.32	-0.27	0.11	0.42	0.5483	0.0113	9.9	1.1	9.4	1.1	A-	B-	B-
ELA	4	937509	2	A-C.2.1.1	3	14024	1.50	0.16	0.39	0.23	0.22		0.45	-0.29	-0.15	0.03	0.41	0.8557	0.0111	9.9	1.2	9.9	1.3	A+	A-	A+
ELA	4	369597	2	A-K.1.1.3	3	14024	1.17	0.23	0.37	0.40			0.42	-0.31	-0.14	0.40		0.5403	0.0135	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	4	601474	3	A-K.1.1.3	3	14061	1.04	0.32	0.32	0.36			0.36	-0.25	-0.13	0.37		0.8767	0.0127	9.9	1.3	9.9	1.4	A-	A+	A-
ELA	4	103669	3	A-K.1.1.1	3	14061	1.99	0.08	0.21	0.36	0.35		0.55	-0.32	-0.33	0.03	0.43	0.1051	0.0117	6.8	1.1	6.1	1.1	A+	A-	A-
ELA	4	612598	4	A-K.1.1.3	3	14050	1.24	0.27	0.22	0.51			0.49	-0.36	-0.23	0.51		0.4485	0.0129	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	4	518430	4	A-K.1.1.3	3	14050	2.07	0.09	0.16	0.34	0.41		0.61	-0.36	-0.38	0.01	0.49	0.0039	0.0118	-1.4	1.0	-2.0	1.0	A-	B-	B-
ELA	4	387588	5	B-K.1.1.1	3	14036	1.28	0.23	0.26	0.51			0.48	-0.33	-0.27	0.51		0.3612	0.0133	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	4	689199	5	B-K.1.1.2	3	14036	1.83	0.09	0.21	0.47	0.23		0.53	-0.32	-0.42	0.29	0.28	0.4048	0.0124	9.0	1.1	8.4	1.1	A+	A-	A-
ELA	4	250225	6	B-C.3.1.1	3	14040	1.77	0.08	0.24	0.53	0.16		0.44	-0.27	-0.29	0.21	0.25	0.5147	0.0132	9.9	1.2	9.9	1.2	A+	B-	A-
ELA	4	270367	6	B-V.4.1.1	2	14040	1.65	0.08	0.19	0.73			0.59	-0.44	-0.32	0.55		-0.7726	0.0166	-9.9	0.8	-7.8	0.8	A+	B-	C-
ELA	4	749604	7	B-C.3.1.2	3	14009	1.76	0.10	0.26	0.43	0.22		0.54	-0.33	-0.34	0.20	0.35	0.5034	0.0121	6.3	1.1	5.7	1.1	A+	A-	A-
ELA	4	984866	7	B-C.3.1.1	3	14009	1.10	0.31	0.28	0.41			0.46	-0.35	-0.15	0.47		0.7773	0.0127	9.9	1.2	9.9	1.3	A+	A-	B-
ELA	4	370737	8	B-C.3.1.1	3	13958	1.29	0.21	0.29	0.50			0.53	-0.37	-0.26	0.53		0.3147	0.0134	3.0	1.0	3.5	1.1	A-	B-	B-
ELA	4	376592	8	B-C.3.1.2	3	13958	1.62	0.13	0.34	0.33	0.21		0.41	-0.23	-0.23	0.11	0.33	0.7331	0.0115	9.9	1.3	9.9	1.3	A-	B-	A-
ELA	4	905947	9	B-K.1.1.2	3	13959	2.11	0.05	0.16	0.41	0.38		0.62	-0.31	-0.46	0.03	0.46	-0.1546	0.0127	-8.0	0.9	-8.6	0.9	A+	B-	A-
ELA	4	742885	9	B-K.1.1.1	3	13959	1.36	0.22	0.20	0.58			0.54	-0.37	-0.34	0.58		0.2253	0.0133	6.0	1.1	9.9	1.2	A+	B-	A-

ELA	5	895077	1	B-K.1.1.1	3	14378	1.35	0.19	0.27	0.54			0.61	-0.48	-0.23	0.58		0.2827	0.0134	-9.8	0.9	-9.9	0.8	A-	A-	A-
ELA	5	723310	1	B-K.1.1.2	3	14378	1.33	0.14	0.52	0.23	0.12		0.34	-0.21	-0.11	0.10	0.28	1.2583	0.0121	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	5	591316	2	B-K.1.1.2	3	14008	1.50	0.14	0.36	0.36	0.14		0.36	-0.24	-0.16	0.14	0.25	1.1105	0.0118	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	5	801607	2	B-K.1.1.1	3	14008	1.19	0.23	0.35	0.42			0.46	-0.32	-0.21	0.47		0.6745	0.0133	9.1	1.1	8.1	1.1	A+	A-	A-
ELA	5	525170	3	B-C.3.1.1	3	14016	1.37	0.21	0.21	0.58			0.53	-0.41	-0.24	0.54		0.3402	0.0134	5.8	1.1	3.6	1.1	A+	A-	A+
ELA	5	799506	3	B-K.1.1.1	3	14016	1.90	0.09	0.30	0.24	0.37		0.33	-0.22	-0.11	-0.10	0.32	0.3794	0.0112	9.9	1.6	9.9	1.8	A+	A-	A-
ELA	5	963076	4	B-K.1.1.1	3	14022	0.87	0.28	0.57	0.15			0.24	-0.23	0.11	0.14		1.5375	0.0152	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	5	118020	4	B-K.1.1.2	3	14022	1.04	0.35	0.36	0.20	0.10		0.05	0.12	-0.21	-0.06	0.21	1.8433	0.0110	9.9	1.9	9.9	2.2	A-	A-	A-
ELA	5	469148	5	B-K.1.1.2	3	13967	1.42	0.17	0.39	0.28	0.16		0.30	-0.13	-0.16	0.05	0.29	1.2258	0.0113	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	5	700497	5	B-K.1.1.1	3	13967	0.78	0.52	0.18	0.30			0.36	-0.24	-0.18	0.42		1.6098	0.0120	9.9	1.2	9.9	1.7	A-	A-	A-
ELA	5	749715	6	A-K.1.1.1	3	13935	1.94	0.06	0.17	0.56	0.22		0.54	-0.34	-0.37	0.17	0.31	0.3447	0.0133	-1.4	1.0	-2.0	1.0	A-	C-	B-
ELA	5	535104	6	A-K.1.1.1	3	13935	0.72	0.47	0.35	0.18			0.22	-0.15	-0.04	0.24		1.8668	0.0135	9.9	1.4	9.9	1.7	A-	A+	A+
ELA	5	359886	7	A-K.1.1.1	3	13980	2.23	0.05	0.12	0.37	0.46		0.58	-0.33	-0.42	-0.02	0.44	-0.1477	0.0126	-2.7	1.0	-2.0	1.0	A+	A-	A-
ELA	5	994412	7	A-K.1.1.1	3	13980	1.18	0.26	0.30	0.44			0.39	-0.31	-0.12	0.38		0.7553	0.0129	9.9	1.3	9.9	1.3	A-	A-	A-
ELA	5	572159	8	A-K.1.1.1	3	13888	1.36	0.19	0.26	0.55			0.59	-0.44	-0.26	0.57		0.3271	0.0136	-7.2	0.9	-9.1	0.9	A+	A-	A-
ELA	5	611315	8	A-K.1.1.3	3	13888	1.66	0.13	0.28	0.38	0.21		0.49	-0.25	-0.33	0.17	0.37	0.8751	0.0117	9.9	1.1	9.9	1.1	A-	A-	A-
ELA	5	889899	9	A-K.1.1.1	3	13993	0.89	0.46	0.19	0.35			0.41	-0.32	-0.12	0.44		1.3623	0.0119	9.9	1.2	9.9	1.4	A+	A-	A-
ELA	5	915626	9	A-K.1.1.2	3	13993	1.25	0.34	0.29	0.14	0.23		0.35	-0.10	-0.29	0.03	0.41	1.4305	0.0099	9.9	1.4	9.9	1.7	A+	A-	A-
ELA	6	464819	1	A-K.1.1.2	3	6628	1.61	0.10	0.37	0.36	0.17		0.40	-0.29	-0.14	0.09	0.29	0.5561	0.0181	9.9	1.4	9.9	1.4	A-	A-	A-
ELA	6	769299	1	A-K.1.1.3	3	6628	1.35	0.22	0.21	0.57			0.43	-0.25	-0.35	0.50		0.0315	0.0198	9.9	1.4	9.9	1.6	A+	A+	A-
ELA	6	753198	2	A-K.1.1.1	3	6197	0.76	0.38	0.49	0.13			0.17	-0.14	0.05	0.13		1.6835	0.0225	9.9	1.5	9.9	1.6	A-	A-	A-
ELA	6	239324	2	A-K.1.1.3	3	6197	1.61	0.12	0.30	0.44	0.15		0.42	-0.28	-0.22	0.21	0.25	0.7611	0.0185	9.9	1.3	9.9	1.3	A+	A-	A+
ELA	6	524870	3	A-K.1.1.1	3	6202	2.18	0.05	0.12	0.45	0.39		0.53	-0.32	-0.35	0.01	0.36	-0.3433	0.0200	3.2	1.1	4.3	1.1	A+	A-	A-
ELA	6	991153	3	A-K.1.1.1	3	6202	1.12	0.28	0.32	0.40			0.37	-0.27	-0.12	0.36		0.6875	0.0199	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	6	185971	4	A-C.2.1.3	3	6194	1.08	0.25	0.43	0.32			0.47	-0.41	0.00	0.38		0.7844	0.0210	7.3	1.1	8.4	1.2	A-	A-	A-
ELA	6	735678	4	A-K.1.1.1	3	6194	1.63	0.08	0.34	0.46	0.13		0.47	-0.33	-0.24	0.22	0.27	0.6841	0.0200	7.5	1.1	7.6	1.1	A-	A-	A-
ELA	6	897783	5	A-K.1.1.1	3	6264	1.18	0.26	0.31	0.44			0.47	-0.32	-0.21	0.48		0.5478	0.0199	9.9	1.2	9.2	1.2	A+	B-	B-
ELA	6	252499	5	A-K.1.1.3	3	6264	1.53	0.19	0.29	0.30	0.21		0.41	-0.19	-0.28	0.12	0.36	0.9240	0.0167	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	6	236764	6	A-K.1.1.1	3	6196	1.96	0.07	0.22	0.40	0.31		0.51	-0.30	-0.29	0.03	0.39	0.0851	0.0187	9.9	1.2	9.9	1.2	A-	A-	A-
ELA	6	834286	6	A-K.1.1.1	3	6196	0.99	0.34	0.34	0.32			0.31	-0.24	-0.04	0.29		1.0681	0.0199	9.9	1.5	9.9	1.7	A+	A-	A-
ELA	6	456978	7	A-C.2.1.3	3	6214	1.29	0.14	0.43	0.43			0.37	-0.28	-0.13	0.32		0.1235	0.0222	9.9	1.3	9.9	1.3	A-	A-	B-
ELA	6	240382	7	A-K.1.1.1	3	6214	1.73	0.11	0.27	0.39	0.23		0.48	-0.24	-0.33	0.14	0.36	0.5290	0.0178	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	604650	8	A-K.1.1.1	3	6188	2.37	0.03	0.10	0.32	0.54		0.58	-0.27	-0.44	-0.10	0.46	-0.7166	0.0206	-1.4	1.0	0.5	1.0	A+	B-	A-
ELA	6	931766	8	A-K.1.1.2	3	6188	1.12	0.22	0.43	0.34			0.43	-0.39	0.01	0.33		0.6835	0.0213	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	112783	9	A-K.1.1.1	3	6227	1.27	0.22	0.29	0.49			0.38	-0.29	-0.14	0.37		0.3528	0.0200	9.9	1.4	9.9	1.5	A-	A-	A-
ELA	6	950024	9	A-K.1.1.3	3	6227	2.20	0.08	0.15	0.28	0.50		0.62	-0.33	-0.46	0.00	0.51	-0.1874	0.0177	-1.3	1.0	-1.3	1.0	A-	B-	C-
ELA	6	798494	10	A-K.1.1.3	3	6224	1.26	0.12	0.50	0.38			0.35	-0.34	-0.01	0.24		0.1364	0.0231	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	981299	10	A-K.1.1.1	3	6224	1.98	0.05	0.25	0.38	0.33		0.48	-0.33	-0.25	0.02	0.36	-0.0710	0.0187	9.9	1.2	9.9	1.2	A+	A-	A-
ELA	6	343967	11	B-C.3.1.1	3	6191	0.81	0.29	0.61	0.10			0.29	-0.35	0.29	0.06		1.6626	0.0245	9.6	1.2	9.9	1.2	A-	A-	A-
ELA	6	162153	11	B-K.1.1.2	3	6191	1.56	0.17	0.31	0.30	0.21		0.45	-0.19	-0.32	0.14	0.39	0.8669	0.0165	9.9	1.2	9.9	1.3	A+	A-	A-
ELA	6	522685	12	B-K.1.1.1	3	6209	1.32	0.19	0.30	0.51			0.57	-0.48	-0.14	0.50		0.2020	0.0206	-1.8	1.0	-2.0	1.0	A-	A-	A-
ELA	6	381573	12	B-K.1.1.3	2	6209	1.85	0.11	0.23	0.36	0.30		0.53	-0.30	-0.34	0.09	0.41	0.3525	0.0174	7.9	1.1	7.0	1.1	A+	A-	A-
ELA	6	590523	13	B-C.2.1.1	3	6215	1.77	0.08	0.32	0.35	0.25		0.51	-0.30	-0.31	0.14	0.37	0.4034	0.0180	7.6	1.1	7.5	1.1	A+	A-	A-
ELA	6	714555	13	B-V.4.1.1	2	6215	1.22	0.22	0.35	0.43			0.54	-0.46	-0.08	0.46		0.4434	0.0204	1.1	1.0	1.4	1.0	A-	A-	A-
ELA	6	876485	14	B-C.3.1.1	3	6241	1.92	0.07	0.24	0.38	0.31		0.60	-0.31	-0.42	0.12	0.44	0.1355	0.0182	-1.7	1.0	-2.5	1.0	A-	B-	A-
ELA	6	899973	14	B-K.1.1.1	3	6241	0.88	0.41	0.30	0.30			0.29	-0.16	-0.20	0.37		1.2510	0.0193	9.9	1.5	9.9	1.7	A-	A-	A-
ELA	6	272516	15	B-C.3.1.1	3	6224	1.79	0.09	0.27	0.42	0.23		0.50	-0.32	-0.28	0.15	0.33	0.4344	0.0180	6.9	1.1	7.2	1.1	A+	A-	B-
ELA	6	604219	15	B-K.1.1.1	3	6224	0.84	0.28	0.59	0.13			0.34	-0.39	0.29	0.10		1.5148	0.0236	8.6	1.2	9.9	1.2	A+	A-	A-
ELA	6	392526	16	B-C.2.1.1	3	6244	1.27	0.20	0.32	0.47			0.54	-0.44	-0.15	0.49		0.3207	0.0206	2.3	1.0	1.1	1.0	A-	A-	A-
ELA	6	242166	16	B-K.1.1.1	3	6244	2.36	0.04	0.11	0.30	0.55		0.61	-0.28	-0.44	-0.13	0.51	-0.6354	0.0198	-4.1	0.9	-1.8	1.0	A+	B-	A-

ELA	6	182402	17	B-C.2.1.1	3	6257	1.31	0.20	0.30	0.51			0.50	-0.41	-0.14	0.46		0.2400	0.0206	6.7	1.1	6.1	1.2	A+	A-	A-
ELA	6	741953	17	B-K.1.1.1	3	6257	1.77	0.09	0.26	0.44	0.21		0.53	-0.25	-0.40	0.19	0.37	0.4751	0.0186	4.6	1.1	3.7	1.1	A+	A-	A-
ELA	6	171565	18	B-K.1.1.1	3	6217	1.60	0.10	0.21	0.70			0.51	-0.38	-0.28	0.49		-0.5863	0.0235	-0.7	1.0	1.6	1.1	A+	A-	A+
ELA	6	269544	18	B-K.1.1.2	3	6217	1.98	0.05	0.16	0.55	0.24		0.56	-0.34	-0.40	0.15	0.34	0.0323	0.0203	-2.0	1.0	-2.4	1.0	A+	A-	A-
ELA	6	132215	19	B-K.1.1.2	3	6231	2.00	0.09	0.18	0.36	0.37		0.60	-0.29	-0.45	0.05	0.48	0.1314	0.0173	-1.1	1.0	-2.1	1.0	A-	B-	A-
ELA	6	147199	19	B-K.1.1.1	3	6231	1.09	0.27	0.38	0.35			0.33	-0.21	-0.16	0.35		0.7581	0.0198	9.9	1.3	9.9	1.4	A+	A-	A+
ELA	6	208763	20	B-K.1.1.1	3	6194	0.92	0.35	0.38	0.27			0.39	-0.31	-0.02	0.35		1.1740	0.0198	9.9	1.2	9.9	1.3	A-	A-	A-
ELA	6	986656	20	B-K.1.1.2	3	6194	1.81	0.08	0.26	0.45	0.22		0.51	-0.32	-0.29	0.15	0.34	0.3670	0.0185	4.6	1.1	4.2	1.1	A-	A-	A-
ELA	7	507677	1	A-V.4.1.1	3	6800	1.33	0.15	0.38	0.48			0.45	-0.41	-0.07	0.36		0.0668	0.0207	7.9	1.1	9.4	1.2	A+	A-	B-
ELA	7	301069	1	A-K.1.1.1	3	6800	2.08	0.07	0.15	0.41	0.37		0.60	-0.37	-0.39	0.05	0.43	-0.0683	0.0176	-2.3	1.0	-1.3	1.0	A+	B-	C-
ELA	7	244744	2	A-K.1.1.3	3	6405	1.38	0.21	0.31	0.38	0.11		0.49	-0.27	-0.32	0.34	0.29	1.3639	0.0172	6.3	1.1	7.0	1.1	A-	B-	A-
ELA	7	826984	2	A-K.1.1.1	3	6405	1.38	0.13	0.36	0.51			0.44	-0.37	-0.13	0.37		0.0462	0.0213	6.1	1.1	6.9	1.2	A+	A-	A-
ELA	7	449620	3	A-V.4.1.1	3	6373	1.81	0.09	0.27	0.39	0.26		0.48	-0.31	-0.27	0.12	0.34	0.5298	0.0173	8.9	1.2	9.4	1.2	A+	B-	A-
ELA	7	392042	3	A-K.1.1.2	3	6373	1.23	0.26	0.26	0.49			0.48	-0.36	-0.19	0.49		0.6116	0.0189	5.7	1.1	6.3	1.2	A+	A-	A-
ELA	7	405214	4	A-K.1.1.3	3	6365	1.29	0.22	0.39	0.26	0.12		0.22	-0.09	-0.10	0.00	0.27	1.4217	0.0169	9.9	1.6	9.9	1.7	A+	A-	A-
ELA	7	253474	4	A-V.4.1.1	2	6365	1.65	0.08	0.19	0.73			0.46	-0.34	-0.25	0.43		-0.5803	0.0238	1.9	1.0	3.0	1.1	A+	A-	C-
ELA	7	663401	5	A-V.4.1.1	3	6398	1.24	0.28	0.21	0.51			0.42	-0.31	-0.19	0.43		0.5769	0.0185	9.9	1.3	9.9	1.3	A+	A+	A-
ELA	7	339697	5	A-K.1.1.1	3	6398	1.88	0.11	0.18	0.44	0.27		0.57	-0.32	-0.38	0.11	0.43	0.4745	0.0173	-0.5	1.0	-1.0	1.0	A-	A-	A-
ELA	7	781036	6	A-K.1.1.3	3	6402	1.58	0.12	0.31	0.44	0.13		0.40	-0.29	-0.20	0.24	0.20	0.9801	0.0183	9.9	1.3	9.9	1.3	A+	B-	A-
ELA	7	110094	6	A-V.4.1.2	3	6402	1.26	0.24	0.26	0.50			0.46	-0.35	-0.19	0.46		0.5250	0.0191	9.0	1.2	7.5	1.2	A+	A-	A-
ELA	7	640923	7	A-K.1.1.1	3	6418	1.76	0.11	0.23	0.45	0.21		0.52	-0.36	-0.28	0.19	0.33	0.6365	0.0174	3.0	1.1	3.0	1.1	A-	B-	B-
ELA	7	994073	7	A-C.3.1.1	3	6418	0.64	0.56	0.25	0.19			0.15	-0.09	-0.07	0.19		1.8548	0.0191	9.9	1.4	9.9	2.3	B-	A-	A+
ELA	7	687435	8	A-C.2.1.1	3	6412	2.02	0.08	0.21	0.31	0.40		0.57	-0.27	-0.42	0.04	0.47	0.1923	0.0169	1.1	1.0	1.9	1.0	A-	B-	A-
ELA	7	218836	8	A-K.1.1.1	3	6412	0.66	0.36	0.63	0.01			0.16	-0.19	0.21	-0.09		3.0220	0.0277	9.9	1.3	9.9	1.3	A-	A-	A+
ELA	7	276462	9	A-K.1.1.3	3	6408	1.74	0.07	0.11	0.81			0.58	-0.39	-0.43	0.61		-0.8128	0.0257	-8.3	0.8	-9.8	0.6	A+	A-	A-
ELA	7	307949	9	A-C.2.1.1	3	6408	1.62	0.12	0.31	0.41	0.17		0.56	-0.37	-0.30	0.28	0.33	0.8723	0.0179	-1.0	1.0	-0.8	1.0	A+	A-	A-
ELA	7	680416	10	A-V.4.1.1	3	6402	1.50	0.09	0.33	0.59			0.44	-0.42	-0.09	0.33		-0.3093	0.0229	4.3	1.1	8.8	1.2	A-	A-	A-
ELA	7	152113	10	A-C.2.1.1	3	6402	1.57	0.13	0.32	0.39	0.16		0.48	-0.33	-0.22	0.22	0.29	0.9704	0.0177	9.5	1.2	9.9	1.2	A-	B-	A-
ELA	7	909158	11	B-K.1.1.1	2	6379	1.30	0.19	0.32	0.49			0.44	-0.34	-0.15	0.41		0.3594	0.0200	8.2	1.1	9.9	1.2	A+	A-	A-
ELA	7	614839	11	B-C.3.1.1	3	6379	2.22	0.09	0.10	0.31	0.50		0.56	-0.27	-0.44	-0.07	0.49	-0.0118	0.0173	3.7	1.1	3.1	1.1	A+	A-	A-
ELA	7	628876	12	B-K.1.1.2	3	6401	1.59	0.11	0.36	0.39	0.15		0.49	-0.27	-0.33	0.27	0.29	0.8756	0.0181	4.9	1.1	4.7	1.1	A-	A-	A-
ELA	7	369270	12	B-C.3.1.1	3	6401	1.35	0.20	0.25	0.55			0.56	-0.41	-0.27	0.56		0.2888	0.0196	-1.2	1.0	-2.7	0.9	A-	A-	A-
ELA	7	246880	13	B-C.2.1.1	3	6337	0.86	0.50	0.14	0.36			0.36	-0.23	-0.27	0.44		1.3191	0.0172	9.9	1.3	9.9	1.7	A-	A-	A+
ELA	7	954140	13	B-V.4.1.1	3	6337	1.86	0.14	0.21	0.30	0.35		0.42	-0.24	-0.25	0.01	0.37	0.5000	0.0159	9.9	1.4	9.9	1.4	A+	A-	A-
ELA	7	773364	14	B-K.1.1.1	3	6389	1.69	0.134	0.285	0.337	0.244		0.473	-0.187	-0.382	0.149	0.387	0.7189	0.0164	9.9	1.18	9.9	1.18	A+	A-	A-
ELA	7	607813	14	B-C.3.1.1	3	6389	1.167	0.36	0.114	0.527			0.449	-0.351	-0.251	0.497		0.7508	0.0174	9.9	1.23	9.9	1.4	A-	A-	A-
ELA	7	438037	15	B-C.3.1.1	3	6384	1.266	0.24	0.253	0.507			0.531	-0.386	-0.245	0.543		0.4919	0.019	0.97	1.02	0.53	1.01	A-	A-	A-
ELA	7	770376	15	B-K.1.1.1	3	6384	1.501	0.142	0.371	0.331	0.156		0.406	-0.275	-0.127	0.079	0.331	1.027	0.0172	9.9	1.24	9.9	1.26	A-	A-	A-
ELA	7	903341	16	B-C.3.1.1	3	6376	1.078	0.304	0.313	0.383			0.458	-0.373	-0.074	0.424		0.8858	0.0187	5.59	1.09	7.05	1.14	A-	A-	A-
ELA	7	276875	16	B-C.2.1.3	3	6376	0.657	0.517	0.33	0.13	0.022		-0.014	0.119	-0.198	0.056	0.101	2.6786	0.0192	9.9	1.7	9.9	2.43	A-	A-	A-
ELA	7	893543	17	B-K.1.1.2	3	6393	1.701	0.139	0.267	0.349	0.246		0.557	-0.318	-0.308	0.109	0.452	0.7469	0.0164	0.74	1.01	0.88	1.01	A-	A-	A-
ELA	7	120187	17	B-C.3.1.1	3	6393	1.165	0.224	0.387	0.389			0.453	-0.348	-0.116	0.414		0.6742	0.0198	5.3	1.08	5.13	1.09	A-	A-	A-
ELA	7	910090	18	B-K.1.1.2	3	6337	1.211	0.156	0.477	0.367			0.419	-0.332	-0.098	0.352		0.4935	0.0215	5.98	1.1	6.96	1.12	A-	A-	A-
ELA	7	817225	18	B-C.2.1.1	3	6337	2.225	0.032	0.117	0.446	0.405		0.56	-0.293	-0.407	-0.037	0.408	-0.3351	0.0199	-3.42	0.94	-3.65	0.93	A+	A-	A-
ELA	7	898722	19	B-K.1.1.1	3	6399	1.902	0.06	0.276	0.367	0.297		0.569	-0.319	-0.373	0.105	0.42	0.2217	0.0175	-2.85	0.95	-3.03	0.95	A-	B-	A-
ELA	7	854341	19	B-C.2.1.1	3	6399	1.541	0.113	0.232	0.655			0.59	-0.437	-0.308	0.565		-0.2692	0.0219	-8.35	0.85	-7.8	0.79	A+	A+	A-
ELA	7	942700	20	B-K.1.1.1	3	6357	1.563	0.24	0.218	0.281	0.261		0.47	-0.228	-0.367	0.155	0.408	0.9935	0.0151	9.9	1.26	9.9	1.32	A-	A-	A-
ELA	7	601705	20	B-C.3.1.1	3	6357	1.136	0.33	0.204	0.466			0.48	-0.376	-0.172	0.494		0.7944	0.0179	7.16	1.11	7.66	1.19	A-	A+	A+

ELA	8	138452	1	A-K.1.1.1	3	6795	1.262	0.296	0.146	0.558			0.535	-0.413	-0.276	0.576		1.003	0.0182	8.06	1.15	7	1.23	A+	A-	B-
ELA	8	213468	1	A-V.4.1.2	3	6795	2.216	0.052	0.141	0.345	0.462		0.571	-0.307	-0.41	-0.02	0.442	0.1867	0.0182	1.87	1.03	3.04	1.06	A-	A-	C-
ELA	8	921390	2	A-K.1.1.3	2	6387	1.528	0.121	0.23	0.649			0.518	-0.414	-0.221	0.478		0.3311	0.0219	0.45	1.01	0.91	1.03	A+	A-	A-
ELA	8	426890	2	A-C.2.1.1	2	6387	1.597	0.154	0.268	0.407	0.172		0.465	-0.222	-0.34	0.207	0.341	1.5187	0.0171	9.9	1.18	9.9	1.19	A-	A-	A-
ELA	8	920126	3	A-C.2.1.3	3	6413	1.862	0.078	0.276	0.352	0.294		0.467	-0.255	-0.309	0.1	0.348	0.9215	0.0174	9.9	1.22	9.9	1.23	A+	B-	B-
ELA	8	214352	3	A-C.2.1.2	3	6413	0.831	0.435	0.3	0.265			0.405	-0.282	-0.113	0.435		2.0416	0.0189	7.88	1.12	9.9	1.29	A+	A-	A-
ELA	8	552275	4	A-V.4.1.1	3	6419	1.629	0.082	0.207	0.711			0.568	-0.443	-0.284	0.522		-0.0372	0.024	-5.93	0.88	-6.85	0.78	A-	B-	B-
ELA	8	794626	4	A-K.1.1.2	3	6419	1.973	0.075	0.158	0.488	0.28		0.493	-0.258	-0.362	0.088	0.347	0.8118	0.0186	6.93	1.13	8.32	1.15	A+	A-	A-
ELA	8	132160	5	A-C.2.1.3	3	6418	1.727	0.062	0.148	0.789			0.522	-0.38	-0.319	0.503		-0.3056	0.026	-3.83	0.91	-5.42	0.78	A-	B-	A-
ELA	8	800211	5	A-K.1.1.3	3	6418	1.971	0.11	0.161	0.375	0.353		0.599	-0.352	-0.446	0.153	0.419	0.9162	0.0169	-1.84	0.97	-3.35	0.94	A-	A-	A-
ELA	8	413372	6	A-C.2.1.3	2	6375	1.312	0.069	0.551	0.38			0.368	-0.39	-0.043	0.247		0.5069	0.0242	6.28	1.1	7.26	1.12	A+	A-	A-
ELA	8	505116	6	A-K.1.1.2	3	6375	1.981	0.07	0.188	0.433	0.309		0.501	-0.327	-0.299	0.085	0.342	0.7881	0.0181	6.47	1.11	6.39	1.12	A+	A-	A-
ELA	8	925376	7	A-K.1.1.1	2	6400	1.379	0.23	0.16	0.61			0.365	-0.243	-0.273	0.415		0.8837	0.019	9.9	1.39	9.9	1.61	A+	A+	A+
ELA	8	872941	7	A-K.1.1.3	2	6400	1.902	0.066	0.217	0.466	0.251		0.495	-0.28	-0.34	0.137	0.326	0.8964	0.0183	3.95	1.07	3.27	1.06	A-	A-	A+
ELA	8	779669	8	A-C.2.1.1	3	6447	1.698	0.196	0.166	0.382	0.256		0.345	-0.097	-0.378	0.067	0.336	1.3949	0.0155	9.9	1.51	9.9	1.64	A+	A-	A-
ELA	8	494376	8	A-K.1.1.3	3	6447	0.6	0.555	0.289	0.156			0.104	-0.079	0.003	0.104		2.5241	0.0197	9.9	1.48	9.9	2.08	A+	A-	A+
ELA	8	282099	9	A-V.4.1.1	3	6407	2.053	0.07	0.132	0.474	0.324		0.475	-0.284	-0.329	0.066	0.322	0.6929	0.0183	7.07	1.13	7.91	1.15	A-	A-	A-
ELA	8	533139	9	A-K.1.1.3	3	6407	1.346	0.228	0.197	0.575			0.41	-0.285	-0.25	0.443		0.9103	0.019	9.9	1.26	9.9	1.36	A+	A+	A-
ELA	8	507139	10	A-K.1.1.3	3	6419	0.459	0.684	0.174	0.143			0.008	0.065	-0.176	0.104		2.8166	0.02	9.9	1.62	9.9	3.23	A+	A+	A+
ELA	8	886763	10	A-K.1.1.1	3	6419	1.766	0.098	0.262	0.416	0.224		0.368	-0.17	-0.246	0.069	0.299	1.1633	0.0173	9.9	1.33	9.9	1.37	A-	A-	A-
ELA	8	108131	11	B-C.3.1.1	3	6432	0.663	0.569	0.198	0.232			0.285	-0.184	-0.134	0.343		2.3045	0.0182	9.9	1.22	9.9	1.82	C-	A-	A-
ELA	8	743340	11	B-K.1.1.2	3	6432	1.976	0.074	0.235	0.332	0.359		0.502	-0.291	-0.299	0.018	0.405	0.7552	0.0169	7.34	1.13	8.4	1.16	A-	B-	A-
ELA	8	123621	12	B-K.1.1.1	2	6414	0.672	0.461	0.407	0.132			0.036	0.025	-0.101	0.111		2.4932	0.0209	9.9	1.6	9.9	1.85	A+	A-	A-
ELA	8	175904	12	B-K.1.1.3	2	6414	1.853	0.062	0.268	0.425	0.245		0.564	-0.386	-0.311	0.141	0.374	0.8929	0.018	-3.2	0.95	-3.35	0.95	A-	B-	A-
ELA	8	918831	13	B-C.3.1.1	2	6405	1.318	0.328	0.232	0.233	0.207		0.37	-0.15	-0.3	0.104	0.378	1.8742	0.0145	9.9	1.35	9.9	1.63	B-	A-	A-
ELA	8	295661	13	B-K.1.1.3	3	6405	0.852	0.298	0.551	0.151			0.276	-0.28	0.153	0.145		2.0497	0.022	9.9	1.21	9.9	1.23	A+	A+	A-
ELA	8	165362	14	B-C.2.1.1	3	6417	1.735	0.104	0.259	0.436	0.202		0.508	-0.328	-0.286	0.191	0.326	1.2352	0.0175	4.02	1.07	3.71	1.06	A-	A-	A-
ELA	8	930871	14	B-C.2.1.2	3	6417	1.285	0.213	0.289	0.498			0.519	-0.356	-0.266	0.532		0.9924	0.0194	1.34	1.02	-0.59	0.99	A+	A-	A-
ELA	8	990087	15	B-V.4.1.2	3	6403	1.369	0.201	0.229	0.57			0.332	-0.284	-0.087	0.304		0.8452	0.0194	9.9	1.35	9.9	1.6	A-	B-	A-
ELA	8	246130	15	B-K.1.1.3	3	6403	1.624	0.158	0.247	0.409	0.187		0.425	-0.211	-0.293	0.153	0.329	1.4921	0.0166	9.9	1.24	9.9	1.25	A-	A+	A-
ELA	8	821602	16	B-K.1.1.1	2	6389	1.467	0.156	0.22	0.624			0.454	-0.354	-0.201	0.437		0.5642	0.0204	6.04	1.11	7.33	1.22	A+	A-	A-
ELA	8	140265	16	B-K.1.1.1	2	6389	1.687	0.228	0.217	0.196	0.36		0.487	-0.219	-0.368	0.011	0.498	1.3602	0.0144	9.9	1.22	9.9	1.29	A-	A-	A-
ELA	8	921732	17	B-V.4.1.2	2	6382	1.284	0.275	0.166	0.559			0.556	-0.438	-0.247	0.579		1.0796	0.0183	-1.27	0.98	-2.88	0.92	A+	A+	A+
ELA	8	547075	17	B-K.1.1.2	3	6382	1.253	0.231	0.403	0.246	0.119		0.321	-0.177	-0.144	0.144	0.257	2.0151	0.0168	9.9	1.34	9.9	1.41	A-	A-	A-
ELA	8	728374	18	B-K.1.1.1	2	6419	1.133	0.29	0.287	0.423			0.19	-0.089	-0.172	0.239		1.3342	0.0184	9.9	1.58	9.9	1.76	A-	A-	A-
ELA	8	544619	18	B-C.3.1.1	3	6419	1.378	0.142	0.423	0.348	0.086		0.395	-0.306	-0.114	0.22	0.208	1.8424	0.0182	8.77	1.15	9.9	1.17	A-	B-	A-
ELA	8	186842	19	B-C.3.1.2	3	6383	1.176	0.16	0.505	0.335			0.453	-0.355	-0.096	0.378		1.1309	0.0215	1.1	1.02	0.79	1.01	A+	A+	A+
ELA	8	726163	19	B-K.1.1.1	3	6383	1.646	0.144	0.279	0.364	0.213		0.428	-0.266	-0.221	0.13	0.317	1.4118	0.0165	9.9	1.26	9.9	1.3	A+	A-	A-
ELA	8	701044	20	B-C.3.1.1	3	6383	1.599	0.112	0.299	0.469	0.12		0.334	-0.205	-0.214	0.218	0.165	1.5337	0.0184	9.9	1.33	9.9	1.33	A-	A-	A-
ELA	8	878179	20	B-K.1.1.2	2	6383	1.049	0.266	0.418	0.316			0.363	-0.304	-0.015	0.305		1.5317	0.0198	9.9	1.21	9.9	1.25	A+	A+	A+

Item Information							Classical														Rasch		Infit		Outfit		DIF		
Cont	Grade	PubID	Form	Std1	Std2	DOK	N	Mean	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	Meas	MeasSE	t	MS	t	MS	M/F	W/B	W/H
ELA	4	990612	1	E.1.1	A-K.1.1.2	3	1474	1.16	0.10	0.68	0.18	0.04	0.00	0.00	0.50	-0.44	-0.03	0.28	0.20	0.05	2.6299	0.0469	-1.6	0.9	-1.8	0.9	A+	A-	A-
ELA	4	100693	2	E.1.1	A-C.3.1.1	3	1495	1.33	0.14	0.48	0.29	0.08	0.00	0.01	0.62	-0.56	-0.08	0.34	0.28	0.07	2.4274	0.0389	-3.9	0.9	-4.2	0.9	C+	B-	B-
ELA	4	475167	3	E.1.1	A-K.1.1.2	3	1495	1.14	0.12	0.66	0.18	0.04	0.00	0.02	0.51	-0.43	-0.03	0.30	0.21	0.04	3.0369	0.0450	-2.0	0.9	-2.5	0.9	B+	A-	A-
ELA	4	545551	4	E.1.1	A-K.1.1.1	3	1492	1.24	0.19	0.47	0.27	0.07	0.00	0.01	0.62	-0.52	-0.08	0.38	0.27	0.06	2.6146	0.0383	-4.5	0.9	-4.8	0.8	A+	A-	B-
ELA	4	650132	5	E.1.1	B-K.1.1.1	3	1491	1.41	0.06	0.57	0.27	0.09	0.00	0.01	0.56	-0.40	-0.28	0.33	0.28	0.07	2.1710	0.0419	-2.9	0.9	-3.4	0.9	A+	A-	A-
ELA	4	550961	6	E.1.1	B-K.1.1.1	3	1484	1.61	0.05	0.44	0.39	0.12	0.01	0.01	0.59	-0.37	-0.37	0.30	0.33	0.07	1.8259	0.0412	-3.4	0.9	-3.3	0.9	B+	A-	A-
ELA	4	825535	7	E.1.1	B-K.1.1.1	3	1487	1.40	0.09	0.51	0.31	0.09	0.01	0.01	0.57	-0.44	-0.22	0.34	0.26	0.09	2.1449	0.0404	-2.7	0.9	-2.8	0.9	B+	B-	A-
ELA	4	802988	8	E.1.1	B-K.1.1.1	3	1487	1.43	0.07	0.53	0.31	0.09	0.00	0.01	0.56	-0.42	-0.24	0.31	0.28	0.07	2.0595	0.0409	-2.3	0.9	-2.4	0.9	A+	B-	B-
ELA	4	789339	9	E.1.1	B-C.3.1.1	3	1489	1.33	0.08	0.58	0.27	0.07	0.00	0.01	0.56	-0.46	-0.18	0.33	0.26	0.07	2.2111	0.0425	-3.1	0.9	-3.5	0.9	C+	B-	A-
ELA	5	476188	1	E.1.1	B-K.1.1.3	3	1473	1.46	0.11	0.46	0.31	0.10	0.02	0.01	0.54	-0.33	-0.29	0.30	0.30	0.12	1.9614	0.0370	-2.0	0.9	-2.4	0.9	B+	A-	A-
ELA	5	101115	2	E.1.1	B-C.3.1.2	3	1487	1.56	0.11	0.35	0.41	0.12	0.01	0.01	0.59	-0.47	-0.22	0.30	0.29	0.11	2.0903	0.0372	-2.5	0.9	-2.6	0.9	A+	A-	B-
ELA	5	722738	3	E.1.1	B-K.1.1.1	3	1484	1.53	0.09	0.42	0.36	0.11	0.01	0.01	0.55	-0.41	-0.24	0.27	0.29	0.11	1.9816	0.0376	-2.1	0.9	-2.4	0.9	B+	C-	B-
ELA	5	427189	4	E.1.1	B-C.3.1.1	3	1492	1.67	0.06	0.37	0.43	0.12	0.02	0.00	0.57	-0.38	-0.30	0.23	0.30	0.19	1.5932	0.0376	-3.0	0.9	-3.1	0.9	C+	A-	A-
ELA	5	498568	5	E.1.1	B-C.3.1.1	3	1496	1.55	0.08	0.41	0.40	0.09	0.02	0.01	0.58	-0.44	-0.29	0.35	0.25	0.12	1.7910	0.0379	-2.2	0.9	-2.3	0.9	B+	A-	A-
ELA	5	385430	6	E.1.1	A-K.1.1.3	3	1496	1.54	0.09	0.44	0.32	0.13	0.02	0.01	0.64	-0.44	-0.31	0.32	0.34	0.17	1.8344	0.0363	-6.2	0.8	-6.3	0.8	B+	A-	A-
ELA	5	707708	7	E.1.1	A-K.1.1.2	3	1486	1.63	0.06	0.35	0.48	0.09	0.01	0.00	0.62	-0.46	-0.34	0.38	0.25	0.11	1.7788	0.0406	-4.6	0.8	-4.6	0.8	A+	B-	A-
ELA	5	737840	8	E.1.1	A-K.1.1.2	3	1488	1.39	0.16	0.41	0.32	0.10	0.01	0.01	0.60	-0.47	-0.17	0.34	0.29	0.11	2.3612	0.0367	-2.9	0.9	-3.1	0.9	A+	A-	B-
ELA	5	271089	9	E.1.1	A-K.1.1.3	3	1470	1.61	0.10	0.33	0.44	0.12	0.01	0.01	0.64	-0.51	-0.26	0.32	0.32	0.10	1.9991	0.0374	-5.7	0.8	-5.6	0.8	C+	A-	A-
ELA	6	741955	1	E.1.1	A-K.1.1.2	3	1505	1.64	0.08	0.35	0.42	0.14	0.01	0.01	0.63	-0.47	-0.30	0.29	0.34	0.11	1.6733	0.0378	-3.7	0.9	-3.7	0.9	C+	A-	B-
ELA	6	304778	2	E.1.1	A-C.3.1.1	3	1504	1.63	0.07	0.37	0.44	0.11	0.01	0.01	0.62	-0.36	-0.39	0.32	0.34	0.11	1.7202	0.0395	-4.8	0.8	-4.8	0.8	C+	A-	A-
ELA	6	246370	3	E.1.1	A-K.1.1.3	3	1503	1.87	0.03	0.30	0.47	0.17	0.02	0.01	0.62	-0.29	-0.48	0.21	0.35	0.19	1.0951	0.0397	-3.8	0.9	-3.8	0.9	C+	A-	A-
ELA	6	599349	4	E.1.1	A-K.1.1.1	3	1503	1.84	0.03	0.29	0.51	0.17	0.01	0.01	0.60	-0.31	-0.45	0.23	0.35	0.11	1.3670	0.0418	-3.4	0.9	-3.4	0.9	C+	B-	A+
ELA	6	792335	5	E.1.1	A-C.2.1.2	3	1504	1.56	0.06	0.48	0.33	0.13	0.01	0.01	0.59	-0.39	-0.33	0.27	0.34	0.13	1.7201	0.0393	-3.1	0.9	-3.2	0.9	A+	B-	A-
ELA	6	914272	6	E.1.1	A-C.2.1.1	3	1504	1.52	0.13	0.34	0.42	0.10	0.01	0.01	0.61	-0.39	-0.32	0.36	0.32	0.12	2.0142	0.0379	-2.2	0.9	-2.3	0.9	A+	C-	C-
ELA	6	158685	7	E.1.1	A-K.1.1.2	3	1501	1.72	0.05	0.34	0.46	0.15	0.01	0.00	0.60	-0.37	-0.37	0.26	0.35	0.10	1.6120	0.0398	-2.7	0.9	-2.7	0.9	C+	A-	B-
ELA	6	179355	8	E.1.1	A-K.1.1.3	3	1502	1.81	0.03	0.31	0.50	0.16	0.01	0.01	0.63	-0.27	-0.51	0.27	0.37	0.10	1.4243	0.0425	-5.2	0.8	-5.2	0.8	C+	A-	A-
ELA	6	774296	9	E.1.1	A-K.1.1.2	3	1499	1.49	0.09	0.44	0.36	0.10	0.01	0.01	0.62	-0.41	-0.31	0.35	0.32	0.11	1.9569	0.0390	-4.3	0.9	-4.6	0.8	B+	A-	A-
ELA	6	754339	10	E.1.1	A-C.3.1.1	3	1503	1.72	0.05	0.32	0.49	0.12	0.01	0.01	0.63	-0.37	-0.41	0.30	0.33	0.14	1.5401	0.0406	-4.4	0.9	-4.3	0.9	C+	A-	A-
ELA	6	454644	11	E.1.1	B-K.1.1.1	3	1501	1.66	0.06	0.39	0.38	0.15	0.01	0.01	0.65	-0.43	-0.37	0.29	0.37	0.14	1.6206	0.0377	-5.8	0.8	-5.9	0.8	B+	A-	A-
ELA	6	711813	12	E.1.1	B-K.1.1.1	3	1504	1.81	0.03	0.29	0.53	0.14	0.01	0.01	0.57	-0.27	-0.43	0.23	0.34	0.08	1.4992	0.0429	-1.9	0.9	-1.9	0.9	C+	A-	A-
ELA	6	589594	13	E.1.1	B-K.1.1.1	3	1502	1.66	0.05	0.42	0.38	0.14	0.02	0.01	0.60	-0.34	-0.39	0.26	0.35	0.15	1.4984	0.0386	-3.8	0.9	-3.5	0.9	C+	A-	B-
ELA	6	439032	14	E.1.1	B-K.1.1.1	3	1503	1.67	0.05	0.37	0.45	0.12	0.01	0.00	0.57	-0.31	-0.40	0.31	0.30	0.11	1.6195	0.0403	-1.8	0.9	-1.9	0.9	B+	B-	A-
ELA	6	975657	15	E.1.1	B-K.1.1.1	3	1502	1.72	0.06	0.36	0.42	0.15	0.02	0.01	0.58	-0.37	-0.35	0.23	0.32	0.17	1.3751	0.0373	-1.9	0.9	-2.1	0.9	C+	B-	B-
ELA	6	549650	16	E.1.1	B-K.1.1.2	3	1505	1.70	0.05	0.35	0.46	0.14	0.00	0.01	0.59	-0.34	-0.39	0.29	0.32	0.09	1.8288	0.0409	-2.4	0.9	-2.3	0.9	B+	B-	B-
ELA	6	316152	17	E.1.1	B-K.1.1.1	3	1503	1.51	0.04	0.51	0.36	0.09	0.01	0.01	0.59	-0.33	-0.41	0.38	0.29	0.10	1.8924	0.0429	-4.3	0.9	-4.3	0.8	B+	A-	A-
ELA	6	909020	18	E.1.1	B-K.1.1.1	3	1502	1.71	0.03	0.36	0.48	0.12	0.01	0.01	0.58	-0.31	-0.41	0.27	0.34	0.08	1.6096	0.0422	-3.1	0.9	-3.0	0.9	C+	A+	A+
ELA	6	616548	19	E.1.1	B-K.1.1.1	3	1503	1.73	0.03	0.38	0.44	0.14	0.01	0.01	0.58	-0.27	-0.44	0.26	0.34	0.12	1.3980	0.0405	-3.8	0.9	-3.6	0.9	C+	A-	A+
ELA	6	937071	20	E.1.1	B-K.1.1.1	3	1501	1.43	0.07	0.50	0.35	0.07	0.00	0.00	0.57	-0.39	-0.29	0.36	0.27	0.05	2.3493	0.0421	-3.9	0.9	-3.9	0.9	C+	A-	A-

ELA	7	867718	1	E.1.1	A-K.1.1.3	3	1508	1.76	0.03	0.37	0.42	0.15	0.02	0.01	0.62	-0.34	-0.44	0.24	0.36	0.17	1.3232	0.0386	-5.2	0.8	-5.1	0.8	C+	A-	A+
ELA	7	925235	2	E.1.1	A-K.1.1.2	3	1502	1.48	0.07	0.52	0.29	0.11	0.01	0.01	0.60	-0.36	-0.35	0.32	0.34	0.14	1.9378	0.0389	-4.7	0.8	-4.7	0.8	B+	A-	A-
ELA	7	612903	3	E.1.1	A-C.2.1.1	3	1506	1.81	0.02	0.37	0.41	0.20	0.01	0.01	0.61	-0.27	-0.49	0.22	0.38	0.14	1.3372	0.0390	-4.1	0.9	-4.2	0.9	C+	A-	A-
ELA	7	274750	4	E.1.1	A-C.2.1.1	3	1502	1.98	0.03	0.31	0.38	0.23	0.05	0.01	0.63	-0.27	-0.47	0.08	0.37	0.27	0.8948	0.0355	-4.3	0.9	-4.2	0.9	C+	A-	A-
ELA	7	842753	5	E.1.1	A-C.2.1.3	3	1500	1.79	0.03	0.37	0.42	0.17	0.02	0.01	0.61	-0.27	-0.46	0.20	0.37	0.19	1.3125	0.0387	-4.5	0.9	-4.7	0.8	B+	A-	A-
ELA	7	862844	6	E.1.1	A-K.1.1.1	3	1500	1.70	0.06	0.39	0.36	0.15	0.04	0.01	0.63	-0.44	-0.35	0.27	0.31	0.21	1.3873	0.0354	-4.4	0.9	-4.4	0.9	C+	A-	A-
ELA	7	563028	7	E.1.1	A-C.3.1.1	3	1501	1.49	0.05	0.56	0.25	0.13	0.01	0.01	0.58	-0.37	-0.32	0.26	0.35	0.15	1.6851	0.0375	-4.3	0.9	-4.6	0.8	B+	A-	A-
ELA	7	139372	8	E.1.1	A-C.3.1.1	3	1505	1.72	0.06	0.34	0.43	0.14	0.02	0.01	0.64	-0.40	-0.39	0.28	0.35	0.17	1.4949	0.0373	-4.9	0.8	-5.0	0.8	C+	A-	A-
ELA	7	128009	9	E.1.1	A-C.3.1.1	3	1506	1.75	0.05	0.37	0.39	0.17	0.02	0.01	0.60	-0.37	-0.36	0.18	0.37	0.18	1.4619	0.0374	-3.3	0.9	-3.4	0.9	C+	A-	A-
ELA	7	157788	10	E.1.1	A-C.2.1.2	3	1501	1.62	0.11	0.37	0.34	0.15	0.03	0.01	0.64	-0.42	-0.33	0.27	0.36	0.20	1.6338	0.0343	-4.3	0.9	-4.6	0.8	B+	C-	A-
ELA	7	553442	11	E.1.1	B-K.1.1.2	3	1502	1.86	0.05	0.32	0.37	0.23	0.03	0.01	0.64	-0.40	-0.40	0.17	0.39	0.19	1.2957	0.0350	-5.0	0.8	-5.2	0.8	C+	A-	A-
ELA	7	207643	12	E.1.1	B-K.1.1.1	3	1501	1.80	0.04	0.36	0.41	0.16	0.04	0.00	0.58	-0.29	-0.39	0.14	0.35	0.23	1.2022	0.0369	-3.2	0.9	-3.3	0.9	A+	A-	A-
ELA	7	327346	13	E.1.1	B-K.1.1.3	3	1502	1.73	0.05	0.39	0.38	0.14	0.04	0.01	0.58	-0.31	-0.41	0.26	0.30	0.21	1.2827	0.0356	-2.8	0.9	-2.8	0.9	C+	A-	B-
ELA	7	554874	14	E.1.1	B-K.1.1.2	3	1503	1.85	0.04	0.31	0.43	0.18	0.03	0.01	0.60	-0.33	-0.40	0.17	0.35	0.18	1.2299	0.0365	-3.6	0.9	-3.7	0.9	C+	A-	A-
ELA	7	833008	15	E.1.1	B-K.1.1.1	3	1503	1.63	0.05	0.46	0.33	0.14	0.02	0.01	0.60	-0.36	-0.37	0.24	0.35	0.17	1.5241	0.0365	-4.3	0.9	-4.5	0.8	A+	B-	A-
ELA	7	963843	16	E.1.1	B-K.1.1.1	3	1501	1.75	0.09	0.30	0.40	0.16	0.04	0.01	0.67	-0.45	-0.35	0.23	0.37	0.22	1.4112	0.0340	-5.9	0.8	-6.1	0.8	A+	A-	B-
ELA	7	333516	17	E.1.1	B-K.1.1.3	3	1504	1.66	0.02	0.44	0.38	0.13	0.01	0.00	0.55	-0.28	-0.42	0.25	0.34	0.11	1.4663	0.0397	-2.9	0.9	-3.0	0.9	A+	B-	A-
ELA	7	797888	18	E.1.1	B-K.1.1.1	3	1503	1.94	0.03	0.28	0.44	0.20	0.04	0.00	0.52	-0.25	-0.38	0.11	0.30	0.21	1.0226	0.0365	0.1	1.0	0.1	1.0	C+	B-	A-
ELA	7	694750	19	E.1.1	B-K.1.1.1	3	1498	1.74	0.03	0.41	0.38	0.17	0.02	0.01	0.53	-0.27	-0.38	0.18	0.34	0.15	1.3606	0.0382	-0.9	1.0	-1.2	1.0	C+	A-	A-
ELA	7	519451	20	E.1.1	B-K.1.1.1	3	1503	1.82	0.04	0.37	0.37	0.19	0.04	0.01	0.55	-0.21	-0.44	0.16	0.34	0.20	1.2046	0.0355	-1.9	0.9	-2.1	0.9	C+	A-	A-
ELA	8	811313	1	E.1.1	A-K.1.1.2	3	1501	1.90	0.02	0.34	0.40	0.22	0.02	0.01	0.61	-0.19	-0.54	0.18	0.39	0.17	1.6100	0.0382	-4.0	0.9	-4.2	0.9	B+	A-	A-
ELA	8	704797	2	E.1.1	A-K.1.1.1	3	1502	1.91	0.02	0.34	0.37	0.24	0.03	0.01	0.60	-0.28	-0.44	0.10	0.40	0.19	1.6372	0.0367	-3.4	0.9	-3.4	0.9	B+	A-	A-
ELA	8	281808	3	E.1.1	A-C.2.1.2	3	1503	1.80	0.02	0.38	0.39	0.17	0.03	0.01	0.62	-0.21	-0.53	0.23	0.38	0.20	1.7315	0.0376	-5.9	0.8	-6.2	0.8	B+	A-	A-
ELA	8	373105	4	E.1.1	A-K.1.1.2	3	1502	2.04	0.04	0.24	0.40	0.26	0.05	0.01	0.66	-0.33	-0.48	0.09	0.40	0.24	1.5734	0.0354	-5.8	0.8	-5.8	0.8	C+	A-	A-
ELA	8	262069	5	E.1.1	A-K.1.1.1	3	1500	1.79	0.04	0.38	0.35	0.21	0.02	0.01	0.63	-0.31	-0.49	0.23	0.40	0.15	1.9472	0.0370	-6.1	0.8	-6.0	0.8	B+	B-	A-
ELA	8	371465	6	E.1.1	A-K.1.1.1	3	1501	2.10	0.03	0.25	0.37	0.31	0.05	0.01	0.67	-0.30	-0.50	0.03	0.41	0.26	1.3917	0.0353	-6.7	0.8	-6.7	0.8	C+	A+	A-
ELA	8	854001	7	E.1.1	A-K.1.1.2	3	1501	1.99	0.02	0.27	0.41	0.27	0.02	0.01	0.64	-0.22	-0.54	0.12	0.42	0.17	1.6094	0.0374	-5.7	0.8	-5.8	0.8	C+	A-	A-
ELA	8	152143	8	E.1.1	A-K.1.1.2	3	1504	1.73	0.04	0.39	0.39	0.17	0.02	0.02	0.62	-0.31	-0.47	0.26	0.38	0.14	1.9760	0.0374	-6.4	0.8	-6.3	0.8	A+	A-	A-
ELA	8	522903	9	E.1.1	A-C.2.1.3	3	1503	2.09	0.02	0.24	0.41	0.29	0.04	0.01	0.63	-0.23	-0.52	0.07	0.39	0.22	1.3431	0.0363	-5.2	0.8	-5.3	0.8	C+	B-	A-
ELA	8	166430	10	E.1.1	A-K.1.1.2	3	1501	1.99	0.05	0.26	0.39	0.26	0.04	0.01	0.68	-0.42	-0.44	0.13	0.40	0.22	1.6515	0.0344	-6.6	0.8	-6.6	0.8	B+	A-	A-
ELA	8	278458	11	E.1.1	B-C.3.1.1	3	1500	1.90	0.03	0.31	0.40	0.22	0.03	0.01	0.63	-0.32	-0.47	0.19	0.36	0.20	1.6960	0.0361	-5.7	0.8	-5.6	0.8	B+	A-	A-
ELA	8	408371	12	E.1.1	B-K.1.1.1	3	1502	2.03	0.03	0.27	0.38	0.26	0.05	0.01	0.69	-0.28	-0.57	0.13	0.43	0.24	1.4535	0.0351	-8.6	0.7	-8.5	0.7	B+	B-	A-
ELA	8	204429	13	E.1.1	B-K.1.1.2	3	1500	1.91	0.02	0.33	0.39	0.23	0.03	0.01	0.62	-0.21	-0.54	0.18	0.38	0.20	1.5263	0.0361	-6.5	0.8	-6.3	0.8	A+	A-	A-
ELA	8	265769	14	E.1.1	B-K.1.1.1	3	1502	2.00	0.04	0.27	0.38	0.28	0.03	0.01	0.66	-0.28	-0.49	0.06	0.45	0.22	1.6569	0.0356	-6.5	0.8	-6.4	0.8	A+	A+	A-
ELA	8	816846	15	E.1.1	B-K.1.1.3	3	1500	1.75	0.03	0.39	0.38	0.18	0.01	0.01	0.56	-0.24	-0.42	0.18	0.38	0.14	1.9868	0.0378	-3.1	0.9	-3.2	0.9	A+	A-	A-
ELA	8	329605	16	E.1.1	B-C.3.1.1	3	1503	1.76	0.06	0.37	0.37	0.19	0.03	0.02	0.65	-0.36	-0.43	0.22	0.39	0.19	1.9668	0.0354	-6.7	0.8	-6.8	0.8	C+	B-	A-
ELA	8	537023	17	E.1.1	B-K.1.1.3	3	1502	1.83	0.02	0.34	0.43	0.18	0.02	0.01	0.63	-0.23	-0.54	0.25	0.39	0.14	1.7725	0.0387	-6.1	0.8	-6.3	0.8	B+	A-	A-
ELA	8	802488	18	E.1.1	B-C.3.1.2	3	1502	1.67	0.05	0.42	0.35	0.17	0.01	0.02	0.60	-0.27	-0.45	0.26	0.38	0.13	2.1559	0.0369	-5.5	0.8	-5.4	0.8	A+	A-	A-
ELA	8	943921	19	E.1.1	B-C.3.1.2	3	1505	1.78	0.02	0.36	0.43	0.17	0.01	0.02	0.64	-0.25	-0.55	0.30	0.38	0.11	2.0453	0.0396	-6.7	0.8	-6.9	0.8	B+	A-	A-
ELA	8	742528	20	E.1.1	B-C.3.1.2	3	1502	1.88	0.04	0.30	0.42	0.22	0.02	0.01	0.65	-0.31	-0.50	0.20	0.41	0.16	1.8611	0.0372	-7.4	0.8	-7.3	0.8	A+	B-	A-

Appendix G:

Test Book Section Layout Plans

Mathematics and Reading Test/Answer Book Section Layout for Grades 4, 5, 6, 7, and 8

Mathematics Core

Core/common MC items	60 (16 core linking)
3 core 4 pt OE items	12 (8 core linking)
Total	72 points

Reading Core

Core/common MC items	40 (16 core linking)
4 core 3 pt OE items	12 (6 core linking)
Total	52 points

The estimated testing time for mathematics is approximately 155—185 minutes. The estimated testing time for reading is approximately 165—255 minutes (including equating block items and embedded field test items). [Timing assumes 5 to 10 min per OE/SA, 30 min per TDA; 3 to 5 min per SR; 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Number of MC/SR	MC/SR Item Breakdown	Number of OE/SA/TDA	OE/SA/TDA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Mathematics	24	23–common (core) items (includes 4 non–calc) 1–non–calc field test item	2	2–common (core) items	N/A	55—65
2	Reading	19—24	19–24–common (core) items	2	2–common (core) items	3	65—85
3	Mathematics	24	13–common (core) items 2–equating block items 9–field test items	1	1–field test	N/A	50—60
4	Reading	18	8–equating block items 10–field test items	1	1–field test	2	50—95
5	Mathematics	24	24–common (core) items	1	1–common (core) item	N/A	50—60
6	Reading	16—21	16–21–common (core) items	2	2–common (core) items	2 or 3	50—75

Notes: 1) There will be nine forms in Grades 4 and 5. There will be twenty forms in Grades 6 through 8. 2) The ruler items may fall in Section 1, 3, or 5. 3) Sections 2 and 6 must equal a combined total of 40 MC items. 4) Section 2 cannot be more than 24 MC items. Section 6 cannot be less than 16 MC items.

Mathematics and Reading Test/Answer Book Section Layout for Grade 3

Mathematics Core

Core/common MC items	60 (16 core linking)
3 core 4 pt OE items	12 (8 core linking)
Total	72 points

Reading Core

Core/common MC items	40 (16 core linking)
2 core 3 pt OE items	6 (3 core linking)
Total	46 points

The estimated testing time for mathematics is approximately 130—185 minutes. The estimated testing time for reading is approximately 160—215 minutes (including equating block items and embedded field test items). [Timing assumes 5 to 10 min per OE, 1½ to 2 min per MC, and 7 min per reading passage set.]

Section	Content	Number of MC/SR	MC Item Breakdown	Number of OE/SA	OE/SA Item Breakdown	Estimated Number of Passages	Section Time (in minutes)
1	Mathematics	24	24–common (core) items	2	2–common (core) item	N/A	55—65
2	Reading	25	25–common (core) items	1	1–common (core) item	3	60—70
3	Mathematics	24	12–common (core) items 2–equating block items 10–field test items	1	1–field test	N/A	50—60
4	Reading	18	8–equating block items 10–field test items	1	1–field test	2	50—60
5	Mathematics	24	24–common (core) items	1	1–common (core) item	N/A	50—60
6	Reading	15	15–common (core) items	1	1–common (core) item	2	40—50

Notes: 1) There will be nine forms. 2) The ruler items may fall in Section 1, 3, or 5. 3) Sections 2 and 6 must equal a combined total of 40 MC items. 4) Section 2 cannot be more than 24 MC items. Section 6 cannot be less than 16 MC items.

Science Test/Answer Book Section Layout

General Information (see grade level page for specifics)

- Timing Key: MC = 1 to 1½ min; 2 pt OE = 5 min; 4 pt OE = 10 min; G8 Scenario stimulus = 3 min
- There are 12 forms per grade.
- Within a section at Grade 4, MC *most likely* will precede OE items.
- Within a section at Grade 8, non-scenario MC items *most likely* will precede scenario-based MC items which will precede OE items.
- Grade 4 and 8 will have both Test Booklets and scannable Answer Booklets.
- *Generally*, core items will precede equating block items, which will precede field test items.

Science: Grade 4

Core/common MC items	58 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	68 points

The estimated Ggrade 4 testing time for science is approximately 95—100 minutes or 110—115 minutes administration time (including equating block items and embedded field test items). [Timing assumes 5 min per 2 pt OE and 1 min per MC.]

Grade	Section	Number of MC	Estimated MC Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
4	1	34	29-common (core) items 1-equating block item 4-embedded field test item	3	3-common (core) items	45—55
4	2	34	29-common (core) items 1-equating block item 4- embedded field test items	3	2-common (core) items 1-embedded field test item	45—55

Science: Grade 8

Core/common MC items	58 (16 core linking)
5 core 2 pt OE items	10 (2 core linking)
Total	68 points

The estimated grade 8 testing time is 105—110 minutes per grade for science or 120—125 minutes administration time (including equating block items and embedded field test items). [Timing assumes 5 min per 2 pt OE, 1 min per MC, and 3 min per grade 8 scenario.]

Grade	Section	Number of MC	Estimated MC Item Breakdown	Number of OE	Estimated OE Item Breakdown	Testing Time
8	1	35	27-common (core) items 4-embedded field test scenario-based items 1-equating block item 3-embedded field test item	3	3-common (core) items	50—60
8	2	35	27-common (core) items 4-common (core) scenario-based items 1-equating block item 3-embedded field test item	3	2-common (core) items 1-embedded field test item	50—60

Writing Book Section Layout

General Information

- There is 1 form for Grade 5 and 1 form for Grade 8.
- Both grades will have one consumable writing booklet.
- Writing assessments fall within two categories:
    - Composition – Academic Standard 1.4, Types of Writing
    - Revising and Editing – Academic Standard 1.5, Quality of Writing

Writing: Both Grades

Core/common MC items 12 (weighted x1)
2 core 4 pt (Mode) WP items 80 (weighted x10)
2 core 4 pt (Conv.) WP items 8 (weighted x1)
Total 100 points

Section	Contents	Core Points Distribution by Academic Standards	Core/FT Item Breakdown	Testing Time
1	12 Multiple-choice	12 points within 1.5.E & 1.5.F	12-common (core) MC items	25—35
2	1 Writing Prompt	8 points within 1.5.E & 1.5.F 80 points within 1.4.A, 1.4.B, & 1.4.C	2-common (core) WP items	55—65
3	1 Writing Prompt			55—65

* Grade 5 does not have an embedded field test WP, and therefore has only 3 sections.

Appendix H:

Mean Raw Scores by Form

Column Heading	Definition
Form	Form
N	N students
L	Length
Pts	Points possible
Min	Minimum
Max	Maximum
Mean	Mean
Med	Median
SD	Standard deviation

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Mathematics 3	0	124702	63	72	4	72	51.9	56.0	14.71
	1	14275	63	72	8	72	50.9	55.0	15.24
	2	13887	63	72	7	72	51.7	55.0	14.66
	3	13829	63	72	5	72	51.5	55.0	14.77
	4	13790	63	72	6	72	52.1	56.0	14.75
	5	13839	63	72	4	72	52.1	56.0	14.64
	6	13794	63	72	8	72	52.2	56.0	14.63
	7	13748	63	72	6	72	52.6	56.0	14.40
	8	13817	63	72	6	72	52.2	56.0	14.65
	9	13723	63	72	7	72	52.1	56.0	14.60
Mathematics 4	0	126911	63	72	1	72	50.0	53.0	14.66
	1	14605	63	72	5	72	48.8	52.0	15.22
	2	14125	63	72	6	72	49.5	53.0	14.86
	3	14167	63	72	3	72	50.1	53.0	14.60
	4	14042	63	72	1	72	50.1	53.0	14.58
	5	14029	63	72	6	72	50.4	54.0	14.58
	6	14032	63	72	5	72	50.1	53.0	14.48
	7	13995	63	72	5	72	50.1	53.0	14.54
	8	13960	63	72	5	72	50.2	53.0	14.51
	9	13956	63	72	1	72	50.2	53.0	14.48
Mathematics 5	0	126693	63	72	5	72	46.4	49.0	15.55
	1	14647	63	72	5	72	45.4	48.0	15.83
	2	14148	63	72	5	72	46.3	49.0	15.55
	3	14007	63	72	6	72	46.5	49.0	15.32
	4	14014	63	72	6	72	46.3	49.0	15.70
	5	13959	63	72	5	72	46.6	49.0	15.37
	6	13936	63	72	5	72	46.6	49.0	15.51
	7	14104	63	72	6	72	46.7	49.0	15.44
	8	13893	63	72	6	72	46.4	49.0	15.70
	9	13985	63	72	8	72	46.7	49.0	15.49
Mathematics 6	0	126128	63	72	4	72	48.0	50.0	14.27
	1	7225	63	72	5	72	46.4	48.0	15.13
	2	6605	63	72	9	72	47.7	50.0	14.40
	3	6610	63	72	9	72	47.8	50.0	14.40
	4	6196	63	72	5	72	48.0	50.0	14.23
	5	6265	63	72	8	72	48.1	50.0	14.31
	6	6194	63	72	7	72	48.0	50.0	14.30
	7	6210	63	72	7	72	48.3	50.5	14.09
	8	6191	63	72	7	72	48.2	50.0	14.09
	9	6223	63	72	7	72	48.0	50.0	14.05
	10	6225	63	72	7	72	47.8	50.0	14.31
	11	6183	63	72	8	72	48.2	50.0	14.11
	12	6202	63	72	8	72	48.0	50.0	14.16
	13	6218	63	72	8	72	48.2	50.0	14.08
	14	6236	63	72	8	72	48.3	50.0	14.31
	15	6220	63	72	4	72	48.3	50.0	14.12
	16	6234	63	72	7	72	48.3	50.0	14.32
	17	6251	63	72	7	72	48.3	51.0	14.12
	18	6214	63	72	8	72	48.2	50.0	14.29
	19	6228	63	72	9	72	48.3	50.0	14.09
	20	6198	63	72	5	72	47.9	50.0	14.19

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Mathematics 7	0	130189	63	72	4	72	45.0	47.0	15.41
	1	7647	63	72	5	72	43.1	44.0	15.88
	2	7016	63	72	5	72	44.6	46.0	15.56
	3	6376	63	72	6	72	45.5	47.0	15.23
	4	6363	63	72	5	72	44.8	46.0	15.39
	5	7008	63	72	4	72	45.1	47.0	15.24
	6	6400	63	72	6	72	45.0	47.0	15.35
	7	6413	63	72	6	72	45.1	47.0	15.30
	8	6417	63	72	6	72	45.2	47.0	15.37
	9	6402	63	72	7	72	45.2	47.0	15.26
	10	6400	63	72	7	72	45.1	47.0	15.48
	11	6387	63	72	6	72	45.1	47.0	15.51
	12	6395	63	72	5	72	44.9	46.0	15.34
	13	6335	63	72	7	72	45.3	47.0	15.36
	14	6384	63	72	8	72	45.1	47.0	15.27
	15	6384	63	72	5	72	44.9	47.0	15.52
	16	6376	63	72	5	72	44.9	47.0	15.43
	17	6391	63	72	5	72	45.2	47.0	15.39
	18	6342	63	72	7	72	45.2	47.0	15.40
	19	6391	63	72	6	72	45.1	47.0	15.28
	20	6362	63	72	7	72	44.9	46.0	15.35

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Mathematics 8	0	131363	63	72	3	72	48.3	51.0	15.62
	1	7955	63	72	5	72	46.3	49.0	16.37
	2	7256	63	72	6	72	47.7	50.0	15.58
	3	6409	63	72	3	72	48.4	52.0	15.70
	4	7272	63	72	5	72	48.3	51.0	15.57
	5	6418	63	72	7	72	48.4	51.0	15.66
	6	6383	63	72	8	72	48.5	52.0	15.54
	7	6404	63	72	6	72	48.4	52.0	15.43
	8	6445	63	72	7	72	48.3	51.0	15.65
	9	6410	63	72	5	72	48.4	52.0	15.59
	10	6417	63	72	5	72	48.6	52.0	15.44
	11	6427	63	72	6	72	48.7	52.0	15.52
	12	6408	63	72	5	72	48.5	52.0	15.62
	13	6401	63	72	5	72	48.3	52.0	15.52
	14	6412	63	72	6	72	48.6	52.0	15.57
	15	6407	63	72	7	72	48.7	52.0	15.63
	16	6386	63	72	6	72	48.7	52.0	15.62
	17	6379	63	72	3	72	48.5	52.0	15.61
	18	6409	63	72	7	72	48.6	52.0	15.45
	19	6383	63	72	6	72	48.8	52.0	15.42
	20	6382	63	72	6	72	48.5	51.0	15.50

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Reading 3	0	124659	42	46	2	46	30.6	33.0	9.73
	1	14137	42	46	3	46	29.9	32.0	9.98
	2	13907	42	46	2	46	30.5	33.0	9.82
	3	13837	42	46	2	46	30.3	32.0	9.75
	4	13801	42	46	3	46	30.7	33.0	9.73
	5	13847	42	46	3	46	30.6	33.0	9.66
	6	13818	42	46	3	46	30.8	33.0	9.64
	7	13747	42	46	3	46	30.9	33.0	9.58
	8	13835	42	46	2	46	30.8	33.0	9.65
	9	13730	42	46	2	46	30.6	33.0	9.73
Reading 4	0	126887	44	52	0	52	35.1	37.0	10.23
	1	14602	44	52	0	52	34.3	37.0	10.79
	2	14124	44	52	1	52	34.8	37.0	10.38
	3	14158	44	52	3	52	35.1	37.0	10.15
	4	14042	44	52	1	52	34.9	37.0	10.31
	5	14027	44	52	3	52	35.3	38.0	10.18
	6	14031	44	52	2	52	35.4	38.0	9.99
	7	14000	44	52	2	52	35.1	37.0	10.16
	8	13953	44	52	4	52	35.4	38.0	10.04
	9	13950	44	52	4	52	35.4	38.0	9.97
Reading 5	0	126639	44	52	1	52	35.0	37.0	9.59
	1	14636	44	52	2	52	34.5	37.0	9.86
	2	14144	44	52	3	52	34.8	37.0	9.66
	3	14005	44	52	4	52	35.0	37.0	9.67
	4	14009	44	52	4	52	35.1	37.0	9.62
	5	13953	44	52	4	52	35.1	37.0	9.49
	6	13924	44	52	2	52	35.3	37.0	9.47
	7	14107	44	52	4	52	35.0	37.0	9.37
	8	13877	44	52	1	52	35.0	37.0	9.57
	9	13984	44	52	4	52	34.9	37.0	9.59
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			44	52					
Reading 6	0	126044	44	52	2	52	34.1	36.0	10.15
	1	7205	44	52	4	52	32.6	35.0	11.04
	2	6605	44	52	4	52	33.9	36.0	10.25
	3	6606	44	52	5	52	34.0	36.0	10.15
	4	6190	44	52	4	52	34.1	36.0	10.10
	5	6258	44	52	4	52	34.1	36.0	10.29
	6	6192	44	52	3	52	34.4	37.0	10.14
	7	6209	44	52	5	52	34.0	36.0	10.15
	8	6182	44	52	2	52	34.3	36.0	10.04
	9	6222	44	52	3	52	34.1	36.0	10.03
	10	6218	44	52	4	52	34.2	36.0	9.94
	11	6183	44	52	3	52	34.3	36.0	9.93
	12	6202	44	52	3	52	34.1	36.0	9.97
	13	6209	44	52	2	52	34.2	37.0	10.13
	14	6235	44	52	2	52	34.1	36.0	10.28
	15	6218	44	52	4	52	34.4	37.0	9.97
	16	6235	44	52	5	52	34.2	36.0	10.14
	17	6252	44	52	2	52	34.3	36.0	10.09
	18	6211	44	52	4	52	34.1	36.0	10.07
	19	6224	44	52	5	52	34.2	36.0	10.01
	20	6188	44	52	5	52	34.2	36.5	10.01

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*		Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Reading 7	0	130053	44	52	2	52	34.7	36.0	9.83	**Reading 8**	0	131218	44	52	0	52	34.6	37.0	9.65
	1	7625	44	52	4	52	33.3	35.0	10.55		1	7942	44	52	1	52	33.2	35.0	10.39
	2	7009	44	52	3	52	34.4	36.0	9.89		2	7246	44	52	5	52	34.5	36.0	9.64
	3	6366	44	52	4	52	35.1	37.0	9.62		3	6406	44	52	4	52	34.7	37.0	9.71
	4	6357	44	52	4	52	34.9	36.0	9.84		4	7267	44	52	3	52	34.5	36.0	9.67
	5	6997	44	52	2	52	34.5	36.0	9.80		5	6411	44	52	4	52	34.8	37.0	9.55
	6	6397	44	52	3	52	34.9	37.0	9.74		6	6367	44	52	2	52	34.9	37.0	9.57
	7	6414	44	52	3	52	34.7	36.0	9.74		7	6393	44	52	3	52	34.9	37.0	9.50
	8	6407	44	52	3	52	34.9	37.0	9.73		8	6439	44	52	4	52	34.6	37.0	9.54
	9	6401	44	52	3	52	34.9	37.0	9.77		9	6399	44	52	4	52	34.6	37.0	9.65
	10	6394	44	52	4	52	34.8	36.0	9.84		10	6412	44	52	5	52	34.8	37.0	9.62
	11	6373	44	52	4	52	34.7	36.0	9.82		11	6421	44	52	4	52	34.5	37.0	9.63
	12	6395	44	52	3	52	34.7	36.0	9.74		12	6405	44	52	5	52	34.6	37.0	9.57
	13	6332	44	52	2	52	34.6	36.0	9.81		13	6396	44	52	0	51	34.6	36.0	9.70
	14	6381	44	52	2	52	34.6	36.0	9.76		14	6407	44	52	4	52	34.7	37.0	9.63
	15	6376	44	52	6	52	34.8	37.0	9.97		15	6394	44	52	4	52	34.8	37.0	9.57
	16	6370	44	52	5	52	34.7	36.0	9.75		16	6380	44	52	4	52	34.6	37.0	9.68
	17	6386	44	52	6	52	34.9	37.0	9.75		17	6375	44	52	6	52	34.8	37.0	9.55
	18	6331	44	52	3	52	35.0	37.0	9.79		18	6410	44	52	2	52	34.6	37.0	9.62
	19	6392	44	52	3	52	34.6	36.0	9.69		19	6374	44	52	4	52	34.9	37.0	9.43
	20	6350	44	52	6	52	34.7	36.0	9.69		20	6374	44	52	5	52	34.9	37.0	9.48

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*		Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Science 4	0	127105	63	68	0	68	47.4	50.0	13.01	**Science 8**	0	130918	63	68	0	68	45.5	49.0	13.81
	1	11285	63	68	1	68	46.5	49.0	13.36		1	12475	63	68	6	68	44.6	48.0	14.11
	2	10692	63	68	8	68	47.4	50.0	12.92		2	11766	63	68	0	68	45.6	49.0	13.62
	3	10511	63	68	3	68	47.5	50.0	13.01		3	10532	63	68	6	68	45.4	49.0	13.87
	4	10492	63	68	6	68	47.2	50.0	13.11		4	11766	63	68	2	68	45.7	49.0	13.63
	5	10469	63	68	8	68	47.8	51.0	12.88		5	10550	63	68	4	68	45.5	49.0	13.80
	6	10712	63	68	5	68	47.4	50.0	12.97		6	10518	63	68	5	68	45.6	49.0	13.81
	7	10492	63	68	4	68	47.7	50.0	12.70		7	10556	63	68	8	68	45.8	49.0	13.88
	8	10489	63	68	8	68	47.6	51.0	13.06		8	10557	63	68	8	68	45.3	49.0	13.77
	9	10468	63	68	0	68	47.4	50.0	13.03		9	10524	63	68	4	68	45.8	49.0	13.72
	10	10502	63	68	8	68	47.3	50.0	13.06		10	10543	63	68	2	68	45.6	49.0	13.72
	11	10485	63	68	7	68	47.5	50.0	13.01		11	10592	63	68	4	68	45.6	49.0	13.86
	12	10508	63	68	6	68	47.6	50.0	13.00		12	10539	63	68	6	68	45.6	49.0	13.87

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Writing 5	0	124666	16	100	22	100	63.1	64.0	14.89
	1	124666	16	100	22	100	63.1	64.0	14.89

	Form	N	L	Pts	Min	Max	Mean	Med	*SD*
Writing 8	0	130302	16	100	22	100	67.2	72.0	13.89
	1	130302	16	100	22	100	67.2	72.0	13.89

Appendix I:

Demographic Characteristics of Students

Demographic Characteristics of Students Taking the 2014 PSSA: Mathematics

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender																		
Female	60,658 48.7	100 40.7	60,758 48.7	61,916 48.9	172 43.3	62,088 48.9	61,893 49.1	244 44.4	62,137 49.0	60,697 48.7	650 46.3	61,347 48.6	62,530 48.8	993 48.4	63,523 48.8	62,638 48.7	1,396 48.6	64,034 48.7
Male	63,716 51.2	146 59.3	63,862 51.2	64,523 51.0	225 56.7	64,748 51.0	64,170 50.9	306 55.6	64,476 50.9	63,923 51.3	754 53.7	64,677 51.3	65,524 51.1	1,059 51.6	66,583 51.1	65,694 51.1	1,476 51.4	67,170 51.1
Race/Ethnicity																		
American Indian/Alaskan Native (not Hispanic)	206 0.2	1 0.4	207 0.2	176 0.1	1 0.3	177 0.1	174 0.1	1 0.2	175 0.1	191 0.2	0 0.0	191 0.2	187 0.1	2 0.1	189 0.1	167 0.1	6 0.2	173 0.1
Asian (not Hispanic)	4,486 3.6	8 3.3	4,494 3.6	4,675 3.7	3 0.8	4,678 3.7	4,571 3.6	4 0.7	4,575 3.6	4,414 3.5	11 0.8	4,425 3.5	4,458 3.5	15 0.7	4,473 3.4	4,344 3.4	20 0.7	4,364 3.3
Black or African American (not Hispanic)	18,338 14.7	29 11.8	18,367 14.7	18,356 14.5	36 9.1	18,392 14.5	18,515 14.7	42 7.6	18,557 14.6	18,553 14.9	173 12.3	18,726 14.8	18,645 14.6	292 14.2	18,937 14.5	18,908 14.7	306 10.7	19,214 14.6
Hispanic (any race)	12,419 10.0	5 2.0	12,424 10.0	12,300 9.7	31 7.8	12,331 9.7	11,763 9.3	32 5.8	11,795 9.3	11,546 9.3	138 9.8	11,684 9.3	11,728 9.2	173 8.4	11,901 9.1	11,079 8.6	189 6.6	11,268 8.6
Multi-Racial (not Hispanic)	4,336 3.5	4 1.6	4,340 3.5	3,850 3.0	11 2.8	3,861 3.0	3,286 2.6	19 3.5	3,305 2.6	2,694 2.2	43 3.1	2,737 2.2	2,435 1.9	60 2.9	2,495 1.9	2,387 1.9	63 2.2	2,450 1.9
White (not Hispanic)	84,491 67.9	197 80.1	84,688 67.9	86,984 68.8	312 78.6	87,296 68.8	87,658 69.5	448 81.5	88,106 69.5	87,071 69.8	1,039 74.0	88,110 69.9	90,484 70.6	1,508 73.5	91,992 70.7	91,317 71.1	2,285 79.6	93,602 71.3
Native Hawaiian or Other Pacific Islander (not Hispanic)	75 0.1	2 0.8	77 0.1	80 0.1	3 0.8	83 0.1	78 0.1	4 0.7	82 0.1	78 0.1	0 0.0	78 0.1	94 0.1	2 0.1	96 0.1	115 0.1	3 0.1	118 0.1

Demographic Characteristics of Students Taking the 2014 PSSA: Mathematics (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups																		
IEP (not gifted)	19,048 15.3	114 46.3	19,162 15.4	20,215 16.0	146 36.8	20,361 16.0	19,974 15.8	183 33.3	20,157 15.9	19,249 15.4	368 26.2	19,617 15.6	19,503 15.2	491 23.9	19,994 15.4	19,512 15.2	657 22.9	20,169 15.4
Student exited IEP in last 2 years	2,641 2.1	1 0.4	2,642 2.1	3,133 2.5	7 1.8	3,140 2.5	3,552 2.8	8 1.5	3,560 2.8	3,537 2.8	27 1.9	3,564 2.8	3,189 2.5	74 3.6	3,263 2.5	2,679 2.1	80 2.8	2,759 2.1
Title I	56,158 45.1	77 31.3	56,235 45.1	54,434 43.0	158 39.8	54,592 43.0	50,516 40.0	195 35.5	50,711 40.0	40,758 32.7	630 44.9	41,388 32.8	32,724 25.5	210 10.2	32,934 25.3	32,190 25.1	245 8.5	32,435 24.7
Title III served	3,817 3.1	1 0.4	3,818 3.1	2,944 2.3	2 0.5	2,946 2.3	2,553 2.0	5 0.9	2,558 2.0	2,501 2.0	15 1.1	2,516 2.0	2,583 2.0	12 0.6	2,595 2.0	2,463 1.9	10 0.3	2,473 1.9
Title III not served	330 0.3	2 0.8	332 0.3	246 0.2	1 0.3	247 0.2	248 0.2	5 0.9	253 0.2	259 0.2	14 1.0	273 0.2	257 0.2	21 1.0	278 0.2	235 0.2	18 0.6	253 0.2
Migrant student	48 0.0	0 0.0	48 0.0	51 0.0	0 0.0	51 0.0	64 0.1	0 0.0	64 0.1	58 0.0	0 0.0	58 0.0	65 0.1	0 0.0	65 0.0	61 0.0	0 0.0	61 0.0
ELL (enrolled after 5/3/13)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled on or before 5/3/13)	4,149 3.3	3 1.2	4,152 3.3	3,162 2.5	3 0.8	3,165 2.5	2,788 2.2	10 1.8	2,798 2.2	2,719 2.2	29 2.1	2,748 2.2	2,834 2.2	33 1.6	2,867 2.2	2,698 2.1	28 1.0	2,726 2.1
Exited ESL/bilingual program and in first year of monitoring	974 0.8	1 0.4	975 0.8	1,426 1.1	2 0.5	1,428 1.1	1,050 0.8	1 0.2	1,051 0.8	599 0.5	3 0.2	602 0.5	432 0.3	1 0.0	433 0.3	423 0.3	2 0.1	425 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	263 0.2	0 0.0	263 0.2	674 0.5	0 0.0	674 0.5	1,016 0.8	0 0.0	1,016 0.8	808 0.6	11 0.8	819 0.6	661 0.5	12 0.6	673 0.5	444 0.3	10 0.3	454 0.3
Former ELL no longer monitored	197 0.2	0 0.0	197 0.2	535 0.4	0 0.0	535 0.4	1,263 1.0	0 0.0	1,263 1.0	2,112 1.7	4 0.3	2,116 1.7	2,659 2.1	16 0.8	2,675 2.1	2,722 2.1	14 0.5	2,736 2.1
Economically disadvantaged	59,349 47.7	108 43.9	59,457 47.7	59,027 46.7	223 56.2	59,250 46.7	57,436 45.5	284 51.6	57,720 45.6	56,185 45.0	690 49.1	56,875 45.1	56,010 43.7	1,024 49.9	57,034 43.8	54,374 42.3	1,326 46.2	55,700 42.4
Historically Underperforming Subgroup	68,013 54.6	153 62.2	68,166 54.7	67,930 53.7	269 67.8	68,199 53.7	66,140 52.4	351 63.8	66,491 52.5	64,262 51.5	839 59.8	65,101 51.6	64,318 50.2	1,211 59.0	65,529 50.3	62,765 48.8	1,601 55.7	64,366 49.0

Demographic Characteristics of Students Taking the 2014 PSSA: Mathematics (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment																		
Enrollment in school of residence after 10/1/13	3,373 2.7	4 1.6	3,377 2.7	3,309 2.6	3 0.8	3,312 2.6	2,955 2.3	10 1.8	2,965 2.3	2,748 2.2	30 2.1	2,778 2.2	3,048 2.4	58 2.8	3,106 2.4	3,122 2.4	93 3.2	3,215 2.4
Enrollment in district of residence after 10/1/13	1,728 1.4	1 0.4	1,729 1.4	1,659 1.3	0 0.0	1,659 1.3	1,623 1.3	6 1.1	1,629 1.3	1,512 1.2	24 1.7	1,536 1.2	1,811 1.4	46 2.2	1,857 1.4	1,931 1.5	72 2.5	2,003 1.5
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	27,734 22.3	34 13.8	27,768 22.3	28,026 22.2	51 12.8	28,077 22.1	27,949 22.2	107 19.5	28,056 22.1	31,258 25.1	330 23.5	31,588 25.0	29,050 22.7	542 26.4	29,592 22.7	22,985 17.9	290 10.1	23,275 17.7
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	10,916 8.8	30 12.2	10,946 8.8	10,657 8.4	39 9.8	10,696 8.4	10,763 8.5	96 17.5	10,859 8.6	11,585 9.3	192 13.7	11,777 9.3	11,707 9.1	212 10.3	11,919 9.2	9,673 7.5	268 9.3	9,941 7.6
Education in Non-Traditional Settings																		
Court/agency placed	28 0.0	1 0.4	29 0.0	41 0.0	3 0.8	44 0.0	54 0.0	1 0.2	55 0.0	89 0.1	6 0.4	95 0.1	145 0.1	20 1.0	165 0.1	315 0.2	20 0.7	335 0.3
Students with scores used in state summaries	124,456	246	124,702	126,514	397	126,911	126,143	550	126,693	124,724	1,404	126,128	128,137	2,052	130,189	128,491	2,872	131,363

Demographic Characteristics of Students Taking the 2014 PSSA: Reading

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender																		
Female	60,643 48.7	100 40.7	60,743 48.7	61,923 49.0	172 43.4	62,095 48.9	61,868 49.1	245 44.5	62,113 49.0	60,675 48.7	650 46.4	61,325 48.7	62,477 48.8	992 48.4	63,469 48.8	62,561 48.7	1,397 48.7	63,958 48.7
Male	63,687 51.2	146 59.3	63,833 51.2	64,493 51.0	224 56.6	64,717 51.0	64,140 50.9	306 55.5	64,446 50.9	63,862 51.2	752 53.6	64,614 51.3	65,443 51.1	1,057 51.6	66,500 51.1	65,628 51.1	1,473 51.3	67,101 51.1
Race/Ethnicity																		
American Indian/Alaskan Native (not Hispanic)	206 0.2	1 0.4	207 0.2	176 0.1	1 0.3	177 0.1	174 0.1	2 0.4	176 0.1	191 0.2	0 0.0	191 0.2	187 0.1	2 0.1	189 0.1	166 0.1	6 0.2	172 0.1
Asian (not Hispanic)	4,480 3.6	8 3.3	4,488 3.6	4,670 3.7	3 0.8	4,673 3.7	4,570 3.6	4 0.7	4,574 3.6	4,413 3.5	11 0.8	4,424 3.5	4,457 3.5	15 0.7	4,472 3.4	4,339 3.4	20 0.7	4,359 3.3
Black or African American (not Hispanic)	18,317 14.7	29 11.8	18,346 14.7	18,350 14.5	35 8.8	18,385 14.5	18,501 14.7	42 7.6	18,543 14.6	18,524 14.9	173 12.3	18,697 14.8	18,615 14.5	290 14.2	18,905 14.5	18,843 14.7	307 10.7	19,150 14.6
Hispanic (any race)	12,402 10.0	5 2.0	12,407 10.0	12,289 9.7	31 7.8	12,320 9.7	11,752 9.3	32 5.8	11,784 9.3	11,528 9.2	138 9.8	11,666 9.3	11,704 9.1	173 8.4	11,877 9.1	11,054 8.6	188 6.6	11,242 8.6
Multi-Racial (not Hispanic)	4,334 3.5	4 1.6	4,338 3.5	3,846 3.0	11 2.8	3,857 3.0	3,284 2.6	19 3.4	3,303 2.6	2,691 2.2	43 3.1	2,734 2.2	2,426 1.9	60 2.9	2,486 1.9	2,378 1.9	63 2.2	2,441 1.9
White (not Hispanic)	84,492 67.9	197 80.1	84,689 67.9	86,987 68.8	312 78.8	87,299 68.8	87,631 69.5	448 81.3	88,079 69.6	87,039 69.8	1,037 74.0	88,076 69.9	90,414 70.6	1,507 73.5	91,921 70.7	91,279 71.1	2,283 79.5	93,562 71.3
Native Hawaiian or Other Pacific Islander (not Hispanic)	75 0.1	2 0.8	77 0.1	80 0.1	3 0.8	83 0.1	78 0.1	4 0.7	82 0.1	78 0.1	0 0.0	78 0.1	94 0.1	2 0.1	96 0.1	115 0.1	3 0.1	118 0.1

Demographic Characteristics of Students Taking the 2014 PSSA: Reading (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups																		
IEP (not gifted)	19,008 15.3	114 46.3	19,122 15.3	20,183 16.0	145 36.6	20,328 16.0	19,967 15.8	183 33.2	20,150 15.9	19,215 15.4	366 26.1	19,581 15.5	19,464 15.2	490 23.9	19,954 15.3	19,467 15.2	657 22.9	20,124 15.3
Student exited IEP in last 2 years	2,646 2.1	1 0.4	2,647 2.1	3,135 2.5	7 1.8	3,142 2.5	3,550 2.8	8 1.5	3,558 2.8	3,539 2.8	27 1.9	3,566 2.8	3,187 2.5	74 3.6	3,261 2.5	2,678 2.1	80 2.8	2,758 2.1
Title I	56,131 45.1	77 31.3	56,208 45.1	54,422 43.0	158 39.9	54,580 43.0	50,467 40.0	196 35.6	50,663 40.0	40,731 32.7	630 44.9	41,361 32.8	32,679 25.5	208 10.2	32,887 25.3	32,089 25.0	245 8.5	32,334 24.6
Title III served	3,801 3.1	1 0.4	3,802 3.0	2,927 2.3	2 0.5	2,929 2.3	2,535 2.0	5 0.9	2,540 2.0	2,489 2.0	15 1.1	2,504 2.0	2,571 2.0	12 0.6	2,583 2.0	2,449 1.9	10 0.3	2,459 1.9
Title III not served	328 0.3	2 0.8	330 0.3	246 0.2	1 0.3	247 0.2	247 0.2	5 0.9	252 0.2	259 0.2	14 1.0	273 0.2	252 0.2	21 1.0	273 0.2	233 0.2	18 0.6	251 0.2
Migrant student	48 0.0	0 0.0	48 0.0	49 0.0	0 0.0	49 0.0	64 0.1	0 0.0	64 0.1	58 0.0	0 0.0	58 0.0	66 0.1	0 0.0	66 0.1	60 0.0	0 0.0	60 0.0
ELL (enrolled after 5/3/13)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled on or before 5/3/13)	4,132 3.3	3 1.2	4,135 3.3	3,145 2.5	3 0.8	3,148 2.5	2,770 2.2	10 1.8	2,780 2.2	2,707 2.2	29 2.1	2,736 2.2	2,817 2.2	33 1.6	2,850 2.2	2,682 2.1	28 1.0	2,710 2.1
Exited ESL/bilingual program and in first year of monitoring	973 0.8	1 0.4	974 0.8	1,427 1.1	2 0.5	1,429 1.1	1,049 0.8	1 0.2	1,050 0.8	599 0.5	3 0.2	602 0.5	430 0.3	1 0.0	431 0.3	422 0.3	2 0.1	424 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	263 0.2	0 0.0	263 0.2	676 0.5	0 0.0	676 0.5	1,018 0.8	0 0.0	1,018 0.8	808 0.6	11 0.8	819 0.6	660 0.5	12 0.6	672 0.5	444 0.3	10 0.3	454 0.3
Former ELL no longer monitored	197 0.2	0 0.0	197 0.2	535 0.4	0 0.0	535 0.4	1,264 1.0	0 0.0	1,264 1.0	2,111 1.7	4 0.3	2,115 1.7	2,662 2.1	15 0.7	2,677 2.1	2,718 2.1	14 0.5	2,732 2.1
Economically disadvantaged	59,308 47.7	108 43.9	59,416 47.7	59,007 46.6	222 56.1	59,229 46.7	57,397 45.5	285 51.7	57,682 45.5	56,136 45.0	689 49.1	56,825 45.1	55,917 43.7	1,025 50.0	56,942 43.8	54,267 42.3	1,325 46.2	55,592 42.4
Historically Underperforming Subgroup	67,965 54.6	153 62.2	68,118 54.6	67,900 53.7	268 67.7	68,168 53.7	66,093 52.4	352 63.9	66,445 52.5	64,202 51.5	838 59.8	65,040 51.6	64,211 50.2	1,210 59.1	65,421 50.3	62,644 48.8	1,600 55.7	64,244 49.0

Demographic Characteristics of Students Taking the 2014 PSSA: Reading (continued)

Demographic or Educational Characteristic	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment																		
Enrollment in school of residence after 10/1/13	3,360 2.7	4 1.6	3,364 2.7	3,297 2.6	3 0.8	3,300 2.6	2,949 2.3	10 1.8	2,959 2.3	2,737 2.2	30 2.1	2,767 2.2	3,032 2.4	57 2.8	3,089 2.4	3,103 2.4	94 3.3	3,197 2.4
Enrollment in district of residence after 10/1/13	1,727 1.4	1 0.4	1,728 1.4	1,656 1.3	0 0.0	1,656 1.3	1,613 1.3	6 1.1	1,619 1.3	1,504 1.2	24 1.7	1,528 1.2	1,808 1.4	46 2.2	1,854 1.4	1,923 1.5	72 2.5	1,995 1.5
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	27,714 22.3	34 13.8	27,748 22.3	28,020 22.2	50 12.6	28,070 22.1	27,912 22.1	107 19.4	28,019 22.1	31,211 25.0	329 23.5	31,540 25.0	28,996 22.7	540 26.4	29,536 22.7	22,913 17.9	290 10.1	23,203 17.7
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	10,906 8.8	30 12.2	10,936 8.8	10,658 8.4	39 9.8	10,697 8.4	10,750 8.5	96 17.4	10,846 8.6	11,553 9.3	192 13.7	11,745 9.3	11,681 9.1	211 10.3	11,892 9.1	9,652 7.5	269 9.4	9,921 7.6
Education in Non-Traditional Settings																		
Court/agency placed	29 0.0	1 0.4	30 0.0	38 0.0	3 0.8	41 0.0	56 0.0	1 0.2	57 0.0	85 0.1	6 0.4	91 0.1	144 0.1	20 1.0	164 0.1	307 0.2	19 0.7	326 0.2
Students with scores used in state summaries	124,413	246	124,659	126,491	396	126,887	126,088	551	126,639	124,642	1,402	126,044	128,004	2,049	130,053	128,348	2,870	131,218

Demographic Characteristics of Students Taking the 2014 PSSA: Science

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender						
Female	61,728 48.9	405 47.1	62,133 48.9	61,763 48.7	2,020 49.5	63,783 48.7
Male	64,425 51.0	454 52.9	64,879 51.0	64,916 51.2	2,058 50.5	66,974 51.2
Race/Ethnicity						
American Indian/Alaskan Native (not Hispanic)	176 0.1	2 0.2	178 0.1	166 0.1	7 0.2	173 0.1
Asian (not Hispanic)	4,744 3.8	7 0.8	4,751 3.7	4,381 3.5	22 0.5	4,403 3.4
Black or African American (not Hispanic)	18,320 14.5	39 4.5	18,359 14.4	18,677 14.7	295 7.2	18,972 14.5
Hispanic (any race)	12,445 9.9	38 4.4	12,483 9.8	11,126 8.8	195 4.8	11,321 8.6
Multi-Racial (not Hispanic)	3,836 3.0	18 2.1	3,854 3.0	2,350 1.9	74 1.8	2,424 1.9
White (not Hispanic)	86,528 68.5	752 87.5	87,280 68.7	89,844 70.8	3,481 85.4	93,325 71.3
Native Hawaiian or Other Pacific Islander (not Hispanic)	82 0.1	3 0.3	85 0.1	116 0.1	4 0.1	120 0.1

Demographic Characteristics of Students Taking the 2014 PSSA: Science (continued)

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups						
IEP (not gifted)	20,174 16.0	172 20.0	20,346 16.0	19,225 15.2	770 18.9	19,995 15.3
Student exited IEP in last 2 years	3,114 2.5	25 2.9	3,139 2.5	2,641 2.1	108 2.6	2,749 2.1
Title I	54,091 42.8	550 64.0	54,641 43.0	31,959 25.2	220 5.4	32,179 24.6
Title III served	3,241 2.6	2 0.2	3,243 2.6	2,678 2.1	11 0.3	2,689 2.1
Title III not served	283 0.2	1 0.1	284 0.2	257 0.2	20 0.5	277 0.2
Migrant student	52 0.0	0 0.0	52 0.0	59 0.0	0 0.0	59 0.0
ELL (enrolled after 5/3/13)	350 0.3	0 0.0	350 0.3	260 0.2	1 0.0	261 0.2
ELL (enrolled on or before 5/3/13)	3,149 2.5	3 0.3	3,152 2.5	2,679 2.1	30 0.7	2,709 2.1
Exited ESL/bilingual program and in first year of monitoring	1,419 1.1	6 0.7	1,425 1.1	420 0.3	3 0.1	423 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	675 0.5	0 0.0	675 0.5	435 0.3	12 0.3	447 0.3
Former ELL no longer monitored	537 0.4	0 0.0	537 0.4	2,719 2.1	14 0.3	2,733 2.1
Economically disadvantaged	58,878 46.6	469 54.6	59,347 46.7	53,609 42.3	1,747 42.8	55,356 42.3
Historically Underperforming Subgroup	67,839 53.7	528 61.5	68,367 53.8	61,984 48.9	2,060 50.5	64,044 48.9

Demographic Characteristics of Students Taking the 2014 PSSA: Science (continued)

Demographic or Educational Characteristic	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment						
Enrollment in school of residence after 10/1/13	3,355 2.7	11 1.3	3,366 2.6	3,111 2.5	109 2.7	3,220 2.5
Enrollment in district of residence after 10/1/13	1,702 1.3	9 1.0	1,711 1.3	1,946 1.5	87 2.1	2,033 1.6
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	28,223 22.4	82 9.5	28,305 22.3	22,827 18.0	344 8.4	23,171 17.7
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	10,924 8.7	68 7.9	10,992 8.6	9,698 7.6	325 8.0	10,023 7.7
Education in Non-Traditional Settings						
Court/agency placed	39 0.0	2 0.2	41 0.0	317 0.2	20 0.5	337 0.3
Students with scores used in state summaries	126,246	859	127,105	126,840	4,078	130,918

Demographic Characteristics of Students Taking the 2014 PSSA: Writing

Demographic or Educational Characteristic	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender						
Female	61,335 49.3	166 45.9	61,501 49.3	62,321 48.9	1,388 48.7	63,709 48.9
Male	62,905 50.6	196 54.1	63,101 50.6	65,044 51.0	1,465 51.3	66,509 51.0
Race/Ethnicity						
American Indian/Alaskan Native (not Hispanic)	174 0.1	0 0.0	174 0.1	164 0.1	5 0.2	169 0.1
Asian (not Hispanic)	4,517 3.6	4 1.1	4,521 3.6	4,316 3.4	20 0.7	4,336 3.3
Black or African American (not Hispanic)	17,851 14.4	21 5.8	17,872 14.3	18,661 14.6	260 9.1	18,921 14.5
Hispanic (any race)	11,389 9.2	19 5.2	11,408 9.2	10,887 8.5	188 6.6	11,075 8.5
Multi-Racial (not Hispanic)	3,229 2.6	13 3.6	3,242 2.6	2,357 1.8	65 2.3	2,422 1.9
White (not Hispanic)	86,992 70.0	301 83.1	87,293 70.0	90,850 71.3	2,312 81.0	93,162 71.5
Native Hawaiian or Other Pacific Islander (not Hispanic)	76 0.1	4 1.1	80 0.1	113 0.1	3 0.1	116 0.1

Demographic Characteristics of Students Taking the 2014 PSSA: Writing (continued)

Demographic or Educational Characteristic	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Educational Category and Other Demographic Groups						
IEP (not gifted)	19,064 15.3	119 32.9	19,183 15.4	19,120 15.0	589 20.6	19,709 15.1
Student exited IEP in last 2 years	3,515 2.8	3 0.8	3,518 2.8	2,662 2.1	84 2.9	2,746 2.1
Title I	49,244 39.6	94 26.0	49,338 39.6	31,747 24.9	202 7.1	31,949 24.5
Title III served	2,320 1.9	2 0.6	2,322 1.9	2,358 1.9	10 0.4	2,368 1.8
Title III not served	230 0.2	5 1.4	235 0.2	218 0.2	20 0.7	238 0.2
Migrant student	60 0.0	0 0.0	60 0.0	61 0.0	0 0.0	61 0.0
ELL (enrolled after 5/3/13)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled on or before 5/3/13)	2,536 2.0	7 1.9	2,543 2.0	2,578 2.0	30 1.1	2,608 2.0
Exited ESL/bilingual program and in first year of monitoring	1,040 0.8	0 0.0	1,040 0.8	420 0.3	2 0.1	422 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	1,011 0.8	0 0.0	1,011 0.8	437 0.3	10 0.4	447 0.3
Former ELL no longer monitored	1,256 1.0	0 0.0	1,256 1.0	2,712 2.1	14 0.5	2,726 2.1
Economically disadvantaged	56,002 45.1	172 47.5	56,174 45.1	53,711 42.1	1,285 45.0	54,996 42.2
Historically Underperforming Subgroup	64,486 51.9	226 62.4	64,712 51.9	61,974 48.6	1,540 54.0	63,514 48.7

Demographic Characteristics of Students Taking the 2014 PSSA: Writing (continued)

Demographic or Educational Characteristic	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Enrollment						
Enrollment in school of residence after 10/1/13	2,837 2.3	7 1.9	2,844 2.3	3,051 2.4	92 3.2	3,143 2.4
Enrollment in district of residence after 10/1/13	1,577 1.3	4 1.1	1,581 1.3	1,912 1.5	67 2.3	1,979 1.5
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	27,075 21.8	88 24.3	27,163 21.8	22,614 17.7	278 9.7	22,892 17.6
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	10,467 8.4	80 22.1	10,547 8.5	9,513 7.5	255 8.9	9,768 7.5
Education in Non-Traditional Settings						
Court/agency placed	45 0.0	1 0.3	46 0.0	283 0.2	20 0.7	303 0.2
Students with scores used in state summaries	124,304	362	124,666	127,449	2,853	130,302

Appendix J:

Incidence of Accommodations Received

Incidence of Presentation Accommodations Received on the 2014 PSSA: Mathematics

Type of Presentation Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	5 0.0	N/A N/A	5 0.0	8 0.0	N/A N/A	8 0.0	6 0.0	N/A N/A	6 0.0	5 0.0	N/A N/A	5 0.0
Large print format	101 0.1	N/A N/A	101 0.1	120 0.1	N/A N/A	120 0.1	108 0.1	N/A N/A	108 0.1	100 0.1	N/A N/A	100 0.1	93 0.1	N/A N/A	93 0.1	94 0.1	N/A N/A	94 0.1
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0	3 0.0	N/A N/A	3 0.0	12 0.0	N/A N/A	12 0.0	3 0.0	N/A N/A	3 0.0	4 0.0	N/A N/A	4 0.0	5 0.0	N/A N/A	5 0.0
Some test items/questions read aloud	7,128 5.7	11 4.5	7,139 5.7	7,562 6.0	12 3.0	7,574 6.0	7,402 5.9	33 6.0	7,435 5.9	5,806 4.7	71 5.1	5,877 4.7	3,702 2.9	92 4.5	3,794 2.9	2,678 2.1	138 4.8	2,816 2.1
All test items/questions read aloud	6,722 5.4	49 19.9	6,771 5.4	6,280 5.0	68 17.1	6,348 5.0	4,859 3.9	69 12.5	4,928 3.9	2,870 2.3	70 5.0	2,940 2.3	1,610 1.3	62 3.0	1,672 1.3	1,157 0.9	96 3.3	1,253 1.0
Test items/questions signed	41 0.0	0 0.0	41 0.0	46 0.0	0 0.0	46 0.0	45 0.0	0 0.0	45 0.0	33 0.0	0 0.0	33 0.0	24 0.0	0 0.0	24 0.0	18 0.0	0 0.0	18 0.0
Test items/questions interpreted for ELL student	84 0.1	0 0.0	84 0.1	76 0.1	0 0.0	76 0.1	100 0.1	0 0.0	100 0.1	58 0.0	2 0.1	60 0.0	34 0.0	1 0.0	35 0.0	55 0.0	0 0.0	55 0.0
Amplification device	42 0.0	0 0.0	42 0.0	48 0.0	0 0.0	48 0.0	46 0.0	0 0.0	46 0.0	27 0.0	0 0.0	27 0.0	19 0.0	0 0.0	19 0.0	20 0.0	0 0.0	20 0.0
Magnification device	18 0.0	1 0.4	19 0.0	16 0.0	1 0.3	17 0.0	18 0.0	0 0.0	18 0.0	15 0.0	1 0.1	16 0.0	9 0.0	0 0.0	9 0.0	10 0.0	0 0.0	10 0.0
Color overlay	75 0.1	N/A N/A	75 0.1	78 0.1	N/A N/A	78 0.1	54 0.0	N/A N/A	54 0.0	45 0.0	N/A N/A	45 0.0	14 0.0	N/A N/A	14 0.0	16 0.0	N/A N/A	16 0.0
Other (per Accommodations Guidelines)	423 0.3	4 1.6	427 0.3	520 0.4	0 0.0	520 0.4	509 0.4	3 0.5	512 0.4	130 0.1	3 0.2	133 0.1	72 0.1	3 0.1	75 0.1	79 0.1	2 0.1	81 0.1
Spanish version	153 0.1	N/A N/A	153 0.1	201 0.2	N/A N/A	201 0.2	202 0.2	N/A N/A	202 0.2	233 0.2	N/A N/A	233 0.2	246 0.2	N/A N/A	246 0.2	249 0.2	N/A N/A	249 0.2
Online Accommodations Received																		
Audio	N/A N/A	88 35.8	88 0.1	N/A N/A	97 24.4	97 0.1	N/A N/A	136 24.7	136 0.1	N/A N/A	182 13.0	182 0.1	N/A N/A	233 11.4	233 0.2	N/A N/A	267 9.3	267 0.2
Video sign language	N/A N/A	1 0.4	1 0.0	N/A N/A	1 0.3	1 0.0	N/A N/A	0 0.0	0 0.0	N/A N/A	0 0.0	0 0.0	N/A N/A	0 0.0	0 0.0	N/A N/A	1 0.0	1 0.0
Color Chooser	N/A N/A	10 4.1	10 0.0	N/A N/A	6 1.5	6 0.0	N/A N/A	10 1.8	10 0.0	N/A N/A	9 0.6	9 0.0	N/A N/A	6 0.3	6 0.0	N/A N/A	16 0.6	16 0.0
Contrasting Text Chooser	N/A N/A	10 4.1	10 0.0	N/A N/A	6 1.5	6 0.0	N/A N/A	8 1.5	8 0.0	N/A N/A	9 0.6	9 0.0	N/A N/A	6 0.3	6 0.0	N/A N/A	16 0.6	16 0.0

Incidence of Presentation Accommodations Received on the 2014 PSSA: Reading

Type of Presentation Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	4 0.0	N/A N/A	4 0.0	3 0.0	N/A N/A	3 0.0	8 0.0	N/A N/A	8 0.0	7 0.0	N/A N/A	7 0.0	7 0.0	N/A N/A	7 0.0	5 0.0	N/A N/A	5 0.0
Large print format	103 0.1	N/A N/A	103 0.1	119 0.1	N/A N/A	119 0.1	106 0.1	N/A N/A	106 0.1	97 0.1	N/A N/A	97 0.1	91 0.1	N/A N/A	91 0.1	93 0.1	N/A N/A	93 0.1
Computer Assistive Technology	5 0.0	N/A N/A	5 0.0	3 0.0	N/A N/A	3 0.0	11 0.0	N/A N/A	11 0.0	4 0.0	N/A N/A	4 0.0	10 0.0	N/A N/A	10 0.0	7 0.0	N/A N/A	7 0.0
Amplification device	48 0.0	0 0.0	48 0.0	50 0.0	0 0.0	50 0.0	42 0.0	0 0.0	42 0.0	24 0.0	0 0.0	24 0.0	17 0.0	0 0.0	17 0.0	15 0.0	0 0.0	15 0.0
Magnification device	16 0.0	1 0.4	17 0.0	14 0.0	1 0.3	15 0.0	18 0.0	0 0.0	18 0.0	14 0.0	1 0.1	15 0.0	8 0.0	0 0.0	8 0.0	9 0.0	0 0.0	9 0.0
Color overlay	282 0.2	N/A N/A	282 0.2	251 0.2	N/A N/A	251 0.2	208 0.2	N/A N/A	208 0.2	100 0.1	N/A N/A	100 0.1	59 0.0	N/A N/A	59 0.0	31 0.0	N/A N/A	31 0.0
Other (per Accommodations Guidelines)	1,010 0.8	3 1.2	1,013 0.8	925 0.7	0 0.0	925 0.7	852 0.7	3 0.5	855 0.7	229 0.2	5 0.4	234 0.2	87 0.1	0 0.0	87 0.1	97 0.1	2 0.1	99 0.1
Online Accommodations Received																		
Color Chooser	N/A N/A	10 4.1	10 0.0	N/A N/A	6 1.5	6 0.0	N/A N/A	10 1.8	10 0.0	N/A N/A	8 0.6	8 0.0	N/A N/A	6 0.3	6 0.0	N/A N/A	16 0.6	16 0.0
Contrasting Text Chooser	N/A N/A	10 4.1	10 0.0	N/A N/A	6 1.5	6 0.0	N/A N/A	8 1.5	8 0.0	N/A N/A	8 0.6	8 0.0	N/A N/A	6 0.3	6 0.0	N/A N/A	16 0.6	16 0.0

Incidence of Presentation Accommodations Received on the 2014 PSSA: Science

Type of Presentation Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	3 0.0	N/A N/A	3 0.0	7 0.0	N/A N/A	7 0.0
Large print format	94 0.1	N/A N/A	94 0.1	77 0.1	N/A N/A	77 0.1
Computer Assistive Technology	1 0.0	N/A N/A	1 0.0	6 0.0	N/A N/A	6 0.0
Some test items/questions read aloud	6,059 4.8	24 2.8	6,083 4.8	1,603 1.3	133 3.3	1,736 1.3
All test items/questions read aloud	5,821 4.6	59 6.9	5,880 4.6	1,061 0.8	89 2.2	1,150 0.9
Test items/questions signed	40 0.0	0 0.0	40 0.0	14 0.0	0 0.0	14 0.0
Test items/questions interpreted for ELL student	58 0.0	0 0.0	58 0.0	29 0.0	0 0.0	29 0.0
Amplification device	31 0.0	0 0.0	31 0.0	12 0.0	1 0.0	13 0.0
Magnification device	12 0.0	1 0.1	13 0.0	6 0.0	1 0.0	7 0.0
Color overlay	56 0.0	N/A N/A	56 0.0	2 0.0	N/A N/A	2 0.0
Other (per Accommodations Guidelines)	218 0.2	0 0.0	218 0.2	78 0.1	1 0.0	79 0.1
Spanish version	299 0.2	N/A N/A	299 0.2	322 0.3	N/A N/A	322 0.2
Online Accommodations Received						
Audio	N/A N/A	116 13.5	116 0.1	N/A N/A	305 7.5	305 0.2
Video sign language	N/A N/A	1 0.1	1 0.0	N/A N/A	1 0.0	1 0.0
Color Chooser	N/A N/A	15 1.7	15 0.0	N/A N/A	34 0.8	34 0.0
Contrasting Text Chooser	N/A N/A	14 1.6	14 0.0	N/A N/A	34 0.8	34 0.0

Incidence of Presentation Accommodations Received on the 2014 PSSA: Writing

Type of Presentation Accommodation	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Braille format	5 0.0	N/A N/A	5 0.0	5 0.0	N/A N/A	5 0.0
Large print format	89 0.1	N/A N/A	89 0.1	71 0.1	N/A N/A	71 0.1
Computer Assistive Technology	12 0.0	N/A N/A	12 0.0	5 0.0	N/A N/A	5 0.0
Some test items/questions/prompt read aloud	4,563 3.7	43 11.9	4,606 3.7	1,519 1.2	85 3.0	1,604 1.2
All test items/questions/prompt read aloud	1,421 1.1	39 10.8	1,460 1.2	373 0.3	42 1.5	415 0.3
Test items/questions/prompt signed	34 0.0	0 0.0	34 0.0	21 0.0	0 0.0	21 0.0
Test items/questions/prompt interpreted for ELL student	35 0.0	0 0.0	35 0.0	20 0.0	0 0.0	20 0.0
Amplification device	36 0.0	0 0.0	36 0.0	13 0.0	0 0.0	13 0.0
Magnification device	11 0.0	0 0.0	11 0.0	8 0.0	0 0.0	8 0.0
Color overlay	62 0.0	N/A N/A	62 0.0	7 0.0	N/A N/A	7 0.0
Other (per Accommodations Guidelines)	327 0.3	3 0.8	330 0.3	73 0.1	0 0.0	73 0.1
Online Accommodations Received						
Color Chooser	N/A N/A	7 1.9	7 0.0	N/A N/A	2 0.1	2 0.0
Contrasting Text Chooser	N/A N/A	7 1.9	7 0.0	N/A N/A	2 0.1	2 0.0

Incidence of Response Accommodations Received on the 2014 PSSA: Mathematics

Type of Response Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	235 0.2	2 0.8	237 0.2	578 0.5	3 0.8	581 0.5	510 0.4	0 0.0	510 0.4	236 0.2	0 0.0	236 0.2	147 0.1	0 0.0	147 0.1	124 0.1	0 0.0	124 0.1
Test administrator scribed open-ended responses at student's direction	970 0.8	3 1.2	973 0.8	767 0.6	3 0.8	770 0.6	621 0.5	0 0.0	621 0.5	377 0.3	2 0.1	379 0.3	237 0.2	1 0.0	238 0.2	172 0.1	18 0.6	190 0.1
Test administrator transcribed student responses	322 0.3	4 1.6	326 0.3	583 0.5	4 1.0	587 0.5	535 0.4	7 1.3	542 0.4	488 0.4	0 0.0	488 0.4	459 0.4	0 0.0	459 0.4	355 0.3	3 0.1	358 0.3
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	5 0.0	0 0.0	5 0.0	2 0.0	0 0.0	2 0.0	10 0.0	0 0.0	10 0.0	5 0.0	0 0.0	5 0.0	2 0.0	0 0.0	2 0.0	18 0.0	0 0.0	18 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	8 0.0	0 0.0	8 0.0	11 0.0	0 0.0	11 0.0	17 0.0	0 0.0	17 0.0	18 0.0	0 0.0	18 0.0	17 0.0	0 0.0	17 0.0	15 0.0	0 0.0	15 0.0
Keyboard, word processor, or computer	17 0.0	N/A N/A	17 0.0	37 0.0	N/A N/A	37 0.0	88 0.1	N/A N/A	88 0.1	94 0.1	N/A N/A	94 0.1	86 0.1	N/A N/A	86 0.1	80 0.1	N/A N/A	80 0.1
Brailler/Notetaker	2 0.0	N/A N/A	2 0.0	3 0.0	N/A N/A	3 0.0	5 0.0	N/A N/A	5 0.0	4 0.0	N/A N/A	4 0.0	3 0.0	N/A N/A	3 0.0	4 0.0	N/A N/A	4 0.0
Augmentative communication device	5 0.0	0 0.0	5 0.0	2 0.0	0 0.0	2 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0	2 0.0	0 0.0	2 0.0	0 0.0	0 0.0	0 0.0
Audio recording of student responses	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0	2 0.0	N/A N/A	2 0.0	4 0.0	N/A N/A	4 0.0	6 0.0	N/A N/A	6 0.0	5 0.0	N/A N/A	5 0.0	2 0.0	N/A N/A	2 0.0
Translation dictionary for ELL student	45 0.0	0 0.0	45 0.0	47 0.0	0 0.0	47 0.0	53 0.0	0 0.0	53 0.0	63 0.1	0 0.0	63 0.0	65 0.1	0 0.0	65 0.0	79 0.1	0 0.0	79 0.1
Other (per Accommodations Guidelines)	183 0.1	5 2.0	188 0.2	245 0.2	0 0.0	245 0.2	183 0.1	0 0.0	183 0.1	73 0.1	8 0.6	81 0.1	59 0.0	1 0.0	60 0.0	47 0.0	1 0.0	48 0.0

Incidence of Response Accommodations Received on the 2014 PSSA: Reading

Type of Response Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	227 0.2	1 0.4	228 0.2	568 0.4	3 0.8	571 0.5	487 0.4	0 0.0	487 0.4	235 0.2	0 0.0	235 0.2	146 0.1	0 0.0	146 0.1	118 0.1	0 0.0	118 0.1
Test administrator scribed open-ended responses at student's direction	1,008 0.8	3 1.2	1,011 0.8	844 0.7	3 0.8	847 0.7	667 0.5	0 0.0	667 0.5	410 0.3	2 0.1	412 0.3	260 0.2	1 0.0	261 0.2	184 0.1	18 0.6	202 0.2
Test administrator transcribed student responses	361 0.3	4 1.6	365 0.3	710 0.6	4 1.0	714 0.6	724 0.6	7 1.3	731 0.6	656 0.5	0 0.0	656 0.5	584 0.5	0 0.0	584 0.4	496 0.4	3 0.1	499 0.4
Keyboard, word processor, or computer	31 0.0	N/A N/A	31 0.0	83 0.1	N/A N/A	83 0.1	216 0.2	N/A N/A	216 0.2	224 0.2	N/A N/A	224 0.2	196 0.2	N/A N/A	196 0.2	208 0.2	N/A N/A	208 0.2
Brailler/Notetaker	3 0.0	N/A N/A	3 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0	4 0.0	N/A N/A	4 0.0
Augmentative communication device	5 0.0	0 0.0	5 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	2 0.0	0 0.0	2 0.0	2 0.0	0 0.0	2 0.0	2 0.0	0 0.0	2 0.0
Audio recording of student responses	2 0.0	0 0.0	2 0.0	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0	2 0.0	N/A N/A	2 0.0	6 0.0	N/A N/A	6 0.0	8 0.0	N/A N/A	8 0.0	13 0.0	N/A N/A	13 0.0	4 0.0	N/A N/A	4 0.0
Other (per Accommodations Guidelines)	123 0.1	0 0.0	123 0.1	192 0.2	0 0.0	192 0.2	149 0.1	0 0.0	149 0.1	77 0.1	0 0.0	77 0.1	59 0.0	1 0.0	60 0.0	38 0.0	1 0.0	39 0.0

Incidence of Response Accommodations Received on the 2014 PSSA: Science

Type of Response Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	523 0.4	0 0.0	523 0.4	100 0.1	0 0.0	100 0.1
Test administrator scribed open-ended responses at student's direction	746 0.6	0 0.0	746 0.6	145 0.1	19 0.5	164 0.1
Test administrator transcribed student responses	416 0.3	0 0.0	416 0.3	300 0.2	3 0.1	303 0.2
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	5 0.0	0 0.0	5 0.0	5 0.0	0 0.0	5 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	12 0.0	0 0.0	12 0.0	6 0.0	0 0.0	6 0.0
Keyboard, word processor, or computer	30 0.0	N/A N/A	30 0.0	119 0.1	N/A N/A	119 0.1
Brailler/Notetaker	2 0.0	N/A N/A	2 0.0	2 0.0	N/A N/A	2 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0	2 0.0	0 0.0	2 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0	1 0.0	0 0.0	1 0.0
Computer Assistive Technology	0 0.0	N/A N/A	0 0.0	5 0.0	N/A N/A	5 0.0
Translation dictionary for ELL student	39 0.0	0 0.0	39 0.0	62 0.0	0 0.0	62 0.0
Other (per Accommodations Guidelines)	143 0.1	0 0.0	143 0.1	15 0.0	1 0.0	16 0.0

Incidence of Response Accommodations Received on the 2014 PSSA: Writing

Type of Response Accommodation	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	132 0.1	0 0.0	132 0.1	51 0.0	0 0.0	51 0.0
Test administrator transcribed student responses	887 0.7	0 0.0	887 0.7	561 0.4	0 0.0	561 0.4
Keyboard, word processor, or computer	382 0.3	N/A N/A	382 0.3	369 0.3	N/A N/A	369 0.3
Brailler/Notetaker	5 0.0	N/A N/A	5 0.0	4 0.0	N/A N/A	4 0.0
Augmentative communication device	2 0.0	0 0.0	2 0.0	0 0.0	0 0.0	0 0.0
Audio recording of student responses	4 0.0	0 0.0	4 0.0	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	16 0.0	N/A N/A	16 0.0	12 0.0	N/A N/A	12 0.0
Other (per Accommodations Guidelines)	102 0.1	0 0.0	102 0.1	28 0.0	1 0.0	29 0.0

Incidence of Setting Accommodations Received on the 2014 PSSA: Mathematics

Type of Setting Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	39 0.0	0 0.0	39 0.0	42 0.0	0 0.0	42 0.0	46 0.0	0 0.0	46 0.0	53 0.0	0 0.0	53 0.0	45 0.0	0 0.0	45 0.0	70 0.1	0 0.0	70 0.1
One-on-one setting	845 0.7	4 1.6	849 0.7	850 0.7	3 0.8	853 0.7	744 0.6	2 0.4	746 0.6	646 0.5	6 0.4	652 0.5	463 0.4	2 0.1	465 0.4	475 0.4	4 0.1	479 0.4
Small group setting	16,555 13.3	68 27.6	16,623 13.3	17,139 13.5	66 16.6	17,205 13.6	16,755 13.3	103 18.7	16,858 13.3	14,102 11.3	222 15.8	14,324 11.4	12,982 10.1	234 11.4	13,216 10.2	12,500 9.7	388 13.5	12,888 9.8
Other (per Accommodations Guidelines)	273 0.2	0 0.0	273 0.2	364 0.3	0 0.0	364 0.3	321 0.3	0 0.0	321 0.3	412 0.3	1 0.1	413 0.3	408 0.3	2 0.1	410 0.3	472 0.4	2 0.1	474 0.4

Incidence of Setting Accommodations Received on the 2014 PSSA: Reading

Type of Setting Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	38 0.0	0 0.0	38 0.0	41 0.0	0 0.0	41 0.0	39 0.0	0 0.0	39 0.0	54 0.0	0 0.0	54 0.0	41 0.0	0 0.0	41 0.0	62 0.0	0 0.0	62 0.0
One-on-one setting	954 0.8	4 1.6	958 0.8	946 0.7	3 0.8	949 0.7	810 0.6	2 0.4	812 0.6	657 0.5	5 0.4	662 0.5	470 0.4	2 0.1	472 0.4	459 0.4	4 0.1	463 0.4
Small group setting	16,234 13.0	66 26.8	16,300 13.1	16,874 13.3	66 16.7	16,940 13.4	16,574 13.1	103 18.7	16,677 13.2	13,937 11.2	217 15.5	14,154 11.2	12,912 10.1	231 11.3	13,143 10.1	12,458 9.7	389 13.6	12,847 9.8
Other (per Accommodations Guidelines)	290 0.2	0 0.0	290 0.2	368 0.3	0 0.0	368 0.3	336 0.3	0 0.0	336 0.3	415 0.3	1 0.1	416 0.3	400 0.3	2 0.1	402 0.3	468 0.4	2 0.1	470 0.4

Incidence of Setting Accommodations Received on the 2014 PSSA: Science

Type of Setting Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	32 0.0	0 0.0	32 0.0	65 0.1	0 0.0	65 0.0
One-on-one setting	797 0.6	0 0.0	797 0.6	413 0.3	1 0.0	414 0.3
Small group setting	15,432 12.2	74 8.6	15,506 12.2	11,380 9.0	421 10.3	11,801 9.0
Other (per Accommodations Guidelines)	214 0.2	0 0.0	214 0.2	422 0.3	1 0.0	423 0.3

Incidence of Setting Accommodations Received on the 2014 PSSA: Writing

Type of Setting Accommodation	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Hospital/home setting	32 0.0	0 0.0	32 0.0	44 0.0	0 0.0	44 0.0
One-on-one setting	600 0.5	0 0.0	600 0.5	374 0.3	1 0.0	375 0.3
Small group setting	13,616 11.0	93 25.7	13,709 11.0	10,828 8.5	352 12.3	11,180 8.6
Other (per Accommodations Guidelines)	233 0.2	0 0.0	233 0.2	435 0.3	2 0.1	437 0.3

Incidence of Timing Accommodations Received on the 2014 PSSA: Mathematics

Type of Timing Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	5,753 4.6	47 19.1	5,800 4.7	6,622 5.2	49 12.3	6,671 5.3	8,538 6.8	72 13.1	8,610 6.8	6,897 5.5	127 9.0	7,024 5.6	7,485 5.8	160 7.8	7,645 5.9	6,228 4.8	238 8.3	6,466 4.9
Frequent breaks	3,763 3.0	52 21.1	3,815 3.1	3,907 3.1	51 12.8	3,958 3.1	3,729 3.0	56 10.2	3,785 3.0	2,677 2.1	100 7.1	2,777 2.2	1,821 1.4	93 4.5	1,914 1.5	1,417 1.1	126 4.4	1,543 1.2
Changed test schedule	537 0.4	4 1.6	541 0.4	544 0.4	0 0.0	544 0.4	550 0.4	2 0.4	552 0.4	450 0.4	2 0.1	452 0.4	451 0.4	0 0.0	451 0.3	479 0.4	2 0.1	481 0.4
Other (per Accommodations Guidelines)	66 0.1	0 0.0	66 0.1	107 0.1	0 0.0	107 0.1	133 0.1	0 0.0	133 0.1	119 0.1	1 0.1	120 0.1	94 0.1	0 0.0	94 0.1	94 0.1	2 0.1	96 0.1

Incidence of Timing Accommodations Received on the 2014 PSSA: Reading

Type of Timing Accommodation	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	5,172 4.2	46 18.7	5,218 4.2	8,739 6.9	49 12.4	8,788 6.9	11,669 9.3	80 14.5	11,749 9.3	9,425 7.6	121 8.6	9,546 7.6	8,470 6.6	152 7.4	8,622 6.6	9,032 7.0	233 8.1	9,265 7.1
Frequent breaks	3,794 3.0	51 20.7	3,845 3.1	3,994 3.2	51 12.9	4,045 3.2	3,777 3.0	55 10.0	3,832 3.0	2,663 2.1	96 6.8	2,759 2.2	1,833 1.4	92 4.5	1,925 1.5	1,442 1.1	129 4.5	1,571 1.2
Changed test schedule	537 0.4	4 1.6	541 0.4	555 0.4	0 0.0	555 0.4	578 0.5	2 0.4	580 0.5	459 0.4	2 0.1	461 0.4	444 0.3	0 0.0	444 0.3	491 0.4	2 0.1	493 0.4
Other (per Accommodations Guidelines)	58 0.0	0 0.0	58 0.0	91 0.1	0 0.0	91 0.1	107 0.1	0 0.0	107 0.1	105 0.1	1 0.1	106 0.1	93 0.1	0 0.0	93 0.1	93 0.1	2 0.1	95 0.1

Incidence of Timing Accommodations Received on the 2014 PSSA: Science

Type of Timing Accommodation	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	4,467 3.5	56 6.5	4,523 3.6	4,008 3.2	227 5.6	4,235 3.2
Frequent breaks	2,736 2.2	44 5.1	2,780 2.2	1,022 0.8	136 3.3	1,158 0.9
Changed test schedule	285 0.2	0 0.0	285 0.2	277 0.2	2 0.0	279 0.2
Other (per Accommodations Guidelines)	65 0.1	0 0.0	65 0.1	49 0.0	2 0.0	51 0.0

Incidence of Timing Accommodations Received on the 2014 PSSA: Writing

Type of Timing Accommodation	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended time	6,105 4.9	73 20.2	6,178 5.0	5,637 4.4	208 7.3	5,845 4.5
Frequent breaks	2,368 1.9	46 12.7	2,414 1.9	1,003 0.8	118 4.1	1,121 0.9
Changed test schedule	375 0.3	0 0.0	375 0.3	355 0.3	2 0.1	357 0.3
Other (per Accommodations Guidelines)	80 0.1	0 0.0	80 0.1	54 0.0	2 0.1	56 0.0

Appendix K:

Accommodation Rate for Non-IEP and IEP Students

Accommodation Rate for Non-IEP and IEP Students on the 2014 PSSA: Mathematics

Student Subgroup	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	105,408	132	105,540	106,299	251	106,550	106,169	367	106,536	105,475	1,036	106,511	108,634	1,561	110,195	108,979	2,215	111,194
Non-Accommodated	95,076 90.2	121 91.7	95,197 90.2	96,447 90.7	244 97.2	96,691 90.7	95,918 90.3	339 92.4	96,257 90.4	98,357 93.3	990 95.6	99,347 93.3	101,728 93.6	1,525 97.7	103,253 93.7	103,150 94.7	2,148 97.0	105,298 94.7
Accommodated	10,332 9.8	11 8.3	10,343 9.8	9,852 9.3	7 2.8	9,859 9.3	10,251 9.7	28 7.6	10,279 9.6	7,118 6.7	46 4.4	7,164 6.7	6,906 6.4	36 2.3	6,942 6.3	5,829 5.3	67 3.0	5,896 5.3
IEP Students	19,048	114	19,162	20,215	146	20,361	19,974	183	20,157	19,249	368	19,617	19,503	491	19,994	19,512	657	20,169
Non-Accommodated	7,257 38.1	21 18.4	7,278 38.0	6,778 33.5	37 25.3	6,815 33.5	6,024 30.2	34 18.6	6,058 30.1	6,338 32.9	64 17.4	6,402 32.6	7,103 36.4	116 23.6	7,219 36.1	7,531 38.6	176 26.8	7,707 38.2
Accommodated	11,791 61.9	93 81.6	11,884 62.0	13,437 66.5	109 74.7	13,546 66.5	13,950 69.8	149 81.4	14,099 69.9	12,911 67.1	304 82.6	13,215 67.4	12,400 63.6	375 76.4	12,775 63.9	11,981 61.4	481 73.2	12,462 61.8

Accommodation Rate for Non-IEP and IEP Students on the 2014 PSSA: Reading

Student Subgroup	Grade 3			Grade 4			Grade 5			Grade 6			Grade 7			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	105,405	132	105,537	106,308	251	106,559	106,121	368	106,489	105,427	1,036	106,463	108,540	1,559	110,099	108,881	2,213	111,094
Non-Accommodated	96,990 92.0	123 93.2	97,113 92.0	95,736 90.1	244 97.2	95,980 90.1	93,928 88.5	334 90.8	94,262 88.5	96,497 91.5	998 96.3	97,495 91.6	100,734 92.8	1,533 98.3	102,267 92.9	100,666 92.5	2,158 97.5	102,824 92.6
Accommodated	8,415 8.0	9 6.8	8,424 8.0	10,572 9.9	7 2.8	10,579 9.9	12,193 11.5	34 9.2	12,227 11.5	8,930 8.5	38 3.7	8,968 8.4	7,806 7.2	26 1.7	7,832 7.1	8,215 7.5	55 2.5	8,270 7.4
IEP Students	19,008	114	19,122	20,183	145	20,328	19,967	183	20,150	19,215	366	19,581	19,464	490	19,954	19,467	657	20,124
Non-Accommodated	7,506 39.5	51 44.7	7,557 39.5	7,024 34.8	74 51.0	7,098 34.9	6,121 30.7	84 45.9	6,205 30.8	6,447 33.6	124 33.9	6,571 33.6	7,308 37.5	217 44.3	7,525 37.7	7,482 38.4	243 37.0	7,725 38.4
Accommodated	11,502 60.5	63 55.3	11,565 60.5	13,159 65.2	71 49.0	13,230 65.1	13,846 69.3	99 54.1	13,945 69.2	12,768 66.4	242 66.1	13,010 66.4	12,156 62.5	273 55.7	12,429 62.3	11,985 61.6	414 63.0	12,399 61.6

Accommodation Rate for Non-IEP and IEP Students on the 2014 PSSA: Science

Student Subgroup	Grade 4			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	106,072	687	106,759	107,615	3,308	110,923
Non-Accommodated	98,763 93.1	670 97.5	99,433 93.1	103,711 96.4	3,244 98.1	106,955 96.4
Accommodated	7,309 6.9	17 2.5	7,326 6.9	3,904 3.6	64 1.9	3,968 3.6
IEP Students	20,174	172	20,346	19,225	770	19,995
Non-Accommodated	7,805 38.7	60 34.9	7,865 38.7	8,436 43.9	242 31.4	8,678 43.4
Accommodated	12,369 61.3	112 65.1	12,481 61.3	10,789 56.1	528 68.6	11,317 56.6

Accommodation Rate for Non-IEP and IEP Students on the 2014 PSSA: Writing

Student Subgroup	Grade 5			Grade 8		
	PPT	CBT	Total	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Non-IEP Students	105,240	243	105,483	108,329	2,264	110,593
Non-Accommodated	97,929 93.1	202 83.1	98,131 93.0	102,857 94.9	2,211 97.7	105,068 95.0
Accommodated	7,311 6.9	41 16.9	7,352 7.0	5,472 5.1	53 2.3	5,525 5.0
IEP Students	19,064	119	19,183	19,120	589	19,709
Non-Accommodated	7,358 38.6	33 27.7	7,391 38.5	8,628 45.1	228 38.7	8,856 44.9
Accommodated	11,706 61.4	86 72.3	11,792 61.5	10,492 54.9	361 61.3	10,853 55.1

Appendix L:

Incidence of Accommodations Received by IEP and ELL Students

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Mathematics

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 3	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	2,559 2.5	2 1.5	2,561 2.5	3,580 19.5	9 8.0	3,589 19.5	794 23.1	0 0.0	794 23.1	195 27.3	0 0.0	195 27.3
All test items/questions read aloud	1,202 1.2	7 5.4	1,209 1.2	5,119 27.9	41 36.3	5,160 28.0	196 5.7	0 0.0	196 5.7	205 28.7	1 100.0	206 28.8
Small group setting	4,777 4.7	9 6.9	4,786 4.7	10,082 55.0	58 51.3	10,140 55.0	1,220 35.5	0 0.0	1,220 35.5	476 66.7	1 100.0	477 66.7
Extended time	2,746 2.7	8 6.2	2,754 2.7	2,694 14.7	39 34.5	2,733 14.8	203 5.9	0 0.0	203 5.9	110 15.4	0 0.0	110 15.4
Frequent breaks	574 0.6	8 6.2	582 0.6	2,994 16.3	44 38.9	3,038 16.5	80 2.3	0 0.0	80 2.3	115 16.1	0 0.0	115 16.1
Number assessed	101,973	130	102,103	18,334	113	18,447	3,435	2	3,437	714	1	715
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	2,190 2.1	0 0.0	2,190 2.1	4,618 23.7	12 8.3	4,630 23.6	520 21.2	0 0.0	520 21.2	234 33.2	0 0.0	234 33.1
All test items/questions read aloud	883 0.9	3 1.2	886 0.9	5,056 25.9	63 43.8	5,119 26.0	151 6.1	0 0.0	151 6.1	190 27.0	2 100.0	192 27.2
Small group setting	4,290 4.1	3 1.2	4,293 4.1	11,556 59.2	62 43.1	11,618 59.1	810 33.0	0 0.0	810 33.0	483 68.5	1 50.0	484 68.5
Extended time	3,310 3.2	4 1.6	3,314 3.2	3,046 15.6	44 30.6	3,090 15.7	154 6.3	0 0.0	154 6.3	112 15.9	1 50.0	113 16.0
Frequent breaks	500 0.5	1 0.4	501 0.5	3,239 16.6	49 34.0	3,288 16.7	60 2.4	0 0.0	60 2.4	108 15.3	1 50.0	109 15.4
Number assessed	103,842	250	104,092	19,510	144	19,654	2,457	1	2,458	705	2	707

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Mathematics (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 5	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	1,608 1.5	3 0.8	1,611 1.5	5,126 26.6	25 14.3	5,151 26.5	415 19.8	1 50.0	416 19.8	253 36.5	4 50.0	257 36.7
All test items/questions read aloud	604 0.6	3 0.8	607 0.6	3,998 20.7	63 36.0	4,061 20.9	110 5.3	0 0.0	110 5.2	147 21.2	3 37.5	150 21.4
Small group setting	3,512 3.4	13 3.6	3,525 3.4	12,102 62.8	84 48.0	12,186 62.6	667 31.8	1 50.0	668 31.9	474 68.4	5 62.5	479 68.3
Extended time	4,893 4.7	12 3.3	4,905 4.7	3,367 17.5	56 32.0	3,423 17.6	157 7.5	0 0.0	157 7.5	121 17.5	4 50.0	125 17.8
Frequent breaks	412 0.4	0 0.0	412 0.4	3,177 16.5	54 30.9	3,231 16.6	46 2.2	0 0.0	46 2.2	94 13.6	2 25.0	96 13.7
Number assessed	104,074	365	104,439	19,281	175	19,456	2,095	2	2,097	693	8	701
Grade 6	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	862 0.8	1 0.1	863 0.8	4,498 24.3	61 17.0	4,559 24.1	258 12.8	7 36.8	265 13.1	188 26.6	2 20.0	190 26.5
All test items/questions read aloud	299 0.3	3 0.3	302 0.3	2,458 13.3	65 18.2	2,523 13.3	49 2.4	1 5.3	50 2.5	64 9.0	1 10.0	65 9.1
Small group setting	2,120 2.0	16 1.6	2,136 2.0	11,177 60.3	188 52.5	11,365 60.1	418 20.8	12 63.2	430 21.2	387 54.7	6 60.0	393 54.7
Extended time	3,878 3.7	20 2.0	3,898 3.7	2,818 15.2	103 28.8	2,921 15.5	116 5.8	3 15.8	119 5.9	85 12.0	1 10.0	86 12.0
Frequent breaks	215 0.2	4 0.4	219 0.2	2,373 12.8	92 25.7	2,465 13.0	31 1.5	3 15.8	34 1.7	58 8.2	1 10.0	59 8.2
Number assessed	103,464	1,017	104,481	18,541	358	18,899	2,011	19	2,030	708	10	718

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Mathematics (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 7	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	321 0.3	3 0.2	324 0.3	3,101 16.5	76 15.9	3,177 16.5	131 6.3	6 31.6	137 6.5	149 20.0	7 50.0	156 20.6
All test items/questions read aloud	164 0.2	4 0.3	168 0.2	1,362 7.3	58 12.2	1,420 7.4	29 1.4	0 0.0	29 1.4	55 7.4	0 0.0	55 7.3
Small group setting	1,550 1.5	15 1.0	1,565 1.4	10,682 56.9	200 41.9	10,882 56.6	368 17.6	9 47.4	377 17.9	382 51.3	10 71.4	392 51.7
Extended time	4,588 4.3	14 0.9	4,602 4.3	2,635 14.0	140 29.4	2,775 14.4	163 7.8	4 21.1	167 7.9	99 13.3	2 14.3	101 13.3
Frequent breaks	130 0.1	3 0.2	133 0.1	1,608 8.6	87 18.2	1,695 8.8	27 1.3	3 15.8	30 1.4	56 7.5	0 0.0	56 7.4
Number assessed	106,544	1,542	108,086	18,759	477	19,236	2,090	19	2,109	744	14	758
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	208 0.2	2 0.1	210 0.2	2,266 12.0	126 19.6	2,392 12.3	93 4.6	4 30.8	97 4.8	111 15.9	6 40.0	117 16.4
All test items/questions read aloud	81 0.1	7 0.3	88 0.1	1,026 5.5	89 13.9	1,115 5.7	18 0.9	0 0.0	18 0.9	32 4.6	0 0.0	32 4.5
Small group setting	1,434 1.3	42 1.9	1,476 1.4	10,453 55.6	331 51.6	10,784 55.4	321 16.0	6 46.2	327 16.2	292 41.9	9 60.0	301 42.3
Extended time	3,650 3.4	25 1.1	3,675 3.4	2,323 12.3	208 32.4	2,531 13.0	187 9.3	0 0.0	187 9.3	68 9.8	5 33.3	73 10.3
Frequent breaks	133 0.1	11 0.5	144 0.1	1,246 6.6	112 17.4	1,358 7.0	6 0.3	0 0.0	6 0.3	32 4.6	3 20.0	35 4.9
Number assessed	106,978	2,202	109,180	18,815	642	19,457	2,001	13	2,014	697	15	712

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Reading

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 3	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	4,655 4.6	9 6.9	4,664 4.6	9,913 54.2	56 49.6	9,969 54.1	1,207 35.3	0 0.0	1,207 35.3	459 64.6	1 100.0	460 64.7
Extended time	2,269 2.2	8 6.2	2,277 2.2	2,621 14.3	38 33.6	2,659 14.4	172 5.0	0 0.0	172 5.0	110 15.5	0 0.0	110 15.5
Frequent breaks	577 0.6	8 6.2	585 0.6	3,025 16.5	43 38.1	3,068 16.7	81 2.4	0 0.0	81 2.4	111 15.6	0 0.0	111 15.6
Number assessed	101,983	130	102,113	18,298	113	18,411	3,422	2	3,424	710	1	711
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	4,260 4.1	3 1.2	4,263 4.1	11,340 58.2	62 43.4	11,402 58.1	801 32.8	0 0.0	801 32.8	473 67.3	1 50.0	474 67.2
Extended time	5,173 5.0	4 1.6	5,177 5.0	3,274 16.8	44 30.8	3,318 16.9	184 7.5	0 0.0	184 7.5	108 15.4	1 50.0	109 15.5
Frequent breaks	525 0.5	1 0.4	526 0.5	3,299 16.9	49 34.3	3,348 17.1	58 2.4	0 0.0	58 2.4	112 15.9	1 50.0	113 16.0
Number assessed	103,866	250	104,116	19,480	143	19,623	2,442	1	2,443	703	2	705
Grade 5	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	3,529 3.4	13 3.6	3,542 3.4	11,934 61.9	84 48.0	12,018 61.8	642 30.9	1 50.0	643 30.9	469 67.6	5 62.5	474 67.5
Extended time	7,592 7.3	21 5.7	7,613 7.3	3,752 19.5	55 31.4	3,807 19.6	183 8.8	0 0.0	183 8.8	142 20.5	4 50.0	146 20.8
Frequent breaks	412 0.4	0 0.0	412 0.4	3,220 16.7	53 30.3	3,273 16.8	46 2.2	0 0.0	46 2.2	99 14.3	2 25.0	101 14.4
Number assessed	104,045	366	104,411	19,273	175	19,448	2,076	2	2,078	694	8	702

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Reading (continued)

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 6	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	2,135 2.1	13 1.3	2,148 2.1	11,019 59.5	186 52.2	11,205 59.4	398 19.9	12 63.2	410 20.3	385 54.6	6 60.0	391 54.7
Extended time	6,198 6.0	13 1.3	6,211 5.9	2,982 16.1	103 28.9	3,085 16.4	165 8.2	4 21.1	169 8.4	80 11.3	1 10.0	81 11.3
Frequent breaks	218 0.2	4 0.4	222 0.2	2,356 12.7	88 24.7	2,444 13.0	31 1.5	3 15.8	34 1.7	58 8.2	1 10.0	59 8.3
Number assessed	103,425	1,017	104,442	18,510	356	18,866	2,002	19	2,021	705	10	715
Grade 7	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	1,568 1.5	15 1.0	1,583 1.5	10,618 56.7	197 41.4	10,815 56.3	352 16.9	9 47.4	361 17.2	374 50.7	10 71.4	384 51.1
Extended time	5,649 5.3	9 0.6	5,658 5.2	2,563 13.7	137 28.8	2,700 14.1	174 8.4	3 15.8	177 8.4	84 11.4	3 21.4	87 11.6
Frequent breaks	133 0.1	3 0.2	136 0.1	1,616 8.6	86 18.1	1,702 8.9	27 1.3	3 15.8	30 1.4	57 7.7	0 0.0	57 7.6
Number assessed	106,460	1,540	108,000	18,727	476	19,203	2,080	19	2,099	737	14	751
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Small group setting	1,439 1.3	42 1.9	1,481 1.4	10,406 55.4	332 51.7	10,738 55.3	320 16.1	6 46.2	326 16.3	293 42.0	9 60.0	302 42.4
Extended time	6,139 5.7	16 0.7	6,155 5.6	2,589 13.8	212 33.0	2,801 14.4	222 11.2	0 0.0	222 11.1	82 11.8	5 33.3	87 12.2
Frequent breaks	142 0.1	11 0.5	153 0.1	1,262 6.7	115 17.9	1,377 7.1	6 0.3	0 0.0	6 0.3	32 4.6	3 20.0	35 4.9
Number assessed	106,896	2,200	109,096	18,770	642	19,412	1,985	13	1,998	697	15	712

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Science

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 4	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	1,644 1.6	8 1.2	1,652 1.6	3,745 19.3	16 9.4	3,761 19.2	469 16.9	0 0.0	469 16.9	201 27.7	0 0.0	201 27.7
All test items/questions read aloud	654 0.6	11 1.6	665 0.6	4,785 24.6	47 27.5	4,832 24.6	180 6.5	0 0.0	180 6.5	202 27.9	1 100.0	203 28.0
Small group setting	3,327 3.2	12 1.8	3,339 3.2	10,722 55.1	61 35.7	10,783 55.0	908 32.7	0 0.0	908 32.7	475 65.5	1 100.0	476 65.6
Extended time	2,008 1.9	11 1.6	2,019 1.9	2,242 11.5	44 25.7	2,286 11.7	128 4.6	0 0.0	128 4.6	89 12.3	1 100.0	90 12.4
Frequent breaks	310 0.3	2 0.3	312 0.3	2,311 11.9	41 24.0	2,352 12.0	54 1.9	0 0.0	54 1.9	61 8.4	1 100.0	62 8.5
Number assessed	103,298	685	103,983	19,449	171	19,620	2,774	2	2,776	725	1	726
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions read aloud	133 0.1	0 0.0	133 0.1	1,338 7.2	122 16.2	1,460 7.6	66 3.0	4 25.0	70 3.1	66 9.3	7 46.7	73 10.1
All test items/questions read aloud	35 0.0	8 0.2	43 0.0	974 5.3	81 10.7	1,055 5.5	18 0.8	0 0.0	18 0.8	34 4.8	0 0.0	34 4.7
Small group setting	1,288 1.2	41 1.2	1,329 1.2	9,479 51.2	365 48.3	9,844 51.1	329 14.7	6 37.5	335 14.9	284 40.2	9 60.0	293 40.6
Extended time	1,950 1.9	15 0.5	1,965 1.8	1,773 9.6	206 27.3	1,979 10.3	211 9.5	1 6.3	212 9.4	74 10.5	5 33.3	79 10.9
Frequent breaks	79 0.1	11 0.3	90 0.1	898 4.8	121 16.0	1,019 5.3	15 0.7	1 6.3	16 0.7	30 4.2	3 20.0	33 4.6
Number assessed	105,383	3,292	108,675	18,518	755	19,273	2,232	16	2,248	707	15	722

Incidence of IEP and ELL Students Receiving Selected Accommodation on the 2014 PSSA: Writing

Accommodation Received	Classification of Students Regarding IEP and ELL											
	General Education			IEP and non-ELL			ELL and non-IEP			Both IEP and ELL		
	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total	PPT	CBT	Total
Grade 5	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions/prompt read aloud	483 0.5	13 5.4	496 0.5	3,693 20.0	25 21.9	3,718 20.0	208 10.8	1 50.0	209 10.8	179 29.4	4 80.0	183 29.9
All test items/questions/prompt read aloud	165 0.2	0 0.0	165 0.2	1,179 6.4	38 33.3	1,217 6.6	42 2.2	0 0.0	42 2.2	35 5.8	1 20.0	36 5.9
Small group setting	2,436 2.4	13 5.4	2,449 2.4	10,251 55.5	74 64.9	10,325 55.6	539 28.0	1 50.0	540 28.0	390 64.1	5 100.0	395 64.4
Extended time	3,798 3.7	20 8.3	3,818 3.7	2,138 11.6	49 43.0	2,187 11.8	95 4.9	0 0.0	95 4.9	74 12.2	4 80.0	78 12.7
Frequent breaks	238 0.2	0 0.0	238 0.2	2,025 11.0	44 38.6	2,069 11.1	35 1.8	0 0.0	35 1.8	70 11.5	2 40.0	72 11.7
Number assessed	103,312	241	103,553	18,456	114	18,570	1,928	2	1,930	608	5	613
Grade 8	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Some test items/questions/prompt read aloud	52 0.0	0 0.0	52 0.0	1,371 7.4	75 13.1	1,446 7.6	47 2.4	4 26.7	51 2.6	49 7.6	6 40.0	55 8.3
All test items/questions/prompt read aloud	6 0.0	6 0.3	12 0.0	344 1.9	35 6.1	379 2.0	13 0.7	0 0.0	13 0.7	10 1.5	1 6.7	11 1.7
Small group setting	1,147 1.1	41 1.8	1,188 1.1	9,173 49.7	294 51.2	9,467 49.7	252 13.1	8 53.3	260 13.4	256 39.5	9 60.0	265 40.0
Extended time	3,746 3.5	13 0.6	3,759 3.5	1,738 9.4	190 33.1	1,928 10.1	105 5.4	0 0.0	105 5.4	48 7.4	5 33.3	53 8.0
Frequent breaks	75 0.1	11 0.5	86 0.1	897 4.9	104 18.1	1,001 5.3	8 0.4	0 0.0	8 0.4	23 3.5	3 20.0	26 3.9
Number assessed	106,399	2,249	108,648	18,472	574	19,046	1,930	15	1,945	648	15	663

Appendix M:

Cut Scores and Scale Transformations

Column Heading	Definition
LOSS	Lowest Obtainable Scaled Score

				Scaled Score Cuts			Logit Cuts		
	Grade	Scaling	LOSS	Basic	Prof.	Adv.	Basic	Prof.	Adv.
Mathematics	3	128.81X + 964.24	750	1044	1180	1370	0.6192	1.6750	3.1501
	4	200.00X + 1183.52	700	1156	1246	1445	-0.1376	0.3124	1.3074
	5	189.80X + 1134.10	700	1158	1312	1483	0.1259	0.9373	1.8383
	6	200.00X + 1201.54	700	1174	1298	1476	-0.1377	0.4823	1.3723
	7	200.00X + 1225.28	700	1183	1298	1472	-0.2114	0.3636	1.2336
	8	177.53X + 1182.30	700	1171	1284	1446	-0.0637	0.5729	1.4854
	11	206.42X + 1203.10	700	1167	1304	1509	-0.1749	0.4888	1.4819
Reading	3	123.80X + 1207.70	1000	1168	1235	1442	-0.3207	0.2205	1.8926
	4	200.00X + 1156.30	700	1112	1255	1469	-0.2215	0.4935	1.5635
	5	198.80X + 1094.60	700	1137	1275	1497	0.2133	0.9074	2.0241
	6	200.00X + 1168.96	700	1121	1278	1456	-0.2398	0.5452	1.4352
	7	200.00X + 1194.40	700	1131	1279	1470	-0.3170	0.4230	1.3780
	8	234.82X + 1113.70	700	1146	1280	1473	0.1376	0.7082	1.5301
	11	245.45X + 1115.20	700	1112	1257	1492	-0.0130	0.5777	1.5351
Science	7	176.75X + 1225.65	1050	1150	1275	1483	-0.4280	0.2792	1.4560
	8	191.54X + 1196.64	925	1150	1275	1464	-0.2435	0.4091	1.3958
	11	101.81X + 1194.69	1050	1150	1275	1347	-0.4390	0.7888	1.4960
Writing	7	100.00X + 1071.44	700	745	1236	1909	-3.2644	1.6456	8.3756
	8	100.00X + 1123.84	700	914	1236	1748	-2.0984	1.1216	6.2416
	11	100.00X + 1244.30	700	952	1236	1806	-2.9230	-0.0830	5.6170

Appendix N:

Raw-to-Scaled Score Conversion Tables

Column Heading	Definition
Raw	Raw score
Meas	Rasch measure
MeasSE	Rasch measure standard error
SS	Scaled score
SSSE	Scaled score standard error
Freq	Frequency
Freq%	Frequency percent
Cum	Cumulative frequency
Cum%	Cumulative frequency percent
Pct	Percentile

Mathematics Grade 3

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-4.9878	1.8340	750	236	0	0.0	0	0.0	0
1	-3.7626	1.0151	750	131	0	0.0	0	0.0	0
2	-3.0390	0.7284	750	94	0	0.0	0	0.0	0
3	-2.6028	0.6034	750	78	0	0.0	0	0.0	0
4	-2.2842	0.5301	750	68	1	0.0	1	0.0	1
5	-2.0299	0.4809	750	62	1	0.0	2	0.0	1
6	-1.8162	0.4453	750	57	4	0.0	6	0.0	1
7	-1.6303	0.4181	754	54	15	0.0	21	0.0	1
8	-1.4647	0.3966	776	51	28	0.0	49	0.0	1
9	-1.3144	0.3791	795	49	71	0.1	120	0.1	1
10	-1.1762	0.3647	813	47	91	0.1	211	0.2	1
11	-1.0476	0.3526	829	45	141	0.1	352	0.3	1
12	-0.9269	0.3424	845	44	244	0.2	596	0.5	1
13	-0.8128	0.3335	860	43	274	0.2	870	0.7	1
14	-0.7042	0.3259	874	42	404	0.3	1274	1.0	1
15	-0.6001	0.3193	887	41	488	0.4	1762	1.4	1
16	-0.5001	0.3135	900	40	542	0.4	2304	1.8	2
17	-0.4034	0.3084	912	40	570	0.5	2874	2.3	2
18	-0.3098	0.3039	924	39	644	0.5	3518	2.8	3
19	-0.2187	0.2999	936	39	678	0.5	4196	3.4	3
20	-0.1298	0.2964	948	38	709	0.6	4905	3.9	4
21	-0.0429	0.2933	959	38	731	0.6	5636	4.5	4
22	0.0423	0.2905	970	37	738	0.6	6374	5.1	5
23	0.1260	0.2881	980	37	849	0.7	7223	5.8	5
24	0.2083	0.2859	991	37	874	0.7	8097	6.5	6
25	0.2895	0.2840	1002	37	894	0.7	8991	7.2	7
26	0.3697	0.2824	1012	36	950	0.8	9941	8.0	8
27	0.4490	0.2809	1022	36	965	0.8	10906	8.7	8
28	0.5276	0.2796	1032	36	1015	0.8	11921	9.6	9
29	0.6054	0.2786	1042	36	977	0.8	12898	10.3	10
30	0.6828	0.2776	1052	36	1045	0.8	13943	11.2	11
31	0.7596	0.2769	1062	36	1076	0.9	15019	12.0	12
32	0.8361	0.2763	1072	36	1151	0.9	16170	13.0	13
33	0.9123	0.2758	1082	36	1223	1.0	17393	13.9	13
34	0.9883	0.2755	1092	35	1310	1.1	18703	15.0	14
35	1.0641	0.2753	1101	35	1337	1.1	20040	16.1	16
36	1.1398	0.2752	1111	35	1438	1.2	21478	17.2	17
37	1.2156	0.2752	1121	35	1441	1.2	22919	18.4	18
38	1.2914	0.2754	1131	35	1499	1.2	24418	19.6	19
39	1.3673	0.2758	1140	36	1569	1.3	25987	20.8	20
40	1.4435	0.2762	1150	36	1623	1.3	27610	22.1	21
41	1.5199	0.2768	1160	36	1703	1.4	29313	23.5	23
42	1.5968	0.2776	1170	36	1804	1.4	31117	25.0	24
43	1.6741	0.2785	1180	36	1876	1.5	32993	26.5	26
44	1.7520	0.2797	1190	36	1875	1.5	34868	28.0	27
45	1.8305	0.2810	1200	36	1981	1.6	36849	29.5	29
46	1.9099	0.2825	1210	36	2021	1.6	38870	31.2	30
47	1.9902	0.2843	1221	37	2084	1.7	40954	32.8	32
48	2.0716	0.2863	1231	37	2278	1.8	43232	34.7	34
49	2.1542	0.2886	1242	37	2391	1.9	45623	36.6	36

50	2.2382	0.2912	1253	38	2462	2.0	48085	38.6	38
51	2.3239	0.2942	1264	38	2538	2.0	50623	40.6	40
52	2.4114	0.2976	1275	38	2592	2.1	53215	42.7	42
53	2.5011	0.3014	1286	39	2708	2.2	55923	44.8	44
54	2.5932	0.3058	1298	39	2782	2.2	58705	47.1	46
55	2.6882	0.3107	1311	40	2944	2.4	61649	49.4	48
56	2.7865	0.3163	1323	41	3152	2.5	64801	52.0	51
57	2.8885	0.3226	1336	42	3278	2.6	68079	54.6	53
58	2.9948	0.3298	1350	42	3516	2.8	71595	57.4	56
59	3.1062	0.3380	1364	44	3601	2.9	75196	60.3	59
60	3.2236	0.3474	1379	45	3813	3.1	79009	63.4	62
61	3.3480	0.3582	1395	46	4020	3.2	83029	66.6	65
62	3.4807	0.3708	1413	48	4144	3.3	87173	69.9	68
63	3.6237	0.3857	1431	50	4403	3.5	91576	73.4	72
64	3.7792	0.4035	1451	52	4537	3.6	96113	77.1	75
65	3.9507	0.4253	1473	55	4756	3.8	100869	80.9	79
66	4.1429	0.4527	1498	58	4794	3.8	105663	84.7	83
67	4.3637	0.4884	1526	63	4651	3.7	110314	88.5	87
68	4.6255	0.5376	1560	69	4371	3.5	114685	92.0	90
69	4.9526	0.6109	1602	79	3843	3.1	118528	95.0	94
70	5.3986	0.7358	1660	95	3196	2.6	121724	97.6	96
71	6.1345	1.0219	1754	132	2071	1.7	123795	99.3	98
72	7.3704	1.8387	1914	237	907	0.7	124702	100.0	99

Mathematics Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7400	1.8324	700	366	0	0.0	0	0.0	0
1	-4.5191	1.0121	700	202	2	0.0	2	0.0	1
2	-3.8015	0.7243	700	145	0	0.0	2	0.0	1
3	-3.3713	0.5985	700	120	1	0.0	3	0.0	1
4	-3.0587	0.5245	700	105	1	0.0	4	0.0	1
5	-2.8104	0.4746	700	95	5	0.0	9	0.0	1
6	-2.6027	0.4384	700	88	12	0.0	21	0.0	1
7	-2.4229	0.4106	700	82	25	0.0	46	0.0	1
8	-2.2634	0.3886	731	78	54	0.0	100	0.1	1
9	-2.1196	0.3706	760	74	75	0.1	175	0.1	1
10	-1.9878	0.3557	786	71	130	0.1	305	0.2	1
11	-1.8658	0.3430	810	69	207	0.2	512	0.4	1
12	-1.7520	0.3322	833	66	321	0.3	833	0.7	1
13	-1.6448	0.3228	855	65	373	0.3	1206	1.0	1
14	-1.5433	0.3146	875	63	499	0.4	1705	1.3	1
15	-1.4466	0.3073	894	61	576	0.5	2281	1.8	2
16	-1.3542	0.3009	913	60	674	0.5	2955	2.3	2
17	-1.2654	0.2952	930	59	702	0.6	3657	2.9	3
18	-1.1798	0.2900	948	58	736	0.6	4393	3.5	3
19	-1.0970	0.2854	964	57	764	0.6	5157	4.1	4
20	-1.0168	0.2813	980	56	812	0.6	5969	4.7	4
21	-0.9387	0.2775	996	56	881	0.7	6850	5.4	5
22	-0.8627	0.2741	1011	55	866	0.7	7716	6.1	6
23	-0.7884	0.2711	1026	54	911	0.7	8627	6.8	6
24	-0.7157	0.2683	1040	54	947	0.7	9574	7.5	7
25	-0.6444	0.2657	1055	53	1017	0.8	10591	8.3	8
26	-0.5744	0.2635	1069	53	1042	0.8	11633	9.2	9
27	-0.5055	0.2614	1082	52	1095	0.9	12728	10.0	10
28	-0.4377	0.2596	1096	52	1127	0.9	13855	10.9	10
29	-0.3708	0.2579	1109	52	1224	1.0	15079	11.9	11
30	-0.3046	0.2565	1123	51	1217	1.0	16296	12.8	12
31	-0.2391	0.2552	1136	51	1308	1.0	17604	13.9	13
32	-0.1743	0.2542	1149	51	1336	1.1	18940	14.9	14
33	-0.1099	0.2533	1162	51	1466	1.2	20406	16.1	16
34	-0.0459	0.2526	1174	51	1453	1.1	21859	17.2	17
35	0.0177	0.2521	1187	50	1527	1.2	23386	18.4	18
36	0.0812	0.2517	1200	50	1537	1.2	24923	19.6	19
37	0.1446	0.2516	1212	50	1736	1.4	26659	21.0	20
38	0.2078	0.2517	1225	50	1681	1.3	28340	22.3	22
39	0.2712	0.2519	1238	50	1792	1.4	30132	23.7	23
40	0.3348	0.2524	1250	50	1873	1.5	32005	25.2	24
41	0.3987	0.2531	1263	51	1851	1.5	33856	26.7	26
42	0.4629	0.2540	1276	51	2048	1.6	35904	28.3	27
43	0.5277	0.2551	1289	51	2026	1.6	37930	29.9	29
44	0.5931	0.2565	1302	51	2175	1.7	40105	31.6	31
45	0.6593	0.2582	1315	52	2244	1.8	42349	33.4	32
46	0.7265	0.2601	1329	52	2386	1.9	44735	35.2	34
47	0.7947	0.2624	1342	52	2477	2.0	47212	37.2	36
48	0.8642	0.2649	1356	53	2664	2.1	49876	39.3	38
49	0.9352	0.2678	1371	54	2604	2.1	52480	41.4	40

50	1.0077	0.2711	1385	54	2883	2.3	55363	43.6	42
51	1.0822	0.2748	1400	55	2875	2.3	58238	45.9	45
52	1.1588	0.2789	1415	56	3051	2.4	61289	48.3	47
53	1.2379	0.2835	1431	57	3158	2.5	64447	50.8	50
54	1.3197	0.2887	1447	58	3280	2.6	67727	53.4	52
55	1.4046	0.2944	1464	59	3306	2.6	71033	56.0	55
56	1.4932	0.3009	1482	60	3494	2.8	74527	58.7	57
57	1.5859	0.3081	1501	62	3676	2.9	78203	61.6	60
58	1.6833	0.3163	1520	63	3818	3.0	82021	64.6	63
59	1.7863	0.3256	1541	65	3740	2.9	85761	67.6	66
60	1.8957	0.3362	1563	67	4008	3.2	89769	70.7	69
61	2.0127	0.3483	1586	70	4003	3.2	93772	73.9	72
62	2.1389	0.3624	1611	72	4139	3.3	97911	77.1	76
63	2.2762	0.3790	1639	76	4139	3.3	102050	80.4	79
64	2.4272	0.3989	1669	80	4180	3.3	106230	83.7	82
65	2.5958	0.4230	1703	85	4134	3.3	110364	87.0	85
66	2.7873	0.4533	1741	91	3853	3.0	114217	90.0	88
67	3.0102	0.4924	1786	98	3579	2.8	117796	92.8	91
68	3.2783	0.5457	1839	109	3081	2.4	120877	95.2	94
69	3.6173	0.6236	1907	125	2546	2.0	123423	97.3	96
70	4.0838	0.7532	2000	151	1982	1.6	125405	98.8	98
71	4.8525	1.0417	2154	208	1089	0.9	126494	99.7	99
72	6.1216	1.8533	2408	371	417	0.3	126911	100.0	99

Mathematics Grade 5

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.1150	1.8331	700	348	0	0.0	0	0.0	0
1	-3.8924	1.0131	700	192	0	0.0	0	0.0	0
2	-3.1730	0.7253	700	138	0	0.0	0	0.0	0
3	-2.7415	0.5993	700	114	0	0.0	0	0.0	0
4	-2.4281	0.5251	700	100	0	0.0	0	0.0	0
5	-2.1793	0.4750	720	90	4	0.0	4	0.0	1
6	-1.9715	0.4384	760	83	15	0.0	19	0.0	1
7	-1.7918	0.4103	794	78	17	0.0	36	0.0	1
8	-1.6328	0.3879	824	74	40	0.0	76	0.1	1
9	-1.4895	0.3697	851	70	97	0.1	173	0.1	1
10	-1.3586	0.3545	876	67	176	0.1	349	0.3	1
11	-1.2376	0.3416	899	65	272	0.2	621	0.5	1
12	-1.1247	0.3306	921	63	441	0.3	1062	0.8	1
13	-1.0186	0.3210	941	61	616	0.5	1678	1.3	1
14	-0.9183	0.3127	960	59	697	0.6	2375	1.9	2
15	-0.8228	0.3055	978	58	855	0.7	3230	2.5	2
16	-0.7314	0.2991	995	57	1050	0.8	4280	3.4	3
17	-0.6438	0.2934	1012	56	1111	0.9	5391	4.3	4
18	-0.5591	0.2884	1028	55	1165	0.9	6556	5.2	5
19	-0.4773	0.2839	1044	54	1300	1.0	7856	6.2	6
20	-0.3978	0.2800	1059	53	1385	1.1	9241	7.3	7
21	-0.3204	0.2765	1073	52	1319	1.0	10560	8.3	8
22	-0.2448	0.2734	1088	52	1365	1.1	11925	9.4	9
23	-0.1708	0.2707	1102	51	1481	1.2	13406	10.6	10
24	-0.0982	0.2683	1115	51	1502	1.2	14908	11.8	11
25	-0.0268	0.2662	1129	51	1483	1.2	16391	12.9	12
26	0.0435	0.2643	1142	50	1587	1.3	17978	14.2	14
27	0.1130	0.2627	1156	50	1570	1.2	19548	15.4	15
28	0.1816	0.2614	1169	50	1624	1.3	21172	16.7	16
29	0.2497	0.2603	1181	49	1673	1.3	22845	18.0	17
30	0.3172	0.2594	1194	49	1671	1.3	24516	19.4	19
31	0.3843	0.2587	1207	49	1703	1.3	26219	20.7	20
32	0.4511	0.2582	1220	49	1773	1.4	27992	22.1	21
33	0.5176	0.2579	1232	49	1789	1.4	29781	23.5	23
34	0.5841	0.2577	1245	49	1812	1.4	31593	24.9	24
35	0.6505	0.2578	1258	49	1839	1.5	33432	26.4	26
36	0.7170	0.2580	1270	49	2016	1.6	35448	28.0	27
37	0.7837	0.2584	1283	49	1937	1.5	37385	29.5	29
38	0.8506	0.2590	1296	49	2045	1.6	39430	31.1	30
39	0.9179	0.2598	1308	49	2156	1.7	41586	32.8	32
40	0.9856	0.2607	1321	49	2134	1.7	43720	34.5	34
41	1.0539	0.2619	1334	50	2195	1.7	45915	36.2	35
42	1.1228	0.2632	1347	50	2166	1.7	48081	38.0	37
43	1.1925	0.2648	1360	50	2293	1.8	50374	39.8	39
44	1.2631	0.2665	1374	51	2333	1.8	52707	41.6	41
45	1.3346	0.2685	1387	51	2355	1.9	55062	43.5	43
46	1.4073	0.2707	1401	51	2380	1.9	57442	45.3	44
47	1.4813	0.2732	1415	52	2514	2.0	59956	47.3	46
48	1.5567	0.2760	1430	52	2540	2.0	62496	49.3	48
49	1.6337	0.2791	1444	53	2584	2.0	65080	51.4	50

50	1.7125	0.2824	1459	54	2695	2.1	67775	53.5	52
51	1.7933	0.2862	1474	54	2681	2.1	70456	55.6	55
52	1.8764	0.2904	1490	55	2763	2.2	73219	57.8	57
53	1.9621	0.2950	1507	56	2761	2.2	75980	60.0	59
54	2.0506	0.3001	1523	57	2877	2.3	78857	62.2	61
55	2.1424	0.3059	1541	58	2973	2.3	81830	64.6	63
56	2.2378	0.3123	1559	59	3067	2.4	84897	67.0	66
57	2.3376	0.3195	1578	61	3160	2.5	88057	69.5	68
58	2.4423	0.3277	1598	62	3256	2.6	91313	72.1	71
59	2.5527	0.3370	1619	64	3292	2.6	94605	74.7	73
60	2.6698	0.3476	1641	66	3400	2.7	98005	77.4	76
61	2.7948	0.3599	1665	68	3338	2.6	101343	80.0	79
62	2.9295	0.3743	1690	71	3512	2.8	104855	82.8	81
63	3.0758	0.3912	1718	74	3410	2.7	108265	85.5	84
64	3.2366	0.4113	1748	78	3284	2.6	111549	88.0	87
65	3.4157	0.4358	1782	83	3215	2.5	114764	90.6	89
66	3.6185	0.4661	1821	88	3131	2.5	117895	93.1	92
67	3.8535	0.5048	1865	96	2798	2.2	120693	95.3	94
68	4.1340	0.5567	1919	106	2314	1.8	123007	97.1	96
69	4.4844	0.6317	1985	120	1796	1.4	124803	98.5	98
70	4.9586	0.7562	2075	144	1195	0.9	125998	99.5	99
71	5.7268	1.0383	2221	197	538	0.4	126536	99.9	99
72	6.9869	1.8481	2460	351	157	0.1	126693	100.0	99

Mathematics Grade 6

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6741	1.8331	700	367	0	0.0	0	0.0	0
1	-4.4513	1.0133	700	203	0	0.0	0	0.0	0
2	-3.7312	0.7260	700	145	0	0.0	0	0.0	0
3	-3.2986	0.6004	700	120	0	0.0	0	0.0	0
4	-2.9837	0.5266	700	105	1	0.0	1	0.0	1
5	-2.7332	0.4769	700	95	3	0.0	4	0.0	1
6	-2.5234	0.4408	700	88	0	0.0	4	0.0	1
7	-2.3416	0.4130	733	83	9	0.0	13	0.0	1
8	-2.1802	0.3910	766	78	21	0.0	34	0.0	1
9	-2.0344	0.3731	795	75	39	0.0	73	0.1	1
10	-1.9009	0.3582	821	72	67	0.1	140	0.1	1
11	-1.7772	0.3456	846	69	132	0.1	272	0.2	1
12	-1.6615	0.3348	869	67	177	0.1	449	0.4	1
13	-1.5526	0.3254	891	65	232	0.2	681	0.5	1
14	-1.4494	0.3173	912	63	377	0.3	1058	0.8	1
15	-1.3510	0.3102	931	62	415	0.3	1473	1.2	1
16	-1.2567	0.3039	950	61	547	0.4	2020	1.6	1
17	-1.1661	0.2984	968	60	664	0.5	2684	2.1	2
18	-1.0785	0.2935	986	59	759	0.6	3443	2.7	2
19	-0.9937	0.2892	1003	58	807	0.6	4250	3.4	3
20	-0.9112	0.2853	1019	57	891	0.7	5141	4.1	4
21	-0.8308	0.2819	1035	56	933	0.7	6074	4.8	4
22	-0.7522	0.2789	1051	56	1027	0.8	7101	5.6	5
23	-0.6751	0.2763	1067	55	1079	0.9	8180	6.5	6
24	-0.5994	0.2740	1082	55	1164	0.9	9344	7.4	7
25	-0.5249	0.2720	1097	54	1294	1.0	10638	8.4	8
26	-0.4514	0.2703	1111	54	1259	1.0	11897	9.4	9
27	-0.3787	0.2688	1126	54	1404	1.1	13301	10.5	10
28	-0.3068	0.2676	1140	54	1389	1.1	14690	11.6	11
29	-0.2355	0.2666	1154	53	1516	1.2	16206	12.8	12
30	-0.1646	0.2659	1169	53	1621	1.3	17827	14.1	13
31	-0.0940	0.2653	1183	53	1668	1.3	19495	15.5	15
32	-0.0238	0.2649	1197	53	1722	1.4	21217	16.8	16
33	0.0463	0.2647	1211	53	1806	1.4	23023	18.3	18
34	0.1164	0.2648	1225	53	1854	1.5	24877	19.7	19
35	0.1866	0.2650	1239	53	1978	1.6	26855	21.3	21
36	0.2569	0.2653	1253	53	2005	1.6	28860	22.9	22
37	0.3274	0.2659	1267	53	2020	1.6	30880	24.5	24
38	0.3983	0.2666	1281	53	2168	1.7	33048	26.2	25
39	0.4696	0.2676	1295	54	2359	1.9	35407	28.1	27
40	0.5415	0.2687	1310	54	2301	1.8	37708	29.9	29
41	0.6140	0.2700	1324	54	2401	1.9	40109	31.8	31
42	0.6874	0.2716	1339	54	2534	2.0	42643	33.8	33
43	0.7616	0.2733	1354	55	2377	1.9	45020	35.7	35
44	0.8368	0.2753	1369	55	2656	2.1	47676	37.8	37
45	0.9132	0.2775	1384	56	2666	2.1	50342	39.9	39
46	0.9910	0.2800	1400	56	2759	2.2	53101	42.1	41
47	1.0702	0.2828	1416	57	2831	2.2	55932	44.3	43
48	1.1510	0.2859	1432	57	2799	2.2	58731	46.6	45
49	1.2337	0.2893	1448	58	2990	2.4	61721	48.9	48

50	1.3184	0.2930	1465	59	2946	2.3	64667	51.3	50
51	1.4054	0.2971	1483	59	3120	2.5	67787	53.7	53
52	1.4950	0.3016	1501	60	3132	2.5	70919	56.2	55
53	1.5874	0.3065	1519	61	3125	2.5	74044	58.7	57
54	1.6829	0.3118	1538	62	3047	2.4	77091	61.1	60
55	1.7820	0.3177	1558	64	3053	2.4	80144	63.5	62
56	1.8849	0.3240	1579	65	3378	2.7	83522	66.2	65
57	1.9921	0.3309	1600	66	3301	2.6	86823	68.8	68
58	2.1040	0.3383	1622	68	3377	2.7	90200	71.5	70
59	2.2212	0.3465	1646	69	3384	2.7	93584	74.2	73
60	2.3443	0.3554	1670	71	3411	2.7	96995	76.9	76
61	2.4742	0.3656	1696	73	3456	2.7	100451	79.6	78
62	2.6121	0.3773	1724	75	3474	2.8	103925	82.4	81
63	2.7596	0.3915	1753	78	3434	2.7	107359	85.1	84
64	2.9198	0.4094	1786	82	3218	2.6	110577	87.7	86
65	3.0967	0.4330	1821	87	3128	2.5	113705	90.2	89
66	3.2976	0.4651	1861	93	3034	2.4	116739	92.6	91
67	3.5344	0.5103	1908	102	2589	2.1	119328	94.6	94
68	3.8276	0.5764	1967	115	2325	1.8	121653	96.5	96
69	4.2166	0.6772	2045	135	1901	1.5	123554	98.0	97
70	4.7852	0.8428	2159	169	1479	1.2	125033	99.1	99
71	5.7566	1.1631	2353	233	899	0.7	125932	99.8	99
72	7.2385	1.9396	2649	388	196	0.2	126128	100.0	99

Mathematics Grade 7

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.2665	1.8326	700	367	0	0.0	0	0.0	0
1	-4.0450	1.0125	700	203	0	0.0	0	0.0	0
2	-3.3266	0.7248	700	145	0	0.0	0	0.0	0
3	-2.8959	0.5989	700	120	0	0.0	0	0.0	0
4	-2.5828	0.5248	709	105	1	0.0	1	0.0	1
5	-2.3342	0.4749	758	95	8	0.0	9	0.0	1
6	-2.1262	0.4386	800	88	12	0.0	21	0.0	1
7	-1.9463	0.4107	836	82	26	0.0	47	0.0	1
8	-1.7869	0.3885	868	78	48	0.0	95	0.1	1
9	-1.6431	0.3704	897	74	120	0.1	215	0.2	1
10	-1.5116	0.3553	923	71	185	0.1	400	0.3	1
11	-1.3899	0.3425	947	69	318	0.2	718	0.6	1
12	-1.2764	0.3316	970	66	459	0.4	1177	0.9	1
13	-1.1697	0.3220	991	64	623	0.5	1800	1.4	1
14	-1.0687	0.3137	1012	63	778	0.6	2578	2.0	2
15	-0.9726	0.3064	1031	61	860	0.7	3438	2.6	2
16	-0.8808	0.2999	1049	60	1047	0.8	4485	3.4	3
17	-0.7926	0.2941	1067	59	1253	1.0	5738	4.4	4
18	-0.7077	0.2889	1084	58	1277	1.0	7015	5.4	5
19	-0.6255	0.2843	1100	57	1393	1.1	8408	6.5	6
20	-0.5459	0.2801	1116	56	1478	1.1	9886	7.6	7
21	-0.4685	0.2764	1132	55	1533	1.2	11419	8.8	8
22	-0.3930	0.2731	1147	55	1591	1.2	13010	10.0	9
23	-0.3193	0.2701	1161	54	1657	1.3	14667	11.3	11
24	-0.2470	0.2675	1176	54	1750	1.3	16417	12.6	12
25	-0.1761	0.2652	1190	53	1775	1.4	18192	14.0	13
26	-0.1063	0.2632	1204	53	1783	1.4	19975	15.3	15
27	-0.0375	0.2615	1218	52	1771	1.4	21746	16.7	16
28	0.0305	0.2600	1231	52	1970	1.5	23716	18.2	17
29	0.0978	0.2588	1245	52	1920	1.5	25636	19.7	19
30	0.1645	0.2578	1258	52	1986	1.5	27622	21.2	20
31	0.2308	0.2571	1271	51	2003	1.5	29625	22.8	22
32	0.2968	0.2566	1285	51	2041	1.6	31666	24.3	24
33	0.3625	0.2564	1298	51	2048	1.6	33714	25.9	25
34	0.4282	0.2563	1311	51	2213	1.7	35927	27.6	27
35	0.4939	0.2565	1324	51	2125	1.6	38052	29.2	28
36	0.5598	0.2568	1337	51	2249	1.7	40301	31.0	30
37	0.6259	0.2574	1350	51	2261	1.7	42562	32.7	32
38	0.6923	0.2581	1364	52	2364	1.8	44926	34.5	34
39	0.7592	0.2591	1377	52	2337	1.8	47263	36.3	35
40	0.8266	0.2602	1391	52	2446	1.9	49709	38.2	37
41	0.8946	0.2615	1404	52	2390	1.8	52099	40.0	39
42	0.9634	0.2630	1418	53	2476	1.9	54575	41.9	41
43	1.0330	0.2647	1432	53	2538	1.9	57113	43.9	43
44	1.1035	0.2665	1446	53	2539	2.0	59652	45.8	45
45	1.1751	0.2686	1460	54	2674	2.1	62326	47.9	47
46	1.2478	0.2708	1475	54	2621	2.0	64947	49.9	49
47	1.3218	0.2732	1490	55	2694	2.1	67641	52.0	51
48	1.3972	0.2759	1505	55	2719	2.1	70360	54.0	53
49	1.4740	0.2787	1520	56	2687	2.1	73047	56.1	55

50	1.5526	0.2818	1536	56	2702	2.1	75749	58.2	57
51	1.6329	0.2851	1552	57	2810	2.2	78559	60.3	59
52	1.7152	0.2887	1568	58	2917	2.2	81476	62.6	61
53	1.7996	0.2926	1585	59	2899	2.2	84375	64.8	64
54	1.8865	0.2969	1603	59	2915	2.2	87290	67.0	66
55	1.9761	0.3016	1621	60	2961	2.3	90251	69.3	68
56	2.0687	0.3069	1639	61	2857	2.2	93108	71.5	70
57	2.1646	0.3128	1658	63	3098	2.4	96206	73.9	73
58	2.2645	0.3195	1678	64	3071	2.4	99277	76.3	75
59	2.3690	0.3272	1699	65	2998	2.3	102275	78.6	77
60	2.4789	0.3361	1721	67	3004	2.3	105279	80.9	80
61	2.5954	0.3466	1744	69	3037	2.3	108316	83.2	82
62	2.7197	0.3591	1769	72	3115	2.4	111431	85.6	84
63	2.8540	0.3743	1796	75	2987	2.3	114418	87.9	87
64	3.0010	0.3931	1825	79	2862	2.2	117280	90.1	89
65	3.1646	0.4166	1858	83	2800	2.2	120080	92.2	91
66	3.3505	0.4469	1895	89	2615	2.0	122695	94.2	93
67	3.5677	0.4869	1939	97	2250	1.7	124945	96.0	95
68	3.8310	0.5419	1991	108	1922	1.5	126867	97.4	97
69	4.1671	0.6224	2059	124	1540	1.2	128407	98.6	98
70	4.6338	0.7545	2152	151	1020	0.8	129427	99.4	99
71	5.4062	1.0440	2307	209	559	0.4	129986	99.8	99
72	6.6790	1.8548	2561	371	203	0.2	130189	100.0	99

Mathematics Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.5278	1.8334	700	325	0	0.0	0	0.0	0
1	-4.3044	1.0137	700	180	0	0.0	0	0.0	0
2	-3.5837	0.7262	700	129	0	0.0	0	0.0	0
3	-3.1510	0.6005	700	107	2	0.0	2	0.0	1
4	-2.8360	0.5265	700	93	0	0.0	2	0.0	1
5	-2.5857	0.4767	723	85	6	0.0	8	0.0	1
6	-2.3761	0.4404	760	78	15	0.0	23	0.0	1
7	-2.1947	0.4126	793	73	30	0.0	53	0.0	1
8	-2.0337	0.3905	821	69	64	0.0	117	0.1	1
9	-1.8884	0.3725	847	66	118	0.1	235	0.2	1
10	-1.7553	0.3575	871	63	169	0.1	404	0.3	1
11	-1.6320	0.3449	893	61	291	0.2	695	0.5	1
12	-1.5168	0.3341	913	59	409	0.3	1104	0.8	1
13	-1.4084	0.3248	932	58	612	0.5	1716	1.3	1
14	-1.3055	0.3167	951	56	738	0.6	2454	1.9	2
15	-1.2074	0.3097	968	55	792	0.6	3246	2.5	2
16	-1.1135	0.3035	985	54	946	0.7	4192	3.2	3
17	-1.0231	0.2980	1001	53	1060	0.8	5252	4.0	4
18	-0.9358	0.2932	1016	52	1173	0.9	6425	4.9	4
19	-0.8511	0.2889	1031	51	1165	0.9	7590	5.8	5
20	-0.7687	0.2851	1046	51	1262	1.0	8852	6.7	6
21	-0.6884	0.2818	1060	50	1255	1.0	10107	7.7	7
22	-0.6099	0.2788	1074	49	1276	1.0	11383	8.7	8
23	-0.5329	0.2762	1088	49	1287	1.0	12670	9.6	9
24	-0.4572	0.2740	1101	49	1352	1.0	14022	10.7	10
25	-0.3827	0.2720	1114	48	1238	0.9	15260	11.6	11
26	-0.3092	0.2703	1127	48	1286	1.0	16546	12.6	12
27	-0.2365	0.2689	1140	48	1305	1.0	17851	13.6	13
28	-0.1645	0.2677	1153	48	1376	1.0	19227	14.6	14
29	-0.0931	0.2668	1166	47	1325	1.0	20552	15.6	15
30	-0.0221	0.2660	1178	47	1362	1.0	21914	16.7	16
31	0.0485	0.2655	1191	47	1444	1.1	23358	17.8	17
32	0.1189	0.2651	1203	47	1512	1.2	24870	18.9	18
33	0.1891	0.2650	1216	47	1538	1.2	26408	20.1	20
34	0.2593	0.2650	1228	47	1616	1.2	28024	21.3	21
35	0.3296	0.2652	1241	47	1545	1.2	29569	22.5	22
36	0.4000	0.2655	1253	47	1684	1.3	31253	23.8	23
37	0.4706	0.2660	1266	47	1673	1.3	32926	25.1	24
38	0.5415	0.2666	1278	47	1805	1.4	34731	26.4	26
39	0.6128	0.2674	1291	47	1876	1.4	36607	27.9	27
40	0.6846	0.2684	1304	48	1915	1.5	38522	29.3	29
41	0.7569	0.2695	1317	48	2108	1.6	40630	30.9	30
42	0.8298	0.2707	1330	48	2109	1.6	42739	32.5	32
43	0.9035	0.2721	1343	48	2243	1.7	44982	34.2	33
44	0.9779	0.2736	1356	49	2300	1.8	47282	36.0	35
45	1.0532	0.2753	1369	49	2446	1.9	49728	37.9	37
46	1.1294	0.2771	1383	49	2515	1.9	52243	39.8	39
47	1.2068	0.2791	1397	50	2547	1.9	54790	41.7	41
48	1.2853	0.2814	1410	50	2672	2.0	57462	43.7	43
49	1.3652	0.2839	1425	50	2792	2.1	60254	45.9	45

50	1.4465	0.2866	1439	51	2831	2.2	63085	48.0	47
51	1.5295	0.2896	1454	51	2857	2.2	65942	50.2	49
52	1.6143	0.2929	1469	52	2967	2.3	68909	52.5	51
53	1.7012	0.2966	1484	53	3146	2.4	72055	54.9	54
54	1.7904	0.3008	1500	53	3240	2.5	75295	57.3	56
55	1.8822	0.3054	1516	54	3158	2.4	78453	59.7	59
56	1.9771	0.3106	1533	55	3301	2.5	81754	62.2	61
57	2.0754	0.3165	1551	56	3320	2.5	85074	64.8	63
58	2.1776	0.3232	1569	57	3472	2.6	88546	67.4	66
59	2.2845	0.3308	1588	59	3451	2.6	91997	70.0	69
60	2.3968	0.3397	1608	60	3531	2.7	95528	72.7	71
61	2.5156	0.3499	1629	62	3592	2.7	99120	75.5	74
62	2.6422	0.3620	1651	64	3692	2.8	102812	78.3	77
63	2.7784	0.3764	1676	67	3784	2.9	106596	81.1	80
64	2.9266	0.3939	1702	70	3880	3.0	110476	84.1	83
65	3.0901	0.4156	1731	74	3826	2.9	114302	87.0	86
66	3.2741	0.4433	1764	79	3791	2.9	118093	89.9	88
67	3.4866	0.4800	1801	85	3551	2.7	121644	92.6	91
68	3.7407	0.5311	1846	94	3135	2.4	124779	95.0	94
69	4.0621	0.6077	1903	108	2659	2.0	127438	97.0	96
70	4.5073	0.7378	1982	131	2067	1.6	129505	98.6	98
71	5.2522	1.0300	2115	183	1312	1.0	130817	99.6	99
72	6.5048	1.8472	2337	328	546	0.4	131363	100.0	99

Reading Grade 3

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.4351	1.8379	1000	228	0	0.0	0	0.0	0
1	-4.2001	1.0218	1000	126	0	0.0	0	0.0	0
2	-3.4629	0.7375	1000	91	7	0.0	7	0.0	1
3	-3.0136	0.6141	1000	76	17	0.0	24	0.0	1
4	-2.6822	0.5419	1000	67	44	0.0	68	0.1	1
5	-2.4155	0.4935	1000	61	96	0.1	164	0.1	1
6	-2.1896	0.4585	1000	57	211	0.2	375	0.3	1
7	-1.9918	0.4319	1000	53	357	0.3	732	0.6	1
8	-1.8145	0.4109	1000	51	600	0.5	1332	1.1	1
9	-1.6528	0.3939	1003	49	869	0.7	2201	1.8	1
10	-1.5032	0.3800	1022	47	1133	0.9	3334	2.7	2
11	-1.3633	0.3684	1039	46	1525	1.2	4859	3.9	3
12	-1.2312	0.3587	1055	44	1665	1.3	6524	5.2	5
13	-1.1055	0.3505	1071	43	1852	1.5	8376	6.7	6
14	-0.9851	0.3436	1086	43	1997	1.6	10373	8.3	8
15	-0.8691	0.3377	1100	42	2162	1.7	12535	10.1	9
16	-0.7567	0.3329	1114	41	2164	1.7	14699	11.8	11
17	-0.6473	0.3288	1128	41	2268	1.8	16967	13.6	13
18	-0.5403	0.3256	1141	40	2359	1.9	19326	15.5	15
19	-0.4352	0.3230	1154	40	2314	1.9	21640	17.4	16
20	-0.3316	0.3211	1167	40	2460	2.0	24100	19.3	18
21	-0.2289	0.3198	1179	40	2539	2.0	26639	21.4	20
22	-0.1269	0.3191	1192	40	2513	2.0	29152	23.4	22
23	-0.0251	0.3191	1205	40	2521	2.0	31673	25.4	24
24	0.0769	0.3196	1217	40	2696	2.2	34369	27.6	26
25	0.1794	0.3207	1230	40	2636	2.1	37005	29.7	29
26	0.2828	0.3225	1243	40	2753	2.2	39758	31.9	31
27	0.3875	0.3250	1256	40	2974	2.4	42732	34.3	33
28	0.4941	0.3281	1269	41	3106	2.5	45838	36.8	36
29	0.6030	0.3321	1282	41	3296	2.6	49134	39.4	38
30	0.7149	0.3369	1296	42	3561	2.9	52695	42.3	41
31	0.8303	0.3427	1310	42	3917	3.1	56612	45.4	44
32	0.9500	0.3496	1325	43	4196	3.4	60808	48.8	47
33	1.0750	0.3578	1341	44	4380	3.5	65188	52.3	51
34	1.2065	0.3675	1357	45	4760	3.8	69948	56.1	54
35	1.3457	0.3791	1374	47	5090	4.1	75038	60.2	58
36	1.4945	0.3929	1393	49	5469	4.4	80507	64.6	62
37	1.6553	0.4096	1413	51	5954	4.8	86461	69.4	67
38	1.8313	0.4300	1434	53	6040	4.8	92501	74.2	72
39	2.0269	0.4552	1459	56	6433	5.2	98934	79.4	77
40	2.2482	0.4869	1486	60	6405	5.1	105339	84.5	82
41	2.5049	0.5281	1518	65	6232	5.0	111571	89.5	87
42	2.8125	0.5835	1556	72	5480	4.4	117051	93.9	92
43	3.1979	0.6626	1604	82	4055	3.3	121106	97.1	96
44	3.7182	0.7901	1668	98	2387	1.9	123493	99.1	98
45	4.5453	1.0692	1770	132	951	0.8	124444	99.8	99
46	5.8536	1.8675	1932	231	215	0.2	124659	100.0	99

Reading Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.4281	1.8335	700	367	1	0.0	1	0.0	1
1	-4.2040	1.0143	700	203	5	0.0	6	0.0	1
2	-3.4818	0.7275	700	146	2	0.0	8	0.0	1
3	-3.0469	0.6025	700	121	8	0.0	16	0.0	1
4	-2.7294	0.5292	700	106	37	0.0	53	0.0	1
5	-2.4759	0.4801	700	96	73	0.1	126	0.1	1
6	-2.2629	0.4446	704	89	145	0.1	271	0.2	1
7	-2.0775	0.4175	741	84	267	0.2	538	0.4	1
8	-1.9122	0.3962	774	79	357	0.3	895	0.7	1
9	-1.7622	0.3790	804	76	543	0.4	1438	1.1	1
10	-1.6240	0.3649	832	73	644	0.5	2082	1.6	1
11	-1.4953	0.3531	857	71	862	0.7	2944	2.3	2
12	-1.3741	0.3431	881	69	980	0.8	3924	3.1	3
13	-1.2594	0.3347	904	67	1096	0.9	5020	4.0	4
14	-1.1498	0.3275	926	66	1201	0.9	6221	4.9	4
15	-1.0446	0.3214	947	64	1205	0.9	7426	5.9	5
16	-0.9430	0.3161	968	63	1320	1.0	8746	6.9	6
17	-0.8445	0.3117	987	62	1392	1.1	10138	8.0	7
18	-0.7486	0.3079	1007	62	1498	1.2	11636	9.2	9
19	-0.6547	0.3048	1025	61	1598	1.3	13234	10.4	10
20	-0.5627	0.3022	1044	60	1590	1.3	14824	11.7	11
21	-0.4721	0.3001	1062	60	1660	1.3	16484	13.0	12
22	-0.3825	0.2985	1080	60	1719	1.4	18203	14.3	14
23	-0.2938	0.2973	1098	59	1757	1.4	19960	15.7	15
24	-0.2057	0.2966	1115	59	1940	1.5	21900	17.3	16
25	-0.1178	0.2962	1133	59	2050	1.6	23950	18.9	18
26	-0.0301	0.2963	1150	59	2268	1.8	26218	20.7	20
27	0.0578	0.2968	1168	59	2307	1.8	28525	22.5	22
28	0.1462	0.2977	1186	60	2517	2.0	31042	24.5	23
29	0.2352	0.2990	1203	60	2742	2.2	33784	26.6	26
30	0.3251	0.3007	1221	60	2905	2.3	36689	28.9	28
31	0.4161	0.3029	1240	61	3099	2.4	39788	31.4	30
32	0.5086	0.3055	1258	61	3286	2.6	43074	33.9	33
33	0.6029	0.3086	1277	62	3622	2.9	46696	36.8	35
34	0.6992	0.3123	1296	62	3938	3.1	50634	39.9	38
35	0.7981	0.3166	1316	63	4197	3.3	54831	43.2	42
36	0.8999	0.3216	1336	64	4471	3.5	59302	46.7	45
37	1.0051	0.3273	1357	65	4649	3.7	63951	50.4	49
38	1.1143	0.3339	1379	67	5029	4.0	68980	54.4	52
39	1.2283	0.3415	1402	68	5323	4.2	74303	58.6	56
40	1.3479	0.3503	1426	70	5563	4.4	79866	62.9	61
41	1.4742	0.3607	1451	72	5849	4.6	85715	67.6	65
42	1.6085	0.3728	1478	75	5854	4.6	91569	72.2	70
43	1.7528	0.3872	1507	77	6024	4.7	97593	76.9	75
44	1.9093	0.4046	1538	81	5988	4.7	103581	81.6	79
45	2.0815	0.4260	1573	85	5575	4.4	109156	86.0	84
46	2.2742	0.4531	1611	91	5075	4.0	114231	90.0	88
47	2.4952	0.4885	1655	98	4422	3.5	118653	93.5	92
48	2.7570	0.5373	1708	107	3572	2.8	122225	96.3	95
49	3.0834	0.6100	1773	122	2429	1.9	124654	98.2	97
50	3.5277	0.7341	1862	147	1484	1.2	126138	99.4	99
51	4.2599	1.0194	2008	204	598	0.5	126736	99.9	99
52	5.4914	1.8365	2255	367	151	0.1	126887	100.0	99

Reading Grade 5

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.4550	1.8377	700	365	0	0.0	0	0.0	0
1	-4.2207	1.0212	700	203	1	0.0	1	0.0	1
2	-3.4853	0.7360	700	146	2	0.0	3	0.0	1
3	-3.0386	0.6116	700	122	1	0.0	4	0.0	1
4	-2.7107	0.5385	700	107	26	0.0	30	0.0	1
5	-2.4479	0.4892	700	97	38	0.0	68	0.1	1
6	-2.2265	0.4533	700	90	85	0.1	153	0.1	1
7	-2.0337	0.4259	700	85	147	0.1	300	0.2	1
8	-1.8618	0.4042	724	80	274	0.2	574	0.5	1
9	-1.7056	0.3865	756	77	384	0.3	958	0.8	1
10	-1.5619	0.3720	784	74	524	0.4	1482	1.2	1
11	-1.4282	0.3598	811	72	679	0.5	2161	1.7	1
12	-1.3025	0.3496	836	70	830	0.7	2991	2.4	2
13	-1.1833	0.3409	859	68	992	0.8	3983	3.1	3
14	-1.0697	0.3335	882	66	1021	0.8	5004	4.0	4
15	-0.9607	0.3271	904	65	1215	1.0	6219	4.9	4
16	-0.8554	0.3218	925	64	1287	1.0	7506	5.9	5
17	-0.7534	0.3172	945	63	1365	1.1	8871	7.0	6
18	-0.6540	0.3134	965	62	1465	1.2	10336	8.2	8
19	-0.5567	0.3103	984	62	1498	1.2	11834	9.3	9
20	-0.4613	0.3078	1003	61	1560	1.2	13394	10.6	10
21	-0.3672	0.3058	1022	61	1665	1.3	15059	11.9	11
22	-0.2742	0.3043	1040	60	1736	1.4	16795	13.3	13
23	-0.1819	0.3034	1058	60	1838	1.5	18633	14.7	14
24	-0.0900	0.3029	1077	60	1876	1.5	20509	16.2	15
25	0.0017	0.3029	1095	60	2043	1.6	22552	17.8	17
26	0.0936	0.3033	1113	60	2229	1.8	24781	19.6	19
27	0.1858	0.3042	1132	60	2327	1.8	27108	21.4	20
28	0.2788	0.3056	1150	61	2472	2.0	29580	23.4	22
29	0.3727	0.3074	1169	61	2664	2.1	32244	25.5	24
30	0.4679	0.3098	1188	62	2996	2.4	35240	27.8	27
31	0.5647	0.3126	1207	62	3215	2.5	38455	30.4	29
32	0.6635	0.3160	1227	63	3547	2.8	42002	33.2	32
33	0.7647	0.3201	1247	64	3866	3.1	45868	36.2	35
34	0.8685	0.3247	1267	65	4098	3.2	49966	39.5	38
35	0.9757	0.3301	1289	66	4603	3.6	54569	43.1	41
36	1.0867	0.3363	1311	67	4885	3.9	59454	46.9	45
37	1.2021	0.3434	1334	68	5254	4.1	64708	51.1	49
38	1.3228	0.3516	1358	70	5568	4.4	70276	55.5	53
39	1.4497	0.3609	1383	72	6109	4.8	76385	60.3	58
40	1.5837	0.3717	1409	74	6406	5.1	82791	65.4	63
41	1.7264	0.3841	1438	76	6516	5.1	89307	70.5	68
42	1.8794	0.3985	1468	79	6632	5.2	95939	75.8	73
43	2.0449	0.4154	1501	83	6528	5.2	102467	80.9	78
44	2.2256	0.4354	1537	87	6252	4.9	108719	85.8	83
45	2.4255	0.4593	1577	91	5427	4.3	114146	90.1	88
46	2.6498	0.4887	1621	97	4570	3.6	118716	93.7	92
47	2.9064	0.5258	1672	105	3449	2.7	122165	96.5	95
48	3.2082	0.5752	1732	114	2258	1.8	124423	98.3	97
49	3.5788	0.6468	1806	129	1348	1.1	125771	99.3	99
50	4.0711	0.7671	1904	152	611	0.5	126382	99.8	99
51	4.8540	1.0444	2060	208	206	0.2	126588	100.0	99
52	6.1220	1.8507	2312	368	51	0.0	126639	100.0	99

Reading Grade 6

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6675	1.8408	700	368	0	0.0	0	0.0	0
1	-4.4255	1.0264	700	205	0	0.0	0	0.0	0
2	-3.6800	0.7425	700	149	4	0.0	4	0.0	1
3	-3.2242	0.6187	700	124	10	0.0	14	0.0	1
4	-2.8879	0.5459	700	109	20	0.0	34	0.0	1
5	-2.6173	0.4969	700	99	44	0.0	78	0.1	1
6	-2.3886	0.4612	700	92	100	0.1	178	0.1	1
7	-2.1887	0.4339	731	87	178	0.1	356	0.3	1
8	-2.0100	0.4122	767	82	318	0.3	674	0.5	1
9	-1.8475	0.3946	799	79	464	0.4	1138	0.9	1
10	-1.6977	0.3800	829	76	647	0.5	1785	1.4	1
11	-1.5580	0.3678	857	74	858	0.7	2643	2.1	2
12	-1.4266	0.3574	884	71	1007	0.8	3650	2.9	2
13	-1.3021	0.3486	909	70	1300	1.0	4950	3.9	3
14	-1.1833	0.3410	932	68	1286	1.0	6236	4.9	4
15	-1.0693	0.3344	955	67	1474	1.2	7710	6.1	6
16	-0.9594	0.3288	977	66	1482	1.2	9192	7.3	7
17	-0.8529	0.3240	998	65	1708	1.4	10900	8.6	8
18	-0.7493	0.3198	1019	64	1672	1.3	12572	10.0	9
19	-0.6481	0.3164	1039	63	1767	1.4	14339	11.4	11
20	-0.5490	0.3135	1059	63	1914	1.5	16253	12.9	12
21	-0.4515	0.3111	1079	62	1999	1.6	18252	14.5	14
22	-0.3553	0.3092	1098	62	2133	1.7	20385	16.2	15
23	-0.2601	0.3079	1117	62	2258	1.8	22643	18.0	17
24	-0.1657	0.3070	1136	61	2276	1.8	24919	19.8	19
25	-0.0716	0.3065	1155	61	2431	1.9	27350	21.7	21
26	0.0224	0.3065	1173	61	2486	2.0	29836	23.7	23
27	0.1165	0.3070	1192	61	2701	2.1	32537	25.8	25
28	0.2110	0.3080	1211	62	2768	2.2	35305	28.0	27
29	0.3062	0.3094	1230	62	2991	2.4	38296	30.4	29
30	0.4025	0.3113	1249	62	3097	2.5	41393	32.8	32
31	0.5001	0.3137	1269	63	3285	2.6	44678	35.4	34
32	0.5995	0.3168	1289	63	3375	2.7	48053	38.1	37
33	0.7010	0.3204	1309	64	3589	2.8	51642	41.0	40
34	0.8050	0.3247	1330	65	3880	3.1	55522	44.0	43
35	0.9121	0.3298	1351	66	4155	3.3	59677	47.3	46
36	1.0227	0.3357	1374	67	4416	3.5	64093	50.8	49
37	1.1377	0.3426	1397	69	4581	3.6	68674	54.5	53
38	1.2577	0.3505	1421	70	4961	3.9	73635	58.4	56
39	1.3837	0.3597	1446	72	5237	4.2	78872	62.6	60
40	1.5169	0.3704	1472	74	5491	4.4	84363	66.9	65
41	1.6586	0.3828	1501	77	5902	4.7	90265	71.6	69
42	1.8108	0.3975	1531	80	5817	4.6	96082	76.2	74
43	1.9755	0.4147	1564	83	5932	4.7	102014	80.9	79
44	2.1559	0.4352	1600	87	5632	4.5	107646	85.4	83
45	2.3559	0.4601	1640	92	5186	4.1	112832	89.5	87
46	2.5815	0.4907	1685	98	4449	3.5	117281	93.0	91
47	2.8410	0.5295	1737	106	3542	2.8	120823	95.9	94
48	3.1480	0.5809	1799	116	2456	1.9	123279	97.8	97
49	3.5269	0.6546	1874	131	1547	1.2	124826	99.0	98
50	4.0313	0.7762	1975	155	792	0.6	125618	99.7	99
51	4.8303	1.0530	2135	211	351	0.3	125969	99.9	99
52	6.1118	1.8562	2391	371	75	0.1	126044	100.0	99

Reading Grade 7

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.6252	1.8438	700	369	0	0.0	0	0.0	0
1	-4.3764	1.0305	700	206	0	0.0	0	0.0	0
2	-3.6238	0.7464	700	149	3	0.0	3	0.0	1
3	-3.1631	0.6220	700	124	10	0.0	13	0.0	1
4	-2.8233	0.5485	700	110	13	0.0	26	0.0	1
5	-2.5503	0.4989	700	100	31	0.0	57	0.0	1
6	-2.3198	0.4628	730	93	85	0.1	142	0.1	1
7	-2.1186	0.4352	771	87	137	0.1	279	0.2	1
8	-1.9389	0.4133	807	83	205	0.2	484	0.4	1
9	-1.7755	0.3956	839	79	356	0.3	840	0.6	1
10	-1.6249	0.3810	869	76	497	0.4	1337	1.0	1
11	-1.4845	0.3687	898	74	646	0.5	1983	1.5	1
12	-1.3525	0.3583	924	72	810	0.6	2793	2.1	2
13	-1.2273	0.3495	949	70	1003	0.8	3796	2.9	3
14	-1.1079	0.3419	973	68	1134	0.9	4930	3.8	3
15	-0.9933	0.3354	996	67	1244	1.0	6174	4.7	4
16	-0.8827	0.3297	1018	66	1378	1.1	7552	5.8	5
17	-0.7756	0.3249	1039	65	1494	1.1	9046	7.0	6
18	-0.6714	0.3207	1060	64	1537	1.2	10583	8.1	8
19	-0.5697	0.3172	1080	63	1650	1.3	12233	9.4	9
20	-0.4701	0.3142	1100	63	1783	1.4	14016	10.8	10
21	-0.3721	0.3117	1120	62	1901	1.5	15917	12.2	12
22	-0.2756	0.3097	1139	62	2053	1.6	17970	13.8	13
23	-0.1802	0.3081	1158	62	2098	1.6	20068	15.4	15
24	-0.0857	0.3069	1177	61	2270	1.7	22338	17.2	16
25	0.0083	0.3062	1196	61	2488	1.9	24826	19.1	18
26	0.1019	0.3058	1215	61	2546	2.0	27372	21.0	20
27	0.1954	0.3058	1233	61	2854	2.2	30226	23.2	22
28	0.2890	0.3062	1252	61	2920	2.2	33146	25.5	24
29	0.3830	0.3070	1271	61	3184	2.4	36330	27.9	27
30	0.4776	0.3082	1290	62	3514	2.7	39844	30.6	29
31	0.5730	0.3097	1309	62	3701	2.8	43545	33.5	32
32	0.6695	0.3118	1328	62	3772	2.9	47317	36.4	35
33	0.7675	0.3143	1348	63	4156	3.2	51473	39.6	38
34	0.8672	0.3173	1368	63	4451	3.4	55924	43.0	41
35	0.9690	0.3209	1388	64	4621	3.6	60545	46.6	45
36	1.0733	0.3251	1409	65	4963	3.8	65508	50.4	48
37	1.1806	0.3300	1431	66	4993	3.8	70501	54.2	52
38	1.2914	0.3358	1453	67	5288	4.1	75789	58.3	56
39	1.4063	0.3426	1476	69	5415	4.2	81204	62.4	60
40	1.5263	0.3505	1500	70	5516	4.2	86720	66.7	65
41	1.6524	0.3599	1525	72	5676	4.4	92396	71.0	69
42	1.7859	0.3711	1552	74	5739	4.4	98135	75.5	73
43	1.9284	0.3845	1580	77	5517	4.2	103652	79.7	78
44	2.0826	0.4011	1611	80	5219	4.0	108871	83.7	82
45	2.2515	0.4217	1645	84	4965	3.8	113836	87.5	86
46	2.4402	0.4481	1682	90	4423	3.4	118259	90.9	89
47	2.6562	0.4830	1726	97	3857	3.0	122116	93.9	92
48	2.9123	0.5317	1777	106	3208	2.5	125324	96.4	95
49	3.2324	0.6046	1841	121	2330	1.8	127654	98.2	97
50	3.6699	0.7293	1928	146	1482	1.1	129136	99.3	99
51	4.3950	1.0159	2073	203	701	0.5	129837	99.8	99
52	5.6215	1.8346	2319	367	216	0.2	130053	100.0	99

Reading Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-4.8327	1.8342	700	431	1	0.0	1	0.0	1
1	-3.6070	1.0155	700	238	1	0.0	2	0.0	1
2	-2.8825	0.7291	700	171	3	0.0	5	0.0	1
3	-2.4453	0.6044	700	142	3	0.0	8	0.0	1
4	-2.1254	0.5314	700	125	15	0.0	23	0.0	1
5	-1.8696	0.4827	700	113	35	0.0	58	0.0	1
6	-1.6540	0.4474	725	105	79	0.1	137	0.1	1
7	-1.4661	0.4206	769	99	161	0.1	298	0.2	1
8	-1.2982	0.3996	809	94	252	0.2	550	0.4	1
9	-1.1454	0.3827	845	90	415	0.3	965	0.7	1
10	-1.0043	0.3688	878	87	593	0.5	1558	1.2	1
11	-0.8726	0.3573	909	84	761	0.6	2319	1.8	1
12	-0.7484	0.3477	938	82	918	0.7	3237	2.5	2
13	-0.6304	0.3395	966	80	1110	0.8	4347	3.3	3
14	-0.5176	0.3326	992	78	1150	0.9	5497	4.2	4
15	-0.4090	0.3267	1018	77	1338	1.0	6835	5.2	5
16	-0.3039	0.3217	1042	76	1397	1.1	8232	6.3	6
17	-0.2018	0.3175	1066	75	1491	1.1	9723	7.4	7
18	-0.1021	0.3139	1090	74	1486	1.1	11209	8.5	8
19	-0.0046	0.3110	1113	73	1631	1.2	12840	9.8	9
20	0.0914	0.3086	1135	72	1642	1.3	14482	11.0	10
21	0.1860	0.3067	1157	72	1775	1.4	16257	12.4	12
22	0.2796	0.3053	1179	72	1834	1.4	18091	13.8	13
23	0.3726	0.3043	1201	71	2031	1.5	20122	15.3	15
24	0.4649	0.3038	1223	71	2044	1.6	22166	16.9	16
25	0.5572	0.3036	1245	71	2259	1.7	24425	18.6	18
26	0.6494	0.3039	1266	71	2381	1.8	26806	20.4	20
27	0.7419	0.3045	1288	72	2454	1.9	29260	22.3	21
28	0.8349	0.3055	1310	72	2689	2.0	31949	24.3	23
29	0.9287	0.3070	1332	72	3083	2.3	35032	26.7	26
30	1.0235	0.3089	1354	73	3284	2.5	38316	29.2	28
31	1.1196	0.3112	1377	73	3573	2.7	41889	31.9	31
32	1.2173	0.3140	1400	74	3928	3.0	45817	34.9	33
33	1.3169	0.3173	1423	75	4228	3.2	50045	38.1	37
34	1.4188	0.3211	1447	75	4543	3.5	54588	41.6	40
35	1.5233	0.3256	1471	76	4880	3.7	59468	45.3	43
36	1.6310	0.3307	1497	78	5169	3.9	64637	49.3	47
37	1.7423	0.3366	1523	79	5612	4.3	70249	53.5	51
38	1.8578	0.3434	1550	81	6039	4.6	76288	58.1	56
39	1.9784	0.3512	1578	82	6211	4.7	82499	62.9	61
40	2.1049	0.3603	1608	85	6284	4.8	88783	67.7	65
41	2.2384	0.3708	1639	87	6397	4.9	95180	72.5	70
42	2.3804	0.3831	1673	90	6321	4.8	101501	77.4	75
43	2.5327	0.3977	1708	93	6174	4.7	107675	82.1	80
44	2.6977	0.4154	1747	98	5675	4.3	113350	86.4	84
45	2.8791	0.4370	1790	103	5018	3.8	118368	90.2	88
46	3.0816	0.4642	1837	109	4293	3.3	122661	93.5	92
47	3.3132	0.4997	1892	117	3290	2.5	125951	96.0	95
48	3.5865	0.5484	1956	129	2404	1.8	128355	97.8	97
49	3.9255	0.6208	2035	146	1609	1.2	129964	99.0	98
50	4.3837	0.7439	2143	175	842	0.6	130806	99.7	99
51	5.1311	1.0272	2319	241	331	0.3	131137	99.9	99
52	6.3740	1.8411	2610	432	81	0.1	131218	100.0	99

Science Grade 4

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.7051	1.8337	1050	324	1	0.0	1	0.0	1
1	-4.4809	1.0144	1050	179	1	0.0	2	0.0	1
2	-3.7589	0.7272	1050	129	0	0.0	2	0.0	1
3	-3.3247	0.6017	1050	106	1	0.0	3	0.0	1
4	-3.0083	0.5279	1050	93	1	0.0	4	0.0	1
5	-2.7565	0.4782	1050	85	2	0.0	6	0.0	1
6	-2.5454	0.4420	1050	78	4	0.0	10	0.0	1
7	-2.3625	0.4143	1050	73	6	0.0	16	0.0	1
8	-2.2002	0.3922	1050	69	26	0.0	42	0.0	1
9	-2.0536	0.3742	1050	66	36	0.0	78	0.1	1
10	-1.9193	0.3592	1050	63	58	0.0	136	0.1	1
11	-1.7949	0.3465	1050	61	130	0.1	266	0.2	1
12	-1.6786	0.3357	1050	59	203	0.2	469	0.4	1
13	-1.5691	0.3262	1050	58	267	0.2	736	0.6	1
14	-1.4654	0.3180	1050	56	365	0.3	1101	0.9	1
15	-1.3666	0.3108	1050	55	455	0.4	1556	1.2	1
16	-1.2720	0.3045	1050	54	590	0.5	2146	1.7	1
17	-1.1810	0.2988	1050	53	649	0.5	2795	2.2	2
18	-1.0933	0.2938	1050	52	784	0.6	3579	2.8	3
19	-1.0083	0.2893	1050	51	826	0.6	4405	3.5	3
20	-0.9257	0.2853	1062	50	929	0.7	5334	4.2	4
21	-0.8453	0.2818	1076	50	994	0.8	6328	5.0	5
22	-0.7669	0.2786	1090	49	1027	0.8	7355	5.8	5
23	-0.6901	0.2758	1104	49	1076	0.8	8431	6.6	6
24	-0.6146	0.2733	1117	48	1140	0.9	9571	7.5	7
25	-0.5406	0.2711	1130	48	1166	0.9	10737	8.4	8
26	-0.4676	0.2692	1143	48	1170	0.9	11907	9.4	9
27	-0.3956	0.2675	1156	47	1249	1.0	13156	10.4	10
28	-0.3245	0.2661	1168	47	1208	1.0	14364	11.3	11
29	-0.2540	0.2649	1181	47	1279	1.0	15643	12.3	12
30	-0.1841	0.2639	1193	47	1358	1.1	17001	13.4	13
31	-0.1147	0.2631	1205	47	1432	1.1	18433	14.5	14
32	-0.0456	0.2626	1218	46	1443	1.1	19876	15.6	15
33	0.0233	0.2622	1230	46	1511	1.2	21387	16.8	16
34	0.0920	0.2621	1242	46	1618	1.3	23005	18.1	17
35	0.1607	0.2621	1254	46	1610	1.3	24615	19.4	19
36	0.2294	0.2623	1266	46	1821	1.4	26436	20.8	20
37	0.2983	0.2628	1278	46	1771	1.4	28207	22.2	21
38	0.3675	0.2634	1291	47	2007	1.6	30214	23.8	23
39	0.4371	0.2643	1303	47	2090	1.6	32304	25.4	25
40	0.5072	0.2653	1315	47	2205	1.7	34509	27.1	26
41	0.5780	0.2666	1328	47	2372	1.9	36881	29.0	28
42	0.6495	0.2682	1340	47	2406	1.9	39287	30.9	30
43	0.7218	0.2700	1353	48	2574	2.0	41861	32.9	32
44	0.7953	0.2720	1366	48	2708	2.1	44569	35.1	34
45	0.8699	0.2744	1379	49	2864	2.3	47433	37.3	36
46	0.9459	0.2771	1393	49	3049	2.4	50482	39.7	39
47	1.0235	0.2801	1407	50	3149	2.5	53631	42.2	41
48	1.1029	0.2836	1421	50	3492	2.7	57123	44.9	44
49	1.1844	0.2874	1435	51	3595	2.8	60718	47.8	46

50	1.2683	0.2918	1450	52	3632	2.9	64350	50.6	49
51	1.3548	0.2967	1465	52	3838	3.0	68188	53.6	52
52	1.4445	0.3022	1481	53	4067	3.2	72255	56.8	55
53	1.5376	0.3085	1497	55	4174	3.3	76429	60.1	58
54	1.6350	0.3156	1515	56	4305	3.4	80734	63.5	62
55	1.7371	0.3237	1533	57	4440	3.5	85174	67.0	65
56	1.8449	0.3330	1552	59	4476	3.5	89650	70.5	69
57	1.9593	0.3438	1572	61	4645	3.7	94295	74.2	72
58	2.0818	0.3565	1594	63	4547	3.6	98842	77.8	76
59	2.2141	0.3715	1617	66	4534	3.6	103376	81.3	80
60	2.3587	0.3895	1643	69	4404	3.5	107780	84.8	83
61	2.5188	0.4115	1671	73	4327	3.4	112107	88.2	86
62	2.6994	0.4394	1703	78	3872	3.0	115979	91.2	90
63	2.9081	0.4757	1740	84	3566	2.8	119545	94.1	93
64	3.1574	0.5255	1784	93	2967	2.3	122512	96.4	95
65	3.4713	0.5996	1839	106	2169	1.7	124681	98.1	97
66	3.9030	0.7254	1916	128	1464	1.2	126145	99.2	99
67	4.6223	1.0130	2043	179	782	0.6	126927	99.9	99
68	5.8447	1.8329	2259	324	178	0.1	127105	100.0	99

Science Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
0	-5.8351	1.8312	925	351	1	0.0	1	0.0	1
1	-4.6170	1.0101	925	193	0	0.0	1	0.0	1
2	-3.9033	0.7215	925	138	2	0.0	3	0.0	1
3	-3.4771	0.5951	925	114	0	0.0	3	0.0	1
4	-3.1686	0.5206	925	100	4	0.0	7	0.0	1
5	-2.9244	0.4703	925	90	1	0.0	8	0.0	1
6	-2.7207	0.4337	925	83	8	0.0	16	0.0	1
7	-2.5451	0.4056	925	78	12	0.0	28	0.0	1
8	-2.3898	0.3832	925	73	42	0.0	70	0.1	1
9	-2.2501	0.3650	925	70	79	0.1	149	0.1	1
10	-2.1224	0.3498	925	67	146	0.1	295	0.2	1
11	-2.0046	0.3370	925	65	237	0.2	532	0.4	1
12	-1.8948	0.3260	925	62	359	0.3	891	0.7	1
13	-1.7918	0.3164	925	61	533	0.4	1424	1.1	1
14	-1.6943	0.3081	925	59	709	0.5	2133	1.6	1
15	-1.6016	0.3008	925	58	851	0.7	2984	2.3	2
16	-1.5130	0.2944	925	56	952	0.7	3936	3.0	3
17	-1.4281	0.2887	925	55	1120	0.9	5056	3.9	3
18	-1.3462	0.2836	939	54	1218	0.9	6274	4.8	4
19	-1.2670	0.2791	954	53	1304	1.0	7578	5.8	5
20	-1.1903	0.2751	969	53	1312	1.0	8890	6.8	6
21	-1.1157	0.2715	983	52	1373	1.0	10263	7.8	7
22	-1.0428	0.2683	997	51	1361	1.0	11624	8.9	8
23	-0.9716	0.2654	1011	51	1397	1.1	13021	9.9	9
24	-0.9019	0.2629	1024	50	1432	1.1	14453	11.0	10
25	-0.8333	0.2607	1037	50	1454	1.1	15907	12.2	12
26	-0.7658	0.2588	1050	50	1530	1.2	17437	13.3	13
27	-0.6993	0.2571	1063	49	1476	1.1	18913	14.4	14
28	-0.6336	0.2556	1075	49	1514	1.2	20427	15.6	15
29	-0.5686	0.2544	1088	49	1508	1.2	21935	16.8	16
30	-0.5041	0.2535	1100	49	1597	1.2	23532	18.0	17
31	-0.4400	0.2527	1112	48	1609	1.2	25141	19.2	19
32	-0.3763	0.2521	1125	48	1601	1.2	26742	20.4	20
33	-0.3128	0.2518	1137	48	1600	1.2	28342	21.6	21
34	-0.2495	0.2516	1149	48	1667	1.3	30009	22.9	22
35	-0.1862	0.2517	1161	48	1768	1.4	31777	24.3	24
36	-0.1228	0.2519	1173	48	1866	1.4	33643	25.7	25
37	-0.0592	0.2524	1185	48	1890	1.4	35533	27.1	26
38	0.0046	0.2531	1198	48	2028	1.5	37561	28.7	28
39	0.0689	0.2540	1210	49	2091	1.6	39652	30.3	29
40	0.1337	0.2551	1222	49	2097	1.6	41749	31.9	31
41	0.1991	0.2564	1235	49	2321	1.8	44070	33.7	33
42	0.2652	0.2580	1247	49	2397	1.8	46467	35.5	35
43	0.3322	0.2598	1260	50	2509	1.9	48976	37.4	36
44	0.4003	0.2620	1273	50	2735	2.1	51711	39.5	38
45	0.4695	0.2644	1287	51	2739	2.1	54450	41.6	41
46	0.5401	0.2671	1300	51	2918	2.2	57368	43.8	43
47	0.6123	0.2702	1314	52	3168	2.4	60536	46.2	45
48	0.6863	0.2738	1328	52	3360	2.6	63896	48.8	48
49	0.7623	0.2777	1343	53	3478	2.7	67374	51.5	50

50	0.8406	0.2821	1358	54	3764	2.9	71138	54.3	53
51	0.9216	0.2871	1373	55	3957	3.0	75095	57.4	56
52	1.0056	0.2928	1389	56	4122	3.1	79217	60.5	59
53	1.0932	0.2991	1406	57	4314	3.3	83531	63.8	62
54	1.1848	0.3064	1424	59	4482	3.4	88013	67.2	66
55	1.2811	0.3146	1442	60	4677	3.6	92690	70.8	69
56	1.3830	0.3241	1462	62	4768	3.6	97458	74.4	73
57	1.4916	0.3350	1482	64	4836	3.7	102294	78.1	76
58	1.6081	0.3479	1505	67	4789	3.7	107083	81.8	80
59	1.7342	0.3630	1529	70	4836	3.7	111919	85.5	84
60	1.8726	0.3813	1555	73	4536	3.5	116455	89.0	87
61	2.0263	0.4036	1585	77	3893	3.0	120348	91.9	90
62	2.2003	0.4318	1618	83	3356	2.6	123704	94.5	93
63	2.4023	0.4685	1657	90	2880	2.2	126584	96.7	96
64	2.6448	0.5188	1703	99	2057	1.6	128641	98.3	97
65	2.9515	0.5935	1762	114	1290	1.0	129931	99.2	99
66	3.3758	0.7202	1843	138	672	0.5	130603	99.8	99
67	4.0875	1.0092	1980	193	265	0.2	130868	100.0	99
68	5.3043	1.8307	2213	351	50	0.0	130918	100.0	99

Writing Grade 5

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
22	-6.5539	1.8374	700	184	50	0.0	50	0.0	1
23	-5.3196	1.0217	700	102	227	0.2	277	0.2	1
24	-4.5818	0.7386	700	74	464	0.4	741	0.6	1
25	-4.1298	0.6170	700	62	605	0.5	1346	1.1	1
26	-3.7939	0.5471	700	55	633	0.5	1979	1.6	1
27	-3.5204	0.5014	719	50	524	0.4	2503	2.0	2
28	-3.2855	0.4694	743	47	374	0.3	2877	2.3	2
29	-3.0765	0.4461	764	45	217	0.2	3094	2.5	2
30	-2.8856	0.4287	783	43	142	0.1	3236	2.6	3
31	-2.7075	0.4156	801	42	101	0.1	3337	2.7	3
32	-2.5390	0.4059	818	41	56	0.0	3393	2.7	3
33	-2.3772	0.3988	834	40	103	0.1	3496	2.8	3
34	-2.2203	0.3939	849	39	264	0.2	3760	3.0	3
35	-2.0665	0.3908	865	39	582	0.5	4342	3.5	3
36	-1.9145	0.3892	880	39	955	0.8	5297	4.2	4
37	-1.7632	0.3889	895	39	1109	0.9	6406	5.1	5
38	-1.6117	0.3898	910	39	1116	0.9	7522	6.0	6
39	-1.4591	0.3917	926	39	1043	0.8	8565	6.9	6
40	-1.3047	0.3943	941	39	886	0.7	9451	7.6	7
41	-1.1480	0.3973	957	40	758	0.6	10209	8.2	8
42	-0.9888	0.4006	973	40	553	0.4	10762	8.6	8
43	-0.8270	0.4038	989	40	395	0.3	11157	8.9	9
44	-0.6628	0.4066	1005	41	324	0.3	11481	9.2	9
45	-0.4966	0.4085	1022	41	409	0.3	11890	9.5	9
46	-0.3293	0.4094	1039	41	774	0.6	12664	10.2	10
47	-0.1618	0.4090	1055	41	1486	1.2	14150	11.4	11
48	0.0049	0.4074	1072	41	2354	1.9	16504	13.2	12
49	0.1698	0.4046	1088	40	3427	2.7	19931	16.0	15
50	0.3320	0.4008	1105	40	4034	3.2	23965	19.2	18
51	0.4909	0.3965	1121	40	4714	3.8	28679	23.0	21
52	0.6463	0.3917	1136	39	5109	4.1	33788	27.1	25
53	0.7978	0.3869	1151	39	4799	3.8	38587	31.0	29
54	0.9456	0.3821	1166	38	4254	3.4	42841	34.4	33
55	1.0900	0.3777	1180	38	3143	2.5	45984	36.9	36
56	1.2311	0.3738	1195	37	1662	1.3	47646	38.2	38
57	1.3695	0.3703	1208	37	259	0.2	47905	38.4	38
58	1.5056	0.3675	1222	37	413	0.3	48318	38.8	39
59	1.6398	0.3654	1236	37	820	0.7	49138	39.4	39
60	1.7728	0.3640	1249	36	1361	1.1	50499	40.5	40
61	1.9050	0.3634	1262	36	2163	1.7	52662	42.2	41
62	2.0371	0.3637	1275	36	3124	2.5	55786	44.7	43
63	2.1698	0.3650	1288	37	4030	3.2	59816	48.0	46
64	2.3038	0.3673	1302	37	4731	3.8	64547	51.8	50
65	2.4398	0.3707	1315	37	5290	4.2	69837	56.0	54
66	2.5790	0.3755	1329	38	4736	3.8	74573	59.8	58
67	2.7223	0.3819	1344	38	2991	2.4	77564	62.2	61
68	2.8712	0.3900	1359	39	208	0.2	77772	62.4	62
69	3.0272	0.4004	1374	40	124	0.1	77896	62.5	62

70	3.1926	0.4135	1391	41	285	0.2	78181	62.7	63
71	3.3702	0.4300	1408	43	673	0.5	78854	63.3	63
72	3.5639	0.4509	1428	45	1184	0.9	80038	64.2	64
73	3.7791	0.4778	1449	48	2177	1.7	82215	65.9	65
74	4.0236	0.5126	1474	51	3723	3.0	85938	68.9	67
75	4.3092	0.5577	1502	56	5357	4.3	91295	73.2	71
76	4.6518	0.6142	1537	61	7796	6.3	99091	79.5	76
77	5.0676	0.6738	1578	67	9279	7.4	108370	86.9	83
78	5.5484	0.7043	1626	70	7296	5.9	115666	92.8	90
79	6.0319	0.6775	1675	68	81	0.1	115747	92.8	93
80	6.4544	0.6206	1717	62	6	0.0	115753	92.9	93
81	6.8059	0.5665	1752	57	8	0.0	115761	92.9	93
82	7.1022	0.5238	1782	52	37	0.0	115798	92.9	93
83	7.3593	0.4917	1807	49	75	0.1	115873	92.9	93
84	7.5890	0.4679	1830	47	163	0.1	116036	93.1	93
85	7.7994	0.4505	1851	45	376	0.3	116412	93.4	93
86	7.9965	0.4381	1871	44	680	0.5	117092	93.9	94
87	8.1846	0.4299	1890	43	1274	1.0	118366	94.9	94
88	8.3673	0.4254	1909	43	2231	1.8	120597	96.7	96
89	8.5475	0.4243	1926	42	2369	1.9	122966	98.6	98
90	8.7284	0.4266	1944	43	20	0.0	122986	98.7	99
91	8.9125	0.4324	1963	43	0	0.0	122986	98.7	99
92	9.1035	0.4423	1982	44	1	0.0	122987	98.7	99
93	9.3052	0.4570	2002	46	3	0.0	122990	98.7	99
94	9.5233	0.4781	2024	48	5	0.0	122995	98.7	99
95	9.7657	0.5083	2048	51	11	0.0	123006	98.7	99
96	10.0456	0.5524	2076	55	42	0.0	123048	98.7	99
97	10.3870	0.6210	2110	62	96	0.1	123144	98.8	99
98	10.8435	0.7414	2156	74	245	0.2	123389	99.0	99
99	11.5851	1.0234	2230	102	527	0.4	123916	99.4	99
100	12.8217	1.8383	2354	184	750	0.6	124666	100.0	99

Writing Grade 8

Raw	Meas	MeasSE	SS	SSSE	Freq	Freq%	Cum	Cum%	Pct
22	-7.4650	1.8389	700	184	20	0.0	20	0.0	1
23	-6.2267	1.0246	700	102	102	0.1	122	0.1	1
24	-5.4827	0.7429	700	74	266	0.2	388	0.3	1
25	-5.0243	0.6225	700	62	334	0.3	722	0.6	1
26	-4.6812	0.5538	700	55	290	0.2	1012	0.8	1
27	-4.4001	0.5093	700	51	218	0.2	1230	0.9	1
28	-4.1569	0.4786	708	48	169	0.1	1399	1.1	1
29	-3.9388	0.4566	730	46	62	0.0	1461	1.1	1
30	-3.7379	0.4407	750	44	51	0.0	1512	1.2	1
31	-3.5489	0.4294	769	43	26	0.0	1538	1.2	1
32	-3.3681	0.4215	787	42	24	0.0	1562	1.2	1
33	-3.1927	0.4165	805	42	71	0.1	1633	1.3	1
34	-3.0204	0.4140	822	41	251	0.2	1884	1.4	1
35	-2.8493	0.4136	839	41	497	0.4	2381	1.8	2
36	-2.6777	0.4151	856	42	693	0.5	3074	2.4	2
37	-2.5042	0.4182	873	42	718	0.6	3792	2.9	3
38	-2.3275	0.4228	891	42	645	0.5	4437	3.4	3
39	-2.1465	0.4283	909	43	474	0.4	4911	3.8	4
40	-1.9605	0.4342	928	43	358	0.3	5269	4.0	4
41	-1.7694	0.4399	947	44	201	0.2	5470	4.2	4
42	-1.5739	0.4442	966	44	129	0.1	5599	4.3	4
43	-1.3754	0.4464	986	45	125	0.1	5724	4.4	4
44	-1.1763	0.4455	1006	45	234	0.2	5958	4.6	4
45	-0.9794	0.4415	1026	44	653	0.5	6611	5.1	5
46	-0.7874	0.4346	1045	43	1472	1.1	8083	6.2	6
47	-0.6022	0.4257	1064	43	2381	1.8	10464	8.0	7
48	-0.4252	0.4157	1081	42	3094	2.4	13558	10.4	9
49	-0.2566	0.4055	1098	41	3285	2.5	16843	12.9	12
50	-0.0962	0.3956	1114	40	3275	2.5	20118	15.4	14
51	0.0566	0.3864	1130	39	2761	2.1	22879	17.6	16
52	0.2028	0.3782	1144	38	2268	1.7	25147	19.3	18
53	0.3430	0.3710	1158	37	1715	1.3	26862	20.6	20
54	0.4783	0.3648	1172	36	1316	1.0	28178	21.6	21
55	0.6094	0.3596	1185	36	861	0.7	29039	22.3	22
56	0.7372	0.3554	1198	36	665	0.5	29704	22.8	23
57	0.8623	0.3522	1210	35	995	0.8	30699	23.6	23
58	0.9855	0.3499	1222	35	1477	1.1	32176	24.7	24
59	1.1074	0.3485	1235	35	2240	1.7	34416	26.4	26
60	1.2286	0.3480	1247	35	2934	2.3	37350	28.7	28
61	1.3498	0.3484	1259	35	3410	2.6	40760	31.3	30
62	1.4715	0.3497	1271	35	3591	2.8	44351	34.0	33
63	1.5946	0.3521	1283	35	3587	2.8	47938	36.8	35
64	1.7197	0.3555	1296	36	3534	2.7	51472	39.5	38
65	1.8476	0.3600	1309	36	2900	2.2	54372	41.7	41
66	1.9793	0.3659	1322	37	2108	1.6	56480	43.3	43
67	2.1158	0.3733	1335	37	1241	1.0	57721	44.3	44
68	2.2584	0.3824	1350	38	690	0.5	58411	44.8	45
69	2.4088	0.3936	1365	39	914	0.7	59325	45.5	45

70	2.5690	0.4074	1381	41	1698	1.3	61023	46.8	46
71	2.7417	0.4244	1398	42	2856	2.2	63879	49.0	48
72	2.9306	0.4455	1417	45	4102	3.1	67981	52.2	51
73	3.1405	0.4718	1438	47	5661	4.3	73642	56.5	54
74	3.3786	0.5050	1462	51	7599	5.8	81241	62.3	59
75	3.6543	0.5464	1489	55	9240	7.1	90481	69.4	66
76	3.9799	0.5955	1522	60	10391	8.0	100872	77.4	73
77	4.3649	0.6435	1560	64	9756	7.5	110628	84.9	81
78	4.7984	0.6667	1604	67	6195	4.8	116823	89.7	87
79	5.2343	0.6471	1647	65	548	0.4	117371	90.1	90
80	5.6258	0.6022	1686	60	45	0.0	117416	90.1	90
81	5.9609	0.5562	1720	56	61	0.0	117477	90.2	90
82	6.2487	0.5180	1749	52	130	0.1	117607	90.3	90
83	6.5014	0.4884	1774	49	251	0.2	117858	90.4	90
84	6.7286	0.4661	1797	47	479	0.4	118337	90.8	91
85	6.9378	0.4495	1818	45	764	0.6	119101	91.4	91
86	7.1343	0.4378	1837	44	1328	1.0	120429	92.4	92
87	7.3223	0.4300	1856	43	1942	1.5	122371	93.9	93
88	7.5051	0.4257	1874	43	2683	2.1	125054	96.0	95
89	7.6857	0.4248	1892	42	2294	1.8	127348	97.7	97
90	7.8670	0.4272	1911	43	197	0.2	127545	97.9	98
91	8.0517	0.4331	1929	43	1	0.0	127546	97.9	98
92	8.2433	0.4430	1948	44	3	0.0	127549	97.9	98
93	8.4457	0.4577	1968	46	9	0.0	127558	97.9	98
94	8.6645	0.4789	1990	48	18	0.0	127576	97.9	98
95	8.9076	0.5090	2015	51	61	0.0	127637	98.0	98
96	9.1882	0.5531	2043	55	129	0.1	127766	98.1	98
97	9.5303	0.6216	2077	62	238	0.2	128004	98.2	98
98	9.9876	0.7419	2123	74	489	0.4	128493	98.6	98
99	10.7301	1.0238	2197	102	847	0.7	129340	99.3	99
100	11.9672	1.8385	2321	184	962	0.7	130302	100.0	99

Appendix O:

Linking Item Statistics

Column Heading	Definition
Type	Item type
Form	Form
Seq	Sequence
Prev Form	Previous form
Prev Seq	Previous sequence
Prev P-Val	Previous P-Value
P-Val	P-Value
Prev Meas	Previous Rasch item measure
Meas	Rasch item measure

Mathematics Grade 3

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
469752	MC	0	2	0	2	2013	0.88	0.85	0.0088	0.3147
286690	MC	0	6	0	6	2013	0.93	0.92	-0.7415	-0.6329
471760	MC	0	8	0	8	2013	0.73	0.72	1.3434	1.3444
663403	MC	0	9	0	9	2013	0.83	0.82	0.5421	0.5298
301655	MC	0	17	0	17	2013	0.55	0.50	2.4967	2.7027
513343	MC	0	21	0	21	2013	0.82	0.78	0.7200	0.9206
873735	MC	0	24	0	24	2013	0.93	0.92	-0.6179	-0.5382
254800	MC	0	54	0	52	2013	0.91	0.91	-0.5164	-0.4796
519917	MC	0	55	0	53	2013	0.64	0.65	2.0963	1.9135
360274	MC	0	58	0	56	2013	0.90	0.88	-0.1137	-0.0295
980303	MC	0	59	0	57	2013	0.61	0.61	2.1691	1.9291
675036	MC	0	64	0	62	2013	0.82	0.87	0.6721	0.1379
452818	MC	0	100	0	98	2013	0.84	0.84	0.4567	0.2827
582469	MC	0	102	0	100	2013	0.94	0.93	-0.8555	-0.8260
523309	MC	0	103	0	101	2013	0.66	0.66	1.8764	1.8615
819093	MC	0	108	0	106	2013	0.89	0.86	0.0330	0.0839
669421	MC	0	115	0	113	2013	0.87	0.84	0.0956	0.3084
117858	MC	0	117	0	115	2013	0.90	0.89	-0.0299	-0.1279
725903	MC	4	72	6;13;15	70	2013	0.88	0.86	0.0669	0.1545
238455	MC	9	68	5;7	66	2013	0.82	0.80	0.7088	0.7965
998880	MC	9	76	5;16;20	74	2013	0.65	0.63	1.8715	1.9324
511474	MC	7	70	17;18	68	2013	0.77	0.77	1.0920	1.0511
333805	MC	1	73	3;12	71	2013	0.89	0.92	-0.0710	-0.6659
942580	MC	5	69	1;16	67	2013	0.88	0.88	-0.0255	0.0128
631893	MC	2	74	9	72	2013	0.89	0.88	0.0546	-0.1161
767071	MC	6	65	20	63	2013	0.50	0.47	2.7225	2.9502
727270	MC	7	65	11	63	2013	0.71	0.70	1.4780	1.5687
155635	MC	8	70	14	68	2013	0.55	0.49	2.4586	2.7939
430175	MC	8	76	15	74	2013	0.62	0.63	2.0589	1.9593
799742	MC	3	66	12	64	2013	0.85	0.81	0.4376	0.6517
271756	MC	2	66	6	64	2013	0.68	0.69	1.7475	1.5629
894935	MC	5	76	1	74	2013	0.51	0.55	2.5519	2.4410
189995	MC	6	73	8	71	2013	0.80	0.77	0.8548	0.9994
287845	MC	3	74	18	72	2013	0.63	0.60	1.9596	2.0709
895209	MC	4	69	3	67	2013	0.74	0.71	1.3017	1.4487
590013	MC	1	67	20	65	2013	0.56	0.55	2.3730	2.3058
142160	OE	0	25	0	25	2013	0.53	0.52	2.6051	2.6069
859377	OE	0	121	0	119	2013	0.75	0.75	1.0118	0.9097
						Mean	0.76	0.75	0.97	0.98

Mathematics Grade 4

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
413467	MC	0	1	0	1	2013	0.721	0.7184	0.0719	0.0195
337018	MC	0	3	0	3	2013	0.6977	0.685	0.2164	0.25
313878	MC	0	8	0	8	2013	0.8622	0.8544	-1.006	-0.995
864558	MC	0	10	0	10	2013	0.6818	0.6652	0.3348	0.3115
679981	MC	0	15	0	15	2013	0.6177	0.6157	0.7212	0.603
379825	MC	0	17	0	17	2013	0.6046	0.5293	0.6965	1.0827
429674	MC	0	20	0	20	2013	0.7946	0.7679	-0.444	-0.351
221331	MC	0	21	0	21	2013	0.6669	0.6999	0.4295	0.1202
700531	MC	0	23	0	23	2013	0.83	0.8194	-0.723	-0.641
520900	MC	0	53	0	54	2013	0.5778	0.5784	0.8883	0.8063
993438	MC	0	55	0	56	2013	0.617	0.6354	0.6763	0.5513
431075	MC	0	56	0	57	2013	0.7598	0.7569	-0.152	-0.242
872174	MC	0	57	0	58	2013	0.616	0.6266	0.6739	0.5106
637737	MC	0	59	0	60	2013	0.6766	0.6768	0.3259	0.2232
367428	MC	0	60	0	61	2013	0.6959	0.6822	0.239	0.2676
595254	MC	0	96	0	98	2013	0.8804	0.8674	-1.304	-1.253
583983	MC	0	97	0	99	2013	0.7144	0.6851	0.1211	0.2606
416139	MC	0	98	0	100	2013	0.596	0.6096	0.7584	0.7494
838889	MC	0	102	0	104	2013	0.7774	0.751	-0.334	-0.138
556430	MC	0	103	0	105	2013	0.7489	0.7443	-0.05	-0.14
984999	MC	0	105	0	107	2013	0.8419	0.8026	-0.661	-0.435
458381	MC	0	107	0	109	2013	0.553	0.5503	1.0606	0.9069
552533	MC	0	114	0	116	2013	0.7356	0.7208	-0.041	-0.046
389957	MC	0	118	0	120	2013	0.544	0.604	1.0792	0.6533
923557	MC	7	66	8;11;19	67	2013	0.7873	0.7828	-0.353	-0.419
265611	MC	3	67	4;6;10	68	2013	0.7854	0.7664	-0.356	-0.296
124410	MC	8	68	5;20	69	2013	0.8424	0.8434	-0.828	-0.898
708265	MC	6	73	10;13;15	74	2013	0.7028	0.6559	0.2127	0.4079
241848	MC	9	67	7;18	68	2013	0.5865	0.6147	0.8575	0.6569
491963	MC	4	70	3;16	71	2013	0.7661	0.7591	-0.238	-0.239
640227	MC	5	74	2;8;18	75	2013	0.7729	0.7742	-0.282	-0.322
353941	MC	9	69	2;13	70	2013	0.7538	0.7814	-0.148	-0.386
596572	MC	8	75	3	76	2013	0.5853	0.6038	0.8109	0.7156
292210	MC	7	75	8	66	2013	0.708	0.7121	0.1753	0.0629
165433	MC	2	68	11	69	2013	0.9075	0.9062	-1.478	-1.663
183725	MC	5	67	12	68	2013	0.8277	0.7956	-0.667	-0.48
196245	MC	3	68	17	69	2013	0.5626	0.5431	0.9741	1.0448
583093	MC	1	68	1	69	2013	0.4939	0.4989	1.2269	1.1742
621075	MC	6	67	2	68	2013	0.3426	0.2595	2.1079	2.6643
215838	MC	4	65	10	66	2013	0.935	0.9058	-1.915	-1.601
374368	MC	2	73	16	74	2013	0.6693	0.6261	0.4088	0.5219
724331	MC	1	74	1	75	2013	0.7121	0.6924	0.0087	0.0797
						Mean	0.70	0.69	0.10	0.10

Mathematics Grade 5

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
122875	MC	0	1	0	1	2013	0.70	0.68	0.3903	0.4880
418653	MC	0	2	0	2	2012	0.77	0.75	0.1639	0.1644
217611	MC	0	13	0	13	2013	0.86	0.87	-0.6264	-0.8217
971657	MC	0	16	0	17	2012	0.70	0.65	0.6142	0.7826
853933	MC	0	17	0	17	2013	0.77	0.75	0.0663	0.1892
232238	MC	0	18	0	18	2013	0.62	0.60	0.9517	1.0564
815145	MC	0	22	0	22	2012	0.53	0.53	1.5434	1.4527
576731	MC	0	57	0	56	2013	0.84	0.84	-0.5077	-0.5272
844327	MC	0	59	0	58	2013	0.75	0.73	0.2068	0.2737
775594	MC	0	60	0	59	2013	0.82	0.82	-0.3944	-0.3107
893918	MC	0	62	0	61	2013	0.61	0.63	0.9730	0.9815
397546	MC	0	64	0	63	2013	0.64	0.66	0.7035	0.7669
747711	MC	0	98	0	98	2013	0.70	0.70	0.4759	0.4786
228514	MC	0	104	0	104	2013	0.69	0.69	0.5420	0.5806
192808	MC	0	106	0	106	2013	0.84	0.82	-0.4487	-0.3696
680498	MC	0	110	0	110	2013	0.66	0.64	0.7038	0.7140
200037	MC	0	111	0	110	2012	0.69	0.66	0.7045	0.6583
754663	MC	0	113	0	112	2012	0.81	0.85	-0.0907	-0.5487
424351	MC	0	116	0	115	2012	0.83	0.82	-0.2592	-0.3974
367532	MC	0	121	0	120	2012	0.65	0.62	0.9357	1.0771
425225	MC	3	71	16	70	2013	0.70	0.74	0.4708	0.2608
309375	MC	4	69	19	68	2013	0.69	0.74	0.5133	0.2129
672459	MC	2	69	11	68	2013	0.51	0.57	1.4859	1.2137
886968	MC	4	75	6	74	2013	0.34	0.36	2.3432	2.4257
715368	MC	5	76	1	75	2013	0.47	0.52	1.5526	1.5511
676151	MC	6	71	12	70	2013	0.54	0.55	1.3159	1.3802
371751	MC	1	77	17	76	2013	0.65	0.65	0.7620	0.7312
957672	MC	9	74	6	73	2013	0.48	0.52	1.6309	1.5694
894633	MC	8	67	9	66	2013	0.64	0.61	0.8174	1.0066
746127	MC	7	70	15	69	2013	0.49	0.46	1.5922	1.8778
799232	MC	2	77	18	76	2013	0.51	0.51	1.4535	1.5613
685276	MC	3	74	3	73	2013	0.64	0.64	0.7706	0.8602
166797	MC	5	72	9	71	2013	0.46	0.52	1.7816	1.5380
704106	MC	9	71	18	70	2013	0.61	0.65	0.9604	0.8151
712211	MC	7	74	8	73	2013	0.70	0.70	0.4516	0.5066
323536	MC	8	73	6	72	2013	0.41	0.35	1.9692	2.4688
917077	MC	1	73	7	72	2013	0.55	0.56	1.2797	1.2217
272867	MC	6	75	7	74	2013	0.51	0.64	1.4856	0.8473
370529	OE	0	122	0	122	2013	0.36	0.36	2.2674	2.4304
						Mean	0.63	0.64	0.81	0.80

Mathematics Grade 6

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
694712	MC	0	1	0	1	2013	0.70	0.69	0.1563	0.2865
412145	MC	0	2	0	2	2013	0.75	0.78	-0.1435	-0.2234
440139	MC	0	11	0	11	2013	0.77	0.75	-0.1984	-0.0436
443753	MC	0	17	0	17	2013	0.78	0.76	-0.3463	-0.1434
786314	MC	0	19	0	19	2013	0.49	0.49	1.4019	1.3268
964620	MC	0	23	0	23	2012	0.53	0.56	1.2370	1.1203
387053	MC	0	24	0	24	2012	0.57	0.60	1.0440	0.8296
225357	MC	0	51	0	51	2013	0.70	0.67	0.1008	0.2883
737783	MC	0	53	0	53	2013	0.86	0.85	-1.0126	-1.0291
954958	MC	0	54	0	54	2012	0.58	0.57	0.9929	0.9631
710745	MC	0	59	0	59	2013	0.81	0.80	-0.6279	-0.4024
473751	MC	0	95	0	95	2012	0.93	0.91	-1.6863	-1.6832
725977	MC	0	96	0	96	2013	0.87	0.87	-1.0887	-1.0248
597296	MC	0	101	0	101	2012	0.47	0.54	1.5755	1.1991
495719	MC	0	102	0	102	2013	0.88	0.91	-1.2351	-1.5919
685308	MC	0	103	0	103	2013	0.60	0.59	0.7700	0.8233
839487	MC	0	106	0	106	2013	0.63	0.62	0.6268	0.6328
980667	MC	0	108	0	109	2012	0.77	0.78	-0.1031	-0.2629
913782	MC	0	109	0	109	2013	0.86	0.87	-0.9613	-1.1071
345097	MC	0	112	0	112	2013	0.57	0.52	0.9371	1.2466
567630	MC	5;14	70	5	70	2011	0.63	0.63	0.7875	0.6467
638517	MC	7;10	71	6	71	2013	0.46	0.48	1.4874	1.4383
243080	MC	1;8	72	4	72	2013	0.88	0.85	-1.2489	-0.9898
970600	MC	4;15	65	7	65	2013	0.64	0.67	0.5552	0.4001
296941	MC	1;8	67	7	67	2013	0.45	0.50	1.5523	1.3180
733205	MC	3;16	63	5	63	2013	0.66	0.65	0.4102	0.4914
192047	MC	2;12	64	3	64	2013	0.76	0.75	-0.1931	-0.1197
891680	MC	6;9;20	67	5	67	2013	0.73	0.73	0.0383	0.0211
284332	MC	2;12	68	2	68	2013	0.69	0.71	0.2712	0.1572
926746	MC	3;16	70	3	70	2013	0.93	0.91	-1.8416	-1.6058
200442	MC	6;9;20	72	2	72	2013	0.90	0.88	-1.3653	-1.1463
702875	MC	4;15	72	9	72	2013	0.80	0.77	-0.4989	-0.2102
838401	MC	11;17;18	72	5	72	2013	0.57	0.63	0.9544	0.6536
231385	MC	13;19	65	3	65	2013	0.66	0.62	0.4520	0.7030
521588	MC	13;19	71	7	71	2013	0.58	0.61	0.8774	0.7516
720166	MC	5;14	63	3	63	2013	0.81	0.85	-0.5289	-0.8497
911392	MC	7;10	65	6	65	2013	0.75	0.80	-0.1444	-0.4714
874990	MC	11;17;18	63	1	63	2013	0.81	0.82	-0.5693	-0.5989
175706	OE	0	26	0	26	2013	0.41	0.39	2.1284	2.3668
						Mean	0.70	0.70	0.12	0.11

Mathematics Grade 7

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
984768	MC	0	1	0	1	2012	0.80	0.78	-0.3882	-0.3526
409847	MC	0	2	0	2	2012	0.82	0.81	-0.4893	-0.4911
813466	MC	0	3	0	3	2012	0.76	0.75	-0.0863	-0.1429
563947	MC	0	7	0	7	2013	0.74	0.75	-0.0783	-0.0081
962921	MC	0	8	0	8	2013	0.62	0.61	0.6700	0.5962
953328	MC	0	9	0	9	2013	0.78	0.78	-0.3502	-0.2564
961851	MC	0	20	0	20	2013	0.47	0.47	1.5542	1.4425
544758	MC	0	21	0	21	2013	0.67	0.67	0.3950	0.3875
661497	MC	0	53	0	53	2013	0.74	0.76	-0.0026	-0.1523
604894	MC	0	55	0	55	2013	0.59	0.60	0.8611	0.7960
220604	MC	0	94	0	94	2012	0.75	0.75	0.0120	-0.1921
156412	MC	0	98	0	98	2013	0.78	0.80	-0.2703	-0.4982
766990	MC	0	102	0	102	2012	0.80	0.79	-0.4093	-0.4569
773381	MC	0	103	0	103	2013	0.76	0.75	-0.1748	-0.2092
292260	MC	0	108	0	108	2013	0.72	0.76	0.1527	-0.1700
576228	MC	0	110	0	110	2013	0.73	0.72	0.0104	0.0407
132775	MC	0	115	0	115	2013	0.53	0.51	1.2375	1.2942
788527	MC	7;20	71	8	71	2013	0.86	0.84	-1.0209	-0.8307
699865	MC	2;3;15	68	3	68	2013	0.84	0.80	-0.8156	-0.5024
883492	MC	10;12	64	9	64	2013	0.66	0.69	0.4559	0.2914
639934	MC	1;19	72	6	72	2013	0.40	0.40	1.8540	1.8226
401175	MC	4;6;14	69	1	69	2013	0.52	0.62	1.1362	0.6780
139076	MC	7;20	66	3	66	2013	0.51	0.48	1.2577	1.4123
647149	MC	2;3;15	62	2	62	2013	0.63	0.61	0.6037	0.7502
946828	MC	17;18	69	5	69	2013	0.43	0.38	1.6802	1.9832
380081	MC	9;16	68	8	68	2013	0.73	0.73	-0.0031	0.0497
117162	MC	5;11	69	7	69	2013	0.75	0.71	-0.0749	0.1806
477095	MC	8;13	64	4	64	2013	0.70	0.70	0.2087	0.2208
130947	MC	4;6;14	66	1	66	2013	0.37	0.34	2.0007	2.2078
356004	MC	8;13	67	7	67	2013	0.24	0.26	2.8171	2.7525
105804	MC	9;16	64	8	64	2013	0.74	0.78	-0.0584	-0.3426
664667	MC	5;11	66	9	66	2013	0.63	0.64	0.6614	0.5581
597701	MC	1;19	66	4	66	2013	0.78	0.78	-0.2806	-0.4036
625607	MC	17;18	66	6	66	2013	0.77	0.75	-0.2423	-0.1013
622721	MC	10;12	70	9	70	2013	0.80	0.76	-0.3887	-0.2171
970842	OE	0	26	0	26	2013	0.41	0.43	1.7194	1.6261
694550	OE	0	117	0	117	2013	0.56	0.53	1.2264	1.3763
						Mean	0.66	0.66	0.42	0.41

Mathematics Grade 8

ID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
778422	MC	0	1	0	2	2012	0.90	0.88	-1.2079	-1.2487
658440	MC	0	2	0	2	2013	0.57	0.56	0.9827	1.1746
498857	MC	0	8	0	8	2013	0.64	0.65	0.6453	0.7184
992574	MC	0	10	0	10	2013	0.70	0.72	0.2657	0.1593
565441	MC	0	12	0	12	2013	0.82	0.79	-0.5733	-0.3150
676077	MC	0	13	0	13	2012	0.47	0.52	1.6225	1.3816
509340	MC	0	18	0	18	2013	0.76	0.78	-0.0095	-0.2065
257210	MC	0	21	0	21	2012	0.47	0.50	1.6557	1.5589
993641	MC	0	57	0	57	2012	0.85	0.84	-0.6926	-0.7510
584381	MC	0	60	0	60	2012	0.82	0.77	-0.4254	-0.0279
112008	MC	0	61	0	61	2012	0.61	0.64	0.8933	0.7070
355499	MC	0	94	0	94	2012	0.82	0.79	-0.4765	-0.2373
834155	MC	0	98	0	98	2013	0.74	0.74	0.0080	0.1686
111557	MC	0	102	0	102	2012	0.80	0.78	-0.3245	-0.3075
956071	MC	0	105	0	105	2013	0.50	0.62	1.3248	0.8304
860734	MC	0	106	0	106	2013	0.82	0.80	-0.5364	-0.2992
779369	MC	0	107	0	107	2012	0.78	0.81	-0.1298	-0.5000
953556	MC	0	109	0	109	2013	0.83	0.82	-0.6081	-0.5143
503627	MC	0	111	0	111	2012	0.76	0.80	0.0123	-0.3327
112071	MC	0	117	0	117	2012	0.88	0.88	-1.0495	-0.9749
344814	MC	13;18	68	1	68	2013	0.66	0.72	0.4680	0.2545
850619	MC	9;10	68	7	68	2013	0.77	0.79	-0.1617	-0.2546
984208	MC	19;20	69	2	69	2013	0.76	0.79	-0.1243	-0.2516
720723	MC	6;11	63	3	63	2013	0.58	0.59	0.9397	1.0810
119505	MC	2;7;12	66	9	66	2013	0.83	0.79	-0.5924	-0.2723
736416	MC	1;3	65	6	65	2013	0.77	0.83	-0.1903	-0.7398
290208	MC	14;15	63	4	63	2013	0.66	0.74	0.5221	0.1393
429494	MC	5;17	73	6	73	2013	0.74	0.70	0.0248	0.3749
975224	MC	19;20	63	7	63	2013	0.82	0.82	-0.5126	-0.4690
780009	MC	4;8;16	70	1	70	2013	0.79	0.80	-0.3921	-0.3218
772493	MC	9;10	73	8	73	2013	0.79	0.78	-0.2669	-0.2254
857749	MC	13;18	73	3	73	2013	0.77	0.74	-0.1535	0.0788
713265	MC	6;11	68	5	68	2013	0.75	0.74	-0.0452	0.0789
674903	MC	1;3	72	5	72	2013	0.60	0.66	0.8517	0.5706
540785	MC	2;7;12	70	2	70	2013	0.42	0.41	1.7872	2.0752
260948	MC	14;15	70	7	70	2013	0.56	0.62	1.0595	0.8834
286559	MC	5;17	67	5	67	2013	0.53	0.57	1.2332	1.1345
391024	MC	4;8;16	66	3	66	2013	0.76	0.78	-0.1096	-0.2117
562517	OE	0	26	0	26	2012	0.44	0.42	1.7240	1.9387
						Mean	0.71	0.72	0.19	0.18

Reading Grade 3

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
227069	MC	0	35	0	35	2013	0.62	0.60	0.2213	0.3190
221842	MC	0	37	0	36	2013	0.75	0.74	-0.4280	-0.3603
420408	MC	0	38	0	37	2013	0.78	0.77	-0.6259	-0.5211
243649	MC	0	39	0	38	2013	0.76	0.74	-0.3879	-0.3010
367922	MC	0	40	0	39	2013	0.65	0.66	0.2392	0.1509
565461	MC	0	41	0	40	2013	0.76	0.75	-0.4949	-0.4314
502971	MC	0	42	0	41	2013	0.72	0.72	-0.1551	-0.1736
254463	MC	0	43	0	43	2013	0.63	0.63	0.4323	0.3359
725011	MC	0	122	0	120	2013	0.85	0.85	-1.5580	-1.5135
473939	MC	0	123	0	121	2013	0.68	0.68	0.0183	-0.0231
560275	MC	0	124	0	123	2013	0.60	0.59	0.4488	0.4523
663978	MC	0	125	0	124	2013	0.70	0.68	0.0164	-0.0133
408330	MC	0	126	0	125	2013	0.87	0.86	-1.3661	-1.2824
425466	MC	0	127	0	126	2013	0.82	0.82	-0.8772	-0.9320
133694	MC	1 to 5	80	1 to 20	78	2013	0.66	0.62	0.1570	0.3023
629142	MC	1 to 5	79	1 to 20	77	2013	0.54	0.52	0.8306	0.8699
653437	MC	1 to 5	78	1 to 20	76	2013	0.75	0.72	-0.3884	-0.2493
155970	MC	1 to 5	82	1 to 20	80	2013	0.71	0.69	-0.1091	-0.1223
452627	MC	1 to 5	84	1 to 20	82	2013	0.55	0.54	0.7864	0.7414
412268	MC	1 to 5	81	1 to 20	79	2013	0.77	0.76	-0.5069	-0.5408
863036	MC	1 to 5	85	1 to 20	83	2013	0.59	0.57	0.5922	0.6154
814418	MC	1 to 5	83	1 to 20	81	2013	0.85	0.84	-1.1693	-1.1910
263141	MC	6 to 9	82	1 to 10	80	2013	0.72	0.72	-0.2126	-0.2093
953947	MC	6 to 9	81	1 to 10	79	2013	0.56	0.56	0.7141	0.7143
206864	MC	6 to 9	83	1 to 10	81	2013	0.68	0.65	0.0240	0.1857
463075	MC	6 to 9	79	1 to 10	77	2013	0.82	0.82	-0.9620	-0.9368
486678	MC	6 to 9	78	1 to 10	76	2013	0.77	0.77	-0.5590	-0.5446
740323	MC	6 to 9	80	1 to 10	78	2013	0.77	0.77	-0.5858	-0.5778
552250	MC	6 to 9	84	1 to 10	82	2013	0.68	0.67	0.0326	0.0498
688099	MC	6 to 9	85	1 to 10	83	2013	0.49	0.48	1.0772	1.1560
104223	OE	0	129	0	129	2013	0.52	0.52	0.8141	0.7726
						Mean	0.70	0.69	-0.13	-0.11

Reading Grade 4

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
708540	MC	0	44	0	44	2013	0.57	0.61	0.6197	0.3070
883614	MC	0	45	0	45	2013	0.82	0.80	-0.8290	-0.7030
939681	MC	0	46	0	46	2013	0.61	0.58	0.5485	0.5045
654724	MC	0	47	0	47	2013	0.79	0.77	-0.6803	-0.5910
854674	MC	0	48	0	48	2013	0.76	0.75	-0.4513	-0.3533
672759	MC	0	49	0	49	2013	0.72	0.72	-0.2582	-0.2222
764523	MC	0	50	0	50	2013	0.56	0.56	0.7491	0.8649
731885	MC	0	132	0	132	2013	0.60	0.60	0.4893	0.3712
986107	MC	0	133	0	133	2013	0.70	0.68	-0.1309	-0.0288
463444	MC	0	134	0	134	2013	0.70	0.70	-0.0801	-0.0999
751467	MC	0	135	0	135	2013	0.52	0.50	0.9407	0.9262
784267	MC	0	136	0	136	2013	0.54	0.58	0.6417	0.6728
439585	MC	0	137	0	137	2013	0.64	0.62	0.2250	0.3216
129718	MC	0	138	0	138	2013	0.77	0.76	-0.4506	-0.4059
238608	MC	6 to 9	80	1 to 10	81	2013	0.60	0.57	0.4808	0.6678
300963	MC	6 to 9	79	1 to 10	80	2013	0.78	0.79	-0.5812	-0.6270
460994	MC	6 to 9	83	1 to 10	84	2013	0.66	0.66	0.1353	0.1463
344704	MC	6 to 9	84	1 to 10	85	2013	0.85	0.86	-1.1351	-1.2563
648875	MC	6 to 9	78	1 to 10	79	2013	0.81	0.81	-0.7991	-0.7958
271213	MC	6 to 9	82	1 to 10	83	2013	0.80	0.79	-0.7586	-0.6548
592663	MC	6 to 9	81	1 to 10	82	2013	0.82	0.83	-0.9184	-0.9833
123022	MC	6 to 9	77	1 to 10	78	2013	0.45	0.46	1.2769	1.2015
759480	MC	1 to 5	80	11 to 20	81	2013	0.87	0.85	-1.3602	-1.1684
900812	MC	1 to 5	77	11 to 20	78	2013	0.82	0.82	-0.8749	-0.9442
528286	MC	1 to 5	78	11 to 20	79	2013	0.84	0.84	-1.0628	-1.0841
618002	MC	1 to 5	79	11 to 20	80	2013	0.64	0.64	0.2611	0.2171
578503	MC	1 to 5	81	11 to 20	82	2013	0.64	0.62	0.2744	0.3190
369749	MC	1 to 5	82	11 to 20	83	2013	0.55	0.53	0.7403	0.8178
133219	MC	1 to 5	84	11 to 20	85	2013	0.83	0.81	-0.9856	-0.8728
936696	MC	1 to 5	83	11 to 20	84	2013	0.54	0.55	0.7829	0.6903
608524	OE	0	51	0	52	2013	0.67	0.66	-0.0050	0.0484
928682	OE	0	139	0	140	2013	0.54	0.53	0.7292	0.7630
						Mean	0.69	0.68	-0.08	-0.06

Reading Grade 5

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
668391	MC	0	45	0	44	2013	0.63	0.61	0.5333	0.5844
325098	MC	0	46	0	45	2013	0.81	0.79	-0.7513	-0.6003
635347	MC	0	47	0	46	2013	0.80	0.79	-0.5488	-0.5037
609030	MC	0	48	0	47	2013	0.73	0.72	-0.0546	-0.0017
333336	MC	0	49	0	48	2013	0.65	0.64	0.4907	0.5710
682227	MC	0	50	0	49	2013	0.68	0.68	0.2842	0.1754
193815	MC	0	51	0	50	2013	0.53	0.47	1.0029	1.2156
535902	MC	0	52	0	51	2013	0.87	0.88	-1.0500	-1.0668
701665	MC	0	133	0	132	2013	0.65	0.64	0.3519	0.4189
975221	MC	0	134	0	133	2013	0.74	0.76	-0.0947	-0.3080
574862	MC	0	135	0	134	2013	0.69	0.68	0.1756	0.2526
419875	MC	0	136	0	135	2013	0.53	0.55	1.0154	0.8727
542019	MC	0	137	0	137	2013	0.60	0.62	0.6939	0.5374
537149	MC	0	138	0	139	2013	0.68	0.69	0.2295	0.1279
240596	MC	6 to 9	84	1 to 10	83	2013	0.70	0.71	0.0743	0.0166
316080	MC	6 to 9	81	1 to 10	80	2013	0.75	0.74	-0.1810	-0.1467
211022	MC	6 to 9	80	1 to 10	79	2013	0.47	0.47	1.3179	1.3042
413897	MC	6 to 9	86	1 to 10	85	2013	0.68	0.68	0.1935	0.2252
893276	MC	6 to 9	83	1 to 10	82	2013	0.87	0.86	-1.1517	-1.0580
944661	MC	6 to 9	82	1 to 10	81	2013	0.73	0.73	-0.0998	-0.1003
762101	MC	6 to 9	79	1 to 10	78	2013	0.58	0.57	0.7725	0.8246
414008	MC	6 to 9	85	1 to 10	84	2013	0.54	0.54	0.9598	0.9447
897782	MC	1 to 5	79	11 to 20	78	2013	0.74	0.75	-0.1069	-0.1990
874871	MC	1 to 5	83	11 to 20	82	2013	0.74	0.74	-0.1032	-0.1337
497968	MC	1 to 5	86	11 to 20	85	2013	0.75	0.73	-0.2042	-0.1114
802898	MC	1 to 5	80	11 to 20	79	2013	0.82	0.81	-0.6545	-0.6253
880493	MC	1 to 5	81	11 to 20	80	2013	0.49	0.49	1.2978	1.1878
391700	MC	1 to 5	85	11 to 20	84	2013	0.65	0.65	0.4575	0.3627
998708	MC	1 to 5	82	11 to 20	81	2013	0.90	0.89	-1.4207	-1.4189
411647	MC	1 to 5	84	11 to 20	83	2013	0.65	0.65	0.4358	0.3744
150904	OE	0	53	0	52	2013	0.58	0.57	0.7484	0.7613
868828	OE	0	139	0	140	2013	0.47	0.47	1.2520	1.3265
						Mean	0.68	0.67	0.18	0.18

Reading Grade 6

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
781196	MC	0	43	0	43	2013	0.73	0.71	-0.4079	-0.4831
179259	MC	0	44	0	44	2013	0.86	0.84	-1.0969	-1.1198
329529	MC	0	45	0	45	2013	0.57	0.57	0.4738	0.5586
439265	MC	0	46	0	46	2013	0.65	0.65	0.2009	0.2606
231121	MC	0	47	0	47	2013	0.62	0.61	0.3428	0.4273
194915	MC	0	48	0	48	2013	0.55	0.53	0.7465	0.9232
909043	MC	0	119	0	119	2013	0.65	0.64	0.2050	0.2230
922509	MC	0	120	0	120	2013	0.82	0.81	-0.9182	-0.9548
420028	MC	0	121	0	121	2013	0.58	0.56	0.6152	0.7269
272064	MC	0	122	0	122	2013	0.74	0.73	-0.4200	-0.4314
796952	MC	0	123	0	123	2013	0.47	0.46	1.0817	1.1536
815163	MC	0	124	0	124	2013	0.85	0.84	-1.1181	-1.1409
120427	MC	0	125	0	125	2013	0.77	0.76	-0.4733	-0.4682
545467	MC	11 to 20	75	2	83	2013	0.83	0.81	-0.9687	-0.8381
643441	MC	11 to 20	80	2	90	2013	0.55	0.57	0.7190	0.6367
310909	MC	11 to 20	78	2	87	2013	0.81	0.82	-0.8181	-0.9072
685349	MC	11 to 20	79	2	89	2013	0.71	0.74	-0.1377	-0.3420
785357	MC	11 to 20	77	2	86	2013	0.70	0.73	-0.0592	-0.3008
592058	MC	11 to 20	82	2	92	2013	0.63	0.64	0.2863	0.2547
903416	MC	11 to 20	81	2	91	2013	0.57	0.56	0.5758	0.7135
736776	MC	1 to 10	76	6	84	2013	0.40	0.43	1.4681	1.3788
918673	MC	1 to 10	77	6	85	2013	0.70	0.71	-0.0968	-0.2111
214360	MC	1 to 10	80	6	88	2013	0.70	0.73	-0.0680	-0.3198
271402	MC	1 to 10	79	6	87	2013	0.75	0.77	-0.4123	-0.6087
729246	MC	1 to 10	81	6	89	2013	0.79	0.81	-0.6674	-0.8703
226511	MC	1 to 10	78	6	86	2013	0.90	0.91	-1.7323	-1.8771
800769	MC	1 to 10	82	6	91	2013	0.77	0.75	-0.5072	-0.4668
164014	MC	1 to 10	75	6	83	2013	0.85	0.87	-1.1666	-1.4106
854740	MC	11 to 20	76	2	85	2013	0.75	0.74	-0.3763	-0.3099
936206	OE	0	49	0	49	2013	0.57	0.56	0.4355	0.5064
272514	OE	0	126	0	126	2013	0.56	0.56	0.4625	0.5489
						Mean	0.69	0.69	-0.12	-0.15

Reading Grade 7

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
190974	MC	0	33	0	33	2013	0.70	0.69	-0.0577	0.0051
185394	MC	0	34	0	34	2013	0.66	0.65	0.1727	0.2893
118710	MC	0	35	0	35	2013	0.83	0.85	-0.9620	-1.0865
744035	MC	0	36	0	36	2013	0.62	0.63	0.3594	0.3651
492898	MC	0	37	0	37	2013	0.62	0.61	0.3795	0.5139
392347	MC	0	38	0	38	2013	0.59	0.60	0.6378	0.6238
825972	MC	0	39	0	40	2013	0.70	0.68	0.0485	0.1216
751432	MC	0	132	0	131	2013	0.58	0.59	0.5994	0.5241
719128	MC	0	133	0	132	2013	0.61	0.59	0.4815	0.5773
738834	MC	0	134	0	133	2013	0.70	0.71	-0.0185	-0.0252
835943	MC	0	135	0	134	2013	0.66	0.68	0.2461	0.2239
271336	MC	0	136	0	135	2013	0.88	0.88	-1.3589	-1.3729
574582	MC	0	137	0	136	2013	0.55	0.52	0.8341	1.0707
145769	MC	1 to 10	77	2	86	2013	0.69	0.72	0.0036	-0.0964
220066	MC	1 to 10	75	2	84	2013	0.55	0.48	0.7939	1.1837
457503	MC	1 to 10	76	2	85	2013	0.77	0.79	-0.4346	-0.5678
751921	MC	1 to 10	79	2	88	2013	0.87	0.88	-1.2614	-1.3622
246392	MC	1 to 10	78	2	87	2013	0.76	0.79	-0.3713	-0.5421
298431	MC	1 to 10	81	2	91	2013	0.53	0.58	0.8563	0.6697
680613	MC	1 to 10	80	2	90	2013	0.52	0.58	0.9469	0.6975
178148	MC	11 to 20	74	7	83	2013	0.71	0.75	-0.0836	-0.2590
324863	MC	11 to 20	79	7	89	2013	0.82	0.85	-0.8329	-1.0093
256893	MC	11 to 20	77	7	87	2013	0.64	0.68	0.3089	0.1403
747544	MC	11 to 20	78	7	88	2013	0.62	0.62	0.4271	0.4773
426783	MC	11 to 20	76	7	85	2013	0.77	0.77	-0.4170	-0.4234
160367	MC	11 to 20	81	7	91	2013	0.57	0.55	0.7015	0.8142
979903	MC	11 to 20	80	7	90	2013	0.64	0.65	0.3164	0.2979
249512	MC	11 to 20	75	7	84	2013	0.79	0.78	-0.6102	-0.4841
765209	MC	1 to 10	74	2	83	2013	0.92	0.93	-1.9258	-2.0903
282855	OE	0	40	0	41	2013	0.58	0.56	0.0639	0.2081
750832	OE	0	139	0	139	2013	0.54	0.54	0.6749	0.7682
						Mean	0.68	0.68	0.02	0.01

Reading Grade 8

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
741839	MC	0	27	0	27	2013	0.78	0.77	-0.0227	0.0501
490058	MC	0	28	0	28	2013	0.77	0.76	0.0235	0.2014
837247	MC	0	29	0	29	2013	0.67	0.68	0.6591	0.6903
233947	MC	0	31	0	32	2013	0.82	0.82	-0.2320	-0.2170
761475	MC	0	32	0	33	2013	0.90	0.90	-0.9728	-1.0042
686884	MC	0	33	0	34	2013	0.64	0.62	1.1393	1.1567
704916	MC	0	132	0	132	2013	0.50	0.45	1.5619	1.8622
433712	MC	0	133	0	133	2013	0.72	0.72	0.4010	0.4794
608950	MC	0	134	0	134	2013	0.73	0.72	0.3375	0.4940
834538	MC	0	135	0	135	2013	0.75	0.75	0.1717	0.2287
543804	MC	0	136	0	136	2013	0.77	0.77	0.0983	0.1900
907745	MC	0	137	0	137	2013	0.39	0.39	2.1031	2.1812
307964	MC	0	138	0	138	2013	0.75	0.75	0.1952	0.2418
930586	MC	1 to 10	76	4	84	2013	0.65	0.67	0.8018	0.7499
403700	MC	1 to 10	79	4	87	2013	0.80	0.83	-0.0909	-0.2759
276204	MC	1 to 10	81	4	91	2013	0.66	0.69	0.7830	0.6334
620506	MC	1 to 10	82	4	92	2013	0.69	0.70	0.6269	0.5950
902533	MC	1 to 10	77	4	85	2013	0.76	0.77	0.1577	0.1219
317932	MC	1 to 10	80	4	89	2013	0.52	0.53	1.4792	1.4970
165705	MC	1 to 10	75	4	83	2013	0.50	0.52	1.5897	1.5153
493358	MC	1 to 10	78	4	86	2013	0.76	0.79	0.1552	-0.0306
163020	MC	11 to 20	77	9	87	2013	0.78	0.81	0.0686	-0.1312
799707	MC	11 to 20	81	9	91	2013	0.74	0.78	0.2908	0.1014
281704	MC	11 to 20	82	9	92	2013	0.76	0.80	0.1470	-0.0429
543473	MC	11 to 20	79	9	89	2013	0.64	0.61	0.8526	1.0668
169939	MC	11 to 20	75	9	83	2013	0.78	0.77	0.0570	0.1216
233686	MC	11 to 20	80	9	90	2013	0.60	0.65	1.0749	0.8825
226587	MC	11 to 20	76	9	85	2013	0.78	0.78	0.0546	0.1201
849389	MC	11 to 20	78	9	88	2013	0.61	0.61	1.0540	1.0616
608739	OE	0	34	0	35	2013	0.53	0.55	1.3568	1.2478
920262	OE	0	139	0	139	2013	0.53	0.54	1.2688	1.3222
						Mean	0.69	0.69	0.55	0.55

Science Grade 4

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
859060	MC	0	3	0	3	2013	0.82	0.81	-0.7419	-0.6652
278887	MC	0	6	0	6	2013	0.89	0.89	-1.1047	-1.2138
126529	MC	0	8	0	8	2013	0.83	0.85	-0.8240	-1.0367
617465	MC	0	11	0	11	2013	0.80	0.83	-0.5078	-0.6789
792776	MC	0	18	0	18	2013	0.49	0.51	1.1855	1.1865
637707	MC	0	19	0	19	2013	0.75	0.77	-0.2890	-0.2748
631407	MC	0	23	0	23	2013	0.84	0.86	-0.8088	-0.8476
202096	MC	0	24	0	24	2013	0.62	0.62	0.4933	0.6370
873117	MC	0	39	0	39	2013	0.71	0.72	-0.1117	-0.0865
636145	MC	0	41	0	41	2013	0.77	0.77	-0.3752	-0.2827
621121	MC	0	45	0	45	2013	0.74	0.78	-0.1425	-0.4775
351911	MC	0	48	0	48	2013	0.87	0.88	-1.1681	-1.1898
984952	MC	0	52	0	52	2013	0.71	0.72	0.0973	0.0471
967419	MC	0	58	0	58	2013	0.67	0.67	0.3409	0.3531
245129	MC	0	61	0	61	2013	0.84	0.82	-0.8112	-0.7027
792329	MC	0	63	0	63	2013	0.64	0.61	0.4651	0.6209
170578	MC	6	67	5	67	2013	0.54	0.55	0.9937	1.0041
607477	MC	3	70	4	70	2013	0.76	0.70	-0.2285	0.1536
152659	MC	3	32	6	69	2011	0.52	0.45	1.1700	1.5184
785462	MC	4	30	11	30	2013	0.69	0.68	0.2256	0.2887
827046	MC	1	70	2	33	2013	0.76	0.74	-0.2754	-0.1976
695038	MC	5	70	9	70	2013	0.61	0.61	0.6731	0.7057
139856	MC	11	71	12	71	2013	0.57	0.58	0.8723	0.8605
109448	MC	7	68	11	68	2013	0.51	0.53	1.1424	1.1178
213442	MC	2	32	9	32	2013	0.61	0.62	0.6384	0.6065
135048	MC	10	34	1	34	2013	0.62	0.63	0.5186	0.5447
603810	MC	1	30	7	30	2013	0.60	0.66	0.6592	0.3231
470077	MC	5	34	12	34	2013	0.86	0.87	-0.9620	-1.1036
632478	MC	12	67	9	67	2013	0.60	0.60	0.7257	0.7726
208030	MC	7	31	1	31	2013	0.80	0.83	-0.6191	-0.6823
699174	MC	10	69	1	69	2013	0.80	0.82	-0.6018	-0.6796
475058	MC	6	34	4	71	2013	0.58	0.60	0.7405	0.7219
662423	MC	8	31	11	31	2013	0.65	0.69	0.4158	0.2516
474520	MC	9	71	9	71	2013	0.43	0.43	1.5526	1.6576
730877	MC	2	69	11	69	2013	0.62	0.66	0.5887	0.4081
460113	MC	11	30	4	30	2013	0.55	0.59	0.9383	0.8036
674538	MC	4	69	11	32	2013	0.80	0.80	-0.5114	-0.5338
752124	MC	12	30	9	30	2013	0.82	0.81	-0.6574	-0.5698
944928	MC	9	31	9	31	2013	0.67	0.65	0.3182	0.4774
966968	MC	8	70	6	33	2013	0.58	0.56	0.7949	0.9548
107340	SCR	0	72	0	72	2013	0.56	0.58	0.8806	0.8528
299002	SCR	0	73	0	73	2013	0.63	0.64	0.4981	0.4876
						Mean	0.68	0.69	0.15	0.15

Science Grade 8

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
263931	MC	0	1	0	1	2013	0.82	0.83	-1.1949	-1.2743
475280	MC	0	2	0	2	2013	0.84	0.85	-1.4300	-1.4494
130392	MC	0	4	0	4	2013	0.70	0.72	-0.4302	-0.4872
788480	MC	0	5	0	5	2013	0.59	0.59	0.1385	0.1944
486390	MC	0	6	0	6	2013	0.75	0.74	-0.7082	-0.7005
240709	MC	0	11	0	11	2013	0.71	0.72	-0.4814	-0.5238
238278	MC	0	12	0	12	2013	0.80	0.80	-1.0130	-1.0078
785295	MC	0	14	0	14	2013	0.67	0.68	-0.2984	-0.3857
931017	MC	0	15	0	15	2013	0.71	0.72	-0.4225	-0.4539
847050	MC	0	24	0	24	2013	0.71	0.74	-0.4477	-0.7346
366282	MC	0	39	0	39	2013	0.80	0.81	-1.1807	-1.2786
357714	MC	0	44	0	44	2013	0.75	0.79	-0.7523	-1.0498
982562	MC	0	46	0	46	2013	0.73	0.72	-0.7255	-0.4613
288836	MC	0	48	0	48	2013	0.66	0.67	-0.1390	-0.1831
851347	MC	0	49	0	49	2013	0.68	0.69	-0.2732	-0.2976
555840	MC	0	59	0	59	2013	0.73	0.71	-0.6701	-0.5533
416451	MC	6	33	6	33	2013	0.36	0.41	1.3513	1.1593
336669	MC	9	70	3	70	2013	0.52	0.55	0.5166	0.4600
463092	MC	3	71	3	71	2013	0.60	0.62	0.1501	0.0694
174171	MC	12	72	2	34	2013	0.52	0.51	0.5698	0.6173
754104	MC	2	32	3	32	2013	0.68	0.66	-0.3205	-0.1803
994229	MC	8	73	3	73	2013	0.59	0.61	0.1694	0.0806
117232	MC	4	34	7	72	2013	0.48	0.54	0.7865	0.5101
886449	MC	5	70	1	70	2013	0.70	0.69	-0.4322	-0.3531
161866	MC	5	35	8	35	2013	0.64	0.66	-0.0542	-0.1547
592347	MC	10	35	6	73	2013	0.54	0.57	0.4608	0.3214
670899	MC	12	33	7	33	2013	0.56	0.57	0.3470	0.3399
306248	MC	11	32	4	32	2013	0.61	0.66	0.0746	-0.1362
954841	MC	7	34	12	34	2013	0.67	0.50	-0.2228	0.6626
667555	MC	7	73	2	73	2013	0.67	0.68	-0.2565	-0.2490
345086	MC	1	33	2	33	2013	0.51	0.50	0.5984	0.6064
882081	MC	10	70	6	70	2013	0.56	0.54	0.3285	0.4858
887071	MC	1	72	6	72	2013	0.53	0.56	0.4971	0.3317
820471	MC	4	72	12	72	2013	0.69	0.67	-0.3278	-0.2287
273941	MC	11	71	11	71	2013	0.60	0.60	0.1317	0.1776
275546	MC	3	34	3	34	2013	0.65	0.62	-0.1130	0.0272
368452	MC	8	32	10	32	2013	0.64	0.64	-0.0504	-0.0758
238324	MC	9	34	7	34	2013	0.56	0.63	0.3265	0.0051
253386	MC	2	70	9	32	2013	0.50	0.48	0.6380	0.7966
901437	MC	6	73	6	35	2013	0.54	0.53	0.4270	0.5588
966808	SCR	0	38	0	38	2013	0.48	0.47	0.7654	0.8151
832619	SCR	0	75	0	75	2013	0.58	0.54	0.2412	0.4772
						Mean	0.63	0.64	-0.08	-0.08

Writing Grade 5

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
118533	MC	1	1	3	13	2009	0.85	0.86	-0.6318	-0.8342
597893	MC	1	2	3	14	2009	0.86	0.88	-0.7630	-1.0630
431220	MC	1	3	3	15	2009	0.59	0.68	1.5355	1.0267
613475	MC	1	4	3	16	2009	0.64	0.66	1.1652	1.1318
176942	MC	1	5	6	13	2009	0.61	0.65	1.4075	1.2462
401704	MC	1	6	6	14	2009	0.52	0.59	2.0063	1.7205
343537	MC	1	7	6	15	2009	0.68	0.71	0.9266	0.7798
547148	MC	1	8	6	16	2009	0.66	0.68	1.0896	0.9964
728403	MC	1	9	1	13	2009	0.72	0.70	0.6151	0.8613
657763	MC	1	10	1	14	2009	0.82	0.82	-0.2500	-0.3434
336952	MC	1	11	1	15	2009	0.61	0.65	1.3632	1.2556
745699	MC	1	12	1	16	2009	0.72	0.72	0.5550	0.6846
502220	WP	1	13	4	21	2012	0.67	0.63	1.7233	2.7710
502220	WP	1	13	4	21	2012	0.66	0.62	1.9892	2.9769
401156	WP	1	14	0	23	2011	0.64	0.61	2.7019	3.0410
401156	WP	1	14	0	23	2011	0.64	0.61	2.6811	3.0682
						Mean	0.68	0.69	1.13	1.21

Writing Grade 8

PubID	Type	Form	Seq	Prev Form	Prev Seq	Prev Year	Prev P-Val	P-Val	Prev Meas	Meas
100048	MC	1	1	2	13	2013	0.76	0.77	0.6561	0.4446
759431	MC	1	2	2	14	2013	0.74	0.75	0.8616	0.6314
301527	MC	1	3	2	15	2013	0.62	0.62	1.7930	1.6969
329565	MC	1	4	2	16	2013	0.73	0.72	0.9171	0.9170
873175	MC	1	5	2	6	2012	0.51	0.48	2.5534	2.7813
376527	MC	1	6	2	5	2012	0.77	0.79	0.5706	0.2962
238868	MC	1	7	2	8	2012	0.52	0.53	2.4914	2.4093
374496	MC	1	8	2	7	2012	0.70	0.70	1.1139	1.1094
699346	MC	1	9	5	5	2013	0.64	0.63	1.6641	1.6824
354546	MC	1	10	5	6	2013	0.73	0.70	0.9609	1.1189
928356	MC	1	11	5	7	2013	0.69	0.61	1.2641	1.7694
445588	MC	1	12	5	8	2013	0.64	0.62	1.6658	1.7130
127031	WP	1	13	5	22	2011	0.70	0.69	1.4205	1.6622
127031	WP	1	13	5	22	2011	0.69	0.69	1.8534	1.7499
738344	WP	1	14	2	23	2013	0.67	0.66	2.0491	2.2255
738344	WP	1	14	2	23	2013	0.66	0.66	2.2495	2.3099
						Mean	0.67	0.66	1.51	1.53

Appendix P:

Reliabilities

Column Heading	Definition
Strand	Strand (Tot.=total)
Group	Subgroup
Pts.	Points possible
Len.	Length
N	N
Mean	Mean
SD	Standard deviation
r	Reliability coefficient
SEM	Standard error of measurement
Items	Item types present

Mathematics Grade 3

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	124702	51.9	14.71	0.95	3.3	MC*OE
	A	All	40	37	124702	28.1	9.09	0.93	2.5	MC*OE
	B	All	10	10	124702	6.9	2.61	0.80	1.2	MC
	C	All	-	-	-	-	-	-	-	-
	D	All	11	8	124702	7.7	2.27	0.60	1.4	MC*OE
	E	All	11	8	124702	9.2	2.14	0.68	1.2	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	63862	52.1	14.93	0.95	3.3	MC*OE
		Female	72	63	60758	51.8	14.47	0.95	3.4	MC*OE
	A	Male	40	37	63862	28.2	9.18	0.93	2.5	MC*OE
		Female	40	37	60758	28.0	8.98	0.92	2.5	MC*OE
	B	Male	10	10	63862	7.2	2.57	0.80	1.2	MC
		Female	10	10	60758	6.6	2.63	0.79	1.2	MC
	C	Male	-	-	-	-	-	-	-	-
		Female	-	-	-	-	-	-	-	-
	D	Male	11	8	63862	7.6	2.29	0.62	1.4	MC*OE
		Female	11	8	60758	7.8	2.25	0.59	1.4	MC*OE
	E	Male	11	8	63862	9.1	2.21	0.69	1.2	MC*OE
		Female	11	8	60758	9.3	2.06	0.67	1.2	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	84688	55.0	12.96	0.94	3.2	MC*OE
		Af. Amer.	72	63	18367	41.7	15.28	0.94	3.6	MC*OE
		Hispanic	72	63	12424	44.7	15.42	0.95	3.6	MC*OE
		Asian	72	63	4494	59.0	12.23	0.94	3.0	MC*OE
		Am. Indian	72	63	207	49.3	14.12	0.94	3.5	MC*OE
		Pacific Islander	72	63	77	52.9	13.12	0.93	3.4	MC*OE
		Multi	72	63	4340	48.4	15.55	0.95	3.5	MC*OE
	A	White	40	37	84688	29.9	8.16	0.91	2.4	MC*OE
		Af. Amer.	40	37	18367	22.1	9.23	0.92	2.7	MC*OE
		Hispanic	40	37	12424	23.6	9.37	0.92	2.6	MC*OE
		Asian	40	37	4494	32.4	7.69	0.92	2.2	MC*OE
		Am. Indian	40	37	207	26.2	8.60	0.91	2.6	MC*OE
		Pacific Islander	40	37	77	28.4	8.44	0.91	2.5	MC*OE
		Multi	40	37	4340	25.9	9.49	0.93	2.6	MC*OE
	B	White	10	10	84688	7.4	2.43	0.78	1.1	MC
		Af. Amer.	10	10	18367	5.3	2.57	0.74	1.3	MC
		Hispanic	10	10	12424	5.9	2.65	0.77	1.3	MC
		Asian	10	10	4494	8.0	2.23	0.78	1.0	MC
		Am. Indian	10	10	207	6.6	2.57	0.77	1.2	MC
		Pacific Islander	10	10	77	7.2	2.37	0.75	1.2	MC
		Multi	10	10	4340	6.4	2.69	0.79	1.2	MC
	C	White	-	-	-	-	-	-	-	-
		Af. Amer.	-	-	-	-	-	-	-	-
		Hispanic	-	-	-	-	-	-	-	-
		Asian	-	-	-	-	-	-	-	-
		Am. Indian	-	-	-	-	-	-	-	-
		Pacific Islander	-	-	-	-	-	-	-	-
		Multi	-	-	-	-	-	-	-	-

	White	11	8	84688	8.1	2.06	0.54	1.4	MC*OE
	Af. Amer.	11	8	18367	6.5	2.45	0.66	1.4	MC*OE
	Hispanic	11	8	12424	6.7	2.41	0.65	1.4	MC*OE
D	Asian	11	8	4494	8.7	1.98	0.53	1.4	MC*OE
	Am. Indian	11	8	207	7.5	2.25	0.61	1.4	MC*OE
	Pacific Islander	11	8	77	8.1	2.14	0.50	1.5	MC*OE
	Multi	11	8	4340	7.3	2.41	0.64	1.5	MC*OE
	White	11	8	84688	9.6	1.76	0.60	1.1	MC*OE
	Af. Amer.	11	8	18367	7.9	2.67	0.73	1.4	MC*OE
	Hispanic	11	8	12424	8.3	2.54	0.73	1.3	MC*OE
E	Asian	11	8	4494	9.9	1.67	0.62	1.0	MC*OE
	Am. Indian	11	8	207	8.8	2.32	0.71	1.2	MC*OE
	Pacific Islander	11	8	77	9.3	1.68	0.49	1.2	MC*OE
	Multi	11	8	4340	8.8	2.39	0.71	1.3	MC*OE

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	4152	39.1	15.28	0.94	3.6	MC*OE
A	All	40	37	4152	20.2	9.15	0.91	2.7	MC*OE
B	All	10	10	4152	5.4	2.56	0.74	1.3	MC
C	All	-	-	-	-	-	-	-	-
D	All	11	8	4152	6.0	2.43	0.67	1.4	MC*OE
E	All	11	8	4152	7.5	2.81	0.74	1.4	MC*OE

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	19162	40.7	16.72	0.95	3.6	MC*OE
A	All	40	37	19162	21.4	9.98	0.93	2.7	MC*OE
B	All	10	10	19162	5.6	2.75	0.78	1.3	MC
C	All	-	-	-	-	-	-	-	-
D	All	11	8	19162	6.1	2.64	0.69	1.5	MC*OE
E	All	11	8	19162	7.7	2.85	0.75	1.4	MC*OE

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	59457	46.0	15.25	0.95	3.5	MC*OE
A	All	40	37	59457	24.5	9.32	0.92	2.6	MC*OE
B	All	10	10	59457	6.0	2.66	0.77	1.3	MC
C	All	-	-	-	-	-	-	-	-
D	All	11	8	59457	6.9	2.38	0.64	1.4	MC*OE
E	All	11	8	59457	8.5	2.45	0.71	1.3	MC*OE

Mathematics Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126911	50.0	14.66	0.94	3.6	MC*OE
	A	All	35	32	126911	25.1	7.49	0.90	2.4	MC*OE
	B	All	10	7	126911	6.0	2.63	0.67	1.5	MC*OE
	C	All	10	10	126911	6.3	2.51	0.72	1.3	MC
	D	All	10	10	126911	7.7	2.16	0.70	1.2	MC
	E	All	7	4	126911	5.0	1.92	0.52	1.3	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64748	50.1	14.82	0.94	3.6	MC*OE
		Female	72	63	62088	49.8	14.49	0.94	3.6	MC*OE
	A	Male	35	32	64748	25.2	7.57	0.90	2.3	MC*OE
		Female	35	32	62088	24.9	7.39	0.90	2.4	MC*OE
	B	Male	10	7	64748	6.1	2.58	0.67	1.5	MC*OE
		Female	10	7	62088	5.8	2.69	0.68	1.5	MC*OE
	C	Male	10	10	64748	6.3	2.56	0.73	1.3	MC
		Female	10	10	62088	6.3	2.46	0.70	1.3	MC
	D	Male	10	10	64748	7.6	2.19	0.71	1.2	MC
		Female	10	10	62088	7.7	2.13	0.70	1.2	MC
	E	Male	7	4	64748	4.9	1.93	0.52	1.3	MC*OE
		Female	7	4	62088	5.1	1.90	0.51	1.3	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	87296	53.0	13.01	0.93	3.5	MC*OE
		Af. Amer.	72	63	18392	39.4	15.06	0.93	3.8	MC*OE
		Hispanic	72	63	12331	42.5	15.11	0.94	3.8	MC*OE
		Asian	72	63	4678	57.4	12.56	0.93	3.2	MC*OE
		Am. Indian	72	63	177	47.5	15.40	0.94	3.7	MC*OE
		Pacific Islande	72	63	83	52.6	13.12	0.93	3.5	MC*OE
		Multi	72	63	3861	46.9	15.07	0.94	3.7	MC*OE
	A	White	35	32	87296	26.5	6.65	0.88	2.3	MC*OE
		Af. Amer.	35	32	18392	19.9	7.86	0.89	2.6	MC*OE
		Hispanic	35	32	12331	21.4	7.89	0.90	2.5	MC*OE
		Asian	35	32	4678	28.9	6.20	0.89	2.0	MC*OE
		Am. Indian	35	32	177	23.9	8.03	0.91	2.4	MC*OE
		Pacific Islande	35	32	83	27.0	6.47	0.88	2.2	MC*OE
		Multi	35	32	3861	23.6	7.75	0.90	2.5	MC*OE
	B	White	10	7	87296	6.4	2.48	0.64	1.5	MC*OE
		Af. Amer.	10	7	18392	4.3	2.49	0.67	1.4	MC*OE
		Hispanic	10	7	12331	4.7	2.55	0.68	1.4	MC*OE
		Asian	10	7	4678	7.1	2.44	0.65	1.4	MC*OE
		Am. Indian	10	7	177	5.8	2.66	0.66	1.6	MC*OE
		Pacific Islande	10	7	83	6.0	2.61	0.69	1.5	MC*OE
		Multi	10	7	3861	5.5	2.64	0.68	1.5	MC*OE
	C	White	10	10	87296	6.7	2.40	0.70	1.3	MC
		Af. Amer.	10	10	18392	4.8	2.38	0.64	1.4	MC
		Hispanic	10	10	12331	5.3	2.45	0.67	1.4	MC
		Asian	10	10	4678	7.2	2.42	0.74	1.2	MC
		Am. Indian	10	10	177	5.7	2.46	0.68	1.4	MC
		Pacific Islande	10	10	83	6.7	2.48	0.72	1.3	MC
		Multi	10	10	3861	5.9	2.52	0.70	1.4	MC

	White	10	10	87296	8.0	1.96	0.67	1.1	MC
	Af. Amer.	10	10	18392	6.5	2.42	0.70	1.3	MC
	Hispanic	10	10	12331	6.8	2.33	0.69	1.3	MC
D	Asian	10	10	4678	8.6	1.71	0.68	1.0	MC
	Am. Indian	10	10	177	7.4	2.23	0.70	1.2	MC
	Pacific Islande	10	10	83	8.0	1.88	0.64	1.1	MC
	Multi	10	10	3861	7.3	2.27	0.70	1.2	MC
	White	7	4	87296	5.3	1.71	0.43	1.3	MC*OE
	Af. Amer.	7	4	18392	3.8	2.13	0.60	1.3	MC*OE
	Hispanic	7	4	12331	4.2	2.11	0.58	1.4	MC*OE
E	Asian	7	4	4678	5.6	1.68	0.43	1.3	MC*OE
	Am. Indian	7	4	177	4.7	1.97	0.51	1.4	MC*OE
	Pacific Islande	7	4	83	4.9	1.87	0.40	1.5	MC*OE
	Multi	7	4	3861	4.6	2.03	0.55	1.4	MC*OE

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	3165	33.4	13.99	0.92	3.8	MC*OE
A	All	35	32	3165	16.8	7.47	0.88	2.6	MC*OE
B	All	10	7	3165	3.6	2.28	0.65	1.4	MC*OE
C	All	10	10	3165	4.2	2.14	0.54	1.4	MC
D	All	10	10	3165	5.7	2.34	0.64	1.4	MC
E	All	7	4	3165	3.1	2.08	0.63	1.3	MC*OE

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	20361	37.9	16.11	0.94	3.8	MC*OE
A	All	35	32	20361	19.0	8.44	0.91	2.6	MC*OE
B	All	10	7	20361	4.2	2.62	0.70	1.4	MC*OE
C	All	10	10	20361	4.7	2.44	0.67	1.4	MC
D	All	10	10	20361	6.1	2.51	0.71	1.3	MC
E	All	7	4	20361	3.8	2.18	0.63	1.3	MC*OE

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	59250	43.7	15.01	0.94	3.8	MC*OE
A	All	35	32	59250	22.0	7.80	0.90	2.5	MC*OE
B	All	10	7	59250	5.0	2.57	0.67	1.5	MC*OE
C	All	10	10	59250	5.4	2.46	0.68	1.4	MC
D	All	10	10	59250	6.9	2.31	0.69	1.3	MC
E	All	7	4	59250	4.4	2.06	0.57	1.4	MC*OE

Mathematics Grade 5

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126693	46.4	15.55	0.95	3.6	MC*OE
	A	All	37	34	126693	24.8	8.42	0.91	2.5	MC*OE
	B	All	9	9	126693	5.4	2.44	0.74	1.2	MC
	C	All	9	6	126693	5.6	2.33	0.61	1.5	MC*OE
	D	All	12	9	126693	7.1	2.69	0.72	1.4	MC*OE
	E	All	5	5	126693	3.5	1.41	0.64	0.9	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64476	46.6	15.75	0.95	3.5	MC*OE
		Female	72	63	62137	46.2	15.33	0.95	3.6	MC*OE
	A	Male	37	34	64476	24.9	8.49	0.92	2.4	MC*OE
		Female	37	34	62137	24.8	8.33	0.91	2.5	MC*OE
	B	Male	9	9	64476	5.5	2.45	0.75	1.2	MC
		Female	9	9	62137	5.2	2.42	0.73	1.3	MC
	C	Male	9	6	64476	5.5	2.37	0.62	1.5	MC*OE
		Female	9	6	62137	5.6	2.29	0.60	1.4	MC*OE
	D	Male	12	9	64476	7.1	2.74	0.73	1.4	MC*OE
		Female	12	9	62137	7.1	2.63	0.71	1.4	MC*OE
	E	Male	5	5	64476	3.6	1.40	0.63	0.8	MC
		Female	5	5	62137	3.5	1.42	0.64	0.9	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	88106	49.5	14.21	0.94	3.5	MC*OE
		Af. Amer.	72	63	18557	35.2	14.68	0.94	3.7	MC*OE
		Hispanic	72	63	11795	38.1	15.18	0.94	3.7	MC*OE
		Asian	72	63	4575	55.2	13.93	0.95	3.2	MC*OE
		Am. Indian	72	63	175	44.6	15.55	0.95	3.6	MC*OE
		Pacific Islande	72	63	82	50.3	15.34	0.95	3.4	MC*OE
		Multi	72	63	3305	43.5	15.41	0.94	3.6	MC*OE
	A	White	37	34	88106	26.5	7.71	0.90	2.4	MC*OE
		Af. Amer.	37	34	18557	19.0	8.09	0.89	2.6	MC*OE
		Hispanic	37	34	11795	20.5	8.26	0.90	2.6	MC*OE
		Asian	37	34	4575	29.6	7.27	0.91	2.2	MC*OE
		Am. Indian	37	34	175	24.0	8.50	0.92	2.5	MC*OE
		Pacific Islande	37	34	82	27.0	8.12	0.92	2.3	MC*OE
		Multi	37	34	3305	23.2	8.41	0.91	2.5	MC*OE
	B	White	9	9	88106	5.8	2.31	0.72	1.2	MC
		Af. Amer.	9	9	18557	3.8	2.25	0.67	1.3	MC
		Hispanic	9	9	11795	4.3	2.40	0.72	1.3	MC
		Asian	9	9	4575	6.7	2.19	0.74	1.1	MC
		Am. Indian	9	9	175	5.2	2.47	0.73	1.3	MC
		Pacific Islande	9	9	82	6.0	2.31	0.72	1.2	MC
		Multi	9	9	3305	5.0	2.43	0.73	1.3	MC
	C	White	9	6	88106	6.0	2.20	0.58	1.4	MC*OE
		Af. Amer.	9	6	18557	4.2	2.23	0.57	1.5	MC*OE
		Hispanic	9	6	11795	4.6	2.32	0.59	1.5	MC*OE
		Asian	9	6	4575	6.5	2.23	0.62	1.4	MC*OE
		Am. Indian	9	6	175	5.2	2.28	0.57	1.5	MC*OE
		Pacific Islande	9	6	82	5.9	2.45	0.67	1.4	MC*OE
		Multi	9	6	3305	5.3	2.33	0.60	1.5	MC*OE

	White	12	9	88106	7.5	2.54	0.70	1.4	MC*OE
	Af. Amer.	12	9	18557	5.5	2.60	0.69	1.5	MC*OE
	Hispanic	12	9	11795	5.9	2.63	0.70	1.4	MC*OE
D	Asian	12	9	4575	8.5	2.50	0.71	1.3	MC*OE
	Am. Indian	12	9	175	6.8	2.70	0.71	1.4	MC*OE
	Pacific Islande	12	9	82	7.8	2.66	0.75	1.3	MC*OE
	Multi	12	9	3305	6.7	2.65	0.71	1.4	MC*OE
	White	5	5	88106	3.8	1.26	0.58	0.8	MC
	Af. Amer.	5	5	18557	2.7	1.54	0.62	1.0	MC
	Hispanic	5	5	11795	2.8	1.53	0.62	0.9	MC
E	Asian	5	5	4575	4.0	1.29	0.67	0.7	MC
	Am. Indian	5	5	175	3.4	1.42	0.63	0.9	MC
	Pacific Islande	5	5	82	3.7	1.36	0.65	0.8	MC
	Multi	5	5	3305	3.3	1.43	0.61	0.9	MC

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	2798	28.0	12.61	0.91	3.7	MC*OE
A	All	37	34	2798	15.5	7.07	0.86	2.7	MC*OE
B	All	9	9	2798	3.1	2.15	0.65	1.3	MC
C	All	9	6	2798	3.1	1.95	0.50	1.4	MC*OE
D	All	12	9	2798	4.4	2.41	0.62	1.5	MC*OE
E	All	5	5	2798	1.9	1.32	0.44	1.0	MC

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	20157	33.0	15.36	0.94	3.7	MC*OE
A	All	37	34	20157	17.9	8.36	0.90	2.6	MC*OE
B	All	9	9	20157	3.7	2.41	0.72	1.3	MC
C	All	9	6	20157	3.9	2.29	0.59	1.5	MC*OE
D	All	12	9	20157	5.0	2.71	0.70	1.5	MC*OE
E	All	5	5	20157	2.5	1.51	0.60	1.0	MC

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	57720	39.4	15.11	0.94	3.7	MC*OE
A	All	37	34	57720	21.1	8.26	0.90	2.6	MC*OE
B	All	9	9	57720	4.4	2.38	0.71	1.3	MC
C	All	9	6	57720	4.7	2.30	0.59	1.5	MC*OE
D	All	12	9	57720	6.1	2.63	0.70	1.4	MC*OE
E	All	5	5	57720	3.0	1.50	0.62	0.9	MC

Mathematics Grade 6

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	126128	48.0	14.27	0.94	3.4	MC*OE
	A	All	31	28	126128	20.6	6.70	0.88	2.3	MC*OE
	B	All	-	-	-	-	-	-	-	-
	C	All	11	8	126128	7.2	2.52	0.76	1.2	MC*OE
	D	All	15	12	126128	10.0	3.18	0.77	1.5	MC*OE
	E	All	15	15	126128	10.2	3.78	0.84	1.5	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	64677	47.4	14.67	0.94	3.4	MC*OE
		Female	72	63	61347	48.6	13.81	0.94	3.4	MC*OE
	A	Male	31	28	64677	20.6	6.83	0.89	2.3	MC*OE
		Female	31	28	61347	20.7	6.55	0.88	2.3	MC*OE
	B	Male	-	-	-	-	-	-	-	-
		Female	-	-	-	-	-	-	-	-
	C	Male	11	8	64677	7.0	2.66	0.78	1.3	MC*OE
		Female	11	8	61347	7.3	2.37	0.75	1.2	MC*OE
	D	Male	15	12	64677	9.9	3.21	0.78	1.5	MC*OE
		Female	15	12	61347	10.2	3.14	0.76	1.5	MC*OE
	E	Male	15	15	64677	9.9	3.85	0.84	1.5	MC
		Female	15	15	61347	10.4	3.68	0.83	1.5	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	88110	50.5	13.23	0.94	3.4	MC*OE
		Af. Amer.	72	63	18726	38.7	13.83	0.93	3.6	MC*OE
		Hispanic	72	63	11684	41.1	13.86	0.93	3.6	MC*OE
		Asian	72	63	4425	56.6	12.44	0.94	3.1	MC*OE
		Am. Indian	72	63	191	46.8	14.35	0.94	3.5	MC*OE
		Pacific Islande	72	63	78	52.1	11.56	0.92	3.3	MC*OE
		Multi	72	63	2737	45.4	14.42	0.94	3.5	MC*OE
	A	White	31	28	88110	21.7	6.33	0.88	2.2	MC*OE
		Af. Amer.	31	28	18726	16.6	6.36	0.85	2.5	MC*OE
		Hispanic	31	28	11684	17.7	6.42	0.86	2.4	MC*OE
		Asian	31	28	4425	24.7	5.83	0.89	2.0	MC*OE
		Am. Indian	31	28	191	20.0	6.57	0.87	2.4	MC*OE
		Pacific Islande	31	28	78	23.1	5.65	0.86	2.1	MC*OE
		Multi	31	28	2737	19.5	6.75	0.88	2.4	MC*OE
	B	White	-	-	-	-	-	-	-	-
		Af. Amer.	-	-	-	-	-	-	-	-
		Hispanic	-	-	-	-	-	-	-	-
		Asian	-	-	-	-	-	-	-	-
		Am. Indian	-	-	-	-	-	-	-	-
		Pacific Islande	-	-	-	-	-	-	-	-
		Multi	-	-	-	-	-	-	-	-
	C	White	11	8	88110	7.5	2.36	0.72	1.2	MC*OE
		Af. Amer.	11	8	18726	5.9	2.71	0.84	1.1	MC*OE
		Hispanic	11	8	11684	6.4	2.60	0.83	1.1	MC*OE
		Asian	11	8	4425	8.2	2.27	0.63	1.4	MC*OE
		Am. Indian	11	8	191	7.0	2.68	0.78	1.3	MC*OE
		Pacific Islande	11	8	78	7.9	1.85	0.62	1.1	MC*OE
		Multi	11	8	2737	6.8	2.60	0.79	1.2	MC*OE

	White	15	12	88110	10.5	2.92	0.75	1.5	MC*OE
	Af. Amer.	15	12	18726	8.1	3.30	0.76	1.6	MC*OE
	Hispanic	15	12	11684	8.6	3.31	0.77	1.6	MC*OE
D	Asian	15	12	4425	11.6	2.74	0.74	1.4	MC*OE
	Am. Indian	15	12	191	9.9	3.08	0.75	1.6	MC*OE
	Pacific Islande	15	12	78	10.7	3.08	0.77	1.5	MC*OE
	Multi	15	12	2737	9.5	3.25	0.77	1.6	MC*OE
	White	15	15	88110	10.8	3.58	0.83	1.5	MC
	Af. Amer.	15	15	18726	8.1	3.69	0.80	1.6	MC
	Hispanic	15	15	11684	8.5	3.71	0.81	1.6	MC
E	Asian	15	15	4425	12.0	3.16	0.83	1.3	MC
	Am. Indian	15	15	191	9.9	3.99	0.86	1.5	MC
	Pacific Islande	15	15	78	10.4	3.43	0.80	1.5	MC
	Multi	15	15	2737	9.7	3.78	0.83	1.6	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	72	63	2748	32.5	12.14	0.91	3.7	MC*OE
	A	All	31	28	2748	14.2	5.55	0.79	2.5	MC*OE
	B	All	-	-	-	-	-	-	-	-
	C	All	11	8	2748	5.4	2.71	0.84	1.1	MC*OE
	D	All	15	12	2748	6.4	3.10	0.72	1.6	MC*OE
	E	All	15	15	2748	6.5	3.30	0.74	1.7	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	72	63	19617	34.2	13.83	0.93	3.7	MC*OE
	A	All	31	28	19617	14.6	6.33	0.84	2.5	MC*OE
	B	All	-	-	-	-	-	-	-	-
	C	All	11	8	19617	5.6	2.77	0.83	1.1	MC*OE
	D	All	15	12	19617	7.0	3.36	0.77	1.6	MC*OE
	E	All	15	15	19617	7.1	3.61	0.79	1.7	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	72	63	56875	42.0	14.01	0.93	3.6	MC*OE
	A	All	31	28	56875	17.9	6.51	0.86	2.4	MC*OE
	B	All	-	-	-	-	-	-	-	-
	C	All	11	8	56875	6.4	2.60	0.82	1.1	MC*OE
	D	All	15	12	56875	8.8	3.28	0.77	1.6	MC*OE
	E	All	15	15	56875	8.8	3.77	0.82	1.6	MC

Mathematics Grade 7

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	130189	44.9	15.41	0.94	3.7	MC*OE
	A	All	22	19	130189	14.9	4.66	0.81	2.0	MC*OE
	B	All	12	12	130189	7.8	3.22	0.82	1.4	MC
	C	All	-	-	-	-	-	-	-	-
	D	All	24	21	130189	14.1	5.85	0.86	2.2	MC*OE
	E	All	14	11	130189	8.1	3.08	0.73	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	66583	44.7	15.79	0.95	3.7	MC*OE
		Female	72	63	63523	45.3	14.98	0.94	3.7	MC*OE
	A	Male	22	19	66583	14.6	4.80	0.82	2.0	MC*OE
		Female	22	19	63523	15.2	4.50	0.80	2.0	MC*OE
	B	Male	12	12	66583	7.7	3.25	0.82	1.4	MC
		Female	12	12	63523	7.9	3.18	0.81	1.4	MC
	C	Male	-	-	-	-	-	-	-	-
		Female	-	-	-	-	-	-	-	-
	D	Male	24	21	66583	14.2	5.93	0.86	2.2	MC*OE
		Female	24	21	63523	14.0	5.76	0.85	2.2	MC*OE
	E	Male	14	11	66583	8.1	3.15	0.74	1.6	MC*OE
		Female	14	11	63523	8.2	2.99	0.71	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	91992	47.7	14.39	0.94	3.6	MC*OE
		Af. Amer.	72	63	18937	34.9	14.19	0.93	3.8	MC*OE
		Hispanic	72	63	11901	36.7	14.55	0.93	3.8	MC*OE
		Asian	72	63	4473	55.0	13.90	0.94	3.3	MC*OE
		Am. Indian	72	63	189	41.7	14.59	0.93	3.8	MC*OE
		Pacific Islande	72	63	96	46.4	14.79	0.94	3.7	MC*OE
		Multi	72	63	2495	41.3	15.68	0.94	3.7	MC*OE
	A	White	22	19	91992	15.6	4.34	0.79	2.0	MC*OE
		Af. Amer.	22	19	18937	12.3	4.78	0.80	2.2	MC*OE
		Hispanic	22	19	11901	12.8	4.73	0.79	2.2	MC*OE
		Asian	22	19	4473	17.8	3.88	0.81	1.7	MC*OE
		Am. Indian	22	19	189	14.0	4.46	0.77	2.1	MC*OE
		Pacific Islande	22	19	96	15.5	4.66	0.82	2.0	MC*OE
		Multi	22	19	2495	13.8	4.81	0.81	2.1	MC*OE
	B	White	12	12	91992	8.3	3.04	0.81	1.3	MC
		Af. Amer.	12	12	18937	5.9	3.01	0.75	1.5	MC
		Hispanic	12	12	11901	6.3	3.15	0.78	1.5	MC
		Asian	12	12	4473	9.6	2.74	0.82	1.2	MC
		Am. Indian	12	12	189	7.3	3.19	0.80	1.4	MC
		Pacific Islande	12	12	96	8.0	2.98	0.79	1.4	MC
		Multi	12	12	2495	7.1	3.27	0.81	1.4	MC
	C	White	-	-	-	-	-	-	-	-
		Af. Amer.	-	-	-	-	-	-	-	-
		Hispanic	-	-	-	-	-	-	-	-
		Asian	-	-	-	-	-	-	-	-
		Am. Indian	-	-	-	-	-	-	-	-
		Pacific Islande	-	-	-	-	-	-	-	-
		Multi	-	-	-	-	-	-	-	-

	White	24	21	91992	15.1	5.57	0.84	2.2	MC*OE
	Af. Amer.	24	21	18937	10.5	5.18	0.82	2.2	MC*OE
	Hispanic	24	21	11901	11.1	5.37	0.83	2.2	MC*OE
D	Asian	24	21	4473	17.8	5.49	0.86	2.0	MC*OE
	Am. Indian	24	21	189	13.0	5.46	0.83	2.3	MC*OE
	Pacific Islande	24	21	96	14.6	5.79	0.85	2.3	MC*OE
	Multi	24	21	2495	12.9	5.88	0.86	2.2	MC*OE
	White	14	11	91992	8.7	2.88	0.69	1.6	MC*OE
	Af. Amer.	14	11	18937	6.2	2.89	0.71	1.5	MC*OE
	Hispanic	14	11	11901	6.6	2.98	0.73	1.6	MC*OE
E	Asian	14	11	4473	9.8	2.98	0.71	1.6	MC*OE
	Am. Indian	14	11	189	7.5	2.96	0.72	1.6	MC*OE
	Pacific Islande	14	11	96	8.3	2.89	0.71	1.6	MC*OE
	Multi	14	11	2495	7.5	3.13	0.74	1.6	MC*OE

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	2867	27.5	12.07	0.90	3.8	MC*OE
A	All	22	19	2867	10.2	4.65	0.78	2.2	MC*OE
B	All	12	12	2867	4.7	2.70	0.69	1.5	MC
C	All	-	-	-	-	-	-	-	-
D	All	24	21	2867	7.9	4.23	0.74	2.1	MC*OE
E	All	14	11	2867	4.7	2.49	0.64	1.5	MC*OE

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	19994	29.9	13.68	0.92	3.8	MC*OE
A	All	22	19	19994	10.5	4.76	0.79	2.2	MC*OE
B	All	12	12	19994	5.0	2.92	0.73	1.5	MC
C	All	-	-	-	-	-	-	-	-
D	All	24	21	19994	9.0	4.92	0.80	2.2	MC*OE
E	All	14	11	19994	5.5	2.80	0.70	1.5	MC*OE

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	57034	38.2	14.67	0.93	3.8	MC*OE
A	All	22	19	57034	13.1	4.71	0.79	2.1	MC*OE
B	All	12	12	57034	6.5	3.17	0.79	1.5	MC
C	All	-	-	-	-	-	-	-	-
D	All	24	21	57034	11.7	5.44	0.83	2.2	MC*OE
E	All	14	11	57034	6.9	2.97	0.72	1.6	MC*OE

Mathematics Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	72	63	131363	48.3	15.62	0.95	3.5	MC*OE
	A	All	13	10	131363	8.5	3.07	0.77	1.5	MC*OE
	B	All	-	-	-	-	-	-	-	-
	C	All	14	11	131363	7.9	4.41	0.85	1.7	MC*OE
	D	All	34	31	131363	24.0	7.78	0.91	2.3	MC*OE
	E	All	11	11	131363	7.9	2.41	0.73	1.3	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	72	63	67170	47.3	16.08	0.95	3.6	MC*OE
		Female	72	63	64034	49.4	15.04	0.95	3.5	MC*OE
	A	Male	13	10	67170	8.4	3.14	0.78	1.5	MC*OE
		Female	13	10	64034	8.6	3.00	0.77	1.5	MC*OE
	B	Male	-	-	-	-	-	-	-	-
		Female	-	-	-	-	-	-	-	-
	C	Male	14	11	67170	7.7	4.34	0.85	1.7	MC*OE
		Female	14	11	64034	8.2	4.46	0.86	1.7	MC*OE
	D	Male	34	31	67170	23.3	8.09	0.92	2.3	MC*OE
		Female	34	31	64034	24.7	7.36	0.91	2.3	MC*OE
	E	Male	11	11	67170	8.0	2.48	0.75	1.2	MC
		Female	11	11	64034	7.9	2.33	0.71	1.3	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	72	63	93602	50.9	14.40	0.94	3.5	MC*OE
		Af. Amer.	72	63	19214	38.5	15.67	0.95	3.7	MC*OE
		Hispanic	72	63	11268	40.5	15.74	0.95	3.6	MC*OE
		Asian	72	63	4364	58.3	12.86	0.94	3.2	MC*OE
		Am. Indian	72	63	173	46.1	16.22	0.95	3.5	MC*OE
		Pacific Islande	72	63	118	52.4	14.76	0.94	3.5	MC*OE
		Multi	72	63	2450	45.1	15.64	0.95	3.6	MC*OE
	A	White	13	10	93602	8.9	2.90	0.75	1.4	MC*OE
		Af. Amer.	13	10	19214	6.9	3.09	0.78	1.4	MC*OE
		Hispanic	13	10	11268	7.1	3.14	0.79	1.5	MC*OE
		Asian	13	10	4364	10.3	2.48	0.69	1.4	MC*OE
		Am. Indian	13	10	173	8.0	2.94	0.76	1.4	MC*OE
		Pacific Islande	13	10	118	9.3	3.07	0.78	1.4	MC*OE
		Multi	13	10	2450	7.9	3.16	0.78	1.5	MC*OE
	B	White	-	-	-	-	-	-	-	-
		Af. Amer.	-	-	-	-	-	-	-	-
		Hispanic	-	-	-	-	-	-	-	-
		Asian	-	-	-	-	-	-	-	-
		Am. Indian	-	-	-	-	-	-	-	-
		Pacific Islande	-	-	-	-	-	-	-	-
		Multi	-	-	-	-	-	-	-	-
	C	White	14	11	93602	8.6	4.23	0.84	1.7	MC*OE
		Af. Amer.	14	11	19214	5.6	4.21	0.86	1.6	MC*OE
		Hispanic	14	11	11268	6.0	4.21	0.85	1.6	MC*OE
		Asian	14	11	4364	10.5	3.99	0.84	1.6	MC*OE
		Am. Indian	14	11	173	7.9	4.75	0.89	1.6	MC*OE
		Pacific Islande	14	11	118	9.0	4.34	0.84	1.8	MC*OE
		Multi	14	11	2450	7.1	4.42	0.86	1.7	MC*OE

D	White	34	31	93602	25.1	7.21	0.90	2.2	MC*OE
	Af. Amer.	34	31	19214	19.6	8.17	0.91	2.4	MC*OE
	Hispanic	34	31	11268	20.6	8.16	0.91	2.4	MC*OE
	Asian	34	31	4364	28.5	6.00	0.89	2.0	MC*OE
	Am. Indian	34	31	173	22.7	8.09	0.92	2.3	MC*OE
	Pacific Islande	34	31	118	26.1	6.88	0.90	2.2	MC*OE
	Multi	34	31	2450	22.7	7.83	0.91	2.4	MC*OE
E	White	11	11	93602	8.3	2.17	0.69	1.2	MC
	Af. Amer.	11	11	19214	6.3	2.53	0.68	1.4	MC
	Hispanic	11	11	11268	6.7	2.55	0.70	1.4	MC
	Asian	11	11	4364	8.9	2.07	0.71	1.1	MC
	Am. Indian	11	11	173	7.6	2.44	0.71	1.3	MC
	Pacific Islande	11	11	118	8.1	2.17	0.67	1.2	MC
	Multi	11	11	2450	7.4	2.45	0.71	1.3	MC

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	2726	31.5	14.35	0.93	3.7	MC*OE
A	All	13	10	2726	5.8	3.02	0.78	1.4	MC*OE
B	All	-	-	-	-	-	-	-	-
C	All	14	11	2726	4.6	3.78	0.84	1.5	MC*OE
D	All	34	31	2726	16.0	7.61	0.89	2.5	MC*OE
E	All	11	11	2726	5.2	2.43	0.63	1.5	MC

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	20169	32.5	14.93	0.94	3.7	MC*OE
A	All	13	10	20169	5.8	3.09	0.79	1.4	MC*OE
B	All	-	-	-	-	-	-	-	-
C	All	14	11	20169	4.8	3.80	0.84	1.5	MC*OE
D	All	34	31	20169	16.1	7.77	0.90	2.5	MC*OE
E	All	11	11	20169	5.8	2.62	0.69	1.5	MC

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	72	63	55700	41.6	15.69	0.95	3.6	MC*OE
A	All	13	10	55700	7.4	3.12	0.78	1.5	MC*OE
B	All	-	-	-	-	-	-	-	-
C	All	14	11	55700	6.4	4.25	0.85	1.6	MC*OE
D	All	34	31	55700	20.9	8.09	0.91	2.4	MC*OE
E	All	11	11	55700	6.9	2.52	0.70	1.4	MC

Reading Grade 3

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	46	42	124659	30.6	9.73	0.92	2.7	MC*OE
	A	All	31	31	124659	20.8	6.98	0.90	2.3	MC
	B	All	15	11	124659	9.7	3.15	0.78	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	46	42	63833	29.5	9.93	0.92	2.7	MC*OE
		Female	46	42	60743	31.7	9.38	0.92	2.7	MC*OE
	A	Male	31	31	63833	20.2	7.11	0.90	2.3	MC
		Female	31	31	60743	21.5	6.78	0.89	2.2	MC
	B	Male	15	11	63833	9.2	3.20	0.79	1.5	MC*OE
		Female	15	11	60743	10.2	3.00	0.77	1.4	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	46	42	84689	32.6	8.86	0.91	2.6	MC*OE
		Af. Amer.	46	42	18346	24.3	9.55	0.91	2.9	MC*OE
		Hispanic	46	42	12407	25.4	9.86	0.91	2.9	MC*OE
		Asian	46	42	4488	33.6	8.89	0.92	2.6	MC*OE
		Am. Indian	46	42	207	28.9	9.71	0.92	2.8	MC*OE
		Pacific Islande	46	42	77	32.1	8.68	0.91	2.7	MC*OE
		Multi	46	42	4338	28.8	9.98	0.92	2.8	MC*OE
	A	White	31	31	84689	22.3	6.41	0.88	2.2	MC
		Af. Amer.	31	31	18346	16.4	6.70	0.86	2.5	MC
		Hispanic	31	31	12407	17.1	6.94	0.88	2.4	MC
		Asian	31	31	4488	22.8	6.45	0.89	2.1	MC
		Am. Indian	31	31	207	19.7	6.99	0.89	2.3	MC
		Pacific Islande	31	31	77	22.0	6.44	0.88	2.2	MC
		Multi	31	31	4338	19.6	7.10	0.89	2.3	MC
	B	White	15	11	84689	10.3	2.85	0.75	1.4	MC*OE
		Af. Amer.	15	11	18346	8.0	3.31	0.77	1.6	MC*OE
		Hispanic	15	11	12407	8.3	3.36	0.78	1.6	MC*OE
		Asian	15	11	4488	10.8	2.84	0.76	1.4	MC*OE
		Am. Indian	15	11	207	9.2	3.09	0.78	1.4	MC*OE
		Pacific Islande	15	11	77	10.1	2.65	0.69	1.5	MC*OE
		Multi	15	11	4338	9.2	3.29	0.79	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	46	42	4135	20.2	8.26	0.86	3.0	MC*OE
	A	All	31	31	4135	13.4	5.62	0.80	2.5	MC
	B	All	15	11	4135	6.8	3.18	0.73	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	46	42	19122	22.4	10.15	0.92	2.9	MC*OE
	A	All	31	31	19122	15.3	7.10	0.88	2.5	MC
	B	All	15	11	19122	7.1	3.47	0.79	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	46	42	59416	26.6	9.82	0.91	2.9	MC*OE
	A	All	31	31	59416	18.0	6.97	0.88	2.4	MC
	B	All	15	11	59416	8.6	3.29	0.78	1.5	MC*OE

Reading Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	52	44	126887	35.1	10.23	0.91	3.0	MC*OE
	A	All	37	33	126887	24.5	7.63	0.89	2.6	MC*OE
	B	All	15	11	126887	10.6	3.05	0.72	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	52	44	64717	33.8	10.55	0.92	3.0	MC*OE
		Female	52	44	62095	36.4	9.71	0.91	3.0	MC*OE
	A	Male	37	33	64717	23.7	7.84	0.89	2.6	MC*OE
		Female	37	33	62095	25.4	7.29	0.88	2.5	MC*OE
	B	Male	15	11	64717	10.2	3.15	0.73	1.6	MC*OE
		Female	15	11	62095	11.0	2.87	0.70	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	52	44	87299	37.0	9.22	0.90	2.9	MC*OE
		Af. Amer.	52	44	18385	28.7	10.67	0.91	3.2	MC*OE
		Hispanic	52	44	12320	30.0	10.71	0.91	3.2	MC*OE
		Asian	52	44	4673	39.6	9.09	0.91	2.8	MC*OE
		Am. Indian	52	44	177	33.3	11.04	0.92	3.1	MC*OE
		Pacific Islande	52	44	83	39.2	8.55	0.89	2.8	MC*OE
		Multi	52	44	3857	33.4	10.64	0.92	3.1	MC*OE
	A	White	37	33	87299	25.9	6.94	0.87	2.5	MC*OE
		Af. Amer.	37	33	18385	19.7	7.78	0.88	2.7	MC*OE
		Hispanic	37	33	12320	20.7	7.88	0.88	2.7	MC*OE
		Asian	37	33	4673	27.7	6.81	0.88	2.4	MC*OE
		Am. Indian	37	33	177	23.0	8.26	0.90	2.6	MC*OE
		Pacific Islande	37	33	83	27.3	6.60	0.87	2.4	MC*OE
		Multi	37	33	3857	23.2	7.89	0.89	2.6	MC*OE
	B	White	15	11	87299	11.1	2.75	0.68	1.6	MC*OE
		Af. Amer.	15	11	18385	8.9	3.36	0.73	1.7	MC*OE
		Hispanic	15	11	12320	9.3	3.31	0.74	1.7	MC*OE
		Asian	15	11	4673	11.9	2.70	0.71	1.5	MC*OE
		Am. Indian	15	11	177	10.3	3.18	0.73	1.7	MC*OE
		Pacific Islande	15	11	83	11.8	2.45	0.66	1.4	MC*OE
		Multi	15	11	3857	10.2	3.19	0.74	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	52	44	3148	22.3	9.24	0.87	3.3	MC*OE
	A	All	37	33	3148	15.1	6.58	0.82	2.8	MC*OE
	B	All	15	11	3148	7.1	3.21	0.69	1.8	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	52	44	20328	25.7	11.15	0.92	3.2	MC*OE
	A	All	37	33	20328	17.7	8.11	0.89	2.7	MC*OE
	B	All	15	11	20328	8.0	3.50	0.75	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	52	44	59229	30.9	10.51	0.91	3.2	MC*OE
	A	All	37	33	59229	21.4	7.76	0.88	2.7	MC*OE
	B	All	15	11	59229	9.5	3.23	0.73	1.7	MC*OE

Reading Grade 5

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	52	44	126639	35.0	9.59	0.91	2.9	MC*OE
	A	All	30	28	126639	20.8	5.67	0.85	2.2	MC*OE
	B	All	22	16	126639	14.2	4.34	0.81	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	52	44	64446	33.9	9.91	0.91	2.9	MC*OE
		Female	52	44	62113	36.1	9.10	0.90	2.9	MC*OE
	A	Male	30	28	64446	20.3	5.88	0.86	2.2	MC*OE
		Female	30	28	62113	21.3	5.39	0.84	2.2	MC*OE
	B	Male	22	16	64446	13.6	4.45	0.82	1.9	MC*OE
		Female	22	16	62113	14.8	4.15	0.80	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	52	44	88079	36.9	8.55	0.89	2.8	MC*OE
		Af. Amer.	52	44	18543	28.4	9.92	0.90	3.1	MC*OE
		Hispanic	52	44	11784	29.9	10.01	0.90	3.1	MC*OE
		Asian	52	44	4574	38.6	8.75	0.90	2.7	MC*OE
		Am. Indian	52	44	176	34.7	9.71	0.91	3.0	MC*OE
		Pacific Islande	52	44	82	37.5	7.62	0.87	2.8	MC*OE
		Multi	52	44	3303	33.6	9.49	0.90	3.0	MC*OE
	A	White	30	28	88079	21.9	5.08	0.83	2.1	MC*OE
		Af. Amer.	30	28	18543	16.9	5.80	0.83	2.4	MC*OE
		Hispanic	30	28	11784	17.8	5.88	0.84	2.4	MC*OE
		Asian	30	28	4574	22.9	5.17	0.85	2.0	MC*OE
		Am. Indian	30	28	176	20.6	5.67	0.85	2.2	MC*OE
		Pacific Islande	30	28	82	22.4	4.76	0.81	2.1	MC*OE
		Multi	30	28	3303	20.0	5.60	0.84	2.3	MC*OE
	B	White	22	16	88079	15.0	3.92	0.78	1.8	MC*OE
		Af. Amer.	22	16	18543	11.4	4.59	0.80	2.0	MC*OE
		Hispanic	22	16	11784	12.1	4.57	0.81	2.0	MC*OE
		Asian	22	16	4574	15.7	3.98	0.80	1.8	MC*OE
		Am. Indian	22	16	176	14.1	4.49	0.81	1.9	MC*OE
		Pacific Islande	22	16	82	15.1	3.27	0.69	1.8	MC*OE
		Multi	22	16	3303	13.6	4.34	0.80	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	52	44	2780	21.5	8.24	0.84	3.3	MC*OE
	A	All	30	28	2780	13.1	5.01	0.75	2.5	MC*OE
	B	All	22	16	2780	8.4	3.79	0.70	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	52	44	20150	25.7	10.33	0.91	3.2	MC*OE
	A	All	30	28	20150	15.6	6.13	0.84	2.4	MC*OE
	B	All	22	16	20150	10.1	4.65	0.81	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	52	44	57682	30.8	9.87	0.90	3.1	MC*OE
	A	All	30	28	57682	18.4	5.81	0.84	2.3	MC*OE
	B	All	22	16	57682	12.4	4.51	0.80	2.0	MC*OE

Reading Grade 6

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	52	44	126044	34.1	10.15	0.92	2.9	MC*OE
	A	All	30	26	126044	20.1	6.05	0.87	2.2	MC*OE
	B	All	22	18	126044	14.0	4.49	0.82	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	52	44	64614	32.8	10.38	0.92	2.9	MC*OE
		Female	52	44	61325	35.4	9.73	0.91	2.9	MC*OE
	A	Male	30	26	64614	19.5	6.18	0.87	2.2	MC*OE
		Female	30	26	61325	20.8	5.82	0.86	2.2	MC*OE
	B	Male	22	18	64614	13.4	4.58	0.82	1.9	MC*OE
		Female	22	18	61325	14.6	4.30	0.81	1.9	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	52	44	88076	36.0	9.23	0.91	2.8	MC*OE
		Af. Amer.	52	44	18697	27.7	10.26	0.91	3.1	MC*OE
		Hispanic	52	44	11666	28.6	10.48	0.91	3.1	MC*OE
		Asian	52	44	4424	38.1	9.49	0.92	2.7	MC*OE
		Am. Indian	52	44	191	34.2	10.11	0.92	2.9	MC*OE
		Pacific Islande	52	44	78	37.2	8.79	0.90	2.8	MC*OE
		Multi	52	44	2734	32.6	10.39	0.92	3.0	MC*OE
	A	White	30	26	88076	21.2	5.52	0.85	2.1	MC*OE
		Af. Amer.	30	26	18697	16.5	6.20	0.85	2.4	MC*OE
		Hispanic	30	26	11666	17.0	6.32	0.86	2.3	MC*OE
		Asian	30	26	4424	22.4	5.60	0.87	2.0	MC*OE
		Am. Indian	30	26	191	20.0	6.09	0.87	2.2	MC*OE
		Pacific Islande	30	26	78	22.2	5.42	0.86	2.0	MC*OE
		Multi	30	26	2734	19.3	6.20	0.87	2.2	MC*OE
	B	White	22	18	88076	14.8	4.12	0.79	1.9	MC*OE
		Af. Amer.	22	18	18697	11.2	4.49	0.79	2.0	MC*OE
		Hispanic	22	18	11666	11.6	4.57	0.80	2.0	MC*OE
		Asian	22	18	4424	15.6	4.26	0.81	1.8	MC*OE
		Am. Indian	22	18	191	14.1	4.41	0.81	1.9	MC*OE
		Pacific Islande	22	18	78	15.1	3.83	0.76	1.9	MC*OE
		Multi	22	18	2734	13.3	4.58	0.82	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	52	44	2736	19.6	7.92	0.84	3.2	MC*OE
	A	All	30	26	2736	11.7	4.98	0.76	2.5	MC*OE
	B	All	22	18	2736	7.9	3.52	0.66	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	52	44	19581	23.7	10.06	0.90	3.1	MC*OE
	A	All	30	26	19581	14.1	6.12	0.85	2.4	MC*OE
	B	All	22	18	19581	9.7	4.40	0.79	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	52	44	56825	29.8	10.26	0.91	3.1	MC*OE
	A	All	30	26	56825	17.7	6.18	0.86	2.3	MC*OE
	B	All	22	18	56825	12.1	4.51	0.80	2.0	MC*OE

Reading Grade 7

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	52	44	130053	34.7	9.83	0.91	3.0	MC*OE
	A	All	30	26	130053	20.8	5.83	0.85	2.2	MC*OE
	B	All	22	18	130053	13.9	4.42	0.79	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	52	44	66500	33.1	10.05	0.91	3.0	MC*OE
		Female	52	44	63469	36.4	9.29	0.90	3.0	MC*OE
	A	Male	30	26	66500	19.8	5.99	0.86	2.3	MC*OE
		Female	30	26	63469	21.8	5.48	0.84	2.2	MC*OE
	B	Male	22	18	66500	13.2	4.48	0.79	2.0	MC*OE
		Female	22	18	63469	14.6	4.23	0.77	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	52	44	91921	36.4	9.08	0.89	3.0	MC*OE
		Af. Amer.	52	44	18905	29.1	9.87	0.90	3.2	MC*OE
		Hispanic	52	44	11877	29.5	10.06	0.90	3.2	MC*OE
		Asian	52	44	4472	38.8	9.25	0.91	2.8	MC*OE
		Am. Indian	52	44	189	32.9	9.80	0.90	3.1	MC*OE
		Pacific Islande	52	44	96	36.3	9.40	0.90	2.9	MC*OE
		Multi	52	44	2486	33.1	10.05	0.91	3.1	MC*OE
	A	White	30	26	91921	21.8	5.37	0.84	2.2	MC*OE
		Af. Amer.	30	26	18905	17.6	5.96	0.84	2.4	MC*OE
		Hispanic	30	26	11877	17.7	6.07	0.85	2.4	MC*OE
		Asian	30	26	4472	23.1	5.50	0.86	2.0	MC*OE
		Am. Indian	30	26	189	19.7	5.86	0.85	2.3	MC*OE
		Pacific Islande	30	26	96	21.9	5.50	0.85	2.1	MC*OE
		Multi	30	26	2486	19.8	5.99	0.85	2.3	MC*OE
	B	White	22	18	91921	14.6	4.15	0.76	2.0	MC*OE
		Af. Amer.	22	18	18905	11.5	4.38	0.77	2.1	MC*OE
		Hispanic	22	18	11877	11.8	4.44	0.78	2.1	MC*OE
		Asian	22	18	4472	15.7	4.14	0.78	2.0	MC*OE
		Am. Indian	22	18	189	13.2	4.53	0.79	2.1	MC*OE
		Pacific Islande	22	18	96	14.4	4.34	0.79	2.0	MC*OE
		Multi	22	18	2486	13.2	4.48	0.79	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	52	44	2850	20.8	7.63	0.82	3.2	MC*OE
	A	All	30	26	2850	12.5	4.87	0.74	2.5	MC*OE
	B	All	22	18	2850	8.3	3.37	0.62	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	52	44	19954	24.2	9.47	0.89	3.2	MC*OE
	A	All	30	26	19954	14.6	5.83	0.83	2.4	MC*OE
	B	All	22	18	19954	9.6	4.14	0.75	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	52	44	56942	30.5	9.88	0.90	3.1	MC*OE
	A	All	30	26	56942	18.4	5.95	0.84	2.4	MC*OE
	B	All	22	18	56942	12.1	4.38	0.77	2.1	MC*OE

Reading Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	52	44	131218	34.6	9.65	0.90	3.0	MC*OE
	A	All	27	21	131218	18.0	5.12	0.83	2.1	MC*OE
	B	All	25	23	131218	16.6	4.96	0.82	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	52	44	67101	32.8	9.93	0.91	3.0	MC*OE
		Female	52	44	63958	36.5	8.95	0.90	2.9	MC*OE
	A	Male	27	21	67101	17.0	5.28	0.84	2.1	MC*OE
		Female	27	21	63958	19.0	4.73	0.81	2.1	MC*OE
	B	Male	25	23	67101	15.7	5.09	0.83	2.1	MC*OE
		Female	25	23	63958	17.5	4.66	0.81	2.0	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	52	44	93562	36.2	8.88	0.89	2.9	MC*OE
		Af. Amer.	52	44	19150	28.9	9.91	0.90	3.2	MC*OE
		Hispanic	52	44	11242	29.5	10.06	0.90	3.2	MC*OE
		Asian	52	44	4359	38.7	8.57	0.90	2.8	MC*OE
		Am. Indian	52	44	172	33.3	9.85	0.90	3.1	MC*OE
		Pacific Islande	52	44	118	35.9	9.42	0.91	2.9	MC*OE
		Multi	52	44	2441	33.2	9.80	0.90	3.0	MC*OE
	A	White	27	21	93562	18.8	4.72	0.81	2.1	MC*OE
		Af. Amer.	27	21	19150	15.2	5.34	0.82	2.3	MC*OE
		Hispanic	27	21	11242	15.5	5.41	0.83	2.2	MC*OE
		Asian	27	21	4359	20.3	4.48	0.81	2.0	MC*OE
		Am. Indian	27	21	172	17.3	5.23	0.83	2.2	MC*OE
		Pacific Islande	27	21	118	18.9	4.81	0.82	2.0	MC*OE
		Multi	27	21	2441	17.3	5.22	0.83	2.2	MC*OE
	B	White	25	23	93562	17.4	4.60	0.80	2.0	MC*OE
		Af. Amer.	25	23	19150	13.8	5.04	0.80	2.2	MC*OE
		Hispanic	25	23	11242	14.0	5.10	0.81	2.2	MC*OE
		Asian	25	23	4359	18.3	4.51	0.81	2.0	MC*OE
		Am. Indian	25	23	172	15.9	4.96	0.81	2.2	MC*OE
		Pacific Islande	25	23	118	17.0	5.10	0.84	2.0	MC*OE
		Multi	25	23	2441	15.9	5.02	0.82	2.1	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	52	44	2710	21.0	7.52	0.81	3.3	MC*OE
	A	All	27	21	2710	11.3	4.37	0.71	2.4	MC*OE
	B	All	25	23	2710	9.7	3.82	0.64	2.3	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	52	44	20124	24.2	9.53	0.89	3.2	MC*OE
	A	All	27	21	20124	12.7	5.19	0.80	2.3	MC*OE
	B	All	25	23	20124	11.5	4.87	0.78	2.3	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	52	44	55592	30.4	9.86	0.90	3.1	MC*OE
	A	All	27	21	55592	15.9	5.28	0.82	2.2	MC*OE
	B	All	25	23	55592	14.5	5.05	0.81	2.2	MC*OE

Science Grade 4

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	68	63	127105	47.4	13.01	0.93	3.3	MC*OE
	A	All	35	32	127105	24.3	7.08	0.89	2.4	MC*OE
	B	All	12	11	127105	8.6	2.55	0.73	1.3	MC*OE
	C	All	11	10	127105	8.0	2.27	0.66	1.3	MC*OE
	D	All	10	10	127105	6.4	2.34	0.66	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	68	63	64879	47.2	13.34	0.94	3.3	MC*OE
		Female	68	63	62133	47.6	12.65	0.93	3.3	MC*OE
	A	Male	35	32	64879	24.2	7.22	0.89	2.4	MC*OE
		Female	35	32	62133	24.5	6.94	0.88	2.4	MC*OE
	B	Male	12	11	64879	8.6	2.59	0.73	1.3	MC*OE
		Female	12	11	62133	8.7	2.50	0.72	1.3	MC*OE
	C	Male	11	10	64879	7.9	2.34	0.68	1.3	MC*OE
		Female	11	10	62133	8.1	2.19	0.64	1.3	MC*OE
	D	Male	10	10	64879	6.5	2.39	0.68	1.3	MC
		Female	10	10	62133	6.3	2.28	0.64	1.4	MC

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	68	63	87280	50.7	11.08	0.92	3.2	MC*OE
		Af. Amer.	68	63	18359	36.8	13.24	0.92	3.7	MC*OE
		Hispanic	68	63	12483	39.4	13.33	0.93	3.6	MC*OE
		Asian	68	63	4751	51.4	12.22	0.94	3.1	MC*OE
		Am. Indian	68	63	178	45.2	13.61	0.94	3.4	MC*OE
		Pacific Islande	68	63	85	50.5	10.90	0.91	3.2	MC*OE
		Multi	68	63	3854	44.7	13.42	0.93	3.4	MC*OE
	A	White	35	32	87280	26.0	6.11	0.86	2.3	MC*OE
		Af. Amer.	35	32	18359	18.8	7.17	0.87	2.6	MC*OE
		Hispanic	35	32	12483	20.1	7.30	0.88	2.6	MC*OE
		Asian	35	32	4751	26.6	6.70	0.89	2.2	MC*OE
		Am. Indian	35	32	178	23.3	7.31	0.89	2.4	MC*OE
		Pacific Islande	35	32	85	25.9	6.25	0.87	2.3	MC*OE
		Multi	35	32	3854	22.9	7.32	0.89	2.5	MC*OE
	B	White	12	11	87280	9.2	2.16	0.66	1.3	MC*OE
		Af. Amer.	12	11	18359	6.7	2.77	0.71	1.5	MC*OE
		Hispanic	12	11	12483	7.2	2.71	0.71	1.5	MC*OE
		Asian	12	11	4751	9.3	2.36	0.72	1.2	MC*OE
		Am. Indian	12	11	178	8.1	2.92	0.79	1.4	MC*OE
		Pacific Islande	12	11	85	9.2	2.26	0.68	1.3	MC*OE
		Multi	12	11	3854	8.2	2.65	0.73	1.4	MC*OE
	C	White	11	10	87280	8.5	1.97	0.58	1.3	MC*OE
		Af. Amer.	11	10	18359	6.4	2.47	0.64	1.5	MC*OE
		Hispanic	11	10	12483	6.9	2.42	0.64	1.5	MC*OE
		Asian	11	10	4751	8.5	2.13	0.67	1.2	MC*OE
		Am. Indian	11	10	178	7.7	2.30	0.65	1.4	MC*OE
		Pacific Islande	11	10	85	8.5	1.57	0.30	1.3	MC*OE
		Multi	11	10	3854	7.6	2.37	0.66	1.4	MC*OE

	White	10	10	87280	6.9	2.15	0.62	1.3	MC
	Af. Amer.	10	10	18359	4.9	2.26	0.59	1.4	MC
	Hispanic	10	10	12483	5.2	2.30	0.61	1.4	MC
D	Asian	10	10	4751	7.0	2.17	0.64	1.3	MC
	Am. Indian	10	10	178	6.1	2.37	0.66	1.4	MC
	Pacific Islande	10	10	85	6.9	2.22	0.65	1.3	MC
	Multi	10	10	3854	6.0	2.36	0.65	1.4	MC

ELL

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	68	63	3502	30.4	11.65	0.90	3.7	MC*OE
A	All	35	32	3502	15.3	6.37	0.83	2.7	MC*OE
B	All	12	11	3502	5.6	2.55	0.63	1.5	MC*OE
C	All	11	10	3502	5.5	2.38	0.59	1.5	MC*OE
D	All	10	10	3502	4.0	2.01	0.48	1.5	MC

IEP

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	68	63	20346	38.3	14.21	0.94	3.6	MC*OE
A	All	35	32	20346	19.4	7.66	0.89	2.6	MC*OE
B	All	12	11	20346	7.1	2.89	0.74	1.5	MC*OE
C	All	11	10	20346	6.7	2.58	0.68	1.5	MC*OE
D	All	10	10	20346	5.1	2.42	0.65	1.4	MC

Eco. Disadv.

Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Tot.	All	68	63	59347	41.6	13.37	0.93	3.5	MC*OE
A	All	35	32	59347	21.2	7.27	0.88	2.5	MC*OE
B	All	12	11	59347	7.6	2.71	0.72	1.4	MC*OE
C	All	11	10	59347	7.2	2.41	0.65	1.4	MC*OE
D	All	10	10	59347	5.5	2.34	0.63	1.4	MC

Science Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	68	63	130918	45.5	13.81	0.94	3.5	MC*OE
	A	All	34	31	130918	23.0	7.34	0.89	2.5	MC*OE
	B	All	12	11	130918	8.4	2.58	0.69	1.4	MC*OE
	C	All	10	10	130918	6.7	2.33	0.67	1.3	MC
	D	All	12	11	130918	7.4	2.89	0.73	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	68	63	66974	45.4	14.35	0.94	3.5	MC*OE
		Female	68	63	63783	45.6	13.21	0.93	3.5	MC*OE
	A	Male	34	31	66974	22.8	7.60	0.90	2.4	MC*OE
		Female	34	31	63783	23.1	7.03	0.88	2.5	MC*OE
	B	Male	12	11	66974	8.3	2.63	0.70	1.4	MC*OE
		Female	12	11	63783	8.6	2.51	0.68	1.4	MC*OE
	C	Male	10	10	66974	6.7	2.42	0.70	1.3	MC
		Female	10	10	63783	6.6	2.24	0.63	1.4	MC
	D	Male	12	11	66974	7.5	2.93	0.75	1.5	MC*OE
		Female	12	11	63783	7.3	2.83	0.71	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	68	63	93325	48.6	12.14	0.92	3.4	MC*OE
		Af. Amer.	68	63	18972	34.8	13.66	0.92	3.8	MC*OE
		Hispanic	68	63	11321	36.5	14.17	0.93	3.7	MC*OE
		Asian	68	63	4403	50.7	12.60	0.93	3.3	MC*OE
		Am. Indian	68	63	173	43.8	14.34	0.94	3.5	MC*OE
		Pacific Islande	68	63	120	47.2	13.63	0.94	3.4	MC*OE
		Multi	68	63	2424	42.6	13.99	0.93	3.6	MC*OE
	A	White	34	31	93325	24.5	6.53	0.87	2.4	MC*OE
		Af. Amer.	34	31	18972	17.6	7.33	0.87	2.7	MC*OE
		Hispanic	34	31	11321	18.5	7.60	0.88	2.6	MC*OE
		Asian	34	31	4403	26.0	6.54	0.88	2.3	MC*OE
		Am. Indian	34	31	173	22.3	7.64	0.89	2.5	MC*OE
		Pacific Islande	34	31	120	23.7	7.17	0.89	2.4	MC*OE
		Multi	34	31	2424	21.5	7.43	0.88	2.5	MC*OE
	B	White	12	11	93325	9.0	2.24	0.62	1.4	MC*OE
		Af. Amer.	12	11	18972	6.7	2.80	0.68	1.6	MC*OE
		Hispanic	12	11	11321	6.9	2.88	0.71	1.6	MC*OE
		Asian	12	11	4403	9.0	2.40	0.67	1.4	MC*OE
		Am. Indian	12	11	173	8.2	2.63	0.69	1.5	MC*OE
		Pacific Islande	12	11	120	8.7	2.57	0.71	1.4	MC*OE
		Multi	12	11	2424	8.0	2.62	0.68	1.5	MC*OE
	C	White	10	10	93325	7.1	2.14	0.63	1.3	MC
		Af. Amer.	10	10	18972	5.1	2.29	0.59	1.5	MC
		Hispanic	10	10	11321	5.4	2.32	0.61	1.5	MC
		Asian	10	10	4403	7.4	2.17	0.67	1.2	MC
		Am. Indian	10	10	173	6.4	2.38	0.67	1.4	MC
		Pacific Islande	10	10	120	7.2	2.22	0.66	1.3	MC
		Multi	10	10	2424	6.2	2.38	0.66	1.4	MC

	White	12	11	93325	8.0	2.64	0.69	1.5	MC*OE
	Af. Amer.	12	11	18972	5.4	2.76	0.68	1.6	MC*OE
	Hispanic	12	11	11321	5.7	2.84	0.70	1.6	MC*OE
D	Asian	12	11	4403	8.3	2.78	0.73	1.4	MC*OE
	Am. Indian	12	11	173	7.0	2.92	0.73	1.5	MC*OE
	Pacific Islande	12	11	120	7.6	2.98	0.75	1.5	MC*OE
	Multi	12	11	2424	6.8	2.93	0.73	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	68	63	2970	25.5	10.47	0.87	3.8	MC*OE
	A	All	34	31	2970	13.0	5.89	0.79	2.7	MC*OE
	B	All	12	11	2970	4.7	2.44	0.56	1.6	MC*OE
	C	All	10	10	2970	4.0	1.98	0.44	1.5	MC
	D	All	12	11	2970	3.8	2.11	0.49	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	68	63	19995	32.4	13.64	0.92	3.8	MC*OE
	A	All	34	31	19995	16.0	7.25	0.86	2.7	MC*OE
	B	All	12	11	19995	6.3	2.81	0.68	1.6	MC*OE
	C	All	10	10	19995	5.0	2.30	0.60	1.5	MC
	D	All	12	11	19995	5.2	2.77	0.69	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Disadv.	Tot.	All	68	63	55356	38.9	14.09	0.93	3.7	MC*OE
	A	All	34	31	55356	19.6	7.51	0.88	2.6	MC*OE
	B	All	12	11	55356	7.4	2.78	0.70	1.5	MC*OE
	C	All	10	10	55356	5.7	2.35	0.63	1.4	MC
	D	All	12	11	55356	6.2	2.88	0.71	1.6	MC*OE

Writing Grade 5

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	100	16	124666	63.1	14.89	0.81	6.5	MC*OE
	A	All	80	2	124666	49.6	12.06	0.72	6.3	OE
	B	All	20	14	124666	13.5	3.50	0.81	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	100	16	63101	60.4	14.89	0.81	6.5	MC*OE
		Female	100	16	61501	65.9	14.36	0.79	6.6	MC*OE
	A	Male	80	2	63101	47.4	11.98	0.73	6.3	OE
		Female	80	2	61501	51.9	11.69	0.70	6.4	OE
	B	Male	20	14	63101	13.0	3.59	0.82	1.5	MC*OE
		Female	20	14	61501	14.0	3.32	0.79	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	100	16	87293	65.3	14.24	0.79	6.5	MC*OE
		Af. Amer.	100	16	17872	55.0	14.17	0.79	6.5	MC*OE
		Hispanic	100	16	11408	56.8	14.27	0.79	6.5	MC*OE
		Asian	100	16	4521	69.7	14.71	0.81	6.4	MC*OE
		Am. Indian	100	16	174	61.0	15.88	0.84	6.4	MC*OE
		Pacific Islande	100	16	80	65.1	14.63	0.85	5.6	MC*OE
		Multi	100	16	3242	60.8	14.80	0.80	6.6	MC*OE
	A	White	80	2	87293	51.2	11.67	0.70	6.4	OE
		Af. Amer.	80	2	17872	43.6	11.41	0.70	6.3	OE
		Hispanic	80	2	11408	45.0	11.48	0.70	6.3	OE
		Asian	80	2	4521	54.6	12.06	0.73	6.3	OE
		Am. Indian	80	2	174	47.8	13.00	0.77	6.3	OE
		Pacific Islande	80	2	80	50.8	12.20	0.80	5.5	OE
		Multi	80	2	3242	47.9	11.98	0.72	6.4	OE
	B	White	20	14	87293	14.1	3.23	0.79	1.5	MC*OE
		Af. Amer.	20	14	17872	11.4	3.51	0.78	1.6	MC*OE
		Hispanic	20	14	11408	11.8	3.53	0.79	1.6	MC*OE
		Asian	20	14	4521	15.0	3.22	0.82	1.4	MC*OE
		Am. Indian	20	14	174	13.2	3.61	0.82	1.5	MC*OE
		Pacific Islande	20	14	80	14.4	3.08	0.79	1.4	MC*OE
		Multi	20	14	3242	13.0	3.51	0.80	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	100	16	2543	48.0	13.05	0.74	6.7	MC*OE
	A	All	80	2	2543	38.8	10.76	0.64	6.5	OE
	B	All	20	14	2543	9.2	3.06	0.68	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	100	16	19183	50.8	14.90	0.81	6.5	MC*OE
	A	All	80	2	19183	40.5	12.01	0.73	6.3	OE
	B	All	20	14	19183	10.3	3.66	0.79	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	100	16	56174	57.2	14.22	0.79	6.5	MC*OE
	A	All	80	2	56174	45.2	11.49	0.70	6.3	OE
	B	All	20	14	56174	12.0	3.48	0.78	1.6	MC*OE

Writing Grade 8

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Overall	Tot.	All	100	16	130302	67.2	13.89	0.81	6.1	MC*OE
	A	All	80	2	130302	54.0	11.05	0.72	5.8	OE
	B	All	20	14	130302	13.3	3.60	0.81	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Gender	Tot.	Male	100	16	66509	63.9	14.19	0.81	6.2	MC*OE
		Female	100	16	63709	70.8	12.64	0.78	5.9	MC*OE
	A	Male	80	2	66509	51.3	11.35	0.72	6.0	OE
		Female	80	2	63709	56.8	9.99	0.68	5.7	OE
	B	Male	20	14	66509	12.6	3.62	0.80	1.6	MC*OE
		Female	20	14	63709	14.0	3.41	0.80	1.5	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Ethnicity	Tot.	White	100	16	93162	69.2	13.14	0.79	6.0	MC*OE
		Af. Amer.	100	16	18921	60.0	13.75	0.79	6.2	MC*OE
		Hispanic	100	16	11075	60.9	14.00	0.80	6.2	MC*OE
		Asian	100	16	4336	74.2	13.00	0.79	6.0	MC*OE
		Am. Indian	100	16	169	66.2	14.06	0.83	5.8	MC*OE
		Pacific Islande	100	16	116	69.6	13.71	0.86	5.0	MC*OE
		Multi	100	16	2422	65.3	13.98	0.81	6.2	MC*OE
	A	White	80	2	93162	55.3	10.55	0.70	5.8	OE
		Af. Amer.	80	2	18921	48.7	11.09	0.71	6.0	OE
		Hispanic	80	2	11075	49.6	11.19	0.71	6.0	OE
		Asian	80	2	4336	59.3	10.34	0.68	5.8	OE
		Am. Indian	80	2	169	53.3	11.00	0.75	5.6	OE
		Pacific Islande	80	2	116	55.7	10.97	0.81	4.8	OE
		Multi	80	2	2422	52.6	11.18	0.72	5.9	OE
	B	White	20	14	93162	13.9	3.37	0.79	1.5	MC*OE
		Af. Amer.	20	14	18921	11.2	3.50	0.77	1.7	MC*OE
		Hispanic	20	14	11075	11.3	3.61	0.79	1.7	MC*OE
		Asian	20	14	4336	14.9	3.38	0.82	1.4	MC*OE
		Am. Indian	20	14	169	12.9	3.77	0.83	1.6	MC*OE
		Pacific Islande	20	14	116	13.9	3.58	0.83	1.5	MC*OE
		Multi	20	14	2422	12.7	3.56	0.79	1.6	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
ELL	Tot.	All	100	16	2608	51.6	12.49	0.73	6.5	MC*OE
	A	All	80	2	2608	43.1	10.61	0.65	6.3	OE
	B	All	20	14	2608	8.5	2.69	0.59	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
IEP	Tot.	All	100	16	19709	54.0	13.80	0.78	6.4	MC*OE
	A	All	80	2	19709	44.4	11.48	0.71	6.2	OE
	B	All	20	14	19709	9.6	3.22	0.71	1.7	MC*OE

	Strand	Group	Pts.	Len.	N	Mean	*SD*	r	*SEM*	Items
Eco. Dis.	Tot.	All	100	16	54996	61.7	13.84	0.80	6.2	MC*OE
	A	All	80	2	54996	50.0	11.14	0.71	6.0	OE
	B	All	20	14	54996	11.7	3.53	0.78	1.7	MC*OE

Appendix Q:

Historical Statistics

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 3	Raw Score	**Mean**	-	-	54.98	55.00	60.02	60.32	59.45	57.33	56.80	51.93
		SD	-	-	9.66	9.91	10.63	9.97	10.81	12.11	12.55	14.71
		Max	-	-	66	66	72	72	72	72	72	72
	Scaled Score	**Mean**	-	-	1314.5	1332.9	1333.0	1341.0	1345.7	1330.2	1317.2	1312.6
		SD	-	-	176.6	184.7	176.0	164.7	176.6	185.0	187.6	199.3
		Max	-	-	1765	1827	1814	1816	1832	1843	1859	1914
	Raw Cuts	**Bel. Basic/Basic**	-	-	37	36	38	38	37	35	35	30
		Basic/Prof.	-	-	50	49	53	52	51	49	50	43
		Prof./Adv.	-	-	61	60	65	65	64	63	64	60
	Theta Cuts	**Bel. Basic/Basic**	-	-	0.6369	0.6397	0.6171	0.6277	0.6410	0.6440	0.6124	0.6828
		Basic/Prof.	-	-	1.7479	1.7081	1.7404	1.7186	1.7186	1.6906	1.7345	1.6741
		Prof./Adv.	-	-	3.3362	3.2408	3.1592	3.2516	3.2193	3.1710	3.2655	3.2236
	Impact %	**Bel. Basic**	-	-	6.1	6.0	5.2	4.2	5.1	6.6	7.7	10.3
		Basic	-	-	15.4	13.5	13.1	11.3	11.4	13.3	15.1	14.6
		Proficient	-	-	44.2	38.0	38.1	41.1	37.3	36.4	38.9	35.3
		Advanced	-	-	34.3	42.5	43.6	43.4	46.2	43.6	38.3	39.7
		Prof. + Adv.	-	-	78.5	80.5	81.7	84.5	83.5	80.0	77.2	75.0
	Demographics	**N Count**	-	-	125533	126552	127268	126676	124749	126139	126734	124702
		% City	-	-	11.4	11.2	10.9	10.8	10.6	10.5	10.2	9.9
		% White	-	-	73.1	72.8	72.5	71.5	70.8	70.0	69.1	67.9
		% Black	-	-	15.8	15.8	15.5	15.5	15.4	15.1	14.7	14.7
		% Hispanic	-	-	7.2	7.5	7.6	8.1	8.5	8.8	9.4	10.0

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 4	Raw Score	**Mean**	-	45.08	43.61	44.28	47.22	49.11	48.92	48.78	48.81	49.95
		SD	-	12.66	12.41	13.25	14.51	12.95	13.25	13.67	14.29	14.66
		Max	-	66	66	66	72	72	72	72	72	72
	Scaled Score	**Mean**	-	1403.0	1416.7	1445.3	1456.6	1469.6	1476.9	1475.7	1448.0	1434.0
		SD	-	220.6	221.0	243.0	234.0	222.4	221.6	237.7	254.6	264.0
		Max	-	2282	2348	2370	2405	2446	2467	2482	2455	2408
	Raw Cuts	**Bel. Basic/Basic**	-	29	28	27	26	28	27	28	31	33
		Basic/Prof.	-	36	34	33	33	35	34	35	38	40
		Prof./Adv.	-	50	47	47	49	50	50	50	52	54
	Theta Cuts	**Bel. Basic/Basic**	-	-0.1359	-0.1029	-0.0871	-0.1178	-0.1150	-0.0872	-0.0802	-0.1017	-0.1099
		Basic/Prof.	-	0.3124	0.3496	0.3348	0.3321	0.3378	0.3446	0.3611	0.3537	0.3348
		Prof./Adv.	-	1.3089	1.3315	1.3437	1.3204	1.3175	1.3544	1.3427	1.3609	1.3197
	Impact %	**Bel. Basic**	-	12.6	12.7	12.3	9.4	7.0	7.1	8.7	13.4	14.9
		Basic	-	10.1	9.3	8.2	8.8	8.1	7.6	8.6	9.1	8.8
		Proficient	-	33.7	31.1	29.6	30.6	30.9	31.0	29.2	27.6	27.0
		Advanced	-	43.5	46.9	50.0	51.2	54.0	54.2	53.4	49.9	49.2
		Prof. + Adv.	-	77.3	78.0	79.5	81.8	84.8	85.2	82.7	77.5	76.3
	Demographics	**N Count**	-	127959	126154	126414	127601	126333	125604	122526	126550	126911
		% City	-	11.6	11.3	11.0	10.9	10.6	10.2	10.2	10.0	9.6
		% White	-	74.5	73.6	73.0	72.5	72.2	71.5	70.6	69.8	68.8
		% Black	-	15.4	15.7	15.7	15.6	15.3	15.1	15.0	14.8	14.5
		% Hispanic	-	6.4	6.9	7.5	7.6	7.7	8.3	8.7	9.0	9.7

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 5	Raw Score	Mean	47.21	44.71	43.81	43.39	46.20	48.59	47.54	47.28	46.32	46.39
		SD	12.31	12.99	12.45	14.08	14.57	13.60	13.17	13.52	13.82	15.55
		Max	66	66	66	66	72	72	72	72	72	72
	Scaled Score	Mean	1419.3	1424.0	1427.6	1453.1	1451.9	1477.1	1474.1	1462.5	1428.2	1447.8
		SD	223.8	238.1	226.7	234.2	226.2	236.3	222.2	235.2	227.3	263.0
		Max	2272	2292	2476	2329	2409	2432	2470	2455	2430	2460
	Raw Cuts	Bel. Basic/Basic	31	29	28	23	25	28	27	28	29	28
		Basic/Prof.	43	40	38	35	37	40	38	39	40	40
		Prof./Adv.	54	51	49	48	51	52	51	51	52	52
	Theta Cuts	Bel. Basic/Basic	-	0.1924	0.1886	0.1398	0.1286	0.1494	0.1911	0.1526	0.1796	0.1816
		Basic/Prof.	-	0.9868	0.9326	0.9407	0.9367	0.9992	0.9477	0.9473	0.9442	0.9856
		Prof./Adv.	-	1.8626	1.8384	1.8360	1.8797	1.9071	1.9015	1.8719	1.8610	1.8764
	Impact %	Bel. Basic	11.9	13.4	12.1	10.4	9.6	8.8	7.7	9.5	12.7	15.4
		Basic	19.1	19.8	17.0	16.4	16.9	16.8	16.0	17.3	18.0	17.4
		Proficient	30.9	28.0	29.5	27.5	29.2	26.8	30.1	27.5	27.9	22.8
		Advanced	38.1	38.9	41.5	45.7	44.3	47.6	46.2	45.8	41.4	44.4
		Prof. + Adv.	69.0	66.9	71.0	73.2	73.5	74.4	76.3	73.2	69.2	67.2
	Demographics	N Count	134322	131702	129781	127324	127544	126419	126578	124973	125790	126693
		% City	12.3	11.6	11.0	10.8	10.6	10.6	9.7	9.5	9.3	8.9
		% White	74.4	74.7	74.2	73.4	72.9	72.3	72.2	71.3	70.2	69.5
		% Black	16.3	15.6	15.4	15.6	15.5	15.5	15.0	14.8	15.0	14.6
		% Hispanic	6.0	6.3	6.7	7.2	7.5	7.8	7.9	8.6	8.9	9.3

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 6	Raw Score	Mean	-	42.44	44.66	42.96	47.90	49.42	49.33	48.65	48.55	48.00
		SD	-	13.07	11.81	13.85	14.36	13.68	13.92	13.11	14.35	14.27
		Max	-	66	66	66	72	72	72	72	72	72
	Scaled Score	Mean	-	1400.2	1421.1	1457.4	1469.9	1493.4	1499.2	1485.9	1467.2	1479.4
		SD	-	227.7	233.6	253.5	240.2	245.0	248.0	240.2	259.9	279.8
		Max	-	2345	2369	2453	2415	2447	2476	2580	2595	2649
	Raw Cuts	Bel. Basic/Basic	-	28	31	26	28	29	29	29	31	31
		Basic/Prof.	-	37	39	35	38	39	38	39	40	40
		Prof./Adv.	-	49	50	47	51	51	51	51	53	51
	Theta Cuts	Bel. Basic/Basic	-	-0.1366	-0.1292	-0.0912	-0.1288	-0.1237	-0.0971	-0.1424	-0.0804	-0.0940
		Basic/Prof.	-	0.4823	0.5116	0.5200	0.5206	0.5324	0.4855	0.5263	0.5027	0.5415
		Prof./Adv.	-	1.3721	1.4429	1.4008	1.4040	1.3791	1.4047	1.4132	1.4465	1.4054
	Impact %	Bel. Basic	-	15.8	14.4	14.1	11.1	9.4	10.1	9.0	13.8	14.1
		Basic	-	16.2	15.9	13.6	13.2	12.6	11.0	13.8	12.6	13.9
		Proficient	-	30.2	30.0	25.5	26.2	24.7	25.0	26.7	27.1	23.2
		Advanced	-	37.8	39.6	46.8	49.5	53.3	53.8	50.5	46.5	48.7
		Prof. + Adv.	-	68.0	69.6	72.3	75.7	78.0	78.9	77.2	73.6	71.9
	Demographics	N Count	-	136186	133610	130851	128421	126288	126630	126661	129366	126128
		% City	-	11.4	10.8	10.3	10.2	10.2	9.7	9.0	8.6	8.2
		% White	-	74.5	74.5	74.2	73.3	72.8	72.2	72.1	70.9	69.9
		% Black	-	16.1	15.6	15.3	15.4	15.2	15.2	14.7	14.8	14.8
		% Hispanic	-	6.2	6.5	6.9	7.3	7.6	8.0	8.1	8.9	9.3

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 7	Raw Score	Mean	-	39.77	40.54	41.58	45.62	47.88	47.81	48.19	47.20	44.95
		SD	-	13.38	13.23	13.41	14.57	14.61	14.13	13.84	14.64	15.41
		Max	-	66	66	66	72	72	72	72	72	72
	Scaled Score	Mean	-	1393.3	1419.2	1442.7	1464.2	1500.0	1503.8	1499.9	1497.1	1494.4
		SD	-	221.7	248.5	236.7	233.4	254.7	249.7	239.8	267.3	264.6
		Max	-	2343	2487	2407	2450	2475	2545	2548	2566	2561
	Raw Cuts	Bel. Basic/Basic	-	26	27	26	26	28	28	27	28	25
		Basic/Prof.	-	34	35	34	35	36	36	36	36	33
		Prof./Adv.	-	46	46	46	49	49	49	49	49	46
	Theta Cuts	Bel. Basic/Basic	-	-0.2123	-0.2114	-0.1486	-0.2145	-0.1565	-0.1500	-0.2106	-0.1715	-0.1761
		Basic/Prof.	-	0.3636	0.4076	0.4271	0.3755	0.3673	0.3885	0.3655	0.3661	0.3625
		Prof./Adv.	-	1.2351	1.3170	1.2916	1.2920	1.2552	1.2924	1.2310	1.2871	1.2478
	Impact %	Bel. Basic	-	17.3	17.8	14.9	11.6	11.7	10.8	9.2	12.3	12.6
		Basic	-	16.3	15.0	14.5	13.1	10.3	10.6	10.8	10.9	11.7
		Proficient	-	29.3	26.2	26.8	27.8	23.6	24.9	24.7	24.9	23.6
		Advanced	-	37.2	41.0	43.8	47.5	54.3	53.7	55.4	51.9	52.1
		Prof. + Adv.	-	66.4	67.2	70.6	75.3	78.0	78.6	80.0	76.8	75.7
	Demographics	N Count	-	141300	138838	135807	132803	127685	126993	127152	131842	130189
		% City	-	10.9	10.7	10.0	9.7	9.6	9.2	8.6	8.0	7.6
		% White	-	75.1	74.3	74.4	74.1	73.3	72.7	72.1	71.5	70.7
		% Black	-	15.8	15.9	15.4	15.1	15.1	14.8	14.9	14.8	14.5
		% Hispanic	-	6.0	6.4	6.7	7.0	7.4	7.9	8.2	8.4	9.1

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 8	Raw Score	Mean	43.97	42.33	42.62	44.17	47.17	49.33	49.21	49.32	48.35	48.32
		SD	13.69	13.71	13.70	13.54	14.84	14.53	14.17	13.99	14.40	15.62
		Max	66	66	66	66	72	72	72	72	72	72
	Scaled Score	Mean	1369.2	1368.7	1393.5	1406.3	1419.8	1450.7	1448.7	1446.1	1425.8	1456.1
		SD	222.2	222.5	222.3	221.0	220.3	236.9	225.4	223.0	221.7	260.9
		Max	2240	2225	2259	2270	2286	2314	2310	2301	2288	2337
	Raw Cuts	Bel. Basic/Basic	31	29	28	29	28	30	30	30	30	30
		Basic/Prof.	41	39	37	38	39	40	39	40	40	39
		Prof./Adv.	52	50	49	50	52	52	52	52	53	51
	Theta Cuts	Bel. Basic/Basic	-	-0.0514	-0.0174	-0.0046	-0.0649	-0.0609	-0.0168	-0.0559	-0.0349	-0.0221
		Basic/Prof.	-	0.6355	0.6341	0.6221	0.6285	0.6122	0.5777	0.6189	0.6203	0.6128
		Prof./Adv.	-	1.4907	1.5493	1.5535	1.4991	1.5042	1.5154	1.5031	1.5409	1.5295
	Impact %	Bel. Basic	19.3	18.9	16.9	16.0	12.8	12.0	11.4	11.4	12.9	15.6
		Basic	17.8	18.9	15.2	13.7	16.0	12.8	11.7	12.2	13.1	10.8
		Proficient	26.5	26.1	27.6	27.7	26.6	24.1	26.7	25.0	28.4	21.6
		Advanced	36.4	36.1	40.3	42.6	44.7	51.1	50.2	51.4	45.7	52.0
		Prof. + Adv.	62.9	62.2	67.9	70.3	71.2	75.1	76.9	76.5	74.0	73.6
	Demographics	N Count	145999	143749	141451	138582	135909	129983	126786	126204	131143	131363
		% City	11.1	11.0	10.6	10.3	9.8	9.5	9.1	8.7	8.0	7.5
		% White	76.8	75.9	75.0	74.5	74.4	74.1	73.3	72.6	71.8	71.3
		% Black	15.0	15.4	15.7	15.6	15.0	14.7	14.8	14.5	14.7	14.6
		% Hispanic	5.3	5.6	6.2	6.5	6.9	7.0	7.6	8.1	8.4	8.6

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mathematics Grade 11	Raw Score	**Mean**	39.89	43.39	40.95	42.00	45.97	47.62	47.99	45.57	-	-
		SD	15.17	14.24	14.25	14.33	15.50	15.23	14.56	14.73	-	-
		Max	66	66	66	66	72	72	72	72	-	-
	Scaled Score	**Mean**	1338.1	1342.5	1332.8	1343.8	1345.4	1372.2	1379.0	1375.8	-	-
		SD	288.3	292.5	253.3	267.3	259.9	276.0	264.0	267.0	-	-
		Max	2440	2398	2349	2342	2347	2377	2425	2587	-	-
	Raw Cuts	**Bel. Basic/Basic**	31	36	31	33	35	37	36	34	-	-
		Basic/Prof.	41	45	41	42	46	46	46	43	-	-
		Prof./Adv.	53	55	54	54	59	58	59	56	-	-
	Theta Cuts	**Bel. Basic/Basic**	-	-0.1182	-0.1546	-0.1113	-0.1731	-0.1149	-0.1601	-0.1157	-	-
		Basic/Prof.	-	0.5620	0.5150	0.5254	0.5272	0.4987	0.4983	0.4933	-	-
		Prof./Adv.	-	1.5382	1.5344	1.5474	1.5417	1.4788	1.5722	1.4957	-	-
	Impact %	**Bel. Basic**	30.5	30.4	26.6	26.6	24.9	24.8	21.6	23.2	-	-
		Basic	18.7	17.7	19.8	17.6	19.5	15.6	18.0	16.8	-	-
		Proficient	24.6	23.9	29.5	30.0	29.9	27.6	31.5	29.6	-	-
		Advanced	26.3	28.1	24.2	25.9	25.7	32.0	28.8	30.4	-	-
		Prof. + Adv.	50.8	51.9	53.7	55.9	55.7	59.6	60.4	60.0	-	-
	Demographics	**N Count**	129962	132666	135632	135137	133952	129910	127797	125113	-	-
		% City	9.3	8.5	8.2	7.8	8.4	8.2	8.2	7.5	-	-
		% White	80.5	80.5	79.5	79.1	77.8	76.6	75.9	75.5	-	-
		% Black	12.1	12.2	12.6	12.7	13.5	13.7	13.9	13.4	-	-
		% Hispanic	3.8	4.0	4.5	5.0	5.3	5.8	6.2	6.6	-	-

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 3	Raw Score	**Mean**	-	-	30.18	30.64	30.82	30.64	31.11	30.81	30.91	30.55
		SD	-	-	9.43	8.87	8.80	9.09	8.87	8.98	9.34	9.73
		Max	-	-	46	46	46	46	46	46	46	46
	Scaled Score	**Mean**	-	-	1330.8	1334.8	1342.1	1350.2	1346.5	1332.8	1335.8	1332.5
		SD	-	-	149.7	139.4	145.8	158.6	155.9	150.7	157.7	164.8
		Max	-	-	1891	1896	1928	1966	1942	1929	1907	1932
	Raw Cuts	**Bel. Basic/Basic**	-	-	19	19	20	19	20	21	21	21
		Basic/Prof.	-	-	25	25	25	25	25	26	26	26
		Prof./Adv.	-	-	39	39	38	38	38	38	39	39
	Theta Cuts	**Bel. Basic/Basic**	-	-	-0.3137	-0.3235	-0.2423	-0.3251	-0.3173	-0.2522	-0.2423	-0.2289
		Basic/Prof.	-	-	0.2857	0.2836	0.2779	0.3125	0.2220	0.2858	0.2838	0.2828
		Prof./Adv.	-	-	2.0417	2.0544	1.9360	2.0230	1.9466	1.8854	2.0420	2.0269
	Impact %	**Bel. Basic**	-	-	14.8	12.4	13.5	12.9	13.1	15.9	16.6	19.3
		Basic	-	-	12.4	10.7	9.5	11.9	9.6	10.0	10.0	10.4
		Proficient	-	-	50.8	57.1	50.8	47.9	48.9	46.9	49.1	44.5
		Advanced	-	-	22.0	19.7	26.2	27.3	28.3	27.2	24.3	25.8
		Prof. + Adv.	-	-	72.8	76.9	77.0	75.2	77.2	74.1	73.4	70.3
	Demographics	**N Count**	-	-	125344	126395	127154	126588	124678	126062	126685	124659
		% City	-	-	11.4	11.2	10.9	10.8	10.6	10.5	10.2	9.9
		% White	-	-	73.2	72.8	72.5	71.6	70.8	70.0	69.1	67.9
		% Black	-	-	15.8	15.8	15.5	15.5	15.4	15.1	14.7	14.7
		% Hispanic	-	-	7.2	7.5	7.6	8.1	8.5	8.8	9.4	10.0

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 4	Raw Score	**Mean**	-	33.10	31.74	33.93	34.07	34.97	35.41	35.30	34.70	35.07
		SD	-	9.92	9.63	9.82	10.15	9.98	9.26	9.59	10.19	10.23
		Max	-	52	52	52	52	52	52	52	52	52
	Scaled Score	**Mean**	-	1339.3	1349.2	1366.6	1375.5	1379.6	1379.5	1367.6	1355.8	1350.4
		SD	-	217.9	218.7	225.1	223.0	222.9	205.8	221.4	232.2	232.8
		Max	-	2303	2411	2318	2299	2294	2286	2249	2244	2255
	Raw Cuts	**Bel. Basic/Basic**	-	22	21	22	21	22	23	24	23	24
		Basic/Prof.	-	30	28	30	29	30	31	31	32	32
		Prof./Adv.	-	40	38	40	40	41	41	42	42	42
	Theta Cuts	**Bel. Basic/Basic**	-	-0.2218	-0.1667	-0.2014	-0.2069	-0.2073	-0.1389	-0.1402	-0.2253	-0.2057
		Basic/Prof.	-	0.4935	0.5021	0.5469	0.5023	0.5057	0.5607	0.4941	0.5805	0.5086
		Prof./Adv.	-	1.5629	1.5675	1.6028	1.5925	1.6441	1.6033	1.6862	1.6694	1.6085
	Impact %	**Bel. Basic**	-	15.3	14.9	13.6	12.8	12.8	11.3	13.5	14.8	15.7
		Basic	-	16.6	15.0	16.3	14.6	14.3	15.3	14.4	18.6	15.6
		Proficient	-	37.1	38.1	35.8	36.2	36.3	37.9	41.3	36.2	36.2
		Advanced	-	31.0	32.0	34.3	36.4	36.6	35.4	30.8	30.4	32.4
		Prof. + Adv.	-	68.1	70.1	70.1	72.6	72.9	73.4	72.0	66.6	68.6
	Demographics	**N Count**	-	127680	125981	126280	127519	128452	124535	121479	126491	126887
		% City	-	11.5	11.3	11.0	10.9	10.5	10.2	10.2	9.9	9.6
		% White	-	74.5	73.7	73.0	72.5	72.2	71.4	70.6	69.9	68.8
		% Black	-	15.4	15.7	15.7	15.6	15.3	15.2	15.0	14.8	14.5
		% Hispanic	-	6.4	6.9	7.4	7.6	7.7	8.4	8.7	9.0	9.7

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 5	Raw Score	**Mean**	35.87	35.13	33.83	34.57	35.11	35.65	35.72	36.29	34.39	34.96
		SD	9.52	9.81	9.68	9.80	9.19	8.79	8.53	9.07	10.00	9.59
		Max	52	52	52	52	52	52	52	52	52	52
	Scaled Score	**Mean**	1334.8	1311.5	1318.0	1329.7	1332.1	1328.9	1354.3	1353.5	1331.7	1321.9
		SD	235.1	232.9	221.9	222.0	219.8	217.6	214.5	226.4	238.7	227.8
		Max	2300	2234	2261	2262	2322	2357	2344	2293	2314	2312
	Raw Cuts	**Bel. Basic/Basic**	28	28	26	26	27	28	27	28	27	28
		Basic/Prof.	35	35	33	34	34	35	34	35	34	35
		Prof./Adv.	44	44	43	43	43	43	43	43	43	43
	Theta Cuts	**Bel. Basic/Basic**	-	0.2263	0.2564	0.2378	0.2289	0.2219	0.2425	0.2815	0.2948	0.2788
		Basic/Prof.	-	0.9268	0.9094	0.9934	0.9321	0.9505	0.9668	0.9794	0.9868	0.9757
		Prof./Adv.	-	2.0985	2.0854	2.0706	2.1020	2.0584	2.1815	2.0234	2.1469	2.0449
	Impact %	**Bel. Basic**	19.1	21.1	20.4	18.9	17.9	17.2	14.6	17.0	21.7	21.4
		Basic	16.7	18.3	19.7	19.6	17.5	18.7	18.2	18.0	17.3	18.0
		Proficient	41.3	39.8	39.2	38.1	41.8	41.2	44.9	36.7	37.3	36.3
		Advanced	22.9	20.8	20.8	23.5	22.7	22.9	22.4	28.3	23.7	24.2
		Prof. + Adv.	64.2	60.6	59.9	61.5	64.5	64.1	67.2	65.0	61.0	60.5
	Demographics	**N Count**	134142	131488	129593	127211	127430	128933	125963	124007	125727	126639
		% City	12.2	11.6	11.0	10.8	10.6	10.5	9.7	9.5	9.3	8.9
		% White	74.4	74.7	74.3	73.5	72.9	72.2	72.2	71.3	70.2	69.6
		% Black	16.3	15.6	15.5	15.6	15.5	15.6	15.0	14.8	15.0	14.6
		% Hispanic	5.9	6.3	6.7	7.2	7.5	7.8	7.9	8.6	8.9	9.3

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 6	Raw Score	**Mean**	-	32.96	33.11	34.54	35.44	35.71	36.22	35.79	34.66	34.07
		SD	-	9.26	9.87	9.60	9.67	9.72	9.27	9.47	9.39	10.15
		Max	-	52	52	52	52	52	52	52	52	52
	Scaled Score	**Mean**	-	1335.6	1342.7	1357.6	1373.1	1378.4	1396.4	1377.0	1358.9	1365.9
		SD	-	210.4	223.9	221.5	222.4	233.7	234.0	238.4	222.5	246.0
		Max	-	2339	2306	2290	2285	2293	2332	2319	2350	2391
	Raw Cuts	**Bel. Basic/Basic**	-	23	23	24	24	25	25	25	24	24
		Basic/Prof.	-	31	31	32	33	33	33	33	33	32
		Prof./Adv.	-	39	40	41	41	41	41	41	40	40
	Theta Cuts	**Bel. Basic/Basic**	-	-0.2409	-0.1960	-0.1898	-0.1980	-0.1583	-0.1615	-0.2155	-0.2323	-0.1657
		Basic/Prof.	-	0.5452	0.5488	0.5587	0.6215	0.5928	0.6003	0.5576	0.6276	0.5995
		Prof./Adv.	-	1.4345	1.5094	1.5553	1.5044	1.5051	1.5402	1.5031	1.4366	1.5169
	Impact %	**Bel. Basic**	-	15.6	17.0	15.3	14.0	14.8	13.1	14.2	14.4	18.0
		Basic	-	18.5	19.6	17.7	18.4	16.4	17.0	17.3	20.5	17.5
		Proficient	-	33.5	32.7	34.9	30.5	30.7	30.5	31.1	28.3	27.1
		Advanced	-	32.4	30.8	32.0	37.1	38.1	39.4	37.4	36.9	37.4
		Prof. + Adv.	-	65.9	63.5	66.9	67.6	68.7	69.9	68.5	65.2	64.6
	Demographics	**N Count**	-	135914	133399	130706	128284	128921	126170	126146	129305	126044
		% City	-	11.4	10.8	10.3	10.2	10.1	9.7	9.0	8.6	8.2
		% White	-	74.5	74.6	74.3	73.3	72.7	72.2	72.0	70.9	69.9
		% Black	-	16.0	15.6	15.3	15.4	15.3	15.2	14.7	14.8	14.8
		% Hispanic	-	6.2	6.5	6.9	7.3	7.6	8.0	8.2	8.9	9.3

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 7	Raw Score	**Mean**	-	33.13	33.19	34.12	34.52	34.83	34.42	35.06	33.96	34.68
		SD	-	9.75	10.18	10.05	9.91	9.48	9.02	8.96	10.06	9.83
		Max	-	52	52	52	52	52	52	52	52	52
	Scaled Score	**Mean**	-	1363.5	1372.4	1394.2	1413.1	1413.9	1418.3	1412.8	1397.5	1409.0
		SD	-	220.1	229.7	234.8	231.0	219.2	210.7	221.2	228.1	231.0
		Max	-	2351	2361	2366	2388	2373	2387	2394	2338	2319
	Raw Cuts	**Bel. Basic/Basic**	-	22	22	22	21	22	21	23	21	22
		Basic/Prof.	-	30	30	30	30	30	29	30	30	30
		Prof./Adv.	-	39	39	40	39	39	38	39	39	39
	Theta Cuts	**Bel. Basic/Basic**	-	-0.3167	-0.2713	-0.2808	-0.3012	-0.2353	-0.2950	-0.2634	-0.3202	-0.2756
		Basic/Prof.	-	0.4230	0.4511	0.4361	0.4955	0.4820	0.4572	0.4224	0.5051	0.4776
		Prof./Adv.	-	1.3773	1.3771	1.4939	1.4066	1.4015	1.3935	1.4251	1.4282	1.4063
	Impact %	**Bel. Basic**	-	14.6	16.0	13.8	11.2	11.2	9.2	10.7	12.8	12.2
		Basic	-	17.3	17.3	16.2	17.4	15.3	14.8	13.2	16.9	15.7
		Proficient	-	33.2	30.3	34.0	30.0	31.6	32.7	34.7	30.7	30.3
		Advanced	-	34.9	36.5	36.0	41.4	41.9	43.3	41.3	39.7	41.7
		Prof. + Adv.	-	68.0	66.8	70.0	71.4	73.5	76.0	76.1	70.4	72.1
	Demographics	**N Count**	-	141012	138610	135669	132641	130376	126902	126765	131767	130053
		% City	-	10.9	10.6	10.0	9.7	9.6	9.2	8.6	8.0	7.6
		% White	-	75.2	74.4	74.5	74.2	73.3	72.7	72.1	71.5	70.7
		% Black	-	15.7	15.9	15.4	15.1	15.2	14.9	14.9	14.7	14.5
		% Hispanic	-	6.0	6.4	6.7	7.0	7.4	7.9	8.2	8.4	9.1

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 8	Raw Score	Mean	39.12	34.98	33.08	33.57	34.77	34.61	35.60	35.18	33.28	34.59
		SD	9.07	9.78	8.98	10.13	9.55	8.89	8.93	9.30	9.90	9.65
		Max	52	52	52	52	52	52	52	52	52	52
	Scaled Score	Mean	1359.5	1424.8	1441.3	1479.9	1499.5	1491.3	1513.0	1505.5	1483.1	1494.4
		SD	274.3	284.7	249.2	272.8	263.7	245.3	260.4	265.7	263.4	263.0
		Max	2349	2559	2646	2628	2621	2635	2639	2626	2616	2610
	Raw Cuts	Bel. Basic/Basic	33	25	22	20	21	21	22	21	20	21
		Basic/Prof.	39	31	28	26	27	27	28	28	26	27
		Prof./Adv.	45	39	36	35	36	36	36	36	34	36
	Theta Cuts	Bel. Basic/Basic	-	0.1584	0.1727	0.1507	0.1775	0.1659	0.1977	0.1407	0.1997	0.1860
		Basic/Prof.	-	0.7466	0.7668	0.7042	0.7360	0.7294	0.7688	0.7964	0.7631	0.7419
		Prof./Adv.	-	1.6424	1.6248	1.5700	1.6317	1.6340	1.5882	1.6002	1.5315	1.6310
	Impact %	Bel. Basic	19.7	16.2	12.3	12.1	10.6	8.7	8.9	9.0	11.7	11.0
		Basic	16.3	13.2	12.7	9.6	8.9	9.4	9.3	11.3	10.8	9.4
		Proficient	30.6	27.1	29.3	24.2	25.2	28.6	24.1	24.1	21.9	24.9
		Advanced	33.5	43.5	45.7	54.1	55.3	53.3	57.7	55.7	55.6	54.7
		Prof. + Adv.	64.0	70.6	75.0	78.2	80.5	81.9	81.7	79.8	77.5	79.6
	Demographics	N Count	145752	143401	141193	138377	135739	132906	127125	126250	131006	131218
		% City	11.1	11.0	10.6	10.2	9.8	9.4	9.0	8.6	7.9	7.5
		% White	76.8	76.0	75.0	74.5	74.5	74.1	73.3	72.6	71.9	71.3
		% Black	15.0	15.4	15.7	15.6	15.0	14.8	14.8	14.5	14.7	14.6
		% Hispanic	5.3	5.6	6.2	6.5	6.9	7.1	7.6	8.1	8.4	8.6

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Reading Grade 11	Raw Score	Mean	38.75	34.76	34.02	34.81	35.04	35.25	35.88	35.99	-	-
		SD	9.51	9.13	9.55	9.28	9.39	9.38	9.10	8.49	-	-
		Max	52	52	52	52	52	52	52	52	-	-
	Scaled Score	Mean	1362.9	1366.4	1346.2	1360.2	1368.5	1363.2	1381.6	1370.0	-	-
		SD	316.5	278.5	266.9	276.2	280.8	280.4	273.4	258.6	-	-
		Max	2446	2631	2529	2546	2524	2520	2511	2520	-	-
	Raw Cuts	Bel. Basic/Basic	33	27	26	27	27	27	27	28	-	-
		Basic/Prof.	38	33	32	33	33	33	33	34	-	-
		Prof./Adv.	45	41	41	41	41	41	41	41	-	-
	Theta Cuts	Bel. Basic/Basic	-	0.0646	0.0416	0.0582	0.0675	0.0156	0.0437	0.0633	-	-
		Basic/Prof.	-	0.6639	0.6034	0.6497	0.6540	0.6097	0.6194	0.6795	-	-
		Prof./Adv.	-	1.6804	1.6229	1.6056	1.5958	1.5606	1.5392	1.5355	-	-
	Impact %	Bel. Basic	22.0	18.5	19.3	19.0	18.8	18.0	15.9	15.7	-	-
		Basic	12.9	16.3	15.3	16.2	15.9	14.8	14.9	16.5	-	-
		Proficient	31.4	33.9	36.5	32.9	32.1	33.2	33.0	33.6	-	-
		Advanced	33.6	31.2	28.9	31.8	33.1	34.0	36.1	34.2	-	-
		Prof. + Adv.	65.0	65.2	65.4	64.7	65.3	67.2	69.2	67.8	-	-
	Demographics	N Count	129693	132434	135364	135015	133753	133291	127997	125380	-	-
		% City	9.3	8.5	8.2	7.8	8.4	8.2	8.2	7.4	-	-
		% White	80.6	80.5	79.6	79.2	77.8	76.4	75.9	75.5	-	-
		% Black	12.1	12.2	12.5	12.7	13.4	13.9	13.9	13.3	-	-
		% Hispanic	3.8	4.0	4.5	4.9	5.2	5.9	6.2	6.6	-	-

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Science Grade 4	Raw Score	**Mean**	-	-	-	45.80	47.25	48.64	48.47	45.73	45.47	47.41
		SD	-	-	-	11.04	11.53	12.22	11.88	12.28	13.20	13.01
		Max	-	-	-	66	66	68	68	68	68	68
	Scaled Score	**Mean**	-	-	-	1429.4	1449.2	1456.8	1452.4	1447.8	1435.5	1447.8
		SD	-	-	-	174.1	176.0	200.4	181.9	183.8	196.0	206.9
		Max	-	-	-	2256	2271	2254	2234	2285	2269	2259
	Raw Cuts	**Bel. Basic/Basic**	-	-	-	26	25	28	26	24	25	27
		Basic/Prof.	-	-	-	36	36	38	37	34	35	37
		Prof./Adv.	-	-	-	51	52	53	53	50	51	53
	Theta Cuts	**Bel. Basic/Basic**	-	-	-	-0.4243	-0.4261	-0.3909	-0.3994	-0.3851	-0.3750	-0.3956
		Basic/Prof.	-	-	-	0.2798	0.3223	0.3093	0.3180	0.3065	0.3115	0.2983
		Prof./Adv.	-	-	-	1.4659	1.5133	1.4914	1.4788	1.4523	1.4658	1.5376
	Impact %	**Bel. Basic**	-	-	-	5.9	4.9	7.7	5.6	6.1	9.2	9.4
		Basic	-	-	-	12.7	11.7	10.8	11.5	11.6	12.2	11.4
		Proficient	-	-	-	41.2	41.0	35.5	38.0	37.8	36.0	36.0
		Advanced	-	-	-	40.3	42.4	45.9	44.9	44.5	42.5	43.2
		Prof. + Adv.	-	-	-	81.5	83.4	81.5	83.0	82.3	78.6	79.2
	Demographics	**N Count**	-	-	-	126426	127537	128565	128103	125170	126729	127105
		% City	-	-	-	10.9	10.7	10.5	10.2	10.3	10.0	9.6
		% White	-	-	-	72.9	72.5	72.0	71.2	70.4	69.6	68.7
		% Black	-	-	-	15.5	15.5	15.3	15.2	15.1	14.8	14.4
		% Hispanic	-	-	-	7.6	7.7	7.9	8.5	8.9	9.2	9.8

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Science Grade 8	Raw Score	**Mean**	-	-	-	38.25	41.00	42.61	42.10	43.09	44.04	45.48
		SD	-	-	-	11.71	13.02	13.74	13.62	12.75	13.52	13.81
		Max	-	-	-	66	66	68	68	68	68	68
	Scaled Score	**Mean**	-	-	-	1284.4	1302.9	1309.0	1312.5	1319.6	1323.2	1324.1
		SD	-	-	-	174.1	197.6	210.1	203.2	191.9	209.9	209.3
		Max	-	-	-	2297	2303	2258	2283	2276	2268	2213
	Raw Cuts	**Bel. Basic/Basic**	-	-	-	29	31	33	31	32	33	35
		Basic/Prof.	-	-	-	39	41	42	41	42	43	45
		Prof./Adv.	-	-	-	51	53	55	54	54	55	57
	Theta Cuts	**Bel. Basic/Basic**	-	-	-	-0.2333	-0.2118	-0.1829	-0.2267	-0.2018	-0.2263	-0.1862
		Basic/Prof.	-	-	-	0.4587	0.4620	0.4202	0.4102	0.4526	0.4352	0.4695
		Prof./Adv.	-	-	-	1.4173	1.4098	1.4771	1.4148	1.4096	1.4295	1.4916
	Impact %	**Bel. Basic**	-	-	-	23.1	24.0	25.5	22.9	20.9	22.3	22.9
		Basic	-	-	-	24.3	21.1	17.3	18.9	19.5	17.7	16.6
		Proficient	-	-	-	36.4	32.5	33.7	34.0	35.4	33.4	34.9
		Advanced	-	-	-	16.3	22.3	23.5	24.3	24.3	26.7	25.6
		Prof. + Adv.	-	-	-	52.7	54.8	57.2	58.3	59.6	60.1	60.5
	Demographics	**N Count**	-	-	-	137790	134969	132452	127075	126112	130637	130918
		% City	-	-	-	10.1	9.7	9.3	9.0	8.6	7.9	7.4
		% White	-	-	-	74.6	74.5	74.1	73.2	72.6	71.7	71.3
		% Black	-	-	-	15.3	14.9	14.6	14.7	14.4	14.7	14.5
		% Hispanic	-	-	-	6.6	7.0	7.1	7.6	8.1	8.5	8.6

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Science Grade 11	Raw Score	**Mean**	-	-	-	36.11	39.02	39.48	39.72	39.47	-	-
		SD	-	-	-	12.46	13.16	13.02	13.94	13.38	-	-
		Max	-	-	-	72	72	74	74	74	-	-
	Scaled Score	**Mean**	-	-	-	1236.3	1244.0	1242.6	1244.8	1245.9	-	-
		SD	-	-	-	89.0	101.5	96.7	96.5	93.5	-	-
		Max	-	-	-	1825	1859	1862	1822	1814	-	-
	Raw Cuts	**Bel. Basic/Basic**	-	-	-	24	27	27	26	25	-	-
		Basic/Prof.	-	-	-	42	44	45	45	44	-	-
		Prof./Adv.	-	-	-	53	53	54	56	55	-	-
	Theta Cuts	**Bel. Basic/Basic**	-	-	-	-0.3955	-0.3898	-0.4062	-0.3853	-0.4439	-	-
		Basic/Prof.	-	-	-	0.7921	0.8144	0.8288	0.7891	0.7792	-	-
		Prof./Adv.	-	-	-	1.5577	1.4967	1.5053	1.5633	1.5334	-	-
	Impact %	**Bel. Basic**	-	-	-	18.1	19.8	19.0	18.8	16.3	-	-
		Basic	-	-	-	46.2	40.5	41.2	40.4	41.8	-	-
		Proficient	-	-	-	25.2	22.5	25.0	26.7	27.6	-	-
		Advanced	-	-	-	10.5	17.2	14.8	14.1	14.2	-	-
		Prof. + Adv.	-	-	-	35.6	39.7	39.8	40.8	41.9	-	-
	Demographics	**N Count**	-	-	-	131157	130262	129926	125307	121693	-	-
		% City	-	-	-	6.8	7.3	7.0	7.4	6.4	-	-
		% White	-	-	-	80.2	78.8	77.5	76.8	76.7	-	-
		% Black	-	-	-	11.6	12.4	13.0	13.1	12.4	-	-
		% Hispanic	-	-	-	4.8	5.1	5.7	6.0	6.2	-	-

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Writing Grade 5	Raw Score	**Mean**	-	68.63	65.07	66.56	66.03	65.44	65.83	64.82	65.63	63.10
		SD	-	12.97	13.03	13.93	14.35	14.55	14.57	14.91	13.93	14.89
		Max	-	100	100	100	100	100	100	100	100	100
	Scaled Score	**Mean**	-	1300.2	1274.5	1319.6	1303.2	1322.1	1351.3	1331.0	1315.6	1330.6
		SD	-	248.9	215.4	304.4	246.0	265.5	277.7	275.7	262.6	282.0
		Max	-	2188	2145	2615	2162	2249	2294	2314	2274	2354
	Raw Cuts	**Bel. Basic/Basic**	-	35	35	34	31	30	31	28	33	29
		Basic/Prof.	-	68	64	65	64	63	61	62	63	59
		Prof./Adv.	-	96	98	89	97	94	92	91	93	88
	Theta Cuts	**Bel. Basic/Basic**				-3.2096	-3.2167	-3.2280	-3.1071	-3.1662	-3.1257	-3.0765
		Basic/Prof.				1.6555	1.7538	1.7554	1.7133	1.7283	1.6573	1.6398
		Prof./Adv.				8.6187	8.4299	8.4710	8.4777	8.3972	8.4274	8.3673
	Impact %	**Bel. Basic**	-	0.8	1.1	1.2	1.0	1.8	1.9	1.8	1.4	2.3
		Basic	-	45.0	41.6	41.6	40.9	36.5	31.0	34.0	35.3	36.5
		Proficient	-	52.0	56.0	52.7	55.5	59.8	64.9	62.5	61.7	56.2
		Advanced	-	2.1	1.3	4.6	2.6	2.0	2.2	1.7	1.7	5.1
		Prof. + Adv.	-	54.1	57.3	57.3	58.1	61.7	67.1	64.2	63.3	61.2
	Demographics	**N Count**	-	129802	128637	125547	126625	128201	128833	127549	124041	124666
		% City	-	11.2	10.7	10.5	10.4	10.4	9.6	9.5	9.2	8.7
		% White	-	75.2	74.6	73.9	73.1	72.4	72.2	71.3	70.5	70.0
		% Black	-	15.2	15.2	15.5	15.3	15.4	15.1	14.9	14.9	14.3
		% Hispanic	-	6.2	6.6	7.0	7.5	7.7	7.9	8.6	8.9	9.2

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Writing Grade 8	Raw Score	**Mean**	-	71.71	67.24	68.05	67.82	68.36	67.11	67.06	66.63	67.23
		SD	-	14.09	13.91	13.32	13.83	14.90	14.22	14.41	14.49	13.89
		Max	-	100	100	100	100	100	100	100	100	100
	Scaled Score	**Mean**	-	1340.5	1375.1	1322.5	1363.1	1400.9	1415.5	1406.6	1402.9	1391.4
		SD	-	266.0	258.4	210.5	265.5	271.9	272.1	276.8	268.4	264.8
		Max	-	2119	2265	2098	2288	2245	2329	2341	2306	2321
	Raw Cuts	**Bel. Basic/Basic**	-	45	40	43	43	38	38	38	38	40
		Basic/Prof.	-	69	60	63	62	60	58	59	58	60
		Prof./Adv.	-	92	85	94	85	86	82	82	83	82
	Theta Cuts	**Bel. Basic/Basic**				-1.9218	-2.0619	-2.0663	-2.0134	-1.9652	-1.9614	-1.9605
		Basic/Prof.				1.1614	1.1847	1.1789	1.2283	1.2174	1.2152	1.2286
		Prof./Adv.				6.4254	6.3760	6.4115	6.3574	6.4652	6.3932	6.2487
	Impact %	**Bel. Basic**	-	3.4	2.8	2.9	4.2	3.2	2.8	3.2	3.3	3.8
		Basic	-	30.6	25.5	28.0	24.6	21.6	24.1	24.1	24.1	22.6
		Proficient	-	60.5	60.9	66.8	60.7	61.7	62.1	62.2	61.5	63.7
		Advanced	-	5.6	10.9	2.3	10.5	13.5	11.0	10.5	11.1	9.8
		Prof. + Adv.	-	66.0	71.7	69.1	71.2	75.1	73.1	72.7	72.6	73.6
	Demographics	**N Count**	-	141365	139263	136417	134976	131780	129619	129035	129823	130302
		% City	-	10.4	10.1	9.8	9.6	9.3	8.9	8.5	7.8	7.4
		% White	-	76.7	75.6	75.0	74.7	74.3	73.4	72.7	72.0	71.5
		% Black	-	14.9	15.3	15.2	14.9	14.6	14.8	14.5	14.7	14.5
		% Hispanic	-	5.5	6.0	6.4	6.8	7.0	7.5	8.0	8.3	8.5

			2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Writing Grade 11	Raw Score	Mean	-	71.90	70.23	69.71	72.30	69.60	71.44	68.63	-	-
		SD	-	13.22	11.48	13.27	14.48	14.35	14.76	15.27	-	-
		Max	-	100	100	100	100	100	100	100	-	-
	Scaled Score	Mean	-	1515.7	1442.9	1470.6	1480.4	1483.7	1536.8	1523.3	-	-
		SD	-	274.8	216.7	262.8	283.7	282.3	298.6	293.9	-	-
		Max	-	2356	2283	2377	2257	2382	2364	2418	-	-
	Raw Cuts	Bel. Basic/Basic	-	36	38	36	39	35	34	31	-	-
		Basic/Prof.	-	57	59	56	60	57	55	53	-	-
		Prof./Adv.	-	83	87	84	88	82	83	81	-	-
	Theta Cuts	Bel. Basic/Basic				-2.8217	-2.8091	-2.7956	-2.7861	-2.9190	-	-
		Basic/Prof.				-0.0891	-0.0515	-0.0159	-0.0562	0.0251	-	-
		Prof./Adv.				5.6192	5.6480	5.6311	5.7382	5.7556	-	-
	Impact %	Bel. Basic	-	1.2	0.8	1.2	2.3	2.2	1.7	2.5	-	-
		Basic	-	13.1	11.3	13.0	14.9	17.1	13.6	14.6	-	-
		Proficient	-	69.8	80.2	72.2	67.9	67.7	66.0	69.3	-	-
		Advanced	-	15.8	7.7	13.6	14.8	13.0	18.7	13.6	-	-
		Prof. + Adv.	-	85.7	87.8	85.8	82.8	80.7	84.7	82.9	-	-
	Demographics	N Count	-	130572	133368	132349	132866	130352	128775	125095	-	-
		% City	-	7.9	7.4	7.0	7.9	7.3	7.5	6.7	-	-
		% White	-	81.4	80.3	80.1	78.2	77.3	76.5	76.5	-	-
		% Black	-	11.6	12.0	11.9	13.1	13.2	13.4	12.8	-	-
		% Hispanic	-	3.8	4.3	4.8	5.1	5.7	6.1	6.2	-	-

Appendix R:

ELA: Writing Field Test Report

INTRODUCTION

The ELA: Writing Field Tests for grades 3–8 are designed to yield a sufficient number of a) standalone language/convention MC items and b) narrative, informative, and persuasive writing prompts to cover six administrations. The size of these tests are expected to mirror the operational writing portion of the ELA test (Section 4) and include unique field-test MC items, linking MC items (identical MC items appearing in the same position on all standalone field-test forms), and unique writing prompts representing one of three modes (narrative, informative, or persuasive). The testing window was spring 2013 for grades 3, 4, and 5, and spring 2014 for grades 6, 7, and 8. The participation was voluntary.

The main purpose of this appendix is to document the psychometric analyses conducted on the writing field tests administered in spring 2013 and 2014.The psychometric analyses included are:

- key verification analysis of multiple-choice (MC) items,
- item analysis based on classical test theory,
- differential item functioning (DIF) analysis, and
- item calibration based on the Rasch model.

This report also includes the following results:

- Data review meeting results
- Inter-Rater Agreement

The technical information provided in this report is intended for users who are interested in learning how the field tests were analyzed and how the results were interpreted and used for subsequent educational decisions. It is assumed that the reader has technical knowledge of test construction and measurement procedures, as stated in the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, National Council on Measurement in Education, 1999).

TEST DESIGN

To calibrate all the field-test items within one content area on the same scale, the common item non-equivalent groups design was employed. In other words, multiple forms were field tested to different groups of students and these forms shared common or linking items that were administered to all students. Figures 1 and 2 illustrate the test design for the 2013 and 2014 ELA: Writing Field Tests for grade 3, and grades 4 through 8, respectively. With all grades, a common set of multiple-choice (MC) items were given to all students. With grade 3, there were also common open-ended (OE) items. A subset of the student sample took the unique MC and writing prompt (WP) items that varied across forms in all grades. Grade 3 also had unique OE items.

Figure 1. Test Design for the 2013 and 2014 ELA: Writing Field Tests for Grade 3.

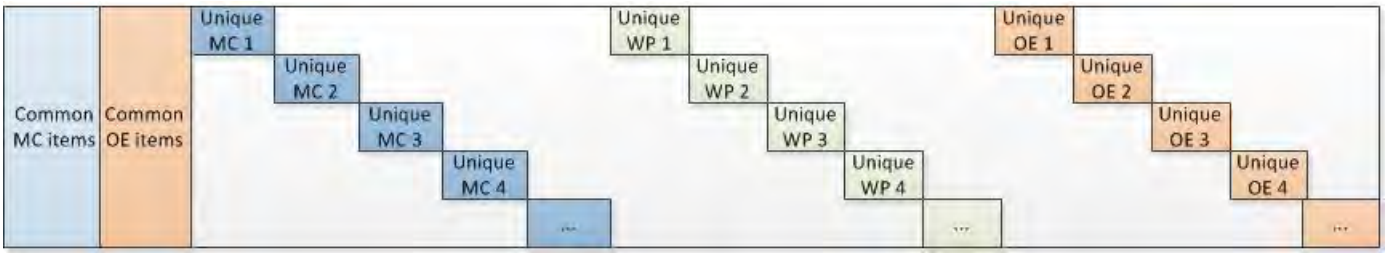
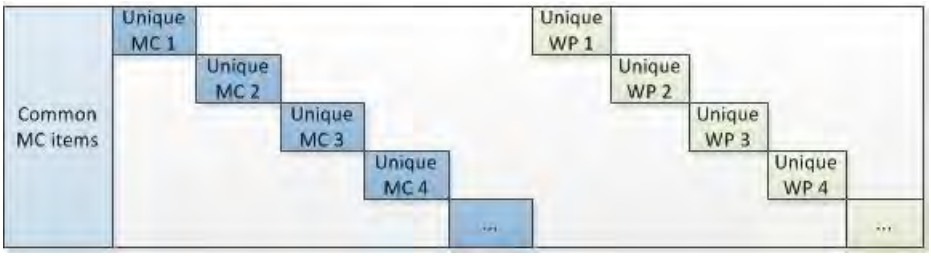


Figure R. Test Design for the 2013 and 2014 ELA: Writing Field Tests for Grades 4–8.



The number of common, unique, and total MC, WP, and OE items per form are shown in Table 1. It also provides the number of forms and total number of items. The WP items were scored on a 1 to 4 point scale for all grades, and the OE items were scored on a 0 to 2 point scale.

Table 1. Test Design

Grade	No. of Common Items per Form		No. of Unique Items per Form			Total No. of Items per Form			No. of Forms	Total No. of Items		
	MC	OE	MC	WP	OE	MC	WP	OE		MC	WP	OE
3	10	2	8	1	2	18	1	4	20	170	20	42
4	14	0	10	1	0	24	1	0	20	214	20	0
5	14	0	10	1	0	24	1	0	20	214	20	0
6	13	0	11	1	0	24	1	0	20	233	20	0
7	13	0	11	1	0	24	1	0	20	233	20	0
8	13	0	11	1	0	24	1	0	20	233	20	0

SAMPLING

Participation in the field test was voluntary. To increase the likelihood of equivalent groups taking each of the 20 forms, the forms were administered in a spiral fashion.

Summary of demographic characteristics (MC and WP items separately)

Frequency data for each demographic category is presented in Tables 2 through 14. Percentages were based on students with a valid score. Table 2 presents the overall demographic information for the students who took the field tests for each grade. The gender distribution of the sample was balanced, as one would expect. For the ethnicity demographic, approximately 67.8% to 71.1% of students reported as White. The next largest ethnicity group was Black/African American, ranging from 13.6% to 15.2%. The proportion of Hispanic ranged from 9.1% to 10.2%. The economically disadvantaged students' percentage varied from 43.7% to 45.3%.

Table 2. Demographic Characteristics of the Overall Sample by Grade

	Grade	3		4		5		6		7		8	
		N	%	N	%	N	%	N	%	N	%	N	%
	Total	102193		100887		99336		80846		78481		74573	
Gender	Male	51966	50.9	51145	50.7	50719	51.1	40806	50.5	39488	50.3	37530	50.3
	Female	49820	48.8	49535	49.1	48313	48.6	39024	48.3	37969	48.4	35882	48.1
Ethnicity	White	71195	69.7	71128	70.5	70619	71.1	54852	67.8	53600	68.3	50827	68.2
	Af. Ameri.	13928	13.6	13978	13.9	13838	13.9	12010	14.9	11653	14.8	11329	15.2
	Hispanic	9867	9.7	9352	9.3	9035	9.1	8364	10.3	8029	10.2	7391	9.9
	Asian	3573	3.5	3473	3.4	3285	3.3	2452	3.0	2291	2.9	2060	2.8
	Am. Indian	152	0.1	153	0.2	156	0.2	122	0.2	112	0.1	101	0.1
	Pacific Islander	**Included in Asian**						55	0.1	65	0.1	66	0.1
	Multi	3003	2.9	2466	2.4	1973	2.0	1879	2.3	1608	2.0	1505	2.0
Eco. Dis.	Yes	45880	44.9	44666	44.3	43429	43.7	36618	45.3	35167	44.8	32898	44.1
	No	56313	55.1	56221	55.7	55907	56.3	44228	54.7	43314	55.2	41675	55.9

Tables 3 through 14 provide gender, ethnicity (White, Black, and Hispanic) and economically disadvantaged information by form for MC and WP items. All students' responses were scored for MC items, but only subsets of students were scored for the WP items and OE items for grade 3, with approximate sample size of 1500. The percentage of students in each demographic characteristic appears to be comparable across most of the forms.

Table 3. Demographic Characteristics for Grade 3 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2580	50.2	2534	49.3	3583	69.7	691	13.4	494	9.6	2298	44.7
2	2606	50.7	2521	49.0	3558	69.2	685	13.3	508	9.9	2333	45.3
3	2669	52.1	2432	47.5	3588	70.1	644	12.6	503	9.8	2284	44.6
4	2692	52.4	2427	47.2	3602	70.1	681	13.2	494	9.6	2305	44.8
5	2615	51.0	2496	48.6	3571	69.6	735	14.3	471	9.2	2261	44.1
6	2548	49.7	2564	50.0	3545	69.1	710	13.8	531	10.4	2313	45.1
7	2599	50.9	2489	48.7	3568	69.9	702	13.7	492	9.6	2327	45.6
8	2608	51.1	2479	48.6	3525	69.0	708	13.9	490	9.6	2290	44.9
9	2635	51.4	2476	48.3	3574	69.7	686	13.4	500	9.7	2342	45.6
10	2602	50.7	2511	48.9	3609	70.3	690	13.4	480	9.4	2307	45.0
11	2579	50.6	2496	49.0	3561	69.8	695	13.6	483	9.5	2285	44.8
12	2646	52.1	2418	47.6	3507	69.0	706	13.9	511	10.1	2291	45.1
13	2566	50.3	2509	49.2	3563	69.9	702	13.8	490	9.6	2301	45.1
14	2583	50.7	2483	48.8	3570	70.1	700	13.8	472	9.3	2260	44.4
15	2516	49.8	2520	49.9	3553	70.3	711	14.1	475	9.4	2275	45.0
16	2594	51.0	2471	48.6	3545	69.7	685	13.5	500	9.8	2290	45.1
17	2613	50.9	2503	48.8	3544	69.0	727	14.2	499	9.7	2328	45.3
18	2613	51.1	2481	48.5	3565	69.7	696	13.6	510	10.0	2290	44.8
19	2546	50.0	2519	49.5	3530	69.4	667	13.1	513	10.1	2244	44.1
20	2556	50.5	2491	49.2	3534	69.8	707	14.0	451	8.9	2256	44.5

Table 4. Demographic Characteristics for Grade 3 WP Sample by Form

Form	Total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1499	748	49.9	744	49.6	1069	71.3	210	14.0	122	8.1	643	42.9
2	1499	768	51.2	728	48.6	1013	67.6	218	14.5	133	8.9	684	45.6
3	1500	822	54.8	668	44.5	1047	69.8	180	12.0	147	9.8	645	43.0
4	1499	808	53.9	685	45.7	1033	68.9	200	13.3	157	10.5	661	44.1
5	1498	770	51.4	723	48.3	1030	68.8	215	14.4	150	10.0	660	44.1
6	1500	771	51.4	728	48.5	1042	69.5	197	13.1	169	11.3	677	45.1
7	1499	749	50.0	745	49.7	1047	69.8	186	12.4	169	11.3	715	47.7
8	1500	777	51.8	718	47.9	1046	69.7	199	13.3	131	8.7	678	45.2
9	1500	763	50.9	727	48.5	1042	69.5	210	14.0	134	8.9	681	45.4
10	1500	768	51.2	727	48.5	1064	70.9	199	13.3	124	8.3	667	44.5
11	1500	770	51.3	722	48.1	1058	70.5	198	13.2	144	9.6	646	43.1
12	1500	762	50.8	735	49.0	1047	69.8	195	13.0	157	10.5	687	45.8
13	1500	779	51.9	713	47.5	1057	70.5	206	13.7	130	8.7	700	46.7
14	1500	763	50.9	729	48.6	1074	71.6	196	13.1	133	8.9	651	43.4
15	1500	747	49.8	746	49.7	1032	68.8	214	14.3	147	9.8	683	45.5
16	1500	776	51.7	719	47.9	1021	68.1	209	13.9	174	11.6	687	45.8
17	1499	768	51.2	725	48.4	1027	68.5	213	14.2	153	10.2	691	46.1
18	1500	738	49.2	755	50.3	1035	69.0	203	13.5	153	10.2	690	46.0
19	1500	744	49.6	751	50.1	1053	70.2	188	12.5	155	10.3	666	44.4
20	1499	763	50.9	734	49.0	1044	69.6	206	13.7	128	8.5	670	44.7

Table 5. Demographic Characteristics for Grade 4 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2646	51.6	2462	48.0	3595	70.2	714	13.9	476	9.3	2267	44.2
2	2584	51.0	2473	48.8	3563	70.3	689	13.6	489	9.6	2224	43.9
3	2564	50.6	2490	49.2	3578	70.7	691	13.6	483	9.5	2200	43.5
4	2606	51.6	2433	48.2	3521	69.8	704	13.9	502	9.9	2265	44.9
5	2518	50.3	2484	49.6	3543	70.7	688	13.7	464	9.3	2151	42.9
6	2519	50.0	2507	49.8	3545	70.4	697	13.8	460	9.1	2204	43.7
7	2593	51.3	2455	48.5	3578	70.7	677	13.4	475	9.4	2286	45.2
8	2530	50.3	2489	49.5	3543	70.5	687	13.7	451	9.0	2228	44.3
9	2528	50.1	2510	49.8	3614	71.6	690	13.7	434	8.6	2220	44.0
10	2589	51.5	2430	48.3	3550	70.6	697	13.9	454	9.0	2213	44.0
11	2538	50.5	2479	49.3	3488	69.4	707	14.1	474	9.4	2205	43.8
12	2564	50.8	2473	49.0	3558	70.5	714	14.1	446	8.8	2317	45.9
13	2509	50.0	2496	49.7	3556	70.8	727	14.5	432	8.6	2268	45.2
14	2580	51.2	2445	48.6	3542	70.3	682	13.5	506	10.0	2207	43.8
15	2535	50.2	2501	49.6	3560	70.5	712	14.1	479	9.5	2235	44.3
16	2547	50.5	2490	49.4	3576	70.9	676	13.4	467	9.3	2236	44.3
17	2445	48.8	2557	51.0	3543	70.7	715	14.3	454	9.1	2254	45.0
18	2586	51.4	2435	48.4	3527	70.1	706	14.0	470	9.3	2252	44.8
19	2540	50.3	2501	49.5	3579	70.9	694	13.7	480	9.5	2190	43.4
20	2624	51.9	2425	48.0	3569	70.6	711	14.1	456	9.0	2244	44.4

Table 6. Demographic Characteristics for Grade 4 WP Sample by Form

Form	total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1500	784	52.3	708	47.2	1037	69.1	209	13.9	146	9.7	671	44.7
2	1500	742	49.5	753	50.2	1069	71.3	196	13.1	144	9.6	649	43.3
3	1499	750	50.0	748	49.9	1079	72.0	204	13.6	134	8.9	662	44.2
4	1500	766	51.1	732	48.8	1037	69.1	197	13.1	171	11.4	661	44.1
5	1500	763	50.9	733	48.9	1049	69.9	212	14.1	152	10.1	652	43.5
6	1500	700	46.7	796	53.1	1053	70.2	201	13.4	154	10.3	674	44.9
7	1499	771	51.4	727	48.5	1052	70.2	197	13.1	147	9.8	696	46.4
8	1500	739	49.3	760	50.7	1050	70.0	201	13.4	142	9.5	670	44.7
9	1500	743	49.5	754	50.3	1098	73.2	191	12.7	123	8.2	655	43.7
10	1500	791	52.7	705	47.0	1046	69.7	192	12.8	157	10.5	655	43.7
11	1500	756	50.4	737	49.1	1048	69.9	206	13.7	139	9.3	664	44.3
12	1500	768	51.2	728	48.5	1074	71.6	195	13.0	139	9.3	692	46.1
13	1500	754	50.3	741	49.4	1055	70.3	225	15.0	121	8.1	656	43.7
14	1499	767	51.2	728	48.6	1057	70.5	203	13.5	145	9.7	659	44.0
15	1500	770	51.3	725	48.3	1048	69.9	225	15.0	135	9.0	695	46.3
16	1500	761	50.7	738	49.2	1069	71.3	198	13.2	132	8.8	649	43.3
17	1500	719	47.9	778	51.9	1081	72.1	218	14.5	120	8.0	652	43.5
18	1500	763	50.9	735	49.0	1069	71.3	211	14.1	140	9.3	666	44.4
19	1500	757	50.5	738	49.2	1082	72.1	188	12.5	130	8.7	632	42.1
20	1499	782	52.2	714	47.6	1027	68.5	218	14.5	159	10.6	668	44.6

Table 7. Demographic Characteristics for Grade 5 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2577	51.6	2404	48.2	3499	70.1	706	14.1	476	9.5	2212	44.3
2	2561	51.4	2407	48.3	3531	70.8	670	13.4	472	9.5	2166	43.5
3	2543	50.8	2450	48.9	3582	71.5	717	14.3	407	8.1	2184	43.6
4	2507	50.4	2452	49.3	3489	70.2	730	14.7	465	9.4	2197	44.2
5	2561	51.3	2421	48.4	3559	71.2	685	13.7	466	9.3	2246	44.9
6	2578	51.4	2422	48.3	3512	70.0	736	14.7	458	9.1	2194	43.7
7	2585	51.8	2390	47.9	3526	70.7	708	14.2	463	9.3	2213	44.3
8	2524	50.8	2422	48.8	3562	71.8	645	13.0	468	9.4	2153	43.4
9	2572	51.6	2399	48.1	3550	71.2	702	14.1	447	9.0	2146	43.1
10	2500	50.2	2465	49.5	3547	71.2	686	13.8	426	8.6	2149	43.1
11	2547	51.7	2358	47.9	3529	71.7	655	13.3	434	8.8	2165	44.0
12	2522	50.9	2409	48.7	3539	71.5	715	14.4	435	8.8	2144	43.3
13	2525	51.7	2346	48.0	3502	71.7	687	14.1	410	8.4	2117	43.3
14	2487	50.5	2427	49.3	3521	71.5	714	14.5	425	8.6	2132	43.3
15	2438	49.7	2452	50.0	3494	71.3	682	13.9	469	9.6	2191	44.7
16	2552	51.5	2384	48.1	3579	72.2	643	13.0	443	8.9	2146	43.3
17	2561	51.2	2431	48.6	3578	71.5	681	13.6	455	9.1	2186	43.7
18	2551	51.3	2408	48.4	3552	71.4	660	13.3	474	9.5	2169	43.6
19	2557	51.6	2381	48.1	3472	70.1	714	14.4	458	9.2	2141	43.2
20	2471	49.7	2485	50.0	3496	70.3	702	14.1	484	9.7	2178	43.8

Table 8. Demographic Characteristics for Grade 5 WP Sample by Form

Form	Total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1500	782	52.1	714	47.6	1056	70.4	210	14.0	133	8.9	648	43.2
2	1499	767	51.2	724	48.3	1050	70.0	213	14.2	148	9.9	623	41.6
3	1499	769	51.3	726	48.4	1072	71.5	209	13.9	135	9.0	684	45.6
4	1500	768	51.2	728	48.5	1057	70.5	227	15.1	129	8.6	635	42.3
5	1500	764	50.9	732	48.8	1074	71.6	199	13.3	149	9.9	681	45.4
6	1500	737	49.1	759	50.6	1052	70.1	202	13.5	153	10.2	653	43.5
7	1500	771	51.4	725	48.3	1042	69.5	213	14.2	146	9.7	660	44.0
8	1500	788	52.5	710	47.3	1076	71.7	187	12.5	150	10.0	654	43.6
9	1500	782	52.1	714	47.6	1068	71.2	213	14.2	141	9.4	647	43.1
10	1500	742	49.5	752	50.1	1057	70.5	208	13.9	132	8.8	662	44.1
11	1500	767	51.1	728	48.5	1085	72.3	193	12.9	133	8.9	665	44.3
12	1500	791	52.7	704	46.9	1096	73.1	201	13.4	123	8.2	646	43.1
13	1500	793	52.9	704	46.9	1070	71.3	212	14.1	136	9.1	666	44.4
14	1500	749	49.9	749	49.9	1083	72.2	209	13.9	127	8.5	648	43.2
15	1500	760	50.7	737	49.1	1037	69.1	208	13.9	162	10.8	686	45.7
16	1500	775	51.7	721	48.1	1072	71.5	209	13.9	125	8.3	677	45.1
17	1500	764	50.9	731	48.7	1052	70.1	204	13.6	160	10.7	668	44.5
18	1500	759	50.6	738	49.2	1066	71.1	196	13.1	153	10.2	665	44.3
19	1499	787	52.5	706	47.1	1065	71.0	211	14.1	136	9.1	598	39.9
20	1499	742	49.5	753	50.2	1050	70.0	229	15.3	137	9.1	661	44.1

Table 9. Demographic Characteristics for Grade 6 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2317	51.4	2136	47.4	3029	67.2	669	14.9	502	11.1	2099	46.6
2	2282	50.6	2173	48.2	2997	66.5	743	16.5	472	10.5	2054	45.6
3	2264	50.5	2157	48.1	2981	66.5	693	15.5	458	10.2	2030	45.3
4	2319	51.6	2117	47.1	3053	68.0	697	15.5	459	10.2	2076	46.2
5	2294	51.2	2136	47.7	3023	67.5	708	15.8	442	9.9	2050	45.8
6	2200	49.1	2228	49.7	3041	67.9	656	14.6	483	10.8	2061	46.0
7	2215	49.5	2206	49.3	3032	67.8	684	15.3	465	10.4	2047	45.8
8	2247	50.4	2160	48.5	3057	68.6	661	14.8	442	9.9	2077	46.6
9	2267	50.9	2137	48.0	3016	┐ 7.	680	15.3	439	9.9	2004	45.0
10	2197	49.4	2206	49.6	3000	67.4	682	15.3	457	10.3	2066	46.4
11	1775	49.4	1776	49.4	2439	67.9	513	14.3	380	10.6	1608	44.8
12	1892	52.5	1660	46.1	2495	69.3	506	14.0	370	10.3	1652	45.9
13	1848	51.3	1706	47.3	2477	68.7	512	14.2	365	10.1	1615	44.8
14	1791	49.5	1778	49.1	2512	69.4	492	13.6	376	10.4	1619	44.7
15	1865	51.8	1673	46.5	2434	67.6	514	14.3	374	10.4	1562	43.4
16	1818	50.5	1731	48.1	2479	68.8	510	14.2	360	10.0	1583	43.9
17	1835	50.7	1731	47.8	2481	68.6	485	13.4	399	11.0	1587	43.9
18	1817	50.7	1716	47.9	2423	67.6	529	14.8	369	10.3	1599	44.6
19	1781	49.2	1797	49.7	2442	67.5	529	14.6	375	10.4	1629	45.0
20	1782	49.1	1800	49.6	2441	67.3	547	15.1	377	10.4	1600	44.1

Table 10. Demographic Characteristics for Grade 6 WP Sample by Form

Form	Total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1499	771	51.4	728	48.6	1027	68.5	228	15.2	157	10.5	727	48.5
2	1499	772	51.5	727	48.5	1027	68.5	228	15.2	157	10.5	657	43.8
3	1498	773	51.6	725	48.4	1027	68.6	228	15.2	157	10.5	704	47.0
4	1500	767	51.1	732	48.8	1028	68.5	228	15.2	157	10.5	679	45.3
5	1499	769	51.3	730	48.7	1027	68.5	228	15.2	157	10.5	688	45.9
6	1500	756	50.4	744	49.6	1028	68.5	228	15.2	157	10.5	697	46.5
7	1500	774	51.6	726	48.4	1028	68.5	228	15.2	157	10.5	698	46.5
8	1499	757	50.5	741	49.4	1027	68.5	228	15.2	157	10.5	715	47.7
9	1500	785	52.3	715	47.7	1028	68.5	228	15.2	157	10.5	710	47.3
10	1499	750	50.0	749	50.0	1027	68.5	228	15.2	157	10.5	695	46.4
11	1500	740	49.3	760	50.7	1028	68.5	228	15.2	157	10.5	694	46.3
12	1499	813	54.2	686	45.8	1027	68.5	228	15.2	157	10.5	697	46.5
13	1500	777	51.8	723	48.2	1028	68.5	228	15.2	157	10.5	654	43.6
14	1499	749	50.0	750	50.0	1027	68.5	228	15.2	157	10.5	698	46.6
15	1499	771	51.4	728	48.6	1028	68.6	227	15.1	157	10.5	662	44.2
16	1499	772	51.5	727	48.5	1028	68.6	228	15.2	157	10.5	676	45.1
17	1499	768	51.2	731	48.8	1027	68.5	228	15.2	157	10.5	679	45.3
18	1499	771	51.4	727	48.5	1028	68.6	228	15.2	156	10.4	631	42.1
19	1496	727	48.6	769	51.4	1025	68.5	228	15.2	156	10.4	657	43.9
20	1500	739	49.3	761	50.7	1028	68.5	228	15.2	157	10.5	668	44.5

Table 11. Demographic Characteristics for Grade 7 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2187	50.0	2131	48.8	2964	67.8	672	15.4	447	10.2	1981	45.3
2	2192	50.3	2116	48.6	2952	67.7	705	16.2	423	9.7	1948	44.7
3	2177	50.1	2111	48.6	2970	68.4	634	14.6	440	10.1	1956	45.0
4	2138	49.2	2146	49.4	3001	69.1	648	14.9	428	9.9	1955	45.0
5	2237	51.7	2034	47.0	2908	67.2	661	15.3	486	11.2	1963	45.4
6	2160	49.9	2110	48.7	2937	67.8	655	15.1	469	10.8	1983	45.8
7	2198	51.0	2059	47.8	2950	68.4	659	15.3	435	10.1	1957	45.4
8	2229	51.3	2055	47.3	2943	67.8	656	15.1	448	10.3	1982	45.7
9	2209	50.3	2117	48.2	2960	67.4	676	15.4	456	10.4	2036	46.4
10	2194	50.0	2130	48.6	2953	67.3	656	15.0	457	10.4	2002	45.7
11	1794	51.6	1635	47.1	2393	68.9	505	14.5	347	10.0	1503	43.3
12	1731	49.4	1730	49.4	2424	69.2	480	13.7	357	10.2	1550	44.3
13	1729	49.6	1711	49.1	2385	68.5	502	14.4	360	10.3	1550	44.5
14	1740	49.4	1742	49.4	2393	67.9	515	14.6	359	10.2	1556	44.2
15	1748	49.9	1717	49.0	2409	68.7	493	14.1	354	10.1	1551	44.2
16	1769	50.7	1678	48.1	2407	69.0	516	14.8	340	9.8	1551	44.5
17	1780	50.7	1684	47.9	2435	69.3	518	14.7	337	9.6	1507	42.9
18	1790	51.2	1654	47.3	2386	68.3	515	14.7	367	10.5	1569	44.9
19	1741	49.6	1715	48.9	2419	68.9	499	14.2	358	10.2	1544	44.0
20	1745	50.0	1694	48.6	2411	69.1	488	14.0	361	10.4	1523	43.7

Table 12. Demographic Characteristics for Grade 7 WP Sample by Form

Form	Total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1500	766	51.1	734	48.9	1031	68.7	228	15.2	157	10.5	664	44.3
2	1498	754	50.3	744	49.7	1030	68.8	228	15.2	156	10.4	666	44.5
3	1498	785	52.4	713	47.6	1030	68.8	227	15.2	157	10.5	688	45.9
4	1499	728	48.6	771	51.4	1031	68.8	228	15.2	156	10.4	699	46.6
5	1497	780	52.1	717	47.9	1030	68.8	227	15.2	157	10.5	689	46.0
6	1497	792	52.9	705	47.1	1028	68.7	228	15.2	157	10.5	721	48.2
7	1499	763	50.9	736	49.1	1030	68.7	228	15.2	157	10.5	682	45.5
8	1497	759	50.7	738	49.3	1031	68.9	226	15.1	156	10.4	666	44.5
9	1500	797	53.1	703	46.9	1031	68.7	228	15.2	157	10.5	680	45.3
10	1499	726	48.4	773	51.6	1030	68.7	228	15.2	157	10.5	694	46.3
11	1499	785	52.4	714	47.6	1031	68.8	227	15.1	157	10.5	672	44.8
12	1497	762	50.9	735	49.1	1030	68.8	227	15.2	156	10.4	684	45.7
13	1497	740	49.4	757	50.6	1030	68.8	228	15.2	155	10.4	667	44.6
14	1500	753	50.2	747	49.8	1031	68.7	228	15.2	157	10.5	658	43.9
15	1498	762	50.9	736	49.1	1031	68.8	227	15.2	156	10.4	664	44.3
16	1498	765	51.1	733	48.9	1030	68.8	227	15.2	157	10.5	683	45.6
17	1498	754	50.3	744	49.7	1030	68.8	227	15.2	157	10.5	654	43.7
18	1500	778	51.9	721	48.1	1031	68.7	228	15.2	157	10.5	713	47.5
19	1498	741	49.5	757	50.5	1030	68.8	227	15.2	157	10.5	673	44.9
20	1499	727	48.5	772	51.5	1030	68.7	228	15.2	157	10.5	673	44.9

Table 13. Demographic Characteristics for Grade 8 MC Sample by Form

Form	Gender				Ethnicity						Eco. Dis.	
	Male		Female		White		Af. Ameri.		Hispanic		Yes	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2084	50.6	1980	48.1	2777	67.4	651	15.8	409	9.9	1877	45.6
2	2087	50.1	2015	48.4	2803	67.3	683	16.4	401	9.6	1915	46.0
3	2058	50.0	2002	48.6	2755	66.9	668	16.2	411	10.0	1851	44.9
4	2054	49.5	2031	49.0	2812	67.8	646	15.6	420	10.1	1823	44.0
5	2061	49.5	2045	49.1	2844	68.3	650	15.6	397	9.5	1839	44.1
6	2041	49.0	2064	49.5	2836	68.0	623	14.9	431	10.3	1839	44.1
7	2094	49.8	2047	48.6	2857	67.9	668	15.9	398	9.5	1861	44.2
8	2081	50.4	1988	48.1	2777	67.2	649	15.7	425	10.3	1835	44.4
9	2112	51.2	1960	47.5	2823	68.4	645	15.6	379	9.2	1832	44.4
10	2069	50.1	2000	48.4	2785	67.4	647	15.7	426	10.3	1837	44.5
11	1639	49.1	1636	49.0	2324	69.6	469	14.1	324	9.7	1473	44.1
12	1690	51.0	1566	47.3	2273	68.6	490	14.8	321	9.7	1454	43.9
13	1666	50.3	1593	48.1	2298	69.4	474	14.3	329	9.9	1449	43.8
14	1661	50.6	1568	47.8	2248	68.5	477	14.5	347	10.6	1376	41.9
15	1709	51.7	1536	46.5	2242	67.9	507	15.3	314	9.5	1476	44.7
16	1664	50.5	1570	47.7	2254	68.4	476	14.5	323	9.8	1453	44.1
17	1676	50.8	1566	47.5	2278	69.1	472	14.3	313	9.5	1405	42.6
18	1721	52.0	1538	46.4	2267	68.4	483	14.6	344	10.4	1397	42.2
19	1670	50.4	1594	48.1	2276	68.7	460	13.9	363	11.0	1430	43.2
20	1693	50.8	1583	47.5	2298	69.0	491	14.7	316	9.5	1476	44.3

Table 14. Demographic Characteristics for Grade 8 WP Sample by Form

Form	Total	Gender				Ethnicity						Eco. Dis.	
		Male		Female		White		Af. Ameri.		Hispanic		Yes	
		N	%	N	%	N	%	N	%	N	%	N	%
1	1500	763	50.9	737	49.1	1027	68.5	232	15.5	156	10.4	695	46.3
2	1499	744	49.6	755	50.4	1026	68.4	232	15.5	156	10.4	691	46.1
3	1500	742	49.5	758	50.5	1027	68.5	232	15.5	156	10.4	678	45.2
4	1499	729	48.6	770	51.4	1026	68.4	232	15.5	156	10.4	653	43.6
5	1499	731	48.8	768	51.2	1026	68.4	232	15.5	156	10.4	679	45.3
6	1500	731	48.7	769	51.3	1027	68.5	232	15.5	156	10.4	652	43.5
7	1500	750	50.0	749	49.9	1027	68.5	232	15.5	156	10.4	652	43.5
8	1496	780	52.1	716	47.9	1023	68.4	232	15.5	156	10.4	663	44.3
9	1499	750	50.0	749	50.0	1027	68.5	231	15.4	156	10.4	700	46.7
10	1499	755	50.4	744	49.6	1027	68.5	232	15.5	155	10.3	675	45.0
11	1499	761	50.8	738	49.2	1027	68.5	232	15.5	156	10.4	693	46.2
12	1499	760	50.7	739	49.3	1027	68.5	231	15.4	156	10.4	678	45.2
13	1500	766	51.1	734	48.9	1027	68.5	232	15.5	156	10.4	696	46.4
14	1498	779	52.0	719	48.0	1026	68.5	232	15.5	155	10.3	641	42.8
15	1499	804	53.6	694	46.3	1027	68.5	232	15.5	155	10.3	694	46.3
16	1498	793	52.9	705	47.1	1025	68.4	232	15.5	156	10.4	679	45.3
17	1498	793	52.9	705	47.1	1026	68.5	231	15.4	156	10.4	665	44.4
18	1499	800	53.4	699	46.6	1026	68.4	232	15.5	156	10.4	649	43.3
19	1500	801	53.4	699	46.6	1027	68.5	232	15.5	156	10.4	712	47.5
20	1498	783	52.3	715	47.7	1026	68.5	231	15.4	156	10.4	701	46.8

KEY VERIFICATION

A key verification is conducted early in the scoring process to ensure that the keys for the multiple-choice items are applied correctly and to identify administration irregularities before any official scoring/reporting/item banking occurs. The data files used for the key verification analysis are usually based on the student data from early-return schools. Sample representativeness is not required for this internal quality check. Available student data typically suffices as long as there is reasonable variability in the total test scores of students.

For the ELA: Writing Field Tests, key verification files were used to conduct preliminary analyses to verify the accuracy of the scoring keys and to obtain an early indication of how items were functioning. Content specialists examined all flagged items and didn't find any miskeyed items. The statistics estimated are described in Chapter Eleven of this 2014 PSSA Technical Report.

An MC item is flagged if it meets one or more of the following criteria:

- p-values < 0.30
- distractor proportion > 0.3
- omit proportion > 0.05
- multiple response proportion > 0.05
- item-total correlation < 0.25
- distractor-total correlation > 0
- distractor proportion > key proportion
- and/or distractor-total correlation > item-total correlation

CLASSICAL ITEM ANALYSIS

The final data files were used to conduct item analysis, calibration, and to prepare the report analyses. The final data contained all students' responses to the MC and a subset of students' responses to the WP/OE items. The final sample sizes (or *n*-counts) can be found in the Item Statistics section at the end of this appendix. The characteristics of the samples are summarized in Table 2.

All field-test items were analyzed statistically following conventional item analysis methods. Indices known as traditional or classical item statistics included the *p*-value, item-total correlation, and the distractor distribution. The final item analysis results can be found in the Item Statistics section at the end of this appendix. The statistics estimated are described in Chapter Eleven of this 2014 PSSA Technical Report. Please note that the term item discrimination and item-total correlation are used interchangeably in this report.

Item *P*-value and Item Discrimination

Table 15 summarizes *p*-value information across the forms for each grade broken down by item type. Information in the table includes the total counts of items, mean, median, standard deviation, minimum, and maximum. The mean *p*-values for the MC items ranged from approximately 0.47 to 0.57, while the mean proportion-correct values for the WP items ranged from approximately 0.43 to 0.56. A wide range of item difficulties appeared on each grade's exam, which was one test development goal.

Summary item-total correlation information across subjects is shown in Table 16. Information in the table includes the total count of items, mean, median, standard deviation, minimum, and maximum. The mean item-test correlations ranged from roughly 0.21 to 0.26 and 0.42 to 0.49 for the MC and WP items, respectively.

Table 15. Summary of Item P-value

	Grade	N	Mean	Median	SD	Min	Max
MC	3	170	0.51	0.48	0.19	0.20	0.92
	4	214	0.57	0.56	0.20	0.16	0.94
	5	214	0.53	0.50	0.21	0.15	0.95
	6	233	0.54	0.55	0.20	0.05	0.95
	7	233	0.50	0.51	0.20	0.06	0.90
	8	233	0.47	0.44	0.22	0.06	0.96
WP	3	20	0.43	0.41	0.05	0.36	0.52
	4	20	0.48	0.46	0.06	0.40	0.61
	5	20	0.52	0.51	0.03	0.48	0.60
	6	20	0.54	0.54	0.04	0.47	0.62
	7	20	0.55	0.54	0.03	0.51	0.60
	8	20	0.56	0.56	0.02	0.52	0.60
OE	3	42	0.45	0.39	0.22	0.12	0.90

Table 16. Summary of Item-Total Correlation

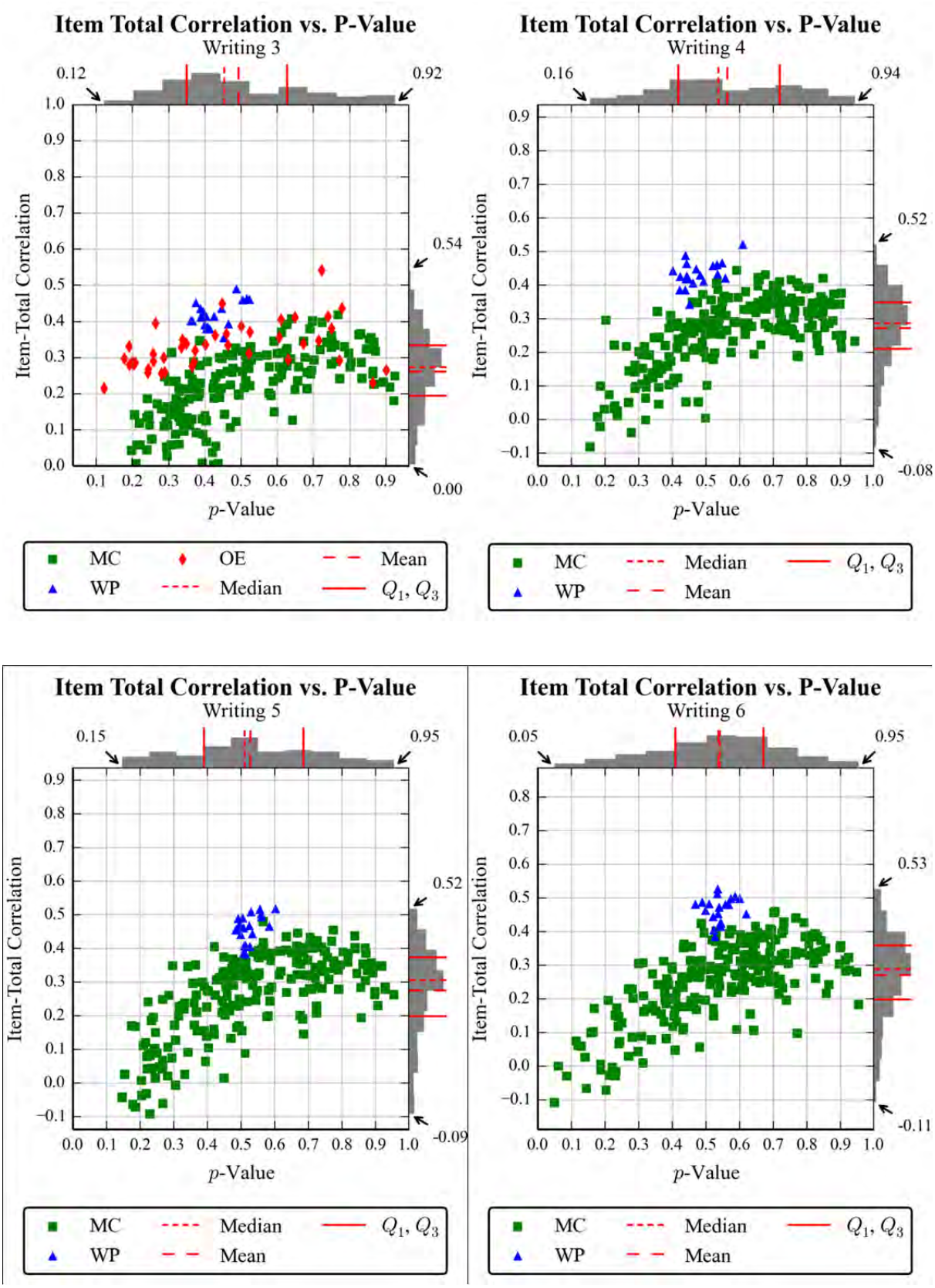
	Grade	N	Mean	Median	SD	Min	Max
MC	3	170	0.23	0.24	0.10	0.00	0.42
	4	214	0.26	0.28	0.11	-0.08	0.44
	5	214	0.26	0.29	0.13	-0.09	0.48
	6	233	0.25	0.28	0.12	-0.11	0.46
	7	233	0.25	0.28	0.13	-0.08	0.45
	8	233	0.21	0.23	0.12	-0.15	0.43
WP	3	20	0.42	0.41	0.03	0.36	0.49
	4	20	0.43	0.43	0.04	0.34	0.52
	5	20	0.46	0.47	0.04	0.38	0.52
	6	20	0.47	0.48	0.04	0.39	0.53
	7	20	0.49	0.50	0.04	0.42	0.56
	8	20	0.45	0.46	0.04	0.37	0.54
OE	3	42	0.33	0.32	0.06	0.21	0.54

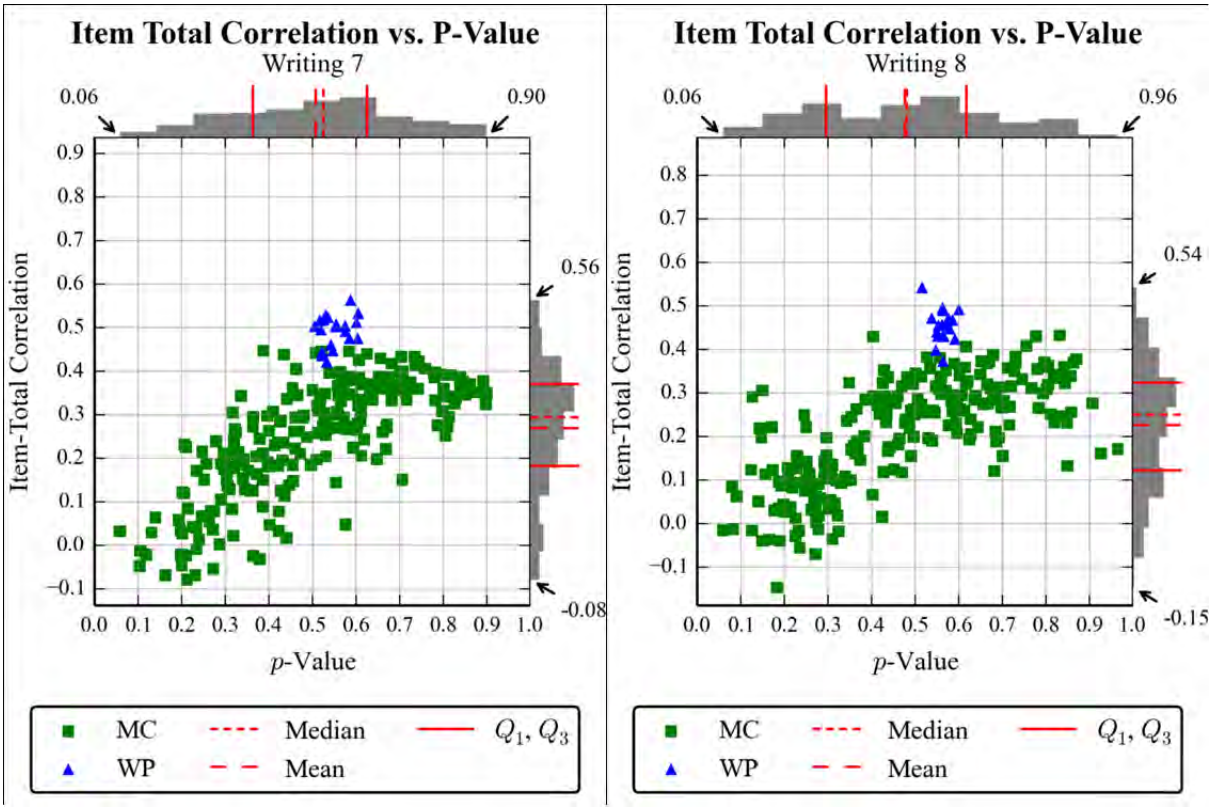
Figure 3 contains a series of scatterplots showing item discrimination values (y-axis) on the item difficulty (x-axis) for each grade. Note that pseudo *p*-values (described above) are used for WP/OE items in these plots. These plots provide maximum information about item discrimination and difficulty in a single visual image. This is because the x- and y-axes also show histogram with following descriptive statistics:

- Minimum and maximum values
- Mean scores
- Median scores
- First and third quartile (Q1 and Q3)

The bivariate relationship between item discrimination (item-test correlations) and difficulty (item *p*-value) is also presented through scatterplots in these figures. One does not usually expect any type of trend here. However, it is often the case that items with extreme difficulties can have lower discrimination values, as this can be revealed in such plots.

Figure 3. Discrimination on Difficulty Scatterplots





DIFFERENTIAL ITEM FUNCTIONING (DIF) ANALYSIS

One of the goals of test development is to develop items that provide an estimate of a student's ability that is as fair and accurate as possible regardless of the student's gender, ethnicity, or test administration mode. Differential item functioning is present when examinees of equal ability do not have the same probability of passing the item. For the purpose of the ELA: Writing Field Tests, if this inequity is associated with gender or ethnicity, the item could be described as potentially biased.

DIF statistics are often used to identify items that groups of students with the same underlying level of ability have different probabilities of answering correctly. For this analysis, groups were spread across four ability categories. If the item is differentially more difficult for an identifiable subgroup when conditioned on ability, the item may be measuring something different from the intended construct. However, it is important to recognize that DIF-flagged items might be related to actual differences in relevant knowledge or skills (item impact) or a statistical Type I error (i.e., false positive). As a result, DIF statistics are used to identify potential sources of item bias. No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists; therefore, subsequent review by content experts and bias/sensitivity committees is required to determine the source and meaning of performance differences. The items with C DIF were reviewed by a group of Pennsylvania teachers in the data review meeting. The details of the data review meeting can be found in Chapter Five of this 2014 PSSA Technical Report and the results of the data review meeting for the ELA: Writing Field Tests can be found in the next section. For more discussion about DIF, readers can refer to Chapter Five of this 2014 PSSA Technical Report.

Counts of the number of items from each grade that were assigned to each severity code are shown below in Table 17. Overall, relatively few MC items had B or C DIF for the Male/Female or White/Black reference and focal groups. With MC items, there were more items showing White/Black DIF than Male/Female DIF. With WP items, there were more items showing Male/Female DIF than White/Black DIF.

Table 17. DIF Summary—MC Items

		Male/Female							White/Black						
	Grade	A+	A-	B+	B-	C+	C-	Tot	A+	A-	B+	B-	C+	C-	Tot
MC	**3**	74	91	3	2	0	0	170	55	91	4	12	0	8	170
	4	111	101	0	2	0	0	214	71	105	6	29	0	3	214
	5	104	104	3	3	0	0	214	84	107	10	11	0	2	214
	6	121	103	4	3	0	2	233	105	101	4	20	1	2	233
	7	109	120	2	1	0	1	233	96	123	2	12	0	0	233
	8	121	104	6	1	0	1	233	87	115	5	22	0	4	233
WP	**3**	5	0	12	0	3	0	20	0	8	0	10	0	2	20
	4	2	0	7	0	11	0	20	1	14	0	4	0	1	20
	5	2	0	11	0	7	0	20	0	13	0	7	0	0	20
	6	0	0	3	0	17	0	20	2	15	0	2	0	1	20
	7	1	0	7	0	12	0	20	0	10	0	7	0	3	20
	8	1	0	10	0	9	0	20	0	4	0	10	0	6	20
OE	**3**	29	13	0	0	0	0	42	3	20	0	17	0	2	42

ITEM REVIEW RESULTS

Item review was conducted during the PSSA item review meeting. The detail of the item review meeting can be found in Chapter Five of this 2014 PSSA Technical Report. The results of item review are shown in Table 18.

Table 18. Item Review Results

Assessment	Grade	No. of Items in Field Test	Flagged Items in Field Test Examined by Data Review Committees					Flagged Items in Field Test Rejected by Data Review Committee		Items Classified as "Rejected" from Field Test**	
			MC	CR	Items flagged for DIF only	Total	Total (% of FT)	No. of	% of FT	No. of	% of FT
ELA	3	232	78	8	19	86	37.0	3	1.2	45*	19.3*
	4	234	80	11	20	91	38.8	10	4.2	10	4.2
	5	234	80	7	9	87	37.7	13	5.1	16	6.8
	6	253	84	20	23	104	45.0	5	2.0	9	3.5
	7	253	88	20	15	108	46.6	10	4.0	12	4.7
	8	253	123	20	25	143	56.5	7	2.7	10	4.0
	Totals	**1,459**	**533**	**86**	**111**	**619**	**42.4%**	**48**	**3.3%**	**102**	**7.0%**

*Includes grade 3 2-point open-ended items accepted at data review; PDE later decided not to include this item type on the operational test design.
**all sources: Data Review Committee, PDE, and DRC

CALIBRATION BASED ON RASCH MODEL

This section focuses on the item analysis in the framework of modern item response theory (IRT). The IRT model used for the ELA: Writing Field Tests is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs given their advantages over classical test theory. This section reports the analysis results. Readers can refer to Chapter 12 of this 2014 PSSA Technical Report for more explanation on Rasch item calibration and item fit.

Please note that with the standalone writing field test, the WP items were scored with 1-4 point scale, but valid non-score responses (blank, non-scoreable, and off topic) received 0 score for the item in the item calibration. The MC, WP, and OE items were calibrated together in one calibration.

Model Data Fit

The fit statistics for each item can be found in the Item Statistics section at the end of this appendix. Table 19 presents the summary statistics of infit and outfit for the ELA: Writing Field Tests, including the mean, standard deviation (SD), minimum, and maximum values. The numbers of items within the acceptable range MSQ fit [0.7, 1.3] are also reported in Table 19. As one can see from the table, the mean values for both fit statistics were close to 1.00 for all tests. Most items had infit values falling

within the desired range of [0.7, 1.3]. More outfit values fell outside this range than infit values. Overall, these results indicate that the Rasch model fits the data well for most of the items.

Table 19. Summary of Infit and Outfit Mean Square Statistics MC only

		Infit Mean Square					Outfit Mean Square				
		Mean	**SD**	**Min**	**Max**	**[0.7,1.3]**	**Mean**	**SD**	**Min**	**Max**	**[0.7,1.3]**
MC	**3**	0.99	0.08	0.85	1.19	170	0.99	0.15	0.65	1.36	162
	4	0.98	0.08	0.84	1.22	214	0.98	0.17	0.60	1.83	198
	5	1.00	0.10	0.83	1.25	214	1.04	0.25	0.58	1.97	174
	6	0.99	0.08	0.84	1.22	233	1.02	0.25	0.55	2.72	206
	7	1.01	0.10	0.85	1.30	233	1.05	0.24	0.59	2.20	200
	8	0.99	0.08	0.83	1.25	233	1.03	0.20	0.65	2.12	218
WP	**3**	0.88	0.03	0.83	0.93	20	0.88	0.03	0.83	0.94	20
	4	0.91	0.04	0.82	0.97	20	0.91	0.04	0.82	0.97	20
	5	0.91	0.04	0.85	1.01	20	0.91	0.04	0.85	1.02	20
	6	0.89	0.04	0.83	0.95	20	0.89	0.04	0.83	0.95	20
	7	0.88	0.04	0.82	0.94	20	0.88	0.04	0.82	0.94	20
	8	0.86	0.03	0.79	0.93	20	0.86	0.03	0.79	0.93	20
OE	**3**	0.94	0.06	0.78	1.05	42	0.91	0.09	0.64	1.08	40

Rasch Item Difficulties

The item difficulties for each item can be found in the column labeled “Rasch” in the Item Statistics section at the end of this appendix. Table 20 summarizes the Rasch logit difficulties of MC, WP, and OE items. The minimum and maximum values and standard deviations suggest that the ELA: Writing Field Test items covered a relatively wide range of difficulties. It is important to note that the logit difficulty values presented have not been linked to a common scale of measurement across grades. Therefore, the relative magnitude of the statistics across content areas and grades cannot be compared.

Table 20. Summary of Item Difficulty

	Grade	**N**	**SD**	**Min**	**Mean**	**Median**	**Max**
MC	**3**	170	1.02	-2.85	-0.13	0.06	1.60
	4	214	1.06	-2.74	-0.06	0.07	2.28
	5	214	1.16	-3.28	-0.02	0.18	2.19
	6	233	1.13	-3.18	0.00	-0.04	3.55
	7	233	1.06	-2.49	0.01	-0.03	3.14
	8	233	1.16	-3.70	0.04	0.14	3.00
WP	**3**	20	0.38	-0.12	0.62	0.74	1.12
	4	20	0.38	-0.18	0.60	0.74	1.16
	5	20	0.30	-0.42	0.16	0.24	0.52
	6	20	0.24	-0.37	0.04	0.02	0.43
	7	20	0.24	-0.63	-0.17	-0.10	0.11
	8	20	0.09	-0.61	-0.48	-0.50	-0.28
OE	**3**	42	1.02	-2.53	0.25	0.50	2.26

RATER AGREEMENT

A source of random error with reliability is related to the scorers of WP items. The data most easily obtainable that captures this information comes from the "10 percent read behinds" collected during the scoring process. See Chapter Eight of 2014 PSSA Technical Report for a description of "10 percent read behinds" and Chapter Eighteen for more discussion on reliability and rater agreement.

The rater agreement information for WP items is provided in Tables 21 through 26. In addition, the percentages awarded to each score point are also presented in these tables. As seen from these tables, the inter-rater agreement percentages were above 80 percent with most WP items.

Table 21. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 3

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	Exact	Adjacent	1	2	3	4	B	N	T
1	93	7	44	36	7	0	4	2	6
2	95	5	37	43	8	0	3	2	6
3	96	4	33	50	7	0	2	3	4
4	91	9	15	44	24	6	3	3	5
5	88	12	16	48	26	5	2	2	2
6	87	13	18	46	23	4	2	1	5
7	94	6	16	43	24	3	3	2	9
8	85	15	38	38	11	1	3	3	7
9	89	11	31	45	12	1	3	2	6
10	91	9	28	45	13	2	3	3	6
11	90	10	25	44	18	1	3	4	6
12	88	12	41	38	11	1	2	2	4
13	95	5	37	44	9	1	3	1	6
14	91	9	21	50	16	2	3	3	6
15	88	13	34	46	10	1	3	2	5
16	96	4	37	47	6	0	2	1	6
17	83	17	25	42	19	3	2	2	6
18	94	6	46	31	10	0	3	2	8
19	96	4	41	43	6	0	3	3	5
20	95	5	35	49	8	0	2	1	5

Note. B = blank; NS = non-scoreable, T= off-topic

Table 22. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 4

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	**Exact**	**Adjacent**	1	**2**	**3**	**4**	**B**	**N**	**T**
1	94	6	33	51	9	1	1	2	3
2	81	19	36	46	12	1	2	1	4
3	87	13	22	55	17	2	1	1	3
4	84	16	34	43	17	1	1	1	3
5	92	8	42	42	10	0	1	1	4
6	89	11	16	51	23	6	1	2	2
7	89	11	12	52	25	4	1	1	4
8	92	8	13	46	29	6	1	1	4
9	94	6	30	54	11	1	1	1	3
10	93	7	25	57	10	1	1	2	5
11	83	17	24	44	20	5	1	1	5
12	88	12	10	37	35	12	1	0	4
13	94	6	30	53	11	1	1	0	3
14	90	10	13	42	30	7	1	1	5
15	84	16	27	48	17	1	1	2	4
16	86	14	25	52	18	1	1	0	3
17	94	6	32	51	12	1	1	0	4
18	98	2	29	53	13	0	1	0	3
19	92	8	28	58	11	0	1	1	2
20	87	13	16	46	26	4	1	1	6

Note. B = blank; NS = non-scoreable, T= off-topic

Table 23. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 5

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	**Exact**	**Adjacent**	1	**2**	**3**	**4**	**B**	**N**	**T**
1	89	11	15	55	22	3	1	0	4
2	88	12	11	38	36	11	1	1	4
3	84	16	15	52	26	3	1	0	2
4	89	11	20	37	28	10	1	0	3
5	88	13	16	53	22	1	1	1	6
6	85	15	14	57	22	1	1	0	4
7	86	14	12	43	35	7	1	0	3
8	89	11	14	51	29	1	1	0	3
9	87	13	17	61	15	1	1	1	4
10	90	10	18	57	20	2	0	1	2
11	95	5	16	51	27	3	0	1	3
12	91	9	18	60	18	1	1	1	2
13	89	11	17	58	18	1	1	1	4
14	90	10	13	64	17	1	1	1	3
15	88	13	14	43	33	6	1	1	2
16	91	9	14	60	22	1	0	1	3
17	92	8	13	44	32	6	1	1	4
18	94	6	14	61	20	1	1	0	2
19	92	8	17	56	22	1	1	0	3
20	90	10	13	61	23	2	1	0	1

Note. B = blank; NS = non-scoreable, T= off-topic

Table 24. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 6

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	**Exact**	**Adjacent**	1	**2**	**3**	**4**	**B**	**N**	**T**
1	91	9	14	55	25	2	1	0	3
2	88	12	13	57	24	2	1	0	2
3	86	14	12	55	28	3	1	0	1
4	90	10	14	50	29	4	1	1	2
5	86	14	13	52	30	2	1	0	2
6	89	11	13	56	25	2	1	0	3
7	88	12	13	54	26	3	1	0	2
8	90	10	23	48	21	2	1	1	3
9	83	17	20	48	26	2	1	1	2
10	86	14	16	49	28	4	1	0	1
11	85	15	20	54	21	2	1	0	2
12	90	10	15	47	30	3	1	1	3
13	86	14	28	50	17	2	1	1	2
14	83	17	17	46	31	3	2	0	2
15	90	10	15	41	33	7	2	0	2
16	87	12	12	37	41	8	1	0	1
17	83	17	13	41	37	7	1	0	1
18	83	16	16	44	30	7	1	0	1
19	90	10	8	36	43	9	1	0	3
20	87	13	12	40	35	7	1	1	4

Note. B = blank; NS = non-scoreable, T= off-topic

Table 25. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 7

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	**Exact**	**Adjacent**	1	**2**	**3**	**4**	**B**	**N**	**T**
1	87	13	87	13	87	13	87	13	87
2	83	17	83	17	83	17	83	17	83
3	86	14	86	14	86	14	86	14	86
4	88	12	88	12	88	12	88	12	88
5	86	14	86	14	86	14	86	14	86
6	86	14	86	14	86	14	86	14	86
7	86	14	86	14	86	14	86	14	86
8	88	12	88	12	88	12	88	12	88
9	82	18	82	18	82	18	82	18	82
10	85	14	85	14	85	14	85	14	85
11	84	16	84	16	84	16	84	16	84
12	85	15	85	15	85	15	85	15	85
13	86	14	86	14	86	14	86	14	86
14	83	17	83	17	83	17	83	17	83
15	82	17	82	17	82	17	82	17	82
16	87	13	87	13	87	13	87	13	87
17	90	10	90	10	90	10	90	10	90
18	84	16	84	16	84	16	84	16	84
19	87	13	87	13	87	13	87	13	87
20	89	11	89	11	89	11	89	11	89

Note. B = blank; NS = non-scoreable, T= off-topic

Table 26. Inter-Rater Agreement and Percentage Awarded for Each Score Point for WP Items Grade 8

	Inter-Rater Agreement %		Percentage Awarded for Each Score Point %						
Item	**Exact**	**Adjacent**	1	**2**	**3**	**4**	**B**	**N**	**T**
1	90	10	14	41	35	7	1	1	1
2	80	20	18	47	27	7	1	0	0
3	80	20	9	47	38	3	1	0	1
4	90	10	12	48	33	5	1	1	1
5	82	18	17	41	32	7	2	0	1
6	76	24	9	44	40	4	1	0	1
7	88	12	13	43	35	6	2	0	1
8	85	15	14	46	30	7	2	0	1
9	87	13	16	43	34	5	2	0	0
10	84	16	12	43	36	7	1	0	1
11	82	18	20	45	29	4	1	0	1
12	88	12	11	42	38	4	2	1	2
13	85	15	9	40	41	7	2	0	2
14	86	14	14	49	31	3	1	0	1
15	87	13	12	46	33	5	1	1	1
16	86	14	19	43	30	5	1	1	1
17	78	22	16	45	34	3	2	0	1
18	85	15	15	45	33	4	1	0	1
19	83	17	15	46	33	3	1	1	0
20	84	16	22	45	27	3	1	0	2

Note. B = blank; NS = non-scoreable, T= off-topic

ITEM STATISTICS

This section provides item statistics for each item. Valid non-score responses (blank, non-scoreable, and off-topic) for WP items were treated as 0 point.

Table 27. MC Item Statistics

Item Information					Classical												Rasch		Infit		Outfit		DIF		
Gr	PubID	Form	Std	DOK	N	P.Value	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	B	Final.B. Err	t	MS	t	MS	MW	BW	WH
3	102153	0	D.1.2.5	1	102193	0.51	0.25	0.12	0.12	0.51	0.01	0.22	-0.07	-0.12	-0.11	0.22	-0.07	0.01	-9.90	0.97	-9.90	0.97	A+	B+	A+
3	871828	0	D.1.1.4	2	102193	0.75	0.07	0.11	0.06	0.75	0.01	0.28	-0.17	-0.15	-0.13	0.28	-1.29	0.01	-9.90	0.86	-9.90	0.76	A+	C-	C-
3	758781	0	D.1.2.1	2	102193	0.38	0.18	0.15	0.29	0.38	0.01	0.09	-0.12	-0.08	0.07	0.09	0.56	0.01	9.90	1.09	9.90	1.15	A-	A-	A+
3	198916	0	D.1.1.6	3	102193	0.48	0.10	0.31	0.48	0.12	0.00	0.27	-0.10	-0.16	0.27	-0.10	0.07	0.01	-9.90	0.92	-9.90	0.90	A-	A-	A-
3	697452	0	D.1.2.4	2	102193	0.27	0.25	0.27	0.35	0.12	0.01	0.17	-0.16	0.17	0.06	-0.10	1.12	0.01	-2.63	0.99	9.90	1.08	A-	A-	A+
3	314142	0	D.1.1.9	2	102193	0.42	0.18	0.13	0.42	0.26	0.00	0.00	-0.04	-0.04	0.00	0.07	0.32	0.01	9.90	1.19	9.90	1.26	A+	A+	A+
3	785433	0	D.1.2.3	2	102193	0.42	0.11	0.24	0.22	0.42	0.01	0.19	-0.15	-0.04	-0.06	0.19	0.32	0.01	1.55	1.00	5.17	1.02	A+	A-	A-
3	671622	0	D.1.1.1	2	102193	0.49	0.49	0.14	0.23	0.13	0.00	0.20	0.20	-0.12	-0.04	-0.10	0.00	0.01	-3.52	0.99	-2.89	0.99	A-	A-	A-
3	727044	0	D.2.1.1	3	102193	0.24	0.15	0.24	0.30	0.30	0.01	0.04	-0.06	0.04	0.01	0.01	1.30	0.01	9.90	1.12	9.90	1.27	A-	A+	A+
3	946046	0	D.1.1.8	2	102193	0.58	0.05	0.58	0.29	0.09	0.00	0.20	-0.13	0.20	-0.06	-0.15	-0.39	0.01	-5.25	0.99	-4.92	0.98	A-	A-	A+
3	185483	1	D.1.2.5	1	5140	0.87	0.05	0.87	0.04	0.04	0.01	0.34	-0.20	0.34	-0.19	-0.16	-2.17	0.04	-5.34	0.85	-8.58	0.65	A+	A-	A-
3	561859	1	D.1.1.3	2	5140	0.91	0.91	0.05	0.01	0.02	0.01	0.22	0.22	-0.16	-0.11	-0.09	-2.67	0.05	-1.57	0.94	-2.36	0.86	A+	A-	A-
3	602433	1	D.1.1.7	3	5140	0.52	0.10	0.20	0.17	0.52	0.01	0.27	-0.16	-0.09	-0.12	0.27	-0.11	0.03	-2.83	0.97	-2.20	0.97	A+	A-	A-
3	358789	1	D.1.2.4	2	5140	0.55	0.10	0.14	0.20	0.55	0.00	0.30	-0.18	-0.18	-0.08	0.30	-0.25	0.03	-5.56	0.94	-5.01	0.93	A-	A+	A-
3	632234	1	D.1.1.1	2	5140	0.63	0.16	0.63	0.13	0.08	0.01	0.29	-0.15	0.29	-0.13	-0.15	-0.64	0.03	-4.17	0.95	-4.58	0.92	A-	A-	A+
3	599927	1	D.1.1.8	2	5140	0.30	0.21	0.22	0.30	0.26	0.01	0.11	-0.03	-0.04	0.11	-0.03	0.97	0.03	5.87	1.09	8.03	1.20	A-	A+	A+
3	138651	1	D.1.2.3	2	5140	0.43	0.16	0.43	0.16	0.24	0.01	0.25	-0.13	0.25	-0.12	-0.06	0.31	0.03	-0.91	0.99	-1.01	0.98	A-	A+	A+
3	428637	1	D.2.1.1	3	5140	0.33	0.33	0.12	0.15	0.39	0.00	0.21	0.21	-0.10	-0.08	-0.07	0.80	0.03	0.72	1.01	3.96	1.09	A-	A-	A-
3	803630	2	D.1.2.5	2	5145	0.72	0.72	0.06	0.11	0.10	0.01	0.32	0.32	-0.16	-0.18	-0.16	-1.06	0.03	-6.39	0.90	-6.77	0.85	A+	A+	A-
3	460975	2	D.1.1.3	2	5145	0.86	0.08	0.03	0.86	0.02	0.00	0.26	-0.16	-0.14	0.26	-0.14	-2.09	0.04	-3.10	0.91	-5.29	0.78	A+	A-	A-
3	925375	2	D.1.1.4	2	5145	0.80	0.08	0.80	0.06	0.05	0.00	0.29	-0.17	0.29	-0.18	-0.11	-1.61	0.04	-4.06	0.91	-5.33	0.83	A-	A-	A+
3	462917	2	D.1.1.6	2	5145	0.40	0.40	0.12	0.26	0.21	0.00	0.13	0.13	-0.07	-0.03	-0.06	0.46	0.03	7.13	1.08	6.27	1.10	A-	A-	A-
3	829152	2	D.1.2.2	2	5145	0.22	0.40	0.22	0.16	0.21	0.01	0.06	0.08	0.06	-0.11	-0.05	1.45	0.04	4.69	1.09	9.16	1.31	A-	A+	A-
3	870268	2	D.1.1.7	3	5145	0.29	0.24	0.16	0.29	0.29	0.01	0.25	-0.11	-0.10	0.25	-0.05	1.05	0.03	-2.78	0.96	-0.23	0.99	A-	A-	A-
3	398241	2	D.1.2.4	3	5145	0.39	0.36	0.39	0.11	0.13	0.01	0.23	-0.04	0.23	-0.14	-0.13	0.54	0.03	-1.30	0.99	-0.65	0.99	A-	A+	A-
3	942146	2	D.2.1.1	3	5145	0.31	0.33	0.24	0.11	0.31	0.00	0.14	-0.10	0.03	-0.09	0.14	0.91	0.03	3.92	1.05	4.08	1.09	A+	A-	B-

3	690404	3	D.1.2.5	2	5121	0.75	0.13	0.75	0.06	0.05	0.01	0.33	-0.17	0.33	-0.17	-0.18	-1.35	0.03	-6.09	0.90	-5.79	0.85	A+	A+	A+
3	225188	3	D.1.1.3	2	5121	0.49	0.49	0.12	0.12	0.26	0.01	0.12	0.12	-0.10	-0.08	0.00	-0.02	0.03	9.90	1.11	9.59	1.14	A-	A+	A+
3	822586	3	D.1.1.4	2	5121	0.46	0.18	0.17	0.46	0.19	0.00	0.31	-0.09	-0.16	0.31	-0.14	0.10	0.03	-5.58	0.94	-4.71	0.93	A+	A+	A-
3	156566	3	D.1.1.6	3	5121	0.62	0.62	0.12	0.15	0.09	0.01	0.32	0.32	-0.14	-0.15	-0.18	-0.68	0.03	-5.90	0.93	-6.09	0.90	A-	A-	B-
3	417318	3	D.1.1.7	3	5121	0.64	0.15	0.08	0.64	0.13	0.00	0.30	-0.21	-0.11	0.30	-0.11	-0.75	0.03	-4.45	0.95	-4.95	0.91	A-	A-	C-
3	998027	3	D.1.2.4	2	5121	0.25	0.46	0.25	0.20	0.08	0.01	0.14	0.08	0.14	-0.17	-0.12	1.22	0.03	2.85	1.05	6.82	1.20	A-	A-	A+
3	209349	3	D.1.2.3	2	5121	0.30	0.17	0.28	0.25	0.30	0.01	0.14	-0.09	-0.08	0.02	0.14	0.88	0.03	4.65	1.07	6.55	1.15	A+	A-	A-
3	876223	3	D.1.1.8	2	5121	0.76	0.76	0.11	0.06	0.07	0.00	0.33	0.33	-0.24	-0.17	-0.12	-1.41	0.03	-6.24	0.89	-7.21	0.81	A+	A-	B-
3	690732	4	D.1.2.6	1	5140	0.83	0.12	0.02	0.83	0.02	0.01	0.29	-0.20	-0.11	0.29	-0.15	-1.86	0.04	-3.62	0.92	-5.12	0.81	A+	B+	B+
3	331149	4	D.1.1.2	2	5140	0.79	0.07	0.05	0.09	0.79	0.01	0.33	-0.17	-0.17	-0.18	0.33	-1.52	0.04	-5.39	0.90	-7.13	0.79	A+	B-	C-
3	386027	4	D.1.1.5	2	5140	0.61	0.08	0.14	0.16	0.61	0.01	0.37	-0.25	-0.16	-0.14	0.37	-0.55	0.03	-9.90	0.89	-9.34	0.85	A-	A-	A-
3	937839	4	D.1.2.1	2	5140	0.49	0.11	0.49	0.19	0.21	0.00	0.33	-0.26	0.33	-0.11	-0.09	0.05	0.03	-7.25	0.93	-6.38	0.91	A+	A-	A-
3	432960	4	D.1.1.9	2	5140	0.33	0.13	0.33	0.07	0.47	0.00	0.12	-0.14	0.12	-0.11	0.04	0.80	0.03	7.42	1.10	7.98	1.17	A-	A-	A+
3	714480	4	D.1.2.3	2	5140	0.36	0.15	0.25	0.23	0.36	0.01	0.24	-0.17	-0.04	-0.09	0.24	0.63	0.03	-0.56	0.99	2.01	1.04	A+	A-	A-
3	561365	4	D.2.1.1	3	5140	0.34	0.21	0.34	0.23	0.21	0.00	0.12	0.04	0.12	-0.13	-0.04	0.75	0.03	7.29	1.10	8.87	1.19	A-	A+	A+
3	754308	4	D.1.1.1	2	5140	0.63	0.63	0.11	0.13	0.13	0.01	0.28	0.28	-0.13	-0.13	-0.14	-0.63	0.03	-2.43	0.97	-3.58	0.94	A-	A-	A-
3	513345	5	D.1.1.9	2	5131	0.61	0.21	0.12	0.61	0.06	0.00	0.27	-0.16	-0.10	0.27	-0.14	-0.56	0.03	-2.11	0.98	-1.79	0.97	A+	A-	B+
3	982177	5	D.1.2.6	2	5131	0.53	0.53	0.16	0.09	0.21	0.01	0.29	0.29	-0.12	-0.13	-0.14	-0.19	0.03	-3.17	0.97	-3.08	0.95	A+	A+	A+
3	621596	5	D.1.1.2	2	5131	0.72	0.12	0.72	0.06	0.09	0.00	0.40	-0.23	0.40	-0.20	-0.19	-1.18	0.03	-9.57	0.86	-9.90	0.76	A-	C-	C-
3	212169	5	D.1.1.3	2	5131	0.70	0.17	0.08	0.05	0.70	0.01	0.40	-0.24	-0.21	-0.16	0.40	-1.03	0.03	-9.90	0.86	-9.90	0.77	B-	A-	A-
3	525894	5	D.1.1.5	2	5131	0.61	0.61	0.10	0.13	0.14	0.01	0.31	0.31	-0.12	-0.16	-0.16	-0.59	0.03	-4.65	0.95	-5.23	0.91	A+	A-	B-
3	450780	5	D.1.2.1	2	5131	0.31	0.31	0.18	0.31	0.20	0.00	0.31	-0.10	-0.09	0.31	-0.16	0.89	0.03	-4.62	0.93	-1.82	0.96	A+	A-	A+
3	400590	5	D.1.2.3	2	5131	0.52	0.13	0.16	0.52	0.19	0.00	0.22	-0.12	-0.07	0.22	-0.12	-0.17	0.03	3.05	1.03	1.82	1.03	A-	A-	A-
3	199310	5	D.1.1.5	2	5131	0.33	0.21	0.22	0.33	0.23	0.01	0.15	-0.12	-0.01	0.15	-0.04	0.79	0.03	5.49	1.08	6.81	1.15	A-	A+	A+
3	529004	6	D.1.1.3	2	5130	0.60	0.23	0.05	0.12	0.60	0.00	0.31	-0.15	-0.16	-0.16	0.31	-0.50	0.03	-6.59	0.93	-6.67	0.90	A-	A-	A-
3	713266	6	D.1.2.6	2	5130	0.31	0.13	0.21	0.35	0.31	0.00	0.06	-0.14	-0.05	0.09	0.06	0.90	0.03	8.01	1.12	9.11	1.21	A+	A+	A+
3	338053	6	D.1.1.4	2	5130	0.69	0.11	0.69	0.15	0.05	0.01	0.38	-0.21	0.38	-0.21	-0.17	-0.96	0.03	-9.90	0.87	-9.90	0.79	A+	C-	B-
3	142385	6	D.1.1.6	3	5130	0.36	0.24	0.18	0.36	0.21	0.01	0.11	0.01	-0.11	0.11	-0.02	0.63	0.03	6.83	1.08	7.06	1.13	A-	A+	A-
3	262941	6	D.1.1.7	2	5130	0.68	0.68	0.17	0.09	0.06	0.01	0.26	0.26	-0.05	-0.21	-0.19	-0.92	0.03	-3.02	0.96	-2.70	0.95	A-	A-	A-
3	921894	6	D.1.2.4	2	5130	0.48	0.24	0.14	0.14	0.48	0.00	0.31	-0.12	-0.13	-0.16	0.31	0.07	0.03	-6.91	0.93	-5.85	0.92	A-	A-	A-
3	766527	6	D.1.2.3	2	5130	0.29	0.29	0.26	0.22	0.22	0.01	0.12	0.12	-0.06	-0.01	-0.05	0.97	0.03	4.07	1.06	6.84	1.16	A-	A+	A-
3	598945	6	D.1.1.8	3	5130	0.47	0.13	0.15	0.47	0.25	0.00	0.22	-0.13	-0.05	0.22	-0.11	0.09	0.03	-0.27	1.00	-0.36	0.99	A+	A+	A+

3	664716	7	D.1.2.5	1	5108	0.80	0.09	0.80	0.06	0.05	0.00	0.27	-0.15	0.27	-0.11	-0.17	-1.68	0.04	-1.62	0.97	-1.51	0.94	A+	A-	A-
3	129094	7	D.1.1.4	2	5108	0.77	0.09	0.08	0.05	0.77	0.01	0.42	-0.23	-0.20	-0.23	0.42	-1.45	0.04	-8.54	0.85	-9.12	0.73	A-	A-	A-
3	192165	7	D.1.1.6	2	5108	0.62	0.11	0.13	0.62	0.12	0.02	0.39	-0.23	-0.20	0.39	-0.14	-0.62	0.03	-8.25	0.90	-7.99	0.85	A+	A-	A-
3	226521	7	D.1.2.3	2	5108	0.37	0.23	0.25	0.37	0.14	0.01	0.29	-0.19	-0.03	0.29	-0.13	0.63	0.03	-1.44	0.98	0.08	1.00	A+	A+	A-
3	675457	7	D.2.1.1	3	5108	0.45	0.45	0.12	0.17	0.26	0.01	0.30	0.30	-0.14	-0.13	-0.11	0.24	0.03	-1.38	0.98	1.06	1.02	A+	A-	A+
3	163810	7	D.1.1.8	2	5108	0.64	0.17	0.09	0.09	0.64	0.01	0.41	-0.22	-0.16	-0.22	0.41	-0.71	0.03	-9.14	0.89	-8.48	0.83	A-	B-	A-
3	116151	7	D.1.1.7	2	5108	0.82	0.82	0.04	0.10	0.03	0.00	0.36	0.36	-0.21	-0.20	-0.21	-1.85	0.04	-5.34	0.88	-6.69	0.74	A-	A-	A-
3	808966	7	D.1.1.3	2	5108	0.80	0.80	0.06	0.08	0.06	0.01	0.31	0.31	-0.20	-0.10	-0.21	-1.64	0.04	-2.97	0.94	-4.12	0.85	A-	A+	A+
3	229406	8	D.1.2.5	1	5105	0.86	0.05	0.04	0.04	0.86	0.01	0.36	-0.22	-0.20	-0.17	0.36	-2.11	0.04	-5.36	0.86	-8.41	0.66	A+	C-	B-
3	634592	8	D.1.2.5	2	5105	0.61	0.17	0.12	0.10	0.61	0.00	0.25	-0.11	-0.14	-0.12	0.25	-0.55	0.03	-0.40	1.00	-0.82	0.99	A+	A+	A-
3	939559	8	D.1.1.2	2	5105	0.32	0.23	0.15	0.29	0.32	0.01	0.19	-0.15	-0.02	-0.03	0.19	0.86	0.03	2.21	1.03	4.80	1.11	A-	B-	A-
3	721637	8	D.1.1.5	2	5105	0.74	0.07	0.16	0.02	0.74	0.01	0.34	-0.20	-0.20	-0.16	0.34	-1.22	0.03	-6.50	0.89	-6.79	0.83	A+	B-	A-
3	533404	8	D.1.2.1	2	5105	0.52	0.18	0.52	0.16	0.14	0.00	0.28	-0.11	0.28	-0.14	-0.12	-0.10	0.03	-2.81	0.97	-2.02	0.97	A-	A+	A+
3	835898	8	D.1.2.3	2	5105	0.37	0.26	0.37	0.20	0.16	0.01	0.21	-0.03	0.21	-0.09	-0.13	0.58	0.03	0.90	1.01	2.50	1.05	A-	A-	A-
3	114204	8	D.2.1.1	3	5105	0.25	0.18	0.25	0.48	0.09	0.00	0.11	-0.07	0.11	0.01	-0.08	1.27	0.03	3.73	1.07	9.62	1.30	A+	B-	A+
3	909378	8	D.1.1.8	2	5105	0.85	0.10	0.03	0.85	0.01	0.01	0.35	-0.27	-0.18	0.35	-0.09	-2.06	0.04	-5.41	0.86	-8.24	0.67	B+	A-	A-
3	482170	9	D.1.1.2	2	5131	0.64	0.64	0.07	0.07	0.21	0.01	0.13	0.13	-0.16	-0.11	0.02	-0.71	0.03	3.64	1.04	2.81	1.05	A+	A+	A+
3	995474	9	D.1.1.5	2	5131	0.51	0.14	0.16	0.17	0.51	0.01	0.28	-0.20	-0.05	-0.12	0.28	-0.12	0.03	-7.11	0.94	-6.90	0.92	A-	A-	A-
3	928897	9	D.1.2.1	2	5131	0.39	0.34	0.11	0.39	0.16	0.00	0.13	-0.01	-0.08	0.13	-0.09	0.44	0.03	4.82	1.05	5.00	1.08	A-	A+	A+
3	796540	9	D.1.2.2	2	5131	0.33	0.34	0.33	0.15	0.17	0.01	0.06	0.05	0.06	-0.04	-0.09	0.75	0.03	7.00	1.09	7.49	1.15	A-	A-	A-
3	554507	9	D.1.1.9	2	5131	0.40	0.40	0.30	0.13	0.16	0.00	0.07	0.07	0.01	-0.04	-0.07	0.39	0.03	8.98	1.10	8.86	1.13	A+	A+	A+
3	746870	9	D.2.1.1	3	5131	0.59	0.59	0.07	0.23	0.10	0.01	0.23	0.23	-0.17	-0.07	-0.12	-0.46	0.03	-3.38	0.97	-2.98	0.96	A-	A+	A+
3	985603	9	D.1.1.8	2	5131	0.52	0.23	0.52	0.19	0.05	0.00	0.27	-0.23	0.27	-0.02	-0.14	-0.15	0.03	-6.50	0.94	-5.49	0.93	A+	A-	B-
3	396974	9	D.1.2.6	1	5131	0.65	0.14	0.65	0.12	0.08	0.01	0.21	-0.14	0.21	-0.06	-0.10	-0.75	0.03	-1.73	0.98	-1.70	0.97	A-	A-	A+
3	712140	10	D.1.2.5	1	5132	0.68	0.12	0.68	0.04	0.15	0.01	0.30	-0.14	0.30	-0.13	-0.19	-0.90	0.03	-6.32	0.92	-6.81	0.87	A-	A+	A+
3	646980	10	D.1.1.2	2	5132	0.30	0.14	0.30	0.36	0.19	0.01	0.16	-0.13	0.16	0.00	-0.07	0.93	0.03	1.82	1.03	4.34	1.10	A-	A+	A-
3	817549	10	D.1.1.5	2	5132	0.86	0.86	0.05	0.03	0.05	0.01	0.26	0.26	-0.15	-0.12	-0.14	-2.14	0.04	-2.86	0.92	-5.71	0.77	A-	C-	C-
3	395898	10	D.1.2.1	2	5132	0.44	0.29	0.06	0.44	0.21	0.00	0.30	-0.18	-0.12	0.30	-0.09	0.21	0.03	-7.11	0.93	-6.45	0.91	A+	A-	A-
3	261288	10	D.1.1.7	3	5132	0.35	0.27	0.19	0.35	0.18	0.01	0.21	-0.04	-0.13	0.21	-0.08	0.64	0.03	-0.68	0.99	0.18	1.00	A+	A+	A+
3	627612	10	D.1.1.9	2	5132	0.32	0.32	0.24	0.20	0.24	0.00	0.09	0.09	-0.02	-0.01	-0.06	0.81	0.03	6.33	1.09	8.28	1.18	A-	A-	A-
3	441072	10	D.1.2.3	2	5132	0.32	0.14	0.22	0.32	0.32	0.01	0.17	-0.21	-0.13	0.11	0.17	0.82	0.03	2.43	1.03	2.98	1.06	A-	A+	A-
3	889515	10	D.2.1.1	3	5132	0.42	0.15	0.22	0.42	0.21	0.00	0.22	-0.15	-0.03	0.22	-0.10	0.30	0.03	-0.21	1.00	0.31	1.00	A+	A+	A-

3	963175	11	D.1.2.6	2	5099	0.67	0.09	0.07	0.16	0.67	0.00	0.35	-0.18	-0.15	-0.20	0.35	-0.83	0.03	-7.66	0.90	-7.55	0.85	A+	B+	A+
3	443216	11	D.1.1.2	2	5099	0.75	0.10	0.05	0.75	0.08	0.01	0.36	-0.19	-0.18	0.36	-0.20	-1.25	0.03	-7.38	0.88	-8.89	0.78	A+	C-	C-
3	535370	11	D.1.1.5	2	5099	0.77	0.08	0.03	0.77	0.11	0.01	0.24	-0.26	-0.14	0.24	-0.01	-1.39	0.04	-2.46	0.95	-0.19	0.99	A-	B-	B-
3	721949	11	D.1.2.1	2	5099	0.45	0.17	0.45	0.14	0.24	0.00	0.22	-0.09	0.22	-0.12	-0.07	0.26	0.03	0.85	1.01	1.35	1.02	A-	A-	A-
3	915419	11	D.1.1.9	2	5099	0.43	0.43	0.37	0.09	0.10	0.01	0.05	0.05	0.08	-0.10	-0.12	0.33	0.03	9.90	1.15	9.90	1.20	A-	A+	A+
3	744898	11	D.1.2.3	2	5099	0.49	0.49	0.09	0.30	0.10	0.01	0.20	0.20	-0.11	-0.04	-0.15	0.04	0.03	2.88	1.03	2.60	1.04	A-	A-	A-
3	911788	11	D.2.1.1	3	5099	0.38	0.21	0.18	0.22	0.38	0.01	0.19	-0.15	-0.02	-0.05	0.19	0.57	0.03	1.90	1.02	2.41	1.04	A-	A-	A+
3	865369	11	D.1.1.8	2	5099	0.69	0.69	0.08	0.07	0.15	0.00	0.25	0.25	-0.18	-0.13	-0.09	-0.93	0.03	-1.91	0.97	-2.64	0.94	A+	A-	A-
3	651512	12	D.1.1.9	2	5083	0.30	0.31	0.30	0.30	0.08	0.01	0.03	-0.02	0.03	0.09	-0.16	0.87	0.03	7.13	1.11	8.19	1.18	A+	A+	A+
3	441036	12	D.1.2.5	1	5083	0.68	0.68	0.08	0.09	0.15	0.00	0.21	0.21	-0.17	-0.11	-0.06	-0.97	0.03	-2.15	0.97	-2.25	0.96	A+	A+	A+
3	231601	12	D.1.1.2	2	5083	0.44	0.44	0.11	0.27	0.17	0.01	0.01	0.01	-0.04	0.07	-0.06	0.18	0.03	9.90	1.14	9.90	1.17	A-	A+	A+
3	493145	12	D.1.1.5	2	5083	0.66	0.19	0.08	0.66	0.06	0.01	0.27	-0.17	-0.07	0.27	-0.16	-0.85	0.03	-6.56	0.92	-6.94	0.88	A+	A-	B-
3	646595	12	D.1.2.1	2	5083	0.36	0.21	0.30	0.36	0.13	0.01	0.19	-0.09	-0.06	0.19	-0.06	0.56	0.03	-1.34	0.98	0.33	1.01	A-	A-	A-
3	442929	12	D.1.2.2	2	5083	0.29	0.07	0.35	0.29	0.28	0.01	0.05	-0.03	-0.06	0.05	0.04	0.88	0.03	5.88	1.09	6.44	1.14	A+	A+	A+
3	861638	12	D.1.2.3	2	5083	0.40	0.40	0.22	0.20	0.17	0.00	0.14	0.14	-0.02	-0.09	-0.06	0.35	0.03	3.01	1.03	3.12	1.05	A-	A+	B+
3	272468	12	D.2.1.1	3	5083	0.60	0.60	0.11	0.16	0.12	0.01	0.24	0.24	-0.14	-0.09	-0.13	-0.58	0.03	-5.43	0.94	-5.30	0.93	A+	A-	B-
3	344249	13	D.1.2.5	1	5098	0.43	0.29	0.43	0.16	0.12	0.01	0.23	-0.19	0.23	-0.03	-0.03	0.36	0.03	-0.44	1.00	0.06	1.00	A+	A+	A+
3	955997	13	D.1.1.4	2	5098	0.75	0.06	0.12	0.75	0.05	0.01	0.34	-0.21	-0.20	0.34	-0.12	-1.27	0.03	-7.40	0.88	-8.63	0.78	A-	C-	C-
3	839236	13	D.1.1.6	3	5098	0.50	0.50	0.12	0.08	0.30	0.00	0.32	0.32	-0.09	-0.11	-0.21	-0.01	0.03	-8.22	0.92	-7.42	0.90	A-	C-	A-
3	898142	13	D.1.2.2	2	5098	0.34	0.26	0.20	0.19	0.34	0.01	0.10	0.00	-0.01	-0.10	0.10	0.76	0.03	7.87	1.10	8.34	1.17	A-	A-	A-
3	824353	13	D.1.2.3	2	5098	0.21	0.36	0.26	0.17	0.21	0.01	0.14	0.04	-0.14	-0.04	0.14	1.56	0.04	1.55	1.03	5.34	1.19	A-	A-	A+
3	108301	13	D.1.1.1	2	5098	0.30	0.16	0.30	0.33	0.19	0.01	0.23	-0.05	0.23	-0.09	-0.11	0.99	0.03	-1.42	0.98	-0.10	1.00	A-	A+	A+
3	912129	13	D.2.1.1	3	5098	0.22	0.26	0.22	0.13	0.38	0.01	0.12	-0.09	0.12	-0.11	0.06	1.46	0.04	2.73	1.05	7.14	1.24	A-	A-	A-
3	847434	13	D.1.1.8	2	5098	0.92	0.02	0.02	0.04	0.92	0.00	0.18	-0.13	-0.10	-0.08	0.18	-2.78	0.05	-0.77	0.97	-2.64	0.83	B+	A-	A+
3	686990	14	D.1.2.2	2	5090	0.39	0.39	0.12	0.19	0.29	0.01	0.01	0.01	-0.06	-0.03	0.07	0.45	0.03	9.90	1.16	9.90	1.21	A-	A-	A-
3	206275	14	D.1.1.2	3	5090	0.52	0.11	0.52	0.22	0.13	0.01	0.30	-0.15	0.30	-0.15	-0.11	-0.16	0.03	-7.90	0.93	-7.11	0.91	A-	B-	A-
3	498994	14	D.1.2.1	2	5090	0.48	0.31	0.12	0.48	0.09	0.00	0.26	-0.14	-0.07	0.26	-0.13	0.06	0.03	-4.32	0.96	-3.33	0.96	A+	B-	A-
3	294361	14	D.1.1.7	2	5090	0.76	0.12	0.76	0.04	0.07	0.01	0.29	-0.19	0.29	-0.16	-0.11	-1.37	0.03	-4.96	0.91	-6.12	0.84	A+	B-	B-
3	418891	14	D.1.1.9	2	5090	0.45	0.45	0.07	0.04	0.42	0.01	0.14	0.14	-0.16	-0.14	0.01	0.16	0.03	4.73	1.05	4.13	1.06	A-	A-	A+
3	163018	14	D.1.2.3	2	5090	0.21	0.37	0.23	0.18	0.21	0.01	0.01	0.03	0.04	-0.08	0.01	1.45	0.04	5.59	1.12	9.24	1.31	A+	A+	B+
3	732695	14	D.1.1.1	2	5090	0.57	0.57	0.16	0.17	0.08	0.01	0.31	0.31	-0.20	-0.13	-0.09	-0.38	0.03	-8.01	0.92	-7.88	0.89	A-	A-	A+
3	851754	14	D.1.2.4	2	5090	0.37	0.37	0.17	0.21	0.24	0.00	0.23	0.23	-0.08	-0.10	-0.08	0.55	0.03	-1.66	0.98	-1.12	0.98	A+	A-	A-

3	473798	15	D.1.2.5	1	5054	0.87	0.87	0.03	0.03	0.07	0.01	0.32	0.32	-0.19	-0.16	-0.18	-2.17	0.04	-4.27	0.88	-7.49	0.68	A+	A-	A-
3	886794	15	D.1.1.3	2	5054	0.63	0.06	0.63	0.17	0.13	0.01	0.39	-0.15	0.39	-0.26	-0.16	-0.59	0.03	-9.90	0.87	-9.90	0.82	B-	A-	B-
3	262747	15	D.1.1.4	2	5054	0.50	0.18	0.50	0.13	0.17	0.02	0.26	-0.06	0.26	-0.10	-0.17	0.00	0.03	-1.46	0.99	-2.11	0.97	A-	A-	B-
3	176494	15	D.1.2.1	2	5054	0.58	0.13	0.58	0.16	0.13	0.00	0.20	-0.08	0.20	-0.11	-0.09	-0.37	0.03	3.30	1.04	2.08	1.03	A-	A-	A-
3	779130	15	D.1.1.6	3	5054	0.53	0.11	0.19	0.53	0.16	0.01	0.33	-0.17	-0.17	0.33	-0.12	-0.11	0.03	-6.99	0.93	-6.53	0.91	A-	A-	A+
3	428492	15	D.1.2.4	2	5054	0.33	0.29	0.21	0.17	0.33	0.01	0.13	-0.07	-0.03	-0.04	0.13	0.84	0.03	6.11	1.09	6.45	1.14	A-	A-	A+
3	408866	15	D.1.2.3	2	5054	0.36	0.22	0.22	0.36	0.20	0.01	0.25	-0.12	-0.13	0.25	-0.04	0.70	0.03	-1.29	0.98	0.82	1.02	A+	A+	A-
3	933850	15	D.1.1.8	3	5054	0.34	0.18	0.31	0.16	0.34	0.01	0.18	-0.08	-0.02	-0.11	0.18	0.78	0.03	3.32	1.04	5.70	1.12	A+	A+	A-
3	140210	16	D.1.2.6	2	5083	0.89	0.04	0.89	0.04	0.03	0.00	0.23	-0.12	0.23	-0.13	-0.13	-2.45	0.05	-2.47	0.92	-5.06	0.76	A+	A-	A-
3	494405	16	D.1.1.2	2	5083	0.63	0.09	0.63	0.19	0.09	0.00	0.32	-0.13	0.32	-0.20	-0.13	-0.67	0.03	-8.77	0.90	-9.04	0.86	A-	A-	A-
3	545319	16	D.1.1.4	2	5083	0.51	0.32	0.51	0.07	0.09	0.00	0.31	-0.16	0.31	-0.15	-0.13	-0.13	0.03	-8.55	0.92	-7.49	0.90	A-	A-	A-
3	595717	16	D.1.2.2	2	5083	0.39	0.39	0.22	0.21	0.17	0.01	0.09	0.09	-0.01	0.04	-0.14	0.42	0.03	7.86	1.09	7.41	1.12	A+	A-	A-
3	746552	16	D.1.2.2	2	5083	0.28	0.30	0.15	0.26	0.28	0.01	0.16	-0.13	0.00	-0.03	0.16	1.00	0.03	1.39	1.02	2.64	1.06	A-	A-	A-
3	512011	16	D.1.2.4	2	5083	0.25	0.25	0.47	0.15	0.12	0.01	0.07	0.07	0.05	-0.06	-0.10	1.15	0.03	4.69	1.08	7.44	1.20	A-	A-	A+
3	985018	16	D.1.1.1	2	5083	0.47	0.47	0.30	0.13	0.10	0.00	0.11	0.11	0.01	-0.07	-0.11	0.06	0.03	7.70	1.08	6.62	1.09	A+	A+	A-
3	164537	16	D.2.1.1	3	5083	0.29	0.35	0.25	0.29	0.10	0.01	0.11	-0.03	-0.03	0.11	-0.07	0.96	0.03	3.78	1.06	6.37	1.15	A+	B+	A+
3	775129	17	D.1.2.6	1	5134	0.58	0.08	0.08	0.58	0.25	0.00	0.27	-0.19	-0.17	0.27	-0.08	-0.39	0.03	-3.57	0.96	-3.33	0.95	A+	A+	A+
3	200540	17	D.1.1.5	2	5134	0.59	0.12	0.59	0.12	0.15	0.01	0.35	-0.15	0.35	-0.17	-0.17	-0.45	0.03	-9.35	0.90	-8.75	0.87	A+	A-	A-
3	202465	17	D.1.2.4	2	5134	0.41	0.17	0.23	0.41	0.19	0.01	0.29	-0.23	-0.04	0.29	-0.09	0.41	0.03	-4.21	0.95	-3.15	0.95	A-	A+	A-
3	482665	17	D.1.1.9	2	5134	0.42	0.42	0.22	0.19	0.15	0.01	0.04	0.04	-0.05	0.11	-0.10	0.34	0.03	9.90	1.16	9.90	1.21	A-	A+	A+
3	984159	17	D.1.2.3	2	5134	0.35	0.35	0.26	0.13	0.25	0.01	0.13	0.13	-0.07	-0.12	0.03	0.69	0.03	5.48	1.07	6.43	1.12	A+	A+	A-
3	209410	17	D.1.1.1	2	5134	0.39	0.35	0.19	0.06	0.39	0.01	0.35	-0.16	-0.18	-0.07	0.35	0.51	0.03	-8.36	0.91	-5.65	0.91	A-	A+	A+
3	916836	17	D.2.1.1	3	5134	0.87	0.05	0.05	0.03	0.87	0.00	0.23	-0.16	-0.11	-0.11	0.23	-2.15	0.04	-1.92	0.95	-3.33	0.85	A+	A-	A+
3	338503	17	D.1.2.1	2	5134	0.44	0.13	0.44	0.32	0.10	0.00	0.26	-0.11	0.26	-0.13	-0.09	0.24	0.03	-2.14	0.98	-1.61	0.98	A+	A-	A-
3	208620	18	D.1.1.5	2	5117	0.44	0.44	0.41	0.07	0.06	0.01	0.19	0.19	-0.05	-0.15	-0.12	0.22	0.03	2.68	1.03	2.40	1.03	A-	A-	A+
3	875070	18	D.1.2.1	2	5117	0.39	0.39	0.19	0.10	0.31	0.00	0.28	0.28	-0.16	-0.16	-0.05	0.48	0.03	-3.90	0.96	-3.46	0.95	B+	A-	C-
3	132011	18	D.1.2.5	2	5117	0.46	0.28	0.13	0.11	0.46	0.01	0.26	-0.13	-0.08	-0.13	0.26	0.12	0.03	-2.99	0.97	-2.41	0.97	A+	A-	A-
3	249350	18	D.1.1.2	2	5117	0.51	0.33	0.08	0.51	0.06	0.01	0.24	-0.13	-0.12	0.24	-0.10	-0.11	0.03	-1.16	0.99	-0.90	0.99	A-	A-	A-
3	398343	18	D.1.2.2	2	5117	0.32	0.23	0.32	0.24	0.20	0.01	0.23	-0.05	0.23	-0.07	-0.13	0.81	0.03	-0.99	0.99	0.02	1.00	A-	A+	A+
3	228778	18	D.1.1.7	3	5117	0.24	0.28	0.24	0.16	0.30	0.01	0.19	-0.03	0.19	-0.14	-0.02	1.26	0.03	0.45	1.01	3.35	1.09	A-	A+	A-
3	925250	18	D.1.2.3	2	5117	0.38	0.38	0.27	0.14	0.20	0.01	0.20	0.20	0.02	-0.18	-0.11	0.49	0.03	1.29	1.01	3.16	1.05	A-	A+	A+
3	836300	18	D.2.1.1	3	5117	0.33	0.42	0.09	0.15	0.33	0.00	0.16	-0.04	-0.12	-0.05	0.16	0.75	0.03	3.68	1.05	2.76	1.05	A+	A-	A+

3	338910	19	D.1.2.5	1	5087	0.70	0.23	0.05	0.70	0.01	0.00	0.29	-0.23	-0.13	0.29	-0.07	-1.02	0.03	-4.82	0.93	-4.65	0.90	A+	A-	A-
3	239279	19	D.1.1.3	2	5087	0.69	0.04	0.12	0.14	0.69	0.00	0.27	-0.12	-0.16	-0.13	0.27	-0.98	0.03	-3.41	0.95	-3.19	0.93	A+	A-	A+
3	481653	19	D.1.1.4	2	5087	0.33	0.33	0.23	0.15	0.28	0.01	0.21	0.21	-0.15	-0.07	-0.02	0.80	0.03	0.33	1.00	2.25	1.05	A+	A+	A-
3	612615	19	D.1.1.6	2	5087	0.37	0.12	0.22	0.37	0.29	0.00	0.23	-0.11	-0.07	0.23	-0.10	0.61	0.03	0.20	1.00	1.33	1.02	A-	A-	A-
3	768330	19	D.1.1.7	2	5087	0.66	0.07	0.66	0.04	0.23	0.00	0.24	-0.20	0.24	-0.18	-0.07	-0.78	0.03	-0.89	0.99	-0.75	0.99	A-	A-	B-
3	978475	19	D.1.2.4	2	5087	0.52	0.15	0.18	0.52	0.14	0.01	0.33	-0.20	-0.07	0.33	-0.19	-0.14	0.03	-7.56	0.93	-6.51	0.91	A-	B-	A+
3	664095	19	D.1.2.3	2	5087	0.36	0.36	0.12	0.27	0.24	0.00	0.13	0.13	-0.11	0.02	-0.08	0.62	0.03	6.82	1.09	8.58	1.16	A+	A+	B+
3	657665	19	D.1.1.1	2	5087	0.61	0.61	0.07	0.25	0.06	0.00	0.27	0.27	-0.15	-0.14	-0.11	-0.57	0.03	-2.81	0.97	-3.03	0.95	A-	A-	A+
3	761372	20	D.1.2.5	1	5065	0.83	0.09	0.83	0.04	0.04	0.00	0.37	-0.24	0.37	-0.15	-0.20	-1.82	0.04	-6.05	0.86	-8.80	0.70	A+	B-	A+
3	930910	20	D.1.1.3	2	5065	0.83	0.04	0.07	0.05	0.83	0.01	0.24	-0.15	-0.06	-0.20	0.24	-1.86	0.04	-2.19	0.95	-2.43	0.91	A-	A-	A-
3	926959	20	D.1.1.4	2	5065	0.59	0.04	0.32	0.59	0.04	0.01	0.15	-0.23	0.03	0.15	-0.20	-0.43	0.03	4.76	1.05	5.89	1.10	A-	A-	A-
3	142352	20	D.1.1.6	2	5065	0.85	0.06	0.85	0.04	0.05	0.01	0.32	-0.19	0.32	-0.19	-0.15	-1.96	0.04	-4.63	0.88	-6.83	0.74	A-	B-	A-
3	530665	20	D.1.1.7	2	5065	0.92	0.92	0.03	0.03	0.01	0.00	0.25	0.25	-0.19	-0.12	-0.11	-2.85	0.06	-1.81	0.92	-4.31	0.73	A+	A-	A-
3	728676	20	D.1.2.4	2	5065	0.24	0.24	0.20	0.35	0.20	0.00	0.13	0.13	-0.15	0.01	0.00	1.33	0.03	1.83	1.03	5.76	1.18	A-	A+	A-
3	567647	20	D.1.2.3	2	5065	0.21	0.36	0.18	0.23	0.21	0.01	0.06	0.01	-0.10	0.03	0.06	1.51	0.04	3.74	1.08	9.48	1.35	A+	A+	B+
3	980209	20	D.2.1.1	3	5065	0.20	0.27	0.28	0.25	0.20	0.01	0.04	-0.08	0.06	-0.02	0.04	1.60	0.04	3.81	1.08	9.18	1.36	A+	A-	A+
4	194818	0	D.1.2.4	2	100887	0.73	0.73	0.03	0.04	0.19	0.00	0.26	0.26	-0.16	-0.18	-0.14	-0.83	0.01	-9.90	0.96	-9.90	0.92	A+	A+	A+
4	983191	0	D.1.1.4	2	100887	0.64	0.64	0.05	0.10	0.21	0.00	0.28	0.28	-0.16	-0.13	-0.14	-0.31	0.01	-9.90	0.95	-9.90	0.91	A-	A-	A-
4	469285	0	D.1.1.2	2	100887	0.69	0.18	0.69	0.05	0.08	0.00	0.35	-0.24	0.35	-0.15	-0.14	-0.61	0.01	-9.90	0.87	-9.90	0.81	A+	A-	B-
4	751250	0	D.1.2.1	2	100887	0.56	0.18	0.56	0.21	0.05	0.00	0.31	-0.15	0.31	-0.14	-0.17	0.06	0.01	-9.90	0.92	-9.90	0.90	A+	B-	B-
4	489972	0	D.1.1.8	2	100887	0.83	0.10	0.06	0.83	0.02	0.00	0.25	-0.18	-0.11	0.25	-0.13	-1.47	0.01	-9.90	0.95	-9.90	0.86	A-	A-	A-
4	583676	0	D.1.1.6	2	100887	0.62	0.18	0.62	0.11	0.09	0.00	0.25	-0.10	0.25	-0.15	-0.12	-0.21	0.01	-8.12	0.98	-9.55	0.96	A+	A+	A+
4	914462	0	D.2.1.3	3	100887	0.16	0.15	0.16	0.16	0.54	0.00	-0.08	-0.10	-0.06	-0.08	0.18	2.28	0.01	9.90	1.20	9.90	1.83	A-	A+	A+
4	263821	0	D.1.1.5	2	100887	0.48	0.17	0.48	0.11	0.24	0.00	0.05	0.00	0.05	-0.06	-0.02	0.45	0.01	9.90	1.17	9.90	1.23	A-	A+	A+
4	960315	0	D.1.1.1	2	100887	0.33	0.17	0.20	0.30	0.33	0.00	0.12	-0.10	-0.04	-0.01	0.12	1.18	0.01	9.90	1.08	9.90	1.16	A+	A+	A+
4	889988	0	D.2.1.1	3	100887	0.37	0.08	0.34	0.22	0.37	0.00	0.15	-0.12	-0.10	0.02	0.15	0.97	0.01	9.90	1.05	9.90	1.12	A-	A+	A+
4	845964	0	D.1.2.2	2	100887	0.59	0.14	0.15	0.59	0.12	0.00	0.29	-0.10	-0.16	0.29	-0.15	-0.07	0.01	-9.90	0.93	-9.90	0.91	A+	A-	A-
4	277467	0	D.1.2.3	2	100887	0.47	0.16	0.17	0.20	0.47	0.00	0.21	-0.09	-0.07	-0.11	0.21	0.50	0.01	5.47	1.01	6.77	1.02	A-	A-	A-
4	953280	0	D.2.1.2	3	100887	0.50	0.09	0.31	0.10	0.50	0.00	0.10	-0.13	0.02	-0.08	0.10	0.33	0.01	9.90	1.12	9.90	1.16	A+	A-	A-
4	912315	0	D.2.1.3	3	100887	0.90	0.90	0.05	0.03	0.02	0.00	0.25	0.25	-0.14	-0.14	-0.15	-2.18	0.01	-9.90	0.91	-9.90	0.79	A+	B-	A-
4	916691	1	D.1.2.4	2	5124	0.42	0.19	0.22	0.18	0.42	0.00	0.29	-0.10	-0.12	-0.14	0.29	0.69	0.03	-2.99	0.97	-1.43	0.98	A+	A+	A-
4	561508	1	D.1.1.7	2	5124	0.65	0.17	0.08	0.09	0.65	0.00	0.40	-0.19	-0.20	-0.20	0.40	-0.44	0.03	-9.36	0.89	-9.27	0.83	A+	A-	A+

4	788054	1	D.1.2.1	2	5124	0.54	0.54	0.07	0.26	0.14	0.00	0.28	0.28	-0.17	-0.02	-0.25	0.13	0.03	-1.94	0.98	-1.97	0.97	A-	A-	A-
4	304973	1	D.1.1.4	2	5124	0.82	0.06	0.82	0.03	0.10	0.00	0.28	-0.18	0.28	-0.11	-0.16	-1.40	0.04	-1.99	0.96	-4.02	0.86	A-	A-	A-
4	639305	1	D.1.1.3	2	5124	0.54	0.30	0.13	0.54	0.03	0.00	0.30	-0.13	-0.18	0.30	-0.15	0.12	0.03	-3.10	0.97	-3.37	0.95	A+	A-	A+
4	668016	1	D.1.1.8	2	5124	0.33	0.33	0.15	0.27	0.24	0.00	0.19	0.19	-0.10	-0.08	-0.03	1.11	0.03	2.13	1.03	5.77	1.12	A+	A+	A-
4	922700	1	D.1.1.5	3	5124	0.32	0.41	0.14	0.13	0.32	0.00	0.00	0.21	-0.12	-0.18	0.00	1.17	0.03	9.90	1.22	9.90	1.32	A-	A-	A+
4	209672	1	D.2.1.3	3	5124	0.74	0.06	0.74	0.10	0.11	0.00	0.28	-0.08	0.28	-0.15	-0.19	-0.89	0.03	-2.56	0.96	-1.06	0.97	A+	A+	A+
4	445564	1	D.2.1.1	3	5124	0.30	0.61	0.30	0.04	0.05	0.00	0.20	-0.11	0.20	-0.11	-0.09	1.28	0.03	0.67	1.01	6.88	1.16	A-	A-	A+
4	159485	1	D.2.1.2	3	5124	0.51	0.12	0.20	0.51	0.17	0.00	0.27	-0.18	-0.12	0.27	-0.07	0.25	0.03	-0.58	0.99	-1.11	0.98	A+	A+	A+
4	463957	2	D.1.2.4	1	5070	0.81	0.05	0.06	0.81	0.08	0.00	0.39	-0.21	-0.20	0.39	-0.21	-1.29	0.04	-5.62	0.88	-8.06	0.74	A+	A+	A-
4	245419	2	D.1.1.3	2	5070	0.85	0.85	0.05	0.06	0.04	0.00	0.36	0.36	-0.18	-0.21	-0.19	-1.62	0.04	-4.07	0.90	-6.08	0.76	A+	A-	A-
4	759670	2	D.1.2.1	2	5070	0.43	0.43	0.04	0.45	0.08	0.00	0.23	0.23	-0.17	-0.13	-0.06	0.67	0.03	2.58	1.03	3.24	1.05	A+	A+	A+
4	667577	2	D.1.1.7	3	5070	0.71	0.08	0.10	0.10	0.71	0.00	0.39	-0.20	-0.21	-0.18	0.39	-0.69	0.03	-6.77	0.90	-6.80	0.84	A-	A-	A-
4	925783	2	D.1.1.2	2	5070	0.87	0.09	0.87	0.02	0.03	0.00	0.35	-0.25	0.35	-0.14	-0.18	-1.81	0.04	-3.48	0.90	-6.26	0.73	A+	C-	B-
4	816982	2	D.1.1.4	2	5070	0.58	0.11	0.58	0.19	0.12	0.00	0.23	-0.11	0.23	-0.11	-0.11	-0.02	0.03	3.07	1.03	2.24	1.04	A+	A-	A-
4	627322	2	D.1.1.6	2	5070	0.47	0.17	0.19	0.47	0.17	0.00	0.21	-0.05	-0.08	0.21	-0.12	0.52	0.03	4.86	1.05	4.64	1.07	A-	A-	A-
4	484211	2	D.1.1.1	2	5070	0.36	0.51	0.06	0.07	0.36	0.00	0.32	-0.15	-0.19	-0.13	0.32	1.06	0.03	-5.67	0.93	-1.84	0.96	A-	A+	A+
4	386818	2	D.1.2.3	2	5070	0.49	0.20	0.49	0.14	0.16	0.00	0.31	-0.14	0.31	-0.09	-0.17	0.39	0.03	-3.83	0.96	-3.20	0.95	A-	A+	A-
4	600469	2	D.2.1.2	3	5070	0.53	0.53	0.07	0.22	0.18	0.00	0.20	0.20	-0.17	-0.07	-0.07	0.24	0.03	5.98	1.06	4.68	1.07	A-	A+	A-
4	602628	3	D.1.2.1	2	5063	0.39	0.39	0.12	0.41	0.08	0.00	0.19	0.19	-0.20	0.06	-0.22	0.83	0.03	3.55	1.04	3.60	1.06	A+	A-	A-
4	478034	3	D.1.1.3	2	5063	0.76	0.06	0.10	0.08	0.76	0.00	0.35	-0.21	-0.18	-0.16	0.35	-0.99	0.03	-5.34	0.91	-6.06	0.84	A-	B-	B-
4	624010	3	D.1.1.8	2	5063	0.20	0.20	0.34	0.22	0.25	0.00	0.03	0.03	0.05	-0.09	0.01	1.91	0.04	5.08	1.11	9.90	1.39	A+	A-	A+
4	102018	3	D.2.1.3	3	5063	0.49	0.23	0.11	0.49	0.17	0.00	0.23	-0.01	-0.17	0.23	-0.16	0.37	0.03	1.04	1.01	1.65	1.02	A-	A+	A+
4	559576	3	D.1.1.5	2	5063	0.88	0.88	0.05	0.04	0.03	0.00	0.29	0.29	-0.18	-0.14	-0.17	-1.91	0.04	-2.81	0.92	-4.23	0.81	A+	A-	A-
4	338852	3	D.2.1.1	3	5063	0.57	0.23	0.57	0.12	0.07	0.00	0.20	-0.16	0.20	-0.12	0.03	-0.03	0.03	3.68	1.04	3.37	1.05	A-	A+	A-
4	631439	3	D.1.2.2	2	5063	0.41	0.09	0.23	0.41	0.26	0.00	0.28	-0.21	-0.12	0.28	-0.05	0.71	0.03	-3.62	0.96	-1.66	0.97	A+	A-	A-
4	570278	3	D.1.2.3	2	5063	0.42	0.42	0.22	0.14	0.22	0.00	0.24	0.24	-0.08	-0.21	-0.02	0.70	0.03	-0.18	1.00	1.70	1.03	A-	A+	A-
4	863266	3	D.2.1.2	3	5063	0.66	0.17	0.66	0.09	0.07	0.00	0.22	-0.10	0.22	-0.12	-0.12	-0.47	0.03	1.67	1.02	0.49	1.01	A+	A+	A+
4	321294	3	D.1.1.7	2	5063	0.77	0.77	0.05	0.08	0.09	0.00	0.41	0.41	-0.22	-0.22	-0.20	-1.08	0.04	-7.37	0.87	-9.42	0.75	A-	A-	A-
4	500324	4	D.1.2.4	2	5048	0.40	0.17	0.40	0.16	0.27	0.00	0.17	-0.05	0.17	-0.11	-0.06	0.82	0.03	2.35	1.03	3.65	1.06	A-	A+	A-
4	647592	4	D.1.1.1	2	5048	0.77	0.77	0.11	0.07	0.05	0.00	0.19	0.19	-0.09	-0.05	-0.16	-1.07	0.04	1.02	1.02	0.98	1.03	A+	A-	A+
4	337182	4	D.1.1.2	2	5048	0.67	0.67	0.17	0.07	0.08	0.00	0.29	0.29	-0.06	-0.22	-0.20	-0.50	0.03	-3.14	0.96	-3.35	0.94	A-	B-	A-
4	358687	4	D.1.1.7	2	5048	0.64	0.64	0.07	0.07	0.21	0.00	0.19	0.19	-0.18	-0.20	0.03	-0.34	0.03	2.29	1.03	2.13	1.04	A-	A+	A+

4	278733	4	D.1.1.4	2	5048	0.78	0.03	0.12	0.78	0.07	0.00	0.35	-0.21	-0.17	0.35	-0.22	-1.11	0.04	-5.22	0.90	-6.28	0.83	A-	A-	B-
4	570988	4	D.1.1.3	2	5048	0.90	0.90	0.05	0.02	0.03	0.00	0.24	0.24	-0.19	-0.10	-0.09	-2.13	0.05	-1.21	0.96	-2.94	0.85	A+	A+	B-
4	600664	4	D.1.1.8	2	5048	0.32	0.16	0.22	0.32	0.30	0.00	0.10	-0.10	-0.04	0.10	0.02	1.18	0.03	5.98	1.08	7.51	1.16	A-	A+	A-
4	349606	4	D.1.1.6	2	5048	0.86	0.06	0.86	0.05	0.03	0.00	0.35	-0.23	0.35	-0.16	-0.17	-1.76	0.04	-4.17	0.88	-6.64	0.74	A+	A-	C-
4	417620	4	D.2.1.3	3	5048	0.24	0.21	0.24	0.34	0.21	0.00	0.03	-0.09	0.03	0.11	-0.06	1.66	0.03	5.76	1.11	9.90	1.35	A+	A+	A+
4	522744	4	D.2.1.2	3	5048	0.40	0.03	0.15	0.41	0.40	0.00	0.11	-0.21	-0.18	0.11	0.11	0.77	0.03	7.91	1.09	7.86	1.13	A+	A+	A+
4	311937	5	D.1.2.4	2	5010	0.65	0.28	0.65	0.04	0.02	0.00	0.34	-0.20	0.34	-0.20	-0.20	-0.39	0.03	-5.81	0.93	-5.45	0.90	A-	A+	A-
4	585125	5	D.1.1.2	2	5010	0.44	0.04	0.48	0.44	0.04	0.00	0.05	-0.21	0.10	0.05	-0.17	0.62	0.03	9.90	1.18	9.90	1.23	A-	A+	A-
4	538749	5	D.1.1.7	2	5010	0.88	0.88	0.03	0.03	0.06	0.00	0.34	0.34	-0.16	-0.18	-0.21	-1.87	0.04	-4.07	0.88	-6.80	0.70	A+	C-	B-
4	386329	5	D.1.2.1	2	5010	0.62	0.62	0.23	0.07	0.07	0.00	0.29	0.29	-0.10	-0.18	-0.18	-0.24	0.03	-2.56	0.97	-3.17	0.94	A-	A-	A-
4	664161	5	D.1.1.4	2	5010	0.85	0.85	0.05	0.07	0.03	0.00	0.27	0.27	-0.18	-0.15	-0.12	-1.66	0.04	-2.51	0.93	-2.88	0.88	A+	A-	A-
4	521514	5	D.1.1.3	2	5010	0.20	0.43	0.20	0.11	0.26	0.00	0.30	-0.20	0.30	0.08	-0.10	1.91	0.04	-3.74	0.92	-1.41	0.95	A+	A-	A-
4	595808	5	D.2.1.1	3	5010	0.23	0.25	0.23	0.35	0.17	0.00	0.04	-0.10	0.04	0.05	0.01	1.73	0.04	6.53	1.13	9.90	1.45	A-	A+	A+
4	666667	5	D.1.2.2	2	5010	0.67	0.09	0.18	0.07	0.67	0.00	0.33	-0.20	-0.15	-0.17	0.33	-0.46	0.03	-5.04	0.93	-5.96	0.88	A+	A+	A+
4	578551	5	D.1.2.3	2	5010	0.38	0.15	0.28	0.38	0.19	0.00	0.22	-0.16	-0.03	0.22	-0.09	0.91	0.03	1.75	1.02	3.25	1.06	A+	A-	A-
4	152028	5	D.1.2.3	2	5010	0.46	0.46	0.22	0.13	0.18	0.00	0.35	0.35	-0.12	-0.18	-0.14	0.53	0.03	-8.41	0.92	-5.53	0.92	A+	A-	A-
4	984548	6	D.1.2.1	2	5039	0.51	0.09	0.24	0.51	0.15	0.00	0.36	-0.25	-0.18	0.36	-0.07	0.29	0.03	-6.76	0.93	-5.70	0.92	A+	B-	B-
4	985579	6	D.1.1.8	3	5039	0.39	0.28	0.13	0.19	0.39	0.00	0.16	0.01	-0.09	-0.12	0.16	0.90	0.03	7.31	1.09	9.38	1.17	A+	A+	A+
4	925821	6	D.2.1.3	3	5039	0.49	0.07	0.49	0.09	0.36	0.00	0.29	-0.22	0.29	-0.18	-0.08	0.41	0.03	-1.15	0.99	-0.31	1.00	A-	A-	B-
4	633166	6	D.1.1.5	3	5039	0.81	0.07	0.03	0.09	0.81	0.00	0.31	-0.26	-0.18	-0.08	0.31	-1.29	0.04	-3.18	0.93	-2.40	0.92	A-	A-	C-
4	343659	6	D.2.1.3	3	5039	0.80	0.80	0.16	0.03	0.01	0.00	0.32	0.32	-0.25	-0.16	-0.12	-1.28	0.04	-3.11	0.93	-4.08	0.86	A-	B-	B-
4	273762	6	D.2.1.1	3	5039	0.49	0.41	0.03	0.07	0.49	0.00	0.37	-0.28	-0.14	-0.09	0.37	0.41	0.03	-8.58	0.91	-7.00	0.90	A-	A-	A+
4	304880	6	D.1.2.3	2	5039	0.64	0.07	0.16	0.64	0.13	0.00	0.33	-0.21	-0.16	0.33	-0.13	-0.33	0.03	-3.68	0.95	-3.48	0.94	A+	A+	A-
4	831793	6	D.1.1.3	2	5039	0.67	0.21	0.06	0.06	0.67	0.00	0.35	-0.19	-0.22	-0.17	0.35	-0.48	0.03	-5.22	0.93	-5.26	0.89	A+	A-	A+
4	497129	6	D.1.1.4	2	5039	0.89	0.05	0.89	0.02	0.04	0.00	0.25	-0.16	0.25	-0.13	-0.12	-2.00	0.05	-1.22	0.96	-2.07	0.89	A+	B-	A-
4	650967	6	D.1.1.1	2	5039	0.63	0.09	0.13	0.15	0.63	0.00	0.34	-0.10	-0.17	-0.22	0.34	-0.27	0.03	-4.21	0.95	-4.57	0.92	A+	A-	A+
4	879490	7	D.1.2.2	2	5058	0.49	0.15	0.49	0.08	0.27	0.00	0.20	-0.20	0.20	-0.20	0.06	0.36	0.03	1.40	1.01	2.28	1.03	A+	A+	A+
4	148455	7	D.1.1.7	3	5058	0.56	0.16	0.11	0.17	0.56	0.00	0.27	-0.15	-0.15	-0.08	0.27	0.06	0.03	-3.13	0.97	-3.02	0.96	A-	A+	A-
4	185884	7	D.1.1.2	2	5058	0.62	0.09	0.17	0.62	0.11	0.00	0.33	-0.17	-0.14	0.33	-0.17	-0.23	0.03	-6.80	0.92	-7.16	0.89	A-	A-	A-
4	109898	7	D.1.1.8	3	5058	0.28	0.28	0.32	0.16	0.24	0.00	-0.04	-0.04	0.07	-0.03	-0.01	1.41	0.03	9.90	1.17	9.90	1.32	A-	A+	A+
4	293237	7	D.1.1.6	2	5058	0.86	0.86	0.05	0.04	0.05	0.00	0.35	0.35	-0.18	-0.16	-0.21	-1.67	0.04	-4.50	0.88	-7.66	0.72	A-	B-	B-
4	796510	7	D.1.1.5	2	5058	0.39	0.14	0.16	0.30	0.39	0.00	0.10	-0.05	-0.08	-0.01	0.10	0.84	0.03	7.30	1.08	7.76	1.12	A+	A-	A-

4	376099	7	D.1.1.1	2	5058	0.31	0.31	0.38	0.20	0.11	0.00	0.15	0.15	-0.11	0.01	-0.06	1.23	0.03	2.18	1.03	4.04	1.08	A-	B+	A-
4	579515	7	D.1.2.2	2	5058	0.44	0.32	0.10	0.14	0.44	0.00	0.27	-0.13	-0.17	-0.07	0.27	0.62	0.03	-4.55	0.96	-3.32	0.96	A+	A-	A-
4	576900	7	D.2.1.2	3	5058	0.29	0.17	0.38	0.16	0.29	0.00	0.16	-0.16	0.05	-0.10	0.16	1.34	0.03	1.29	1.02	3.58	1.08	A-	A+	A+
4	800328	7	D.2.1.3	3	5058	0.34	0.34	0.12	0.26	0.28	0.00	0.12	0.12	-0.12	-0.01	-0.04	1.07	0.03	4.31	1.05	5.51	1.10	A-	A-	A+
4	358701	8	D.1.2.4	1	5028	0.82	0.82	0.04	0.04	0.10	0.00	0.32	0.32	-0.21	-0.16	-0.17	-1.33	0.04	-2.82	0.94	-2.73	0.90	A+	A-	A+
4	168426	8	D.1.1.2	2	5028	0.83	0.09	0.83	0.04	0.03	0.00	0.35	-0.24	0.35	-0.14	-0.19	-1.46	0.04	-3.57	0.91	-5.25	0.79	A+	A-	B-
4	448230	8	D.1.1.2	2	5028	0.57	0.13	0.05	0.57	0.25	0.00	0.36	-0.25	-0.23	0.36	-0.10	0.11	0.03	-5.06	0.94	-5.29	0.91	A+	A+	A+
4	734881	8	D.1.1.4	2	5028	0.72	0.17	0.05	0.06	0.72	0.00	0.32	-0.13	-0.19	-0.22	0.32	-0.68	0.03	-2.25	0.96	-2.48	0.94	A+	A-	B-
4	796931	8	D.1.1.6	2	5028	0.68	0.20	0.06	0.06	0.68	0.00	0.43	-0.28	-0.22	-0.15	0.43	-0.44	0.03	-9.01	0.88	-8.52	0.82	A-	A-	A-
4	810706	8	D.2.1.3	3	5028	0.78	0.78	0.18	0.02	0.03	0.00	0.24	0.24	-0.17	-0.17	-0.10	-1.06	0.04	1.32	1.03	-0.23	0.99	A+	A-	A-
4	818620	8	D.1.1.7	2	5028	0.50	0.14	0.50	0.12	0.25	0.00	0.25	-0.16	0.25	-0.12	-0.07	0.45	0.03	3.72	1.04	3.34	1.05	A-	A+	A+
4	887573	8	D.2.1.2	3	5028	0.62	0.21	0.06	0.62	0.11	0.00	0.38	-0.20	-0.24	0.38	-0.15	-0.14	0.03	-6.16	0.93	-5.91	0.89	A-	A-	A-
4	913054	8	D.2.1.1	3	5028	0.39	0.44	0.07	0.39	0.10	0.00	0.31	-0.15	-0.10	0.31	-0.17	0.95	0.03	-3.63	0.96	1.15	1.02	A+	A-	A-
4	286494	8	D.1.1.5	2	5028	0.80	0.05	0.80	0.10	0.05	0.00	0.27	-0.18	0.27	-0.11	-0.17	-1.23	0.04	-0.72	0.98	-0.86	0.97	A-	A-	A-
4	124492	9	D.1.2.1	2	5045	0.66	0.66	0.07	0.20	0.08	0.00	0.42	0.42	-0.20	-0.23	-0.21	-0.42	0.03	-8.85	0.89	-9.07	0.82	A-	B-	B-
4	185185	9	D.1.1.8	2	5045	0.72	0.07	0.72	0.04	0.16	0.00	0.32	-0.24	0.32	-0.19	-0.12	-0.74	0.03	-2.76	0.96	-2.68	0.93	A+	A-	B-
4	686514	9	D.1.1.6	2	5045	0.72	0.09	0.14	0.72	0.06	0.00	0.41	-0.27	-0.24	0.41	-0.11	-0.75	0.03	-7.90	0.88	-7.42	0.82	A+	B-	A-
4	620669	9	D.1.1.5	2	5045	0.38	0.38	0.24	0.19	0.19	0.00	0.16	0.16	-0.03	-0.08	-0.09	0.94	0.03	8.11	1.10	9.10	1.18	A+	A+	A-
4	336901	9	D.2.1.3	3	5045	0.72	0.11	0.04	0.13	0.72	0.00	0.30	-0.23	-0.14	-0.10	0.30	-0.78	0.03	-1.53	0.98	-1.36	0.96	A-	A-	B-
4	748926	9	D.1.1.1	2	5045	0.36	0.20	0.36	0.24	0.20	0.00	0.14	-0.08	0.14	0.02	-0.10	1.04	0.03	9.25	1.12	9.90	1.24	A-	A+	A+
4	684355	9	D.2.1.1	3	5045	0.43	0.43	0.07	0.34	0.15	0.00	0.24	0.24	-0.12	-0.11	-0.10	0.67	0.03	2.52	1.03	4.36	1.07	A-	A-	A-
4	292455	9	D.1.2.2	3	5045	0.53	0.53	0.17	0.18	0.12	0.00	0.41	0.41	-0.08	-0.27	-0.21	0.21	0.03	-9.59	0.90	-8.34	0.87	A+	A-	A-
4	657822	9	D.1.2.3	2	5045	0.68	0.04	0.16	0.68	0.11	0.00	0.37	-0.21	-0.17	0.37	-0.20	-0.54	0.03	-5.55	0.92	-5.70	0.88	A+	A+	A+
4	516983	9	D.1.1.3	2	5045	0.78	0.10	0.04	0.78	0.08	0.00	0.40	-0.24	-0.17	0.40	-0.21	-1.09	0.04	-6.35	0.88	-6.97	0.79	A+	B-	C-
4	264026	10	D.1.2.4	1	5027	0.47	0.40	0.47	0.08	0.04	0.00	0.35	-0.18	0.35	-0.21	-0.15	0.46	0.03	-4.87	0.95	-2.98	0.95	A+	B-	A-
4	539164	10	D.1.1.3	2	5027	0.90	0.06	0.02	0.02	0.90	0.00	0.34	-0.24	-0.13	-0.18	0.34	-2.17	0.05	-3.60	0.88	-5.99	0.68	A+	B-	B-
4	798037	10	D.1.1.4	2	5027	0.70	0.70	0.04	0.05	0.21	0.00	0.38	0.38	-0.19	-0.20	-0.23	-0.68	0.03	-5.70	0.92	-5.79	0.86	A-	A-	A-
4	347656	10	D.1.1.2	2	5027	0.76	0.09	0.06	0.76	0.08	0.00	0.27	-0.11	-0.17	0.27	-0.13	-1.00	0.04	-0.33	0.99	0.56	1.02	A+	A-	A-
4	841767	10	D.1.1.6	2	5027	0.55	0.32	0.06	0.55	0.06	0.00	0.37	-0.22	-0.17	0.37	-0.15	0.07	0.03	-6.14	0.93	-5.89	0.91	A-	A-	A-
4	222943	10	D.1.1.5	2	5027	0.62	0.15	0.10	0.12	0.62	0.00	0.29	-0.15	-0.16	-0.11	0.29	-0.27	0.03	0.24	1.00	0.23	1.00	A-	A-	A+
4	947639	10	D.1.1.1	2	5027	0.68	0.08	0.15	0.68	0.09	0.00	0.37	-0.19	-0.20	0.37	-0.18	-0.57	0.03	-5.50	0.92	-6.10	0.87	A-	B-	A-
4	320428	10	D.2.1.1	3	5027	0.55	0.07	0.55	0.08	0.30	0.00	0.35	-0.22	0.35	-0.17	-0.15	0.11	0.03	-4.70	0.95	-4.42	0.93	A-	B-	A-

4	681820	10	D.1.2.2	2	5027	0.65	0.07	0.65	0.11	0.17	0.00	0.42	-0.22	0.42	-0.17	-0.25	-0.43	0.03	-9.16	0.88	-9.20	0.82	A+	A-	A-
4	492533	10	D.2.1.2	3	5027	0.46	0.46	0.28	0.15	0.11	0.00	0.21	0.21	-0.08	-0.07	-0.13	0.52	0.03	6.61	1.07	6.89	1.11	A+	A+	B-
4	639349	11	D.1.2.4	1	5029	0.72	0.72	0.16	0.06	0.06	0.00	0.27	0.27	-0.12	-0.18	-0.15	-0.72	0.03	-1.85	0.97	-3.68	0.92	A+	A-	A-
4	462070	11	D.1.1.4	2	5029	0.67	0.08	0.18	0.67	0.07	0.00	0.33	-0.19	-0.11	0.33	-0.23	-0.45	0.03	-5.88	0.92	-5.34	0.90	A-	A-	B-
4	606529	11	D.1.1.7	2	5029	0.68	0.25	0.03	0.04	0.68	0.00	0.33	-0.16	-0.24	-0.21	0.33	-0.51	0.03	-5.47	0.93	-5.76	0.89	A-	A-	A-
4	712797	11	D.1.1.2	3	5029	0.90	0.03	0.02	0.04	0.90	0.00	0.21	-0.15	-0.11	-0.09	0.21	-2.16	0.05	-0.81	0.97	-1.96	0.89	A-	A-	A+
4	646630	11	D.1.1.8	2	5029	0.32	0.20	0.32	0.21	0.27	0.00	0.06	-0.06	0.06	-0.07	0.06	1.20	0.03	8.49	1.12	9.90	1.21	A+	A+	A+
4	316396	11	D.1.2.1	2	5029	0.65	0.13	0.65	0.10	0.12	0.00	0.32	-0.12	0.32	-0.20	-0.15	-0.36	0.03	-5.22	0.94	-5.19	0.91	A+	A-	A-
4	155553	11	D.1.1.6	2	5029	0.85	0.05	0.05	0.05	0.85	0.00	0.29	-0.16	-0.16	-0.15	0.29	-1.65	0.04	-2.88	0.92	-3.66	0.86	A-	B-	A-
4	491731	11	D.1.1.5	2	5029	0.36	0.22	0.19	0.36	0.22	0.00	0.05	0.05	-0.08	0.05	-0.02	1.00	0.03	9.90	1.14	9.90	1.24	A-	A-	A-
4	239494	11	D.1.1.1	2	5029	0.44	0.07	0.43	0.44	0.06	0.00	0.19	-0.20	-0.05	0.19	-0.07	0.63	0.03	3.48	1.04	3.37	1.05	A-	A+	B+
4	796813	11	D.1.2.2	3	5029	0.50	0.50	0.12	0.13	0.25	0.00	0.18	0.18	-0.07	-0.12	-0.07	0.34	0.03	4.14	1.04	3.35	1.04	A+	A+	A+
4	258368	12	D.1.2.1	2	5048	0.66	0.16	0.66	0.06	0.12	0.00	0.35	-0.25	0.35	-0.12	-0.13	-0.42	0.03	-5.91	0.93	-6.46	0.88	A+	A-	A-
4	435005	12	D.1.1.8	3	5048	0.29	0.15	0.44	0.29	0.12	0.00	0.10	-0.06	0.09	0.10	-0.21	1.35	0.03	6.26	1.10	9.43	1.24	A-	A+	A-
4	257445	12	D.1.1.6	2	5048	0.80	0.09	0.07	0.80	0.03	0.00	0.32	-0.17	-0.18	0.32	-0.17	-1.28	0.04	-3.99	0.92	-4.33	0.86	A+	A-	A+
4	581745	12	D.1.1.5	2	5048	0.23	0.21	0.33	0.23	0.24	0.00	0.03	-0.03	0.00	0.03	-0.01	1.73	0.04	6.71	1.13	9.90	1.36	A-	A+	A-
4	689204	12	D.2.1.3	3	5048	0.74	0.17	0.74	0.04	0.05	0.00	0.35	-0.18	0.35	-0.20	-0.22	-0.87	0.03	-5.62	0.91	-6.70	0.84	A-	A-	B-
4	834431	12	D.1.1.1	2	5048	0.77	0.77	0.09	0.10	0.04	0.00	0.19	0.19	-0.14	-0.07	-0.10	-1.07	0.04	1.28	1.02	2.84	1.09	A-	A-	A+
4	103071	12	D.1.2.2	2	5048	0.46	0.20	0.20	0.46	0.14	0.00	0.26	-0.13	-0.08	0.26	-0.11	0.52	0.03	-0.68	0.99	-0.30	1.00	A+	A-	A+
4	962001	12	D.1.1.7	2	5048	0.42	0.25	0.42	0.18	0.15	0.00	0.22	-0.09	0.22	-0.07	-0.11	0.72	0.03	1.69	1.02	4.06	1.06	A+	B+	A-
4	421467	12	D.1.1.3	2	5048	0.52	0.15	0.20	0.13	0.52	0.00	0.29	-0.22	-0.09	-0.09	0.29	0.24	0.03	-3.37	0.97	-3.60	0.95	A-	A+	A+
4	861993	12	D.2.1.1	3	5048	0.75	0.05	0.08	0.75	0.11	0.00	0.42	-0.24	-0.24	0.42	-0.19	-0.95	0.03	-8.53	0.86	-9.86	0.75	A+	B-	A-
4	838756	13	D.1.2.4	1	5021	0.76	0.76	0.18	0.03	0.03	0.00	0.25	0.25	-0.12	-0.17	-0.19	-1.00	0.04	-0.44	0.99	-0.07	1.00	A+	A+	A+
4	477421	13	D.1.1.3	2	5021	0.83	0.83	0.07	0.02	0.08	0.00	0.23	0.23	-0.05	-0.19	-0.15	-1.49	0.04	-0.53	0.99	1.26	1.05	A-	A+	A+
4	314262	13	D.1.2.1	2	5021	0.60	0.18	0.08	0.60	0.15	0.00	0.36	-0.14	-0.19	0.36	-0.20	-0.11	0.03	-7.30	0.92	-6.05	0.90	A-	B-	B-
4	223959	13	D.1.1.4	2	5021	0.70	0.11	0.11	0.70	0.08	0.00	0.34	-0.20	-0.14	0.34	-0.19	-0.62	0.03	-4.82	0.93	-4.36	0.90	B-	C-	B-
4	237406	13	D.1.1.3	2	5021	0.87	0.09	0.87	0.03	0.01	0.00	0.29	-0.19	0.29	-0.15	-0.15	-1.78	0.04	-2.25	0.94	-3.03	0.86	A-	A-	A-
4	672086	13	D.1.1.6	2	5021	0.44	0.02	0.44	0.31	0.23	0.00	0.27	-0.15	0.27	-0.13	-0.12	0.63	0.03	-1.11	0.99	0.19	1.00	A+	A-	A+
4	949777	13	D.2.1.3	3	5021	0.71	0.71	0.12	0.09	0.08	0.00	0.27	0.27	-0.13	-0.15	-0.12	-0.68	0.03	-0.59	0.99	-0.98	0.98	A+	B-	A-
4	721502	13	D.2.1.1	3	5021	0.52	0.16	0.07	0.25	0.52	0.00	0.26	-0.12	-0.16	-0.09	0.26	0.26	0.03	0.94	1.01	0.00	1.00	A-	A+	A+
4	887823	13	D.1.1.7	2	5021	0.82	0.08	0.05	0.82	0.06	0.00	0.33	-0.18	-0.17	0.33	-0.19	-1.40	0.04	-3.46	0.92	-5.97	0.79	A+	A+	A-
4	695695	13	D.1.2.3	2	5021	0.53	0.23	0.13	0.12	0.53	0.00	0.33	-0.08	-0.20	-0.18	0.33	0.22	0.03	-5.00	0.95	-4.33	0.94	A+	A-	A-

4	195890	14	D.1.1.8	3	5036	0.48	0.15	0.18	0.48	0.19	0.00	0.27	-0.11	-0.12	0.27	-0.13	0.43	0.03	-2.31	0.98	-0.54	0.99	A+	B-	A-
4	141685	14	D.1.2.4	1	5036	0.82	0.10	0.05	0.82	0.04	0.00	0.35	-0.18	-0.19	0.35	-0.20	-1.35	0.04	-4.99	0.89	-6.75	0.78	A+	A-	A-
4	715857	14	D.1.1.7	2	5036	0.81	0.07	0.81	0.06	0.05	0.00	0.33	-0.16	0.33	-0.19	-0.18	-1.34	0.04	-4.34	0.91	-5.82	0.81	A+	A-	A-
4	497203	14	D.1.1.4	2	5036	0.72	0.07	0.14	0.72	0.07	0.00	0.37	-0.20	-0.18	0.37	-0.21	-0.75	0.03	-7.36	0.89	-7.75	0.83	A-	B-	B-
4	127172	14	D.1.1.2	2	5036	0.69	0.69	0.14	0.10	0.08	0.00	0.28	0.28	-0.10	-0.17	-0.15	-0.54	0.03	-1.81	0.97	-2.61	0.95	A+	A-	A-
4	131125	14	D.1.1.6	2	5036	0.32	0.32	0.17	0.13	0.39	0.00	0.22	0.22	-0.07	-0.15	-0.04	1.24	0.03	-0.10	1.00	1.94	1.04	A-	A-	A+
4	790258	14	D.1.1.5	2	5036	0.21	0.17	0.37	0.24	0.21	0.00	0.07	-0.06	-0.01	0.00	0.07	1.85	0.04	3.97	1.08	9.69	1.34	A-	A-	A+
4	399261	14	D.1.1.1	3	5036	0.18	0.34	0.18	0.32	0.15	0.00	-0.02	0.06	-0.02	0.03	-0.09	2.04	0.04	6.41	1.15	9.90	1.57	A+	B+	A+
4	114318	14	D.1.2.2	2	5036	0.40	0.19	0.12	0.29	0.40	0.00	0.29	-0.12	-0.14	-0.10	0.29	0.84	0.03	-3.95	0.96	-1.78	0.97	A-	B-	A-
4	833509	14	D.2.1.2	3	5036	0.27	0.44	0.17	0.27	0.12	0.00	0.15	-0.04	-0.06	0.15	-0.06	1.49	0.03	2.60	1.04	6.86	1.18	A+	A+	A+
4	719823	15	D.1.1.4	2	5047	0.85	0.07	0.04	0.04	0.85	0.00	0.31	-0.14	-0.19	-0.19	0.31	-1.59	0.04	-3.21	0.92	-4.96	0.81	A-	A-	C-
4	937191	15	D.1.1.2	2	5047	0.47	0.17	0.11	0.24	0.47	0.00	0.29	-0.16	-0.15	-0.06	0.29	0.48	0.03	-4.30	0.96	-3.27	0.96	A-	A-	A+
4	977524	15	D.1.1.7	2	5047	0.44	0.20	0.22	0.44	0.14	0.00	0.19	-0.08	-0.03	0.19	-0.13	0.63	0.03	3.54	1.04	3.72	1.05	B-	A+	A+
4	259791	15	D.1.1.5	2	5047	0.76	0.08	0.06	0.76	0.09	0.00	0.32	-0.21	-0.15	0.32	-0.14	-1.01	0.04	-4.20	0.92	-5.26	0.86	A+	A-	A-
4	433997	15	D.1.1.1	2	5047	0.90	0.90	0.04	0.03	0.02	0.00	0.38	0.38	-0.25	-0.20	-0.14	-2.15	0.05	-4.42	0.85	-8.35	0.60	A+	A-	B-
4	622223	15	D.2.1.1	3	5047	0.36	0.26	0.36	0.35	0.03	0.00	0.10	-0.03	0.10	0.00	-0.17	1.00	0.03	7.30	1.09	9.90	1.20	A+	B+	B+
4	470785	15	D.1.2.2	2	5047	0.27	0.35	0.17	0.21	0.27	0.00	0.05	0.13	-0.11	-0.09	0.05	1.47	0.03	6.91	1.11	9.90	1.27	A+	A+	A-
4	233658	15	D.1.1.8	3	5047	0.41	0.22	0.22	0.15	0.41	0.00	0.12	-0.10	0.01	-0.07	0.12	0.78	0.03	7.47	1.08	8.61	1.14	A-	A+	A-
4	960628	15	D.2.1.3	3	5047	0.75	0.75	0.17	0.04	0.04	0.00	0.27	0.27	-0.20	-0.12	-0.09	-0.93	0.03	-1.92	0.97	-2.75	0.93	A+	A-	A-
4	749919	15	D.1.1.6	2	5047	0.55	0.33	0.04	0.55	0.07	0.00	0.35	-0.21	-0.15	0.35	-0.16	0.11	0.03	-8.99	0.91	-8.26	0.89	A+	A-	A-
4	156129	16	D.1.1.1	2	5043	0.39	0.39	0.08	0.09	0.44	0.00	0.27	0.27	-0.12	-0.10	-0.15	0.88	0.03	-1.43	0.98	2.89	1.05	A-	A+	A-
4	680136	16	D.1.1.2	2	5043	0.75	0.75	0.10	0.06	0.08	0.00	0.36	0.36	-0.12	-0.22	-0.23	-0.96	0.04	-4.96	0.91	-5.00	0.86	A+	A-	A-
4	713879	16	D.1.1.8	2	5043	0.35	0.35	0.24	0.15	0.25	0.00	0.17	0.17	-0.08	-0.08	-0.03	1.06	0.03	6.24	1.08	9.90	1.22	A-	A-	A+
4	491107	16	D.1.1.5	2	5043	0.85	0.05	0.06	0.85	0.04	0.00	0.42	-0.27	-0.22	0.42	-0.19	-1.64	0.04	-6.51	0.84	-8.74	0.66	A-	A-	C-
4	423531	16	D.2.1.3	3	5043	0.46	0.31	0.08	0.14	0.46	0.00	0.26	-0.01	-0.20	-0.20	0.26	0.52	0.03	1.00	1.01	2.10	1.03	A+	A-	A-
4	460458	16	D.2.1.1	3	5043	0.80	0.13	0.03	0.80	0.03	0.00	0.39	-0.27	-0.22	0.39	-0.13	-1.24	0.04	-6.05	0.88	-6.99	0.77	A+	B-	A-
4	811847	16	D.1.2.2	2	5043	0.54	0.10	0.19	0.17	0.54	0.00	0.39	-0.19	-0.15	-0.21	0.39	0.18	0.03	-8.95	0.91	-7.30	0.89	A+	A-	A+
4	917462	16	D.1.2.3	2	5043	0.31	0.22	0.40	0.31	0.07	0.00	0.19	-0.13	0.03	0.19	-0.20	1.29	0.03	2.49	1.04	6.37	1.16	A-	A+	A-
4	998092	16	D.1.1.3	2	5043	0.83	0.05	0.83	0.09	0.03	0.00	0.31	-0.20	0.31	-0.16	-0.16	-1.53	0.04	-2.81	0.93	-3.92	0.84	A-	A+	A-
4	337579	16	D.1.2.1	2	5043	0.72	0.05	0.12	0.11	0.72	0.00	0.34	-0.18	-0.12	-0.22	0.34	-0.75	0.03	-3.93	0.94	-2.83	0.93	A+	A-	B-
4	443286	17	D.1.1.1	2	5012	0.52	0.52	0.08	0.29	0.10	0.00	0.18	0.18	-0.14	-0.05	-0.09	0.26	0.03	6.09	1.06	5.18	1.07	A-	A-	A-
4	853255	17	D.1.1.3	2	5012	0.55	0.17	0.55	0.16	0.13	0.00	0.32	-0.18	0.32	-0.15	-0.11	0.15	0.03	-5.47	0.94	-5.28	0.93	A-	B-	A-

4	198286	17	D.1.1.8	3	5012	0.42	0.08	0.31	0.42	0.18	0.00	0.12	-0.10	-0.03	0.12	-0.03	0.75	0.03	9.59	1.11	8.40	1.14	A-	A+	A-
4	413643	17	D.1.1.5	2	5012	0.94	0.03	0.01	0.94	0.02	0.00	0.23	-0.19	-0.09	0.23	-0.10	-2.74	0.06	-1.46	0.93	-4.28	0.70	A+	A-	B-
4	500820	17	D.2.1.1	3	5012	0.35	0.17	0.11	0.35	0.36	0.00	0.24	-0.26	-0.14	0.24	0.06	1.06	0.03	-0.30	1.00	1.03	1.02	A-	A-	A-
4	446126	17	D.1.2.2	2	5012	0.23	0.23	0.07	0.09	0.61	0.00	0.22	0.22	-0.23	-0.14	0.02	1.76	0.04	-0.83	0.98	1.92	1.06	A-	A+	A-
4	167184	17	D.1.2.3	2	5012	0.49	0.16	0.49	0.20	0.15	0.00	0.32	-0.12	0.32	-0.14	-0.15	0.39	0.03	-5.04	0.95	-4.63	0.94	A+	A+	A+
4	368383	17	D.1.2.3	2	5012	0.69	0.18	0.06	0.69	0.06	0.00	0.36	-0.19	-0.17	0.36	-0.21	-0.58	0.03	-6.73	0.91	-7.62	0.84	A+	A+	A+
4	941010	17	D.2.1.2	3	5012	0.53	0.26	0.06	0.14	0.53	0.00	0.28	-0.10	-0.18	-0.14	0.28	0.23	0.03	-1.52	0.98	-1.40	0.98	A+	A-	A-
4	979790	17	D.2.1.3	3	5012	0.18	0.13	0.10	0.59	0.18	0.00	0.01	-0.18	-0.16	0.23	0.01	2.11	0.04	5.50	1.13	9.90	1.48	A-	A+	A+
4	761952	18	D.1.1.1	2	5032	0.74	0.18	0.03	0.74	0.04	0.00	0.35	-0.23	-0.21	0.35	-0.13	-0.86	0.03	-4.62	0.92	-5.35	0.86	A+	A-	A-
4	599821	18	D.1.1.3	2	5032	0.72	0.11	0.05	0.11	0.72	0.00	0.35	-0.20	-0.19	-0.15	0.35	-0.74	0.03	-4.47	0.93	-4.75	0.88	A-	A+	A-
4	872782	18	D.1.1.2	2	5032	0.58	0.58	0.09	0.09	0.24	0.00	0.29	0.29	-0.17	-0.14	-0.13	-0.02	0.03	-0.29	1.00	-1.23	0.98	A-	B+	A+
4	509938	18	D.1.1.4	2	5032	0.55	0.09	0.29	0.55	0.07	0.00	0.25	-0.18	-0.03	0.25	-0.24	0.16	0.03	2.38	1.03	2.12	1.03	A-	B-	A-
4	557807	18	D.1.1.6	2	5032	0.35	0.35	0.17	0.36	0.12	0.00	0.24	0.24	-0.10	-0.08	-0.10	1.13	0.03	0.69	1.01	3.84	1.08	A-	A-	A-
4	820777	18	D.2.1.3	3	5032	0.61	0.07	0.61	0.27	0.05	0.00	0.33	-0.05	0.33	-0.23	-0.20	-0.16	0.03	-3.65	0.96	-2.86	0.95	A+	B-	C-
4	697236	18	D.1.2.3	2	5032	0.59	0.15	0.11	0.14	0.59	0.00	0.44	-0.16	-0.27	-0.21	0.44	-0.06	0.03	-9.90	0.86	-9.90	0.81	A-	A-	A+
4	352382	18	D.2.1.2	3	5032	0.19	0.47	0.19	0.20	0.14	0.00	0.10	-0.01	0.10	0.01	-0.11	2.09	0.04	3.18	1.07	9.90	1.44	A-	A-	A+
4	109662	18	D.2.1.2	3	5032	0.70	0.10	0.07	0.70	0.13	0.00	0.40	-0.19	-0.20	0.40	-0.22	-0.62	0.03	-7.78	0.89	-7.12	0.84	A+	B-	A-
4	488323	18	D.1.2.2	2	5032	0.52	0.52	0.13	0.07	0.27	0.00	0.29	0.29	-0.20	-0.21	-0.06	0.26	0.03	-0.87	0.99	-0.82	0.99	A+	A-	A+
4	108297	19	D.1.1.7	3	5050	0.88	0.03	0.06	0.88	0.02	0.00	0.37	-0.20	-0.22	0.37	-0.19	-1.90	0.05	-4.53	0.86	-8.28	0.65	A+	A-	B-
4	424450	19	D.1.2.4	2	5050	0.49	0.23	0.16	0.11	0.49	0.00	0.22	-0.03	-0.10	-0.19	0.22	0.39	0.03	0.23	1.00	0.18	1.00	A+	A+	A-
4	853185	19	D.1.1.1	2	5050	0.84	0.07	0.02	0.07	0.84	0.00	0.21	-0.18	-0.15	-0.02	0.21	-1.51	0.04	-0.88	0.98	1.08	1.04	A+	A-	A+
4	183889	19	D.1.2.1	2	5050	0.50	0.07	0.34	0.08	0.50	0.00	0.29	-0.22	-0.05	-0.24	0.29	0.32	0.03	-5.51	0.95	-4.55	0.94	A-	B-	A-
4	825438	19	D.1.1.4	2	5050	0.76	0.15	0.02	0.07	0.76	0.00	0.30	-0.18	-0.12	-0.19	0.30	-0.98	0.03	-3.64	0.93	-4.28	0.89	A+	B-	A-
4	876738	19	D.1.1.6	2	5050	0.29	0.08	0.46	0.29	0.17	0.00	0.14	-0.13	0.02	0.14	-0.10	1.36	0.03	1.99	1.03	6.65	1.16	A+	A+	A+
4	246512	19	D.1.1.5	2	5050	0.84	0.05	0.84	0.06	0.05	0.00	0.37	-0.20	0.37	-0.23	-0.17	-1.55	0.04	-5.20	0.87	-7.50	0.74	A-	A-	A-
4	256103	19	D.2.1.1	3	5050	0.50	0.50	0.02	0.35	0.14	0.00	0.00	0.00	-0.16	0.03	0.02	0.34	0.03	9.90	1.18	9.90	1.25	A+	B+	A-
4	161858	19	D.1.2.3	2	5050	0.31	0.31	0.14	0.23	0.31	0.00	0.11	0.11	-0.12	0.00	-0.01	1.25	0.03	4.85	1.07	7.63	1.17	A-	A+	A+
4	854657	19	D.1.1.8	2	5050	0.34	0.14	0.34	0.35	0.17	0.00	0.14	-0.08	0.14	-0.04	-0.04	1.09	0.03	3.48	1.04	6.31	1.13	A+	A-	A+
4	121611	20	D.1.2.4	1	5057	0.85	0.06	0.05	0.04	0.85	0.00	0.32	-0.22	-0.16	-0.14	0.32	-1.66	0.04	-3.83	0.90	-6.64	0.76	A+	A+	A+
4	973986	20	D.1.2.1	2	5057	0.61	0.11	0.15	0.61	0.13	0.00	0.29	-0.13	-0.13	0.29	-0.15	-0.24	0.03	-3.38	0.96	-3.82	0.94	A+	A-	A-
4	638874	20	D.1.1.8	2	5057	0.24	0.24	0.20	0.25	0.31	0.00	0.01	0.01	-0.08	-0.07	0.13	1.62	0.03	8.13	1.15	9.90	1.31	A-	A+	A+
4	210690	20	D.1.1.6	2	5057	0.36	0.15	0.36	0.14	0.35	0.00	0.25	-0.14	0.25	-0.14	-0.04	0.94	0.03	-1.64	0.98	0.05	1.00	A-	A-	A+

4	954803	20	D.2.1.3	3	5057	0.26	0.19	0.35	0.26	0.20	0.00	0.22	-0.20	0.00	0.22	-0.05	1.45	0.03	-0.51	0.99	1.65	1.04	A-	A-	A+
4	673498	20	D.1.1.5	3	5057	0.62	0.62	0.10	0.16	0.12	0.00	0.27	0.27	-0.07	-0.13	-0.18	-0.26	0.03	-2.21	0.97	-1.84	0.97	A-	A-	A-
4	799954	20	D.1.2.2	2	5057	0.45	0.45	0.15	0.13	0.27	0.00	0.29	0.29	-0.10	-0.14	-0.13	0.50	0.03	-4.10	0.96	-3.38	0.95	A+	A+	A+
4	853379	20	D.1.2.3	2	5057	0.29	0.28	0.23	0.29	0.20	0.00	0.09	0.01	-0.02	0.09	-0.10	1.31	0.03	5.88	1.09	8.57	1.20	A-	A+	A-
4	381892	20	D.2.1.3	3	5057	0.72	0.12	0.10	0.72	0.06	0.00	0.32	-0.16	-0.17	0.32	-0.16	-0.79	0.03	-4.60	0.93	-5.52	0.88	A+	A-	B-
4	517893	20	D.2.1.1	3	5057	0.41	0.17	0.41	0.08	0.34	0.00	0.21	-0.15	0.21	-0.18	0.00	0.68	0.03	1.66	1.02	2.65	1.04	A-	A-	B-
5	188796	0	D.1.2.5	1	99336	0.79	0.08	0.10	0.79	0.03	0.00	0.28	-0.18	-0.13	0.28	-0.15	-1.39	0.01	-9.90	0.95	-9.90	0.89	A+	A+	A-
5	844275	0	D.1.1.2	2	99336	0.75	0.05	0.06	0.13	0.75	0.00	0.39	-0.25	-0.17	-0.20	0.39	-1.13	0.01	-9.90	0.86	-9.90	0.77	A+	A-	B-
5	292687	0	D.1.1.5	2	99336	0.72	0.14	0.72	0.07	0.07	0.00	0.42	-0.23	0.42	-0.22	-0.22	-0.93	0.01	-9.90	0.84	-9.90	0.73	A+	A-	A-
5	171577	0	D.1.2.4	2	99336	0.22	0.22	0.18	0.14	0.46	0.00	-0.03	-0.03	-0.05	-0.09	0.13	1.66	0.01	9.90	1.23	9.90	1.62	A-	A+	A+
5	426823	0	D.1.2.3	2	99336	0.46	0.05	0.34	0.46	0.15	0.00	0.30	-0.16	-0.10	0.30	-0.18	0.37	0.01	-9.90	0.95	-9.90	0.95	A+	A-	A-
5	997075	0	D.1.1.6	2	99336	0.56	0.32	0.04	0.56	0.08	0.00	0.40	-0.30	-0.13	0.40	-0.12	-0.12	0.01	-9.90	0.86	-9.90	0.82	A+	A-	A-
5	956675	0	D.1.1.3	2	99336	0.93	0.03	0.93	0.03	0.01	0.00	0.28	-0.18	0.28	-0.16	-0.14	-2.75	0.01	-9.90	0.89	-9.90	0.66	A+	C-	B-
5	902065	0	D.2.1.2	3	99336	0.40	0.34	0.40	0.12	0.13	0.00	0.14	-0.04	0.14	-0.11	-0.04	0.66	0.01	9.90	1.09	9.90	1.18	A+	A+	A-
5	479824	0	D.1.2.1	2	99336	0.47	0.09	0.38	0.47	0.07	0.00	0.22	-0.19	0.00	0.22	-0.21	0.33	0.01	9.90	1.04	9.90	1.07	A-	A+	A+
5	682991	0	D.1.2.2	2	99336	0.74	0.12	0.74	0.06	0.07	0.00	0.35	-0.23	0.35	-0.13	-0.18	-1.07	0.01	-9.90	0.89	-9.90	0.81	A+	A-	A-
5	741896	0	D.1.1.1	2	99336	0.26	0.26	0.39	0.15	0.20	0.00	0.05	0.05	-0.01	-0.07	0.02	1.41	0.01	9.90	1.17	9.90	1.42	A-	A+	A+
5	901642	0	D.2.1.1	3	99336	0.88	0.02	0.06	0.05	0.88	0.00	0.33	-0.16	-0.22	-0.18	0.33	-2.09	0.01	-9.90	0.88	-9.90	0.67	A+	A-	A-
5	435345	0	D.2.1.3	3	99336	0.27	0.27	0.40	0.17	0.16	0.00	0.05	0.05	0.04	0.03	-0.13	1.35	0.01	9.90	1.13	9.90	1.44	A-	A+	A+
5	207898	0	D.1.1.4	2	99336	0.49	0.16	0.18	0.16	0.49	0.00	0.25	-0.12	-0.10	-0.12	0.25	0.20	0.01	4.04	1.01	6.39	1.02	A-	A-	A+
5	728359	1	D.1.2.5	1	4992	0.72	0.72	0.02	0.05	0.21	0.00	0.23	0.23	-0.15	-0.21	-0.08	-0.98	0.03	3.19	1.05	1.87	1.05	A-	B+	A+
5	590408	1	D.1.1.7	3	4992	0.70	0.14	0.09	0.07	0.70	0.00	0.37	-0.19	-0.17	-0.21	0.37	-0.83	0.03	-4.64	0.93	-5.14	0.88	A+	A+	A+
5	698412	1	D.1.1.7	2	4992	0.68	0.05	0.23	0.04	0.68	0.00	0.39	-0.22	-0.22	-0.22	0.39	-0.75	0.03	-6.57	0.91	-7.05	0.85	A-	A-	A+
5	623318	1	D.1.1.8	2	4992	0.75	0.75	0.14	0.05	0.06	0.00	0.33	0.33	-0.17	-0.20	-0.17	-1.13	0.04	-2.68	0.95	-3.65	0.90	A-	A-	C-
5	907344	1	D.1.2.4	2	4992	0.20	0.47	0.20	0.13	0.20	0.00	0.01	0.09	-0.03	-0.11	0.01	1.76	0.04	8.15	1.18	9.90	1.59	A-	A+	A-
5	810639	1	D.1.1.3	2	4992	0.59	0.14	0.17	0.10	0.59	0.00	0.36	-0.16	-0.18	-0.18	0.36	-0.26	0.03	-5.17	0.94	-5.00	0.92	A+	A-	A-
5	434370	1	D.1.2.1	3	4992	0.72	0.11	0.72	0.09	0.08	0.00	0.34	-0.18	0.34	-0.18	-0.16	-0.95	0.03	-3.53	0.94	-3.92	0.90	A+	A-	A-
5	521781	1	D.1.1.1	2	4992	0.27	0.34	0.20	0.27	0.20	0.00	0.07	0.01	-0.03	0.07	-0.06	1.36	0.03	8.62	1.15	9.90	1.39	A+	A-	A+
5	701928	1	D.2.1.3	3	4992	0.68	0.10	0.10	0.68	0.13	0.00	0.35	-0.22	-0.21	0.35	-0.10	-0.71	0.03	-3.86	0.95	-4.16	0.91	A-	A-	A-
5	451127	1	D.2.1.4	3	4992	0.42	0.15	0.24	0.42	0.19	0.00	0.26	-0.20	0.03	0.26	-0.18	0.54	0.03	1.50	1.02	4.50	1.08	A-	A-	A-
5	147340	2	D.1.2.5	2	4985	0.59	0.10	0.59	0.16	0.15	0.00	0.28	-0.12	0.28	-0.17	-0.12	-0.31	0.03	1.47	1.02	-0.14	1.00	A+	B+	A-
5	127510	2	D.1.2.5	2	4985	0.84	0.04	0.06	0.06	0.84	0.00	0.40	-0.22	-0.20	-0.23	0.40	-1.82	0.04	-6.17	0.85	-8.42	0.67	A+	A+	A-

5	650299	2	D.1.1.5	3	4985	0.42	0.11	0.39	0.08	0.42	0.00	0.41	-0.20	-0.20	-0.15	0.41	0.51	0.03	-9.48	0.89	-6.65	0.89	A+	B+	B+
5	708847	2	D.1.2.4	2	4985	0.30	0.30	0.21	0.23	0.25	0.00	0.17	0.17	-0.08	-0.07	-0.04	1.12	0.03	5.56	1.09	9.90	1.28	A-	A-	B+
5	531843	2	D.1.1.4	2	4985	0.69	0.10	0.11	0.11	0.69	0.00	0.27	-0.11	-0.12	-0.18	0.27	-0.81	0.03	1.43	1.02	1.23	1.03	A+	A+	A-
5	946810	2	D.1.2.1	2	4985	0.52	0.12	0.14	0.52	0.22	0.00	0.33	-0.17	-0.10	0.33	-0.18	0.04	0.03	-2.34	0.97	-2.64	0.96	A-	A-	A-
5	633432	2	D.1.1.1	2	4985	0.15	0.28	0.27	0.31	0.15	0.00	-0.04	-0.05	-0.02	0.11	-0.04	2.19	0.04	7.27	1.21	9.90	1.95	A+	A+	A-
5	351565	2	D.2.1.1	3	4985	0.89	0.07	0.02	0.02	0.89	0.00	0.36	-0.25	-0.16	-0.19	0.36	-2.30	0.05	-4.30	0.87	-6.81	0.66	A+	B-	A-
5	931449	2	D.2.1.3	3	4985	0.23	0.41	0.23	0.23	0.13	0.00	0.09	0.01	0.09	0.03	-0.16	1.58	0.04	5.51	1.11	9.90	1.54	A-	A+	A+
5	499914	2	D.2.1.4	3	4985	0.73	0.04	0.15	0.08	0.73	0.00	0.42	-0.21	-0.25	-0.21	0.42	-1.04	0.03	-8.04	0.87	-8.35	0.79	A-	A-	A-
5	795349	3	D.1.1.2	2	5009	0.53	0.53	0.12	0.05	0.29	0.00	0.32	0.32	-0.10	-0.21	-0.18	0.02	0.03	-2.23	0.98	-2.08	0.97	A+	A-	A-
5	995557	3	D.1.1.8	3	5009	0.23	0.43	0.12	0.21	0.23	0.00	0.04	0.01	-0.03	-0.03	0.04	1.57	0.04	8.62	1.17	9.90	1.47	A-	A-	A+
5	671516	3	D.1.1.5	2	5009	0.47	0.16	0.05	0.33	0.47	0.00	0.30	-0.18	-0.22	-0.09	0.30	0.34	0.03	-1.00	0.99	-0.07	1.00	A+	A-	A+
5	312111	3	D.1.2.3	3	5009	0.55	0.21	0.07	0.17	0.55	0.00	0.38	-0.18	-0.17	-0.18	0.38	-0.06	0.03	-6.57	0.93	-5.40	0.92	A+	A-	A-
5	921926	3	D.1.1.6	2	5009	0.84	0.84	0.03	0.07	0.07	0.00	0.40	0.40	-0.21	-0.23	-0.22	-1.76	0.04	-5.29	0.87	-8.74	0.67	A-	C-	C-
5	225840	3	D.2.1.4	3	5009	0.50	0.20	0.14	0.15	0.50	0.00	0.33	-0.19	-0.19	-0.07	0.33	0.18	0.03	-3.26	0.96	-3.17	0.95	A-	A-	A-
5	610782	3	D.2.1.2	3	5009	0.50	0.14	0.24	0.12	0.50	0.00	0.33	-0.06	-0.21	-0.16	0.33	0.20	0.03	-2.68	0.97	-2.17	0.97	A-	A+	A+
5	637587	3	D.2.1.1	3	5009	0.31	0.25	0.34	0.31	0.10	0.00	0.13	-0.17	0.08	0.13	-0.06	1.15	0.03	7.81	1.12	9.90	1.27	A-	A+	A+
5	838233	3	D.1.2.2	2	5009	0.86	0.08	0.04	0.86	0.02	0.00	0.19	-0.07	-0.14	0.19	-0.13	-1.92	0.04	1.37	1.04	0.73	1.03	A-	A+	A+
5	247743	3	D.1.1.3	2	5009	0.89	0.07	0.89	0.02	0.02	0.00	0.33	-0.27	0.33	-0.09	-0.15	-2.27	0.05	-3.06	0.90	-5.66	0.71	A-	A-	A-
5	301475	4	D.1.2.5	2	4972	0.22	0.21	0.40	0.16	0.22	0.00	0.08	-0.21	0.15	-0.06	0.08	1.69	0.04	5.37	1.11	6.92	1.23	A+	B+	A-
5	426777	4	D.1.1.8	2	4972	0.37	0.28	0.37	0.10	0.25	0.00	0.21	-0.07	0.21	-0.17	-0.05	0.86	0.03	2.36	1.03	4.28	1.08	A+	A+	B+
5	824323	4	D.1.1.2	2	4972	0.50	0.50	0.15	0.33	0.01	0.00	0.33	0.33	-0.16	-0.19	-0.15	0.23	0.03	-6.17	0.94	-4.99	0.93	A-	A-	A-
5	519312	4	D.1.2.4	3	4972	0.27	0.40	0.27	0.18	0.15	0.00	-0.06	0.08	-0.06	0.03	-0.07	1.40	0.03	9.90	1.23	9.90	1.49	A+	A+	A+
5	287753	4	D.2.1.4	3	4972	0.25	0.36	0.18	0.21	0.25	0.00	0.15	0.03	-0.13	-0.07	0.15	1.53	0.03	2.18	1.04	7.62	1.23	A-	A-	A+
5	863421	4	D.1.1.3	2	4972	0.40	0.40	0.14	0.17	0.28	0.00	0.23	0.23	-0.10	-0.09	-0.09	0.72	0.03	1.57	1.02	2.49	1.04	A-	A+	A-
5	722913	4	D.1.1.1	2	4972	0.28	0.34	0.19	0.28	0.19	0.00	0.11	0.03	0.02	0.11	-0.17	1.31	0.03	5.77	1.09	9.15	1.24	A-	A+	A+
5	199375	4	D.2.1.3	3	4972	0.37	0.14	0.30	0.18	0.37	0.00	0.16	-0.11	-0.08	0.00	0.16	0.86	0.03	6.63	1.08	6.05	1.11	A+	A+	B-
5	370548	4	D.1.2.3	2	4972	0.57	0.03	0.32	0.08	0.57	0.00	0.42	-0.20	-0.27	-0.17	0.42	-0.07	0.03	-9.90	0.87	-9.90	0.84	A-	A-	A+
5	716467	4	D.2.1.2	3	4972	0.63	0.16	0.07	0.63	0.14	0.00	0.40	-0.32	-0.18	0.40	-0.08	-0.40	0.03	-9.82	0.88	-9.09	0.85	A+	A-	A-
5	147768	5	D.1.1.2	2	4997	0.45	0.49	0.05	0.45	0.01	0.00	0.20	-0.10	-0.18	0.20	-0.14	0.39	0.03	6.57	1.07	6.05	1.10	A+	A+	A-
5	729983	5	D.1.1.8	2	4997	0.59	0.59	0.25	0.08	0.08	0.00	0.24	0.24	-0.02	-0.22	-0.18	-0.24	0.03	3.07	1.04	3.80	1.06	A-	A-	A+
5	637707	5	D.1.2.3	2	4997	0.74	0.03	0.74	0.07	0.16	0.00	0.28	-0.16	0.28	-0.19	-0.13	-1.06	0.03	-0.60	0.99	-2.49	0.93	A-	A-	A+
5	912462	5	D.1.1.6	2	4997	0.79	0.04	0.07	0.10	0.79	0.00	0.34	-0.18	-0.19	-0.17	0.34	-1.38	0.04	-3.61	0.93	-5.21	0.83	A+	A+	A-

5	210794	5	D.2.1.4	3	4997	0.49	0.22	0.23	0.49	0.07	0.00	0.32	-0.19	-0.12	0.32	-0.13	0.23	0.03	-2.69	0.97	-2.55	0.96	A+	A-	A+
5	274247	5	D.1.1.4	2	4997	0.55	0.18	0.14	0.14	0.55	0.00	0.27	-0.07	-0.15	-0.17	0.27	-0.06	0.03	0.99	1.01	0.29	1.00	A-	A+	A+
5	432420	5	D.1.2.2	2	4997	0.43	0.20	0.43	0.24	0.14	0.00	0.31	-0.06	0.31	-0.20	-0.12	0.51	0.03	-2.58	0.97	-0.82	0.99	A+	A+	A+
5	286829	5	D.2.1.1	3	4997	0.68	0.68	0.04	0.05	0.22	0.00	0.19	0.19	-0.18	-0.16	-0.04	-0.74	0.03	5.03	1.07	4.74	1.11	A-	A-	A-
5	884719	5	D.2.1.2	3	4997	0.34	0.41	0.16	0.34	0.08	0.00	0.09	0.02	0.00	0.09	-0.20	0.94	0.03	9.90	1.16	9.90	1.27	A-	A+	A-
5	170199	5	D.1.1.5	2	4997	0.54	0.20	0.54	0.23	0.04	0.00	0.39	-0.12	0.39	-0.24	-0.23	-0.01	0.03	-8.45	0.91	-7.39	0.89	A-	A+	A-
5	612204	6	D.1.1.3	2	5015	0.95	0.02	0.95	0.01	0.02	0.00	0.26	-0.16	0.26	-0.10	-0.18	-3.28	0.07	-1.76	0.90	-3.82	0.67	A+	A-	A-
5	659698	6	D.1.2.5	2	5015	0.72	0.13	0.06	0.72	0.08	0.00	0.31	-0.20	-0.14	0.31	-0.13	-0.96	0.03	-2.56	0.96	-3.26	0.92	A+	A+	A+
5	526203	6	D.1.1.2	2	5015	0.67	0.11	0.11	0.12	0.67	0.00	0.36	-0.20	-0.14	-0.19	0.36	-0.65	0.03	-5.71	0.92	-5.36	0.89	A+	A-	A-
5	801059	6	D.1.1.8	3	5015	0.45	0.45	0.31	0.15	0.09	0.00	0.02	0.02	0.06	-0.01	-0.10	0.39	0.03	9.90	1.23	9.90	1.32	A-	A+	A+
5	395900	6	D.1.2.3	3	5015	0.37	0.37	0.14	0.22	0.27	0.00	0.21	0.21	-0.12	-0.13	-0.01	0.79	0.03	2.24	1.03	5.25	1.11	A+	A-	A+
5	147234	6	D.1.1.6	2	5015	0.73	0.10	0.04	0.14	0.73	0.00	0.29	-0.26	-0.14	-0.07	0.29	-0.99	0.03	-1.36	0.98	-1.31	0.97	A+	A-	A+
5	439642	6	D.2.1.4	3	5015	0.91	0.04	0.02	0.04	0.91	0.00	0.23	-0.14	-0.13	-0.12	0.23	-2.45	0.05	-0.68	0.97	-1.56	0.91	A+	A-	A+
5	253476	6	D.1.1.1	2	5015	0.37	0.26	0.18	0.37	0.20	0.00	0.15	-0.08	-0.07	0.15	-0.03	0.77	0.03	6.15	1.08	8.99	1.18	A-	A+	A+
5	867541	6	D.1.2.2	3	5015	0.33	0.19	0.33	0.25	0.23	0.00	0.23	-0.09	0.23	-0.10	-0.07	1.00	0.03	0.01	1.00	3.26	1.07	A+	A-	A+
5	391122	6	D.2.1.1	3	5015	0.67	0.09	0.07	0.67	0.17	0.00	0.32	-0.18	-0.16	0.32	-0.16	-0.66	0.03	-3.16	0.96	-3.52	0.93	A-	B-	B-
5	773927	7	D.2.1.3	3	4990	0.44	0.24	0.44	0.14	0.18	0.00	0.25	-0.14	0.25	-0.17	-0.01	0.45	0.03	1.13	1.01	2.86	1.04	A-	A+	A+
5	204059	7	D.1.2.5	1	4990	0.58	0.58	0.23	0.02	0.17	0.00	0.20	0.20	-0.13	-0.16	-0.06	-0.18	0.03	5.53	1.06	5.00	1.08	A-	A+	B+
5	632900	7	D.1.1.7	2	4990	0.55	0.19	0.19	0.07	0.55	0.00	0.32	-0.10	-0.22	-0.13	0.32	-0.06	0.03	-4.11	0.96	-4.10	0.94	A+	A+	A+
5	409145	7	D.1.1.2	2	4990	0.37	0.13	0.37	0.18	0.31	0.00	0.26	-0.16	0.26	-0.05	-0.11	0.82	0.03	-1.41	0.98	2.18	1.04	A-	A-	A-
5	244200	7	D.1.2.4	2	4990	0.48	0.48	0.19	0.19	0.14	0.00	0.23	0.23	-0.06	-0.08	-0.17	0.30	0.03	2.85	1.03	1.99	1.03	A+	A+	A+
5	174011	7	D.1.1.8	2	4990	0.90	0.04	0.90	0.02	0.05	0.00	0.35	-0.24	0.35	-0.17	-0.18	-2.32	0.05	-3.81	0.87	-7.20	0.64	A-	A-	B-
5	836976	7	D.2.1.4	3	4990	0.52	0.11	0.08	0.29	0.52	0.00	0.24	-0.18	-0.05	-0.11	0.24	0.10	0.03	2.37	1.03	2.48	1.04	A-	A+	A-
5	895587	7	D.1.1.3	2	4990	0.50	0.08	0.26	0.50	0.15	0.00	0.16	-0.11	-0.01	0.16	-0.11	0.18	0.03	9.25	1.10	8.41	1.13	A+	A+	A-
5	930034	7	D.1.2.1	2	4990	0.75	0.09	0.07	0.75	0.09	0.00	0.39	-0.25	-0.22	0.39	-0.15	-1.07	0.03	-7.10	0.88	-7.43	0.81	A+	A+	A+
5	617754	7	D.1.1.1	2	4990	0.23	0.23	0.19	0.23	0.35	0.00	-0.09	-0.09	0.00	0.05	0.03	1.59	0.04	9.90	1.25	9.90	1.69	A+	A+	A+
5	884493	8	D.1.1.5	2	4964	0.34	0.09	0.35	0.34	0.22	0.00	0.35	-0.25	0.05	0.35	-0.28	0.91	0.03	-6.40	0.92	-5.15	0.90	A-	A+	A+
5	315562	8	D.1.1.2	2	4964	0.69	0.02	0.28	0.69	0.02	0.00	0.15	-0.14	-0.07	0.15	-0.15	-0.77	0.03	6.55	1.10	6.73	1.16	A-	A-	A+
5	694550	8	D.1.1.8	2	4964	0.45	0.22	0.14	0.19	0.45	0.00	0.22	-0.06	-0.10	-0.13	0.22	0.38	0.03	3.31	1.04	3.73	1.06	A+	A+	A+
5	168172	8	D.1.1.8	3	4964	0.47	0.19	0.47	0.24	0.10	0.00	0.13	-0.09	0.13	0.04	-0.14	0.29	0.03	9.90	1.12	9.90	1.17	A-	A+	A+
5	335826	8	D.1.2.3	2	4964	0.72	0.72	0.05	0.19	0.03	0.00	0.40	0.40	-0.16	-0.29	-0.18	-0.97	0.03	-7.83	0.88	-8.51	0.80	A+	B-	A-
5	672996	8	D.2.1.4	3	4964	0.71	0.71	0.05	0.21	0.04	0.00	0.32	0.32	-0.20	-0.16	-0.20	-0.88	0.03	-3.40	0.95	-2.87	0.93	A-	A-	A+

5	391408	8	D.1.1.3	2	4964	0.68	0.06	0.68	0.07	0.20	0.00	0.20	-0.21	0.20	-0.16	-0.02	-0.71	0.03	3.46	1.05	4.52	1.10	A+	A-	A+
5	381248	8	D.2.1.2	3	4964	0.21	0.35	0.21	0.17	0.27	0.00	0.11	-0.01	0.11	-0.10	-0.01	1.67	0.04	3.07	1.06	9.84	1.37	A-	A+	A+
5	445231	8	D.1.2.2	3	4964	0.33	0.25	0.33	0.25	0.17	0.00	0.22	-0.01	0.22	-0.12	-0.12	0.97	0.03	0.98	1.01	4.39	1.10	A-	A-	A-
5	743911	8	D.2.1.1	3	4964	0.64	0.26	0.05	0.06	0.64	0.00	0.27	-0.15	-0.13	-0.15	0.27	-0.50	0.03	-0.12	1.00	0.36	1.01	A+	A+	A-
5	587167	9	D.1.2.5	1	4984	0.65	0.12	0.65	0.12	0.11	0.00	0.31	-0.15	0.31	-0.12	-0.18	-0.57	0.03	-1.68	0.98	-2.93	0.94	A+	A-	A+
5	301520	9	D.1.1.2	2	4984	0.48	0.29	0.13	0.48	0.10	0.00	0.29	-0.10	-0.19	0.29	-0.12	0.27	0.03	-0.99	0.99	0.09	1.00	A-	A-	A-
5	422426	9	D.1.1.8	3	4984	0.42	0.30	0.11	0.17	0.42	0.00	0.14	0.05	-0.13	-0.13	0.14	0.55	0.03	9.83	1.12	9.54	1.17	A+	A+	A+
5	312162	9	D.1.2.4	2	4984	0.27	0.38	0.17	0.18	0.27	0.00	0.04	0.06	-0.02	-0.10	0.04	1.35	0.03	9.79	1.17	9.90	1.39	A+	A+	A+
5	933735	9	D.1.2.3	2	4984	0.71	0.71	0.13	0.09	0.08	0.00	0.43	0.43	-0.23	-0.23	-0.21	-0.87	0.03	-9.16	0.86	-9.90	0.77	A+	A-	A-
5	366553	9	D.1.1.6	2	4984	0.36	0.41	0.16	0.08	0.36	0.00	0.30	-0.13	-0.10	-0.16	0.30	0.86	0.03	-3.42	0.96	0.48	1.01	A-	A-	A-
5	477365	9	D.2.1.4	3	4984	0.61	0.11	0.09	0.61	0.19	0.00	0.32	-0.27	-0.19	0.32	-0.05	-0.39	0.03	-2.56	0.97	-3.20	0.94	A+	A-	A-
5	997865	9	D.1.1.3	2	4984	0.87	0.05	0.03	0.05	0.87	0.00	0.40	-0.22	-0.21	-0.23	0.40	-2.03	0.04	-5.39	0.85	-9.24	0.61	A+	A-	A-
5	577305	9	D.1.1.1	2	4984	0.19	0.33	0.22	0.19	0.26	0.00	-0.07	-0.04	0.09	-0.07	0.01	1.88	0.04	9.38	1.22	9.90	1.83	A-	A+	A+
5	129629	9	D.2.1.1	3	4984	0.80	0.04	0.80	0.10	0.05	0.00	0.39	-0.16	0.39	-0.25	-0.20	-1.48	0.04	-5.78	0.88	-7.63	0.75	A+	A-	A+
5	463300	10	D.1.1.7	2	4981	0.79	0.03	0.79	0.15	0.02	0.00	0.35	-0.20	0.35	-0.24	-0.15	-1.40	0.04	-4.18	0.91	-5.19	0.82	A+	A+	A-
5	935716	10	D.1.1.5	2	4981	0.93	0.93	0.01	0.04	0.02	0.00	0.29	0.29	-0.10	-0.22	-0.14	-2.74	0.06	-2.05	0.91	-4.55	0.69	A+	A+	A-
5	851502	10	D.1.2.3	3	4981	0.49	0.34	0.49	0.08	0.09	0.00	0.23	-0.06	0.23	-0.16	-0.14	0.23	0.03	5.14	1.06	5.28	1.09	A+	A-	A-
5	148153	10	D.1.1.6	2	4981	0.87	0.04	0.05	0.05	0.87	0.00	0.31	-0.20	-0.16	-0.16	0.31	-2.02	0.04	-2.24	0.93	-4.22	0.80	A+	B-	A-
5	197497	10	D.2.1.4	3	4981	0.51	0.51	0.27	0.12	0.10	0.00	0.09	0.09	-0.03	-0.03	-0.07	0.14	0.03	9.90	1.20	9.90	1.27	A+	A+	A+
5	488670	10	D.1.1.4	2	4981	0.17	0.16	0.55	0.12	0.17	0.00	0.17	-0.03	-0.01	-0.14	0.17	2.03	0.04	0.51	1.01	6.66	1.30	A+	A-	A+
5	847095	10	D.2.1.2	3	4981	0.38	0.16	0.17	0.38	0.28	0.00	0.30	-0.21	-0.03	0.30	-0.12	0.76	0.03	-1.93	0.98	0.28	1.01	A-	A+	A-
5	697254	10	D.1.2.1	2	4981	0.57	0.23	0.13	0.57	0.08	0.00	0.38	-0.17	-0.17	0.38	-0.21	-0.13	0.03	-6.86	0.92	-6.90	0.89	A+	A+	A-
5	820919	10	D.1.2.2	2	4981	0.77	0.06	0.10	0.07	0.77	0.00	0.46	-0.26	-0.26	-0.21	0.46	-1.25	0.04	-9.25	0.83	-9.90	0.70	A+	A+	A+
5	321274	10	D.2.1.1	3	4981	0.50	0.12	0.50	0.12	0.26	0.00	0.32	-0.16	0.32	-0.11	-0.16	0.22	0.03	-2.46	0.97	-1.52	0.98	A+	A-	B-
5	434122	11	D.1.1.6	2	4922	0.44	0.12	0.38	0.44	0.06	0.00	0.31	-0.11	-0.16	0.31	-0.16	0.50	0.03	-0.08	1.00	1.06	1.02	A+	A+	A-
5	853750	11	D.1.2.3	2	4922	0.82	0.82	0.04	0.09	0.05	0.00	0.39	0.39	-0.18	-0.26	-0.17	-1.59	0.04	-5.33	0.88	-7.81	0.71	A+	B-	A-
5	879605	11	D.1.1.7	2	4922	0.55	0.55	0.12	0.19	0.14	0.00	0.32	0.32	-0.15	-0.14	-0.15	-0.04	0.03	-0.23	1.00	-0.67	0.99	A-	A+	B+
5	837301	11	D.1.1.5	2	4922	0.45	0.22	0.14	0.45	0.19	0.00	0.33	-0.20	-0.15	0.33	-0.07	0.45	0.03	-0.74	0.99	-0.51	0.99	A+	A+	A-
5	759978	11	D.1.1.4	2	4922	0.46	0.17	0.46	0.20	0.17	0.00	0.29	-0.10	0.29	-0.16	-0.10	0.41	0.03	2.44	1.03	1.97	1.03	A-	A-	A-
5	175718	11	D.2.1.2	3	4922	0.45	0.27	0.14	0.14	0.45	0.00	0.37	-0.07	-0.23	-0.21	0.37	0.44	0.03	-4.85	0.94	-4.39	0.93	A-	A+	A-
5	547434	11	D.1.2.1	2	4922	0.33	0.21	0.23	0.23	0.33	0.00	0.24	-0.15	-0.02	-0.10	0.24	1.03	0.03	3.72	1.05	6.19	1.15	A-	A+	A+
5	642412	11	D.1.2.2	2	4922	0.46	0.25	0.13	0.46	0.15	0.00	0.33	-0.11	-0.21	0.33	-0.12	0.39	0.03	-1.40	0.98	-0.28	1.00	A+	A+	A+

5	318907	11	D.2.1.1	3	4922	0.49	0.11	0.27	0.49	0.13	0.00	0.32	-0.20	-0.06	0.32	-0.21	0.22	0.03	-0.44	0.99	0.62	1.01	A+	A-	A+
5	763945	11	D.2.1.3	3	4922	0.30	0.21	0.34	0.16	0.30	0.00	0.35	-0.23	-0.08	-0.08	0.35	1.23	0.03	-3.70	0.94	-1.48	0.96	A-	A-	A-
5	808339	12	D.1.1.5	3	4951	0.40	0.35	0.40	0.11	0.13	0.00	0.10	0.08	0.10	-0.14	-0.13	0.61	0.03	9.90	1.17	9.90	1.26	A+	A+	B+
5	708469	12	D.1.2.3	2	4951	0.57	0.05	0.26	0.13	0.57	0.00	0.48	-0.20	-0.28	-0.21	0.48	-0.18	0.03	-9.90	0.84	-9.90	0.79	A+	A-	A-
5	756913	12	D.1.1.6	2	4951	0.23	0.05	0.08	0.64	0.23	0.00	0.19	-0.17	-0.15	0.00	0.19	1.54	0.04	1.65	1.03	7.99	1.28	A-	A-	A-
5	700451	12	D.1.1.6	2	4951	0.78	0.78	0.04	0.14	0.05	0.00	0.34	0.34	-0.20	-0.19	-0.18	-1.33	0.04	-3.71	0.93	-3.91	0.88	A-	A+	A-
5	736778	12	D.2.1.4	3	4951	0.36	0.36	0.24	0.17	0.23	0.00	0.17	0.17	0.01	-0.08	-0.13	0.82	0.03	7.24	1.10	8.80	1.19	A-	A-	A+
5	352228	12	D.1.1.4	3	4951	0.39	0.19	0.18	0.39	0.24	0.00	0.16	-0.04	-0.05	0.16	-0.10	0.67	0.03	9.35	1.12	9.84	1.19	A-	A-	A+
5	738258	12	D.2.1.2	3	4951	0.27	0.08	0.15	0.27	0.50	0.00	0.25	-0.14	-0.18	0.25	-0.02	1.33	0.03	-0.66	0.99	4.57	1.13	A-	A-	A-
5	965119	12	D.1.2.2	2	4951	0.66	0.66	0.11	0.15	0.08	0.00	0.41	0.41	-0.24	-0.19	-0.19	-0.68	0.03	-7.97	0.89	-7.65	0.84	A-	A+	A-
5	575992	12	D.2.1.1	3	4951	0.52	0.11	0.52	0.17	0.20	0.00	0.31	-0.18	0.31	-0.10	-0.14	0.06	0.03	-1.17	0.99	-1.05	0.98	A+	A+	A+
5	791319	12	D.1.2.1	2	4951	0.68	0.07	0.14	0.12	0.68	0.00	0.40	-0.22	-0.27	-0.13	0.40	-0.75	0.03	-7.59	0.89	-7.93	0.83	A+	A-	A+
5	163215	13	D.1.2.5	2	4884	0.78	0.07	0.10	0.78	0.06	0.00	0.36	-0.24	-0.17	0.36	-0.17	-1.31	0.04	-5.05	0.90	-6.45	0.80	A+	A+	A-
5	718663	13	D.1.1.7	3	4884	0.36	0.36	0.10	0.38	0.16	0.00	0.24	0.24	-0.13	-0.11	-0.06	0.82	0.03	2.54	1.03	4.01	1.08	A-	B+	A-
5	184375	13	D.1.1.5	2	4884	0.90	0.90	0.01	0.03	0.06	0.00	0.27	0.27	-0.08	-0.18	-0.18	-2.35	0.05	-1.84	0.94	-3.64	0.79	B-	A-	A-
5	936635	13	D.1.2.3	2	4884	0.71	0.15	0.06	0.08	0.71	0.00	0.40	-0.23	-0.20	-0.19	0.40	-0.92	0.03	-7.59	0.89	-8.24	0.80	A+	A-	A-
5	356488	13	D.2.1.4	3	4884	0.39	0.25	0.39	0.13	0.22	0.00	0.06	0.06	0.06	-0.13	-0.03	0.65	0.03	9.90	1.20	9.90	1.30	A+	A-	A+
5	763536	13	D.1.1.4	2	4884	0.49	0.16	0.11	0.25	0.49	0.00	0.17	-0.06	-0.14	-0.04	0.17	0.20	0.03	9.90	1.11	8.94	1.15	A-	A-	A+
5	727150	13	D.2.1.2	3	4884	0.40	0.16	0.05	0.39	0.40	0.00	0.27	-0.15	-0.08	-0.13	0.27	0.61	0.03	0.35	1.00	2.48	1.04	A-	A-	A-
5	511428	13	D.1.2.1	2	4884	0.53	0.11	0.28	0.53	0.07	0.00	0.29	-0.17	-0.11	0.29	-0.17	-0.02	0.03	-0.08	1.00	-0.10	1.00	A-	A+	A+
5	724634	13	D.1.2.2	2	4884	0.47	0.23	0.20	0.47	0.09	0.00	0.34	-0.14	-0.17	0.34	-0.15	0.27	0.03	-4.76	0.95	-3.02	0.95	A-	A-	A-
5	427079	13	D.2.1.1	3	4884	0.47	0.08	0.04	0.47	0.41	0.00	0.33	-0.25	-0.16	0.33	-0.14	0.28	0.03	-4.25	0.95	-3.17	0.95	A-	A-	A+
5	435466	14	D.1.1.2	2	4926	0.57	0.20	0.03	0.20	0.57	0.00	0.41	-0.22	-0.18	-0.21	0.41	-0.16	0.03	-9.90	0.89	-9.54	0.86	A+	A-	A+
5	993104	14	D.1.1.8	2	4926	0.39	0.07	0.10	0.43	0.39	0.00	0.29	-0.22	-0.24	-0.01	0.29	0.68	0.03	-1.61	0.98	-0.42	0.99	A-	A+	A-
5	173408	14	D.1.2.4	2	4926	0.15	0.16	0.26	0.43	0.15	0.00	-0.04	-0.10	-0.05	0.15	-0.04	2.17	0.04	5.68	1.16	9.90	1.77	A-	A-	A+
5	876575	14	D.1.2.3	2	4926	0.74	0.08	0.14	0.74	0.04	0.00	0.40	-0.23	-0.23	0.40	-0.18	-1.06	0.03	-7.26	0.88	-8.74	0.78	A-	A-	A-
5	148281	14	D.1.1.6	2	4926	0.48	0.11	0.12	0.48	0.29	0.00	0.33	-0.15	-0.14	0.33	-0.15	0.24	0.03	-4.05	0.96	-3.58	0.95	A-	A-	B-
5	310118	14	D.2.1.4	3	4926	0.44	0.20	0.44	0.20	0.15	0.00	0.21	-0.07	0.21	-0.09	-0.09	0.43	0.03	4.63	1.05	4.82	1.08	A+	A+	A+
5	666849	14	D.1.1.3	2	4926	0.55	0.22	0.15	0.55	0.08	0.00	0.39	-0.20	-0.20	0.39	-0.16	-0.09	0.03	-8.83	0.91	-8.55	0.87	A-	A-	A-
5	108019	14	D.2.1.2	3	4926	0.58	0.58	0.14	0.16	0.12	0.00	0.20	0.20	-0.13	-0.01	-0.15	-0.23	0.03	5.83	1.07	5.12	1.09	A+	A-	A-
5	686043	14	D.1.1.1	2	4926	0.28	0.36	0.21	0.15	0.28	0.00	0.02	0.01	-0.03	0.00	0.02	1.25	0.03	9.90	1.19	9.90	1.45	A-	A+	A+
5	180525	14	D.2.1.1	3	4926	0.49	0.49	0.18	0.20	0.12	0.00	0.17	0.17	-0.08	-0.04	-0.10	0.19	0.03	8.45	1.09	8.65	1.13	A-	A+	A+

5	509538	15	D.1.2.5	1	4903	0.72	0.03	0.09	0.15	0.72	0.00	0.21	-0.17	-0.11	-0.09	0.21	-0.94	0.03	3.72	1.06	4.54	1.13	A+	B+	A+
5	191659	15	D.1.1.5	2	4903	0.76	0.10	0.02	0.12	0.76	0.00	0.31	-0.22	-0.13	-0.14	0.31	-1.16	0.04	-1.57	0.97	-2.81	0.92	A-	A-	A-
5	564181	15	D.1.2.4	2	4903	0.20	0.30	0.15	0.34	0.20	0.00	-0.04	-0.01	0.00	0.05	-0.04	1.80	0.04	9.74	1.22	9.90	1.72	A+	A+	A+
5	835115	15	D.1.1.4	2	4903	0.77	0.07	0.08	0.77	0.09	0.00	0.42	-0.26	-0.23	0.42	-0.18	-1.22	0.04	-7.25	0.87	-7.92	0.77	A-	B-	B-
5	681723	15	D.1.2.1	2	4903	0.67	0.12	0.12	0.67	0.09	0.00	0.39	-0.20	-0.20	0.39	-0.17	-0.64	0.03	-6.38	0.91	-6.95	0.85	A+	A-	A+
5	557208	15	D.2.1.1	3	4903	0.92	0.04	0.02	0.92	0.02	0.00	0.35	-0.20	-0.22	0.35	-0.16	-2.60	0.05	-3.39	0.87	-6.98	0.58	A+	A-	A-
5	128788	15	D.2.1.1	3	4903	0.76	0.02	0.14	0.09	0.76	0.00	0.37	-0.17	-0.24	-0.20	0.37	-1.14	0.04	-4.84	0.91	-5.92	0.83	A-	A+	A-
5	408043	15	D.1.1.1	2	4903	0.42	0.29	0.42	0.17	0.12	0.00	0.16	-0.06	0.16	-0.04	-0.11	0.60	0.03	9.11	1.11	9.90	1.19	A+	A+	A-
5	290678	15	D.2.1.3	3	4903	0.24	0.22	0.24	0.19	0.35	0.00	0.10	-0.05	0.10	-0.14	0.07	1.55	0.04	4.15	1.08	9.90	1.46	A-	A+	A+
5	544547	15	D.2.1.2	3	4903	0.69	0.69	0.13	0.04	0.13	0.00	0.32	0.32	-0.20	-0.16	-0.14	-0.77	0.03	-2.06	0.97	-2.48	0.94	A-	A-	A+
5	181059	16	D.1.1.2	2	4956	0.15	0.17	0.15	0.12	0.56	0.00	0.03	-0.01	0.03	-0.07	0.03	2.13	0.04	4.64	1.13	9.90	1.60	A+	A+	A+
5	496239	16	D.1.1.8	3	4956	0.54	0.16	0.15	0.15	0.54	0.00	0.25	-0.03	-0.11	-0.20	0.25	-0.04	0.03	2.36	1.03	2.17	1.03	A+	A-	A-
5	487005	16	D.1.1.5	3	4956	0.51	0.23	0.16	0.09	0.51	0.00	0.36	-0.23	-0.10	-0.15	0.36	0.10	0.03	-7.00	0.93	-4.81	0.93	B-	A+	A+
5	156157	16	D.1.2.3	2	4956	0.40	0.31	0.07	0.40	0.23	0.00	0.28	-0.13	-0.18	0.28	-0.07	0.65	0.03	-0.99	0.99	1.31	1.02	A+	A+	A-
5	870134	16	D.1.1.6	2	4956	0.36	0.36	0.29	0.25	0.09	0.00	0.35	0.35	-0.14	-0.13	-0.16	0.82	0.03	-6.71	0.92	-3.12	0.94	A-	A+	A+
5	591771	16	D.2.1.4	3	4956	0.40	0.40	0.08	0.22	0.30	0.00	0.14	0.14	-0.12	-0.07	-0.01	0.65	0.03	9.42	1.11	9.51	1.18	A-	A+	A+
5	223419	16	D.1.1.4	3	4956	0.24	0.23	0.36	0.24	0.17	0.00	0.20	0.03	-0.13	0.20	-0.08	1.51	0.04	1.10	1.02	4.45	1.14	A-	A-	A-
5	855718	16	D.2.1.2	3	4956	0.19	0.05	0.19	0.70	0.07	0.00	0.17	-0.16	0.17	0.01	-0.13	1.88	0.04	0.86	1.02	5.68	1.23	A-	A-	A-
5	827669	16	D.1.2.2	3	4956	0.47	0.16	0.47	0.24	0.13	0.00	0.29	-0.12	0.29	-0.09	-0.19	0.33	0.03	-1.74	0.98	0.06	1.00	A-	A-	A-
5	277585	16	D.2.1.1	3	4956	0.90	0.02	0.06	0.02	0.90	0.00	0.26	-0.15	-0.13	-0.17	0.26	-2.31	0.05	-1.88	0.94	-3.99	0.79	B+	B-	A-
5	317776	17	D.2.1.1	3	5004	0.49	0.35	0.08	0.49	0.08	0.00	0.36	-0.18	-0.13	0.36	-0.21	0.24	0.03	-6.46	0.93	-3.70	0.94	A-	A-	A-
5	297791	17	D.1.2.5	1	5004	0.86	0.86	0.06	0.05	0.04	0.00	0.28	0.28	-0.13	-0.19	-0.15	-1.90	0.04	-1.51	0.96	-1.93	0.91	A+	B+	A+
5	681789	17	D.1.1.7	2	5004	0.87	0.87	0.03	0.06	0.03	0.00	0.39	0.39	-0.17	-0.25	-0.21	-2.05	0.04	-4.86	0.86	-7.51	0.66	A-	A-	A-
5	693089	17	D.1.1.5	3	5004	0.31	0.22	0.31	0.28	0.18	0.00	0.20	-0.09	0.20	-0.08	-0.05	1.12	0.03	2.90	1.04	6.01	1.15	A-	A+	A+
5	573595	17	D.1.2.4	2	5004	0.18	0.36	0.18	0.29	0.17	0.00	-0.06	0.07	-0.06	0.02	-0.05	1.98	0.04	8.19	1.20	9.90	1.97	A+	B+	A+
5	127049	17	D.1.1.4	2	5004	0.84	0.04	0.05	0.84	0.07	0.00	0.44	-0.24	-0.21	0.44	-0.26	-1.74	0.04	-7.24	0.83	-9.42	0.65	B+	B-	B-
5	576195	17	D.1.2.1	2	5004	0.74	0.06	0.16	0.74	0.04	0.00	0.33	-0.19	-0.15	0.33	-0.21	-1.04	0.03	-2.29	0.96	-3.45	0.91	A+	A-	A-
5	949289	17	D.1.1.1	2	5004	0.31	0.40	0.17	0.12	0.31	0.00	-0.01	0.06	-0.05	-0.03	-0.01	1.17	0.03	9.90	1.23	9.90	1.56	A-	A-	A+
5	168287	17	D.2.1.3	3	5004	0.22	0.25	0.28	0.24	0.22	0.00	0.24	-0.11	-0.08	-0.03	0.24	1.66	0.04	-1.54	0.97	2.55	1.09	A+	A-	A-
5	803412	17	D.2.1.2	3	5004	0.67	0.06	0.05	0.67	0.22	0.00	0.45	-0.24	-0.15	0.45	-0.29	-0.64	0.03	-9.90	0.86	-9.90	0.79	A-	B-	A-
5	491411	18	D.1.1.7	2	4973	0.86	0.86	0.06	0.05	0.02	0.00	0.35	0.35	-0.19	-0.22	-0.17	-1.97	0.04	-4.48	0.88	-7.18	0.70	A-	A-	A+
5	964700	18	D.1.2.4	2	4973	0.33	0.18	0.33	0.34	0.15	0.00	0.03	0.01	0.03	0.07	-0.14	0.95	0.03	9.90	1.19	9.90	1.41	A-	A-	A-

5	811678	18	D.1.1.3	2	4973	0.46	0.23	0.18	0.46	0.13	0.00	0.26	-0.04	-0.17	0.26	-0.13	0.33	0.03	0.82	1.01	1.91	1.03	A-	A+	A-
5	781720	18	D.1.1.4	2	4973	0.45	0.14	0.45	0.23	0.18	0.00	0.31	-0.15	0.31	-0.22	-0.02	0.40	0.03	-3.53	0.96	-1.38	0.98	A-	A-	A-
5	691934	18	D.2.1.2	3	4973	0.55	0.55	0.07	0.13	0.24	0.00	0.33	0.33	-0.08	-0.19	-0.18	-0.12	0.03	-4.05	0.96	-4.47	0.93	B-	A-	A-
5	194574	18	D.1.2.1	2	4973	0.67	0.17	0.07	0.09	0.67	0.00	0.37	-0.17	-0.21	-0.20	0.37	-0.68	0.03	-6.49	0.91	-6.87	0.86	B+	A-	A+
5	536763	18	D.1.2.2	2	4973	0.55	0.12	0.12	0.20	0.55	0.00	0.37	-0.18	-0.19	-0.16	0.37	-0.12	0.03	-7.91	0.92	-7.32	0.89	A+	A-	A-
5	443817	18	D.2.1.1	3	4973	0.29	0.28	0.26	0.29	0.16	0.00	0.08	0.06	-0.09	0.08	-0.07	1.16	0.03	8.66	1.14	9.90	1.32	A+	A-	A+
5	570899	18	D.2.1.3	3	4973	0.23	0.48	0.23	0.20	0.09	0.00	0.08	0.10	0.08	-0.10	-0.14	1.55	0.04	4.91	1.09	9.90	1.38	A+	A+	A+
5	974921	18	D.1.1.1	2	4973	0.25	0.33	0.16	0.26	0.25	0.00	0.09	0.08	-0.09	-0.09	0.09	1.42	0.03	6.55	1.12	7.92	1.25	A-	A+	A+
5	877519	19	D.1.1.7	2	4955	0.84	0.03	0.10	0.84	0.02	0.00	0.33	-0.19	-0.21	0.33	-0.15	-1.83	0.04	-2.88	0.93	-5.05	0.79	A+	A-	A-
5	691137	19	D.1.2.4	2	4955	0.22	0.31	0.18	0.22	0.29	0.00	0.04	-0.12	-0.02	0.04	0.11	1.64	0.04	8.64	1.18	9.90	1.58	A-	A-	A+
5	743512	19	D.1.1.3	3	4955	0.32	0.08	0.44	0.16	0.32	0.00	0.23	-0.09	-0.05	-0.15	0.23	1.08	0.03	1.67	1.02	7.14	1.18	A-	A-	C-
5	302319	19	D.1.1.4	3	4955	0.45	0.13	0.45	0.26	0.16	0.00	0.33	-0.11	0.33	-0.12	-0.19	0.39	0.03	-3.16	0.96	-2.11	0.96	A+	A-	A-
5	913888	19	D.2.1.2	3	4955	0.71	0.71	0.06	0.15	0.08	0.00	0.28	0.28	-0.16	-0.05	-0.26	-0.91	0.03	-0.16	1.00	0.85	1.02	A+	B-	A-
5	462171	19	D.1.2.1	2	4955	0.70	0.16	0.70	0.09	0.04	0.00	0.41	-0.21	0.41	-0.26	-0.18	-0.88	0.03	-7.67	0.89	-8.15	0.81	A+	A+	A+
5	312536	19	D.1.2.2	2	4955	0.65	0.09	0.16	0.65	0.10	0.00	0.39	-0.20	-0.19	0.39	-0.18	-0.59	0.03	-6.28	0.92	-6.32	0.87	A-	A-	A+
5	443395	19	D.2.1.1	3	4955	0.58	0.58	0.16	0.19	0.07	0.00	0.28	0.28	-0.06	-0.14	-0.22	-0.24	0.03	1.76	1.02	2.01	1.04	A+	A-	B+
5	417744	19	D.1.1.1	2	4955	0.22	0.20	0.22	0.31	0.27	0.00	0.12	-0.02	0.12	-0.06	-0.03	1.68	0.04	4.73	1.10	9.07	1.35	A+	B+	B+
5	115049	19	D.2.1.3	3	4955	0.29	0.32	0.29	0.22	0.17	0.00	0.26	-0.17	0.26	0.03	-0.14	1.25	0.03	-0.18	1.00	2.92	1.08	A-	A-	A-
5	147026	20	D.1.1.2	2	4973	0.74	0.10	0.07	0.74	0.09	0.00	0.34	-0.17	-0.18	0.34	-0.18	-1.10	0.04	-2.60	0.96	-3.62	0.90	A+	A+	A+
5	245742	20	D.1.1.8	3	4973	0.24	0.16	0.34	0.25	0.24	0.00	0.02	-0.09	0.13	-0.08	0.02	1.49	0.04	9.90	1.22	9.90	1.56	A+	B+	A+
5	848933	20	D.1.1.5	2	4973	0.48	0.06	0.24	0.48	0.22	0.00	0.37	-0.16	-0.14	0.37	-0.21	0.27	0.03	-5.99	0.93	-2.57	0.96	A+	A-	A-
5	180208	20	D.1.2.3	2	4973	0.59	0.09	0.16	0.16	0.59	0.00	0.38	-0.24	-0.15	-0.17	0.38	-0.29	0.03	-5.60	0.93	-5.93	0.90	A-	A-	A-
5	191765	20	D.1.1.6	2	4973	0.82	0.07	0.82	0.07	0.05	0.00	0.36	-0.18	0.36	-0.25	-0.15	-1.63	0.04	-3.68	0.92	-4.87	0.82	A+	A-	B-
5	251471	20	D.2.1.2	3	4973	0.70	0.06	0.17	0.70	0.06	0.00	0.28	-0.06	-0.15	0.28	-0.24	-0.89	0.03	0.99	1.02	1.38	1.03	A-	A-	A-
5	366856	20	D.2.1.4	3	4973	0.62	0.18	0.62	0.09	0.11	0.00	0.39	-0.26	0.39	-0.16	-0.15	-0.42	0.03	-6.04	0.92	-6.44	0.88	A-	B-	B-
5	685146	20	D.1.1.4	3	4973	0.24	0.19	0.21	0.35	0.24	0.00	0.10	-0.05	-0.06	0.00	0.10	1.50	0.04	6.24	1.12	9.90	1.42	A-	A+	A+
5	891255	20	D.1.2.2	2	4973	0.63	0.11	0.10	0.15	0.63	0.00	0.44	-0.18	-0.24	-0.22	0.44	-0.51	0.03	-9.04	0.88	-9.26	0.83	A+	A-	A+
5	322551	20	D.2.1.1	3	4973	0.62	0.10	0.62	0.15	0.14	0.00	0.33	-0.21	0.33	-0.11	-0.18	-0.43	0.03	-1.37	0.98	-2.01	0.96	A-	A+	A+
6	219562	0	D.1.1.3	2	80846	0.37	0.09	0.18	0.37	0.36	0.00	0.16	-0.12	-0.10	0.16	0.00	0.83	0.01	9.90	1.05	9.90	1.12	A+	A+	A+
6	320304	0	D.1.1.1	2	80846	0.27	0.14	0.48	0.27	0.11	0.00	0.03	-0.10	0.10	0.03	-0.08	1.34	0.01	9.90	1.16	9.90	1.38	A-	A+	A+
6	124328	0	D.1.2.3	2	80846	0.54	0.10	0.12	0.24	0.54	0.00	0.33	-0.19	-0.19	-0.10	0.33	0.02	0.01	-9.90	0.89	-9.90	0.86	A+	A-	A-
6	402584	0	D.1.1.6	2	80846	0.72	0.18	0.72	0.06	0.05	0.00	0.22	-0.07	0.22	-0.15	-0.15	-0.88	0.01	0.64	1.00	0.42	1.00	A+	A-	A-

6	680662	0	D.1.2.1	2	80846	0.24	0.24	0.20	0.16	0.40	0.00	0.12	0.12	-0.03	-0.08	-0.01	1.53	0.01	9.90	1.05	9.90	1.24	A-	A+	A+
6	135307	0	D.2.1.1	2	80846	0.63	0.63	0.17	0.08	0.12	0.00	0.16	0.16	-0.11	-0.12	0.00	-0.43	0.01	9.90	1.07	9.90	1.12	A-	A+	A+
6	589482	0	D.1.1.7	2	80846	0.72	0.03	0.19	0.72	0.06	0.00	0.31	-0.18	-0.18	0.31	-0.17	-0.92	0.01	-9.90	0.89	-9.90	0.82	A-	B-	B-
6	547131	0	D.1.1.8	2	80846	0.56	0.56	0.10	0.18	0.16	0.00	0.29	0.29	-0.15	-0.17	-0.09	-0.08	0.01	-9.90	0.92	-9.90	0.91	A+	B-	A-
6	951902	0	D.1.1.5	2	80846	0.46	0.14	0.11	0.28	0.46	0.00	0.18	-0.06	-0.10	-0.08	0.18	0.37	0.01	9.90	1.06	9.90	1.08	A+	A+	A+
6	238181	0	D.1.2.2	2	80846	0.82	0.06	0.03	0.09	0.82	0.00	0.31	-0.18	-0.16	-0.16	0.31	-1.55	0.01	-9.90	0.88	-9.90	0.76	A+	A+	A-
6	453598	0	D.2.1.3	2	80846	0.86	0.86	0.03	0.09	0.02	0.00	0.22	0.22	-0.16	-0.08	-0.16	-1.85	0.01	-7.46	0.95	-2.10	0.98	A+	A-	A-
6	976415	0	D.2.1.4	2	80846	0.41	0.16	0.34	0.09	0.41	0.00	0.17	-0.13	0.04	-0.18	0.17	0.63	0.01	9.90	1.06	9.90	1.09	A+	A+	A+
6	106358	0	D.2.1.2	2	80846	0.35	0.21	0.30	0.35	0.14	0.00	0.16	-0.10	0.02	0.16	-0.12	0.91	0.01	9.90	1.04	9.90	1.10	A-	A-	A-
6	735279	1	D.1.1.3	2	4505	0.73	0.11	0.73	0.10	0.05	0.00	0.43	-0.22	0.43	-0.22	-0.22	-0.95	0.04	-7.85	0.87	-8.71	0.77	A-	A-	A-
6	945288	1	D.1.1.1	2	4505	0.84	0.11	0.84	0.02	0.03	0.00	0.34	-0.19	0.34	-0.18	-0.23	-1.69	0.04	-3.51	0.91	-3.79	0.84	A+	A-	B-
6	328406	1	D.1.2.3	2	4505	0.67	0.11	0.17	0.05	0.67	0.00	0.38	-0.21	-0.20	-0.18	0.38	-0.61	0.03	-5.66	0.92	-6.06	0.87	A-	B-	A-
6	920627	1	D.1.2.4	2	4505	0.21	0.18	0.21	0.24	0.37	0.00	-0.03	-0.13	-0.03	-0.04	0.17	1.77	0.04	8.60	1.19	9.90	1.72	A+	A+	A-
6	292663	1	D.2.1.1	2	4505	0.46	0.05	0.46	0.15	0.34	0.00	0.28	-0.18	0.28	-0.19	-0.06	0.44	0.03	0.96	1.01	1.95	1.03	B-	A+	A-
6	152478	1	D.1.1.5	2	4505	0.37	0.37	0.21	0.15	0.27	0.00	0.31	0.31	-0.16	-0.16	-0.06	0.84	0.03	-3.88	0.95	1.34	1.03	A+	A-	A-
6	196334	1	D.1.1.7	2	4505	0.80	0.03	0.13	0.80	0.04	0.00	0.39	-0.21	-0.23	0.39	-0.19	-1.36	0.04	-4.86	0.90	-6.80	0.77	A+	A+	A+
6	443236	1	D.1.1.2	2	4505	0.90	0.05	0.02	0.03	0.90	0.00	0.36	-0.25	-0.16	-0.18	0.36	-2.32	0.05	-3.26	0.88	-6.68	0.63	A+	A-	A-
6	505264	1	D.1.2.2	2	4505	0.40	0.09	0.32	0.40	0.19	0.00	0.20	-0.15	-0.04	0.20	-0.08	0.72	0.03	4.86	1.06	7.23	1.15	A+	A+	A-
6	917203	1	D.2.1.3	2	4505	0.85	0.09	0.85	0.03	0.03	0.01	0.35	-0.22	0.35	-0.15	-0.20	-1.83	0.04	-3.69	0.90	-4.43	0.80	A+	A-	B-
6	463183	1	D.2.1.2	2	4505	0.50	0.06	0.17	0.28	0.50	0.00	0.29	-0.12	-0.17	-0.11	0.29	0.25	0.03	-0.19	1.00	0.60	1.01	B-	A-	A+
6	524496	2	D.1.1.1	2	4506	0.57	0.57	0.14	0.15	0.13	0.01	0.39	0.39	-0.19	-0.21	-0.14	-0.12	0.03	-9.90	0.89	-9.67	0.86	A+	B-	A-
6	232297	2	D.1.1.2	2	4506	0.38	0.30	0.18	0.14	0.38	0.00	0.19	-0.01	-0.12	-0.12	0.19	0.76	0.03	4.01	1.05	4.58	1.08	A+	A+	A+
6	884562	2	D.1.1.3	2	4506	0.52	0.20	0.11	0.52	0.17	0.00	0.15	-0.07	-0.14	0.15	-0.01	0.10	0.03	8.13	1.09	6.92	1.10	A+	A+	A-
6	772371	2	D.1.2.3	2	4506	0.53	0.29	0.53	0.06	0.12	0.00	0.40	-0.27	0.40	-0.09	-0.17	0.07	0.03	-9.90	0.88	-9.90	0.86	A+	B-	B-
6	742728	2	D.1.2.1	2	4506	0.43	0.21	0.43	0.15	0.20	0.00	0.36	-0.17	0.36	-0.15	-0.13	0.51	0.03	-8.24	0.91	-6.35	0.91	A+	A-	A+
6	888321	2	D.2.1.1	2	4506	0.38	0.23	0.38	0.22	0.16	0.00	0.20	-0.08	0.20	-0.14	0.00	0.78	0.03	3.48	1.04	4.06	1.07	A-	A+	A-
6	565068	2	D.1.1.5	2	4506	0.47	0.14	0.25	0.15	0.47	0.00	0.20	-0.09	-0.05	-0.12	0.20	0.36	0.03	4.08	1.04	3.65	1.05	A-	A-	A+
6	160363	2	D.1.1.7	2	4506	0.61	0.06	0.61	0.25	0.08	0.00	0.27	-0.22	0.27	-0.01	-0.26	-0.33	0.03	-1.68	0.98	-1.06	0.98	A-	A+	A+
6	293963	2	D.1.2.2	2	4506	0.62	0.31	0.62	0.03	0.04	0.00	0.32	-0.22	0.32	-0.11	-0.17	-0.36	0.03	-4.46	0.95	-5.23	0.91	A-	A+	A-
6	759052	2	D.2.1.3	2	4506	0.28	0.13	0.55	0.28	0.04	0.01	0.23	-0.13	-0.04	0.23	-0.18	1.29	0.04	0.31	1.01	0.99	1.02	C-	B-	A-
6	955288	2	D.2.1.2	2	4506	0.43	0.21	0.43	0.28	0.07	0.00	0.12	0.00	0.12	-0.06	-0.11	0.52	0.03	9.90	1.12	9.89	1.16	A-	A-	A-
6	125086	3	D.1.1.3	2	4481	0.28	0.21	0.14	0.36	0.28	0.00	0.20	-0.09	-0.14	-0.01	0.20	1.28	0.04	0.08	1.00	4.05	1.11	A-	A-	A+

6	480589	3	D.1.1.1	2	4481	0.90	0.90	0.04	0.03	0.03	0.00	0.35	0.35	-0.20	-0.21	-0.16	-2.25	0.05	-3.85	0.86	-6.90	0.64	A+	A-	A-
6	366181	3	D.1.2.3	3	4481	0.34	0.08	0.53	0.05	0.34	0.00	0.08	-0.18	0.09	-0.15	0.08	0.99	0.03	8.25	1.12	9.90	1.25	A+	A+	A+
6	692682	3	D.1.2.1	2	4481	0.74	0.05	0.15	0.06	0.74	0.00	0.30	-0.20	-0.11	-0.20	0.30	-1.01	0.04	-3.53	0.94	-2.99	0.92	A+	A-	A+
6	954670	3	D.2.1.1	2	4481	0.14	0.39	0.35	0.14	0.11	0.00	0.03	0.03	0.01	0.03	-0.06	2.27	0.05	2.15	1.07	9.90	1.68	A+	A-	A-
6	837580	3	D.1.1.5	2	4481	0.31	0.50	0.31	0.08	0.10	0.00	0.01	0.14	0.01	-0.13	-0.13	1.13	0.03	9.90	1.18	9.90	1.36	A-	A+	A+
6	398889	3	D.1.1.7	2	4481	0.79	0.79	0.05	0.01	0.15	0.00	0.34	0.34	-0.20	-0.18	-0.20	-1.28	0.04	-4.27	0.91	-5.50	0.83	A+	A-	A-
6	910377	3	D.1.1.2	3	4481	0.61	0.08	0.61	0.16	0.15	0.00	0.24	-0.16	0.24	-0.05	-0.15	-0.28	0.03	0.84	1.01	0.83	1.01	A-	A+	A+
6	709469	3	D.1.2.2	2	4481	0.71	0.17	0.09	0.02	0.71	0.00	0.25	-0.11	-0.17	-0.12	0.25	-0.84	0.04	-0.61	0.99	-0.50	0.99	A+	A+	A-
6	755256	3	D.2.1.3	2	4481	0.65	0.17	0.65	0.09	0.08	0.01	0.40	-0.24	0.40	-0.18	-0.15	-0.52	0.03	-9.44	0.88	-8.59	0.83	A+	B-	C-
6	896113	3	D.2.1.2	2	4481	0.69	0.04	0.10	0.17	0.69	0.00	0.34	-0.15	-0.18	-0.18	0.34	-0.70	0.03	-5.14	0.92	-5.89	0.87	A+	A+	A-
6	198768	4	D.1.1.3	2	4493	0.09	0.10	0.09	0.09	0.72	0.00	-0.03	-0.05	-0.03	-0.01	0.06	2.86	0.05	2.87	1.12	9.90	2.10	A-	A+	A-
6	808591	4	D.1.1.1	2	4493	0.47	0.11	0.34	0.47	0.07	0.00	0.20	-0.19	0.03	0.20	-0.20	0.33	0.03	4.52	1.05	3.81	1.06	A+	A+	A+
6	290513	4	D.1.2.3	2	4493	0.62	0.20	0.12	0.62	0.05	0.00	0.37	-0.17	-0.18	0.37	-0.20	-0.36	0.03	-7.57	0.91	-7.24	0.87	A+	A-	A+
6	614069	4	D.1.2.1	2	4493	0.30	0.30	0.35	0.06	0.28	0.00	0.31	0.31	-0.09	-0.18	-0.12	1.19	0.03	-5.08	0.92	-1.30	0.97	A-	A-	A+
6	434905	4	D.2.1.1	2	4493	0.55	0.06	0.55	0.22	0.17	0.00	0.28	-0.24	0.28	-0.17	-0.03	-0.01	0.03	-2.06	0.98	-1.55	0.98	A-	A-	A-
6	117966	4	D.1.1.5	2	4493	0.61	0.61	0.11	0.16	0.12	0.00	0.25	0.25	-0.12	-0.10	-0.14	-0.31	0.03	0.68	1.01	0.37	1.01	A-	A+	A-
6	978839	4	D.1.1.7	2	4493	0.70	0.24	0.70	0.03	0.02	0.00	0.27	-0.16	0.27	-0.15	-0.18	-0.79	0.03	-1.20	0.98	-1.80	0.96	A+	A+	A-
6	831124	4	D.1.1.2	3	4493	0.48	0.20	0.48	0.09	0.22	0.00	0.27	-0.06	0.27	-0.17	-0.13	0.29	0.03	-0.96	0.99	-0.50	0.99	A-	A-	A-
6	912278	4	D.1.2.2	2	4493	0.95	0.02	0.01	0.95	0.02	0.00	0.28	-0.18	-0.11	0.28	-0.17	-3.03	0.07	-1.68	0.91	-5.85	0.55	A-	A-	B-
6	608882	4	D.2.1.3	2	4493	0.81	0.12	0.81	0.02	0.04	0.01	0.33	-0.19	0.33	-0.15	-0.20	-1.43	0.04	-3.89	0.91	-5.14	0.82	A-	A-	A+
6	695592	4	D.2.1.2	2	4493	0.40	0.02	0.54	0.03	0.40	0.00	0.12	-0.10	-0.07	-0.04	0.12	0.67	0.03	8.92	1.11	9.41	1.17	A-	A+	A+
6	673374	5	D.1.1.3	3	4478	0.12	0.04	0.66	0.19	0.12	0.00	0.06	-0.17	0.15	-0.16	0.06	2.44	0.05	2.35	1.08	5.93	1.35	A-	A-	A+
6	518579	5	D.1.1.1	2	4478	0.77	0.02	0.77	0.03	0.18	0.00	0.10	-0.17	0.10	-0.11	0.01	-1.21	0.04	4.03	1.08	7.87	1.27	A-	A-	A-
6	444267	5	D.1.2.3	2	4478	0.91	0.91	0.02	0.04	0.02	0.00	0.28	0.28	-0.14	-0.16	-0.19	-2.48	0.06	-2.21	0.91	-4.93	0.70	A+	A-	A-
6	198375	5	D.1.2.1	2	4478	0.27	0.24	0.29	0.20	0.27	0.00	0.23	-0.03	-0.11	-0.09	0.23	1.33	0.04	-1.13	0.98	1.38	1.04	A+	A-	A+
6	510678	5	D.2.1.1	2	4478	0.60	0.17	0.60	0.08	0.14	0.01	0.31	-0.12	0.31	-0.19	-0.14	-0.29	0.03	-4.94	0.94	-4.15	0.93	A+	A-	A-
6	695240	5	D.1.1.5	2	4478	0.38	0.28	0.08	0.38	0.25	0.00	0.24	-0.15	-0.09	0.24	-0.06	0.72	0.03	-0.64	0.99	1.18	1.02	A-	A+	A-
6	630161	5	D.1.1.7	2	4478	0.93	0.03	0.02	0.93	0.02	0.00	0.29	-0.18	-0.15	0.29	-0.15	-2.65	0.06	-2.12	0.90	-5.11	0.67	A-	A+	A+
6	974232	5	D.1.1.2	2	4478	0.58	0.07	0.58	0.15	0.20	0.00	0.22	-0.11	0.22	-0.09	-0.12	-0.17	0.03	1.60	1.02	1.75	1.03	A-	A+	A-
6	826301	5	D.1.2.2	2	4478	0.72	0.18	0.72	0.06	0.04	0.00	0.33	-0.19	0.33	-0.16	-0.18	-0.93	0.04	-5.03	0.92	-4.64	0.88	A-	A+	A-
6	979254	5	D.2.1.2	2	4478	0.38	0.21	0.38	0.24	0.17	0.01	0.22	-0.07	0.22	-0.07	-0.11	0.76	0.03	0.22	1.00	3.04	1.06	A+	A-	A-
6	357251	5	D.2.1.2	2	4478	0.61	0.13	0.13	0.61	0.12	0.00	0.23	-0.19	-0.13	0.23	0.00	-0.35	0.03	1.05	1.01	1.75	1.03	A-	A+	A-

6	681691	6	D.1.1.3	3	4480	0.22	0.22	0.22	0.29	0.27	0.00	0.00	0.06	0.00	0.00	-0.05	1.68	0.04	7.75	1.17	9.90	1.48	A-	A-	A+
6	650295	6	D.1.1.1	2	4480	0.63	0.12	0.12	0.13	0.63	0.00	0.26	-0.15	-0.11	-0.12	0.26	-0.41	0.03	-0.38	1.00	-0.41	0.99	A-	A-	A-
6	324147	6	D.1.2.3	2	4480	0.70	0.06	0.05	0.20	0.70	0.00	0.40	-0.20	-0.19	-0.25	0.40	-0.72	0.03	-8.38	0.88	-8.59	0.81	A+	A-	A-
6	599000	6	D.1.2.1	2	4480	0.53	0.09	0.53	0.22	0.15	0.00	0.37	-0.23	0.37	-0.10	-0.19	0.10	0.03	-8.76	0.91	-7.64	0.89	A+	A-	A-
6	776211	6	D.2.1.1	2	4480	0.49	0.49	0.14	0.09	0.28	0.00	0.32	0.32	-0.18	-0.20	-0.07	0.29	0.03	-4.58	0.95	-3.05	0.95	A-	A-	A-
6	687041	6	D.1.1.8	2	4480	0.28	0.36	0.23	0.13	0.28	0.00	0.09	0.05	-0.10	-0.06	0.09	1.32	0.04	6.59	1.11	9.90	1.29	A+	A+	B+
6	279709	6	D.1.1.7	2	4480	0.90	0.02	0.02	0.90	0.06	0.00	0.30	-0.17	-0.17	0.30	-0.18	-2.21	0.05	-2.61	0.91	-5.43	0.71	A-	A-	A-
6	589039	6	D.1.1.2	3	4480	0.43	0.03	0.43	0.02	0.52	0.00	0.27	-0.09	0.27	-0.13	-0.20	0.57	0.03	-1.00	0.99	0.68	1.01	A-	B+	A+
6	775383	6	D.1.2.2	2	4480	0.72	0.09	0.72	0.14	0.05	0.00	0.26	-0.16	0.26	-0.13	-0.12	-0.86	0.04	-0.66	0.99	-1.42	0.96	A+	A+	A+
6	889302	6	D.2.1.3	2	4480	0.85	0.09	0.85	0.03	0.03	0.00	0.34	-0.19	0.34	-0.19	-0.19	-1.73	0.04	-4.23	0.89	-5.20	0.79	A+	A-	B-
6	523580	6	D.2.1.4	1	4480	0.45	0.06	0.45	0.19	0.30	0.01	0.26	-0.17	0.26	-0.12	-0.08	0.49	0.03	-0.57	0.99	0.29	1.00	A+	A-	A+
6	859184	7	D.1.1.3	2	4471	0.61	0.19	0.09	0.61	0.11	0.00	0.31	-0.20	-0.11	0.31	-0.13	-0.33	0.03	-3.30	0.96	-2.39	0.96	A+	A+	A-
6	399282	7	D.1.1.1	2	4471	0.11	0.16	0.11	0.31	0.42	0.00	0.08	0.03	0.08	0.11	-0.17	2.52	0.05	1.47	1.05	7.89	1.50	A+	A+	A+
6	693776	7	D.1.2.3	2	4471	0.58	0.13	0.18	0.58	0.11	0.00	0.35	-0.09	-0.21	0.35	-0.18	-0.19	0.03	-6.24	0.93	-5.59	0.91	A+	A-	A+
6	345157	7	D.1.2.1	2	4471	0.58	0.11	0.58	0.22	0.10	0.00	0.41	-0.14	0.41	-0.25	-0.18	-0.18	0.03	-9.90	0.88	-9.77	0.84	A+	B-	B-
6	308885	7	D.2.1.1	2	4471	0.42	0.26	0.42	0.24	0.08	0.00	0.24	-0.09	0.24	-0.10	-0.11	0.55	0.03	1.31	1.02	1.67	1.03	A-	A-	A+
6	913703	7	D.1.1.7	2	4471	0.65	0.18	0.07	0.09	0.65	0.00	0.30	-0.11	-0.20	-0.17	0.30	-0.55	0.03	-2.80	0.96	-3.45	0.93	B-	A+	A-
6	871760	7	D.1.1.2	2	4471	0.32	0.32	0.16	0.43	0.09	0.00	0.16	0.16	-0.18	0.08	-0.14	1.08	0.03	4.70	1.07	5.64	1.13	A-	A-	A+
6	710034	7	D.1.1.5	2	4471	0.95	0.95	0.01	0.02	0.01	0.00	0.18	0.18	-0.11	-0.06	-0.15	-3.18	0.07	-0.62	0.96	-2.83	0.74	A+	A-	A-
6	418223	7	D.1.2.2	2	4471	0.58	0.22	0.58	0.09	0.12	0.00	0.24	-0.18	0.24	-0.01	-0.12	-0.18	0.03	1.67	1.02	1.72	1.03	A+	A+	A+
6	252812	7	D.2.1.4	2	4471	0.51	0.15	0.51	0.20	0.13	0.00	0.26	-0.06	0.26	-0.20	-0.08	0.12	0.03	0.70	1.01	1.26	1.02	A-	A+	A-
6	848707	7	D.2.1.2	2	4471	0.73	0.06	0.13	0.08	0.73	0.00	0.23	-0.15	-0.11	-0.09	0.23	-0.95	0.04	0.20	1.00	0.47	1.01	A-	A+	A+
6	161913	8	D.1.1.3	2	4457	0.74	0.06	0.18	0.02	0.74	0.00	0.20	-0.15	-0.07	-0.15	0.20	-1.00	0.04	2.96	1.05	3.93	1.12	A+	A+	A+
6	951639	8	D.1.1.1	2	4457	0.76	0.13	0.76	0.05	0.05	0.00	0.33	-0.18	0.33	-0.18	-0.18	-1.16	0.04	-3.17	0.94	-3.79	0.88	A+	A-	A-
6	816014	8	D.1.2.3	2	4457	0.70	0.08	0.09	0.13	0.70	0.01	0.46	-0.25	-0.22	-0.23	0.46	-0.79	0.04	-9.90	0.85	-9.90	0.76	A+	A+	A-
6	176713	8	D.1.2.1	2	4457	0.55	0.55	0.18	0.10	0.16	0.00	0.36	0.36	-0.14	-0.28	-0.11	-0.04	0.03	-5.63	0.94	-5.37	0.91	A+	A-	A-
6	940473	8	D.2.1.1	2	4457	0.69	0.16	0.69	0.07	0.07	0.00	0.30	-0.07	0.30	-0.17	-0.24	-0.72	0.03	-1.84	0.97	-0.85	0.98	A-	A+	A+
6	202041	8	D.1.1.7	2	4457	0.92	0.02	0.92	0.05	0.01	0.00	0.32	-0.17	0.32	-0.21	-0.17	-2.62	0.06	-2.57	0.89	-5.94	0.61	A+	A-	A-
6	216662	8	D.1.1.2	3	4457	0.48	0.13	0.32	0.07	0.48	0.00	0.26	-0.11	-0.14	-0.11	0.26	0.32	0.03	1.67	1.02	2.18	1.04	A-	A+	A+
6	930719	8	D.1.1.5	2	4457	0.64	0.08	0.12	0.64	0.15	0.00	0.30	-0.18	-0.17	0.30	-0.11	-0.46	0.03	-0.97	0.99	-1.53	0.97	A-	A-	B-
6	619205	8	D.1.2.2	2	4457	0.65	0.13	0.65	0.14	0.08	0.00	0.25	-0.14	0.25	-0.09	-0.14	-0.50	0.03	2.17	1.03	0.86	1.02	A-	A+	A-
6	367919	8	D.2.1.4	2	4457	0.73	0.06	0.05	0.73	0.15	0.01	0.41	-0.17	-0.25	0.41	-0.21	-0.95	0.04	-6.77	0.89	-7.58	0.80	B+	A-	A-

6	455287	8	D.2.1.2	2	4457	0.59	0.14	0.09	0.59	0.18	0.00	0.27	-0.07	-0.22	0.27	-0.11	-0.21	0.03	1.45	1.02	0.59	1.01	A+	A-	A-
6	307206	9	D.1.1.3	2	4455	0.54	0.14	0.17	0.54	0.15	0.00	0.22	-0.10	-0.03	0.22	-0.17	0.01	0.03	2.38	1.03	2.37	1.04	A-	A+	B+
6	447782	9	D.1.1.1	2	4455	0.50	0.36	0.08	0.50	0.05	0.00	0.20	-0.01	-0.18	0.20	-0.17	0.18	0.03	4.01	1.04	3.61	1.05	A+	A-	A-
6	250487	9	D.1.2.1	2	4455	0.62	0.18	0.11	0.62	0.09	0.00	0.37	-0.20	-0.17	0.37	-0.17	-0.39	0.03	-7.86	0.91	-8.24	0.86	A-	A-	A-
6	644106	9	D.2.1.1	2	4455	0.51	0.23	0.17	0.08	0.51	0.01	0.30	-0.11	-0.14	-0.17	0.30	0.12	0.03	-3.88	0.96	-3.66	0.95	A+	A-	A+
6	707818	9	D.1.1.7	2	4455	0.83	0.02	0.06	0.09	0.83	0.00	0.32	-0.20	-0.20	-0.15	0.32	-1.64	0.04	-3.64	0.91	-4.81	0.82	A+	A+	A+
6	327444	9	D.1.1.2	2	4455	0.42	0.42	0.37	0.15	0.07	0.00	0.18	0.18	-0.03	-0.15	-0.06	0.56	0.03	4.84	1.06	5.70	1.10	A-	A-	A+
6	140689	9	D.1.1.5	2	4455	0.83	0.03	0.83	0.08	0.06	0.00	0.26	-0.15	0.26	-0.14	-0.15	-1.59	0.04	-1.84	0.95	-2.46	0.91	A+	A+	A-
6	876539	9	D.1.2.2	2	4455	0.54	0.11	0.54	0.20	0.14	0.00	0.24	-0.18	0.24	-0.08	-0.09	-0.01	0.03	1.08	1.01	1.77	1.03	A-	A+	A+
6	464547	9	D.2.1.3	2	4455	0.23	0.19	0.23	0.53	0.04	0.00	-0.02	-0.03	-0.02	0.13	-0.21	1.54	0.04	8.05	1.17	9.90	1.41	A+	A+	A-
6	937146	9	D.2.1.4	2	4455	0.54	0.17	0.54	0.15	0.14	0.00	0.26	-0.06	0.26	-0.19	-0.11	0.00	0.03	-0.60	0.99	-0.31	1.00	A+	A+	A-
6	476926	9	D.1.2.3	2	4455	0.60	0.17	0.60	0.12	0.11	0.00	0.39	-0.16	0.39	-0.22	-0.17	-0.31	0.03	-9.90	0.88	-8.74	0.86	A+	A-	A-
6	217234	10	D.1.1.3	2	4451	0.61	0.07	0.12	0.20	0.61	0.00	0.38	-0.17	-0.20	-0.20	0.38	-0.31	0.03	-7.69	0.91	-7.91	0.86	A+	A+	A-
6	171086	10	D.1.1.3	2	4451	0.32	0.32	0.15	0.37	0.15	0.00	0.17	0.17	-0.15	0.04	-0.12	1.10	0.03	4.73	1.07	6.10	1.15	A+	A-	A-
6	440048	10	D.1.1.1	2	4451	0.05	0.81	0.04	0.10	0.05	0.00	-0.11	0.25	-0.17	-0.13	-0.11	3.55	0.07	1.78	1.11	9.90	2.72	A+	A+	A+
6	397205	10	D.1.2.3	2	4451	0.63	0.23	0.63	0.04	0.09	0.00	0.31	-0.17	0.31	-0.12	-0.18	-0.40	0.03	-2.57	0.97	-2.57	0.95	A-	A-	A+
6	465960	10	D.1.2.1	2	4451	0.54	0.05	0.05	0.54	0.36	0.00	0.28	-0.11	-0.19	0.28	-0.15	0.06	0.03	-0.45	0.99	-0.93	0.98	A+	A+	A+
6	449724	10	D.2.1.1	2	4451	0.62	0.15	0.62	0.13	0.10	0.00	0.33	-0.13	0.33	-0.21	-0.14	-0.32	0.03	-4.08	0.95	-4.25	0.92	A-	A+	A+
6	936107	10	D.1.1.7	2	4451	0.14	0.14	0.15	0.69	0.02	0.00	-0.07	-0.07	-0.18	0.23	-0.14	2.29	0.04	6.15	1.19	9.90	1.95	A+	A-	A-
6	760497	10	D.1.1.2	2	4451	0.71	0.13	0.11	0.71	0.05	0.00	0.31	-0.18	-0.20	0.31	-0.08	-0.79	0.04	-3.10	0.95	-3.80	0.91	A+	B-	A-
6	400676	10	D.1.2.2	2	4451	0.63	0.18	0.63	0.11	0.07	0.00	0.39	-0.23	0.39	-0.15	-0.18	-0.40	0.03	-7.69	0.90	-7.38	0.86	A-	B+	A+
6	439719	10	D.2.1.3	2	4451	0.82	0.08	0.82	0.05	0.05	0.00	0.39	-0.23	0.39	-0.17	-0.23	-1.54	0.04	-5.89	0.86	-7.65	0.72	A-	B-	B-
6	800246	10	D.2.1.4	1	4451	0.59	0.13	0.21	0.07	0.59	0.01	0.28	-0.19	0.00	-0.27	0.28	-0.17	0.03	-0.08	1.00	0.02	1.00	A-	A-	A-
6	179150	11	D.1.1.1	2	3593	0.24	0.33	0.24	0.24	0.18	0.00	0.15	0.11	0.15	-0.16	-0.12	1.52	0.04	3.05	1.07	6.13	1.22	A-	A+	A+
6	848694	11	D.1.2.3	2	3593	0.59	0.06	0.10	0.25	0.59	0.00	0.35	-0.18	-0.24	-0.13	0.35	-0.22	0.04	-4.62	0.94	-4.87	0.91	A+	A+	A-
6	236524	11	D.1.1.6	2	3593	0.49	0.38	0.49	0.08	0.05	0.00	0.42	-0.24	0.42	-0.21	-0.17	0.25	0.04	-9.90	0.88	-9.21	0.85	A+	A-	A-
6	171484	11	D.2.1.1	2	3593	0.53	0.18	0.16	0.53	0.13	0.00	0.38	-0.18	-0.20	0.38	-0.13	0.05	0.04	-7.66	0.91	-6.22	0.90	A+	A-	A-
6	365643	11	D.1.1.5	2	3593	0.39	0.23	0.25	0.39	0.14	0.00	0.24	-0.08	-0.07	0.24	-0.15	0.71	0.04	1.30	1.02	2.29	1.05	A-	A-	A-
6	478088	11	D.1.1.8	2	3593	0.48	0.14	0.48	0.15	0.23	0.00	0.27	-0.19	0.27	-0.13	-0.05	0.29	0.04	0.33	1.00	0.53	1.01	A-	A-	A-
6	268322	11	D.1.2.1	2	3593	0.67	0.67	0.04	0.04	0.25	0.00	0.38	0.38	-0.17	-0.15	-0.27	-0.66	0.04	-6.10	0.90	-6.67	0.84	A+	A-	A-
6	984405	11	D.1.1.4	2	3593	0.23	0.22	0.23	0.29	0.26	0.00	-0.03	-0.07	-0.03	0.17	-0.08	1.58	0.04	9.24	1.22	9.90	1.51	A+	A+	A-
6	437376	11	D.1.2.2	2	3593	0.64	0.15	0.64	0.10	0.11	0.00	0.31	-0.17	0.31	-0.12	-0.16	-0.51	0.04	-2.64	0.96	-2.96	0.93	A-	B+	A+

6	493810	11	D.2.1.3	2	3593	0.77	0.11	0.77	0.09	0.03	0.00	0.34	-0.17	0.34	-0.23	-0.14	-1.19	0.04	-3.90	0.92	-4.93	0.84	A+	C-	C-
6	398582	11	D.2.1.4	1	3593	0.47	0.47	0.12	0.28	0.12	0.01	0.17	0.17	-0.11	0.05	-0.20	0.32	0.04	7.09	1.09	7.06	1.13	A+	A+	A-
6	876469	12	D.1.1.3	3	3602	0.43	0.19	0.18	0.19	0.43	0.00	0.23	-0.14	-0.05	-0.10	0.23	0.53	0.04	2.26	1.03	4.01	1.08	A+	A-	A-
6	660410	12	D.1.1.1	2	3602	0.38	0.11	0.29	0.38	0.23	0.00	0.13	-0.09	-0.10	0.13	0.02	0.80	0.04	7.63	1.11	9.46	1.22	A-	A+	A-
6	690463	12	D.1.1.6	2	3602	0.73	0.10	0.73	0.09	0.08	0.00	0.40	-0.13	0.40	-0.25	-0.23	-0.93	0.04	-5.83	0.89	-6.92	0.80	A+	B-	B-
6	567186	12	D.1.2.1	2	3602	0.81	0.10	0.81	0.07	0.02	0.00	0.39	-0.26	0.39	-0.21	-0.15	-1.50	0.05	-4.72	0.88	-6.58	0.74	A+	A-	A-
6	510122	12	D.2.1.1	2	3602	0.30	0.30	0.36	0.17	0.17	0.00	0.04	0.04	0.09	-0.12	-0.04	1.20	0.04	9.53	1.18	9.90	1.34	A-	A-	A-
6	850254	12	D.1.1.8	2	3602	0.38	0.18	0.26	0.38	0.18	0.00	0.26	-0.13	-0.02	0.26	-0.17	0.76	0.04	-1.34	0.98	3.58	1.08	A+	A-	A+
6	977303	12	D.1.1.4	2	3602	0.66	0.17	0.05	0.12	0.66	0.00	0.25	-0.18	-0.13	-0.06	0.25	-0.57	0.04	1.48	1.02	0.77	1.02	A+	A+	A+
6	981039	12	D.1.2.2	2	3602	0.49	0.30	0.12	0.09	0.49	0.00	0.29	-0.12	-0.15	-0.12	0.29	0.26	0.04	-0.87	0.99	-0.06	1.00	A-	A-	A+
6	566123	12	D.2.1.3	2	3602	0.83	0.06	0.83	0.06	0.05	0.00	0.39	-0.19	0.39	-0.22	-0.20	-1.65	0.05	-4.91	0.86	-5.16	0.77	A+	B-	A-
6	457799	12	D.2.1.4	1	3602	0.81	0.07	0.07	0.81	0.05	0.01	0.36	-0.21	-0.17	0.36	-0.20	-1.45	0.04	-4.60	0.89	-3.90	0.84	A+	A+	A-
6	492107	12	D.1.2.3	2	3602	0.61	0.12	0.61	0.16	0.11	0.00	0.33	-0.16	0.33	-0.17	-0.15	-0.34	0.04	-3.02	0.96	-2.92	0.94	A-	A+	A+
6	230965	13	D.1.1.3	2	3603	0.31	0.26	0.26	0.31	0.17	0.00	0.09	0.02	0.00	0.09	-0.11	1.14	0.04	6.99	1.12	7.88	1.21	A+	A+	A+
6	643692	13	D.1.1.1	2	3603	0.06	0.04	0.12	0.78	0.06	0.00	0.00	-0.11	-0.12	0.15	0.00	3.28	0.07	1.24	1.07	9.14	2.08	A+	A+	A+
6	264190	13	D.1.1.6	2	3603	0.43	0.43	0.18	0.24	0.15	0.00	0.35	0.35	-0.09	-0.20	-0.16	0.52	0.04	-6.95	0.92	-4.55	0.92	A-	A+	A-
6	677052	13	D.2.1.1	2	3603	0.41	0.14	0.34	0.41	0.10	0.00	0.22	-0.21	0.02	0.22	-0.14	0.62	0.04	1.97	1.03	2.55	1.05	A+	A+	A-
6	324858	13	D.1.1.8	2	3603	0.16	0.35	0.37	0.11	0.16	0.00	0.10	-0.02	0.04	-0.15	0.10	2.07	0.05	2.01	1.06	5.64	1.28	A+	A+	A+
6	606872	13	D.1.2.1	2	3603	0.47	0.19	0.47	0.16	0.18	0.00	0.27	-0.21	0.27	-0.17	0.04	0.35	0.04	-0.66	0.99	-0.82	0.99	A+	A-	A+
6	819357	13	D.1.1.4	2	3603	0.59	0.31	0.59	0.08	0.02	0.00	0.11	-0.01	0.11	-0.11	-0.12	-0.22	0.04	8.94	1.12	7.76	1.16	A-	A+	A+
6	915447	13	D.1.2.2	2	3603	0.46	0.15	0.11	0.46	0.28	0.00	0.28	-0.14	-0.19	0.28	-0.05	0.41	0.04	-1.72	0.98	-1.30	0.98	A-	A+	A+
6	481038	13	D.2.1.3	2	3603	0.69	0.25	0.69	0.03	0.02	0.00	0.36	-0.27	0.36	-0.18	-0.08	-0.72	0.04	-6.25	0.90	-5.13	0.87	A-	B-	C-
6	289163	13	D.2.1.5	2	3603	0.40	0.20	0.40	0.19	0.21	0.00	0.30	-0.19	0.30	-0.08	-0.07	0.68	0.04	-3.13	0.96	-2.13	0.96	A+	A-	A+
6	201507	13	D.1.2.3	2	3603	0.57	0.14	0.16	0.13	0.57	0.00	0.32	-0.19	-0.15	-0.11	0.32	-0.09	0.04	-4.82	0.94	-2.60	0.95	A-	A+	A-
6	860178	14	D.1.1.3	2	3621	0.68	0.12	0.68	0.04	0.16	0.00	0.30	-0.24	0.30	-0.17	-0.08	-0.75	0.04	-2.61	0.96	-3.48	0.91	A+	A+	A+
6	878737	14	D.1.1.1	2	3621	0.45	0.28	0.45	0.16	0.10	0.00	0.31	-0.17	0.31	-0.14	-0.09	0.35	0.04	-3.93	0.95	-2.86	0.95	A+	A-	A-
6	602203	14	D.1.2.3	2	3621	0.54	0.23	0.11	0.54	0.12	0.00	0.34	-0.15	-0.17	0.34	-0.15	-0.05	0.04	-5.57	0.93	-4.35	0.93	A+	A+	A-
6	850641	14	D.1.1.6	2	3621	0.39	0.42	0.08	0.11	0.39	0.00	0.25	-0.10	-0.14	-0.10	0.25	0.67	0.04	-0.26	1.00	2.42	1.05	A+	A-	A+
6	192415	14	D.2.1.1	2	3621	0.34	0.28	0.24	0.34	0.13	0.00	0.18	-0.02	-0.11	0.18	-0.08	0.89	0.04	3.34	1.05	5.10	1.12	A-	A+	A-
6	980523	14	D.1.1.8	2	3621	0.36	0.36	0.21	0.22	0.21	0.00	0.24	0.24	-0.09	-0.11	-0.08	0.82	0.04	0.37	1.01	2.19	1.05	A-	A-	A+
6	845617	14	D.1.1.4	2	3621	0.59	0.24	0.15	0.02	0.59	0.00	0.23	-0.11	-0.14	-0.10	0.23	-0.29	0.04	2.07	1.03	1.85	1.04	A-	A+	A-
6	720149	14	D.1.2.2	2	3621	0.91	0.03	0.02	0.03	0.91	0.00	0.32	-0.17	-0.18	-0.18	0.32	-2.52	0.06	-2.86	0.87	-5.80	0.62	B+	A+	A+

6	985667	14	D.1.2.1	2	3621	0.23	0.28	0.23	0.24	0.24	0.00	0.15	-0.04	0.15	0.03	-0.13	1.53	0.04	2.08	1.05	6.71	1.25	A-	B+	A+
6	358904	14	D.2.1.3	2	3621	0.64	0.23	0.09	0.64	0.04	0.00	0.11	0.06	-0.12	0.11	-0.21	-0.54	0.04	7.02	1.10	9.41	1.23	A+	A-	A-
6	677361	14	D.2.1.5	2	3621	0.64	0.09	0.64	0.16	0.11	0.00	0.37	-0.19	0.37	-0.20	-0.15	-0.52	0.04	-7.24	0.90	-6.68	0.86	A-	B-	B-
6	157220	15	D.1.1.3	2	3599	0.46	0.16	0.46	0.27	0.11	0.00	0.30	-0.09	0.30	-0.14	-0.18	0.33	0.04	-0.93	0.99	0.69	1.01	A-	A+	A+
6	769563	15	D.1.1.1	2	3599	0.79	0.08	0.06	0.79	0.06	0.01	0.43	-0.17	-0.24	0.43	-0.26	-1.43	0.04	-6.82	0.84	-6.57	0.75	B+	A-	A-
6	325425	15	D.1.2.3	2	3599	0.71	0.08	0.15	0.06	0.71	0.00	0.46	-0.22	-0.24	-0.24	0.46	-0.90	0.04	-9.36	0.84	-9.03	0.76	A+	A-	A-
6	363556	15	D.1.1.6	2	3599	0.52	0.06	0.09	0.52	0.34	0.00	0.38	-0.18	-0.09	0.38	-0.25	0.05	0.04	-6.05	0.93	-5.41	0.90	A+	A+	A+
6	625942	15	D.2.1.1	2	3599	0.58	0.12	0.58	0.17	0.12	0.01	0.35	-0.20	0.35	-0.11	-0.17	-0.25	0.04	-4.18	0.94	-3.18	0.94	A-	A-	A+
6	933683	15	D.1.1.8	2	3599	0.52	0.20	0.19	0.09	0.52	0.00	0.29	-0.14	-0.10	-0.17	0.29	0.04	0.04	0.71	1.01	0.32	1.01	A-	A-	A+
6	870125	15	D.1.2.1	2	3599	0.60	0.16	0.07	0.60	0.17	0.00	0.37	-0.21	-0.22	0.37	-0.12	-0.36	0.04	-4.40	0.94	-4.26	0.91	A-	A+	A-
6	791008	15	D.1.1.4	2	3599	0.41	0.18	0.41	0.26	0.15	0.00	0.05	0.02	0.05	0.00	-0.09	0.57	0.04	9.90	1.22	9.90	1.34	A-	A+	A+
6	921844	15	D.1.2.2	2	3599	0.46	0.46	0.16	0.34	0.04	0.00	0.36	0.36	-0.15	-0.16	-0.20	0.34	0.04	-4.74	0.94	-3.33	0.94	A-	A+	A+
6	137741	15	D.2.1.3	2	3599	0.21	0.46	0.21	0.12	0.21	0.00	0.20	-0.02	0.20	-0.17	-0.04	1.68	0.04	0.99	1.02	5.26	1.23	C-	B-	A-
6	900942	15	D.2.1.5	2	3599	0.62	0.11	0.12	0.14	0.62	0.00	0.33	-0.24	-0.11	-0.11	0.33	-0.46	0.04	-2.46	0.96	-1.50	0.97	A+	A-	A-
6	255601	16	D.1.1.3	2	3602	0.64	0.08	0.21	0.64	0.07	0.00	0.34	-0.16	-0.20	0.34	-0.15	-0.48	0.04	-4.72	0.93	-4.48	0.91	A+	A-	A-
6	508069	16	D.1.1.1	2	3602	0.84	0.84	0.04	0.04	0.08	0.00	0.37	0.37	-0.19	-0.22	-0.20	-1.72	0.05	-4.72	0.86	-6.26	0.73	A+	A-	A-
6	357519	16	D.1.2.3	2	3602	0.66	0.10	0.66	0.06	0.18	0.00	0.28	-0.17	0.28	-0.12	-0.14	-0.56	0.04	-1.69	0.97	-2.32	0.95	A+	A+	A+
6	408625	16	D.1.1.6	2	3602	0.17	0.12	0.06	0.65	0.17	0.00	0.17	-0.12	-0.18	0.04	0.17	2.01	0.05	-0.57	0.98	4.17	1.21	A-	A-	A-
6	488943	16	D.2.1.1	2	3602	0.44	0.19	0.44	0.09	0.27	0.00	0.18	-0.18	0.18	-0.17	0.08	0.45	0.04	4.96	1.06	5.65	1.10	A-	A-	B+
6	294643	16	D.1.1.8	2	3602	0.52	0.12	0.07	0.52	0.28	0.00	0.17	-0.20	-0.14	0.17	0.04	0.09	0.04	6.06	1.07	5.58	1.10	A-	A+	A-
6	756340	16	D.1.2.1	2	3602	0.51	0.51	0.16	0.17	0.16	0.00	0.24	0.24	-0.06	-0.13	-0.13	0.13	0.04	0.93	1.01	0.66	1.01	A+	A+	A+
6	858394	16	D.1.1.4	2	3602	0.20	0.20	0.20	0.25	0.34	0.00	-0.07	-0.11	-0.07	0.00	0.16	1.75	0.04	8.01	1.21	9.90	1.64	A-	A+	A+
6	432376	16	D.1.2.2	2	3602	0.65	0.16	0.65	0.03	0.16	0.00	0.37	-0.16	0.37	-0.17	-0.24	-0.51	0.04	-6.52	0.91	-6.83	0.86	A+	A+	A+
6	287253	16	D.2.1.3	2	3602	0.87	0.03	0.03	0.08	0.87	0.00	0.24	-0.11	-0.04	-0.21	0.24	-1.93	0.05	-1.34	0.95	-1.64	0.91	A-	A+	A+
6	183775	16	D.2.1.5	2	3602	0.40	0.17	0.40	0.16	0.27	0.00	0.29	-0.17	0.29	-0.13	-0.05	0.66	0.04	-2.95	0.96	-1.65	0.97	A+	A-	A-
6	686322	17	D.1.1.3	2	3618	0.41	0.23	0.21	0.41	0.15	0.00	0.13	0.00	-0.11	0.13	-0.05	0.62	0.04	7.91	1.11	8.25	1.16	A+	A+	A+
6	939178	17	D.1.1.1	2	3618	0.19	0.19	0.13	0.16	0.52	0.00	-0.01	-0.01	-0.14	-0.02	0.13	1.90	0.05	5.47	1.15	9.90	1.55	A-	A+	B+
6	287763	17	D.1.2.3	2	3618	0.65	0.19	0.65	0.08	0.08	0.00	0.36	-0.20	0.36	-0.17	-0.18	-0.49	0.04	-5.46	0.92	-6.08	0.87	A+	B-	A+
6	370476	17	D.1.1.6	2	3618	0.77	0.77	0.06	0.13	0.04	0.00	0.44	0.44	-0.22	-0.28	-0.20	-1.16	0.04	-7.47	0.84	-9.10	0.72	A+	A+	A-
6	314847	17	D.1.2.1	2	3618	0.67	0.06	0.23	0.67	0.04	0.00	0.39	-0.25	-0.22	0.39	-0.17	-0.63	0.04	-6.71	0.90	-7.13	0.84	A-	A-	A-
6	495765	17	D.2.1.1	2	3618	0.63	0.15	0.63	0.15	0.07	0.00	0.37	-0.17	0.37	-0.18	-0.18	-0.39	0.04	-6.10	0.92	-6.13	0.88	A+	A-	A-
6	194508	17	D.1.1.8	2	3618	0.41	0.29	0.41	0.13	0.17	0.00	0.20	0.02	0.20	-0.13	-0.16	0.64	0.04	3.55	1.05	3.96	1.08	A-	A-	A+

6	381381	17	D.1.1.4	2	3618	0.24	0.15	0.15	0.45	0.24	0.00	0.07	-0.15	-0.08	0.11	0.07	1.52	0.04	5.59	1.12	7.81	1.29	A-	A+	A-
6	158951	17	D.1.2.2	2	3618	0.69	0.05	0.69	0.07	0.19	0.00	0.28	-0.12	0.28	-0.20	-0.12	-0.70	0.04	-0.68	0.99	-1.54	0.96	A-	A+	B+
6	857640	17	D.2.1.3	2	3618	0.76	0.04	0.15	0.04	0.76	0.00	0.25	-0.21	-0.04	-0.21	0.25	-1.15	0.04	-0.49	0.99	1.89	1.07	A+	A-	C-
6	238080	17	D.2.1.5	2	3618	0.55	0.15	0.13	0.55	0.17	0.01	0.36	-0.17	-0.18	0.36	-0.13	-0.01	0.04	-6.41	0.92	-5.85	0.90	A-	A-	A-
6	743801	18	D.1.1.1	2	3583	0.65	0.13	0.10	0.12	0.65	0.00	0.33	-0.16	-0.15	-0.17	0.33	-0.51	0.04	-3.95	0.94	-4.14	0.91	A-	A-	A-
6	800277	18	D.1.2.3	2	3583	0.66	0.05	0.13	0.14	0.66	0.01	0.32	-0.21	-0.16	-0.12	0.32	-0.59	0.04	-3.85	0.94	-4.27	0.90	A+	A+	A+
6	918470	18	D.1.1.6	2	3583	0.68	0.05	0.22	0.68	0.05	0.00	0.32	-0.16	-0.19	0.32	-0.14	-0.67	0.04	-3.53	0.94	-4.14	0.90	A+	A-	A-
6	920362	18	D.1.1.3	2	3583	0.67	0.23	0.06	0.04	0.67	0.00	0.25	-0.18	-0.10	-0.10	0.25	-0.64	0.04	-0.34	0.99	-0.35	0.99	B+	C+	A+
6	461238	18	D.2.1.1	2	3583	0.34	0.19	0.34	0.17	0.30	0.00	0.27	-0.07	0.27	-0.04	-0.18	0.96	0.04	-1.17	0.98	0.84	1.02	A-	A-	A+
6	383878	18	D.1.1.8	2	3583	0.16	0.25	0.54	0.16	0.05	0.00	0.10	0.08	-0.08	0.10	-0.14	2.12	0.05	2.43	1.08	7.14	1.39	A-	B-	A+
6	664897	18	D.1.1.4	2	3583	0.45	0.45	0.26	0.15	0.13	0.00	0.20	0.20	-0.09	-0.10	-0.05	0.41	0.04	4.98	1.06	4.71	1.08	A-	A-	A-
6	407499	18	D.1.2.2	2	3583	0.68	0.09	0.11	0.68	0.12	0.00	0.30	-0.19	-0.12	0.30	-0.14	-0.69	0.04	-2.55	0.96	-2.58	0.93	A+	A+	B+
6	543984	18	D.1.2.1	2	3583	0.27	0.45	0.27	0.12	0.15	0.00	0.23	0.02	0.23	-0.15	-0.17	1.33	0.04	-0.07	1.00	4.88	1.15	A+	A-	A+
6	319020	18	D.2.1.3	2	3583	0.31	0.63	0.31	0.03	0.02	0.00	0.31	-0.20	0.31	-0.13	-0.15	1.11	0.04	-2.90	0.95	-1.28	0.97	A-	C-	B-
6	567750	18	D.2.1.5	2	3583	0.23	0.42	0.23	0.09	0.25	0.01	0.17	0.01	0.17	-0.15	-0.06	1.56	0.04	2.42	1.05	4.61	1.17	A-	A+	A+
6	995400	19	D.1.1.1	2	3619	0.38	0.38	0.04	0.06	0.52	0.00	0.08	0.08	-0.22	-0.18	0.09	0.69	0.04	9.90	1.14	9.66	1.21	A-	A+	A+
6	341632	19	D.1.2.3	2	3619	0.73	0.10	0.07	0.73	0.10	0.00	0.33	-0.11	-0.19	0.33	-0.21	-1.04	0.04	-4.22	0.92	-5.24	0.85	A+	A-	A-
6	423388	19	D.1.1.6	2	3619	0.25	0.05	0.05	0.65	0.25	0.00	0.13	-0.17	-0.21	0.05	0.13	1.40	0.04	2.66	1.06	8.10	1.28	A-	A+	A+
6	226989	19	D.2.1.1	2	3619	0.48	0.19	0.18	0.15	0.48	0.00	0.31	-0.16	-0.17	-0.06	0.31	0.21	0.04	-3.92	0.95	-2.90	0.95	A-	A-	A-
6	157879	19	D.1.1.8	2	3619	0.54	0.11	0.16	0.54	0.19	0.00	0.29	-0.12	-0.10	0.29	-0.18	-0.06	0.04	-2.73	0.97	-2.23	0.96	A-	A-	A-
6	197476	19	D.1.1.4	1	3619	0.43	0.15	0.10	0.32	0.43	0.00	0.11	-0.07	-0.11	0.01	0.11	0.45	0.04	9.63	1.12	8.94	1.17	A+	A+	A+
6	234422	19	D.1.2.2	2	3619	0.64	0.11	0.64	0.09	0.16	0.00	0.37	-0.13	0.37	-0.20	-0.21	-0.53	0.04	-7.21	0.90	-6.38	0.87	A-	A+	A+
6	212781	19	D.1.2.1	2	3619	0.13	0.50	0.17	0.21	0.13	0.00	0.06	-0.09	-0.03	0.09	0.06	2.31	0.05	2.02	1.07	8.50	1.55	A+	A+	A-
6	107539	19	D.2.1.3	2	3619	0.82	0.06	0.82	0.06	0.06	0.00	0.34	-0.20	0.34	-0.10	-0.23	-1.60	0.05	-4.10	0.89	-3.82	0.84	A+	A-	A-
6	376425	19	D.2.1.5	2	3619	0.61	0.13	0.61	0.07	0.19	0.00	0.29	-0.15	0.29	-0.17	-0.12	-0.37	0.04	-2.89	0.96	-3.34	0.93	A+	A-	A-
6	324741	19	D.1.1.3		3619	0.69	0.69	0.16	0.08	0.06	0.01	0.39	0.39	-0.17	-0.22	-0.23	-0.79	0.04	-7.34	0.88	-7.39	0.82	A+	A+	A-
6	529656	20	D.1.1.1	2	3629	0.48	0.29	0.11	0.11	0.48	0.00	0.06	0.03	-0.08	-0.05	0.06	0.26	0.04	9.90	1.17	9.90	1.23	A+	A+	A-
6	420333	20	D.1.2.3	2	3629	0.69	0.69	0.13	0.12	0.06	0.00	0.41	0.41	-0.21	-0.23	-0.18	-0.75	0.04	-7.82	0.87	-8.13	0.81	A+	A-	A-
6	561068	20	D.1.1.6	2	3629	0.49	0.25	0.08	0.49	0.18	0.00	0.40	-0.19	-0.18	0.40	-0.17	0.20	0.04	-9.90	0.89	-8.31	0.87	A+	A+	A-
6	600659	20	D.2.1.1	2	3629	0.31	0.17	0.25	0.26	0.31	0.00	0.21	-0.17	-0.05	-0.02	0.21	1.07	0.04	1.44	1.02	2.45	1.06	A-	A-	A-
6	590811	20	D.1.1.8	2	3629	0.65	0.11	0.65	0.07	0.17	0.00	0.42	-0.24	0.42	-0.23	-0.17	-0.53	0.04	-9.02	0.87	-9.08	0.82	A-	B-	A-
6	459990	20	D.1.2.1	2	3629	0.47	0.17	0.47	0.10	0.26	0.00	0.31	-0.22	0.31	-0.19	-0.04	0.32	0.04	-3.77	0.96	-3.40	0.94	A-	A-	A-

6	621257	20	D.1.1.4	2	3629	0.24	0.22	0.24	0.37	0.17	0.01	0.07	-0.07	0.07	0.08	-0.09	1.49	0.04	5.16	1.11	9.07	1.33	A+	A+	A+
6	483450	20	D.1.1.3	2	3629	0.19	0.17	0.34	0.30	0.19	0.00	0.01	-0.14	0.08	0.03	0.01	1.85	0.04	4.91	1.13	9.16	1.43	A-	A+	A-
6	870536	20	D.1.2.2	2	3629	0.40	0.17	0.30	0.40	0.12	0.00	0.15	-0.14	0.04	0.15	-0.12	0.62	0.04	6.59	1.09	5.51	1.11	A+	A+	A+
6	662221	20	D.2.1.3	2	3629	0.69	0.04	0.69	0.03	0.23	0.00	0.25	-0.19	0.25	-0.16	-0.10	-0.76	0.04	-0.69	0.99	0.50	1.01	A+	B-	A-
6	966073	20	D.2.1.5	2	3629	0.71	0.14	0.06	0.71	0.09	0.00	0.38	-0.25	-0.20	0.38	-0.13	-0.84	0.04	-6.28	0.89	-6.37	0.84	A-	B-	B-
7	755737	0	D.1.1.5	2	78481	0.27	0.22	0.36	0.27	0.14	0.00	0.08	-0.01	-0.05	0.08	-0.01	1.17	0.01	9.90	1.15	9.90	1.32	A-	A+	A+
7	238935	0	D.1.1.1	2	78481	0.61	0.61	0.12	0.14	0.13	0.00	0.31	0.31	-0.20	-0.13	-0.11	-0.49	0.01	-9.90	0.94	-9.90	0.95	A+	A-	A-
7	904296	0	D.1.2.1	2	78481	0.56	0.22	0.56	0.13	0.10	0.00	0.31	-0.17	0.31	-0.15	-0.10	-0.23	0.01	-9.90	0.95	-9.90	0.94	A+	A-	A-
7	675564	0	D.1.1.7	2	78481	0.66	0.17	0.66	0.07	0.10	0.00	0.26	-0.10	0.26	-0.18	-0.11	-0.75	0.01	-5.69	0.98	-8.74	0.95	A+	A-	A-
7	269210	0	D.2.1.2	3	78481	0.41	0.15	0.13	0.30	0.41	0.00	0.23	-0.12	-0.07	-0.10	0.23	0.45	0.01	4.79	1.01	8.18	1.03	A+	A+	A+
7	498396	0	D.1.1.6	2	78481	0.33	0.13	0.33	0.35	0.19	0.00	0.19	-0.15	0.19	-0.03	-0.04	0.88	0.01	9.90	1.04	9.90	1.13	A-	A+	A+
7	424674	0	D.1.1.8	2	78481	0.81	0.04	0.81	0.13	0.02	0.00	0.27	-0.18	0.27	-0.14	-0.15	-1.64	0.01	-9.90	0.93	-9.90	0.87	A+	A-	A-
7	606557	0	D.2.1.1	2	78481	0.43	0.27	0.43	0.08	0.22	0.00	0.24	-0.07	0.24	-0.16	-0.10	0.35	0.01	7.27	1.02	8.45	1.03	A+	A-	A-
7	965669	0	D.1.2.3	2	78481	0.56	0.56	0.08	0.21	0.15	0.00	0.27	0.27	-0.16	-0.14	-0.09	-0.24	0.01	-3.15	0.99	-5.80	0.98	A-	A-	A-
7	610346	0	D.1.1.3	2	78481	0.62	0.16	0.05	0.16	0.62	0.00	0.24	-0.13	-0.19	-0.06	0.24	-0.53	0.01	-0.62	1.00	3.85	1.02	A-	A-	A-
7	240630	0	D.1.2.2	2	78481	0.36	0.20	0.39	0.05	0.36	0.00	0.30	-0.21	-0.06	-0.13	0.30	0.69	0.01	-9.90	0.96	-8.20	0.96	A-	A-	A-
7	555973	0	D.2.1.3	2	78481	0.68	0.10	0.15	0.07	0.68	0.00	0.33	-0.16	-0.20	-0.14	0.33	-0.86	0.01	-9.90	0.90	-9.90	0.85	A-	A-	A-
7	583205	0	D.2.1.4	2	78481	0.21	0.21	0.38	0.06	0.36	0.00	0.23	0.23	0.08	-0.16	-0.20	1.58	0.01	-3.94	0.98	9.90	1.12	A+	A+	A+
7	799155	1	D.1.2.1	2	4371	0.56	0.07	0.06	0.56	0.32	0.00	0.37	-0.19	-0.17	0.37	-0.21	-0.25	0.03	-6.66	0.92	-5.88	0.90	A-	A-	A+
7	994666	1	D.1.1.7	2	4371	0.72	0.07	0.08	0.13	0.72	0.00	0.34	-0.20	-0.19	-0.14	0.34	-1.04	0.04	-4.28	0.93	-4.52	0.88	A+	A-	A+
7	581841	1	D.1.2.3	2	4371	0.21	0.21	0.42	0.12	0.25	0.00	0.23	0.23	-0.03	-0.09	-0.11	1.60	0.04	-0.71	0.98	4.42	1.17	A+	A+	A-
7	768612	1	D.2.1.2	3	4371	0.42	0.16	0.28	0.42	0.14	0.00	0.24	-0.12	-0.11	0.24	-0.07	0.41	0.03	2.91	1.04	3.90	1.07	A-	A-	A-
7	277686	1	D.1.1.5	2	4371	0.23	0.23	0.29	0.26	0.21	0.00	0.04	0.04	-0.07	-0.01	0.05	1.47	0.04	7.88	1.17	9.78	1.36	A-	A+	A+
7	412799	1	D.1.1.1	2	4371	0.30	0.30	0.22	0.18	0.30	0.00	0.20	-0.02	-0.11	-0.08	0.20	1.04	0.04	2.91	1.05	4.41	1.11	A-	A-	A-
7	875415	1	D.2.1.1	2	4371	0.64	0.09	0.09	0.18	0.64	0.00	0.36	-0.23	-0.21	-0.12	0.36	-0.66	0.03	-5.92	0.92	-5.65	0.89	A+	A+	A+
7	431699	1	D.1.1.2	2	4371	0.78	0.11	0.06	0.78	0.04	0.00	0.40	-0.24	-0.22	0.40	-0.16	-1.42	0.04	-6.76	0.87	-8.29	0.74	B+	A-	A-
7	945978	1	D.1.1.3	2	4371	0.31	0.24	0.31	0.11	0.35	0.00	0.14	-0.12	0.14	-0.19	0.11	1.00	0.04	6.48	1.11	7.87	1.20	A-	A+	A+
7	659002	1	D.1.2.2	2	4371	0.25	0.34	0.19	0.21	0.25	0.00	0.22	0.03	-0.18	-0.08	0.22	1.33	0.04	1.48	1.03	3.72	1.12	A-	B+	A+
7	559891	1	D.2.1.3	2	4371	0.55	0.30	0.01	0.55	0.13	0.00	0.14	-0.09	-0.04	0.14	-0.08	-0.22	0.03	9.64	1.12	9.70	1.17	A+	A+	A-
7	671505	2	D.1.2.1	2	4358	0.52	0.04	0.18	0.52	0.25	0.00	0.28	-0.15	-0.04	0.28	-0.21	-0.09	0.03	-1.09	0.99	-1.00	0.98	A-	A-	A-
7	301284	2	D.1.1.7	2	4358	0.71	0.71	0.11	0.06	0.11	0.00	0.40	0.40	-0.20	-0.21	-0.20	-0.99	0.04	-8.33	0.87	-8.77	0.79	A+	A-	B-
7	489362	2	D.1.2.3	2	4358	0.28	0.15	0.38	0.20	0.28	0.00	0.24	-0.05	-0.12	-0.07	0.24	1.13	0.04	-0.79	0.99	3.82	1.10	A-	A-	A+

7	129152	2	D.2.1.2	3	4358	0.30	0.22	0.09	0.30	0.39	0.00	0.21	-0.17	-0.14	0.21	0.03	1.02	0.04	1.49	1.02	4.10	1.10	A+	A-	A+
7	507455	2	D.1.1.5	2	4358	0.49	0.12	0.49	0.18	0.21	0.00	0.25	-0.15	0.25	-0.09	-0.10	0.09	0.03	1.18	1.01	1.20	1.02	A-	A+	A+
7	825879	2	D.1.1.1	2	4358	0.30	0.30	0.15	0.21	0.33	0.00	0.15	0.15	-0.13	-0.01	-0.02	0.99	0.04	4.80	1.08	7.03	1.18	A-	A-	A+
7	495216	2	D.2.1.1	2	4358	0.43	0.23	0.13	0.43	0.21	0.00	0.13	-0.02	-0.11	0.13	-0.04	0.37	0.03	9.69	1.12	9.03	1.15	A-	A+	A+
7	349086	2	D.1.1.2	2	4358	0.20	0.24	0.20	0.19	0.37	0.01	-0.02	-0.10	-0.02	-0.07	0.18	1.63	0.04	7.07	1.17	9.90	1.54	A-	A+	A+
7	792756	2	D.1.1.3	2	4358	0.70	0.10	0.07	0.70	0.13	0.00	0.36	-0.12	-0.22	0.36	-0.20	-0.94	0.04	-6.14	0.91	-6.47	0.85	B-	A-	B-
7	651251	2	D.1.2.2	2	4358	0.79	0.08	0.09	0.79	0.05	0.00	0.28	-0.10	-0.17	0.28	-0.17	-1.48	0.04	-2.33	0.95	-2.29	0.92	A+	A-	A+
7	846193	2	D.2.1.3	2	4358	0.61	0.05	0.27	0.06	0.61	0.00	0.21	-0.11	-0.10	-0.13	0.21	-0.50	0.03	3.25	1.04	2.83	1.05	A+	A+	A+
7	810098	3	D.1.2.1	2	4344	0.34	0.34	0.39	0.13	0.14	0.00	0.34	0.34	-0.11	-0.13	-0.18	0.82	0.03	-4.36	0.94	-2.03	0.96	A+	A-	A-
7	129715	3	D.1.1.7	2	4344	0.61	0.61	0.07	0.24	0.07	0.00	0.43	0.43	-0.23	-0.23	-0.18	-0.49	0.03	-9.90	0.88	-9.90	0.82	A+	A+	A+
7	373695	3	D.2.1.2	3	4344	0.56	0.20	0.18	0.56	0.06	0.00	0.30	-0.09	-0.19	0.30	-0.16	-0.26	0.03	-0.97	0.99	-1.82	0.97	A-	A+	A+
7	543352	3	D.1.2.3	2	4344	0.52	0.17	0.26	0.52	0.05	0.00	0.34	-0.22	-0.13	0.34	-0.13	-0.07	0.03	-4.09	0.95	-3.83	0.94	A-	A-	A-
7	246281	3	D.1.1.5	2	4344	0.33	0.20	0.16	0.33	0.30	0.00	0.21	-0.11	-0.12	0.21	-0.03	0.85	0.03	3.64	1.06	4.77	1.11	A-	A+	A-
7	109881	3	D.1.1.1	2	4344	0.36	0.18	0.36	0.29	0.18	0.00	0.13	-0.03	0.13	-0.08	-0.03	0.70	0.03	9.89	1.14	8.91	1.20	A-	A+	A+
7	122518	3	D.2.1.1	2	4344	0.32	0.40	0.13	0.15	0.32	0.00	0.24	-0.17	-0.08	0.00	0.24	0.91	0.04	2.30	1.04	2.34	1.06	A+	A+	A+
7	414972	3	D.1.1.2	2	4344	0.47	0.21	0.47	0.15	0.16	0.00	0.21	-0.17	0.21	-0.06	-0.02	0.15	0.03	5.58	1.07	6.35	1.11	A-	A-	A-
7	991027	3	D.1.1.3	2	4344	0.57	0.24	0.10	0.08	0.57	0.00	0.36	-0.18	-0.18	-0.16	0.36	-0.32	0.03	-5.69	0.93	-5.28	0.91	A+	A-	A-
7	922668	3	D.1.2.2	2	4344	0.21	0.43	0.25	0.11	0.21	0.00	0.12	-0.12	-0.01	0.04	0.12	1.60	0.04	4.46	1.10	7.69	1.31	A-	A+	A-
7	352584	3	D.2.1.3	2	4344	0.10	0.07	0.05	0.77	0.10	0.00	-0.01	-0.17	-0.16	0.20	-0.01	2.48	0.05	3.61	1.14	9.82	1.73	A+	B+	A+
7	665227	4	D.1.2.1	2	4342	0.65	0.08	0.20	0.65	0.07	0.00	0.39	-0.24	-0.18	0.39	-0.17	-0.71	0.03	-7.56	0.90	-7.66	0.85	A+	A-	A-
7	895746	4	D.1.1.7	2	4342	0.57	0.09	0.21	0.57	0.13	0.00	0.35	-0.21	-0.13	0.35	-0.18	-0.32	0.03	-5.23	0.94	-5.71	0.91	A+	A-	A+
7	522562	4	D.1.2.3	2	4342	0.43	0.16	0.43	0.24	0.17	0.00	0.29	-0.14	0.29	-0.10	-0.13	0.37	0.03	-0.93	0.99	0.16	1.00	A-	A-	A+
7	683754	4	D.2.1.2	3	4342	0.80	0.05	0.09	0.06	0.80	0.00	0.34	-0.17	-0.20	-0.18	0.34	-1.58	0.04	-4.60	0.90	-5.44	0.81	A-	A-	A+
7	440595	4	D.1.1.5	2	4342	0.50	0.50	0.23	0.10	0.17	0.00	0.18	0.18	-0.06	-0.14	-0.06	0.04	0.03	6.82	1.08	6.32	1.10	A-	A-	A-
7	837883	4	D.1.1.1	2	4342	0.42	0.14	0.16	0.27	0.42	0.00	0.18	-0.10	-0.06	-0.06	0.18	0.39	0.03	6.31	1.08	6.77	1.12	A-	A+	A+
7	210363	4	D.2.1.1	2	4342	0.27	0.09	0.25	0.27	0.39	0.00	-0.05	-0.11	-0.01	-0.05	0.13	1.17	0.04	9.90	1.26	9.90	1.50	A-	A+	A+
7	676713	4	D.1.1.2	2	4342	0.53	0.18	0.17	0.11	0.53	0.00	0.35	-0.16	-0.15	-0.16	0.35	-0.11	0.03	-6.04	0.93	-5.44	0.92	A+	A+	A+
7	205136	4	D.1.1.3	2	4342	0.32	0.32	0.33	0.10	0.25	0.00	0.08	0.08	-0.03	-0.20	0.09	0.93	0.04	9.44	1.15	9.58	1.24	A-	A+	A+
7	492870	4	D.1.2.2	2	4342	0.67	0.06	0.67	0.22	0.04	0.00	0.36	-0.17	0.36	-0.24	-0.12	-0.80	0.03	-5.88	0.92	-5.88	0.87	A+	A-	A-
7	179634	4	D.2.1.3	2	4342	0.43	0.14	0.14	0.43	0.29	0.00	0.20	-0.17	-0.13	0.20	0.02	0.35	0.03	5.48	1.07	6.29	1.11	A-	A+	A-
7	665640	5	D.2.1.2	3	4328	0.56	0.22	0.09	0.12	0.56	0.00	0.40	-0.17	-0.26	-0.15	0.40	-0.26	0.03	-6.01	0.93	-5.64	0.90	A-	A+	A+
7	597549	5	D.1.2.1	2	4328	0.61	0.61	0.15	0.11	0.13	0.00	0.38	0.38	-0.14	-0.22	-0.19	-0.47	0.03	-4.54	0.94	-4.20	0.91	A-	A-	A-

7	936301	5	D.1.1.7	2	4328	0.68	0.07	0.68	0.09	0.15	0.00	0.42	-0.20	0.42	-0.24	-0.19	-0.86	0.04	-6.62	0.90	-6.63	0.84	A+	A-	A-
7	432277	5	D.1.2.3	2	4328	0.51	0.26	0.06	0.51	0.16	0.00	0.31	-0.15	-0.14	0.31	-0.15	-0.02	0.03	0.67	1.01	0.29	1.01	A+	A+	A-
7	892857	5	D.1.1.5	2	4328	0.34	0.14	0.12	0.40	0.34	0.00	0.20	-0.17	-0.23	0.08	0.20	0.85	0.04	6.67	1.10	7.07	1.18	A+	A-	A+
7	616701	5	D.1.1.1	2	4328	0.21	0.37	0.21	0.31	0.11	0.00	0.09	0.06	0.09	-0.07	-0.10	1.61	0.04	7.04	1.16	9.90	1.49	A-	B-	A-
7	361734	5	D.2.1.1	2	4328	0.60	0.13	0.60	0.12	0.15	0.00	0.27	-0.06	0.27	-0.19	-0.13	-0.43	0.03	3.82	1.05	2.99	1.06	A-	A+	A+
7	945740	5	D.1.1.2	2	4328	0.82	0.82	0.06	0.05	0.07	0.00	0.39	0.39	-0.25	-0.23	-0.15	-1.72	0.04	-5.36	0.87	-5.70	0.77	A+	A-	B-
7	582388	5	D.1.1.3	2	4328	0.68	0.09	0.68	0.16	0.07	0.00	0.39	-0.26	0.39	-0.15	-0.19	-0.83	0.04	-4.87	0.93	-4.70	0.88	A+	A+	A+
7	673955	5	D.1.2.2	2	4328	0.90	0.05	0.02	0.90	0.03	0.00	0.35	-0.23	-0.18	0.35	-0.17	-2.49	0.05	-3.22	0.88	-6.07	0.64	A-	A-	A-
7	544503	5	D.2.1.3	2	4328	0.63	0.06	0.30	0.63	0.01	0.00	0.36	-0.21	-0.23	0.36	-0.14	-0.59	0.03	-3.16	0.96	-2.42	0.95	A-	B-	C-
7	442267	6	D.1.2.1	2	4331	0.74	0.74	0.10	0.07	0.09	0.00	0.42	0.42	-0.22	-0.22	-0.22	-1.25	0.04	-7.86	0.86	-8.47	0.76	A+	A-	B-
7	292010	6	D.1.1.7	2	4331	0.72	0.09	0.05	0.14	0.72	0.00	0.38	-0.18	-0.23	-0.19	0.38	-1.13	0.04	-5.75	0.90	-6.10	0.84	A+	A-	A+
7	881576	6	D.2.1.2	3	4331	0.61	0.08	0.16	0.61	0.14	0.00	0.33	-0.19	-0.18	0.33	-0.12	-0.54	0.03	-3.40	0.96	-3.73	0.93	A-	A+	A+
7	133003	6	D.1.2.3	2	4331	0.67	0.67	0.11	0.09	0.13	0.00	0.27	0.27	-0.07	-0.21	-0.13	-0.83	0.03	-0.26	1.00	1.01	1.02	A+	A-	A-
7	761755	6	D.1.1.5	2	4331	0.26	0.20	0.23	0.31	0.26	0.00	0.19	-0.09	-0.09	-0.01	0.19	1.25	0.04	2.34	1.04	5.84	1.18	A-	A+	A+
7	570490	6	D.1.1.1	2	4331	0.23	0.19	0.23	0.47	0.11	0.01	-0.01	-0.17	-0.01	0.26	-0.18	1.39	0.04	9.82	1.21	9.90	1.54	A-	A-	A+
7	281799	6	D.2.1.1	2	4331	0.34	0.04	0.34	0.16	0.45	0.00	0.13	-0.13	0.13	-0.07	-0.02	0.76	0.03	9.14	1.14	9.90	1.24	A+	A+	A-
7	182797	6	D.1.1.2	2	4331	0.59	0.17	0.15	0.59	0.09	0.00	0.35	-0.16	-0.16	0.35	-0.17	-0.43	0.03	-4.23	0.95	-4.64	0.92	A+	A+	A+
7	321701	6	D.1.1.3	2	4331	0.84	0.04	0.07	0.84	0.05	0.00	0.39	-0.19	-0.24	0.39	-0.17	-1.91	0.04	-5.49	0.86	-7.32	0.70	A+	A+	A+
7	569919	6	D.1.2.2	2	4331	0.30	0.37	0.21	0.12	0.30	0.00	0.17	-0.06	-0.07	-0.07	0.17	0.97	0.04	4.63	1.08	7.22	1.19	A-	A+	B+
7	174179	6	D.2.1.4	2	4331	0.67	0.04	0.25	0.67	0.04	0.00	0.22	-0.13	-0.08	0.22	-0.21	-0.82	0.03	3.13	1.05	2.85	1.07	A-	A-	B-
7	867178	7	D.1.2.1	2	4311	0.58	0.05	0.58	0.32	0.05	0.00	0.35	-0.17	0.35	-0.22	-0.16	-0.35	0.03	-4.62	0.95	-4.91	0.91	A-	A-	A-
7	505418	7	D.1.1.7	2	4311	0.53	0.06	0.53	0.13	0.27	0.00	0.27	-0.18	0.27	-0.14	-0.09	-0.12	0.03	1.25	1.01	0.23	1.00	A+	A-	A-
7	293994	7	D.2.1.2	3	4311	0.57	0.13	0.57	0.19	0.10	0.00	0.38	-0.19	0.38	-0.15	-0.20	-0.28	0.03	-7.54	0.91	-7.27	0.88	A+	A+	A+
7	691370	7	D.1.2.3	2	4311	0.76	0.04	0.08	0.76	0.12	0.01	0.41	-0.20	-0.23	0.41	-0.20	-1.29	0.04	-7.32	0.87	-7.89	0.76	A+	A-	B-
7	181940	7	D.1.1.5	2	4311	0.51	0.51	0.06	0.18	0.25	0.01	0.32	0.32	-0.23	-0.19	-0.06	-0.01	0.03	-2.53	0.97	-2.79	0.95	A+	A+	A-
7	649396	7	D.1.1.1	2	4311	0.81	0.08	0.06	0.81	0.05	0.00	0.30	-0.14	-0.18	0.30	-0.16	-1.65	0.04	-2.09	0.95	-3.97	0.85	A+	A+	A+
7	263370	7	D.2.1.1	2	4311	0.71	0.07	0.11	0.71	0.12	0.00	0.15	-0.14	-0.14	0.15	0.04	-0.98	0.04	5.29	1.09	6.87	1.20	A+	A-	A-
7	639861	7	D.1.1.2	2	4311	0.64	0.64	0.09	0.19	0.08	0.00	0.34	0.34	-0.20	-0.14	-0.17	-0.62	0.03	-4.54	0.94	-3.08	0.94	A-	A-	A+
7	100660	7	D.1.1.3	2	4311	0.51	0.11	0.16	0.21	0.51	0.00	0.26	-0.15	-0.16	-0.05	0.26	-0.02	0.03	2.52	1.03	2.52	1.04	A-	A-	A+
7	818137	7	D.1.2.2	2	4311	0.32	0.30	0.26	0.12	0.32	0.00	0.27	-0.13	-0.10	-0.07	0.27	0.92	0.04	0.35	1.01	1.59	1.04	A+	A-	A+
7	802295	7	D.2.1.4	2	4311	0.12	0.37	0.24	0.12	0.27	0.00	-0.02	0.04	-0.08	-0.02	0.05	2.37	0.05	4.05	1.15	9.90	2.03	A+	A+	A-
7	306225	8	D.1.2.1	2	4341	0.60	0.10	0.14	0.60	0.16	0.00	0.28	-0.12	-0.21	0.28	-0.08	-0.45	0.03	-1.94	0.98	-1.49	0.97	A+	B-	A-

7	393655	8	D.1.1.7	2	4341	0.25	0.25	0.12	0.51	0.12	0.00	0.15	0.15	-0.14	0.01	-0.07	1.29	0.04	2.60	1.05	6.22	1.19	A+	A+	A+
7	977127	8	D.1.2.3	2	4341	0.43	0.18	0.43	0.08	0.30	0.00	0.44	-0.17	0.44	-0.18	-0.22	0.34	0.03	-9.90	0.85	-9.90	0.83	A+	A-	A-
7	368819	8	D.2.1.2	3	4341	0.74	0.13	0.74	0.08	0.05	0.00	0.36	-0.21	0.36	-0.17	-0.17	-1.17	0.04	-5.84	0.90	-7.18	0.81	A+	A+	A-
7	149083	8	D.1.1.5	2	4341	0.26	0.31	0.13	0.30	0.26	0.00	0.06	-0.05	-0.13	0.11	0.06	1.22	0.04	7.96	1.15	7.97	1.24	A-	A-	A-
7	674025	8	D.1.1.1	2	4341	0.23	0.23	0.26	0.36	0.14	0.01	0.04	0.04	0.04	0.08	-0.19	1.40	0.04	6.68	1.14	9.87	1.34	A-	A-	A+
7	477682	8	D.2.1.1	2	4341	0.37	0.17	0.37	0.22	0.24	0.00	0.16	-0.06	0.16	-0.04	-0.09	0.64	0.03	5.48	1.07	5.35	1.10	A-	A+	A+
7	266044	8	D.1.1.2	2	4341	0.65	0.13	0.09	0.65	0.13	0.01	0.20	-0.12	-0.06	0.20	-0.09	-0.66	0.03	2.09	1.03	3.50	1.07	A+	A+	A+
7	422164	8	D.1.1.3	2	4341	0.14	0.38	0.38	0.10	0.14	0.00	0.07	-0.01	0.03	-0.11	0.07	2.10	0.05	2.54	1.08	7.72	1.42	A-	A-	A+
7	256978	8	D.1.2.2	2	4341	0.67	0.09	0.15	0.08	0.67	0.00	0.37	-0.13	-0.26	-0.15	0.37	-0.77	0.03	-7.97	0.89	-7.73	0.84	A+	A-	A-
7	674549	8	D.2.1.4	2	4341	0.20	0.49	0.14	0.20	0.16	0.00	0.12	0.12	-0.18	0.12	-0.10	1.61	0.04	2.66	1.06	5.77	1.22	A+	A+	A-
7	103980	9	D.1.2.1	2	4391	0.62	0.08	0.62	0.24	0.06	0.00	0.44	-0.23	0.44	-0.25	-0.18	-0.56	0.03	-9.90	0.85	-9.90	0.80	A+	A-	B-
7	584628	9	D.1.1.7	2	4391	0.57	0.05	0.06	0.57	0.32	0.00	0.33	-0.20	-0.19	0.33	-0.15	-0.27	0.03	-5.21	0.94	-5.16	0.92	A-	A+	A-
7	571843	9	D.1.2.3	2	4391	0.84	0.84	0.04	0.04	0.08	0.00	0.36	0.36	-0.16	-0.21	-0.23	-1.85	0.04	-4.75	0.88	-8.04	0.69	A+	B-	B-
7	961352	9	D.1.1.5	2	4391	0.38	0.30	0.15	0.38	0.16	0.00	-0.03	0.07	-0.09	-0.03	0.05	0.61	0.03	9.90	1.25	9.90	1.32	A-	A+	A+
7	250504	9	D.1.1.1	2	4391	0.37	0.22	0.37	0.23	0.17	0.01	0.21	-0.05	0.21	-0.02	-0.17	0.65	0.03	3.09	1.04	3.25	1.06	A-	A+	A+
7	732681	9	D.2.1.1	2	4391	0.27	0.20	0.20	0.27	0.33	0.00	0.04	-0.15	-0.10	0.04	0.18	1.18	0.04	8.92	1.16	9.90	1.34	A+	A+	A-
7	753798	9	D.1.1.2	2	4391	0.74	0.12	0.08	0.06	0.74	0.00	0.42	-0.24	-0.19	-0.21	0.42	-1.14	0.04	-8.94	0.85	-9.63	0.75	A+	B-	B-
7	808263	9	D.1.1.3	2	4391	0.33	0.33	0.25	0.16	0.26	0.00	0.20	0.20	-0.17	-0.08	0.03	0.85	0.03	2.59	1.04	4.55	1.10	A-	A+	A+
7	900656	9	D.1.2.2	2	4391	0.51	0.12	0.51	0.30	0.07	0.00	0.31	-0.12	0.31	-0.20	-0.08	-0.03	0.03	-3.48	0.96	-3.32	0.95	A+	A+	A+
7	240326	9	D.2.1.3	2	4391	0.39	0.17	0.19	0.39	0.25	0.00	0.09	-0.07	-0.14	0.09	0.08	0.57	0.03	9.90	1.14	9.90	1.20	A-	A+	A+
7	284482	9	D.2.1.4	2	4391	0.06	0.12	0.49	0.33	0.06	0.00	0.03	-0.22	0.17	-0.05	0.03	3.14	0.07	0.86	1.05	7.80	1.81	A+	A+	A+
7	957599	10	D.1.2.1	2	4385	0.58	0.21	0.06	0.15	0.58	0.00	0.45	-0.23	-0.18	-0.22	0.45	-0.40	0.03	-9.90	0.86	-9.90	0.81	A+	A-	A-
7	999715	10	D.1.1.7	2	4385	0.52	0.52	0.11	0.21	0.16	0.00	0.44	0.44	-0.18	-0.18	-0.25	-0.10	0.03	-9.90	0.86	-9.90	0.82	A-	A-	B-
7	216108	10	D.1.2.3	2	4385	0.39	0.38	0.39	0.09	0.14	0.00	0.45	-0.20	0.45	-0.21	-0.17	0.53	0.03	-9.90	0.85	-8.97	0.85	A-	A-	A-
7	760134	10	D.1.1.5	2	4385	0.36	0.36	0.23	0.23	0.17	0.01	0.13	0.13	-0.02	-0.07	-0.05	0.65	0.03	9.17	1.13	7.97	1.16	A-	A-	A+
7	276836	10	D.1.1.1	2	4385	0.61	0.12	0.14	0.61	0.12	0.00	0.38	-0.21	-0.17	0.38	-0.16	-0.51	0.03	-8.03	0.91	-7.56	0.87	A-	A-	A-
7	771119	10	D.2.1.1	2	4385	0.40	0.40	0.40	0.10	0.10	0.00	0.18	-0.01	0.18	-0.15	-0.12	0.47	0.03	6.43	1.08	6.02	1.11	A+	A+	A+
7	958802	10	D.1.1.2	2	4385	0.58	0.14	0.58	0.10	0.18	0.01	0.38	-0.23	0.38	-0.17	-0.14	-0.37	0.03	-7.69	0.91	-7.44	0.88	A+	A+	B+
7	278939	10	D.1.1.3	2	4385	0.21	0.21	0.13	0.39	0.27	0.00	-0.08	-0.08	-0.13	0.07	0.11	1.52	0.04	9.90	1.27	9.90	1.58	A-	A+	A+
7	735148	10	D.1.2.2	2	4385	0.53	0.07	0.05	0.53	0.35	0.00	0.30	-0.05	-0.09	0.30	-0.24	-0.14	0.03	-1.50	0.98	-1.96	0.97	A+	A-	A-
7	618341	10	D.2.1.3	2	4385	0.45	0.15	0.45	0.21	0.20	0.00	0.14	-0.11	0.14	-0.08	0.01	0.25	0.03	9.90	1.12	8.94	1.15	A-	A-	A+
7	771857	10	D.2.1.4	2	4385	0.35	0.35	0.14	0.22	0.28	0.00	0.17	0.17	-0.11	-0.13	0.03	0.71	0.03	6.26	1.09	5.44	1.11	A+	A+	A+

7	539287	11	D.1.1.4	2	3474	0.47	0.12	0.18	0.22	0.47	0.00	0.26	-0.11	-0.13	-0.10	0.26	0.19	0.04	3.93	1.05	3.16	1.06	A+	A-	A+
7	778130	11	D.1.2.4	2	3474	0.71	0.71	0.08	0.11	0.09	0.00	0.35	0.35	-0.17	-0.23	-0.13	-1.06	0.04	-3.40	0.94	-2.73	0.91	A+	B-	A-
7	475205	11	D.1.2.1	2	3474	0.61	0.05	0.08	0.26	0.61	0.00	0.37	-0.22	-0.15	-0.20	0.37	-0.50	0.04	-3.76	0.95	-2.98	0.93	A+	A-	A-
7	890689	11	D.1.1.6	2	3474	0.74	0.08	0.13	0.05	0.74	0.00	0.41	-0.20	-0.22	-0.21	0.41	-1.19	0.04	-6.34	0.88	-5.99	0.80	A+	A-	A-
7	273496	11	D.1.1.8	2	3474	0.46	0.08	0.46	0.13	0.32	0.00	0.41	-0.19	0.41	-0.16	-0.19	0.22	0.04	-6.14	0.92	-5.19	0.90	A-	A+	B+
7	575530	11	D.1.1.1	2	3474	0.66	0.66	0.08	0.11	0.15	0.01	0.43	0.43	-0.25	-0.22	-0.17	-0.74	0.04	-7.33	0.89	-7.08	0.82	A-	A-	A+
7	868180	11	D.2.1.1	2	3474	0.46	0.18	0.27	0.46	0.09	0.00	0.26	-0.19	-0.03	0.26	-0.16	0.24	0.04	3.89	1.05	3.39	1.07	A+	A-	A-
7	357713	11	D.1.1.2	2	3474	0.56	0.23	0.08	0.56	0.13	0.01	0.35	-0.14	-0.23	0.35	-0.13	-0.25	0.04	-2.07	0.97	-2.56	0.95	A-	A-	A-
7	284004	11	D.1.2.2	2	3474	0.80	0.07	0.10	0.80	0.03	0.00	0.31	-0.19	-0.17	0.31	-0.14	-1.58	0.05	-1.63	0.96	-2.29	0.90	A+	A+	A-
7	884502	11	D.2.1.3	2	3474	0.53	0.12	0.53	0.13	0.22	0.00	0.20	-0.09	0.20	-0.22	0.01	-0.11	0.04	8.02	1.11	6.99	1.15	A+	A+	A+
7	890087	11	D.2.1.4	2	3474	0.10	0.44	0.28	0.10	0.18	0.00	-0.05	0.12	0.01	-0.05	-0.12	2.56	0.06	4.15	1.18	9.90	2.20	A-	A+	A-
7	705229	12	D.1.1.4	2	3501	0.40	0.27	0.15	0.40	0.18	0.00	0.26	-0.05	-0.18	0.26	-0.10	0.52	0.04	2.14	1.03	3.32	1.07	A-	A-	B-
7	907191	12	D.1.2.4	2	3501	0.59	0.05	0.10	0.27	0.59	0.00	0.38	-0.17	-0.23	-0.19	0.38	-0.39	0.04	-4.84	0.93	-4.70	0.90	A-	A-	A-
7	595131	12	D.1.2.1	2	3501	0.51	0.21	0.51	0.07	0.22	0.00	0.44	-0.24	0.44	-0.22	-0.17	0.00	0.04	-9.24	0.88	-7.91	0.86	A-	B-	A-
7	767875	12	D.1.1.6	2	3501	0.58	0.15	0.58	0.17	0.09	0.00	0.39	-0.19	0.39	-0.18	-0.17	-0.37	0.04	-4.94	0.93	-5.60	0.89	A-	A-	A+
7	423455	12	D.1.1.8	2	3501	0.86	0.08	0.05	0.86	0.02	0.00	0.35	-0.23	-0.22	0.35	-0.12	-2.07	0.05	-3.28	0.90	-5.69	0.70	A+	A+	A+
7	182696	12	D.1.1.1	2	3501	0.16	0.21	0.24	0.38	0.16	0.01	-0.07	-0.02	-0.03	0.11	-0.07	1.96	0.05	7.90	1.25	9.90	1.97	A-	A-	A-
7	689201	12	D.2.1.1	2	3501	0.53	0.11	0.19	0.53	0.17	0.00	0.30	-0.19	-0.17	0.30	-0.07	-0.10	0.04	0.42	1.01	1.07	1.02	A+	A-	A+
7	440162	12	D.1.1.2	2	3501	0.70	0.13	0.07	0.09	0.70	0.01	0.43	-0.24	-0.25	-0.17	0.43	-0.99	0.04	-7.96	0.86	-7.78	0.78	A+	A+	A+
7	897784	12	D.1.2.2	2	3501	0.66	0.08	0.66	0.11	0.15	0.00	0.38	-0.24	0.38	-0.17	-0.18	-0.77	0.04	-5.04	0.92	-5.46	0.86	A-	A+	A+
7	229694	12	D.2.1.3	2	3501	0.56	0.12	0.16	0.16	0.56	0.00	0.37	-0.20	-0.21	-0.11	0.37	-0.25	0.04	-4.07	0.95	-3.21	0.94	A-	A-	A-
7	388776	12	D.2.1.4	2	3501	0.46	0.46	0.16	0.18	0.20	0.00	0.15	0.15	0.08	-0.20	-0.07	0.25	0.04	9.90	1.16	9.64	1.20	A-	A-	B-
7	678846	13	D.1.2.4	2	3484	0.79	0.07	0.02	0.11	0.79	0.00	0.39	-0.20	-0.19	-0.25	0.39	-1.50	0.04	-4.81	0.88	-5.91	0.77	A+	A+	A+
7	336904	13	D.1.2.1	2	3484	0.70	0.70	0.09	0.08	0.12	0.00	0.38	0.38	-0.21	-0.19	-0.17	-0.94	0.04	-4.61	0.92	-5.32	0.85	A+	A-	A-
7	382738	13	D.1.1.4	2	3484	0.30	0.19	0.25	0.26	0.30	0.00	0.18	-0.04	-0.05	-0.08	0.18	1.10	0.04	3.23	1.06	6.81	1.22	A-	A+	A+
7	418086	13	D.1.1.6	2	3484	0.27	0.09	0.31	0.32	0.27	0.00	0.08	-0.17	0.07	-0.03	0.08	1.27	0.04	6.65	1.14	9.90	1.39	A-	A-	A-
7	328263	13	D.1.1.8	2	3484	0.86	0.06	0.05	0.03	0.86	0.00	0.37	-0.23	-0.19	-0.17	0.37	-2.04	0.05	-4.14	0.87	-5.13	0.73	A-	A-	A-
7	209449	13	D.1.1.1	2	3484	0.20	0.36	0.20	0.14	0.30	0.01	0.03	0.09	0.03	-0.05	-0.07	1.72	0.05	6.11	1.17	9.90	1.54	A-	A+	A+
7	171466	13	D.2.1.1	2	3484	0.36	0.33	0.36	0.16	0.15	0.00	0.27	-0.03	0.27	-0.12	-0.20	0.75	0.04	0.56	1.01	0.70	1.02	A+	A+	A+
7	478197	13	D.1.1.2	2	3484	0.58	0.10	0.11	0.58	0.21	0.00	0.27	-0.22	-0.21	0.27	0.01	-0.30	0.04	1.15	1.02	1.14	1.02	A+	A+	A+
7	214413	13	D.1.2.2	2	3484	0.90	0.06	0.03	0.90	0.01	0.00	0.32	-0.20	-0.18	0.32	-0.17	-2.43	0.06	-2.89	0.88	-3.93	0.74	A+	A-	A-
7	256252	13	D.2.1.3	2	3484	0.44	0.44	0.27	0.19	0.10	0.00	0.34	0.34	-0.16	-0.16	-0.11	0.36	0.04	-3.49	0.95	-2.34	0.95	A-	A-	A-

7	943853	13	D.2.1.5	2	3484	0.78	0.05	0.11	0.78	0.06	0.00	0.33	-0.17	-0.20	0.33	-0.17	-1.42	0.04	-3.28	0.92	-2.12	0.92	A+	A-	A-
7	719233	14	D.1.2.4	2	3524	0.88	0.05	0.04	0.04	0.88	0.00	0.35	-0.21	-0.20	-0.17	0.35	-2.15	0.05	-3.47	0.88	-7.16	0.65	B+	A+	A-
7	528463	14	D.1.2.1	2	3524	0.42	0.10	0.36	0.42	0.11	0.00	0.03	-0.19	0.23	0.03	-0.23	0.42	0.04	9.90	1.17	9.90	1.21	A-	A+	A+
7	400987	14	D.1.1.4	2	3524	0.69	0.11	0.12	0.07	0.69	0.00	0.37	-0.13	-0.21	-0.21	0.37	-0.87	0.04	-6.34	0.89	-6.82	0.84	A+	A-	A-
7	572635	14	D.1.1.6	2	3524	0.32	0.12	0.11	0.45	0.32	0.00	0.31	-0.16	-0.15	-0.08	0.31	0.94	0.04	-4.73	0.93	-2.47	0.94	A+	A-	A-
7	563938	14	D.1.1.8	2	3524	0.78	0.78	0.11	0.04	0.06	0.00	0.40	0.40	-0.28	-0.16	-0.17	-1.40	0.04	-6.41	0.86	-7.72	0.75	A-	A+	A-
7	721490	14	D.1.1.1	2	3524	0.36	0.16	0.19	0.28	0.36	0.00	-0.02	-0.10	-0.07	0.17	-0.02	0.71	0.04	9.90	1.21	9.90	1.30	A-	A+	B-
7	130683	14	D.2.1.1	2	3524	0.46	0.11	0.26	0.46	0.17	0.00	0.22	-0.08	-0.14	0.22	-0.06	0.25	0.04	1.37	1.02	1.78	1.03	A+	A-	A+
7	826257	14	D.1.1.2	2	3524	0.41	0.18	0.41	0.30	0.11	0.00	0.31	-0.21	0.31	-0.05	-0.14	0.49	0.04	-4.77	0.94	-2.80	0.95	A-	A-	A-
7	331325	14	D.1.2.2	2	3524	0.13	0.13	0.41	0.29	0.17	0.00	0.03	0.03	0.03	-0.07	0.01	2.19	0.05	2.13	1.08	6.26	1.39	A+	A-	A-
7	347333	14	D.2.1.3	2	3524	0.20	0.22	0.05	0.20	0.53	0.00	-0.05	-0.14	-0.14	-0.05	0.22	1.63	0.04	6.38	1.17	9.90	1.49	A-	A+	A+
7	944373	14	D.2.1.5	2	3524	0.21	0.21	0.22	0.10	0.46	0.00	-0.02	-0.02	-0.07	-0.03	0.09	1.56	0.04	5.97	1.15	9.90	1.46	A-	A+	A-
7	981275	15	D.1.2.4	2	3506	0.80	0.06	0.80	0.06	0.08	0.00	0.36	-0.17	0.36	-0.23	-0.18	-1.59	0.04	-4.62	0.89	-5.97	0.77	A+	B-	B-
7	906345	15	D.1.2.1	2	3506	0.57	0.07	0.21	0.15	0.57	0.00	0.36	-0.13	-0.19	-0.17	0.36	-0.29	0.04	-5.44	0.93	-4.70	0.91	A+	A-	A+
7	156693	15	D.1.1.4	2	3506	0.19	0.22	0.21	0.38	0.19	0.00	0.06	-0.05	-0.13	0.11	0.06	1.67	0.05	4.57	1.12	9.13	1.44	A-	A+	A+
7	173995	15	D.1.1.6	2	3506	0.40	0.10	0.13	0.37	0.40	0.00	0.30	-0.15	-0.15	-0.09	0.30	0.51	0.04	-1.48	0.98	-0.82	0.98	A-	A+	A-
7	751716	15	D.1.1.8	2	3506	0.85	0.03	0.04	0.85	0.09	0.00	0.38	-0.17	-0.20	0.38	-0.23	-1.93	0.05	-4.58	0.86	-7.29	0.67	A+	A-	A+
7	994416	15	D.1.1.1	2	3506	0.52	0.14	0.19	0.52	0.15	0.01	0.33	-0.17	-0.12	0.33	-0.15	-0.06	0.04	-3.72	0.95	-3.19	0.94	A+	A-	A-
7	613144	15	D.2.1.1	2	3506	0.31	0.08	0.31	0.44	0.17	0.00	0.21	-0.11	0.21	0.01	-0.19	0.96	0.04	2.44	1.04	3.30	1.09	A-	B-	A-
7	496472	15	D.1.1.2	2	3506	0.40	0.14	0.35	0.40	0.11	0.00	0.19	-0.11	0.03	0.19	-0.21	0.50	0.04	4.98	1.07	5.51	1.12	A+	A-	A-
7	588062	15	D.1.2.2	2	3506	0.34	0.34	0.06	0.52	0.08	0.00	0.15	0.15	-0.14	-0.03	-0.08	0.79	0.04	6.01	1.10	6.89	1.18	C-	A-	A-
7	220220	15	D.2.1.3	2	3506	0.44	0.13	0.44	0.26	0.16	0.00	0.02	-0.05	0.02	0.08	-0.07	0.30	0.04	9.90	1.23	9.90	1.32	A-	A+	A+
7	145596	15	D.2.1.5	2	3506	0.43	0.43	0.12	0.14	0.31	0.00	0.29	0.29	-0.13	-0.12	-0.12	0.36	0.04	-0.61	0.99	0.40	1.01	A+	A+	B-
7	616205	16	D.1.2.4	2	3486	0.62	0.12	0.62	0.15	0.11	0.00	0.37	-0.19	0.37	-0.18	-0.17	-0.52	0.04	-6.97	0.91	-6.62	0.87	A-	A-	A-
7	388799	16	D.1.2.1	2	3486	0.57	0.12	0.12	0.57	0.18	0.00	0.29	-0.18	-0.14	0.29	-0.09	-0.31	0.04	-2.21	0.97	-1.56	0.97	A+	A+	A-
7	786709	16	D.1.1.4	2	3486	0.39	0.17	0.39	0.15	0.28	0.00	0.15	-0.11	0.15	-0.13	0.04	0.56	0.04	5.99	1.09	6.13	1.13	A+	A-	A+
7	253282	16	D.1.1.9	2	3486	0.29	0.38	0.29	0.15	0.17	0.00	0.11	0.10	0.11	-0.13	-0.13	1.05	0.04	5.50	1.10	7.57	1.22	A+	A-	A+
7	386382	16	D.1.1.6	2	3486	0.23	0.23	0.22	0.41	0.13	0.00	0.17	0.17	-0.08	0.01	-0.12	1.38	0.04	0.90	1.02	5.09	1.19	A-	A-	A-
7	107397	16	D.1.1.1	2	3486	0.32	0.32	0.36	0.13	0.19	0.01	0.02	0.02	0.08	-0.05	-0.06	0.90	0.04	9.90	1.19	9.90	1.29	A+	A+	B+
7	376533	16	D.2.1.1	2	3486	0.44	0.31	0.07	0.19	0.44	0.00	0.11	-0.06	-0.14	0.02	0.11	0.32	0.04	9.26	1.12	8.78	1.16	A+	A+	A-
7	414994	16	D.1.1.2	2	3486	0.53	0.16	0.53	0.18	0.12	0.00	0.29	-0.21	0.29	-0.08	-0.09	-0.13	0.04	-2.34	0.97	-0.95	0.98	A+	A-	A+
7	597537	16	D.1.2.2	2	3486	0.42	0.35	0.19	0.42	0.03	0.00	0.08	-0.07	0.05	0.08	-0.11	0.38	0.04	9.90	1.15	9.84	1.19	A-	A-	A+

7	979540	16	D.2.1.3	2	3486	0.80	0.03	0.10	0.80	0.07	0.00	0.25	-0.11	-0.14	0.25	-0.16	-1.59	0.04	-1.27	0.97	-1.54	0.94	A-	A-	A-
7	349914	16	D.2.1.5	2	3486	0.60	0.19	0.16	0.60	0.05	0.00	0.38	-0.26	-0.14	0.38	-0.15	-0.44	0.04	-8.34	0.89	-7.40	0.86	A-	A-	A-
7	374822	17	D.1.2.4	2	3512	0.53	0.10	0.13	0.24	0.53	0.00	0.25	-0.16	-0.11	-0.09	0.25	-0.12	0.04	1.59	1.02	1.50	1.03	A+	A+	A-
7	403938	17	D.1.2.1	2	3512	0.45	0.25	0.23	0.07	0.45	0.00	0.36	-0.22	-0.08	-0.19	0.36	0.24	0.04	-5.75	0.93	-4.70	0.92	A-	A-	B-
7	287986	17	D.1.1.4	2	3512	0.31	0.31	0.27	0.23	0.19	0.00	0.13	0.13	-0.06	-0.01	-0.06	0.96	0.04	6.72	1.12	6.27	1.17	A-	A-	A-
7	794631	17	D.1.1.9	2	3512	0.38	0.19	0.13	0.30	0.38	0.00	0.25	-0.08	-0.08	-0.12	0.25	0.60	0.04	1.93	1.03	1.77	1.04	A+	A-	A-
7	941307	17	D.1.1.6	2	3512	0.61	0.09	0.61	0.18	0.13	0.00	0.32	-0.14	0.32	-0.19	-0.12	-0.47	0.04	-3.24	0.96	-4.06	0.92	A-	A-	A-
7	497592	17	D.1.1.1	2	3512	0.25	0.19	0.25	0.30	0.27	0.01	0.07	-0.14	0.07	0.06	0.01	1.33	0.04	7.03	1.16	7.69	1.28	A-	A+	A+
7	858113	17	D.2.1.1	2	3512	0.45	0.08	0.44	0.45	0.03	0.00	0.19	-0.02	-0.14	0.19	-0.11	0.24	0.04	6.23	1.08	5.90	1.11	A+	A-	A+
7	537793	17	D.1.1.2	2	3512	0.58	0.58	0.15	0.16	0.10	0.01	0.27	0.27	-0.20	0.00	-0.17	-0.35	0.04	-0.14	1.00	1.24	1.02	A-	A-	A-
7	476784	17	D.1.2.2	2	3512	0.32	0.29	0.32	0.26	0.13	0.00	0.26	-0.17	0.26	-0.08	-0.03	0.87	0.04	-0.13	1.00	1.66	1.04	A+	A-	A-
7	211785	17	D.2.1.3	2	3512	0.32	0.18	0.23	0.32	0.27	0.00	0.18	-0.07	-0.10	0.18	-0.04	0.90	0.04	4.18	1.07	5.79	1.15	A-	A+	A+
7	147454	17	D.2.1.5	2	3512	0.60	0.02	0.07	0.60	0.31	0.00	0.27	-0.16	-0.13	0.27	-0.16	-0.45	0.04	0.10	1.00	-0.38	0.99	A-	A-	A+
7	789410	18	D.1.2.4	2	3495	0.71	0.06	0.08	0.71	0.15	0.00	0.36	-0.18	-0.19	0.36	-0.19	-1.04	0.04	-4.44	0.92	-2.67	0.92	A-	A+	A-
7	244774	18	D.1.2.1	2	3495	0.50	0.20	0.08	0.50	0.21	0.00	0.36	-0.20	-0.16	0.36	-0.12	0.04	0.04	-3.47	0.96	-3.70	0.93	A-	A-	A+
7	403663	18	D.1.1.4	2	3495	0.30	0.27	0.23	0.19	0.30	0.00	0.18	-0.03	-0.06	-0.10	0.18	1.03	0.04	4.60	1.09	6.76	1.21	A-	A+	A+
7	725288	18	D.1.1.9	2	3495	0.83	0.04	0.83	0.10	0.03	0.00	0.33	-0.19	0.33	-0.17	-0.18	-1.77	0.05	-2.77	0.92	-3.75	0.82	A-	A+	A+
7	481921	18	D.1.1.6	2	3495	0.39	0.21	0.15	0.39	0.24	0.01	0.21	-0.03	-0.17	0.21	-0.04	0.60	0.04	4.34	1.07	6.08	1.15	A+	A-	A+
7	986723	18	D.1.1.1	2	3495	0.23	0.23	0.38	0.24	0.15	0.00	-0.07	-0.07	0.24	-0.10	-0.11	1.47	0.04	9.90	1.30	9.90	1.69	A-	A+	A+
7	221011	18	D.2.1.1	2	3495	0.61	0.04	0.61	0.07	0.28	0.00	0.29	-0.10	0.29	-0.19	-0.16	-0.49	0.04	0.82	1.01	1.77	1.04	A-	A-	A-
7	781708	18	D.1.1.2	2	3495	0.54	0.18	0.20	0.54	0.07	0.01	0.40	-0.17	-0.20	0.40	-0.16	-0.14	0.04	-6.80	0.91	-5.94	0.89	A+	A-	A-
7	420139	18	D.1.2.2	2	3495	0.81	0.07	0.81	0.07	0.04	0.00	0.34	-0.23	0.34	-0.18	-0.13	-1.68	0.05	-3.19	0.92	-4.54	0.80	A-	A+	A-
7	677242	18	D.2.1.3	2	3495	0.63	0.15	0.12	0.09	0.63	0.00	0.37	-0.13	-0.18	-0.24	0.37	-0.59	0.04	-4.78	0.93	-4.23	0.90	A-	A-	A+
7	299493	18	D.2.1.5	2	3495	0.64	0.27	0.03	0.06	0.64	0.00	0.33	-0.17	-0.18	-0.22	0.33	-0.63	0.04	-3.23	0.95	0.17	1.00	A-	B-	A-
7	938938	19	D.1.2.4	2	3510	0.78	0.07	0.78	0.12	0.03	0.00	0.39	-0.26	0.39	-0.19	-0.19	-1.39	0.04	-5.06	0.89	-6.13	0.79	A-	A-	A-
7	189909	19	D.1.2.1	2	3510	0.73	0.10	0.73	0.09	0.07	0.00	0.43	-0.26	0.43	-0.20	-0.21	-1.11	0.04	-7.38	0.86	-8.40	0.76	A-	B-	B-
7	464161	19	D.1.1.4	2	3510	0.48	0.48	0.11	0.06	0.35	0.00	0.29	0.29	-0.19	-0.23	-0.05	0.18	0.04	-1.61	0.98	-0.33	0.99	A-	A+	A-
7	440281	19	D.1.1.6	2	3510	0.48	0.19	0.23	0.48	0.11	0.00	0.30	-0.09	-0.13	0.30	-0.18	0.17	0.04	-1.83	0.98	-1.49	0.97	A-	A-	A+
7	330880	19	D.1.1.9	2	3510	0.40	0.22	0.14	0.24	0.40	0.00	0.05	0.01	-0.05	-0.02	0.05	0.54	0.04	9.90	1.20	9.90	1.27	A+	A+	A+
7	906454	19	D.1.1.1	2	3510	0.20	0.30	0.29	0.20	0.20	0.01	0.03	-0.07	0.11	-0.05	0.03	1.67	0.04	5.49	1.14	9.90	1.53	A-	A-	A+
7	670990	19	D.2.1.1	2	3510	0.24	0.37	0.08	0.30	0.24	0.00	0.01	0.06	-0.11	0.00	0.01	1.41	0.04	7.59	1.17	9.90	1.48	A-	A-	B+
7	274028	19	D.1.1.2	2	3510	0.70	0.15	0.06	0.70	0.08	0.01	0.40	-0.23	-0.23	0.40	-0.14	-0.91	0.04	-6.75	0.88	-6.33	0.84	A+	A-	B-

7	806822	19	D.1.2.2	2	3510	0.67	0.17	0.05	0.12	0.67	0.00	0.28	-0.12	-0.15	-0.17	0.28	-0.75	0.04	-0.30	0.99	-0.88	0.98	A+	A+	A+
7	562034	19	D.2.1.3	2	3510	0.58	0.58	0.15	0.11	0.16	0.00	0.05	0.05	-0.05	0.09	-0.09	-0.28	0.04	9.90	1.20	9.90	1.29	A-	A+	A+
7	249602	19	D.2.1.5	2	3510	0.84	0.05	0.04	0.84	0.07	0.00	0.37	-0.20	-0.16	0.37	-0.24	-1.82	0.05	-4.22	0.88	-5.37	0.76	A+	A+	B-
7	807015	20	D.1.2.4	2	3487	0.84	0.84	0.05	0.04	0.06	0.00	0.37	0.37	-0.19	-0.19	-0.22	-1.91	0.05	-4.24	0.87	-4.73	0.77	A+	A-	A-
7	255547	20	D.1.2.1	2	3487	0.85	0.85	0.05	0.07	0.03	0.00	0.35	0.35	-0.22	-0.15	-0.20	-1.98	0.05	-3.38	0.89	-4.55	0.77	A+	A-	B-
7	517356	20	D.1.1.4	2	3487	0.89	0.03	0.89	0.04	0.04	0.00	0.38	-0.21	0.38	-0.19	-0.22	-2.38	0.06	-3.88	0.85	-6.95	0.59	A+	A-	A-
7	255060	20	D.1.1.6	2	3487	0.29	0.31	0.21	0.18	0.29	0.00	0.19	0.13	-0.14	-0.21	0.19	1.11	0.04	3.30	1.06	5.41	1.18	A-	A-	A-
7	354855	20	D.1.1.9	2	3487	0.47	0.30	0.06	0.16	0.47	0.01	0.35	-0.17	-0.21	-0.11	0.35	0.22	0.04	-3.95	0.95	-2.78	0.95	A+	A-	A+
7	202806	20	D.1.1.1	2	3487	0.29	0.27	0.18	0.29	0.26	0.00	0.00	0.04	-0.07	0.00	0.03	1.13	0.04	9.90	1.25	9.90	1.49	A-	A-	B+
7	336976	20	D.2.1.1	2	3487	0.58	0.17	0.17	0.58	0.08	0.00	0.35	-0.14	-0.18	0.35	-0.19	-0.33	0.04	-3.54	0.95	-3.38	0.93	A-	A+	A-
7	551544	20	D.1.1.2	2	3487	0.46	0.23	0.16	0.46	0.15	0.01	0.29	-0.12	-0.16	0.29	-0.09	0.24	0.04	-0.32	1.00	0.44	1.01	A+	A+	A+
7	372094	20	D.1.2.2	2	3487	0.51	0.09	0.28	0.12	0.51	0.00	0.20	-0.16	-0.05	-0.09	0.20	0.01	0.04	6.66	1.09	5.86	1.11	A-	A+	A+
7	787569	20	D.2.1.3	2	3487	0.59	0.16	0.03	0.59	0.21	0.00	0.23	-0.11	-0.09	0.23	-0.13	-0.39	0.04	4.35	1.06	3.72	1.08	A-	A-	A-
7	983031	20	D.2.1.5	2	3487	0.83	0.04	0.83	0.08	0.05	0.00	0.34	-0.15	0.34	-0.19	-0.20	-1.79	0.05	-2.94	0.92	-3.94	0.82	A+	B-	B-
8	348017	0	D.2.1.2	2	74573	0.69	0.06	0.08	0.16	0.69	0.00	0.20	-0.08	-0.12	-0.10	0.20	-1.03	0.01	-3.95	0.99	1.29	1.01	A-	A-	A-
8	104396	0	D.1.1.3	2	74573	0.15	0.40	0.25	0.19	0.15	0.01	-0.04	0.18	-0.06	-0.11	-0.04	1.84	0.01	9.90	1.16	9.90	1.53	A-	A+	A+
8	238134	0	D.1.2.1	2	74573	0.82	0.03	0.82	0.08	0.07	0.00	0.23	-0.13	0.23	-0.12	-0.13	-1.82	0.01	-9.90	0.93	-9.90	0.84	B+	A-	A-
8	990202	0	D.1.1.6	2	74573	0.26	0.03	0.68	0.26	0.02	0.00	0.11	-0.11	-0.01	0.11	-0.14	1.08	0.01	9.90	1.05	9.90	1.16	A-	A+	A+
8	530781	0	D.2.1.3	2	74573	0.70	0.70	0.10	0.09	0.11	0.00	0.28	0.28	-0.17	-0.16	-0.10	-1.09	0.01	-9.90	0.91	-9.90	0.86	A+	A-	A-
8	308096	0	D.1.1.7	2	74573	0.78	0.78	0.04	0.12	0.05	0.00	0.27	0.27	-0.15	-0.14	-0.14	-1.56	0.01	-9.90	0.90	-9.90	0.82	A+	A-	A-
8	647431	0	D.1.1.8	2	74573	0.30	0.21	0.22	0.27	0.30	0.00	0.20	-0.01	-0.09	-0.09	0.20	0.87	0.01	-7.01	0.97	1.37	1.01	A+	A-	A-
8	650127	0	D.1.2.2	2	74573	0.30	0.21	0.39	0.30	0.09	0.00	0.14	-0.12	0.10	0.14	-0.19	0.83	0.01	6.07	1.02	9.90	1.09	A+	A-	A-
8	811443	0	D.1.1.5	2	74573	0.29	0.10	0.29	0.19	0.42	0.00	0.12	-0.12	0.12	-0.03	-0.01	0.89	0.01	9.66	1.04	9.90	1.13	A-	A+	A+
8	334158	0	D.1.1.1	2	74573	0.28	0.32	0.16	0.28	0.24	0.00	0.09	0.00	-0.09	0.09	-0.01	0.97	0.01	9.90	1.07	9.90	1.18	A-	A+	A+
8	750433	0	D.1.2.3	2	74573	0.68	0.68	0.17	0.05	0.10	0.00	0.12	0.12	0.02	-0.13	-0.12	-0.98	0.01	9.90	1.06	9.90	1.11	A+	A+	A+
8	903020	0	D.2.1.1	2	74573	0.38	0.15	0.30	0.17	0.38	0.00	0.20	-0.09	-0.08	-0.07	0.20	0.43	0.01	-5.41	0.98	1.12	1.00	A-	A-	A-
8	864456	0	D.2.1.4	2	74573	0.70	0.06	0.70	0.13	0.11	0.00	0.27	-0.13	0.27	-0.14	-0.13	-1.06	0.01	-9.90	0.92	-9.90	0.88	A+	B-	A-
8	132058	1	D.1.2.4	2	4120	0.66	0.10	0.06	0.18	0.66	0.00	0.37	-0.23	-0.22	-0.14	0.37	-0.89	0.04	-8.31	0.89	-8.73	0.83	A+	A-	A-
8	208230	1	D.1.1.8	2	4120	0.28	0.25	0.20	0.28	0.26	0.01	0.06	0.01	-0.10	0.06	0.04	0.94	0.04	5.70	1.10	8.15	1.22	A-	A-	A+
8	698537	1	D.1.1.3	2	4120	0.64	0.15	0.64	0.16	0.05	0.00	0.29	-0.16	0.29	-0.17	-0.10	-0.76	0.03	-4.08	0.95	-4.49	0.92	A+	A-	A-
8	225081	1	D.2.1.2	2	4120	0.49	0.08	0.12	0.30	0.49	0.00	0.16	-0.13	-0.11	0.00	0.16	-0.07	0.03	4.86	1.05	3.91	1.06	A+	A-	A-
8	675794	1	D.1.1.2	2	4120	0.91	0.91	0.02	0.05	0.02	0.00	0.28	0.28	-0.13	-0.17	-0.16	-2.64	0.06	-2.15	0.91	-5.22	0.71	A+	A-	A-

8	194333	1	D.1.2.1	2	4120	0.47	0.31	0.47	0.07	0.15	0.00	0.32	-0.19	0.32	-0.05	-0.15	0.03	0.03	-7.19	0.93	-6.43	0.91	A-	B-	B-
8	774917	1	D.1.2.2	2	4120	0.21	0.33	0.21	0.13	0.32	0.01	0.13	0.07	0.13	-0.24	0.01	1.39	0.04	0.67	1.01	5.82	1.21	A-	A+	A-
8	990420	1	D.1.1.5	2	4120	0.59	0.08	0.11	0.59	0.21	0.00	0.23	-0.11	-0.14	0.23	-0.07	-0.54	0.03	-0.81	0.99	-0.63	0.99	A+	A+	A+
8	975803	1	D.1.1.1	2	4120	0.32	0.18	0.29	0.32	0.20	0.01	0.02	-0.08	0.07	0.02	0.00	0.73	0.04	9.81	1.15	9.35	1.22	A-	A+	A-
8	370167	1	D.2.1.1	2	4120	0.43	0.43	0.16	0.27	0.14	0.00	0.27	0.27	-0.12	-0.09	-0.13	0.23	0.03	-3.78	0.96	-2.29	0.96	A+	A+	A-
8	123996	1	D.2.1.4	2	4120	0.50	0.09	0.19	0.50	0.22	0.00	0.20	-0.08	-0.16	0.20	-0.03	-0.09	0.03	1.43	1.01	1.85	1.03	A+	A-	A-
8	439328	2	D.1.2.4	2	4162	0.53	0.53	0.05	0.35	0.07	0.00	0.36	0.36	-0.12	-0.24	-0.14	-0.25	0.03	-9.90	0.89	-9.77	0.87	A-	C-	A-
8	740770	2	D.1.1.8	2	4162	0.30	0.16	0.22	0.30	0.31	0.01	0.03	0.00	-0.06	0.03	0.03	0.85	0.04	7.82	1.13	8.91	1.21	A-	A-	A-
8	569584	2	D.1.1.3	3	4162	0.35	0.15	0.25	0.24	0.35	0.00	0.25	-0.17	-0.06	-0.05	0.25	0.59	0.03	-2.30	0.97	-1.42	0.97	A-	A+	A-
8	124960	2	D.2.1.2	2	4162	0.20	0.06	0.20	0.41	0.32	0.00	0.03	-0.19	0.03	-0.02	0.10	1.44	0.04	4.24	1.10	8.49	1.31	A+	A+	A-
8	237850	2	D.1.1.2	2	4162	0.43	0.27	0.15	0.43	0.15	0.00	0.12	0.08	-0.12	0.12	-0.13	0.24	0.03	6.09	1.07	5.67	1.09	A+	A+	A+
8	126051	2	D.1.2.1	2	4162	0.69	0.05	0.69	0.06	0.20	0.00	0.19	-0.12	0.19	-0.13	-0.08	-0.97	0.04	0.54	1.01	1.03	1.02	A-	A+	A+
8	864382	2	D.1.2.2	2	4162	0.13	0.04	0.13	0.19	0.64	0.00	0.29	-0.18	0.29	0.10	-0.21	2.05	0.05	-3.41	0.89	-1.79	0.91	A+	A-	A-
8	965373	2	D.1.1.5	2	4162	0.49	0.18	0.14	0.20	0.49	0.00	0.22	-0.05	-0.18	-0.07	0.22	-0.03	0.03	-0.64	0.99	-0.54	0.99	A-	A-	A-
8	876954	2	D.1.1.1	2	4162	0.28	0.28	0.27	0.24	0.21	0.01	0.02	0.02	-0.02	0.03	-0.01	0.97	0.04	7.42	1.13	8.91	1.24	A+	A+	A+
8	618795	2	D.2.1.1	2	4162	0.57	0.23	0.10	0.57	0.10	0.00	0.35	-0.18	-0.15	0.35	-0.17	-0.41	0.03	-9.90	0.89	-9.30	0.87	A+	A-	A-
8	712301	2	D.2.1.4	2	4162	0.55	0.10	0.15	0.19	0.55	0.00	0.31	-0.16	-0.18	-0.10	0.31	-0.34	0.03	-6.79	0.93	-6.48	0.91	A-	B-	A-
8	541829	3	D.1.2.4	2	4118	0.24	0.20	0.09	0.47	0.24	0.00	0.14	0.01	-0.08	-0.08	0.14	1.23	0.04	1.67	1.03	5.93	1.21	A+	A-	A-
8	816299	3	D.1.1.8	2	4118	0.61	0.19	0.61	0.11	0.09	0.00	0.29	-0.06	0.29	-0.20	-0.21	-0.62	0.03	-3.11	0.96	-2.82	0.95	A-	A-	A-
8	109155	3	D.1.1.3	2	4118	0.73	0.73	0.08	0.08	0.11	0.00	0.37	0.37	-0.20	-0.22	-0.16	-1.27	0.04	-6.20	0.89	-7.65	0.80	A+	B-	C-
8	117251	3	D.2.1.2	2	4118	0.72	0.72	0.18	0.04	0.06	0.00	0.27	0.27	-0.13	-0.17	-0.16	-1.20	0.04	-1.63	0.97	-1.14	0.97	A+	A+	A-
8	571124	3	D.1.1.2	2	4118	0.87	0.04	0.87	0.04	0.04	0.00	0.38	-0.18	0.38	-0.21	-0.21	-2.28	0.05	-5.01	0.84	-7.35	0.66	A+	A+	A-
8	111500	3	D.1.2.1	2	4118	0.21	0.61	0.07	0.21	0.11	0.00	0.12	0.04	-0.09	0.12	-0.14	1.40	0.04	3.07	1.07	4.79	1.18	A-	A+	A+
8	661801	3	D.1.2.2	2	4118	0.08	0.79	0.05	0.08	0.08	0.00	-0.01	0.17	-0.22	-0.01	-0.05	2.58	0.06	1.06	1.05	9.90	2.12	A+	A+	A+
8	327376	3	D.1.1.5	2	4118	0.86	0.04	0.86	0.05	0.04	0.00	0.37	-0.20	0.37	-0.21	-0.19	-2.22	0.05	-4.88	0.85	-7.49	0.67	A+	C-	A-
8	285688	3	D.1.1.1	2	4118	0.31	0.18	0.23	0.31	0.28	0.00	0.10	-0.07	0.01	0.10	-0.04	0.81	0.04	6.12	1.10	7.98	1.21	A-	A+	A+
8	409899	3	D.2.1.1	2	4118	0.37	0.11	0.37	0.17	0.35	0.00	0.26	-0.16	0.26	-0.13	-0.05	0.52	0.03	-2.86	0.96	2.16	1.04	A-	A-	A+
8	100314	3	D.2.1.4	2	4118	0.42	0.10	0.21	0.27	0.42	0.00	0.25	-0.15	-0.15	-0.04	0.25	0.26	0.03	-0.82	0.99	-0.71	0.99	A+	A-	A+
8	548416	4	D.1.2.4	2	4147	0.31	0.31	0.35	0.12	0.21	0.00	0.14	0.14	0.01	-0.09	-0.09	0.78	0.04	2.51	1.04	4.01	1.09	A+	A+	A+
8	737944	4	D.1.1.8	2	4147	0.46	0.07	0.21	0.46	0.25	0.01	0.28	-0.16	-0.11	0.28	-0.11	0.08	0.03	-5.09	0.95	-4.66	0.94	A-	A-	A-
8	833476	4	D.1.1.3	2	4147	0.34	0.11	0.33	0.22	0.34	0.00	0.24	-0.16	-0.04	-0.10	0.24	0.61	0.03	-2.20	0.97	-0.77	0.99	A+	A-	A+
8	605773	4	D.2.1.2	2	4147	0.72	0.11	0.08	0.72	0.09	0.00	0.23	-0.05	-0.13	0.23	-0.17	-1.16	0.04	-1.90	0.97	-0.96	0.98	A-	A-	A-

8	912300	4	D.1.1.2	2	4147	0.46	0.12	0.20	0.22	0.46	0.00	0.20	-0.01	-0.14	-0.09	0.20	0.04	0.03	0.99	1.01	0.83	1.01	A+	A+	A-
8	313891	4	D.1.2.1	2	4147	0.43	0.19	0.43	0.22	0.16	0.00	0.32	-0.11	0.32	-0.18	-0.11	0.22	0.03	-8.25	0.91	-6.81	0.90	A+	B-	B-
8	362690	4	D.1.2.2	2	4147	0.09	0.07	0.09	0.59	0.25	0.00	0.06	-0.14	0.06	0.11	-0.07	2.41	0.06	0.16	1.01	6.91	1.48	A-	A+	A+
8	806177	4	D.1.1.5	2	4147	0.58	0.13	0.58	0.17	0.12	0.01	0.23	-0.09	0.23	-0.11	-0.09	-0.47	0.03	-1.50	0.98	-1.09	0.98	A-	A-	A+
8	997491	4	D.1.1.1	2	4147	0.27	0.27	0.20	0.29	0.24	0.00	-0.07	-0.07	-0.03	0.04	0.07	0.99	0.04	9.90	1.20	9.90	1.30	A-	A+	A+
8	955121	4	D.2.1.1	2	4147	0.30	0.37	0.17	0.16	0.30	0.00	0.16	0.00	-0.07	-0.11	0.16	0.85	0.04	1.28	1.02	3.28	1.08	A-	A+	A-
8	785436	4	D.2.1.4	2	4147	0.47	0.05	0.20	0.47	0.28	0.00	0.12	-0.14	-0.12	0.12	0.05	0.02	0.03	6.36	1.07	5.92	1.08	A+	B+	A+
8	272943	5	D.1.2.4	2	4167	0.56	0.56	0.09	0.25	0.09	0.00	0.34	0.34	-0.18	-0.18	-0.12	-0.37	0.03	-9.90	0.89	-9.60	0.87	A+	B-	A-
8	961822	5	D.1.1.8	2	4167	0.23	0.23	0.16	0.30	0.30	0.00	0.15	0.15	-0.13	-0.02	0.00	1.25	0.04	0.10	1.00	4.35	1.14	A+	A+	A-
8	943192	5	D.1.1.3	2	4167	0.19	0.47	0.20	0.19	0.13	0.00	0.10	0.04	-0.10	0.10	-0.04	1.54	0.04	1.61	1.04	4.62	1.18	A+	A-	A-
8	111659	5	D.2.1.2	2	4167	0.21	0.11	0.48	0.20	0.21	0.01	0.09	-0.06	0.03	-0.06	0.09	1.39	0.04	2.00	1.04	4.70	1.16	A-	A-	A+
8	375414	5	D.1.1.2	2	4167	0.86	0.02	0.09	0.86	0.03	0.00	0.26	-0.12	-0.18	0.26	-0.12	-2.10	0.05	-2.58	0.92	-4.63	0.80	A-	B-	C-
8	198944	5	D.1.2.1	2	4167	0.14	0.16	0.14	0.26	0.44	0.00	0.05	-0.19	0.05	-0.01	0.11	1.91	0.05	2.10	1.07	4.58	1.23	A+	A+	A+
8	796808	5	D.1.2.2	2	4167	0.12	0.07	0.12	0.61	0.20	0.00	0.12	-0.17	0.12	0.02	-0.01	2.07	0.05	-0.26	0.99	4.54	1.25	A-	A-	A+
8	807291	5	D.1.1.5	2	4167	0.49	0.15	0.49	0.20	0.16	0.00	0.24	-0.12	0.24	-0.12	-0.07	-0.03	0.03	-3.49	0.97	-2.64	0.96	A+	A+	A-
8	788898	5	D.1.1.1	2	4167	0.23	0.21	0.43	0.23	0.13	0.00	-0.02	-0.05	0.08	-0.02	-0.04	1.23	0.04	6.41	1.13	7.93	1.26	A-	A-	A-
8	640976	5	D.2.1.1	2	4167	0.31	0.14	0.31	0.42	0.13	0.01	0.12	-0.03	0.12	0.01	-0.13	0.82	0.04	3.08	1.05	4.78	1.11	A+	A+	A+
8	719903	5	D.2.1.4	2	4167	0.85	0.04	0.03	0.08	0.85	0.00	0.13	-0.06	-0.11	-0.06	0.13	-2.02	0.05	0.33	1.01	1.85	1.08	A+	A-	B-
8	857142	6	D.1.1.9	2	4169	0.44	0.09	0.41	0.44	0.06	0.00	0.18	-0.11	-0.06	0.18	-0.11	0.15	0.03	1.83	1.02	1.70	1.02	A-	A-	A-
8	825352	6	D.1.2.4	2	4169	0.50	0.25	0.08	0.50	0.17	0.00	0.34	-0.17	-0.09	0.34	-0.19	-0.11	0.03	-9.90	0.90	-9.81	0.87	A+	B-	A-
8	173646	6	D.1.1.3	2	4169	0.13	0.71	0.13	0.07	0.09	0.00	-0.02	0.19	-0.02	-0.13	-0.16	2.04	0.05	2.79	1.10	9.09	1.51	A-	A+	A-
8	440341	6	D.2.1.2	2	4169	0.45	0.14	0.45	0.16	0.25	0.00	0.12	-0.14	0.12	-0.04	0.01	0.11	0.03	5.40	1.06	4.97	1.07	A+	A+	A+
8	747815	6	D.1.1.2	2	4169	0.35	0.35	0.19	0.25	0.20	0.00	0.17	0.17	-0.07	-0.08	-0.05	0.57	0.03	1.76	1.02	2.07	1.04	A+	A-	A+
8	853819	6	D.1.2.1	2	4169	0.44	0.37	0.44	0.11	0.08	0.00	0.17	-0.05	0.17	-0.12	-0.08	0.17	0.03	2.46	1.03	3.57	1.05	A-	A-	A-
8	249685	6	D.1.2.2	2	4169	0.08	0.08	0.75	0.10	0.08	0.00	0.09	-0.17	0.14	-0.13	0.09	2.58	0.06	-0.03	1.00	4.88	1.35	A-	A+	A+
8	870895	6	D.1.1.5	2	4169	0.49	0.17	0.49	0.27	0.08	0.00	0.26	-0.13	0.26	-0.11	-0.13	-0.07	0.03	-4.19	0.96	-3.52	0.95	A-	A+	A-
8	224697	6	D.1.1.1	2	4169	0.26	0.26	0.31	0.18	0.24	0.00	0.11	0.11	-0.02	-0.05	-0.04	1.08	0.04	2.67	1.05	4.52	1.12	A-	A-	A-
8	388416	6	D.2.1.1	2	4169	0.58	0.12	0.13	0.58	0.17	0.00	0.28	-0.17	-0.12	0.28	-0.11	-0.49	0.03	-6.08	0.94	-5.41	0.92	A-	A-	B-
8	135467	6	D.2.1.4	2	4169	0.43	0.10	0.35	0.12	0.43	0.00	0.28	-0.16	-0.09	-0.15	0.28	0.19	0.03	-5.81	0.94	-5.61	0.92	A-	B-	A-
8	771469	7	D.1.1.9	2	4208	0.53	0.32	0.07	0.08	0.53	0.00	0.38	-0.26	-0.16	-0.11	0.38	-0.23	0.03	-9.90	0.88	-9.90	0.85	A+	A-	B-
8	755041	7	D.1.2.4	2	4208	0.82	0.07	0.82	0.04	0.06	0.00	0.34	-0.20	0.34	-0.16	-0.18	-1.80	0.04	-4.61	0.89	-7.00	0.75	A+	B-	C-
8	859751	7	D.1.1.3	2	4208	0.65	0.08	0.11	0.15	0.65	0.00	0.37	-0.18	-0.16	-0.20	0.37	-0.82	0.03	-9.23	0.88	-8.75	0.83	A+	A+	A-

8	240514	7	D.2.1.2	2	4208	0.26	0.59	0.07	0.26	0.08	0.00	0.08	0.10	-0.16	0.08	-0.16	1.08	0.04	5.81	1.11	7.52	1.22	A-	A+	A+
8	386799	7	D.1.1.2	2	4208	0.31	0.19	0.31	0.32	0.18	0.00	0.05	-0.01	0.05	0.02	-0.06	0.84	0.04	8.39	1.14	9.20	1.23	A+	A+	A+
8	800693	7	D.1.2.1	2	4208	0.15	0.15	0.09	0.26	0.50	0.00	0.31	0.31	-0.24	-0.01	-0.07	1.87	0.05	-3.68	0.90	-1.27	0.94	A+	A+	A-
8	449216	7	D.1.2.2	2	4208	0.17	0.30	0.46	0.17	0.06	0.00	0.12	-0.06	0.05	0.12	-0.16	1.68	0.04	1.21	1.03	5.65	1.25	A+	A+	A+
8	268350	7	D.1.1.5	2	4208	0.81	0.05	0.81	0.10	0.04	0.00	0.25	-0.10	0.25	-0.18	-0.13	-1.75	0.04	-1.81	0.96	-2.93	0.89	A+	B-	A-
8	612862	7	D.1.1.1	2	4208	0.22	0.21	0.36	0.21	0.22	0.00	0.08	-0.01	0.02	-0.08	0.08	1.35	0.04	4.10	1.09	6.95	1.25	A-	A-	A+
8	268676	7	D.2.1.1	2	4208	0.46	0.46	0.13	0.24	0.16	0.00	0.29	0.29	-0.10	-0.14	-0.13	0.09	0.03	-4.45	0.95	-1.96	0.97	A-	A-	B-
8	385108	7	D.2.1.4	2	4208	0.43	0.16	0.21	0.43	0.19	0.00	0.25	-0.05	-0.14	0.25	-0.11	0.20	0.03	-1.58	0.98	-0.08	1.00	A+	A-	A-
8	874565	8	D.1.1.9	2	4130	0.17	0.08	0.05	0.70	0.17	0.00	0.22	-0.11	-0.16	-0.04	0.22	1.70	0.04	-1.10	0.97	1.26	1.05	A-	A+	A+
8	447349	8	D.1.2.4	2	4130	0.60	0.12	0.09	0.60	0.19	0.00	0.28	-0.15	-0.11	0.28	-0.15	-0.54	0.03	-3.66	0.96	-3.68	0.94	A-	A-	A+
8	639296	8	D.1.1.3	3	4130	0.50	0.14	0.20	0.50	0.16	0.00	0.25	-0.13	-0.14	0.25	-0.05	-0.08	0.03	-1.34	0.99	-1.45	0.98	A+	A-	A+
8	960044	8	D.2.1.2	2	4130	0.29	0.38	0.29	0.13	0.20	0.00	0.11	0.10	0.11	-0.18	-0.09	0.93	0.04	5.26	1.09	6.91	1.18	A-	A+	A-
8	142619	8	D.1.1.2	2	4130	0.70	0.70	0.10	0.17	0.03	0.00	0.16	0.16	0.00	-0.13	-0.11	-1.05	0.04	1.85	1.03	5.70	1.15	A+	A-	A-
8	945314	8	D.1.2.1	2	4130	0.40	0.40	0.40	0.07	0.12	0.00	0.29	0.29	-0.08	-0.16	-0.18	0.36	0.03	-3.87	0.95	-2.76	0.95	A-	B-	A-
8	482423	8	D.1.2.2	2	4130	0.15	0.59	0.15	0.08	0.18	0.00	0.20	-0.04	0.20	-0.25	0.05	1.90	0.05	-1.16	0.97	3.69	1.18	A-	B+	A+
8	679776	8	D.1.1.5	2	4130	0.57	0.16	0.11	0.16	0.57	0.01	0.31	-0.12	-0.15	-0.15	0.31	-0.41	0.03	-5.69	0.94	-4.99	0.92	A+	A-	B-
8	285692	8	D.1.1.1	2	4130	0.25	0.31	0.31	0.25	0.13	0.00	0.10	-0.05	0.00	0.10	-0.06	1.16	0.04	4.54	1.09	6.84	1.21	A+	A+	A+
8	892350	8	D.2.1.1	2	4130	0.85	0.04	0.85	0.10	0.01	0.00	0.23	-0.13	0.23	-0.17	-0.07	-2.02	0.05	-1.40	0.96	-3.55	0.85	A+	B-	C-
8	267963	8	D.2.1.4	2	4130	0.60	0.02	0.29	0.09	0.60	0.00	0.26	-0.08	-0.14	-0.19	0.26	-0.56	0.03	-2.82	0.97	-2.06	0.96	A-	A-	A-
8	985483	9	D.1.1.9	2	4129	0.75	0.13	0.75	0.06	0.06	0.00	0.33	-0.17	0.33	-0.18	-0.15	-1.32	0.04	-5.11	0.91	-5.76	0.84	A+	A-	A-
8	286835	9	D.1.2.4	2	4129	0.67	0.67	0.12	0.10	0.11	0.00	0.28	0.28	-0.09	-0.14	-0.17	-0.89	0.04	-2.86	0.96	-1.59	0.97	A+	A+	A+
8	473212	9	D.2.1.3	2	4129	0.37	0.29	0.11	0.37	0.23	0.01	0.19	-0.06	-0.15	0.19	-0.02	0.55	0.03	2.99	1.04	4.56	1.09	A+	A-	A-
8	714646	9	D.1.1.3	2	4129	0.25	0.18	0.25	0.51	0.05	0.00	0.14	-0.17	0.14	0.08	-0.14	1.17	0.04	3.20	1.06	5.78	1.18	A+	A+	A+
8	955074	9	D.1.1.2	2	4129	0.56	0.13	0.05	0.26	0.56	0.01	0.38	-0.22	-0.19	-0.15	0.38	-0.35	0.03	-9.90	0.89	-8.78	0.86	A-	A-	B-
8	716666	9	D.1.2.1	2	4129	0.51	0.18	0.27	0.04	0.51	0.00	0.29	-0.20	-0.13	-0.05	0.29	-0.11	0.03	-3.05	0.97	-1.33	0.98	A+	B-	A-
8	562051	9	D.1.2.2	2	4129	0.06	0.28	0.08	0.06	0.58	0.00	-0.02	-0.08	-0.14	-0.02	0.17	3.00	0.07	1.09	1.06	9.01	1.99	A+	A+	A+
8	904354	9	D.1.1.5	2	4129	0.72	0.10	0.09	0.72	0.10	0.00	0.32	-0.18	-0.17	0.32	-0.13	-1.17	0.04	-3.90	0.93	-4.85	0.88	A-	A-	B-
8	569686	9	D.1.1.1	2	4129	0.29	0.20	0.29	0.25	0.25	0.00	0.14	-0.10	0.14	-0.03	-0.02	0.93	0.04	3.60	1.06	6.34	1.17	A-	A+	A-
8	868223	9	D.2.1.1	2	4129	0.55	0.55	0.10	0.22	0.13	0.00	0.32	0.32	-0.19	-0.10	-0.16	-0.31	0.03	-4.56	0.95	-4.55	0.93	A-	A-	B-
8	871386	9	D.2.1.5	2	4129	0.55	0.13	0.55	0.05	0.27	0.00	0.26	-0.10	0.26	-0.18	-0.12	-0.29	0.03	-0.68	0.99	-0.94	0.99	A-	A+	A-
8	186680	10	D.1.1.9	2	4129	0.80	0.07	0.09	0.04	0.80	0.00	0.36	-0.21	-0.20	-0.15	0.36	-1.68	0.04	-6.27	0.86	-8.27	0.74	A+	B-	A-
8	966352	10	D.2.1.3	2	4129	0.63	0.11	0.63	0.19	0.07	0.00	0.24	-0.14	0.24	-0.10	-0.09	-0.73	0.03	-2.05	0.97	-1.54	0.97	A+	A-	B-

8	121336	10	D.1.1.3	3	4129	0.44	0.44	0.20	0.26	0.10	0.00	0.34	0.34	-0.16	-0.13	-0.14	0.15	0.03	-8.80	0.91	-6.26	0.91	A-	B-	A-
8	362946	10	D.1.1.2	2	4129	0.30	0.30	0.22	0.31	0.17	0.00	0.12	0.12	-0.04	-0.10	0.02	0.84	0.04	3.78	1.06	4.59	1.11	A-	B+	A+
8	671277	10	D.1.2.1	2	4129	0.14	0.76	0.14	0.01	0.09	0.00	0.22	-0.16	0.22	-0.06	-0.01	1.86	0.05	-1.23	0.96	-0.23	0.99	B+	A+	A+
8	616939	10	D.1.2.4	2	4129	0.32	0.12	0.32	0.12	0.43	0.01	0.10	-0.11	0.10	-0.14	0.09	0.72	0.04	5.19	1.08	6.33	1.14	A-	A+	B+
8	533706	10	D.1.2.2	2	4129	0.25	0.29	0.34	0.25	0.11	0.01	0.25	0.03	-0.14	0.25	-0.14	1.13	0.04	-2.93	0.94	-0.04	1.00	A-	A-	A+
8	755889	10	D.1.1.5	2	4129	0.36	0.10	0.36	0.15	0.39	0.00	0.16	-0.05	0.16	-0.07	-0.07	0.51	0.03	2.44	1.03	3.69	1.07	A-	A+	A+
8	798558	10	D.1.1.1	2	4129	0.21	0.21	0.19	0.26	0.33	0.00	0.13	0.13	-0.05	-0.05	-0.02	1.34	0.04	1.76	1.04	4.24	1.15	A-	A+	A-
8	150897	10	D.2.1.1	2	4129	0.21	0.17	0.35	0.26	0.21	0.00	0.04	-0.06	-0.09	0.11	0.04	1.32	0.04	4.90	1.11	6.99	1.25	A-	A-	A-
8	769398	10	D.2.1.5	2	4129	0.62	0.06	0.06	0.62	0.26	0.00	0.33	-0.15	-0.19	0.33	-0.17	-0.68	0.03	-7.25	0.91	-7.00	0.88	A+	A-	A+
8	122968	11	D.1.2.5	1	3337	0.83	0.05	0.07	0.83	0.04	0.00	0.43	-0.25	-0.21	0.43	-0.23	-1.98	0.05	-5.80	0.83	-8.24	0.65	A+	A-	A+
8	364105	11	D.1.1.6	2	3337	0.68	0.68	0.06	0.18	0.08	0.00	0.39	0.39	-0.21	-0.22	-0.15	-1.00	0.04	-6.35	0.89	-6.31	0.84	A+	A-	B-
8	371907	11	D.2.1.3	2	3337	0.59	0.16	0.59	0.16	0.09	0.00	0.26	-0.04	0.26	-0.11	-0.23	-0.53	0.04	0.41	1.01	1.14	1.02	A+	A-	A+
8	919329	11	D.1.1.10	2	3337	0.81	0.05	0.09	0.81	0.06	0.00	0.36	-0.23	-0.21	0.36	-0.14	-1.78	0.05	-4.31	0.89	-4.63	0.81	A-	A+	A-
8	420686	11	D.1.1.2	2	3337	0.60	0.17	0.10	0.60	0.13	0.00	0.34	-0.19	-0.17	0.34	-0.14	-0.61	0.04	-4.12	0.94	-4.71	0.90	C-	A-	A-
8	867802	11	D.1.2.1	2	3337	0.51	0.06	0.51	0.37	0.05	0.00	0.34	-0.22	0.34	-0.15	-0.19	-0.19	0.04	-5.23	0.94	-4.40	0.92	A-	B-	B-
8	904687	11	D.1.1.4	2	3337	0.48	0.17	0.18	0.17	0.48	0.00	0.24	-0.07	-0.12	-0.12	0.24	-0.03	0.04	1.43	1.02	1.84	1.03	A+	A-	A-
8	628141	11	D.1.1.1	2	3337	0.32	0.40	0.13	0.15	0.32	0.01	0.05	0.13	-0.12	-0.11	0.05	0.77	0.04	9.18	1.16	9.90	1.32	A-	A+	A+
8	818706	11	D.1.2.3	2	3337	0.43	0.42	0.11	0.04	0.43	0.00	0.26	-0.17	-0.08	-0.10	0.26	0.22	0.04	-0.93	0.99	1.99	1.04	A+	A-	A-
8	171447	11	D.2.1.1	2	3337	0.93	0.05	0.93	0.01	0.02	0.00	0.16	-0.10	0.16	-0.04	-0.12	-2.99	0.07	-0.03	1.00	1.23	1.11	A+	A+	B-
8	884117	11	D.2.1.5	2	3337	0.73	0.06	0.08	0.12	0.73	0.00	0.35	-0.17	-0.21	-0.17	0.35	-1.27	0.04	-3.99	0.92	-5.05	0.85	A+	A-	A-
8	910921	12	D.1.2.5	2	3311	0.67	0.04	0.05	0.67	0.24	0.00	0.32	-0.20	-0.18	0.32	-0.16	-0.88	0.04	-3.48	0.94	-3.43	0.92	A+	B-	B-
8	440912	12	D.1.1.6	2	3311	0.84	0.04	0.84	0.06	0.05	0.00	0.32	-0.22	0.32	-0.12	-0.20	-2.01	0.05	-2.76	0.91	-3.55	0.83	A+	A+	A+
8	897453	12	D.2.1.3	2	3311	0.65	0.10	0.17	0.08	0.65	0.01	0.34	-0.19	-0.14	-0.16	0.34	-0.80	0.04	-5.04	0.92	-4.64	0.90	A+	A-	A-
8	691457	12	D.1.1.10	2	3311	0.80	0.09	0.06	0.05	0.80	0.00	0.32	-0.17	-0.19	-0.16	0.32	-1.72	0.05	-2.84	0.92	-3.31	0.87	A-	A-	A-
8	568095	12	D.1.1.2	2	3311	0.54	0.20	0.12	0.54	0.14	0.01	0.26	-0.07	-0.17	0.26	-0.10	-0.27	0.04	-0.69	0.99	-0.40	0.99	A+	A+	A-
8	833941	12	D.1.2.1	2	3311	0.71	0.71	0.07	0.20	0.03	0.00	0.36	0.36	-0.18	-0.22	-0.17	-1.14	0.04	-4.54	0.92	-5.54	0.85	A+	B-	A-
8	274833	12	D.1.1.4	1	3311	0.23	0.22	0.28	0.27	0.23	0.00	0.16	-0.10	-0.07	0.02	0.16	1.31	0.04	1.42	1.03	2.88	1.11	A-	A-	A-
8	404805	12	D.1.1.1	2	3311	0.27	0.26	0.30	0.16	0.27	0.01	0.06	0.02	-0.03	-0.04	0.06	1.04	0.04	5.76	1.12	8.26	1.29	A+	A+	A+
8	524743	12	D.1.2.3	2	3311	0.62	0.17	0.62	0.12	0.09	0.00	0.19	-0.16	0.19	-0.02	-0.09	-0.68	0.04	3.33	1.05	2.53	1.06	A+	B+	A-
8	727988	12	D.2.1.1	2	3311	0.86	0.08	0.05	0.86	0.01	0.00	0.34	-0.19	-0.20	0.34	-0.16	-2.14	0.05	-3.10	0.90	-4.99	0.75	A+	A-	A-
8	648369	12	D.2.1.5	2	3311	0.36	0.36	0.46	0.12	0.06	0.00	0.18	0.18	-0.04	-0.09	-0.15	0.57	0.04	2.89	1.04	3.11	1.07	A-	A-	A-
8	613898	13	D.1.2.5	2	3311	0.67	0.07	0.10	0.67	0.16	0.00	0.37	-0.19	-0.19	0.37	-0.18	-0.89	0.04	-8.51	0.87	-9.16	0.81	A+	A-	A-

8	466873	13	D.1.1.6	2	3311	0.52	0.16	0.20	0.52	0.11	0.01	0.26	-0.07	-0.12	0.26	-0.16	-0.19	0.04	-3.99	0.96	-3.48	0.95	A-	A-	A+
8	900252	13	D.2.1.3	3	3311	0.63	0.10	0.12	0.14	0.63	0.00	0.21	-0.15	-0.09	-0.07	0.21	-0.68	0.04	-0.79	0.99	-0.21	1.00	A+	A-	A-
8	167814	13	D.1.1.10	2	3311	0.80	0.80	0.03	0.10	0.07	0.00	0.31	0.31	-0.18	-0.16	-0.16	-1.66	0.05	-3.49	0.91	-5.21	0.82	A+	A+	A-
8	932704	13	D.1.1.2	2	3311	0.50	0.26	0.11	0.50	0.13	0.00	0.26	-0.08	-0.15	0.26	-0.14	-0.08	0.04	-4.71	0.95	-3.86	0.94	A-	A-	A-
8	565822	13	D.1.2.1	2	3311	0.27	0.36	0.27	0.24	0.13	0.01	0.06	0.17	0.06	-0.14	-0.12	1.02	0.04	4.03	1.08	4.60	1.14	A-	A-	A-
8	176681	13	D.1.1.4	2	3311	0.31	0.18	0.31	0.28	0.23	0.00	-0.03	0.02	-0.03	0.00	0.03	0.80	0.04	8.67	1.15	9.17	1.25	A+	A+	A+
8	688860	13	D.1.1.1	2	3311	0.16	0.49	0.21	0.14	0.16	0.00	0.11	-0.04	-0.01	-0.05	0.11	1.77	0.05	0.31	1.01	2.62	1.13	A+	A-	A+
8	273110	13	D.1.2.3	2	3311	0.19	0.25	0.35	0.21	0.19	0.00	0.04	-0.07	-0.03	0.08	0.04	1.54	0.05	2.47	1.07	4.75	1.21	A-	A+	A+
8	641019	13	D.2.1.1	2	3311	0.96	0.01	0.96	0.01	0.01	0.00	0.17	-0.11	0.17	-0.07	-0.11	-3.70	0.10	-0.45	0.96	-2.34	0.74	A+	C-	B-
8	543356	13	D.2.1.5	2	3311	0.32	0.26	0.34	0.32	0.08	0.00	-0.02	-0.08	0.15	-0.02	-0.09	0.73	0.04	8.59	1.14	9.90	1.27	A-	A+	A+
8	509376	14	D.1.2.5	2	3283	0.43	0.19	0.20	0.18	0.43	0.00	0.29	-0.13	-0.11	-0.12	0.29	0.15	0.04	-5.31	0.94	-4.47	0.93	A+	A-	A-
8	525440	14	D.1.1.6	2	3283	0.69	0.69	0.07	0.07	0.15	0.00	0.31	0.31	-0.18	-0.18	-0.14	-1.09	0.04	-5.29	0.91	-6.03	0.86	A+	A-	A+
8	115861	14	D.2.1.3	3	3283	0.64	0.16	0.64	0.07	0.13	0.00	0.29	-0.12	0.29	-0.18	-0.14	-0.79	0.04	-4.42	0.94	-4.68	0.91	A+	A-	A-
8	830156	14	D.1.1.10	2	3283	0.19	0.19	0.41	0.19	0.21	0.00	0.09	-0.07	-0.09	0.09	0.09	1.43	0.05	2.20	1.06	3.14	1.13	A-	A+	A+
8	950843	14	D.1.1.2	1	3283	0.40	0.36	0.13	0.40	0.10	0.00	0.07	0.06	-0.12	0.07	-0.07	0.28	0.04	7.82	1.10	8.13	1.15	A+	A+	A-
8	453278	14	D.1.2.1	2	3283	0.41	0.04	0.41	0.45	0.09	0.00	0.27	-0.15	0.27	-0.20	-0.01	0.23	0.04	-3.64	0.95	-3.48	0.94	A-	A-	A+
8	850867	14	D.1.1.4	2	3283	0.26	0.26	0.26	0.23	0.25	0.00	0.03	0.04	0.03	-0.10	0.02	1.00	0.04	5.42	1.11	7.24	1.23	A+	B+	A+
8	778853	14	D.1.1.1	2	3283	0.17	0.17	0.40	0.19	0.24	0.01	-0.04	-0.04	0.15	-0.02	-0.11	1.64	0.05	4.15	1.13	7.42	1.37	A+	A+	A-
8	283415	14	D.1.2.3	2	3283	0.27	0.50	0.18	0.05	0.27	0.01	0.05	0.07	-0.08	-0.11	0.05	0.96	0.04	4.71	1.10	6.51	1.20	A-	A-	A+
8	561854	14	D.2.1.1	2	3283	0.48	0.20	0.20	0.48	0.11	0.00	0.34	-0.14	-0.17	0.34	-0.14	-0.08	0.04	-8.56	0.90	-7.58	0.89	A-	A-	A-
8	797426	14	D.2.1.5	2	3283	0.54	0.14	0.23	0.09	0.54	0.00	0.19	-0.12	-0.06	-0.10	0.19	-0.34	0.04	1.16	1.01	1.14	1.02	A-	A-	A-
8	241367	15	D.1.2.5	2	3304	0.61	0.12	0.13	0.13	0.61	0.00	0.36	-0.16	-0.17	-0.17	0.36	-0.68	0.04	-5.83	0.92	-5.17	0.90	A+	A-	A+
8	359921	15	D.1.1.6	2	3304	0.51	0.16	0.16	0.51	0.16	0.00	0.27	-0.08	-0.12	0.27	-0.17	-0.20	0.04	-0.83	0.99	-0.93	0.98	A+	A+	A-
8	298758	15	D.2.1.3	2	3304	0.59	0.14	0.08	0.19	0.59	0.00	0.37	-0.17	-0.21	-0.16	0.37	-0.56	0.04	-6.36	0.91	-6.18	0.88	A-	A+	A+
8	168163	15	D.1.1.10	2	3304	0.36	0.08	0.18	0.39	0.36	0.00	0.18	-0.19	-0.08	-0.01	0.18	0.54	0.04	3.96	1.06	4.47	1.11	A+	A+	A+
8	741749	15	D.1.1.2	2	3304	0.37	0.41	0.07	0.37	0.16	0.00	0.17	0.01	-0.20	0.17	-0.09	0.49	0.04	4.51	1.07	5.20	1.12	A-	A-	A-
8	659986	15	D.1.2.1	2	3304	0.40	0.09	0.40	0.14	0.36	0.00	0.43	-0.08	0.43	-0.22	-0.23	0.32	0.04	-9.90	0.86	-9.16	0.83	A+	A-	A-
8	778678	15	D.1.1.4	2	3304	0.80	0.80	0.07	0.05	0.08	0.00	0.37	0.37	-0.23	-0.21	-0.15	-1.70	0.05	-5.20	0.87	-6.12	0.77	B+	A-	A-
8	723960	15	D.1.1.1	2	3304	0.23	0.30	0.23	0.23	0.23	0.00	0.09	0.00	-0.07	-0.03	0.09	1.27	0.04	4.32	1.10	7.04	1.28	A-	A-	A+
8	911396	15	D.1.2.3	2	3304	0.35	0.53	0.35	0.04	0.08	0.00	0.32	-0.24	0.32	-0.09	-0.05	0.59	0.04	-3.98	0.94	-2.33	0.95	A-	A+	A-
8	202915	15	D.2.1.1	2	3304	0.46	0.18	0.27	0.46	0.09	0.00	0.18	0.04	-0.17	0.18	-0.10	0.05	0.04	5.36	1.07	4.93	1.09	A-	A-	A-
8	391622	15	D.2.1.6	2	3304	0.62	0.62	0.07	0.05	0.26	0.00	0.41	0.41	-0.20	-0.21	-0.22	-0.69	0.04	-8.64	0.88	-8.01	0.84	A+	B-	B-

8	649832	16	D.1.2.5	2	3294	0.43	0.30	0.14	0.43	0.12	0.00	0.23	-0.08	-0.17	0.23	-0.05	0.17	0.04	-3.62	0.96	-1.52	0.98	A+	A-	A+
8	746943	16	D.2.1.3	2	3294	0.64	0.64	0.04	0.06	0.26	0.00	0.22	0.22	-0.13	-0.20	-0.08	-0.79	0.04	-2.06	0.97	-1.24	0.98	A+	A-	A-
8	252789	16	D.1.1.11	2	3294	0.19	0.17	0.29	0.35	0.19	0.00	-0.04	-0.04	0.07	-0.01	-0.04	1.47	0.05	3.66	1.10	7.77	1.34	A-	A-	A-
8	433028	16	D.1.1.7	2	3294	0.24	0.18	0.26	0.31	0.24	0.01	-0.06	-0.03	0.03	0.07	-0.06	1.17	0.04	5.95	1.13	7.34	1.26	A+	A+	A+
8	524383	16	D.1.1.2	1	3294	0.35	0.22	0.35	0.15	0.27	0.01	0.10	-0.08	0.10	-0.05	0.03	0.55	0.04	3.00	1.04	3.20	1.07	A+	A+	A-
8	368273	16	D.1.2.1	2	3294	0.29	0.06	0.29	0.28	0.37	0.00	0.10	-0.16	0.10	-0.15	0.12	0.86	0.04	1.81	1.03	4.06	1.11	A-	B-	A-
8	694794	16	D.1.1.4	2	3294	0.84	0.84	0.04	0.06	0.06	0.00	0.33	0.33	-0.20	-0.16	-0.17	-1.99	0.05	-3.93	0.88	-6.22	0.75	B+	B-	B-
8	119709	16	D.1.1.1	2	3294	0.20	0.18	0.40	0.22	0.20	0.00	0.04	0.00	0.04	-0.07	0.04	1.41	0.05	1.97	1.05	4.58	1.19	A-	A+	A+
8	118707	16	D.1.2.3	2	3294	0.48	0.03	0.39	0.48	0.11	0.00	0.23	-0.20	-0.04	0.23	-0.21	-0.02	0.04	-3.82	0.96	-3.05	0.96	A-	A+	A-
8	776952	16	D.2.1.1	2	3294	0.23	0.27	0.33	0.17	0.23	0.00	0.01	0.00	0.04	-0.06	0.01	1.23	0.04	3.76	1.09	5.02	1.18	A-	A+	A+
8	641268	16	D.2.1.6	2	3294	0.66	0.10	0.10	0.66	0.14	0.00	0.27	-0.15	-0.21	0.27	-0.06	-0.85	0.04	-4.30	0.94	-4.62	0.91	A+	A-	A-
8	751536	17	D.2.1.3	2	3297	0.60	0.14	0.12	0.14	0.60	0.00	0.21	-0.12	-0.11	-0.06	0.21	-0.55	0.04	-0.99	0.99	-0.24	1.00	A+	A-	A-
8	316569	17	D.1.1.11	3	3297	0.83	0.83	0.08	0.03	0.06	0.00	0.25	0.25	-0.07	-0.15	-0.21	-1.89	0.05	-1.89	0.94	-3.21	0.87	A+	C-	B-
8	157101	17	D.1.1.7	2	3297	0.79	0.04	0.15	0.02	0.79	0.00	0.30	-0.15	-0.22	-0.09	0.30	-1.61	0.05	-3.56	0.91	-5.25	0.82	B+	A-	B-
8	967139	17	D.1.1.2	1	3297	0.42	0.15	0.14	0.42	0.28	0.00	0.02	-0.08	0.02	0.02	0.04	0.23	0.04	9.90	1.12	9.15	1.16	A-	A+	A+
8	704049	17	D.1.2.1	2	3297	0.23	0.49	0.25	0.23	0.03	0.00	0.13	0.00	-0.06	0.13	-0.11	1.24	0.04	0.59	1.01	2.10	1.07	A+	A-	A-
8	721855	17	D.1.1.4	2	3297	0.37	0.28	0.17	0.37	0.17	0.00	0.15	-0.07	-0.08	0.15	-0.01	0.46	0.04	1.22	1.02	2.48	1.05	A+	A-	A-
8	743473	17	D.1.1.1	2	3297	0.18	0.21	0.18	0.32	0.28	0.01	0.03	-0.13	0.03	0.05	0.06	1.58	0.05	1.99	1.06	6.49	1.30	A+	A-	A+
8	743064	17	D.1.2.3	2	3297	0.27	0.23	0.27	0.43	0.07	0.00	0.04	-0.01	0.04	0.01	-0.07	0.98	0.04	4.11	1.08	6.40	1.19	A-	A+	A+
8	776071	17	D.2.1.1	2	3297	0.33	0.18	0.33	0.08	0.40	0.01	0.09	-0.07	0.09	-0.17	0.09	0.68	0.04	3.59	1.06	4.64	1.11	A-	A+	A+
8	470835	17	D.2.1.6	2	3297	0.53	0.26	0.53	0.09	0.11	0.01	0.20	-0.01	0.20	-0.16	-0.12	-0.25	0.04	-0.98	0.99	-0.83	0.99	A+	A-	A-
8	669336	17	D.1.2.5	2	3297	0.61	0.08	0.61	0.23	0.08	0.00	0.26	-0.20	0.26	-0.06	-0.16	-0.62	0.04	-3.69	0.95	-4.09	0.93	A+	A-	A-
8	101331	18	D.1.2.5	2	3312	0.68	0.04	0.13	0.68	0.15	0.00	0.28	-0.19	-0.18	0.28	-0.09	-0.99	0.04	-3.44	0.94	-3.75	0.92	A+	A+	A-
8	340252	18	D.2.1.3	2	3312	0.27	0.26	0.27	0.37	0.09	0.00	0.00	-0.01	0.00	0.11	-0.16	0.96	0.04	6.77	1.13	8.64	1.27	A-	A+	A+
8	457659	18	D.1.1.11	2	3312	0.44	0.14	0.44	0.28	0.14	0.00	0.18	-0.16	0.18	-0.02	-0.06	0.14	0.04	1.97	1.02	3.53	1.06	A+	A-	A-
8	466367	18	D.1.1.7	2	3312	0.25	0.14	0.24	0.37	0.25	0.00	0.22	-0.15	-0.01	-0.08	0.22	1.09	0.04	-1.43	0.97	-0.78	0.97	A-	A+	A-
8	470141	18	D.1.1.2	1	3312	0.28	0.28	0.28	0.24	0.20	0.00	-0.01	-0.01	0.08	0.03	-0.09	0.93	0.04	7.56	1.15	8.95	1.28	A+	A+	A+
8	409224	18	D.1.2.1	2	3312	0.39	0.43	0.06	0.39	0.13	0.00	0.29	-0.18	-0.19	0.29	-0.01	0.37	0.04	-4.43	0.94	-3.83	0.93	A-	A+	A-
8	265971	18	D.1.1.4	2	3312	0.34	0.36	0.14	0.16	0.34	0.00	0.11	0.07	-0.06	-0.16	0.11	0.61	0.04	4.50	1.07	5.32	1.13	A-	A-	A+
8	224518	18	D.1.1.1	2	3312	0.34	0.32	0.34	0.16	0.18	0.00	0.10	0.09	0.10	-0.14	-0.08	0.60	0.04	4.99	1.08	6.05	1.14	A-	A-	A+
8	419567	18	D.1.2.3	2	3312	0.83	0.04	0.09	0.03	0.83	0.01	0.34	-0.17	-0.19	-0.18	0.34	-1.90	0.05	-4.01	0.89	-6.17	0.76	B+	A+	A+
8	854523	18	D.2.1.1	2	3312	0.69	0.13	0.10	0.09	0.69	0.00	0.30	-0.12	-0.17	-0.17	0.30	-1.02	0.04	-3.92	0.93	-4.54	0.90	A+	A-	A-

8	577394	18	D.2.1.6	2	3312	0.68	0.21	0.05	0.68	0.05	0.00	0.21	-0.07	-0.17	0.21	-0.14	-1.02	0.04	-0.25	1.00	0.26	1.01	A+	A-	A-
8	984354	19	D.1.2.5	2	3314	0.56	0.56	0.21	0.13	0.10	0.00	0.33	0.33	-0.18	-0.14	-0.13	-0.38	0.04	-4.15	0.95	-3.67	0.93	A-	A+	A-
8	965197	19	D.1.1.11	2	3314	0.75	0.08	0.05	0.11	0.75	0.00	0.41	-0.22	-0.24	-0.19	0.41	-1.42	0.04	-6.34	0.86	-6.82	0.78	A+	A-	A-
8	635893	19	D.1.1.7	2	3314	0.84	0.84	0.04	0.09	0.03	0.00	0.36	0.36	-0.20	-0.24	-0.15	-2.05	0.05	-3.62	0.89	-5.35	0.75	A-	A-	A-
8	300802	19	D.1.1.2	1	3314	0.49	0.16	0.15	0.49	0.20	0.00	0.32	-0.16	-0.12	0.32	-0.12	-0.09	0.04	-3.82	0.95	-2.10	0.96	A-	A-	A-
8	902719	19	D.1.2.1	2	3314	0.62	0.12	0.20	0.62	0.06	0.00	0.33	-0.15	-0.16	0.33	-0.18	-0.68	0.04	-3.18	0.95	-3.69	0.92	A+	A-	B-
8	520599	19	D.1.1.4	2	3314	0.59	0.10	0.14	0.18	0.59	0.00	0.30	-0.19	-0.16	-0.09	0.30	-0.53	0.04	-1.48	0.98	-1.98	0.96	A+	A+	A+
8	683546	19	D.1.1.1	2	3314	0.78	0.06	0.78	0.11	0.05	0.00	0.43	-0.20	0.43	-0.25	-0.22	-1.56	0.04	-6.82	0.84	-7.54	0.74	A+	A-	A-
8	378090	19	D.1.2.3	2	3314	0.39	0.32	0.13	0.16	0.39	0.01	0.29	-0.14	-0.06	-0.11	0.29	0.43	0.04	-2.56	0.96	1.12	1.02	B-	A-	A-
8	714933	19	D.2.1.1	2	3314	0.78	0.10	0.78	0.08	0.04	0.00	0.36	-0.15	0.36	-0.25	-0.17	-1.58	0.04	-3.81	0.91	-4.62	0.83	A-	A-	A-
8	630480	19	D.2.1.4	2	3314	0.18	0.10	0.18	0.30	0.42	0.00	-0.15	-0.16	-0.15	-0.03	0.24	1.60	0.05	8.33	1.25	9.90	2.11	A+	A+	B+
8	440060	19	D.2.1.6	2	3314	0.43	0.24	0.18	0.43	0.14	0.00	0.26	-0.06	-0.16	0.26	-0.10	0.21	0.04	-0.20	1.00	0.64	1.01	A+	A-	A-
8	859736	20	D.1.1.11	1	3331	0.56	0.56	0.21	0.14	0.09	0.00	0.30	0.30	-0.17	-0.16	-0.08	-0.34	0.04	-2.89	0.96	-3.43	0.94	A-	A-	A+
8	739171	20	D.1.1.7	2	3331	0.43	0.17	0.19	0.20	0.43	0.00	0.27	-0.07	-0.17	-0.10	0.27	0.24	0.04	-1.45	0.98	-0.96	0.98	A+	A+	A+
8	524275	20	D.1.1.2	1	3331	0.26	0.29	0.26	0.27	0.18	0.00	0.08	0.10	0.08	-0.09	-0.11	1.12	0.04	5.15	1.11	7.32	1.25	A+	A+	A+
8	327116	20	D.1.2.1	2	3331	0.43	0.43	0.07	0.33	0.16	0.00	0.35	0.35	-0.20	-0.12	-0.17	0.26	0.04	-6.82	0.91	-5.44	0.90	A-	A-	A-
8	898978	20	D.1.1.4	2	3331	0.67	0.12	0.10	0.11	0.67	0.00	0.31	-0.15	-0.11	-0.19	0.31	-0.90	0.04	-3.79	0.94	-3.48	0.92	A-	A-	A+
8	423128	20	D.1.1.1	2	3331	0.25	0.29	0.25	0.20	0.26	0.00	0.08	-0.05	0.08	-0.05	0.03	1.20	0.04	4.81	1.11	7.51	1.27	A-	A-	A+
8	715944	20	D.1.2.3	2	3331	0.77	0.77	0.08	0.09	0.07	0.00	0.31	0.31	-0.18	-0.17	-0.13	-1.44	0.04	-3.15	0.93	-4.28	0.86	A-	A+	A+
8	741340	20	D.2.1.1	2	3331	0.62	0.03	0.23	0.62	0.12	0.00	0.32	-0.16	-0.20	0.32	-0.11	-0.62	0.04	-4.15	0.94	-4.11	0.92	A-	A-	A-
8	183748	20	D.2.1.4	2	3331	0.23	0.16	0.23	0.27	0.35	0.00	-0.03	-0.07	-0.03	-0.03	0.11	1.34	0.04	7.26	1.18	9.90	1.50	A-	A+	A+
8	312750	20	D.2.1.5	2	3331	0.44	0.25	0.21	0.44	0.10	0.00	0.28	-0.19	-0.06	0.28	-0.10	0.21	0.04	-2.31	0.97	-1.07	0.98	A+	A-	A-
8	159506	20	D.1.2.5	2	3331	0.73	0.10	0.73	0.04	0.13	0.00	0.38	-0.22	0.38	-0.18	-0.20	-1.21	0.04	-6.19	0.88	-7.51	0.79	A+	A-	B-

Table 28. OE Item Statistics

Item Information					Classical										Rasch		Infit		Outfit		DIF		
Gr	PubID	Form	Std	DOK	N	P.Value	P(0)	P(1)	P(2)	P(blank)	PtBis	PT(0)	PT(1)	PT(2)	B	Final.B. Err	t	MS	t	MS	MW	BW	WH.
3	559605	0	C.1.2.1	3	1499	0.58	0.57	0.28	0.15	0.03	0.26	-0.25	0.12	0.20	0.88	0.04	-2.62	0.92	-3.31	0.86	A-	A-	A-
3	746367	0	C.1.1.2	3	1499	1.26	0.14	0.46	0.40	0.01	0.29	-0.20	-0.12	0.27	-0.67	0.04	-2.55	0.92	-2.32	0.93	A+	B-	B-
3	252077	1	C.1.3.1	3	1499	0.92	0.29	0.49	0.21	0.02	0.37	-0.33	0.09	0.26	0.23	0.04	-2.66	0.92	-3.03	0.91	A-	C-	C-
3	395751	1	C.1.2.2	3	1499	1.04	0.22	0.53	0.26	0.01	0.31	-0.24	-0.04	0.27	-0.10	0.04	-0.45	0.99	-0.43	0.99	A-	A-	A-
3	707715	2	C.1.3.4	3	1499	0.70	0.38	0.53	0.08	0.02	0.34	-0.30	0.17	0.23	0.94	0.05	-2.72	0.91	-2.83	0.91	A+	A-	A-
3	344070	2	C.1.1.1	3	1499	0.56	0.58	0.28	0.14	0.01	0.26	-0.22	0.07	0.23	0.94	0.04	0.03	1.00	-0.69	0.97	A+	A-	A-
3	757794	3	C.1.2.2	3	1500	0.93	0.17	0.74	0.09	0.01	0.33	-0.38	0.26	0.10	0.27	0.06	-2.04	0.92	-2.18	0.91	A+	B-	A-
3	529156	3	C.1.3.3	3	1500	1.22	0.26	0.25	0.48	0.01	0.41	-0.37	-0.03	0.35	-0.48	0.04	-3.65	0.89	-2.45	0.90	A+	B-	B-
3	152497	4	C.1.3.4	3	1499	0.68	0.41	0.50	0.09	0.02	0.35	-0.31	0.17	0.24	0.97	0.05	-1.90	0.94	-2.35	0.92	A+	A-	A-
3	156601	4	C.1.1.1	3	1499	0.48	0.62	0.27	0.11	0.02	0.26	-0.23	0.11	0.20	1.18	0.04	1.46	1.05	1.55	1.08	A+	B-	A+
3	685240	5	C.1.2.4	3	1498	0.36	0.73	0.17	0.09	0.02	0.30	-0.27	0.12	0.25	1.38	0.05	-0.51	0.98	-0.08	0.99	A-	B-	B-
3	685164	5	C.1.3.3	3	1498	0.75	0.46	0.33	0.21	0.02	0.32	-0.30	0.11	0.24	0.48	0.04	1.38	1.04	1.08	1.04	A+	A+	A+
3	599589	6	C.1.3.3	3	1500	1.54	0.11	0.25	0.65	0.02	0.29	-0.28	-0.06	0.24	-1.29	0.04	-1.73	0.94	-1.58	0.92	A+	B-	A-
3	906203	6	C.1.2.4	3	1500	0.40	0.70	0.19	0.10	0.02	0.29	-0.26	0.11	0.25	1.21	0.04	-0.12	0.99	-0.26	0.98	A+	A-	A-
3	471515	7	C.1.1.4	3	1499	0.38	0.72	0.17	0.10	0.02	0.33	-0.31	0.15	0.27	1.41	0.05	0.28	1.01	0.71	1.05	A+	A-	A-
3	407749	7	C.1.2.3	2	1499	1.45	0.22	0.11	0.67	0.01	0.54	-0.47	-0.19	0.54	-0.87	0.04	-6.26	0.78	-5.31	0.64	A+	B-	B-
3	806319	8	C.1.1.2	3	1500	0.74	0.34	0.58	0.08	0.02	0.29	-0.26	0.16	0.17	0.88	0.05	-0.66	0.98	-0.76	0.97	A+	A+	A+
3	485649	8	C.1.3.4	3	1500	0.24	0.78	0.20	0.02	0.02	0.21	-0.19	0.15	0.15	2.26	0.06	0.28	1.01	-0.29	0.98	A+	A-	A-
3	682271	9	C.1.1.2	3	1500	1.05	0.26	0.44	0.31	0.02	0.37	-0.34	0.04	0.28	-0.17	0.04	-4.00	0.89	-4.21	0.88	A-	C-	A+
3	283507	9	C.1.3.4	3	1500	0.57	0.52	0.38	0.10	0.02	0.30	-0.27	0.16	0.21	1.01	0.04	-1.53	0.95	-1.99	0.93	A+	A-	A-
3	609434	10	C.1.3.1	3	1500	1.43	0.27	0.04	0.70	0.01	0.35	-0.33	-0.08	0.35	-0.74	0.03	-3.14	0.90	-1.77	0.86	A-	B-	A-
3	573940	10	C.1.1.4	3	1500	0.41	0.71	0.17	0.12	0.02	0.29	-0.27	0.11	0.24	1.14	0.04	0.14	1.01	-1.02	0.93	A+	B-	A-
3	348700	11	C.1.1.2	3	1500	0.80	0.35	0.49	0.16	0.01	0.34	-0.30	0.11	0.24	0.52	0.04	-2.32	0.93	-2.59	0.92	A+	A-	A+
3	506168	11	C.1.1.3	2	1500	1.80	0.02	0.17	0.82	0.01	0.26	-0.09	-0.25	0.27	-2.53	0.06	-1.05	0.94	-1.31	0.90	A-	B-	A-
3	979543	12	C.1.2.1	2	1500	1.34	0.24	0.18	0.58	0.01	0.34	-0.27	-0.13	0.34	-0.72	0.04	-3.06	0.91	-3.71	0.83	A+	B-	A-
3	779437	12	C.1.3.2	3	1500	0.86	0.32	0.50	0.18	0.01	0.36	-0.29	0.05	0.30	0.25	0.04	-4.17	0.88	-4.37	0.87	A-	A-	A-
3	227678	13	C.1.2.1	3	1500	0.67	0.56	0.22	0.23	0.01	0.33	-0.30	0.08	0.28	0.63	0.04	-0.82	0.97	-0.85	0.96	A+	A-	A-
3	799197	13	C.1.2.3	2	1500	1.50	0.16	0.18	0.66	0.01	0.38	-0.32	-0.14	0.36	-0.99	0.04	-4.20	0.85	-3.17	0.81	A+	B-	A-
3	956314	14	C.1.2.4	3	1500	0.52	0.62	0.24	0.14	0.02	0.29	-0.27	0.11	0.23	0.95	0.04	-1.46	0.95	-0.45	0.98	A+	A-	A-

3	561888	14	C.1.2.3	3	1500	1.00	0.35	0.29	0.35	0.01	0.39	-0.34	0.00	0.34	-0.03	0.04	-4.57	0.88	-3.97	0.87	A-	A-	A-
3	747506	15	C.1.2.2	3	1500	1.21	0.14	0.51	0.35	0.01	0.36	-0.26	-0.11	0.31	-0.57	0.04	-2.82	0.91	-2.71	0.91	A+	A-	A-
3	992945	15	C.1.3.3	3	1500	1.73	0.07	0.13	0.80	0.01	0.23	-0.18	-0.13	0.22	-1.63	0.05	0.41	1.02	0.08	1.00	A+	A+	A+
3	903562	16	C.1.1.3	3	1500	1.30	0.23	0.25	0.52	0.01	0.41	-0.33	-0.13	0.39	-0.65	0.04	-5.53	0.84	-5.22	0.79	A-	B-	A-
3	504085	16	C.1.1.4	3	1500	0.49	0.63	0.25	0.12	0.02	0.27	-0.22	0.06	0.25	1.02	0.04	-0.45	0.98	-0.96	0.95	A+	A-	A+
3	931284	17	C.1.2.4	3	1499	0.41	0.70	0.20	0.10	0.02	0.28	-0.26	0.13	0.22	1.20	0.04	0.24	1.01	0.77	1.05	A+	A-	A-
3	809704	17	C.1.2.3	2	1499	1.48	0.16	0.20	0.64	0.00	0.41	-0.34	-0.16	0.39	-1.03	0.04	-5.57	0.81	-4.53	0.76	A+	A-	C-
3	878500	18	C.1.3.1	3	1500	0.53	0.59	0.28	0.12	0.02	0.39	-0.36	0.18	0.30	1.00	0.04	-2.29	0.92	-2.49	0.89	A+	B-	A-
3	291236	18	C.1.1.3	2	1500	0.90	0.30	0.51	0.19	0.02	0.45	-0.34	0.00	0.39	0.21	0.04	-5.64	0.84	-5.87	0.83	A-	B-	A+
3	499822	19	C.1.1.4	3	1500	0.51	0.58	0.32	0.10	0.02	0.31	-0.30	0.19	0.20	1.20	0.04	0.04	1.00	-0.52	0.98	A-	B-	A-
3	430376	19	C.1.2.3	2	1500	1.56	0.14	0.16	0.70	0.01	0.44	-0.35	-0.20	0.43	-1.16	0.04	-5.19	0.81	-5.24	0.67	A+	A-	B-
3	750218	20	C.1.3.4	3	1499	0.38	0.72	0.18	0.10	0.02	0.28	-0.26	0.12	0.23	1.34	0.04	-1.97	0.92	-1.21	0.92	A+	A-	B-
3	148160	20	C.1.1.1	3	1499	0.73	0.47	0.33	0.20	0.01	0.28	-0.24	0.06	0.23	0.60	0.04	-1.00	0.97	-0.99	0.96	A-	B-	A-

Table 29. WP Item Statistics

Item Information					Classical														Rasch		Infit		Outfit		DIF		
Gr	PubID	Form	Std	DOK	N	P.Value	P(0)	P(1)	P(2)	P(3)	P(4)	P(Blank)	PtBis	PT(0)	PT(1)	PT(2)	PT(3)	PT(4)	B	Final.B. Err	t	MS	t	MS	MW.	BW	WH
3	411765	1	C.1.1	3	1499	1.45	0.09	0.46	0.37	0.07	0.00	0.04	0.40	-0.19	-0.27	0.26	0.23	0.05	1.12	0.04	-2.80	0.90	-3.03	0.89	B+	A-	A-
3	652513	2	C.1.1	3	1499	1.55	0.08	0.38	0.45	0.08	0.00	0.03	0.44	-0.13	-0.37	0.26	0.26	0.14	0.97	0.04	-4.59	0.84	-4.59	0.84	B+	B-	A-
3	363000	3	C.1.1	3	1500	1.62	0.07	0.34	0.52	0.07	0.01	0.02	0.41	-0.15	-0.33	0.24	0.23	0.11	0.79	0.04	-3.12	0.89	-2.96	0.89	B+	B-	B-
3	698639	4	C.1.3	3	1499	2.06	0.07	0.16	0.45	0.24	0.07	0.03	0.46	-0.19	-0.29	-0.03	0.24	0.29	0.01	0.03	-3.79	0.87	-3.57	0.88	B+	A-	A-
3	520884	5	C.1.3	3	1498	2.09	0.05	0.17	0.49	0.25	0.05	0.02	0.46	-0.13	-0.32	-0.07	0.29	0.27	-0.12	0.03	-3.81	0.86	-3.66	0.87	A+	A-	A-
3	947271	6	C.1.3	3	1500	2.02	0.06	0.19	0.48	0.24	0.04	0.02	0.46	-0.15	-0.34	0.00	0.28	0.23	0.00	0.03	-4.88	0.83	-4.79	0.83	C+	C-	A-
3	256548	7	C.1.3	3	1499	1.95	0.10	0.17	0.46	0.25	0.03	0.03	0.49	-0.20	-0.37	0.03	0.35	0.19	0.29	0.03	-2.40	0.92	-2.03	0.93	A+	B-	A-
3	263061	8	C.1.2	3	1500	1.56	0.09	0.40	0.39	0.11	0.01	0.03	0.41	-0.14	-0.32	0.20	0.27	0.13	0.71	0.04	-2.74	0.90	-2.86	0.90	C+	A-	A+
3	561635	9	C.1.2	3	1500	1.65	0.08	0.32	0.46	0.13	0.01	0.03	0.38	-0.14	-0.30	0.18	0.24	0.11	0.77	0.04	-2.79	0.90	-2.74	0.91	B+	A-	A-
3	177297	10	C.1.2	3	1500	1.70	0.09	0.29	0.47	0.14	0.02	0.03	0.41	-0.22	-0.27	0.17	0.23	0.14	0.52	0.03	-3.77	0.87	-3.78	0.87	B+	B-	C-
3	829081	11	C.1.2	3	1500	1.79	0.08	0.25	0.46	0.19	0.01	0.03	0.44	-0.22	-0.28	0.10	0.32	0.08	0.64	0.03	-4.12	0.86	-4.03	0.86	B+	C-	A-
3	595682	12	C.1.2	3	1500	1.60	0.06	0.42	0.40	0.11	0.01	0.02	0.39	-0.13	-0.32	0.20	0.25	0.09	0.51	0.04	-4.07	0.86	-4.23	0.85	C+	A-	A-
3	776170	13	C.1.1	3	1500	1.58	0.07	0.39	0.45	0.09	0.01	0.03	0.43	-0.12	-0.34	0.22	0.28	0.14	0.89	0.04	-4.31	0.85	-4.34	0.85	B+	B-	A-
3	660312	14	C.1.3	3	1500	1.81	0.08	0.22	0.51	0.16	0.02	0.03	0.36	-0.15	-0.25	0.08	0.24	0.12	0.40	0.03	-1.98	0.93	-1.73	0.94	A+	B-	B-
3	474171	15	C.1.2	3	1500	1.63	0.06	0.35	0.48	0.10	0.01	0.03	0.38	-0.15	-0.30	0.21	0.22	0.09	0.81	0.04	-2.64	0.91	-2.62	0.91	A+	B-	B-
3	615493	16	C.1.1	3	1500	1.56	0.06	0.38	0.49	0.06	0.00	0.02	0.41	-0.19	-0.30	0.28	0.21	0.06	0.95	0.04	-4.24	0.85	-4.14	0.85	A+	B-	A-
3	165339	17	C.1.3	3	1499	1.86	0.07	0.26	0.44	0.20	0.03	0.02	0.39	-0.09	-0.33	0.05	0.27	0.19	0.20	0.03	-2.44	0.92	-2.45	0.92	B+	A-	A-
3	276636	18	C.1.1	3	1500	1.46	0.09	0.47	0.32	0.11	0.01	0.03	0.40	-0.17	-0.26	0.18	0.28	0.11	0.97	0.04	-2.35	0.92	-2.72	0.91	B+	B-	A-
3	385107	19	C.1.1	3	1500	1.50	0.07	0.42	0.45	0.06	0.00	0.03	0.45	-0.19	-0.33	0.31	0.23	0.08	1.06	0.04	-4.03	0.86	-4.03	0.86	B+	B-	B-
3	958527	20	C.1.1	3	1499	1.62	0.06	0.35	0.51	0.08	0.00	0.03	0.38	-0.12	-0.30	0.22	0.22	0.11	0.89	0.04	-3.09	0.89	-3.07	0.89	B+	A-	B-
4	100529	1	C.1.1	3	1500	1.69	0.04	0.34	0.52	0.09	0.01	0.01	0.43	-0.14	-0.35	0.23	0.23	0.11	0.89	0.04	-2.77	0.90	-2.78	0.90	B+	A-	A-
4	164800	2	C.1.2	3	1500	1.69	0.04	0.37	0.47	0.12	0.01	0.01	0.39	-0.08	-0.33	0.17	0.26	0.11	0.94	0.04	-1.07	0.96	-1.22	0.96	C+	A+	A+
4	260857	3	C.1.2	3	1499	1.93	0.03	0.22	0.56	0.18	0.02	0.01	0.43	-0.10	-0.37	0.09	0.29	0.13	0.51	0.04	-3.12	0.88	-3.06	0.89	B+	A-	B-
4	215463	4	C.1.2	3	1500	1.81	0.03	0.34	0.44	0.17	0.02	0.01	0.34	-0.11	-0.26	0.09	0.23	0.12	0.56	0.04	-0.76	0.97	-0.85	0.97	C+	A-	A-
4	972389	5	C.1.1	3	1500	1.61	0.04	0.42	0.43	0.10	0.00	0.01	0.44	-0.13	-0.37	0.24	0.27	0.11	1.10	0.04	-3.09	0.89	-3.45	0.88	C+	C-	A-
4	622347	6	C.1.3	3	1500	2.13	0.03	0.16	0.52	0.24	0.06	0.01	0.46	-0.13	-0.33	-0.06	0.28	0.24	0.12	0.04	-2.29	0.92	-2.19	0.92	C+	B-	A-
4	112762	7	C.1.3	3	1499	2.14	0.04	0.13	0.53	0.26	0.04	0.01	0.43	-0.14	-0.30	-0.07	0.27	0.22	0.24	0.04	-3.05	0.89	-2.90	0.89	A+	A-	A-
4	293533	8	C.1.3	3	1500	2.19	0.04	0.14	0.47	0.29	0.06	0.01	0.47	-0.13	-0.38	-0.07	0.31	0.19	0.18	0.04	-1.47	0.95	-1.26	0.95	A+	A-	B-
4	253848	9	C.1.1	3	1500	1.76	0.03	0.30	0.55	0.11	0.01	0.01	0.49	-0.14	-0.44	0.28	0.25	0.10	0.96	0.04	-3.78	0.86	-3.79	0.86	B+	A-	A-

4	176110	10	C.1.1	3	1500	1.77	0.05	0.24	0.59	0.10	0.01	0.01	0.46	-0.17	-0.37	0.21	0.28	0.11	0.89	0.04	-2.50	0.90	-2.13	0.91	B+	B-	B-
4	435041	11	C.1.2	3	1500	1.97	0.05	0.25	0.45	0.21	0.05	0.01	0.41	-0.16	-0.31	0.05	0.24	0.19	0.32	0.03	-2.44	0.91	-2.52	0.91	C+	A-	A-
4	349232	12	C.1.3	3	1500	2.44	0.03	0.10	0.38	0.35	0.13	0.01	0.52	-0.17	-0.33	-0.20	0.27	0.31	-0.18	0.03	-5.24	0.82	-5.29	0.82	C+	B-	A-
4	990909	13	C.1.1	3	1500	1.77	0.03	0.31	0.54	0.11	0.01	0.01	0.43	-0.09	-0.38	0.20	0.27	0.09	0.76	0.04	-1.72	0.94	-1.70	0.94	C+	A-	A-
4	180225	14	C.1.3	3	1499	2.23	0.05	0.13	0.44	0.31	0.07	0.01	0.42	-0.12	-0.30	-0.11	0.25	0.24	0.12	0.03	-1.84	0.93	-1.70	0.94	B+	A-	A-
4	373671	15	C.1.2	3	1500	1.85	0.04	0.28	0.49	0.18	0.01	0.01	0.41	-0.18	-0.30	0.11	0.26	0.11	0.73	0.04	-2.34	0.92	-2.37	0.92	C+	B-	A-
4	319660	16	C.1.2	3	1500	1.88	0.03	0.26	0.53	0.18	0.01	0.01	0.45	-0.14	-0.35	0.10	0.30	0.11	0.74	0.04	-2.04	0.93	-2.03	0.93	C+	A-	A-
4	878289	17	C.1.1	3	1500	1.75	0.03	0.32	0.52	0.12	0.01	0.01	0.39	-0.12	-0.31	0.16	0.24	0.11	0.84	0.04	-1.54	0.94	-1.61	0.94	C+	A-	B-
4	553554	18	C.1.1	3	1500	1.76	0.03	0.31	0.53	0.12	0.00	0.01	0.42	-0.10	-0.34	0.14	0.30	0.08	1.16	0.04	-1.22	0.96	-1.15	0.96	B+	A-	A-
4	423216	19	C.1.1	3	1500	1.79	0.02	0.28	0.58	0.11	0.00	0.01	0.42	-0.10	-0.36	0.19	0.25	0.09	0.84	0.04	-3.34	0.88	-3.33	0.88	C+	A-	A-
4	391973	20	C.1.3	3	1499	2.08	0.05	0.17	0.47	0.26	0.04	0.01	0.46	-0.16	-0.34	-0.02	0.31	0.19	0.25	0.03	-3.20	0.89	-3.10	0.89	B+	A-	A+
5	840905	1	C.1.3	3	1500	2.05	0.03	0.15	0.56	0.22	0.03	0.01	0.38	-0.08	-0.33	0.00	0.28	0.11	0.20	0.04	0.16	1.01	0.54	1.02	B+	B-	A-
5	368050	2	C.1.3	3	1499	2.41	0.03	0.11	0.39	0.37	0.11	0.01	0.52	-0.14	-0.37	-0.19	0.29	0.29	-0.42	0.03	-3.00	0.89	-2.84	0.90	A+	B-	A-
5	253444	3	C.1.2	3	1499	2.13	0.02	0.16	0.52	0.27	0.03	0.01	0.44	-0.11	-0.33	-0.06	0.30	0.18	-0.07	0.04	-1.50	0.94	-1.42	0.95	B+	A-	A-
5	926846	4	C.1.3	3	1500	2.22	0.03	0.20	0.38	0.28	0.10	0.01	0.52	-0.09	-0.40	-0.09	0.28	0.31	-0.21	0.03	-4.35	0.86	-4.47	0.85	B+	A-	A-
5	764002	5	C.1.2	3	1500	1.99	0.05	0.16	0.55	0.22	0.01	0.01	0.47	-0.20	-0.31	0.00	0.34	0.15	0.52	0.04	-2.60	0.90	-2.44	0.91	C+	A-	A+
5	471465	6	C.1.2	3	1500	2.03	0.04	0.14	0.58	0.22	0.01	0.01	0.39	-0.10	-0.32	0.00	0.28	0.10	0.38	0.04	-1.04	0.96	-0.80	0.97	B+	A-	A+
5	831316	7	C.1.3	3	1500	2.34	0.02	0.12	0.44	0.35	0.07	0.01	0.47	-0.06	-0.36	-0.16	0.28	0.26	-0.30	0.04	-2.73	0.90	-2.62	0.91	A+	A-	A-
5	365742	8	C.1.2	3	1500	2.11	0.03	0.14	0.53	0.28	0.01	0.01	0.41	-0.13	-0.26	-0.09	0.31	0.15	0.32	0.04	-1.47	0.94	-1.09	0.96	C+	A-	A+
5	522912	9	C.1.2	3	1500	1.94	0.04	0.17	0.63	0.16	0.01	0.01	0.46	-0.13	-0.37	0.07	0.32	0.11	0.51	0.04	-2.63	0.89	-2.27	0.91	B+	A-	A-
5	713886	10	C.1.1	3	1500	2.02	0.02	0.19	0.58	0.20	0.02	0.00	0.49	-0.10	-0.38	0.00	0.34	0.19	0.21	0.04	-3.97	0.85	-3.91	0.86	C+	A-	A+
5	559099	11	C.1.1	3	1500	2.12	0.02	0.16	0.52	0.27	0.03	0.00	0.51	-0.09	-0.38	-0.09	0.37	0.22	0.10	0.04	-3.21	0.88	-3.05	0.89	B+	B-	A+
5	156028	12	C.1.1	3	1500	1.97	0.02	0.18	0.60	0.19	0.01	0.01	0.47	-0.06	-0.45	0.12	0.30	0.11	0.51	0.04	-2.79	0.90	-2.51	0.90	C+	A-	A-
5	627456	13	C.1.1	3	1500	1.97	0.03	0.17	0.60	0.19	0.01	0.01	0.49	-0.19	-0.34	0.04	0.33	0.15	0.48	0.04	-3.59	0.86	-3.46	0.86	C+	A-	A-
5	883279	14	C.1.2	3	1500	2.00	0.03	0.14	0.65	0.17	0.01	0.01	0.44	-0.10	-0.31	-0.06	0.36	0.14	0.38	0.04	-2.57	0.89	-2.12	0.91	B+	B-	A-
5	962053	15	C.1.3	3	1500	2.24	0.03	0.15	0.44	0.33	0.06	0.01	0.49	-0.07	-0.38	-0.12	0.30	0.28	-0.16	0.04	-3.41	0.88	-3.29	0.89	B+	B-	A-
5	791854	16	C.1.1	3	1500	2.05	0.02	0.14	0.61	0.21	0.01	0.00	0.41	-0.12	-0.28	-0.06	0.32	0.11	0.26	0.04	-1.40	0.94	-1.11	0.95	C+	A-	A-
5	390324	17	C.1.3	3	1500	2.24	0.03	0.14	0.44	0.33	0.06	0.01	0.50	-0.12	-0.39	-0.11	0.32	0.25	-0.21	0.04	-2.72	0.90	-2.67	0.90	B+	A-	A-
5	633396	18	C.1.1	3	1500	2.04	0.02	0.14	0.62	0.20	0.01	0.01	0.41	-0.06	-0.30	-0.06	0.33	0.14	0.30	0.04	-1.89	0.92	-1.52	0.94	B+	A-	A-
5	382010	19	C.1.1	3	1499	2.03	0.02	0.17	0.58	0.23	0.01	0.01	0.46	-0.07	-0.37	-0.03	0.36	0.12	0.39	0.04	-2.42	0.91	-2.05	0.92	C+	B-	C-
5	469749	20	C.1.2	3	1499	2.10	0.01	0.13	0.62	0.22	0.01	0.01	0.47	-0.10	-0.34	-0.08	0.35	0.13	0.04	0.04	-2.97	0.88	-2.97	0.88	B+	B-	A-
6	684243	1	C.1.2	3	1499	2.08	0.03	0.14	0.56	0.25	0.02	0.01	0.45	-0.16	-0.29	-0.06	0.32	0.16	0.23	0.04	-1.93	0.93	-1.81	0.93	C+	A-	B-

6	635210	2	C.1.2	3	1499	2.11	0.02	0.13	0.58	0.24	0.02	0.01	0.39	-0.09	-0.26	-0.09	0.29	0.16	0.22	0.04	-1.46	0.94	-1.33	0.95	C+	A-	A-
6	606433	3	C.1.2	3	1498	2.17	0.02	0.12	0.55	0.28	0.03	0.01	0.42	-0.13	-0.29	-0.07	0.25	0.21	-0.05	0.04	-2.05	0.92	-1.95	0.93	C+	A-	A-
6	941089	4	C.1.2	3	1500	2.17	0.02	0.14	0.51	0.28	0.04	0.01	0.43	-0.17	-0.30	-0.03	0.22	0.23	-0.03	0.04	-1.55	0.94	-1.63	0.94	C+	A-	A-
6	680301	5	C.1.2	3	1499	2.18	0.02	0.13	0.53	0.30	0.02	0.01	0.43	-0.11	-0.32	-0.06	0.28	0.17	-0.07	0.04	-2.46	0.91	-2.38	0.91	C+	A-	A-
6	403700	6	C.1.2	3	1500	2.09	0.03	0.14	0.56	0.25	0.02	0.01	0.41	-0.18	-0.27	-0.03	0.27	0.13	0.21	0.04	-1.41	0.95	-1.25	0.95	C+	A-	A-
6	188822	7	C.1.2	3	1500	2.14	0.02	0.14	0.55	0.26	0.03	0.01	0.45	-0.13	-0.32	-0.07	0.28	0.22	0.00	0.04	-2.69	0.90	-2.73	0.90	B+	A-	A-
6	350192	8	C.1.1	3	1499	1.95	0.04	0.23	0.49	0.22	0.02	0.01	0.49	-0.18	-0.36	0.05	0.33	0.16	0.38	0.04	-4.00	0.86	-4.03	0.86	C+	C-	A-
6	950196	9	C.1.1	3	1500	2.04	0.03	0.20	0.49	0.25	0.02	0.01	0.48	-0.12	-0.37	-0.02	0.35	0.18	0.20	0.04	-3.97	0.86	-3.90	0.86	C+	B-	B-
6	328715	10	C.1.1	3	1499	2.16	0.02	0.16	0.49	0.28	0.04	0.01	0.47	-0.12	-0.34	-0.08	0.30	0.23	0.05	0.04	-3.26	0.88	-3.23	0.89	C+	A+	A-
6	952877	11	C.1.1	3	1500	1.99	0.03	0.20	0.55	0.21	0.02	0.01	0.46	-0.12	-0.37	0.04	0.30	0.18	0.34	0.04	-3.21	0.88	-3.16	0.88	C+	A-	A-
6	988292	12	C.1.1	3	1499	2.14	0.03	0.15	0.49	0.30	0.03	0.01	0.53	-0.23	-0.35	-0.03	0.31	0.25	0.10	0.04	-5.00	0.83	-4.98	0.83	C+	A-	A-
6	947211	13	C.1.1	3	1500	1.87	0.03	0.28	0.51	0.17	0.02	0.01	0.48	-0.15	-0.36	0.11	0.28	0.23	0.43	0.04	-3.73	0.87	-3.79	0.87	B+	A-	A-
6	850469	14	C.1.1	3	1499	2.13	0.03	0.17	0.46	0.31	0.03	0.02	0.51	-0.17	-0.35	-0.08	0.36	0.21	0.15	0.04	-4.78	0.84	-4.70	0.84	B+	A-	A-
6	282177	15	C.1.3	3	1499	2.27	0.03	0.14	0.41	0.33	0.07	0.02	0.48	-0.13	-0.35	-0.11	0.27	0.27	-0.20	0.03	-2.98	0.90	-2.86	0.90	C+	A+	A-
6	617649	16	C.1.3	3	1499	2.40	0.02	0.12	0.38	0.41	0.08	0.01	0.50	-0.11	-0.36	-0.18	0.31	0.24	-0.37	0.04	-3.73	0.87	-3.66	0.87	C+	A-	A-
6	784560	17	C.1.3	3	1499	2.35	0.02	0.13	0.41	0.37	0.07	0.01	0.51	-0.12	-0.35	-0.14	0.27	0.30	-0.36	0.04	-4.58	0.84	-4.52	0.85	C+	B-	C-
6	529731	18	C.1.3	3	1499	2.23	0.02	0.16	0.45	0.30	0.07	0.01	0.48	-0.11	-0.34	-0.11	0.29	0.26	-0.11	0.04	-3.35	0.88	-3.33	0.88	C+	A-	C-
6	111280	19	C.1.3	3	1496	2.48	0.03	0.07	0.37	0.43	0.09	0.01	0.45	-0.10	-0.29	-0.22	0.22	0.30	-0.32	0.04	-2.25	0.91	-1.81	0.93	C+	A-	A-
6	875922	20	C.1.3	3	1500	2.30	0.04	0.12	0.41	0.37	0.07	0.01	0.50	-0.12	-0.35	-0.17	0.31	0.29	-0.05	0.03	-3.88	0.86	-3.31	0.88	C+	A-	A-
7	252133	1	C.1.1	3	1500	2.02	0.03	0.22	0.47	0.25	0.03	0.02	0.50	-0.17	-0.37	0.00	0.35	0.18	0.11	0.04	-3.83	0.87	-3.81	0.87	B+	B-	A-
7	651812	2	C.1.1	3	1498	2.09	0.02	0.18	0.51	0.26	0.03	0.01	0.44	-0.12	-0.35	0.00	0.27	0.20	-0.03	0.04	-2.39	0.91	-2.31	0.92	C+	B-	B-
7	422127	3	C.1.1	3	1498	2.08	0.02	0.20	0.49	0.25	0.03	0.01	0.50	-0.12	-0.36	-0.03	0.31	0.24	-0.08	0.04	-3.96	0.86	-3.94	0.86	B+	A-	A-
7	234055	4	C.1.1	3	1499	2.10	0.03	0.16	0.52	0.27	0.02	0.01	0.52	-0.15	-0.37	-0.06	0.36	0.21	0.05	0.04	-4.84	0.83	-4.79	0.83	C+	B-	A-
7	488635	5	C.1.2	3	1497	2.17	0.02	0.12	0.55	0.29	0.02	0.01	0.46	-0.13	-0.36	-0.07	0.32	0.15	-0.08	0.04	-2.07	0.92	-2.04	0.92	C+	A-	A-
7	581539	6	C.1.2	3	1497	2.22	0.03	0.14	0.46	0.35	0.03	0.02	0.51	-0.14	-0.37	-0.10	0.35	0.21	-0.19	0.04	-3.91	0.86	-3.90	0.86	C+	B-	B-
7	206504	7	C.1.2	3	1499	2.09	0.03	0.16	0.54	0.26	0.02	0.01	0.44	-0.15	-0.31	-0.03	0.29	0.19	0.06	0.04	-1.88	0.93	-1.74	0.93	C+	A-	B-
7	572730	8	C.1.2	3	1497	2.13	0.03	0.13	0.54	0.27	0.03	0.01	0.42	-0.16	-0.29	-0.04	0.26	0.19	0.04	0.04	-1.53	0.94	-1.54	0.94	C+	A-	A-
7	539578	9	C.1.2	3	1500	2.21	0.02	0.14	0.47	0.33	0.03	0.01	0.50	-0.13	-0.35	-0.14	0.36	0.21	-0.12	0.04	-4.12	0.85	-4.01	0.86	A+	B-	C-
7	960738	10	C.1.3	3	1499	2.34	0.04	0.11	0.40	0.39	0.07	0.01	0.48	-0.12	-0.31	-0.19	0.28	0.29	-0.28	0.03	-3.26	0.88	-2.98	0.89	B+	A-	B-
7	411523	11	C.1.2	3	1499	2.19	0.03	0.14	0.48	0.33	0.03	0.02	0.45	-0.11	-0.32	-0.11	0.33	0.18	-0.11	0.04	-1.72	0.94	-1.52	0.94	B+	A-	A-
7	267287	12	C.1.3	3	1497	2.35	0.03	0.13	0.40	0.34	0.10	0.01	0.56	-0.15	-0.37	-0.18	0.27	0.37	-0.53	0.03	-5.25	0.82	-5.30	0.82	C+	A-	A-
7	459804	13	C.1.3	3	1497	2.40	0.02	0.11	0.40	0.37	0.09	0.01	0.51	-0.11	-0.35	-0.19	0.27	0.30	-0.63	0.04	-3.12	0.89	-3.04	0.89	B+	B-	A-

7	428948	14	C.1.3	3	1500	2.42	0.02	0.09	0.43	0.39	0.08	0.01	0.48	-0.14	-0.29	-0.20	0.26	0.27	-0.48	0.04	-3.83	0.86	-3.77	0.87	C+	A-	A+
7	700615	15	C.1.3	3	1498	2.42	0.02	0.11	0.40	0.38	0.10	0.01	0.53	-0.13	-0.35	-0.20	0.28	0.32	-0.60	0.04	-4.73	0.84	-4.75	0.84	C+	A-	B-
7	717876	16	C.1.3	3	1498	2.30	0.03	0.14	0.42	0.33	0.08	0.02	0.50	-0.14	-0.30	-0.18	0.27	0.33	-0.36	0.03	-4.02	0.86	-3.93	0.86	B+	C-	A-
7	705846	17	C.1.3	3	1498	2.30	0.03	0.13	0.41	0.37	0.06	0.01	0.49	-0.13	-0.33	-0.16	0.30	0.28	-0.26	0.04	-3.64	0.87	-3.52	0.88	B+	B-	A-
7	319716	18	C.1.1	3	1500	2.14	0.03	0.15	0.47	0.32	0.02	0.02	0.52	-0.22	-0.35	-0.06	0.36	0.19	0.03	0.04	-4.25	0.85	-4.27	0.85	C+	C-	A-
7	127907	19	C.1.1	3	1498	2.07	0.03	0.17	0.51	0.26	0.03	0.02	0.52	-0.21	-0.36	0.00	0.33	0.20	0.02	0.04	-4.01	0.86	-4.05	0.86	C+	A-	A-
7	770105	20	C.1.1	3	1499	2.12	0.04	0.14	0.51	0.29	0.02	0.02	0.53	-0.22	-0.37	-0.04	0.36	0.18	0.04	0.04	-3.86	0.86	-3.91	0.86	C+	C-	C-
8	298200	1	C.1.3	3	1500	2.31	0.02	0.14	0.41	0.36	0.07	0.01	0.47	-0.17	-0.30	-0.14	0.29	0.24	-0.61	0.03	-4.51	0.85	-4.38	0.85	C+	B-	A-
8	723525	2	C.1.1	3	1499	2.22	0.02	0.17	0.47	0.27	0.07	0.01	0.43	-0.13	-0.29	-0.08	0.21	0.27	-0.55	0.03	-3.20	0.89	-3.26	0.89	B+	B-	B-
8	967885	3	C.1.2	3	1500	2.32	0.02	0.09	0.48	0.37	0.03	0.01	0.45	-0.14	-0.27	-0.19	0.32	0.19	-0.54	0.04	-3.20	0.88	-3.12	0.88	B+	B-	B-
8	161668	4	C.1.3	3	1499	2.26	0.02	0.12	0.48	0.33	0.05	0.01	0.37	-0.12	-0.19	-0.16	0.23	0.24	-0.35	0.04	-1.95	0.93	-1.96	0.93	C+	B-	A-
8	980717	5	C.1.1	3	1499	2.25	0.02	0.18	0.40	0.32	0.07	0.01	0.43	-0.14	-0.28	-0.09	0.20	0.28	-0.48	0.03	-3.86	0.87	-3.79	0.87	C+	B-	B-
8	329973	6	C.1.2	3	1500	2.37	0.01	0.09	0.45	0.40	0.04	0.01	0.42	-0.09	-0.27	-0.18	0.28	0.22	-0.52	0.04	-3.73	0.87	-3.72	0.87	B+	B-	A-
8	441597	7	C.1.3	3	1500	2.31	0.02	0.13	0.44	0.35	0.06	0.01	0.47	-0.12	-0.29	-0.19	0.32	0.23	-0.47	0.04	-4.20	0.85	-4.19	0.85	C+	B-	B-
8	385793	8	C.1.1	3	1496	2.26	0.02	0.15	0.46	0.30	0.07	0.01	0.43	-0.09	-0.31	-0.09	0.20	0.28	-0.53	0.03	-2.94	0.90	-2.92	0.90	C+	B-	A-
8	597285	9	C.1.3	3	1499	2.25	0.02	0.16	0.43	0.34	0.05	0.01	0.49	-0.14	-0.32	-0.15	0.31	0.25	-0.53	0.04	-4.98	0.83	-5.02	0.83	C+	B-	B-
8	302853	10	C.1.3	3	1499	2.34	0.02	0.12	0.43	0.36	0.07	0.02	0.47	-0.12	-0.30	-0.17	0.27	0.27	-0.58	0.04	-4.03	0.86	-4.03	0.86	B+	C-	C-
8	324937	11	C.1.1	3	1499	2.15	0.02	0.19	0.45	0.29	0.04	0.01	0.47	-0.18	-0.34	-0.03	0.29	0.21	-0.51	0.04	-3.65	0.88	-3.58	0.88	C+	A-	C-
8	809594	12	C.1.2	3	1499	2.29	0.03	0.11	0.43	0.38	0.04	0.02	0.46	-0.18	-0.29	-0.14	0.32	0.19	-0.38	0.04	-3.51	0.87	-3.49	0.87	B+	C-	C-
8	260495	13	C.1.3	3	1500	2.40	0.03	0.09	0.41	0.41	0.07	0.02	0.49	-0.19	-0.30	-0.18	0.29	0.26	-0.60	0.04	-5.19	0.81	-5.25	0.81	B+	C-	C-
8	422996	14	C.1.1	3	1498	2.20	0.02	0.14	0.50	0.31	0.03	0.01	0.44	-0.10	-0.31	-0.11	0.30	0.21	-0.38	0.04	-3.84	0.86	-3.88	0.86	B+	C-	C-
8	607495	15	C.1.3	3	1499	2.25	0.02	0.13	0.47	0.33	0.05	0.01	0.50	-0.14	-0.34	-0.13	0.31	0.24	-0.48	0.04	-4.88	0.83	-4.86	0.83	B+	A-	C-
8	393459	16	C.1.1	3	1498	2.19	0.02	0.18	0.44	0.30	0.06	0.01	0.40	-0.12	-0.27	-0.08	0.25	0.20	-0.47	0.03	-3.28	0.89	-3.34	0.89	A+	C-	C-
8	132779	17	C.1.2	3	1498	2.21	0.02	0.15	0.45	0.34	0.03	0.02	0.43	-0.20	-0.28	-0.07	0.29	0.15	-0.35	0.04	-3.84	0.87	-3.84	0.87	B+	A-	A-
8	571082	18	C.1.2	3	1499	2.25	0.02	0.14	0.46	0.34	0.04	0.01	0.46	-0.10	-0.36	-0.08	0.28	0.21	-0.55	0.04	-4.18	0.86	-4.16	0.86	C+	C-	C-
8	134986	19	C.1.2	3	1500	2.21	0.02	0.16	0.45	0.34	0.03	0.01	0.46	-0.13	-0.33	-0.10	0.32	0.18	-0.50	0.04	-2.82	0.90	-2.76	0.90	C+	A-	A-
8	463268	20	C.1.1	3	1498	2.06	0.02	0.23	0.45	0.27	0.03	0.01	0.54	-0.16	-0.39	-0.02	0.35	0.26	-0.28	0.04	-6.61	0.79	-6.58	0.79	B+	B-	B-

pennsylvania
DEPARTMENT OF EDUCATION

PENNSYLVANIA
KEYSTONE EXAMS

TECHNICAL REPORT

ALGEBRA I, BIOLOGY, AND LITERATURE

2014

Provided by Data Recognition Corporation

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GLOSSARY OF COMMON TERMS

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals. A glossary of accommodation terms as applied to the Pennsylvania Keystone Exams is provided in Chapter Ten.

Term	Common Definition
Ability	In Rasch scaling, ability is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the Keystone Exams, a student's literature ability is measured by how the student performed on the Literature Keystone Exam. A student who answered more items correctly has a higher ability than a student who answered fewer items correctly.
Adjacent Agreement	A score/rating difference of one (1) point in value usually assigned by two different raters under the same conditions (e.g., two independent raters give the same paper scores that differ by one point).
Alternate Forms	Two or more versions of a test that are considered exchangeable, i.e., they measure the same constructs in the same ways, are intended for the same purposes, and are administered using the same directions. More specific terminology applies depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, and comparable forms) where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	A measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Bias	In a statistical context, bias refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity, etc.). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to the development of the final operational form of the test (see also Differential Item Functioning).
Constructed-Response Item	See Open-Ended Item.
Content Validity Evidence	Evidence regarding the extent to which a test provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's Grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).

Glossary of Common Terms

Term	Common Definition
Criterion-Referenced Interpretation	When a score is interpreted as a measure of a student's performance with respect to an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do with respect to a given content area.
Cut Score	A specified point on a score scale such that scores at or above that point are interpreted or acted upon differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). One or more cut scores can be set for a test that results in dividing the score range into various proficiency level ranges. Methods for establishing cut scores vary. For the Keystone Exams, three cut scores are used to place students into one of four performance levels (see also Performance Level Setting).
Decision Consistency	The extent to which classifications based on test scores would match the decisions based on scores from a second, parallel form of the same test. It is often expressed as the proportion of examinees who are classified the same way from the two test administrations.
Differential Item Functioning (DIF)	A statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also Bias).
Distractor	An incorrect option in a multiple-choice item (also called a foil).
Equating	The strongest of several linking methods used to establish comparability between scores from multiple tests. Equated test scores should be considered exchangeable. Consequently, the criteria needed to refer to a linkage as equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that it should be a matter of indifference to a student if he/she takes any of the equated tests (see also Linking).
Exact Agreement	When identical scores/ratings are assigned by two different raters under the same conditions (e.g., two independent raters give a paper the same score).
Field-Test (FT) Items	The Keystone Exams use multiple test forms for each content-area test. Each form is composed of operational (OP) items and field-test (FT) items. An FT item is a newly developed item that is ready to be tried out to determine its statistical properties (see also *P*-value and Point-Biserial Correlation). Each test form includes a set of FT items. FT items are not part of any student scores.
Frequency	The number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	A tabulation of scores from low to high or high to low showing the number and/or percent of individuals who obtain each score or who fall within each score interval or category.

Glossary of Common Terms

Term	Common Definition
Infit/Outfit	Statistical indicators of the agreement of the data and the measurement model (see also Outfit/Infit).
Item Difficulty	For the Rasch model, the dichotomous item difficulty represents the point along the latent trait continuum where an examinee has a 0.50 probability of making a correct response. For a polytomous item, the difficulty is the average of the item's step difficulties (see also Step Difficulty).
Key	The correct response option or answer to a test item.
Linking	A generic term referring to one of a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also Equating).
Logit	In Rasch scaling, logits are units used to express both examinee ability and item difficulty. When expressing examinee ability, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into scaled scores through a linear transformation. When expressing item difficulty, logits are transformed *p*-values (see also *P*-value). The logit difficulty scale is inversely related to *p*-values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.
Mean	Also referred to as the arithmetic mean of a set of scores, is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.
Measure	In Rasch scaling, measure generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the Keystone Exams, a student's literature measure might be equal to 0.525 logits. Or, a Literature Keystone Exam test item might have logit equal to -0.905.
Median	The middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts such that each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Module	On score reports, a module often refers to a set of items on a test measuring the same contextual area (e.g., Operations and Linear Equations & Inequalities in Algebra I). Items developed to measure the same reporting category would be used to determine the module score (sometimes called "subscale" score).

Glossary of Common Terms

Term	Common Definition
Multiple-Choice Item	A type of item format that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed (see also Open-Ended Item).
N-count	Sometimes designated as *N* or *n*, it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), the number of students who attained a specific score, etc. In the following set {23, 32, 56, 65, 78, 87}, $n = 6$.
Open-Ended Item	An open-ended (OE) item—referred to by some as a constructed-response (CR) item—is an item format that requires examinees to create their own responses, which can be expressed in various forms (e.g., written paragraph, created table/graph, formulated calculation, etc.). Such items are frequently scored using more than two score categories, that is, polytomously (e.g., 0, 1, 2, and 3). This format is in contrast to when students make a choice from a supplied set of answer options (e.g., multiple-choice (MC) items which are typically dichotomously scored as right = 1 or wrong = 0). When interpreting item difficulty and discrimination indices it is important to consider whether an item is polytomously or dichotomously scored.
Operational Item	The Keystone Exams use multiple test forms for each content-area test. Each form is composed of operational (OP) items and field-test (FT) items. OP items are the same on all forms for any content-area test. Student total raw scores and scaled scores are based exclusively on the OP items.
Outfit/Infit	Statistical indicators of the agreement of the data and the measurement model. Infit and outfit are highly correlated, and both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.
Percent Correct	When referring to an individual item, the percent correct is the item's *p*-value expressed as a percent (instead of a proportion). When referring to a total test score, it is the percentage of the total number of points that a student received. The percent correct score is obtained by dividing the student's raw score by the total number of possible points and multiplying the result by 100. Percent correct scores are often used in criterion-referenced interpretations and are generally more helpful if the overall difficulty of a test is known. Sometimes percent correct scores are incorrectly interpreted as percentile ranks.

Glossary of Common Terms

Term	Common Definition
Percentile	The score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a scaled score of 1500 on a given test, then the scaled score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The percentage of scores in a specified distribution falling at/below a certain point on a score distribution. Percentile ranks range in value from 1 to 99, and indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, percentiles and percentile rank are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Performance Level Descriptors	Descriptions of an individual's competency in a particular content area, usually defined as ordered categories on a continuum, often labeled from Below Basic to Advanced, that constitute broad ranges for classifying performance. The exact labeling of these categories, and narrative descriptions, may vary from one assessment or testing program to another.
Performance Level Setting	Also referred to as standard setting, a procedure used in the determination of the cut scores for a given assessment that is used to measure students' progress towards certain performance standards. Standard setting methods vary (e.g., modified Angoff, Bookmark Method, etc.), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Point-Biserial Correlation	In classical test theory this is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.
P-value	An index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. *P*-values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. *P*-values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a *p*-value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also Logit).

Glossary of Common Terms

Term	Common Definition
Raw Score	Sometimes abbreviated by RS—it is an unadjusted score usually determined by tallying the number of questions answered correctly, or by the sum of item scores (i.e., points). (Some rarer situations might include formula-scoring, the amount of time required to perform a task, the number of errors, application of basal/ceiling rules, etc.) Raw scores typically have little or no meaning by themselves and require additional information—like the number of items on the test, the difficulty of the test items, norm-referenced information, or criterion-referenced information.
Reliability	The expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure, and therefore, are considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	A statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using coefficient alpha). Expressed this way, the reliability coefficient is a unitless index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also Standard Error of Measurement).
Scaled Score	A mathematical transformation of a raw score developed through a process called scaling. Scaled scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful score scale across different forms of a test.
Selected-Response Item	See Multiple-Choice Item.
Spiraling	A packaging process used when multiple forms of a test exist and it is desired that each form be tested in all classrooms (or other grouping unit (e.g., schools)) participating in the testing process. This process allows for the random distribution of test booklets to students. For example, if a package has four test forms labeled A, B, C, and D, the order of the test booklets in the package would be A, B, C, D, A, B, C, D, A, B, C, D, etc.
Standard Deviation (SD)	A statistic that measures the degree of spread or dispersion of a set of scores. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from each other in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic. The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data.

Glossary of Common Terms

Term	Common Definition
Standard Error of Measurement (SEM)	The amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard errors of measurement (CSEMs) provide an SEM for each possible scaled score.
Step Difficulty	Step difficulty is a parameter estimate in Master's partial credit model (PCM) that represents the relative difficulty of each score step (e.g., going from a score of 1 to a score of 2). The higher the value of a particular step difficulty, the more difficult a particular step is relative to other score steps (e.g., is it harder to go from a 1 to a 2, or to go from a 2 to a 3).
Strand	On score reports, a strand often refers to a set of items on a test measuring the same contextual area (e.g., Number Sense in Mathematics). Items developed to measure the same reporting category would be used to determine the strand score (sometimes called "subscale" score).
Technical Advisory Committee (TAC)	A group of individuals, most often professionals in the field of testing, who are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Validity	The degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purposed uses of a test. There are various ways of gathering validity evidence.

Glossary of Common Terms

PREFACE: AN OVERVIEW OF THE ASSESSMENTS

THE KEYSTONE EXAMS FROM 2008 TO PRESENT

COMPREHENSIVE GRADUATION COMPETENCY ASSESSMENT PROGRAM

In 2008, the Commonwealth of Pennsylvania initiated a comprehensive graduation competency assessment program. The goals of this program include the following:

- To provide a system that is aligned, focused, standards-based, accurate, universally applicable, and publicly accessible
- To develop, produce, distribute, administer (both online and paper/pencil), collect, score, analyze, track, and report results of graduation competency assessments for 10 high school–level content areas: Algebra I, Algebra II, Biology, Chemistry, Civics and Government, English Composition, Geometry, Literature, U.S. History, and World History, with each area or course comprised of modules containing unique content
- To provide graduation competency testing opportunities for students three times each school year—spring, summer, and fall—with students permitted to retake modules until proficiency is achieved on each module
- To report graduation competency results under accelerated timelines
- To ensure validity and reliability of the assessment systems through technically sound test development and psychometric practices, detailed statistical analyses and research studies, and well-documented processes and quality procedures

The Keystone Exams, as the graduation competency assessments are named, are just one component of Pennsylvania's system of high school graduation requirements. Keystone Exams are designed to help school districts guide students toward meeting state standards—standards aligned with expectations for success in college and the workplace. In order to receive a diploma, students are also required to meet local district credit and attendance requirements and to complete a culminating project, along with any additional district requirements.

For graduating classes, students are to demonstrate successful completion of secondary-level course work in Algebra I, Biology, and Literature, in which the Keystone Exams served as the final course exams. Students' Keystone Exam scores counted for at least one-third of the final course grades.

Based upon Chapter 4 regulations, each Keystone Exam is designed in modules that reflect distinct, related academic content common to the traditional progression of course work. Students who do not score Proficient or above on a Keystone Exam module may choose to complete a project-based assessment for that module based upon other specific requirements.

ASSESSMENT ACTIVITIES OCCURRING FROM 2010 TO PRESENT

The first assessment activities took place in the 2010–2011 school year. Prior to November 2010, there were no Keystone Exam assessment events. The table below outlines the field tests and operational exams administered during the 2010–11 school year.

Following the development of Assessment Anchors and Eligible Content, exams were developed for initial field test in 2010 and were subsequently administered as operational exams in 2011. Additional exams, which were based on the Assessment Anchors and Eligible Content developed in 2009 and 2010, were developed for initial field test in 2011. Detailed information about the operational exam activities that occurred during the 2010–2011 school year is in the *Keystone Exams Spring 2011 Algebra I, Biology, and Literature Technical Report.*

Field Test and Operational Exams during the 2010–11 School Year

Exam	Assessment Activity	Date
Algebra I	Initial Stand-Alone Field Test	Fall 2010 (November)
Algebra I	Inaugural Operational Exam Administration	Spring 2011 (May)
Algebra II	Initial Stand-Alone Field Test	Spring 2011 (May)
Biology	Initial Stand-Alone Field Test	Fall 2010 (November)
Biology	Inaugural Operational Exam Administration	Spring 2011 (May)
English Composition	Initial Stand-Alone Field Test	Spring 2011 (May)
Geometry	Initial Stand-Alone Field Test	Spring 2011 (May)
Literature	Initial Stand-Alone Field Test	Fall 2010 (November)
Literature	Inaugural Operational Exam Administration	Spring 2011 (May)

Following a one-year program hiatus in 2012, the field test items embedded in the Spring 2011 operational forms were used to construct the forms for the next four administrations (spring, summer, winter, and possible breach). The table below outlines exams administered during the 2012–13 school year. Detailed information about the operational exam activities that occurred during the 2012–2013 school year is in the *Keystone Exams Spring 2013 Algebra I, Biology, and Literature Technical Report.*

Operational Exams during the 2012–13 School Year

Exam	Assessment Activity	Date
Algebra I	Operational Retest Exam Administration	Winter 2012/2013 (December–January)
Algebra I	Operational Exam Administration	Spring 2013 (May)
Algebra I	Operational Retest Exam Administration	Summer 2013 (August)
Biology	Operational Retest Exam Administration	Winter 2012/2013 (December–January)
Biology	Operational Exam Administration	Spring 2013 (May)
Biology	Operational Retest Exam Administration	Summer 2013 (August)
Literature	Operational Retest Exam Administration	Winter 2012/2013 (December–January)
Literature	Operational Exam Administration	Spring 2013 (May)
Literature	Operational Retest Exam Administration	Summer 2013 (August)

Preface: An Overview of the Assessments

Some of the field test items embedded in the Spring 2013 operational forms were used to construct the forms for the next four administrations (spring, summer, winter, and possible breach). The core items on the 2013–2014 forms also consisted of items that appeared on the core forms of the administrations two years prior. More information on these core-to-core overlap items can be found in Chapter Three. The table below outlines exams administered during the 2013–14 school year. Detailed information about the operational exam activities that occurred during the 2013–2014 school year is in the *Keystone Exams Spring 2014 Algebra I, Biology, and Literature Technical Report.*

Operational Exams during the 2013–14 School Year

Exam	Assessment Activity	Date
Algebra I	Operational Retest Exam Administration	Winter 2013/2014 (December–January)
Algebra I	Operational Exam Administration	Spring 2014 (May)
Algebra I	Operational Retest Exam Administration	Summer 2014 (August)
Biology	Operational Retest Exam Administration	Winter 2013/2014 (December–January)
Biology	Operational Exam Administration	Spring 2014 (May)
Biology	Operational Retest Exam Administration	Summer 2014 (August)
Literature	Operational Retest Exam Administration	Winter 2013/2014 (December–January)
Literature	Operational Exam Administration	Spring 2014 (May)
Literature	Operational Retest Exam Administration	Summer 2014 (August)

Preface: An Overview of the Assessments

CHAPTER ONE: BACKGROUND OF THE KEYSTONE EXAMS

This brief overview of the Pennsylvania Keystone Exams summarizes the history of the program's development process, intent and purpose, and recent changes.

ASSESSMENT HISTORY IN PENNSYLVANIA

Pennsylvania's involvement in statewide assessment actually began in the 1969–1970 school year with a purely school-based assessment known as *Educational Quality Assessment* (EQA), which continued through the 1987–1988 school year. A state-mandated student competency testing program called *Testing for Essential Learning and Literacy Skills* (TELLS) also operated from the school years of 1984–1985 through 1990–1991. Also in 1990, the state initiated an on-demand writing assessment.

The Pennsylvania System of School Assessment (PSSA) program was instituted in 1992 as a school evaluation model with reporting at the school level only. The PSSA initially measured performance in the content areas of mathematics and reading at grades 5, 8, and 11, and in writing at grades 6 and 9. Starting in 1994, as part of the Chapter 5 regulations, the PSSA added student-level reports. In 1999, as part of Chapter 4 regulations, the State Board of Education adopted the Pennsylvania Academic Standards for mathematics and for reading, writing, speaking, and listening. Proficiency levels for Advanced, Proficient, Basic, and Below Basic were defined in 2000. In 2001 and 2004, the reading and mathematics assessments underwent various content enhancements to improve alignment to the 1999 Academic Standards. Grade 11 was added to the writing assessment in 2001. Then, in 2004–2005, the PSSA Assessment Anchors and Eligible Content were developed to clarify content structure and improve articulation between assessment and instruction. In addition, in 2005, the grade 6 and 9 writing assessments were moved to grades 5 and 8. By 2006, the operational mathematics and reading assessments incorporated grades 3 through 8 and 11. In 2007, the PSSA and the PSSA Assessment Anchors and Eligible Content underwent additional content enhancements. In 2008, science was added to the PSSA as an operational assessment. Starting with the 2013 field test, PSSA began a multiyear transition to a new set of standards called the Pennsylvania Core Standards. Detailed information about the operational exam activities that occurred during the 2013–2014 school year is in the *2014 PSSA Technical Report.*

THE KEYSTONE EXAMS

In 2008, the Commonwealth of Pennsylvania initiated a comprehensive graduation competency assessment program. As a key piece of this program, the Keystone Exams are designed to assess proficiency in various subject areas, including Algebra I, Algebra II, Biology, Chemistry, Civics and Government, English Composition, Geometry, Literature, U.S. History, and World History. The Keystone Exams are just one component of Pennsylvania's high school graduation requirements. Students must also earn state-specified credits, fulfill the state's service learning and attendance requirements, and complete any additional local school system requirements to receive a Pennsylvania high school diploma.

The stated goals of the Keystone Exams program are to

- provide for a system that is aligned, focused, standards-based, accurate, universally applicable, and publicly accessible.

- develop, produce, distribute, administer (both online and in paper-and-pencil), collect, score, analyze, track, and report results of graduation competency assessments for 10 high school–level content areas: Algebra I, Algebra II, Biology, Chemistry, Civics and Government, English Composition, Geometry, Literature, U.S. History, and World History, with each area or course composed of modules containing unique content.
- provide graduation competency testing opportunities for students three times each school year—spring, summer, and fall—with students permitted to retake modules until proficiency is achieved on each module.
- report graduation competency results under accelerated timelines.
- ensure validity and reliability of the assessment systems through technically sound test development and psychometric practices, detailed statistical analyses and research studies, and well-documented processes and quality procedures.

GRADUATION REQUIREMENTS AND THE KEYSTONE EXAMS

Based upon Chapter 4 regulations, each Keystone Exam is designed in modules that reflect distinct, related academic content common to the traditional progression of coursework. Students who do not score Proficient or above on a Keystone Exam module may choose to complete a project-based assessment for that module based on the requirements detailed below.

If a student is unable to meet the requirements in § 4.24(b)(1)(iv)(A) (relating to high school graduation requirements) after two attempts on a Keystone Exam, the student may supplement a Keystone Exam score with satisfactory completion of a project-based assessment. Points earned through satisfactory performance on one or more project modules related to the Keystone Exam module or modules that the student did not pass shall be added to the student's highest Keystone Exam score.

A student may qualify to participate in one or more project-based assessments if the student has met all of the following conditions:

1. The student has taken the course.
2. The student was unsuccessful in achieving a score of Proficient on the Keystone Exam after at least two attempts.
3. The student has met the district's attendance requirements for the course.
4. The student has participated in a satisfactory manner in supplemental instructional services under § 4.24(i).

KEYSTONE EXAMS ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

In 2009, the state initiated development of test designs and test blueprints for the Keystone Exams based on Pennsylvania Keystone Course Standards. Committees of Pennsylvania educators met in 2009, 2010, and 2011 to write, review, and approve Assessment Anchors and Eligible Content statements and sample exam items. To provide initial focus, each test blueprint committee was presented with materials specific to the exam in question, including a basic blueprint structure, the Pennsylvania State Standards, and draft Eligible content statements based on the standards. The results from the initial committee work were evaluated by national, state, and local subject experts, and, following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Keystone Exams Assessment

Anchors and Eligible Content statements for literacy, mathematics, and science were approved by the State Board of Education in September 2010.

- Mathematics
  - The first committee meetings took place in April 2009, where initial drafts of the test blueprints were developed for Algebra I, Algebra II, and Geometry.
  - A follow-up committee meeting for the three mathematics exams was held in August 2009.
- Literacy
  - The first committee meetings took place in April 2009, where initial drafts of the test blueprints were developed for English Composition and Literature.
  - A follow-up committee meeting for the two literacy exams was held in November 2009.
- Science
  - The first committee meetings took place in October 2009, where the initial draft of the test blueprint was developed for Biology.
  - A follow-up committee meeting for Biology was held in January 2010.
  - In addition, in January 2010, the initial draft of the test blueprint was developed for Chemistry.
  - Chemistry was part of a follow-up committee meeting held in late January 2010.
- Social Studies
  - The first committee meetings took place in November 2010, where initial drafts of the test blueprints were developed for Civics and Government, U.S. History, and World History.
  - A follow-up committee meeting for the Civics and Government exam was held in October 2011.
  - A follow-up committee meeting for U.S. History and World History remains unscheduled pending further decisions about the future of these Keystone Exams.

WAVE IMPLEMENTATION OF THE EXAMS

The implementation plan for the Keystone Exams envisioned the 10 Keystone Exams becoming operational through a series of waves. The initial wave included Algebra I, Biology, and Literature. These first three exams were field tested in the fall of 2010 and reached operational status with the Spring 2011 administration. The second wave included Algebra II, English Composition, and Geometry; these were field tested in the spring of 2011. English Composition is scheduled to reach operational status at a future date. Civics and Government is projected to reach operational status following English Composition. The implementation of the five remaining courses, Algebra II, Geometry, Chemistry, U.S. History, and World History, is currently unscheduled. The Pennsylvania Department of Education continues to evaluate the implementation schedule. Table 1–1 reflects the implementation plans as of September 2014.

Table 1–1. Keystone Exams Wave Implementation Plan

Wave	Exam(s)	Initial Field Test	First Operational
1	Algebra I, Biology, Literature	Fall 2010	Spring 2011
2	English Composition	Spring 2011	TBD
2	Algebra II, Geometry	Spring 2011	Not Scheduled
3	Civics and Government	TBD	TBD
4	Chemistry, U.S. History, World History	TBD	Not Scheduled

MODE OF DELIVERY FOR THE EXAMS

One key feature of the Keystone Exams is the dual mode of delivery of the testing materials that is available to districts. In addition to the traditional paper-and-pencil format, the Keystone Exams are also available in a computer-based online format using test-delivery software.

While exam materials are still available in the traditional format (two pieces of exam materials—a test book and a separate answer book [or, in the case of English Composition, a single test/answer book]), districts are given the option to administer the exams using computer-based online testing software instead of the paper-and-pencil format.

For more information about how the online exams were developed in concert with the traditional paper-and-pencil format, see Chapter Three.

MULTIPLE TESTING OPPORTUNITIES

Another key feature of the Keystone Exams is the multiple testing opportunities provided to students. Main administrations in both spring and winter provide options for students completing course work at various times of the year and accommodate both traditional and block scheduling. In addition, a summer retest opportunity is also available. More information about the winter and summer administrations can be found in Chapter Three.

PERFORMANCE LEVELS FOR THE KEYSTONE EXAMS

The State Board approved a set of criteria defining Advanced, Proficient, Basic, and Below Basic levels of performance for the Keystone Exams. More information about these Performance Level Descriptors (PLDs) is found in Chapter Thirteen.

OPERATIONAL TEST DESIGN INFORMATION

The test definition of each of the operational Keystone Exams, including information about exam-specific test designs, test blueprints, test layouts, item types, and other exam elements, is detailed in Chapter Three.

CHAPTER TWO: TEST DEVELOPMENT OVERVIEW OF THE KEYSTONE EXAMS

KEYSTONE BLUEPRINT/ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

The Keystone Test Blueprints—known as the Keystone Exams Assessment Anchors and Eligible Content—are based on Pennsylvania Keystone Course Standards and the Pennsylvania Core Standards. Prior to the development of the Assessment Anchors, multiple groups of Pennsylvania educators convened to create a set of standards for each of the Keystone Exams. Derived from a review of existing standards, these Enhanced Standards (Course Standards) focus on what students need to know and be able to do in order to be ready for college and career.

Although the Keystone Course Standards indicate what students should know and be able to do, Assessment Anchors are designed to indicate the parts of the Keystone Course Standards (Instructional Standards) that will be assessed on the Keystone Exams. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected and focus the content of the standards into what is assessable on a large-scale exam. The Assessment Anchor documents also serve to communicate Eligible Content—the range of knowledge and skills from which the Keystone Exams are designed.

The Keystone Exams Assessment Anchors and Eligible Content have been designed to hold together, or anchor, the state assessment system and curricular/instructional practices in schools by following these design parameters:

- **Clear:** The Assessment Anchors are easy to read and user friendly; they clearly detail which standards are assessed on the Keystone Exams.
- **Focused:** The Assessment Anchors identify a core set of standards that can be reasonably assessed on a large-scale assessment; this keeps educators from having to guess which standards are critical.
- **Rigorous:** The Assessment Anchors support the rigor of the state standards by assessing higher order and reasoning skills.
- **Manageable:** The Assessment Anchors define the standards in a way that can be easily incorporated into a course to prepare students for success.

The Assessment Anchors and Eligible Content are organized into cohesive blueprints, each structured with a common labeling system. This framework is organized by increasing levels of detail: first, Module (Reporting Category); second, Assessment Anchor; third, Anchor Descriptor; and fourth, Eligible Content statement. The common format of this outline is followed across the Keystone Exams.

A description of each level in the labeling system for the Keystone Exams is as follows:

- **Module:** The Assessment Anchors are organized into two thematic modules for each of the Keystone Exams, and these modules serve as the Reporting Categories for the Keystone Exams. The module title appears at the top of each page in the Assessment Anchor document. The module level is also important because the Keystone Exams are built using a module format, with each of the Keystone Exams divided into two equally sized test modules. Each module is made up of two or more Assessment Anchors.
- **Assessment Anchor:** The Assessment Anchor appears in the shaded bar across the top of each Assessment Anchor table in the Assessment Anchor document. The Assessment Anchors represent categories of subject matter that anchor the content of the Keystone Exams. Each Assessment Anchor is part of a module and has one or more Anchor Descriptors unified under it.
- **Anchor Descriptor:** Below each Assessment Anchor in the Assessment Anchor document is a specific Anchor Descriptor. The Anchor Descriptor level details the scope of content covered by the Assessment Anchor. Each Anchor Descriptor is part of an Assessment Anchor and has one or more Eligible Content unified under it.
- **Eligible Content:** The column to the right of the Anchor Descriptor in the Assessment Anchor document contains the Eligible Content statements. The Eligible Content is the most specific description of the content that is assessed in the Keystone Exams. This level is considered the assessment limit. It helps educators identify the range of content covered on the Keystone Exams.
- **Enhanced Standard:** In the column to the right of each Eligible Content statement is a code representing one or more Enhanced Standards that correlate to the Eligible Content statement. Some Eligible Content statements include annotations that clarify the scope of an Eligible Content.
- **Notes:** There are three types of notes included in the Assessment Anchor document.

  “e.g.” (“for example”)—sample approach, but not a limit to the Eligible Content

  “i.e.” (“that is”)—specific limit to the Eligible Content

  “Note”—content exclusions or definable range of the Eligible Content

As shown in Table 2–1, the Assessment Anchor’s coding is read like an outline. The coding includes the Subject (Exam), Reporting Category/Module, Assessment Anchor, Anchor Descriptor, and Eligible Content. Each exam has two modules. Each module has two or more Assessment Anchors. Each of the Assessment Anchors has one or more Anchor Descriptors, and each Anchor Descriptor has at least one Eligible Content (generally more than one). The Assessment Anchors form the basis of the test design for the exams undergoing test development. In turn, this hierarchy is the basis for organizing the total module and exam scores (based on the core [common] portions).

Table 2–1. Sample Assessment Anchor Coding

Sample Code	Subject (Exam)	Reporting Category (Module)	Assessment Anchor (AA)	Anchor Descriptor (AD)	Eligible Content (EC)
A1.1.1.2.1	**A1** Algebra I	**1** Operations and Linear Equations & Inequalities	**1** Linear Equations	**2** Write, solve, and/or graph linear equations using various methods.	**1** Write, solve, and/or apply a linear equation (including problem situations).
BIO.A.2.1.1	**BIO** Biology	**A** Cells and Cell Processes	**2** The Chemical Basis for Life	**1** Describe how the unique properties of water support life on Earth.	**1** Describe the unique properties of water and how these properties support life on Earth (e.g., freezing point, high specific heat, cohesion).
L.F.2.4.1	**L** Literature	**F** Fiction	**2** Analyzing and Interpreting Literature—Fiction	**4** Use appropriate strategies to interpret and analyze the universal significance of literary fiction.	**1** Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.

The complete set of Assessment Anchors and Eligible Content can be referenced at PDE's Standards Aligned System (SAS) website: http://www.pdesas.org/Standard/KeystoneDownloads.

HIGH-LEVEL TEST DESIGN CONSIDERATIONS

The Keystone Exams employs two types of test items (questions): multiple choice and constructed response. These item types assess different levels of knowledge and provide different information about achievement. Psychometrically, multiple-choice items are very useful and efficient tools for collecting information about a student's academic achievement. Constructed-response performance tasks generally generate fewer scorable points than multiple-choice items generate in the same amount of testing time; however, they provide tasks that are more realistic and sample eligible content that best lends itself to this item type. Furthermore, well-constructed scoring guides have made it possible to include constructed-response tasks in large-scale assessments, and trained scorers apply the scoring guides to efficiently score large numbers of student responses in a highly reliable way. The design of the Keystone Exams attempts to achieve a reasonable balance between the two item types.

Table 2–2. Keystone Exams High-Level Design Considerations

Exam	MC as Percentage of Core Points	CR as Percentage of Core Points	Number of Points per MC	Number of Points per CR	Number of Modules	Number of Assessment Anchors	Number of Eligible Content
Algebra I	60	40	1	4	2	6	33
Biology	73	27	1	3	2	8	38
Literature	65	35	1	3	2	4	56

DEPTH OF KNOWLEDGE

The goal of each Keystone Exam is for each item to be of sufficient rigor, or Webb's Depth of Knowledge (DOK) Level 3. Webb's DOK was created by Norman Webb of the Wisconsin Center for Education Research. Webb's definition of depth of knowledge is the degree or complexity of knowledge that the content curriculum standards and expectations require. Therefore, when reviewing an item for depth of knowledge, the item is reviewed to determine whether it is as demanding cognitively as what the actual content curriculum standard expects. In the case of the Pennsylvania Keystone Exams, the item meets the criterion if the DOK of the item is in alignment with the DOK of the Assessment Anchor as defined by the Eligible Content. Webb's DOK includes four levels, from the lowest (basic recall) level to the highest (extended thinking) level.

In some specific cases, DOK level 2 was allowed when the cognitive intent of an Eligible Content was level 2. For more information on DOK, see Chapter Three and Appendix A.

ONLINE TESTING DESIGN CONSIDERATIONS

The Keystone Exams were designed from the beginning to provide a dual mode of test delivery, using traditional paper-and-pencil forms and computer-based online forms. The computer-based online testing environment (called INSIGHT) is designed to provide a testing experience that mirrors the elements of traditional paper-and-pencil-based test delivery. This includes not only standard ancillary testing materials available in or with the printed forms, like formula sheets, periodic tables, scoring guidelines, and response spaces, but also analogs of the mechanical elements of response generation not necessarily associated with a computer-screen interface. These elements include line guides, rulers, screen highlighters, magnifiers, equation-building software, online calculators and graphing tools, and keyboard shortcuts.

Consideration of other components of online testing—like item layout, passage layout, font, screen resolution, navigation tools, and other interface mechanisms—all played a role in the overall design constraints, with some considerations having a more meaningful impact on specific exams. For more information on how the online test design impacted the overall test design considerations, see the sections below under each exam. See also Chapter Twenty for more information on a study comparing the use of both modes of delivery.

Online testing also provides an opportunity to utilize software to generate scores for student responses. In cases where responses to questions invoke numerical strings or equations, online responses can be scored through the use of lookup tables. Lookup tables are automated scoring rubrics that contain common correct and incorrect responses. When a response does not match a record in the lookup table, a human scorer is used to adjudicate the score. Operational autoscoring was only used for the Algebra I Exam; see below for more information on its use in Algebra I. For more information on scoring, see Chapter Eight.

ALGEBRA I

The Algebra I Keystone Exam has two reporting categories: Module 1, Operations and Linear Equations & Inequalities, and Module 2, Linear Functions and Data Organizations. Both modules include three Assessment Anchors. Module 1 has 18 Eligible Content, and Module 2 has 15 Eligible Content. Each module corresponds to specific content aligned to statements and specifications included in the course-specific Assessment Anchor documents. The content included in the Algebra I multiple-choice items aligns with the Assessment Anchors and Eligible Content statements. The process skills, directives, and action statements also specifically align with the Assessment Anchors and Eligible Content statements. The content included in Algebra I constructed-response items aligns with content included in the Eligible Content statements. The process skills, directives, and action statements included in the performance demands of the Algebra I constructed-response items align with specifications included in the Assessment Anchor statements, the Anchor Descriptor statements, and/or the Eligible Content statements. In other words, the verbs or action statements used in the constructed-response items or stems can come from the Eligible Content, Anchor Descriptor, or Assessment Anchor statements.

ALGEBRA I ONLINE CONSIDERATIONS

Students taking the computer-based online delivery of the Algebra I Keystone Exam are provided with online versions of several common tools typically available to a student taking a traditional paper-and-pencil exam. Each student has access to the following online tools: a standard four-function calculator, a scientific calculator, a graphing tool (similar, but not identical to, a graphing calculator), a ruler (available in metric and English units), a highlighter, a line guide, a magnifier, a sticky note generator, and a cross-off tool. In addition, an equation builder—which allows students to generate complex equations not normally possible with a standard keyboard—is also made available with all constructed-response items. Also, if the constructed-response item requests that the student draw, label, or otherwise change a graph, special graph-drawing tools are provided for on-screen graph generation. The Algebra I general scoring guideline and formula sheets are also available to students.

Layout of both the multiple-choice and constructed-response items is optimized for minimal screen manipulation (minimal scrolling required to see graphics or text that extend beyond the visible working space on the computer screen), and exam items are scrutinized carefully in both print and online versions for continuity and accuracy.

ALGEBRA I MULTIPLE-CHOICE ITEMS

Sixty percent of the possible points on the Algebra I Keystone Exam are derived from multiple-choice items. This item type is especially efficient for measuring a broad range of content. Each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, incorrect application of an algorithm, or computational errors.

Algebra I multiple-choice items are intended to take about one and a half minutes of response time per item. They are used to assess a variety of skill levels, including problem solving. Algebra I items involving application emphasize the requirement to carry out some mathematical process to find an answer rather than simply recalling information from memory.

ALGEBRA I CONSTRUCTED-RESPONSE ITEMS

Constructed-response items (tasks) require that students read a problem description and develop an appropriate solution. Algebra I constructed-response items are designed to take about 10 minutes of response time per item. Most of the constructed-response items have several components in the overall task that may enable students to enter or begin the problem at different places. In some items, each successive component is designed to assess progressively more difficult skills or higher knowledge levels. Certain components may ask students to explain their reasoning for applying particular operations or for arriving at certain conclusions. The types of tasks utilized do not necessarily require computations. Students may also be asked to perform such tasks as constructing a graph, shading some portion of a figure, or listing object combinations that meet specified criteria.

Constructed-response tasks are especially useful for measuring students' problem-solving skills in Algebra I. They offer the opportunity to present real-life situations that necessitate that the students solve problems using mathematics abilities learned in the classroom. Students must read the task carefully, identify the necessary information, devise a method of solution, perform the calculations, enter the solution directly in the answer document, and, when required, offer an explanation. This provides insight into the students' mathematical knowledge, abilities, and reasoning processes.

The constructed-response Algebra I items are scored on a 0–4 point scale using an item-specific scoring guideline. The item-specific scoring guideline outlines the requirements for each score point. Item-specific scoring guidelines are based on the Algebra I General Description of Scoring Guidelines. The general guidelines describe a hierarchy of responses, which represent the five score levels. See Appendix B or these portals:

- *https://pa.drcedirect.com [Click on "Documents" under the "General Information" tab.]*
- *www.education.state.pa.us [Click on the green check mark and select "Keystone Exams."]*

The Algebra I Keystone Exam includes two types of constructed-response items: Scaffolded Constructed-Response Items (SCR) and Extended Constructed-Response Items (ECR). Both types are scored on the same 0–4 point scale using the same Algebra I General Description of Scoring Guidelines as the base. SCR items are constructed to generally elicit four distinct responses (a response may contain more than one answer blank), and each response has the potential to earn a discrete number of score points (generally just one [1] score point per response). In turn, the four distinct responses are generally organized into four sections, with each labeled as a "Part" within an SCR. The next table shows a generic (nonauthentic) illustration of the application of this concept.

Table 2–3. Generic Example [Nonauthentic] Showing Concept of Four Distinct Responses

Stem	Part A	Part B	Part C	Part D
Presents a numerical distribution	In the answer spaces, write the list of numbers from least to greatest.	Write the mean in an answer blank.	Write the median in an answer blank.	Write the mode in an answer blank.
4 points	1 distinct point even though students enter more than one number	1 distinct point with one distinct entry	1 distinct point with one distinct entry	1 distinct point with one distinct entry

- SCR items do not require narrative, explanation, or "show all your work" responses.
- Most SCR item responses lend themselves to automatic scoring; however, **not all items can be automatically scored exclusively with the use of lookup tables.** The full application of Assessment Anchors and Eligible Content sometimes requires item construction that is incompatible with lookup tables.

In familiar and probably the most descriptive terms, Algebra I ECR items—in form, format, and scoring provisions—adhere to the philosophy of PSSA OE item format. Like SCR items, development is based on the item qualities that best measure the skills and concepts with which the item aligns.

- ECR items intentionally elicit narrative, explanation of reasoning, "explain why . . .", and/or "show your work" responses.
- In contrast to SCR items, in which DOK level 3 cognitive engagement is inferred from student responses, ECR items (through explanations and recorded work) often provide direct evidence of DOK level 3 engagement. This aspect of ECR items is intentionally included during development. Following initial development, the ECR item will be approved by PDE as accepted by the review committee, or PDE and DRC will collaborate in amending the item.

BIOLOGY

The Biology Keystone Exam has two reporting categories: Module 1[A], Cells and Cell Processes; and Module 2[B], Continuity and Unity of Life. Both modules have four Assessment Anchors. Module A has 16 Eligible Content, and Module B has 22 Eligible Content. Each module corresponds to specific content aligned to statements and specifications included in the course-specific assessment anchor documents. The content included in the Biology multiple-choice items aligns with the Assessment Anchors and Eligible Content statements. The process skills, directives, and action statements also specifically align with the Assessment Anchors and Eligible Content statements. The content included in Biology constructed-response items aligns with content included in the Eligible Content statements. The process skills, directives, and action statements included in the performance demands of the Biology constructed-response items align with specifications included in the Assessment Anchor statements, the Anchor Descriptor statements, and/or the Eligible Content statements. In other words, the verbs or action statements used in the constructed-response items or stems can come from the Eligible Content, Anchor Descriptor, or Assessment Anchor statements.

BIOLOGY ONLINE CONSIDERATIONS

Students taking the computer-based online delivery of the Biology Keystone Exam are provided with online versions of several common tools typically available to a student taking a traditional paper-and-pencil exam. Each student has access to the following online tools: a highlighter, a line guide, a magnifier, a sticky note generator, and a cross-off tool. The Biology general scoring guideline and a periodic table are also provided to students.

Layout of both the multiple-choice and constructed-response items is optimized for minimal screen manipulation (minimal scrolling to see graphics or text that extend beyond the visible working space on the computer screen), and exam items are scrutinized carefully in both print and online versions for continuity and accuracy.

BIOLOGY MULTIPLE-CHOICE ITEMS

Seventy-three percent of the possible points on the Biology Keystone Exam are derived from multiple-choice items. Multiple-choice items are especially efficient for measuring a broad range of content. Each multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent incorrect concepts, incorrect logic, or incorrect application of a biological principle.

Biology multiple-choice items are intended to take about one and a quarter minutes of response time per item. They are used to assess a variety of skill levels, including the application of Biology content. Biology items involving application emphasize the requirement to utilize science content to find an answer rather than simply recalling information from memory.

BIOLOGY CONSTRUCTED-RESPONSE ITEMS

Constructed-response items (tasks) require students to read a description of a Biology problem and to develop an appropriate solution. Biology constructed-response items are designed to take about eight minutes of response time per item. Constructed-response tasks are especially useful for measuring students' skills in biology. These tasks may present real-life situations that require students to solve problems using science abilities learned in the classroom. Students must read a task carefully, identify the necessary information, devise a method of solution, enter the solution directly into the answer document, and when required, offer an explanation. This provides insight into students' science knowledge, abilities, and reasoning processes.

The constructed-response science items are scored on a 0–3 point scale with an item-specific scoring guideline, and each task is carefully constructed with a scoring guideline reflecting the task requirements. The general guidelines describe a hierarchy of responses, which represents the four score levels. Each item-specific scoring guideline outlines the requirements at each score point, and each item-specific scoring guideline is based on the Biology General Description of Scoring Guidelines. See Appendix B or these portals:

- *https://pa.drcedirect.com [Click on "Documents" under the "General Information" tab.]*
- *www.education.state.pa.us [Click on the green check mark and select "Keystone Exams."]*

LITERATURE

The Literature Keystone Exam has two reporting categories: Module 1, Fiction; and Module 2, Nonfiction. Both modules have two Assessment Anchors. Module 1 has 25 Eligible Content, and Module 2 has 33 Eligible Content. The Literature Exam employs two types of test items, multiple-choice and constructed-response, and the content included aligns with content included in the Eligible Content statements. The items are designed to measure students' comprehension of the content contained in the literature passages. Each module corresponds to specific content aligned to statements and specifications included in the course-specific Assessment Anchor documents. The content included in the Literature multiple-choice items aligns with the Assessment Anchors and Eligible Content statements. The process skills, directives, and action statements also specifically align with the Assessment Anchors and Eligible Content statements. The content included in Literature constructed-response items aligns with content included in the Eligible Content statements. The process skills, directives, and action statements included in the performance demands of the Literature constructed-response items align with specifications included in the Assessment Anchor statements, the Anchor Descriptor statements, and/or the Eligible Content statements. In other words, the verbs or action statements used in the constructed-response items or stems can come from the Eligible Content, Anchor Descriptor, or Assessment Anchor statements.

LITERATURE ONLINE CONSIDERATIONS

Students taking the computer-based online delivery of the Literature Keystone Exam are provided with online versions of several common tools typically available to a student taking a traditional paper-and-pencil exam. Each student has access to the following online tools: a highlighter, a line guide, a magnifier, a sticky note generator, and a cross-off tool. The Literature general scoring guideline is also provided to students.

Layout of passages, multiple-choice items, and constructed-response items is optimized for minimal screen manipulation (minimal scrolling to see text and graphics that extend beyond the visible working space on the computer screen), and exam items are scrutinized carefully in both print and online versions for continuity and accuracy. In addition, the amount of space devoted to the passage compared to the amount of space devoted to the exam questions was also optimized.

LITERATURE MULTIPLE-CHOICE ITEMS

Sixty-five percent of the possible points on the Literature Keystone Exam are derived from multiple-choice items. Literature multiple-choice items are intended to take about one minute of response time per item. They are designed to measure how well students comprehend the overall meaning of a passage or make basic inferences about it. At times, asking students to choose a preferred answer is the best way to determine whether they have gleaned certain information from a story. Such information may include central idea, setting, or main events and their sequence.

Each Literature multiple-choice item has four response options, only one of which is correct. The student is awarded one point for choosing the correct response. Distractors typically represent some kind of misinterpretation, predisposition, unsound reasoning, or casual reading.

LITERATURE CONSTRUCTED-RESPONSE ITEMS

Constructed-response items (tasks) are designed to address comprehension of text in ways that multiple-choice items cannot. Literature constructed-response items are designed to take about five minutes of response time per item. A short written response allows students to prepare an answer and summarize using supporting details or examples derived from the text.

The Literature constructed-response items are scored on a 0–3 point scale using an item-specific scoring guideline. Each task is text-dependent and is carefully constructed with the scoring guideline reflecting the task requirements. All item-specific scoring guidelines are based on the Literature General Description of Scoring Guidelines. The general guidelines describe a hierarchy of responses, which represent the four score levels. See Appendix B or these portals:

- *https://pa.drcedirect.com [Click on "Documents" under the "General Information" tab.]*
- *www.education.state.pa.us [Click on the green check mark and select "Keystone Exams."]*

LITERATURE PASSAGES

One of the key requirements of the Literature Keystone Exam is that students should be able to read and comprehend both literature and informational texts of sufficient text complexity and quality as required by the Assessment Anchors and Eligible Content. For example, the Assessment Anchors and Eligible Content for Literature require students to engage with appropriately complex literary fiction, literary nonfiction, and informational works. Passage genres include, but are not limited to, the following: stories; excerpts from novels, biographies, and autobiographies; letters; dramas; poems; myths from diverse cultures and different time periods; texts in history/social studies, science, and other disciplines; seminal US documents; the classics of American, British, and world literature; and current articles and editorials.

TEXT COMPLEXITY

Text complexity involves three components: matching reader to text and task, qualitative evaluation of the text, and quantitative evaluation of the text.

MATCHING READER TO TEXT AND TASK

A number of factors are taken into consideration when deciding whether a passage will be placed in the pool for possible use on the Literature Keystone Exam. The factors include, but are not limited to, the following:

- Are the conceptual load, vocabulary, syntactic patterns, sentence length, and clarity appropriate for the grade level?
- Does the passage stand the test of time as an example of literary fiction, literary nonfiction, and/or informational text, and is it judged by the committee of Pennsylvania educators as having sufficient quality?
- Is the passage "rich" enough to generate a variety of items?
- Do the passages represent a range of reading levels appropriate to the grade level?

- Do the passages lend themselves well to measuring the Keystone Exams Assessment Anchors and Eligible Content, including text structures and elements?
- Are the passages free of issues of bias, fairness, and/or sensitivity?
- Does the pool of passages represent diversity in the areas of gender, culture, ethnicity, urban/rural status, socioeconomic status, physical differences, and age?

QUALITATIVE EVALUATION OF THE TEXT

Evaluating the text complexity of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate at a given grade level. All passages to be included in the pool of passages for possible use on the Literature Keystone Exam are reviewed and approved by PDE and the Pennsylvania Reading Content Committee (a committee of Pennsylvania educators). The passages are reviewed by Pennsylvania educators to judge whether each passage meets the criteria outlined above. All potential passages are also reviewed by the Pennsylvania Bias, Fairness, and Sensitivity Committee.

QUANTITATIVE EVALUATION OF THE TEXT

Each readability program uses different methods to determine the readability for a particular passage (e.g., syllables, sentence length, number of words, vocabulary lists). Each readability formula is designed for a particular grade range of materials. When using the various readability formulas, a wide range of readability levels may be identified for a particular passage. Some readability formulas are better suited to a particular grade level. If a particular formula being used is outside of the intended range, then the results may be unreliable.

Readability of the Literature Keystone Exam passages has been determined using several of the most widely accepted readability formulas. These formulas are not used in a rigid way, but rather more informally to provide for several “snapshots” of a passage. The readability formulas used for the passages that appear on the Literature Keystone Exam are the Dale-Chall Formula, the Flesch Grade Level Formula, and the Fry Graph.

CHAPTER THREE: ITEM AND TEST DEVELOPMENT PROCESSES

GENERAL TEST DEVELOPMENT PROCESSES

The 2014 Keystone Exams initiated the start of the core-to-core biennial overlap. Approximately 30% to 50% of the operational points in each module overlap with items used operationally 2 years prior. To accommodate the program hiatus, the 2014 Keystone Exam cores were made up of items that had appeared on the Spring 2011 and/or Winter 2012/2013 cores. The remainder of the operational 2014 exams were made up of items that were field tested on the Spring 2013 Keystone Exams embedded field test administration. Table 3–1 below is a graphic representation of the basic process flow and overlap of the development cycles.

Table 3–1. General Development and Usage Cycle of the Algebra I, Biology, and Literature Keystone Exams

Admin Year	Events Occurring in Calendar Year						
	2009	2010	2011	2012	2013	2014	2015*
2010–2011	Initial Item Development for Fall 2010 FT	**Fall 2010 Stand-alone FT** New Item Development for Spring 2011 FT	Data Review of Fall 2010 FT **Spring 2011 Operational & Embedded FT**	Data Review of Spring 2011 FT	***Biennial Core-to-Core Overlap Deferred Due to 2012 Hiatus***	Biennial Core-to-Core Overlap (2011 core included as a portion of the 2014 core)	
2011–2012	**No Operational Administrations in 2011–2012 (Program in Hiatus)**						
2012–2013*			New Item Development for Spring 2013 FT	**Winter 2012/13 Administration**	**Spring 2013 Operational & Embedded FT** Data Review of Spring 2013 FT **Summer 2013 Administration**		Biennial Core-to-Core Overlap (2013 core included as a portion of the 2015 core)
2013–2014					**Winter 2013/14 Administration** New Item Development for Spring 2014 FT	**Spring 2014 Operational & Embedded FT** Data Review of Spring 2014 FT **Summer 2014 Administration**	
2014–2015*						**Winter 2014/15 Administration** New Item Development for Spring 2015 FT	**Spring 2015 Operational & Embedded FT** Data Review of Spring 2015 FT **Summer 2015 Administration**

*Projected/scheduled tasks and activities

GENERAL TEST DEFINITION

The plan for the Keystone Exams was developed through the collaborative efforts of the Pennsylvania Department of Education (PDE) and Data Recognition Corporation (DRC). The exams are presented online or in two printed testing materials, a test book and a separate answer book. The test book contains multiple-choice (MC) items. The answer book contains scannable pages for multiple-choice responses, constructed-response (CR) items with response spaces, and demographic data collection areas. All MC items are worth 1 point. Algebra I CR items receive a maximum of 4 points (on a scale of 0–4), and all Biology and Literature CR items receive a maximum of 3 points (on a scale of 0–3). In Spring 2014, each test form contained operational (core) items (identical on all forms) along with embedded field test items.

CORE-TO-CORE OVERLAP ITEMS

The operational items consist of a set of core items taken by all students. Starting in 2014 these core items included core-to-core overlapping items, which are items that also appeared on the core form of the administration two years before. The overlap connects the spring and summer administrations of year *x* and the winter administration in year *x*+1, with the year *x*+2 spring and summer and year *x*+3 winter administrations. The first biennial core-to-core overlap from the Spring 2011 and Winter 2011/2012 core was scheduled to begin with the Spring 2013 administration. However, when the program was placed on hiatus during the 2011–2012 school year, the overlap was moved to the Spring 2014 administration.

ALGEBRA I TEST DEFINITIONS

The Spring 2014 Algebra I Keystone Exam was composed of 24 forms. All of the forms contained operational core items identical for all students and sets of generally unique items. Tables 3–2 and 3–3 display the design for Algebra I for forms 1 through 24. The column entries for these tables denote the following:

- Number of unique core MC items
- Number of unique core CR items
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of MC and CR items in the form

Table 3–2. Algebra I Test Plan (Spring 2014) per Operational Form

	Module	Core per Form		Field Test per Form		Total per Form	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Algebra I	1	18	3	5	1	23	4
	2	18	3	5	1	23	4
	Total	36	6	10	2	46	8

Table 3–3. Algebra I Test Plan (Spring 2014) per 24 Operational Forms

	Module	Core per 24 Forms		Field Test per 24 Forms		Total per 24 Forms	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Algebra I	1	18	3	120	24	276	54
	2	18	3	120	24		
	Total	36	6	240	48		

The operational (core) portions of the Winter 2013/2014 and Summer 2014 administrations came from the same sources as the Spring 2014 core. Therefore 30% to 50% of the Winter 2013/2014 core overlaps with Spring 2011 and/or Winter 2012/2013 cores. The remaining core items that appeared on the Winter 2013/2014 were field tested in the Spring 2013 Keystone Exams embedded field test administration. Although each spring administration includes embedded field test items, the summer, winter, and breach forms do not include any embedded field test items due to the lower *n*-counts for these administrations. However, summer, winter, and breach forms still include the same number of items that appear in the spring administration. Instead of field test items, the slots in these exams are filled by placeholder (PH) items. Table 3–4 displays the design for the Algebra I Summer, Winter, and Breach operational forms.

Table 3–4. Algebra I Test Plan (2014 Summer, Winter, and Breach) per Operational Form

	Module	Core per Form		Placeholders per Form		Total per Form		Number of Forms	
		MC Items	CR Items	MC Items	CR Items	Core & PH MC Items	Core & PH CR Items	Master Core	Scrambles
Algebra I	1	18	3	5	1	23	4	1	2
	2	18	3	5	1	23	4		
	Total	36	6	10	2	46	8		

Since an individual student's score is based solely on the operational (or core) items, the total number of operational points is 60 for Algebra I. The total score is obtained by combining the points from the core MC (1 point each) and core CR (up to 4 points each) portions of the exam as shown in Table 3–5.

Table 3–5. Algebra I Core Points

Algebra I	Module 1		Module 2		Algebra I Total	
	50%		50%		100%	
	MC Items	CR Items	MC Items	CR Items	MC Items	CR Items
Core Items	18	3	18	3	36	6
Core Points	18	12	18	12	36	24
Total Points	30		30		60	

The Algebra I Exam results will be reported in two categories based on the two modules of the Algebra I Exam. The code letters for these Assessment Anchor categories are

1. Operations and Linear Equations & Inequalities
2. Linear Functions and Data Organization

The distribution of Algebra I items into these two categories is shown in Table 3–6.

Table 3–6. Algebra I Module and Anchor Distribution

Algebra I Module	Raw Points	Module Weight	Number of Anchors	Number of Eligible Content
1	30	50%	3	18
2	30	50%	3	15

The reporting categories are further subdivided for specificity and Eligible Content (limits). Each subdivision is coded by adding an additional character to the framework of the labeling system. These subdivisions are called Assessment Anchors and Eligible Content. More information about Assessment Anchors and Eligible Content is in Chapter Two.

For more information concerning the process used to convert the Algebra I operational test plan into forms (i.e., form construction), see Chapter Six.

For more information concerning the test sessions, timing, and layout for the Algebra I operational exam, see Chapter Seven.

BIOLOGY TEST DEFINITIONS

The Spring 2014 Biology Keystone Exam was composed of 24 forms. All of the forms contained operational core items identical for all students and sets of generally unique items. Tables 3–7 and 3–8 display the design for Biology for forms 1 through 24. The column entries for these tables denote the following:

- Number of unique core MC items
- Number of unique core CR items
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of MC and CR items in the form

Table 3–7. Biology Test Plan (Spring 2014) per Operational Form

	Module	Core per Form		Field Test per Form		Total per Form	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Biology	1	24	3	8	1	32	4
	2	24	3	8	1	32	4
	Total	48	6	16	2	64	8

Table 3–8. Biology Test Plan (Spring 2014) per 24 Operational Forms

	Module	Core per 24 Forms		Field Test per 24 Forms		Total per 24 Forms	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Biology	1	24	3	192	24	432	54
	2	24	3	192	24		
	Total	48	6	384	48		

The operational (core) portions of the Winter 2013/2014 and Summer 2014 administrations came from the same sources as the Spring 2014 core. Therefore 30% to 50% of the Winter 2013/2014 core overlaps with Spring 2011 and/or Winter 2012/2013 cores. The remaining core items that appeared on the Winter 2013/2014 were field tested in the Spring 2013 Keystone Exams embedded field test administration. Although each spring administration includes embedded field test items, the summer, winter, and breach forms do not include any embedded field test items due to the lower *n*-counts for these administrations. However, summer, winter, and breach forms still include the same number of items that appear in the spring administration. Instead of field test items, the slots in these exams are filled by placeholder (PH) items. Table 3–9 displays the design for the Biology Summer, Winter, and Breach operational forms.

Table 3–9. Biology Test Plan (2014 Summer, Winter, and Breach) per Operational Form

	Module	Core per Form		Placeholders per Form		Total per Form		Number of Forms	
		MC Items	CR Items	MC Items	CR Items	Core & PH MC Items	Core & PH CR Items	Master Core	Scrambles
Biology	1	24	3	8	1	32	4	1	2
	2	24	3	8	1	32	4		
	Total	48	6	16	2	64	8		

Since an individual student's score is based solely on the operational (or core) items, the total number of operational points is 66 for Biology. The total score is obtained by combining the points from the core MC (1 point each) and core CR (up to 3 points each) portions of the exam as shown in Table 3–10.

Table 3–10. Biology Core Points

Biology	Module 1		Module 2		Biology Total	
	50%		50%		100%	
	MC Items	CR Items	MC Items	CR Items	MC Items	CR Items
Core Items	24	3	24	3	48	6
Core Points	24	9	24	9	48	18
Total Points	33		33		66	

The Biology Exam results will be reported in two categories based on the two modules of the Biology Exam.

1. Cells and Cell Processes
2. Continuity and Unity of Life

The distribution of Biology items into these two categories is shown in Table 3–11.

Table 3–11. Biology Module and Anchor Distribution

Biology Module	Raw Points	Module Weight	Number of Anchors	Number of Eligible Content
1	33	50%	4	16
2	33	50%	4	22

The reporting categories are further subdivided for specificity and Eligible Content (limits). Each subdivision is coded by adding an additional character to the framework of the labeling system. These subdivisions are called Assessment Anchors and Eligible Content. More information about Assessment Anchors and Eligible Content is in Chapter Two.

For more information concerning the process used to convert the Biology operational test plan into forms (i.e., form construction), see Chapter Six.

For more information concerning the test sessions, timing, and layout for the Biology operational exam, see Chapter Seven.

LITERATURE TEST DEFINITIONS

The Spring 2014 Literature Keystone Exam was composed of 24 forms. All of the forms contained operational core items identical for all students and sets of generally unique items. Tables 3–12 and 3–13 display the design for Literature for forms 1 through 24. The column entries for these tables denote the following:

- Number of unique core passages
- Number of unique core MC items
- Number of unique core CR items
- Number of embedded field test passages
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of passages, MC items, and CR items in the form

Table 3–12. Literature Test Plan (Spring 2014) per Operational Form

	Module	Core per Form			Field Test per Form			Total per Form		
		Passages	MC Items	CR Items	Passages	MC Items	CR Items	Core & FT Passages	Core & FT MC Items	Core & FT CR Items
Literature	1	2	17	*3	1	6	1	3	23	4
	2	2	17	*3	1	6	1	3	23	4
	Total	4	34	6	2	12	2	6	46	8

*For each module, one core passage has two CRs and one core passage has one CR.

Table 3–13. Literature Test Plan (Spring 2014) per 24 Operational Forms

	Module	Core per 24 Forms			Field Test per 24 Forms			Total per 24 Forms		
		Passages	MC Items	CR Items	Passages	MC Items	CR Items	Core & FT Passages	Core & FT MC Items	Core & FT CR Items
Literature	1	2	17	*3	12	144	24	28	322	54
	2	2	17	*3	12	144	24			
	Total	4	34	6	24	288	48			

*For each module, one core passage has two CRs and one core passage has one CR.

The operational (core) portions of the Winter 2013/2014 and Summer 2014 administrations came from the same sources as the Spring 2014 core. Therefore 30% to 50% of the Winter 2013/2014 core overlaps with Spring 2011 and/or Winter 2012/2013 cores. The remaining core items that appeared on the Winter 2013/2014 were field tested in the Spring 2013 Keystone Exams embedded field test administration. Although each spring administration includes embedded field test items, the summer, winter, and breach forms do not include any embedded field test items due to the lower *n*-counts for these administrations. However, summer, winter, and breach forms still include the same number of items that appear in the spring administration. Instead of field

test items, the slots in these exams are filled by placeholder items. Table 3–14 displays the design for the Literature Summer, Winter, and Breach operational forms.

Table 3–14. Literature Test Plan (2014 Summer, Winter, and Breach) per Operational Form

	Module	Core per Form		Placeholders per Form		Total per Form		Number of Forms	
		MC Items	CR Items	MC Items	CR Items	Core & PH MC Items	Core & PH CR Items	Master Core	Scrambles
Literature	1	17	*3	6	1	23	4	1	2
	2	17	*3	6	1	23	4		
	Total	34	6	12	2	46	8		

*For each module, one core passage has two CRs and one core passage has one CR.

Since an individual student's score is based solely on the operational (or core) items, the total number of operational points is 52 for Literature. The total score is obtained by combining the points from the core MC (1 point each) and core CR (up to 3 points each) portions of the exam as shown in Table 3–15.

Table 3–15. Literature Core Points

Literature	Module 1			Module 2			Literature Total		
	50%			50%			100%		
	Passages	MC Items	CR Items	Passages	MC Items	CR Items	Passages	MC Items	CR Items
Core Items	2	17	3	2	17	3	4	34	6
Core Points	[redacted]	17	9	[redacted]	17	9	[redacted]	34	18
Total Points	26			26			52		

The Literature Exam results will be reported in two broad categories based on the two modules of the Literature Exam.

1. Fiction Literature
2. Nonfiction Literature

The distribution of Literature items into these two categories is shown in Table 3–16.

Table 3–16. Literature Module and Anchor Distribution

Literature Module	Raw Points	Module Weight	Number of Anchors	Number of Eligible Content
1	26	50%	2	25
2	26	50%	2	31

The reporting categories are further subdivided for specificity and Eligible Content (limits). Each subdivision is coded by adding an additional character to the framework of the labeling system. These subdivisions are called Assessment Anchors and Eligible Content. More information about Assessment Anchors and Eligible Content is in Chapter Two.

For more information concerning the process used to convert the Literature operational test plan into forms (i.e., form construction), see Chapter Six.

For more information concerning the test sessions, timing, and layout for the Literature operational exam, see Chapter Seven.

ITEM DEVELOPMENT CONSIDERATIONS

Alignment to the Keystone Exams Assessment Anchors and Eligible Content, course-level appropriateness (as specified by PDE), depth of knowledge (DOK), item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology were major considerations in the item development process. The *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 1999) and *Universal Design* (Thompson, Johnstone, & Thurlow, 2002) guided the development process. In addition, *Fairness in Testing: Training Manual for Issues of Bias, Fairness, and Sensitivity* (DRC, 2010) was used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field specialists.

BIAS, FAIRNESS, AND SENSITIVITY OVERVIEW

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests meet Standard 7.4 of the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999).

Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.

To meet Standard 7.4, DRC uses a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items related to issues of bias, fairness, and sensitivity (as well as based on technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity include instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include but are not limited to stereotyping, gender, region/geography, ethnic/cultural, socioeconomics/class, religion, experience, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

See the sections below in this chapter for more information about the Bias, Fairness, and Sensitivity Review meetings conducted for the Keystone Exams.

UNIVERSAL DESIGN OVERVIEW

The principles of universal design were incorporated throughout the item development process to allow participation of the widest possible range of students in the Keystone Exams. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.
- Items have concise and readable text.
- Items allow changes to other formats, such as Braille, without changing meaning or difficulty.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the principles of universal design is provided in Chapter Four.

DEPTH-OF-KNOWLEDGE OVERVIEW

An important element in statewide graduation exams is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999, 2006) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating DOK. According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (Webb, 1999, pp. 7–8). The four levels of cognitive complexity (i.e., DOK) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

DOK levels were incorporated into the item writing and review process, and items were coded with respect to the level they represented. The default DOK for the Keystone Exams is Level 3. The DOK level for CR items must be Level 3. The DOK level for MC items must also be Level 3; however, in some specific cases, Level 2 is allowed when the cognitive intent of an Eligible Content is Level 2. DOK Level 1 and DOK Level 4 are not included on the Keystone Exams. For more information on DOK (and a comparison of DOK to Bloom's Taxonomy), see Appendix A.

PASSAGE READIBILITY OVERVIEW

Evaluating the readability of a passage is essentially a judgment by individuals familiar with the classroom context and what is linguistically appropriate (PDE recommends that the Literature Keystone Exam be administered at grade 10). Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way but more informally to provide for several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage-selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness. For more information on Literature passages, see Chapter Two and the literature passage-selection process described below.

TEST ITEM READIBILITY OVERVIEW

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject/course areas such as Algebra I or Biology contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary at or one level below the course level for non-Literature exams. There was a conscious effort made to ensure that each question was evaluating a student's ability to build toward mastery of the course standards rather than evaluating the student's reading ability. Resources used to verify the vocabulary level were the *EDL Core Vocabularies* and the *Children's Writer's Word Book*.

In addition, every test question is brought before several different committees composed of Pennsylvania educators who are course-level/grade-level experts in the content field in question. They review each question from the perspective of the students they teach, determine the validity of the vocabulary used, and work to minimize the level of reading required.

Vocabulary was also addressed at the Bias, Fairness, and Sensitivity Review, although the focus was on how certain words or phrases may represent possible sources of bias or issues of fairness or sensitivity. See the sections that follow in this chapter for more information about the Bias, Fairness, and Sensitivity Review meetings conducted for the Keystone Exams.

ITEM AND TEST DEVELOPMENT CYCLE

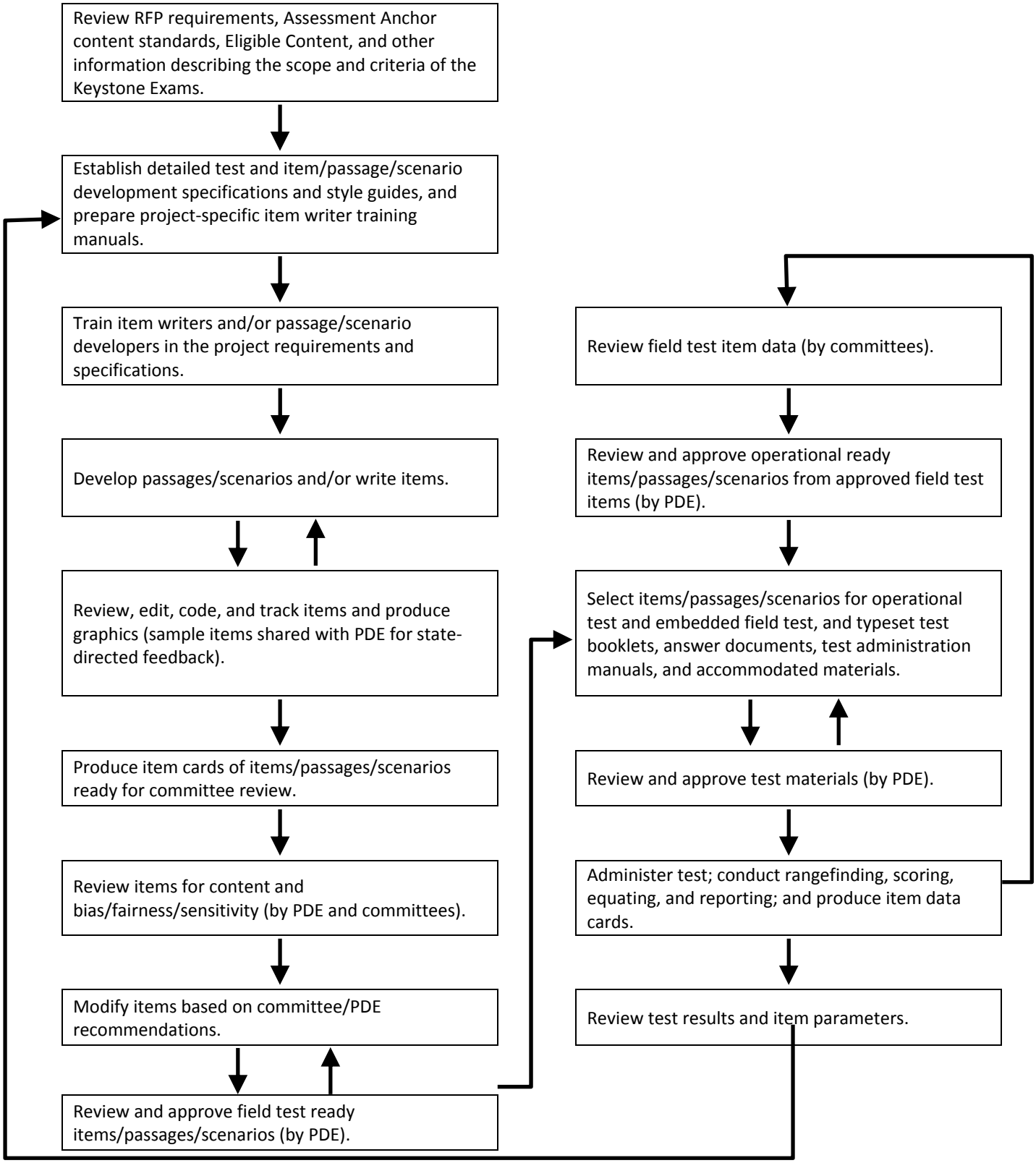
The item development process followed a logical cycle and timeline, which are outlined in Table 3–17 and Figure 3–1. On the front end of the schedule, tasks were generally completed with the goal of presenting field test candidate items to committees of Pennsylvania educators. On the back end of the schedule, all tasks led to the field test data review and operational test construction. This process represents a typical life cycle for an embedded Keystone Exam field test event, not a stand-alone field test event or an accelerated development cycle.

The process flowchart, Figure 3–1, illustrates the interrelationship among the steps in the primary cycle that occurs in a normal process of development (i.e., when the items for field testing are primarily from new development, as opposed to being selected from an existing item bank). In addition, a detailed process table describing the item and test development processes also appears in Appendix C.

Table 3–17. General Item and Test Development Life Cycle for Spring Keystone Exam Administrations

Cycle	Steps in Development Life Cycle	Timeline	Approximate Window	
Primary	Development Planning	Summer/Fall	Month 1–4	Jul–Oct
	Literature Passage Selection	Summer/Fall	Month 1–6	Jul–Dec
	Item Writer Training	Fall	Month 5	Nov
	Initial Item Authoring	Fall/Winter	Month 5–9	Nov–Mar
	Internal Reviews and PDE Reviews	Fall to Spring	Month 6–12	Dec–Jun
	Bias, Fairness, and Sensitivity Review	Summer	Month 13	Jul
	New Item Content Committee Review (PA Educators)	Summer	Month 13	Jul
	Post-Review Resolution and Cleanup	Summer	Month 13–14	Jul–Aug
	Build Field Test Forms	Summer/Fall	Month 15–16	Sep–Oct
	Internal Form Reviews and PDE Reviews	Summer/Fall	Month 15–18	Sep–Dec
	Final Form and Printer Proof Approvals	Fall/Winter	Month 18–19	Dec–Jan
	Ancillary and Accommodated Form Development	Fall/Winter	Month 18–20	Dec–Feb
	Form Printing, Spiraling, Packaging, and Shipping	Winter/Spring	Month 19–22	Jan–Apr
	Field Test Administration	Spring	Month 23	May
	Material/Data Processing, Rangefinding, and Scoring	Spring/Summer	Month 23–26	May–Aug
	Field Test Item Data Review (PA Educators)	Summer	Month 27	Sept
	Select Operational Items	Summer/Fall	Month 27–28	Sep–Oct
	Build Operational Forms	Fall	Month 28–29	Oct–Nov
	Internal Form Reviews and PDE Reviews	Fall	Month 29–30	Nov–Dec
	Final Form and Printer Proof Approvals	Fall/Winter	Month 30–31	Dec–Jan
	Ancillary and Accommodated Form Development	Fall/Winter	Month 31–33	Jan–Mar
	Form Printing, Spiraling, Packaging, and Shipping	Winter/Spring	Month 31–33	Jan–Mar
	Operational Test Administration	Spring	Month 35	May
	Material/Data Processing and Scoring	Spring/Summer	Month 35–36	May–Jun
	Score Reporting	Summer	Month 35–39	May–Sep
Secondary	Select Biennial Core-to-Core Overlap Items (Operational Items)	Summer/Fall	Month 51–52	Sep–Oct
	Build Operational Forms	Fall/Winter	Month 52–53	Oct–Nov
	Internal Form Reviews and PDE Reviews	Winter	Month 53–54	Nov–Dec
	Final Form and Printer Proof Approvals	Winter	Month 54–55	Dec–Jan
	Ancillary and Accommodated Form Development	Winter/Spring	Month 55–57	Jan–Mar
	Form Printing, Spiraling, Packaging, and Shipping	Winter/Spring	Month 56–58	Feb–Apr
	Second Operational Test Administration	Spring	Month 59	May
	Material/Data Processing and Scoring	Spring/Summer	Month 59–60	May–Jun
	Score Reporting	Summer	Month 59–63	May–Sep
Tertiary	Release Core-to-Core Overlap Items in Samplers	Fall	Month 63	Sep

Figure 3–1. DRC Item and Test Development Primary Cycle



GENERAL ITEM AND TEST DEVELOPMENT PROCESS

This section describes the processes which lead up to an operational exam. These processes were used to develop the entire pool of items that appeared in the field test and operational administrations.

ITEM DEVELOPMENT PLANNING MEETING

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans for the next administration, including the test blueprint, the field test plan (including development counts), procedures, time lines, etc. With a complete development cycle lasting about three years (from item authoring through field test, data review, and operational usage), the initial planning begins well in advance of the anticipated administration.

ITEM WRITER TRAINING

Item writers were selected and trained for the subject areas of Algebra I, Biology, and Literature. Qualified writers—either hired independently by the testing vendor, DRC, or through subcontractors like WestEd—were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing MC and CR items. Prior to developing items for the Keystone Exams, the cadre of item writers was trained with regard to the following areas:

- Keystone Exams Assessment Anchors and Eligible Content
- Webb's levels of cognitive complexity, DOK
- Subject-specific general scoring guidelines
- Specific and general guidelines for item writing
- Bias, fairness, and sensitivity guidelines
- Principles of universal design
- Item quality technical style guidelines
- Reference information
- Sample items

LITERATURE PASSAGE SELECTION

The task of searching for passages was conducted by DRC professionals with classroom experience in reading/language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage selection included appropriate length, text structure, density, and vocabulary. A judgment was also made about whether the reading level required by a particular passage was at the independent level—that is, where the average student should be able to read 90 percent of words in the text independently. Passage finders were given the task of searching for a specified number of passages for each genre. Generally, they looked for at least twice as many passages as were needed. Passages acquired were either authentic (permissioned), in that they were culled from published materials, or commissioned by experienced authors. See Chapter Two for more information on the types of passages used on the Literature Keystone Exam.

For permissioned passages, approval to reprint was secured from the publishers. Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are appropriate in terms of vocabulary and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are from a variety of sources.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of MC and CR items.
- Passages are complete with all necessary permissions documentation.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages should not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, the passages deemed potentially acceptable were reviewed by the Reading Content Committee and the Bias, Fairness, and Sensitivity Committee for final approval.

ITEM AUTHORING AND TRACKING

Initially, items are generated with software-prepared Keystone Exam Item Cards, which allow for preliminary sorting and reviewing. Although very similar, the Keystone Exam Item Cards for Multiple-Choice Items differ from the Keystone Exam Item Cards for Constructed-Response Items in that the former have a location at the bottom of the card for comments regarding the distractors. Blank examples of these two cards are shown in Appendix D. In both instances, a column against the right margin includes codes to identify the subject area, grade, content categories, passage information (in the case of reading), item type, DOK (cognitive complexity), estimated difficulty, answer key (for MC items), and calculator use (for mathematics items).

All items undergoing field testing were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use in a test form (for both print and online delivery). The system supports item history records that include item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF). A sample IDEAS Item Card is presented in Appendix D.

INTERNAL REVIEWS AND PDE REVIEWS

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as subject, content category, and subcategories. Based on the item writer's classroom teaching experience, his/her knowledge of the content area curriculum, and the cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulty and for cognitive complexity focused on DOK Level 3.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC, at WestEd, or at both companies. Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and/or Assessment Anchor. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided and cued only one correct answer (MC items only). In addition, the difficulty level, DOK, graphics, language demand, and distractors were also evaluated. Other elements considered in this process included, but were not limited to, universal design, bias, source of challenge, grammar/punctuation, and Keystone Exam style.

Following this internal process, items were reviewed by content specialists at PDE, who then consulted with DRC about any general issues or concerns (e.g., style, format, interpretation of Assessment Anchors and Eligible Content) and about edits to specific items. Following PDE's review, the items were prepared for the content review meetings conducted with Pennsylvania educators.

ITEM CONTENT REVIEWS IN AUGUST 2013

Prior to the 2014 field testing, all newly developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level (course) appropriateness, estimated difficulty, DOK, and source of challenge. They also suggested revisions and made recommendations for reclassification of items. In some cases when an item was deleted, the committee suggested a replacement item and/or reviewed a suggested replacement item provided by the facilitators. The committee also reviewed the items for adherence to the principles of universal design, including language demand and issues of bias, fairness, and sensitivity.

With source of challenge, items were identified where the cognitive demand was focused on an unintended content, concept, or skill (Webb, 2002). Source of challenge may be a contributing factor if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge.

The content review meetings were held on August 5–9, 2013, for Algebra I, Biology, and Literature. Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE. Committee members, grouped by exam, worked through and reviewed the items for quality and content, as well as for the following categories:

- Assessment Anchor alignment
- Content limits
- Grade-level (course-level) appropriateness
- Difficulty level
- DOK
- Appropriate source of challenge
- Correct answer
- Quality of distractors
- Graphics in regards to appropriateness
- Appropriate language demand
- Freedom from bias

The members then came to consensus and assigned a status to each item: Approved, Accepted with Revision, or Rejected. All comments were recorded, and a master rating sheet was completed. Committee facilitators recorded the committee consensus on the Item Review Rating Sheet. A sample form and rating criteria may be found in Appendix E.

Security was addressed by adhering to a strict set of procedures. Items in binders were distributed for committee review by number and signed for by each member on a daily basis. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials not in use at any time were stored in a locked room. Secure materials that did not need to be retained after the meetings were deposited in secure barrels, the contents of which were shredded.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS IN JULY 2013

Prior to the 2014 field testing, all newly developed test items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This review took place from July 16–18, 2013, for Algebra I, Biology, and Literature. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multiethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2013). Members of the committee also had expertise with special needs students and English Language Learners (ELL). PDE staff members were also trained and participated in the review. All items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed, for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, region, religion, socioeconomics, or stereotypes. These categories were the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee discussed each of the issues as a group and came to consensus as to

which decisions should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to PDE. This review followed the same security procedures as outlined above, except that the materials were locked up and stored at the DRC offices in Harrisburg. Table 3–18 shows the gender and race/ethnicity of the members of the bias committee who reviewed the Keystone Exam items and passages for bias, fairness, and sensitivity.

Table 3–18. Demographic Composition of the 2013 Keystone Exam Bias, Fairness, and Sensitivity Committee

Member #	July 2013	
	Gender	Race/Ethnicity
1.	Female	American Indian or Alaskan Native
2.	Female	African American
3.	Female	Caucasian American
4.	Female	Caucasian American
5.	Female	Caucasian American
6.	Male	Caucasian American
7.	Male	Asian or Pacific Islander
8.	Female	Hispanic of any race
9.	Male	Caucasian American
Totals	3 Male 6 Female	1 American Indian 1 Asian American 1 African American 5 Caucasian American 1 Hispanic American

The results from the 2013 Bias, Fairness, and Sensitivity Committee reviews are summarized in Table 3–19.

Table 3–19. Number of Items—Bias, Fairness, and Sensitivity Committee Review

Date	Algebra I			
	Total Reviewed	**Accepted As Is**	**Accepted with Revision**	**Rejected**
July 2013	321	311	10	0
Date	**Biology**			
	Total Reviewed	**Accepted As Is**	**Accepted with Revision**	**Rejected**
July 2013	107 Scenario Items 477 Items	107 Scenario Items 473 Items	0 Scenario Items 4 Items	0 Scenario Items 0 Items
Date	**Literature**			
	Total Reviewed	**Accepted As Is**	**Accepted with Revision**	**Rejected**
July 2013	26 Passages 372 Items	24 Passages 370 Items	2 Passages 2 Items	0 Passages 0 Items
Date	**All Exams**			
	Total Reviewed	**Accepted As Is**	**Accepted with Revision**	**Rejected**
July 2013	107 Scenario Items 26 Passages 1170 Items	107 Scenario Items 24 Passages 1154 Items	0 Scenario Items 2 Passages 16 Items	0 Scenario Items 0 Passages 0 Items

CHAPTER FOUR: UNIVERSAL DESIGN PROCEDURES APPLIED TO THE KEYSTONE EXAMS TEST DEVELOPMENT PROCESS

UNIVERSAL DESIGN

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone, & Thurlow, 2002). At every stage of the item and test development process, procedures were employed to ensure that items and subsequent tests (in both print and online delivery methods) were designed and developed using the elements of universally designed assessments established by the National Center on Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title I and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including English Language Learners and students with disabilities. The benefits of universally designed assessments not only apply to these groups of students, but to all individuals with wide-ranging characteristics.

DRC's test development team was trained in the elements of Universal Design as they relate to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Language Learners. Likewise, some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines that were followed during all stages of the item development process for the Keystone Exams.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Connell et al., 1997), NCEO has produced seven elements of Universal Design as they apply to assessments (Thompson, Johnstone, & Thurlow, 2002). These elements served to guide item development for the Keystone Exams.

- **Inclusive Assessment Population**

  The target population includes students attending Commonwealth schools who participate in one or more of the graduation competency exams.

- **Precisely Defined Constructs**

  An important function of well-designed assessments is that the assessments actually measure what they are intended to measure. The Keystone Exams Assessment Anchor Content Standards (Assessment Anchors) provided clear descriptions of the constructs to be measured on each of the exams. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

- **Accessible, Nonbiased Items**

  DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers due to lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team who understood the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than being added after the fact.

- **Amenable to Accommodations**

  Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the exam is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology (see also the section on Assessment Accommodations later in this chapter).

- **Simple, Clear, and Intuitive Instructions and Procedures**

  Assessment instructions should be easy to understand regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

- **Maximum Readability and Comprehensibility**

  A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, and text organization. All of these features were considered as item text was developed.

  Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the new Keystone Exam items:

  - Reduction of excessive length
  - Use of common words
  - Avoidance of ambiguous words
  - Avoidance of irregularly spelled words
  - Avoidance of proper names
  - Avoidance of inconsistent naming and graphic conventions
  - Avoidance of unclear signals about directing attention

- **Maximum Legibility**

  Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are assessing. A style guide was developed and utilized that included dimensions of style consistent with Universal Design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was followed. For more information on the checklist, see the Universal Design section in Chapter Three of this report.

1. **Items measure what they are intended to measure.** Item writing training included making certain that writers and reviewers had a clear understanding of Pennsylvania's Academic Standards and the Keystone Exams Assessment Anchors. During all phases of test development, items were presented with content standard information to ensure that each item reflected the intended Assessment Anchor. Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant. With certain types of items an additional skill was necessary, such as the Algebra I test, which requires the student to read.
2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items to avoid issues of bias, fairness, and sensitivity. Training also included an awareness of and sensitivity to issues of cultural and regional diversity.
3. **Items have a clear format for text.** Decisions about how items were presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which are far less legible and are read considerably more slowly than standard typeface. Captions, keys, and legends were at least a 12-point size, while footnotes and sentence numbers use a 10-point font.[1] Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space was used around paragraphs and between columns and staggered right margins.
4. **Stimuli and items have clear pictures and graphics.** When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used when possible. Sufficient contrast between the background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.

[1] While font size follows specific requirements during online setup of an exam, the screen resolution used at the local level can impact whether the effective font size is visible to the student.

5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used:
    - Simple, clear, commonly used words were used whenever possible.
    - Extraneous text was omitted.
    - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
    - Technical terms and abbreviations were used only if they were related to the content being measured.
    - Definitions and examples were clear and understandable.
    - Idioms were avoided unless idiomatic speech was being assessed.
    - Questions to be answered were clearly identifiable.
6. **Items allow changes to format without changing meaning or difficulty.** A Braille version was available for each operational exam. Attention was given to using items that allow for Braille. Specific accommodations were permitted, such as signing to a student, the use of oral presentation under specified conditions, and the use of various assistive technologies. A Spanish version of the Algebra I and Biology exams was available for use by English Language Learners who would benefit from this accommodation and who were in US schools for less than three years.
7. **The test has an overall appearance that is clean and organized.** Information was organized in a left-right, top-bottom format. Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, shading, visual crowding caused by excess information) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose.

ITEM DEVELOPMENT

DRC and WestEd worked closely with the Pennsylvania Department of Education to ensure that the Keystone Exams complied with nationally recognized principles of Universal Design. The implementation of accommodations on large-scale statewide assessments for students with disabilities was supported in the development of the Keystone Exams. In addition to the principles of Universal Design as described in the Pennsylvania Technical Report, DRC and WestEd applied to each exam the standards for test accessibility as described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004).

To this end, DRC and WestEd embrace the following precepts:

- Test directions are worded to allow for alternate responses to constructed-response items.
- During item and bias reviews, committee members are made aware of the Principles of Universal Design and of issues that may adversely affect students with disabilities. The goal is to make certain that the Keystone Exams are bias free for all students.

- With the goal of ensuring that the Keystone Exams are accessible to the widest range of diverse student populations, PDE instructs DRC and WestEd to limit item types that are difficult to format in Braille and that may become distorted when published in large print. DRC and WestEd are instructed to limit the following on the Keystone Exams.
    - Algebra I: Complicated tessellations; charts or graphs that extend beyond one page
    - Literature: Graphics and illustrations that are not germane to the content presented
    - All exams: Unnecessary boxes and framing of text, unless enclosing the text provides necessary context for the student; use of italics (limited to only when it is absolutely necessary, such as with variables)

ITEM FORMAT

For all Keystone Exams (both online and print), DRC formats the items to maximize accessibility for all students by using text that is in an easily readable size and font style. DRC limits shading, graphics, charts, and the number of items per page so that there is sufficient white space on each page. Whenever possible, DRC ensures that graphics, pictures, diagrams, charts, and tables are positioned on the page with the associated test items. DRC uses high contrast for text and background when possible to convey pertinent information. Tests are published on dull-finish paper to avoid the glare encountered on glossy paper. DRC pays close attention to the binding of the exam books to ensure that they lie flat for two-page viewing and ease of reading and handling.

DRC ensures consistency across Keystone Exams by following these Principles of Universal Design:

- High contrast and clarity is used to convey detailed information.
- Typically, shading is avoided; when necessary for content purposes, 10-percent screens are used as the standard.
- Overlaid print on diagrams, charts, and graphs is avoided.
- Charts, graphs, diagrams, and tables are clearly labeled with titles and with short descriptions when applicable.
- Only relevant information is included in diagrams, pictures, and graphics.
- Symbols used in keys and legends are meaningful and provide reasonable representations of the topics they depict.
- Pictures that require physical measurement are true to size.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to make certain that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. Three accommodations manuals for Pennsylvania assessments titled *Accommodations Guidelines for Students with IEPs and Students with 504 Plans, Accommodations Guidelines for Students without IEPs and 504 Plans*, and *Accommodations Guidelines for English Language Learners* were developed for use with the Keystone Exams. The manuals can be accessed by going to www.pdesas.org/Assessment/Keystone and selecting the corresponding document under the Test Accommodations section.

In addition, Spanish-language versions, translated from the original English versions, were made available for both the Algebra I Exam and the Biology Exam. The Spanish-language versions of the exams are discussed in Chapter Six.

CHAPTER FIVE: FIELD TEST LEADING TO THE SPRING 2014 CORE

FIELD TEST OVERVIEW

Approximately 50% of the core items appearing on the Spring 2014 Pennsylvania Keystone Exams came from the field test (nonlinking) items on the Spring 2013 Keystone Exams. The remaining core items were part of the biennial core-to-core overlap. For more information about the core-to-core overlapping items, please see Chapter Three. The purpose of administering field test items is to obtain statistics for them so they can be reviewed before becoming operational (core). Based on this statistical review, many of the field test items appearing in the Spring 2013 Keystone Exams were selected for use as common (core) items in the 2014 Keystone Exams.

As shown in Table 5–1, the overall Keystone Exams Field Test Plan uses a given spring administration to augment the pool of items available for use in core positions in the subsequent administration cycle starting with the next spring administration. Each spring field test is designed to yield up to three cores' worth of items to fill the core administrations of the subsequent spring, summer, and winter cores.

Table 5–1. General Pattern Showing Path from Field Test to Core and to Core-to-Core Overlap for a Given Keystone Exam

Field Test Administration	Initial Core Use			Core-to-Core Overlap Use		
	Spring	Summer	Winter	Spring	Summer	Winter
Spring Year X	X+1	X+1	X+2	X+3	X+3	X+4
Spring Year X+1	X+2	X+2	X+3	X+4	X+4	X+5
Spring Year X+2	X+3	X+3	X+4	X+5	X+5	X+6

See Chapter Three (concerning the test definitions for the individual Keystone Exams) for more details about the number of embedded field test (EFT) items appearing in a Keystone Exam within a typical operational form setting.

SPRING 2013 KEYSTONE EXAMS EMBEDDED FIELD TEST

For 2013, the embedded field test (in spring) was designed to yield enough items to construct portions of the following operational forms: Spring 2014, Summer 2014, Winter 2014/2015, and a possible breach form for 2014/2015. The next tables describe the embedded field test plans for the Keystone Exams in the spring of 2013.

SPRING 2013 ALGEBRA I KEYSTONE EXAM EMBEDDED FIELD TEST PLAN

The Spring 2013 Algebra I Keystone Exam was composed of 20 forms. All of the forms contained core items that were identical for all students and sets of generally unique items. Tables 5–2 and 5–3 display the design for Algebra I for forms 1 through 20. The column entries for these tables denote the following:

- Number of unique core MC items
- Number of unique core CR items
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of MC and CR items in the form

Table 5–2. Algebra I Test Plan (Spring 2013) per Operational Form

	Module	Core per Form		Field Test per Form		Total per Form	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Algebra I	1	18	3	5	1	23	4
	2	18	3	5	1	23	4
	Total	36	6	10	2	46	8

Table 5–3. Algebra I Test Plan (Spring 2013) per 20 Operational Forms

	Module	Core per 20 Forms		Field Test per 20 Forms		Total per 20 Forms	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Algebra I	1	18	3	100	20	236	46
	2	18	3	100	20		
	Total	36	6	200	40		

SPRING 2013 BIOLOGY KEYSTONE EXAM EMBEDDED FIELD TEST PLAN

The Spring 2013 Biology Keystone Exam was composed of 20 forms. All of the forms contained core items that were identical for all students and sets of generally unique items. Tables 5–4 and 5–5 display the design for Biology for forms 1 through 20. The column entries for these tables denote the following:

- Number of unique core MC items
- Number of unique core CR items
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of MC and CR items in the form

Table 5–4. Biology Test Plan (Spring 2013) per Operational Form

	Module	Core per Form		Field Test per Form		Total per Form	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Biology	1	24	3	8	1	32	4
	2	24	3	8	1	32	4
	Total	48	6	16	2	64	8

Table 5–5. Biology Test Plan (Spring 2013) per 20 Operational Forms

	Module	Core per 20 Forms		Field Test per 20 Forms		Total per 20 Forms	
		MC Items	CR Items	MC Items	CR Items	Core & FT MC Items	Core & FT CR Items
Biology	1	24	3	160	20	368	46
	2	24	3	160	20		
	Total	48	6	320	40		

SPRING 2013 LITERATURE KEYSTONE EXAM EMBEDDED FIELD TEST PLAN

The Spring 2013 Literature Keystone Exam was composed of 20 forms. All of the forms contained common items that were identical for all students and sets of generally unique items. Tables 5–6 and 5–7 display the design for Literature for forms 1 through 20. The column entries for these tables denote the following:

- Number of unique core passages
- Number of unique core MC items
- Number of unique core CR items
- Number of embedded field test passages
- Number of embedded MC field test items
- Number of embedded CR field test items
- Total number of passages, MC items, and CR items in the form

Table 5–6. Literature Test Plan (Spring 2013) per Operational Form

	Module	Core per Form			Field Test per Form			Total per Form		
		Passages	MC Items	CR Items	Passages	MC Items	CR Items	Core & FT Passages	Core & FT MC Items	Core & FT CR Items
Literature	1	2	17	3	1	6	1	3	23	4
	2	2	17	3	1	6	1	3	23	4
	Total	4	34	6	2	12	2	6	46	8

Table 5–7. Literature Test Plan (Spring 2013) per 20 Operational Forms

	Module	Core per 20 Forms			Field Test per 20 Forms			Total per 20 Forms		
		Passages	MC Items	CR Items	Passages	MC Items	CR Items	Core & FT Passages	Core & FT MC Items	Core & FT CR Items
Literature	1	2	17	3	10	120	20	24	274	46
	2	2	17	3	10	120	20			
	Total	4	34	6	20	240	40			

STATISTICAL ANALYSES AND RESULTS

All field test items were analyzed statistically following conventional item analysis methods. For MC items, traditional, or classical, item statistics included the corrected point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), the percent correct (*p*-value), and the percentage selecting incorrect responses. For CR items, the statistical indices included the item-total test correlation, the point-biserial correlation for each score category or level, the percentage in each score category, and the percentage of non-scorable responses.

In general, more-capable students are expected to respond correctly to easy items and less-capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient for MC items and the item-total correlation for CR items. In each case the statistic will be positive if the total-test mean score is higher for the students who respond correctly to MC items (or attain a higher CR item score) and negative when the reverse is true. A detailed explanation of item statistics based on the classical test theory (CTT) can be found in Chapter Eleven.

DIFFERENTIAL ITEM FUNCTIONING

The differential item functioning (DIF) analysis was conducted on all the field test items. Differential item functioning occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. This pattern of results may suggest the presence of item bias. As a statistical concept, however, DIF can be differentiated from item bias, which is a content issue that can arise when an item presents negative group stereotypes, uses language that is more familiar to one subpopulation than to another, or is presented in a format that disadvantages certain learning styles. While the source of item bias is often plain to trained judges, DIF may have no clear cause. However, studying how DIF arises and how it presents itself can help to detect and correct for it.

DIF DETECTION PROCEDURES

For MC items, the Mantel-Haenszel (MH) procedure (Mantel & Haenszel, 1959) for detecting DIF is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score to organize the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal group was female for gender-based DIF, black and Hispanic for ethnicity-based DIF, and computer-based-test (CBT) group for the test administration mode-based DIF; reference groups were male, white, and paper-and-pencil test (PPT) groups respectively. The MH statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right or wrong). The ability groups are defined by the test's score distribution for the total examinee populations.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

For CR items, a comparable statistic is computed based on the standardized mean difference (SMD) (Dorans, Schmitt, & Bleistein, 1992), computed as the differences in mean scores for the focal and reference groups if both groups had the same score distribution.

To assist the review committees in interpreting the analyses, the items are assigned a severity code based on the magnitude of the MH statistic (Zwick & Erickan, 1989) and the effect size for the SMD. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but are acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is an inexact science. There have been a variety of methods proposed for detecting DIF, but no one statistic can be considered either necessary or sufficient. Different methods are more or less successful depending on the situation. No analysis can guarantee that a test is free of bias, but almost any thoughtful analysis will uncover the most flagrant problems.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method will locate the problems. If, however, all items on the test show consistent DIF to the disadvantage of a given subpopulation, a statistical analysis of the items will not be able to separate DIF effects from true differences in achievement.

CRITERIA USED TO FLAG ITEMS

Item statistics are used as a means of detecting items that deserve closer scrutiny rather than as a mechanism for automatic retention or rejection. Toward this end, a set of criteria was used as a screening tool to identify items needing a closer review by committees of Pennsylvania educators.

For all the items, if any item had a gender (male vs. female), ethnicity (white vs. black or Hispanic), and/or test administration mode (PPT vs. CBT) DIF code of C+ or C-, it was flagged.

For an MC item to be flagged, the following four additional criteria were also used:

1. Point-biserial correlation for the correct response of less than 0.25
2. Point-biserial correlation for any incorrect response greater than 0.0
3. Percent correct less than 0.3 or greater than 0.9
4. Percentage responding to any incorrect responses greater than the percent correct

For a CR item to be flagged, the following criterion was used in addition to the DIF criteria:

5. Score proportion less than 0.05

The intent of the above criteria is to flag everything that should be reviewed. For this purpose, the preference is to over-identify rather than under-identify the outliers. Any of these flags should cause the item to be reviewed by content experts, but there are many reasons the experts might want to keep an item in spite of the statistics.

RESULTS AND OBSERVATIONS

Details of the samples used for the Spring 2013 field test item analysis can be found in Chapter Nine of the *2013 Pennsylvania Keystone Exams Technical Report* (Pennsylvania Department of Education, 2013). Overall, the samples used to analyze the field test items embedded in 20 forms were equivalent, so the classical statistics for all the field test items across forms can be compared.

This section focuses on reporting the number (*N*) and percentage (%) of items flagged by different criteria (see Tables 5–8 to 5–10). For the DIF analysis, the number and percentage of items were provided not only for the C- and C+ bias codes, which were used as the criteria to flag items, but also for the bias codes A-, A+, B-, and B+.

Table 5–8. Summary of Items Flagged by the CTT-Based Statistics

Item Type	Flagging Criterion*	Algebra I			Biology			Literature		
		Total *N*	*N*	%	Total *N*	*N*	%	Total *N*	*N*	%
MC	1	200	61	30.5	320	90	28.1	240	56	23.3
	2		45	22.5		82	25.6		39	16.3
	3		40	20.0		33	10.3		11	4.6
	4		49	24.5		54	17.0		19	7.9
CR	5	40	26	65.0	40	24	60.0	40	1	2.5

* See Section Criteria Used to Flag Items for what 1–5 stands for.

Table 5–9. DIF Summary — MC Items

Reference Group	Focal Group	Bias Code	Algebra I (Total *N*=200)		Biology (Total *N*=320)		Literature (Total *N*=240)	
			N	%	*N*	%	*N*	%
Male	Female	A–	113	56.5	183	57.2	127	52.9
		A+	81	40.5	133	41.6	104	43.3
		B–	3	1.5	3	.9	7	2.9
		B+	1	.5	1	.3	1	.4
		C–	2	1.0	0	0.0	1	.4
		C+	0	0.0	0	0.0	0	0.0
White	Black	A–	144	72.0	231	72.2	188	78.3
		A+	49	24.5	82	25.6	36	15.0
		B–	4	2.0	7	2.2	11	4.6
		B+	0	0.0	0	0.0	0	0.0
		C–	3	1.5	0	0.0	5	2.1
		C+	0	0.0	0	0.0	0	0.0
White	Hispanic	A–	132	66.0	217	67.8	164	68.3
		A+	60	30.0	97	30.3	49	20.4
		B–	5	2.5	6	1.9	25	10.4
		B+	0	0.0	0	0.0	0	0.0
		C–	3	1.5	0	0.0	2	0.8
		C+	0	0.0	0	0.0	0	0.0
PPT	CBT	A–	61	30.5	172	53.8	112	46.7
		A+	135	67.5	145	45.3	120	50.0
		B–	0	0.0	1	.3	3	1.3
		B+	4	2.0	2	.6	5	2.1
		C–	0	0.0	0	0.0	0	0.0
		C+	0	0.0	0	0.0	0	0.0

Table 5–10. DIF Summary — CR Items

Reference Group	Focal Group	Bias Code	Algebra I (Total *N*=40)		Biology (Total *N*=40)		Literature (Total *N*=40)	
			N	%	*N*	%	*N*	%
Male	Female	A–	19	47.5	13	32.5	0	0.0
		A+	19	47.5	26	65.0	22	55.0
		B–	0	0.0	0	0.0	0	0.0
		B+	1	2.5	1	2.5	16	40.0
		C–	1	2.5	0	0.0	0	0.0
		C+	0	0.0	0	0.0	2	5.0
White	Black	A–	36	90.0	34	85.0	19	47.5
		A+	2	5.0	4	10.0	19	47.5
		B–	2	5.0	2	5.0	2	5.0
		B+	0	0.0	0	0.0	0	0.0
		C–	0	0.0	0	0.0	0	0.0
		C+	0	0.0	0	0.0	0	0.0
White	Hispanic	A–	31	77.5	27	67.5	16	40.0
		A+	8	20.0	11	27.5	24	60.0
		B–	1	2.5	2	5.0	0	0.0
		B+	0	0.0	0	0.0	0	0.0
		C–	0	0.0	0	0.0	0	0.0
		C+	0	0.0	0	0.0	0	0.0
PPT	CBT	A–	30	75.0	28	70.0	21	52.5
		A+	8	20.0	12	30.0	0	0.0
		B–	2	5.0	0	0.0	13	32.5
		B+	0	0.0	0	0.0	0	0.0
		C–	0	0.0	0	0.0	6	15.0
		C+	0	0.0	0	0.0	0	0.0

REVIEW OF ITEMS WITH DATA

In the preceding section on statistical analysis of item data, it was stated that content-area test development specialists used certain statistics from item and DIF analyses of the Spring 2013 embedded field test to identify items for further review. Specific flagging criteria for this purpose were specified in the previous section. Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable. Likewise, items of extremely poor statistical quality were regarded as unacceptable and needed no further review. However, there were some items that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by a committee of Pennsylvania educators. The intent was to capture all items that needed a closer look; thus, the criteria employed tended to overidentify rather than under-identify items.

The review of the items with data was conducted by more than 33 Pennsylvania educators (teachers and PDE staff) broken out into exam-based committees. The review took place on September 4 and 5, 2013. In these sessions, committee members were first trained by a representative from DRC's psychometrics staff with regard to the statistical indices used in item evaluation. This training was followed by a discussion with examples

concerning reasons an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of flagged field test items and made recommendations on each item. The results of the committee reviews are shown in Table 5–11. Further discussion on how this information was used is covered in Chapter Six.

Table 5–11. Spring 2013 Keystone Exam Data Review Results

Exam	Type	Number of Items in Spring 2013 EFT	Flagged Items in Spring 2013 EFT Examined at Sept 2013 Data Review Committee		Flagged Items in Spring 2013 EFT Rejected by Sept 2013 Data Review Committee		Items Classified as "Rejected" from Spring 2013 EFT (all sources)*	
			Number of Items	% of Field Test	Number of Items	% of Field Test	Number of Items	% of Field Test
Algebra I	MC	200	82	41.0%	12	6.0%	16	8.0%
	CR	40	23	57.5%	5	12.5%	9	22.5%
Biology	MC	320	112	35.0%	46	14.9%	47	14.7%
	CR	40	24	60.0%	9	22.5%	9	22.5%
Literature	MC	240	65	27.1%	10	4.2%	13	5.4%
	CR	40	9	22.5%	0	0.0%	0	0.0%
Subtotal	MC	760	259	34.1%	68	9.0%	76	10.0%
	CR	120	56	46.7%	14	11.7%	18	15.0%
	Total	880	315	35.8%	82	9.3%	94	10.7%

*Data Review Committee, PDE, and DRC

CHAPTER SIX: OPERATIONAL FORMS CONSTRUCTION FOR 2014 ADMINISTRATIONS

FINAL SELECTION OF ITEMS AND FORMS CONSTRUCTION

Approximately 50% of the items that made up the Winter 2013/2014, Spring 2014, and Summer 2014 operational forms emerged from the Spring 2013 embedded field test. The remaining operational (core) items were part of the biennial core-to-core overlap. For more information about the core-to-core overlapping items, please see Chapter Three. Prior to being placed on the operational tests, these items had undergone multiple reviews, including the following:

- Reviews by Data Recognition Corporation (DRC) and WestEd content-area test development specialists and curriculum specialists to ensure that all items were properly aligned with content standards
- Formal bias, fairness, and sensitivity review by the Bias, Fairness, and Sensitivity Committee, which consisted of a multiethnic group of men and women having expertise with special-needs students and English Language Learners (ELL)
- Formal review by the content committees consisting of Pennsylvania educators, including teachers as well as district personnel
- Pennsylvania Department of Education (PDE) review
- Item data review by members of the PDE content-area teacher committees

The item and bias reviews are detailed in Chapter Three. The results of the data review are summarized in Chapter Five.

The end product of the above process was an item status designation for each field test item. All items having an item status code of Accepted/Operational Ready were candidates to be selected for the 2013 Keystone Exams. To have an item status code of Accepted/Operational Ready meant that the item met the following criteria:

- Appropriately aligned with its designated Keystone Exams Assessment Anchor Content Standard (Assessment Anchor) and subclassifications
- Acceptable in terms of bias/fairness/sensitivity issues, including differential item functioning (for gender and ethnicity)
- Acceptable in terms of psychometric standards, including a special review of flagged items

Next, all relevant information regarding the acceptable items, including associated graphics, was entered into the item banking system known as IDEAS (Item Development and Education Assessment System). From IDEAS and other database sources, Microsoft Excel files were created for each exam. These files contained all relevant content codes and statistical characteristics. IDEAS also created an item card displaying each acceptable item, any associated graphic, and all relevant exam codes and item statistics for use by the subject-area test development specialists and psychometric services staff.

DRC test development specialists reviewed the test design blueprint, including the number of items per strand for each content-area test. Psychometricians provided content-area test development specialists with an overview of the psychometric guidelines for forms construction.

Senior DRC content-area test development specialists reviewed all items in the operational pool to make an initial selection (pull) for common (core) positions according to test blueprint requirements and psychometric guidelines. Changes to items were not encouraged since alterations could affect how an item performs in subsequent testing.

For these common items, this meant that the combination of multiple-choice (MC) and constructed-response (CR) items would yield the appropriate range of points while tapping an appropriate variety of the Assessment Anchors and related Eligible Content within each Reporting Category (module). Items selected in the first round were examined with regard to how well they fit together as a set. Of particular concern were the following:

- One item providing cues as to the correct answer to another item
- Context redundancy (e.g., mathematics items with a sports context)
- Presence of clang (distractors not unique from one another)
- Diversity of names and artwork for gender and ethnicity

A core-building software tool known as PerForm was used in concert with performance data and metadata from IDEAS to aid in the organization and communication of the pulled data. PerForm automatically tabulates the statistical characteristics of the proposed core, updating instantly whenever item swaps were performed. Using PerForm, the first round of items was then evaluated for statistical features such as an acceptable point-biserial correlation and whether correct answers were distributed equally—that is, whether approximately 25 percent of correct answers appeared in each of the four possible positions (A, B, C, or D). Selected items that were deemed psychometrically less advantageous in contrast to the overall psychometric characteristics of the core resulted in a search by the senior reviewer for suitable replacements. At this point, the second round of items was analyzed. If necessary, this iterative process between content-based selections and statistical properties continued in an effort to reach the best possible balance.

Once the recommendations were finalized for the core items, they were submitted to PDE for review. Department staff provided feedback, which could be in the form of approval or recommendations for replacing certain items. Any item replacement was accomplished by the collective effort of the test development specialists, psychometricians, and PDE staff until final PDE approval was given. See Appendix F for the Keystone Exams Tally Sheets.

Following final approval by PDE, test development specialists developed print and online forms based on the approved core and approved embedded field test items. Both modes of delivery were built using IDEAS. Highly skilled test development specialists and editors used specialized checklists to verify accuracy of layout and formatting in both modes of delivery. Following final approval to print, the documents were prepared for the printing presses. See Chapter Eight for more information about the steps following the final approval to print.

SPECIAL FORMS USED WITH THE OPERATIONAL 2014 KEYSTONE EXAMS

Four accommodated forms are available for the operational Keystone Exams: audio, Braille, large print, and Spanish translation. Audio versions and Spanish versions are available for Algebra I and Biology. Braille and large print are available for all operational exams. Braille, large print, and Spanish translation versions are available in the print mode of delivery. The audio version is only available in the online mode of delivery. The tables below summarize the usage for these four accommodated forms. Refer to the information about test accommodations in Chapter Ten for more information about this topic.

Table 6–1. Special Forms Usage Summary from Operational Spring 2014 Keystone Exams

Exam	Online Delivery	Print Form Delivery			All
	Audio	Braille	Large Print	Spanish	
Algebra I	1,164	10	79	909	2,162
Biology	1,283	7	62	549	1,901
Literature	[redacted]	6	51	[redacted]	57
Total	2,447	23	192	1,458	4,120
Total Administrations by Delivery Method	74,081	442,500			516,581
% of Total Administrations by Delivery Method	3.30%	0.005%	0.043%	0.329%	0.798%

Table 6–2. Special Forms Usage Summary from Operational Winter 2013/2014 Keystone Exams

Exam	Online Delivery	Print Form Delivery			All
	Audio	Braille	Large Print	Spanish	
Algebra I	596	5	30	374	1,005
Biology	566	1	17	183	767
Literature	[redacted]	1	9	[redacted]	10
Total	1,162	7	56	557	1,782
Total Administrations by Delivery Method	38,175	176,654			214,829
% of Total Administrations by Delivery Method	3.04%	0.004%	0.032%	0.315%	0.829%

Table 6–3. Special Forms Usage Summary from Operational Summer 2014 Keystone Exams

Exam	Online Delivery	Print Form Delivery			All
	Audio	Braille	Large Print	Spanish	
Algebra I	17	0	0	0	17
Biology	3	0	0	1	4
Literature	[redacted]	0	0	[redacted]	0
Total	20	0	0	1	21
Total Administrations by Delivery Method	944	2,337			3,281
% of Total Administrations by Delivery Method	2.12%	0.000%	0.000%	0.043%	0.640%

On a yearly basis, the PDE examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. Accommodations manuals for Pennsylvania assessments titled *2014 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners* were developed for use with the Keystone Exams. The manuals can be accessed by going to www.pdesas.org/Assessment/Keystone and selecting the corresponding document under the Test Accommodations section. For more information about the general on-screen testing aids available to students taking the online mode of delivery, see Chapter Two.

AUDIO

For students requiring an auditory presentation accommodation, a text-to-speech synthesizer is available to students taking the Algebra I and/or Biology Exams using the online mode of test delivery. For each operational exam, one form was selected for the creation of the audio version. Special scripts are crafted, writing out each item, distractor, graphic, and directions to utilize the rich, synthesized voice features while accounting for specific nuances of the intended sounds. The resulting audio information is provided to students receiving the accommodation. Since additional software is required to generate the vocalization from the scripted text and since headphones are required to minimize disruptions within a computer lab setting, local school personnel generally must preplan to use the audio version in order to ensure that the student has a properly equipped computer and a proper setting.

BRAILLE AND LARGE PRINT

Students with visual impairments were able to respond to test materials that were available in either Braille or large print. For each operational exam, one form was selected for the creation of a Braille and a large print edition. School district personnel ordered Braille or large print assessment materials directly from DRC. They could also contact PaTTAN for technical assistance regarding students with visual impairments.

School personnel were directed to transcribe all student answers (MC and CR) into scannable answer documents exactly as the student responded. No alterations or corrections of student work were permitted, and the transcribed answer document had to have the same form designation as the Braille and large print version.

SPANISH TRANSLATION

Starting with the operational exams in Spring 2011, school personnel had the option of allowing Spanish-speaking students who had been enrolled in schools in the United States for less than three years to respond to a Spanish version of the Keystone Exams for Algebra I and Biology. The original translation of the items and the *Directions for Administration Manual* was initiated by Language Services Associates and completed/verified by Exact Communications. These companies use translators with varying cultural and regional backgrounds to create the Spanish versions. The translations were then reviewed and verified by DRC's internal Spanish group. As part of the internal review, a Spanish style guide is maintained to document Spanish word choice from administration to administration and across exams within an administration.

Following PDE's approval of the translation, the translated text was typeset into print delivery forms. The test book is constructed with a side-by-side format with the English text and translated Spanish text on facing pages. The translated Spanish text is on the left-hand side followed by the original English text on the right-hand (facing) side. Each CR item covered either two or four pages in the answer book, depending on the length of the original English item. In the case of four-page open-ended items, the first set of facing pages of an item was presented in Spanish. The second set of facing pages of an item was presented in the original English.

Those students using this accommodated version are permitted to write their answers on either the English language pages or on the translated Spanish-language pages. Their answers can be written in English, Spanish, or a combination of both Spanish and English because all pages are evaluated and scored, and the highest possible scores from those combinations are recorded for the students.

CHAPTER SEVEN: TEST ADMINISTRATION PROCEDURES

SECTIONS, SESSIONS, TIMING, AND LAYOUT OF THE KEYSTONE EXAMS

The design for most Keystone Exams utilizes separate test books and answer books. An answer book is used to respond to the multiple-choice (MC) and constructed-response (CR) items and to collect demographic information. The MC items and all stimulus text are placed within the test book. Table 7–1 identifies the exam material format for each 2014 Keystone Exam.

Table 7–1. Book Type by Exam

Exam	Test Book	Answer Book	Single Consumable Book
Algebra I	✓	✓	
Biology	✓	✓	
Literature	✓	✓	

Generally, a separate test book and answer book are used to separate the MC items and the CR items. For passage-based exams, like Literature, the separate exam materials allow the students to reference stimulus materials at the same time that a response to a CR item is composed. In addition, since all student responses must be scanned for scoring and storage purposes, a separate answer book limits the volume of data that must be stored.

SECTIONS AND SESSIONS

Each operational Keystone Exam is organized around two equally sized test modules; the focus of each is on two or more specific, thematically linked Assessment Anchors and Eligible Content. The content in each module remains separate, and items measuring the Eligible Content in a module appear only in that module. The module design is identical in the print (paper/pencil) and online modes of delivery.

Each exam section is administered in an exam session. Local districts must schedule the two modules as two separate exam sessions (morning and afternoon or two separate days), and an individual module must be completed in one exam session.

Each test session is to be completed within a prescribed testing window. The testing windows below reflect both online and paper/pencil administrations in the 2013–2014 school year. The testing windows also include all make-up testing. Schools were able to choose one of the two testing windows (“waves”) for the winter administration. Two windows were provided to accommodate different semester end dates for schools with block scheduling.

Table 7–2. Winter 2013/2014 Operational Keystone Exam Testing Windows

Exam	Wave 1 Dates	Wave 2 Dates
Algebra I	December 2–13, 2013	January 8–22, 2014
Biology		
Literature		

Table 7–3. Spring 2014 Operational Keystone Exam Testing Windows

Exam	Dates
Algebra I	May 12–23, 2014
Biology	
Literature	

Table 7–4. Summer 2014 Operational Keystone Exam Testing Windows

Exam	Dates
Algebra I	July 28–August 1, 2014
Biology	
Literature	

TIMING

In general, the estimated testing times allow 1–2 minutes per MC item on the Keystone Exams, depending on the exam. The CR items are estimated to take approximately 5–10 minutes per item, also depending on the exam. Stimulus passages on the Literature exam are estimated to take about 10 minutes to read. There was no difference in the timing for online and print forms of delivery.

Test administrators were instructed that each section (module) in a form should be scheduled as a separate exam session. Exam modules were not to have been scheduled back to back in the morning (or in the afternoon). Instead, the exam modules were to be divided across two days or divided across the morning and afternoon of the same day.

Since not all students are expected to finish the exam sections at the same time, test administrators are advised to use the flexibility of the time limits to the students' advantage. For example, test administrators manage the testing time so that students do not feel rushed while they are taking any assessment section, and no student is penalized because he or she works slowly. It is also stressed to test administrators that a student should not be given an opportunity to waste time. Students are told to close their exam materials when they have finished the section of the exam in which they have been working. Students who finish early are allowed to sit quietly or read

for pleasure until all students have finished. Students with special requirements and/or abilities (i.e., physical, visual, auditory, or learning disabilities as defined by their IEP or service contracts) and students who just work slowly may require extended time. Special assessment situations are arranged for these students. When all students in a testing session indicate that they have finished an exam section, test administrators end the section.

Scheduled extended time is provided by a test administrator, and students are allowed to request extended time if they indicate that they have not completed the task. Such requests are granted if the test administrator finds the request to be educationally valid. Test administrators are advised that not permitting ample time for students to complete the assessment might impact the students' and school's performances.

As a general guideline, however, when all students indicate that they have finished a section, that section is closed. Students requiring time beyond the majority of the student population are allowed to continue immediately following the regularly scheduled session in another setting. When such accommodations are made, school personnel ensure that students are monitored at all times to prevent sharing of information. Students are not permitted to continue a section of the assessment after a significant lapse of time from the original session.

Table 7–5. Testing Load and Duration by Exam

Exam	Total No. of MC Items per Form per Administration	Total No. of CR Items per Form per Administration	Total Estimated Testing Time per Form (in minutes)	Total Estimated Administration Time per Form (in minutes)
Algebra I	46	8	150	170–180
Biology	64	8	144	164–174
Literature	46	8	146	166–176

Table 7–6. Testing Load and Duration by Type per Unit (in minutes)

Exam	Administration Tasks	Stimulus Passages	MC Points per Minute [PPM]*	CR [PPM]*	Estimated Overall PPM**
Algebra I	20–30	–	1.5 [0.670]	10 [0.400]	0.400
Biology	20–30	–	1.25 [0.800]	8 [0.375]	0.458
Literature	20–30	60	1 [1.000]	5 [0.600]	0.356

*Based on rates per item type
**Based on total testing time

Prior to beginning the exam, students were asked to verify that they understood the *Code of Conduct for Test Takers* by marking the circle in the exam. Additionally, an Attention statement was added to the beginning of the exams to notify students of the penalties that will be incurred if exam materials are copied.

LAYOUT

The layout of the operational Keystone Exams follows a general sequence regardless of the exam. Each exam is divided into thematically linked sets of content called modules. Within each module, there are core (common) items and field test items. Both core and field test items are represented though MC and CR items.

Stimulus material (like passages), text for MC items, answer options, and any stimulus materials associated with MC items or answer options appear in the test book. Answer bubbles, text for CR items, and associated response spaces appear in the answer book.

Within a non-passage-based module (like Algebra I and Biology), the sequencing of items follows this pattern:

1st: Approximately half of the MC items

2nd: Half of the CR items

3rd: Remaining half of the MC items

4th: Remaining CR items

Within a passage-based module (like Literature), the sequencing of items follows this pattern:

1st: Stimulus Passage X

2nd: MC items associated with Passage X

3rd: CR items associated with Passage X

4th: Stimulus Passage Y

5th: MC items associated with Passage Y

6th: CR items associated with Passage Y

7th: Stimulus Passage Z

8th: MC items associated with Passage Z

9th: CR items associated with Passage Z

Regardless of sequencing pattern, the field test items appear in the relative middle of each module, and item sequencing is self-contained within a module.

For more information about the test layout of the operational Keystone Exams, see Appendix G.

SHIPPING, PACKAGING, AND DELIVERY OF MATERIALS

There were two shipments sent out by DRC for the Keystone Exams operational assessments:

- Shipment one contained the *Handbook for Assessment Coordinators* and the *Directions for Administration Manual*s for each subject at schools participating in the Algebra I, Biology, and Literature Keystone Exams. Shipment one was delivered by April 14, 2014.
- Shipment two contained the administrative materials (e.g., Return Shipping labels, District/School labels, Do Not Score labels, Student Precode labels) and secure materials (e.g., consumable test/answer books) for each subject at schools participating in the Algebra I, Biology, and Literature Keystone Exams. Shipment two was delivered by April 28, 2014.

DRC ensured that all exam materials were assembled correctly prior to shipping. DRC operations staff used the automated Operations Materials Management System (Ops MMS) to assign secure materials to a school at the time of ship out. This system used barcode technology to provide an automated quality check between items requested for a site and items shipped to a site. A shipment box manifest was produced for and placed in each box shipped. DRC operations staff double-checked all box contents with the box manifest prior to sealing the box for shipping to ensure accurate delivery of materials. DRC operations staff performed lot acceptance sampling on both shipments. Districts and schools were selected at random and examined for correct and complete packaging and labeling. This sampling represented a minimum of 10 percent of all shipping sites.

DRC's materials management system, along with the systems of shippers, allowed DRC to track materials from DRC's warehouse facility to receipt at the district, school, or testing site. All DRC shipping facilities, materials processing facilities, and storage facilities are secure. Access is restricted by security code. Non-DRC personnel are escorted by a DRC employee at all times. Only DRC inventory control personnel have access to stored secure materials. DRC employees are trained in and made aware of the high level of security that is required.

DRC used United Parcel Service (UPS) to deliver the secure materials to the testing sites.

TEST SECURITY MEASURES

Test security is essential to obtaining reliable and valid scores for accountability purposes. Test Security Certifications were required to be signed by each building principal, School Assessment Coordinator, District Assessment Coordinator, Test Administrator, and Proctor prior to the assessment being administered. All signed Certifications were returned to the Chief School Administrator who must retain the Certifications for three years. The purpose of the Certifications was to serve as a tool to document that the individuals responsible for administering the assessments both understood and acknowledged the importance of test security and accountability. The Certifications attested that all security measures were followed concerning the handling of secure materials.

SAMPLE MANUALS

Copies of the *Keystone Exams Test Coordinator Handbook, Keystone Exams User Guide*, and the *Directions for Administration Manual*s are available on the PA eDIRECT online system at https://pa.drcedirect.com. (Click on Documents under the General Information tab.)

TESTING WINDOW ASSESSMENT ACCOMMODATIONS

Two accommodations manuals, *2014 Accommodations Guidelines* and *Accommodations Guidelines for English Language Learners*, were developed for use with the Spring 2014 Keystone Exams. Additional information regarding assessment accommodations can be found in Chapter Four of this report.

CHAPTER EIGHT: PROCESSING AND SCORING

RECEIPT OF MATERIALS

Receipt of the Pennsylvania Keystone Exams test materials began on May 16, 2014, and concluded on May 29, 2014. DRC's Operations Materials Management System (Ops MMS) was utilized to receive assessment materials securely, accurately, and efficiently. This system features innovative automation and advanced barcode scanners. Captured data was organized into reports, which provided timely information with respect to suspected missing material.

The first step in Ops MMS was Box Receipt. When a shipment arrived at DRC, the boxes were removed from the carrier's truck and passed under a barcode reader, which read the barcode printed on the return label and identified the district and school. The number of boxes was immediately compared to what was picked up at the district. The data collected in this process was stored in the Ops MMS database. After the barcode data was captured, the boxes were placed on a pallet and assigned a corresponding pallet number.

Once the Box Receipt process was completed, the Materials Separation phase began. Warehouse personnel opened the boxes and sorted materials by grade, subject, and status (used and/or unused booklets) into scanning boxes. Every booklet's security barcode and precode barcode were hand scanned to link each document to the original box. As the booklets were sorted, Ops MMS guided the floor operator to the box in which to place the document. Ops MMS kept count and record of the materials placed in each box. This count remained correlated to the box as an essential quality-control step throughout the secure booklet processing and provided a target number for all steps of the check-in process. Once a box was closed, an MMS Processing Label was placed on that box.

Once labeled, the sorted and counted boxes proceeded to Quality Assurance, where a secure booklet check-in operator used a hand scanner to scan the MMS Processing Label. This procedure identified the material type and quantity parameters for what Ops MMS should expect within a box. The box contents were then loaded into the stream feeder.

The documents were fed past oscillating scanners that captured both the security code and precode from the booklets. A human operator monitored an Ops MMS screen that displayed scan errors, an ordered accounting of what was successfully scanned, and the document count for each box. The system ensured that all material within the box matched the information obtained from the original hand-scanning process.

When all materials were scanned and the correct document count was confirmed, the box was sealed and placed on a pallet. If the correct document count was not confirmed, or if the operator encountered difficulties with material scanning, the box and its contents were delivered to an exception-handling station for resolution.

This check-in process occurred immediately upon receipt of materials; therefore, DRC provided feedback to districts and schools regarding any missing materials based on actual receipt versus expected receipt. Sites that had 100 percent of their materials missing after the date they were due to DRC were contacted, and any issues were resolved.

Throughout the process of secure booklet check-in, DRC project management ran a daily Missing Materials Report. Every site that was missing any number of booklets was contacted by DRC. Results of these correspondences were recorded for inclusion in the final Missing Materials Report if the missing booklets were not returned by the testing site. DRC produced the Missing Materials Report for PDE upon completion of secure

booklet check-in. The report listed all schools in each participating district along with security barcodes for any booklets not returned to DRC.

After scannable materials (used answer booklets) were processed through booklet check-in, the materials became available to the DRC Document Processing log-in staff for document log-in. The booklets were logged in using the following process:

- A DRC scannable barcode batch header was scanned, and a batch number was assigned to each box of booklets.
- The DRC box label barcode was scanned into the system to link the box and booklets to the newly created batch and to create a Batch Control Sheet.
- The DRC box label barcode number and the number of booklets in the box were printed on the Batch Control Sheet for document-tracking purposes. All booklets linked to the box barcode were assigned to the batch number and tracked through all processing steps. As booklets were processed, DRC staff dated and initialed the Batch Control Sheet to indicate that proper processing and controls were observed.

Before the booklets were scanned, all batches went through a quality inspection to ensure batch integrity and correct document placement.

After a quality check-in at the DRC Document Processing log-in area, the spines were cut off the scannable documents, and the pages were sent to DRC's Imaging and Scoring System.

SCANNING OF MATERIALS

Customized scanning programs for all scannable documents were prepared to read the books and to format the scanned information electronically. Before materials arrived, all image-scanning programs went through a quality review process that included scanning of mock data from production books to ensure proper data collection.

DRC's image scanners were calibrated using a standard deck of scannable pages with 16 known levels of gray. On a predefined page location, the average pixel darkness was compared to the standard calibration to determine the level of gray. Marks with an average darkness level of 4 or above on a scale of 16 (0 through F) were determined to be valid responses, per industry standards. If multiple marks were read for a single item and the difference between the grayscale reads was greater than four levels, the lighter mark was discarded. If the multiple marks had fewer than four levels of grayscale difference, the response was flagged and forwarded to an editor for resolution.

DRC's image scanners read selected-response, demographic, and identification information. The image scanners also used barcode readers to read preprinted barcodes from a label on the book.

The scannable documents were automatically fed into the image scanners where predefined processing criteria determined which fields were to be captured electronically. Open-ended (OE) response images were separated out for image-based scoring.

During scanning, a unique serial number was printed on each sheet of paper. This serial number was used to ensure document integrity and to maintain sequencing within a batch of books.

A monitor randomly displayed images, and the human operator adjusted or cleaned the scanner when the scanned image did not meet DRC's strict quality standards for image clarity.

All images passed through a process and a software clean-up program that despeckled, deskewed, and desmeared the images. A random sample of images was reviewed for image quality approval. If any document failed to meet image quality standards, the document was returned for rescanning.

Page-scan verification was performed to ensure that all predefined portions of the booklets were represented in their entirety in the image files. If a page was missing, the entire book was flagged for resolution.

After each batch was scanned, books were processed through a computer-based editing program to detect potential errors as a result of smudges, multiple marks, and omissions in predetermined fields. Marks that did not meet the predefined editing standards were routed to editors for resolution.

Experienced DRC Document Processing editing staff reviewed all potential errors detected during scanning and made necessary corrections to the data file. The imaging system displayed each suspected error. The editing staff then inspected the image and made any necessary corrections using the unique serial number printed on the document during scanning.

Upon completion of editing, quality control reports were run to ensure that all detected potential errors were reviewed again and a final disposition was determined.

Before batches of books were extracted for scoring, a final edit was performed to ensure that all requirements for final processing were met. If a batch contained errors, it was flagged for further review before being extracted for scoring and reporting.

During this processing step, the actual number of documents scanned was compared to the number of books assigned to the box during book receipt. Count discrepancies between book receipt and books scanned were resolved at this time.

Once all requirements for final processing were met, the batch was released for scoring and student-level processing.

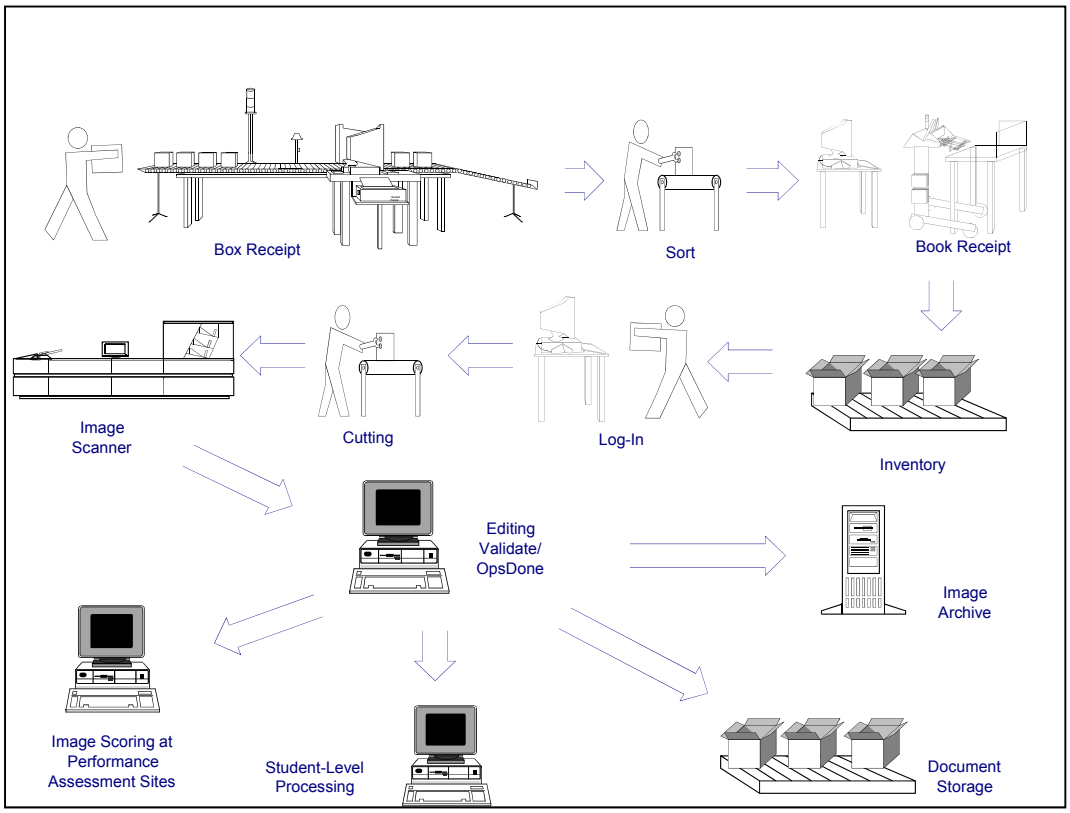
Table 8–1 shows the number of answer books received through book check-in, the number of books that contained student responses that were scanned and scored, the number of test books received, and the total number of books received for the Algebra I, Biology, and Literature Keystone Exams.

Table 8–1. Counts of 2014 Keystone Exams Materials Received: Algebra I, Biology, and Literature

Exam	Answer Books Received	Used Answer Books Received	Test Books Received	Total Books Received	Total Books Shipped
Algebra I	401,735	272,153	401,732	803,467	803,756
Biology	304,178	202,219	304,173	608,351	608,392
Literature	278,888	174,572	278,879	557,767	557,820

Figure 8–1 illustrates the production workflow for DRC's Ops MMS and Image Scanning and Scoring System from receipt of materials through all processing of materials and the presentation of scanned images for scoring.

Figure 8–1. Workflow System



MATERIALS STORAGE

Upon completion of processing, student response documents were boxed for security purposes and final storage as follows:

- Project-specific box labels were created containing unique customer and project information, material type, batch number, pallet/box number, and the number of boxes for a given batch.
- Boxes were stacked on pallets that were labeled with the project information and a list of the pallet's contents before delivery to the Materials Distribution Center for final secure storage.

Materials will be destroyed one year after the contract year ends with PDE written approval.

SCORING MULTIPLE-CHOICE ITEMS

For both online and paper-and-pencil modes, the scoring process included the scoring of multiple-choice (MC) items against the answer key and the aggregation of raw scores from the OE responses. A student's raw score is the actual number of points achieved for tested elements of an assessment. From the raw scores, the scale scores were calculated.

The student file was scored against the final and approved MC answer key. Items were scored as right, wrong, omitted, or double-gridded (more than one answer was bubbled for an item). Sections of the exam were evaluated as a whole, and an attempt status was determined for each student for each subject. The score program defined all data elements for reporting at the student level.

RANGEFINDING

After student answer documents were received and processed, DRC's Performance Assessment Services (PAS) staff assembled groups of responses that exemplified the different score points for each subject. The score point ranges were represented by the following scoring guidelines:

- 0–3 item-specific scoring guidelines for Literature
- 0–4 item-specific scoring guidelines for Algebra I (some items were divided into separate parts that were scored on a 0–1, 0–2, or 0–3 point scale, but the sum of the parts always resulted in an overall score of 0–4 for each item).
- 0–3 item-specific scoring guidelines for Biology

Responses were pulled from the embedded field test portion of the Keystone Exams for each subject. Once examples of all score points were selected for each item, sets were assembled for rangefinding and copies were made for each rangefinding participant. Rangefinding committees consisted of Pennsylvania educators, PDE staff members, DRC Test Development staff, and DRC Performance Assessment Services staff. The rangefinding meetings were held from July 7–11 at the Sheraton Harrisburg-Hershey, Harrisburg.

Each rangefinding meeting began in a joint session with a review of the history of the assessment and then broke into groups by subject. Sets of student responses were presented to the committees, one item at a time. Each committee initially reviewed and scored student responses as a group to ensure that everyone was interpreting the scoring guidelines consistently. Committee members then went on to score responses independently. For each student response, committee members' scores were discussed until a consensus was reached. Only those responses for which there was strong agreement among committee members were chosen for inclusion in training materials for DRC raters.

Discussions of student responses included the mandatory use of scoring guideline language. This ensured that committee members remained focused on the specific requirements of each score level. DRC PAS staff took notes addressing how and why the committees arrived at score point decisions, and this information was used by the scoring directors in rater training.

DRC and PDE discussed scoring guideline edits suggested by the rangefinding committees. Changes approved by PDE were then incorporated into the scoring guidelines by DRC Test Development staff. The edited scoring guidelines were used in the preparation of materials and the training of raters.

SCORER RECRUITMENT AND QUALIFICATIONS

DRC retains a number of raters from year to year; the overall return rate in 2014 was 63%. This pool of experienced raters was drawn from to staff the scoring of the 2014 Keystone Exams. To complete the rater staffing for this project, DRC placed advertisements in local newspapers and utilized a variety of web sites. Open houses were held and applications for rater positions were screened by DRC's recruiting staff. Candidates were personally interviewed by DRC staff. In addition, each candidate was required to provide an on-demand writing sample, an on-demand math sample, references, and proof of a four-year college degree. In this screening process, preference was given to candidates with previous experience scoring large-scale assessments and degrees emphasizing expertise in the subjects being scored. Thus, the rater pool consisted of educators and other professionals with content-specific backgrounds. These individuals were valued for their content-specific knowledge, but they were required to set aside their own biases about student performance and accept the scoring standards of the Keystone Exams.

LEADERSHIP RECRUITMENT AND QUALIFICATIONS

Scoring directors and team leaders were selected by content specialists from a pool of employees who displayed expertise as raters and leaders on previous DRC projects. These individuals had strong backgrounds in mathematics, English language arts, science, or writing and demonstrated organizational, leadership, and management skills. A majority of scoring directors and team leaders had at least five years of leadership experience working on large-scale assessments, including previous assessments for Pennsylvania. All scoring directors, team leaders, and raters were required to sign confidentiality agreements before handling secure materials.

Each room of raters was assigned a scoring director. This individual led all handscoring activities for the duration of the project. Scoring directors assisted in rangefinding, worked with supervisors to create training materials, conducted team leader training, and were responsible for training the raters. The scoring director made sure that reports were available and interpreted those reports for the raters. The scoring director also supervised the team leaders. All scoring directors were monitored by the project director, the project manager, and the content specialists.

Team leaders assisted the scoring director with rater training by leading their teams in small-group discussions and answering individual questions that raters may not have felt comfortable asking in a large group. Once raters were qualified, team leaders were responsible for maintaining the accuracy and workload of each team member. Ongoing monitoring identified those individuals having difficulty scoring accurately. These raters received one-on-one retraining from the team leader. Any rater who could not be successfully retrained had his/her scores purged and was released from the project.

TRAINING

As part of preparation for the 2014 Keystone Exams, DRC's PAS staff assembled the PDE-approved scoring guidelines and scored student responses approved by rangefinding committees into sets used for training raters. The item-specific scoring guidelines served as the raters' constant reference. Responses that were relevant in terms of the scoring concepts they illustrated were annotated and included in an anchor set. The full range of each score point was clearly represented and annotated in the anchor set, which was used for reference by raters throughout the project.

Training sets and qualifying sets contained student responses that were pre-scored on the student responses that were consensus-scored by rangefinding committee members. Raters were instructed on how to apply the scoring guidelines and were required to demonstrate a clear comprehension of each anchor set by performing well on the associated training materials. Responses were selected for training to show raters the range of each score point (e.g., high, mid, and low 2s). Examples of 0s were also included for all items. This process helped raters recognize the various ways that a student could respond in order to earn each score point outlined and defined in the item-specific scoring guidelines.

The scoring director conducted a team leader training session before training the raters. This session followed the same procedures as rater training, but qualifying standards were more stringent due to the extra responsibilities required of team leaders. During team leader training, all Keystone Exam materials were reviewed and discussed. Team leaders were required to annotate all of their training materials with committee justifications from the rangefinding meetings. To facilitate scoring consistency, it was imperative that all team leaders imparted the same rationale for each response. Once the team leaders were qualified, leadership responsibilities were reviewed and team assignments were given. A ratio of one team leader per each 8–10 raters ensured sufficient monitoring rates for team members.

The 2014 assessment included the opportunity for students to respond in Spanish to Algebra I and Biology items. The scoring director responsible for overseeing this is a Spanish language speaker who has a strong content background and has worked closely with the Keystone Exams in this capacity for five years. All Spanish raters were bilingual and hired specifically to score the Spanish portion of the assessment. They were required to meet the same training and scoring standards set for the raters of the English version of the assessment.

Rater training began with the scoring director providing an intensive review of the scoring guidelines and anchor papers. Next, raters practiced by independently scoring the responses in the training sets. After each training set, the scoring director or team leaders led a thorough discussion of the responses, either in a large-group or small-group setting.

Once the scoring guidelines, anchor sets, and training sets were thoroughly discussed, each rater was required to demonstrate understanding of the scoring criteria by qualifying (i.e., scoring with acceptable agreement to the true scores) on at least one of the qualifying sets. Raters who failed to achieve 70 percent exact agreement on the first qualifying set were given additional, individual training. Raters who did not perform at the required level of agreement by the end of the qualifying process were not allowed to score any student responses. These individuals were removed from the pool of potential raters in DRC's imaging system and released from the project.

HANDSCORING PROCESS

Student responses were scored independently. All responses were scored once, and 10 percent of the responses were scored a second time. The data collected from the 10-percent double-read portion was used to calculate the exact and adjacent agreement rates in the Scoring Summary Reports. The responses that were used for the 10 percent read behind were randomly chosen by the imaging system at the item level. Additional read behinds by the team leaders and scoring directors were done to further ensure reliability.

Raters scored the imaged student responses on PC monitors at DRC Scoring Centers in Sharonville and Columbus, Ohio; Plymouth and Woodbury, Minnesota; Pittsburgh, Pennsylvania; and Austin, Texas. Raters were seated at tables with two imaging stations at each table. Image distribution was controlled, ensuring that student images were sent only to designated groups of raters qualified to score those items. Imaged student responses were electronically separated for routing to individual raters by item. Raters were only provided with student responses that they were qualified to score. Scores were keyed into DRC's imaging system.

To handle possible alerts (i.e., student responses indicating potential issues related to students' safety and well-being that sometimes require attention at the state or local level), DRC's imaging system allows raters to forward responses needing attention to the scoring director. These alerts are reviewed by project management, who then notifies the students' schools and PDE of the occurrences. However, PDE does not receive students' responses or any other identifying information about the students. At no time in the alerts process do raters, or other DRC staff, acquire any knowledge concerning a student's personal identity.

HANDSCORING VALIDITY PROCESS

One of the training tools PAS utilized to ensure rater accuracy was the validity process. The goal of the validity process is to ensure that scoring standards are maintained. Specifically, the objective is to make sure that raters score student responses in a manner consistent with statewide standards both within a single administration of the Keystone Exams and across consecutive administrations. In scoring the 2014 Keystone Exams, this scoring consistency was maintained, in part, through the validity process.

The validity process began with the selection of scored responses from the initial field test. The content specialist for each subject selected 40 validity responses for each core open-ended (OE) item. These 40 responses were drawn from a pool of exemplars (responses that are representative of a particular score point and have been verified by the scoring director and the content specialist). The scores on validity responses are considered true scores.

The validity responses were then implemented to test rater accuracy. The responses were scanned into the imaging system and dispersed intermittently to the raters. By the end of the project, raters had scored all 40 validity responses for any items they were qualified to score. Raters were unaware that they were being dealt pre-scored validity responses and assumed that they were scoring live student responses. This helped bolster the internal validity of the process. It is important to note that all raters who received validity responses had already successfully completed the training/qualifying process.

Next, the scores that the raters assigned to the validity responses were compared to the true scores in order to determine the validity of the raters' scores. For each item, the percentage of exact agreement as well as the percentage of high and low scores was computed. This data was accessed through the Validity Item Detail Report. The same sort of data was also computed for each specific rater. This data was accessed through the Validity Reader Detail Report. Both of these may be run as daily or cumulative reports.

The Validity Reader Detail Report was used to identify particular raters for retraining. If a rater on a certain day generated a lower rate of agreement on a group of validity responses, it was immediately apparent in the Validity Reader Detail Report. A lower rate of agreement was defined as anything below 70 percent exact agreement with the true scores. Any time a rater's validity agreement rate fell below 70 percent, the scoring director was cued to examine that rater's scoring. First, the scoring director attempted to ascertain what kind of validity responses the rater was scoring incorrectly. This was done to determine whether there was any sort of a trend (e.g., trending low on the 1–2 line). Once the source of the low agreement rate was determined, the rater was retrained. If it was determined that the rater had been scoring live papers responses inaccurately, then his/her scores were purged for that day, and the responses were re-circulated and scored by other raters.

The cumulative Validity Item Detail Report was utilized to identify potential room-wide trends in need of correction. For instance, if a particular validity response with a true score of 3 was given a score of 2 by a significant number of raters within the room, that trend would be revealed in the Validity Item Detail Report. To correct a trend of this sort, the scoring director would look for student responses similar to the validity response being scored incorrectly. Once located, these responses would be used in room-wide re-training, usually in the form of an annotated handout or a short set of responses without printed scores given to raters as a recalibration test.

Validity was employed on all core Algebra I, Biology, and Literature OE items. Each 40-paper validity set was formulated to mirror the score point distribution that the item generated during its previous administration. Each validity set included at least five examples of each score point. Examples of different types of responses were included to ensure that raters were tested on the full spectrum of response types.

The exact rater agreement rate generated during the validity process was often higher than the inter-rater agreement rate for the same item. The reason for this discrepancy has to do with how validity sets are formulated. The 40 validity responses for each item, chosen by the content specialist, are intended to cover the full breadth of each score point. For example, each validity set contains examples of high, mid, and low 2s. This scope ensures that the validity process is truly valid in terms of addressing the complete spectrum of response types. However, certain types of responses are generally not included in validity sets. These include line responses (i.e., examples of score points that are so close to the adjacent score point that raters are instructed to consult with a supervisor before assigning a score) and responses that, because of poor word choice/writing, are difficult to understand. The reason for these exclusions is that confusing/line/illegible papers often do not impart a teachable lesson. Since these types of responses are usually unique, any potential lesson the response might teach would apply only to that particular response. Conversely, the responses in validity sets are chosen because they represent common response-types and teach lessons that can be applied to other similar papers. Due to this distinction, validity sets generate a slightly higher agreement rate than is typically generated during operational scoring.

QUALITY CONTROL

Rater accuracy was monitored throughout the scoring session by means of daily and on-demand reports. These reports ensured that an acceptable level of scoring accuracy was maintained throughout the project. Inter-rater reliability was tracked and monitored with multiple quality control reports that were reviewed by quality assurance analysts. These reports and other quality control documents were generated at the scoring centers, where they were reviewed by the scoring directors, team leaders, content specialists, and project directors. The following reports and documents were used during the scoring of the open-ended items:

The Scoring Summary Report (includes two related reports)

1. The Reader Monitor Report monitored how often raters were in exact agreement with one another and ensured that an acceptable agreement rate was maintained. This report provided daily and cumulative exact and adjacent inter-rater agreement on the 10 percent that was double read.
2. The Score Point Distribution Report monitored the percentage of responses given each of the score points. For example, the Algebra I daily and cumulative reports showed what percentage of 0s, 1s, 2s, 3s, and 4s a rater had given to all the responses scored at the time the report was produced. It also indicated the number of responses read by each rater so that production rates could be monitored.

The Item Status Report monitored the progress of handscoring. This report tracked each response and indicated the status (e.g., not read, complete, awaiting supervisor review). This report ensured that all responses were scored by the end of the project.

The Reader Score Report identified all responses scored by an individual rater. This report was useful if any responses needed rescoring because of possible rater drift.

The Validity Reports (addressed in detail on previous page) tracked how raters performed by comparing pre-scored responses to raters' scores for the same responses. If a rater's scoring fell below the 70 percent determined agreement rate, remediation occurred. Raters who did not retrain to the required level of agreement were released from the project.

The Read-Behind Log was used by the team leader/scoring director to monitor individual rater reliability. Team leaders read randomly selected scored items from each team member. If the team leader disagreed with a rater's score, remediation occurred. This proved to be a very effective type of feedback because it was done with live items scored by a particular rater.

Recalibration Sets were used throughout the scoring sessions to ensure accuracy by comparing each rater's scores with the true scores on a pre-selected set of responses. Recalibration sets helped to refocus raters on Pennsylvania scoring standards. This check made sure there was no change in the scoring pattern as the project progressed. Raters failing to achieve 70 percent agreement with the recalibration true scores were given additional training to achieve the highest degree of accuracy possible. Raters who were unable to recalibrate were released from the project. The process for creating and administering recalibration sets was similar to the one used for training sets.

Table 8–2. Inter-Rater Agreement and Percentage Awarded for Each Score Point for CR Items Winter 2014

Exam	Module	Item Position	Item Part	Score Point Range	Inter-Rater Agreement %		% Validity Agreement	Percentage Awarded for Each Score Point					
					Exact	Adjacent		0	1	2	3	4	B/NS
Algebra I	1	15	A	0-1	100	0	99	50	43	-	-	-	7
			B	0-2	99	1	98	55	18	20	-	-	7
			C	0-1	100	0	100	70	23	-	-	-	7
		26		0-4	88	12	91	47	32	6	3	1	11
		27	A	0-1	99	1	100	57	32	-	-	-	10
			B	0-1	99	1	100	35	55	-	-	-	10
			C	0-1	99	1	100	47	42	-	-	-	10
			D	0-1	99	1	100	37	52	-	-	-	10
	2	15		0-4	94	6	92	32	34	14	8	3	9
		26	A	0-1	99	1	98	75	13	-	-	-	12
			B	0-1	93	7	97	57	31	-	-	-	12
			C	0-1	99	1	100	82	7	-	-	-	12
			D	0-1	99	1	99	79	10	-	-	-	12
			MU	0-1	100	0	100	88	0	-	-	-	12
		27	A	0-1	99	1	100	41	41	-	-	-	13
			B	0-1	100	0	99	79	11	-	-	-	13
			C	0-1	99	1	100	62	25	-	-	-	13
			D	0-1	99	1	100	69	18	-	-	-	13
Biology	1	17		0-3	94	6	96	58	27	5	1		8
		18		0-3	94	6	95	32	37	12	3		15
		35		0-3	96	4	96	65	14	5	2		13
	2	17		0-3	92	8	97	35	31	15	9		10
		18		0-3	86	14	93	14	26	23	25		11
		35		0-3	90	10	93	44	27	10	3		15
Literature	1	10		0-3	81	19	87	17	32	30	9		12
		26		0-3	83	17	89	17	41	23	6		13
		27		0-3	86	14	87	25	37	18	4		15
	2	9		0-3	80	20	82	14	46	20	6		13
		26		0-3	81	19	87	9	32	35	11		13
		27		0-3	84	16	91	14	33	29	7		17

Notes: B = blank; NS = non-scorable. Mathematics responses received a total of 0–4 points. For some mathematics items, readers simply applied a single score of 0, 1, 2, 3, or 4. Many of the mathematics items, however, were divided into separate parts that were scored on a 0–1, 0–2, or 0–3 point scale, although the sum of the parts always resulted in an overall score of 0–4 for each item. For example, a mathematics item might have a part A, part B, part C, and part D, each of which was scored on a 0–1 point scale, which results in a summed 0–4 point total score for each response. Furthermore, some mathematics items with multiple parts could receive up to one point for "minimal understanding" (MU) if they did not receive points for any of the individual parts.

Table 8–3. Inter-Rater Agreement and Percentage Awarded for Each Score Point for CR Items Spring 2014

Exam	Module	Item ID	Item Part	Score Point Range	Inter-Rater Agreement %		% Validity Agreement	Percentage Awarded for Each Score Point					
					Exact	Adjacent		0	1	2	3	4	B/NS
Algebra I	1	616434	A	0-1	100	0	100	41	56	-	-	-	4
			B	0-1	100	0	99	67	30	-	-	-	4
			C	0-1	99	1	100	75	21	-	-	-	4
			D	0-1	100	0	100	88	8	-	-	-	4
		644449	A	0-1	99	1	99	75	19	-	-	-	6
			B	0-1	100	0	97	70	25	-	-	-	6
			C	0-2	97	3	98	81	9	4	-	-	6
			MU	0-1	100	0	100	94	0	-	-	-	6
		616748	A	0-2	99	1	100	79	1	14	-	-	7
			B	0-2	99	1	100	53	17	23	-	-	7
	2	616749	A	0-1	100	0	100	32	63	-	-	-	5
			B	0-1	100	0	99	94	1	-	-	-	5
			C	0-1	99	1	100	48	47	-	-	-	5
			D	0-1	100	0	99	58	37	-	-	-	5
		644984	A	0-1	99	1	100	28	66	-	-	-	5
			B	0-1	100	0	100	79	16	-	-	-	5
			C	0-1	99	1	99	94	1	-	-	-	5
			D	0-1	99	1	100	84	10	-	-	-	5
			MU	0-1	100	0	100	94	0	-	-	-	5
		631622	A	0-1	99	1	100	55	38	-	-	-	7
			B	0-1	100	0	100	52	40	-	-	-	7
			C	0-1	98	2	100	82	10	-	-	-	7
			D	0-1	99	1	100	80	12	-	-	-	7
Biology	1	641219		0-3	93	7	93	58	22	8	4		8
		629467		0-3	93	7	89	30	34	19	6		11
		609398		0-3	92	8	92	37	36	10	4		13
	2	607815		0-3	86	14	83	20	36	24	13		7
		610912		0-3	91	9	96	21	36	27	9		7
		611079		0-3	80	19	84	24	38	20	6		12
Literature	1	614631		0-3	85	15	94	11	30	41	11		6
		644128		0-3	81	19	95	16	39	33	3		10
		644127		0-3	84	16	89	27	32	24	3		15
	2	643690		0-3	84	16	89	17	39	26	6		12
		613847		0-3	81	19	93	6	27	41	15		10
		613848		0-3	90	10	91	16	34	29	7		16

Notes: B = blank; NS = non-scorable. Mathematics responses received a total of 0–4 points. For some mathematics items, readers simply applied a single score of 0, 1, 2, 3, or 4. Many of the mathematics items, however, were divided into separate parts that were scored on a 0–1, 0–2, or 0–3 point scale, although the sum of the parts always resulted in an overall score of 0–4 for each item. For example, a mathematics item might have a part A, part B, part C, and part D, each of which was scored on a 0–1 point scale, which results in a summed 0–4 point total score for each response. Furthermore, some mathematics items with multiple parts could receive up to one point for "minimal understanding" (MU) if they did not receive points for any of the individual parts.

Table 8–4. Inter-Rater Agreement and Percentage Awarded for Each Score Point for CR Items Summer 2014

Exam	Module	Item ID	Item Part	Score Point Range	Inter-Rater Agreement %		% Validity Agreement	Percentage Awarded for Each Score Point					
					Exact	Adjacent		0	1	2	3	4	B/ NS
Algebra I	1	608732		0-4	88	12	91	40	34	11	6	3	6
		644452	A	0-1	100	0	100	68	26	-	-	-	6
			B	0-1	100	0	100	42	52	-	-	-	6
			C	0-1	99	1	100	65	29	-	-	-	6
			D	0-1	100	0	99	77	17	-	-	-	6
		640128		0-4	92	8	88	17	26	20	20	9	8
	2	609334		0-4	95	5	95	12	39	15	12	17	6
		640899	A	0-1	99	1	99	53	40	-	-	-	6
			B	0-1	100	0	99	85	8	-	-	-	6
			C	0-1	99	1	98	81	13	-	-	-	6
			D	0-1	99	1	97	66	28	-	-	-	6
		644797	A	0-2	98	2	98	25	41	26	-	-	8
			B	0-1	99	1	100	76	16	-	-	-	8
			C	0-1	100	0	100	82	10	-	-	-	8
Biology	1	641295		0-3	85	15	92	20	29	31	11		8
		611041		0-3	84	16	91	31	25	21	11		11
		641308		0-3	85	15	91	44	23	14	5		13
	2	608246		0-3	85	15	94	7	33	37	16		7
		609831		0-3	82	18	91	26	22	21	19		12
		641226		0-3	88	12	95	42	17	12	17		12
Literature	1	613852		0-3	77	23	79	9	35	35	14		7
		644720		0-3	79	21	81	10	33	40	8		8
		644721		0-3	79	21	88	7	27	40	15		10
	2	614714		0-3	86	14	94	4	19	53	17		7
		644058		0-3	77	23	86	10	35	36	10		9
		644056		0-3	77	23	83	10	25	39	14		10

Notes: B = blank; NS = non-scorable. Mathematics responses received a total of 0–4 points. For some mathematics items, readers simply applied a single score of 0, 1, 2, 3, or 4. Many of the mathematics items, however, were divided into separate parts that were scored on a 0–1, 0–2, or 0–3 point scale, although the sum of the parts always resulted in an overall score of 0–4 for each item. For example, a mathematics item might have a part A, part B, part C, and part D, each of which was scored on a 0–1 point scale, which results in a summed 0–4 point total score for each response. Furthermore, some mathematics items with multiple parts could receive up to one point for "minimal understanding" (MU) if they did not receive points for any of the individual parts.

CHAPTER NINE: DESCRIPTION OF DATA SOURCES

This section describes the filtering process and data sources used for the various analysis procedures discussed in the remaining sections of this report. Psychometric analyses were conducted at several points for the Winter 2013/2014, Spring 2014, and Summer 2014 Pennsylvania Keystone Exams in Algebra I, Biology, and Literature: 1) key verification analyses for quality-control purposes; 2) post-equating check; 3) item analysis and calibration of field test items embedded in the spring forms; and 4) analyses for this technical report.

STUDENT FILTERING CRITERIA

Students' records included in all the psychometric analyses needed to meet at least the following psychometric analyses criteria:

- Module 1 Attempted Status = 1 (1 = the student attempted a minimum of five items in Module 1)
- Module 2 Attempted Status = 1 (1 = the student attempted a minimum of five items in Module 2)
- Module 1 Invalidated = N (N = the student's score was not invalidated)
- Module 2 Invalidated = N (N = the student's score was not invalidated)
- Student Duplication Status = N (N = no duplication)
- Module 1 Form Number = Module 2 Form Number

For each specific analysis conducted at different times, additional criteria might be needed to filter students. For example, the following criteria were used in addition to the ones listed above for the post-equating check, since the analyses were conducted during the scoring window:

- Module 1 Complete Status = 01
- Module 2 Complete Status = 01

The value 01 represents the response string which includes scores on the multiple-choice (MC) and constructed-response (CR) operational items. When the analyses were conducted by using the final data files, these criteria were no longer necessary since all operational CR items had been scored.

Item analysis and calibration of embedded field test items were conducted using the first-time testers only (i.e., retester = N). The classical item statistics for the field test items analyzed by using the first-time testers were more comparable to the results of the Spring 2011 Keystone Exams, which were given to the first-time test takers.

Because a large number of students took the Keystone Exams, only a representative sample of students' responses on field test CR items was scored within each content area. For the item analysis of field test CR items, the following additional criteria were used to select only those who were sampled for hand-scoring:

- Module 1 Complete Status = 02
- Module 2 Complete Status = 02

KEY VERIFICATION DATA

The key verification data are mentioned only for completeness, as no formal results are provided in this technical document. A key verification is often conducted early in the scoring process to ensure the keys for the MC items are applied correctly. The data files used for the key verification analysis are usually (but not always) based on the student data from early-return schools. The sample representativeness is not required for this internal quality check. Available student data typically suffices as long as there is reasonable variability in the total-test scores of students. The details about the sample sizes for the winter, spring, and summer administrations can be found in Table 9–1.

CALIBRATION OF OPERATIONAL TEST DATA

The post-equating check data included all students who met the inclusion criteria and were scored by 02/14/2014, 06/25/2014, and 08/25/2014 for the winter, spring, and summer administrations respectively. Note that the students included in the post-equating check data included those who had testing accommodations.

FINAL DATA

The final data files were used to conduct item analyses for the operational items and analyses conducted for Chapters 16–19 in this technical report. The final data contained students' responses to both the MC and CR items. All students' responses included in the analyses met the filtering criteria. The final sample sizes (or *n*-counts) can be found in the column labeled "Final" in Table 9–1.

Table 9–1. Data Source *N*-Counts

Administration	Content Area	Key Verification	Post-Equating Check	Final
Winter	Algebra I	7,866	97,384	97,386
	Biology	5,608	62,415	62,415
	Literature	5,146	49,572	49,572
Spring	Algebra I	34,883	20,1526	201,526
	Biology	26,231	164,172	164,172
	Literature	22,900	143,421	143,421
Summer	Algebra I	1,693	1,712	1,712
	Biology	856	859	859
	Literature	631	644	644

SPIRALING OF FORMS

During the administration of Keystone Exams, test forms were spiraled at the student level. The goal of spiraling is to achieve equivalent samples of students across forms so the classical statistics (e.g., *p*-value and point-biserial correlation) for all the field test items can be compared. Given that the field test items were embedded in the spring administration only, the equivalence of samples was checked for the spring administration instead of all administrations. When spiraling achieves randomly equivalent samples, the forms will have equal means (within sampling error) over the operational items.

Appendix H provides summary statistics for all the spring forms for each content area exam. The tables provide the form number (Form), number of students (*N*), test length in items (L), total points (Pts.), minimum (Min) score, maximum (Max) score, mean (Mean) score, median (Med) score, and standard deviation (SD). The extent to which the mean raw scores across forms are similar indicates the extent to which the student populations taking each form are of approximately equal ability. This equivalence of ability distributions across forms is the desired outcome of spiraling and allows for optimum analysis of the embedded field test items.

In Figure 9–1, the form mean raw scores are plotted (circle-shaped marker) with standard error of mean lines. For each form, the standard error of mean was computed by taking the standard deviation of all student scores (assumed as the population standard deviation divided by the square root of the form *n*-count). The mean score across all forms is indicated by the red horizontal broken line. If the three standard error band captures the horizontal line, then that suggests only random differences exist between the form mean and the population mean. This is true for most of the Algebra I forms. However, the means of Algebra I and Biology form 1 are lower than the rest of the forms. This is likely due to the fact that form 1 was also given to the students with accommodations. For the Biology and Literature forms, the means of the first half of the forms are smaller than the second half.

Figure 9–1. Form Mean Scores with +/- Three Standard Error (SE) Bands

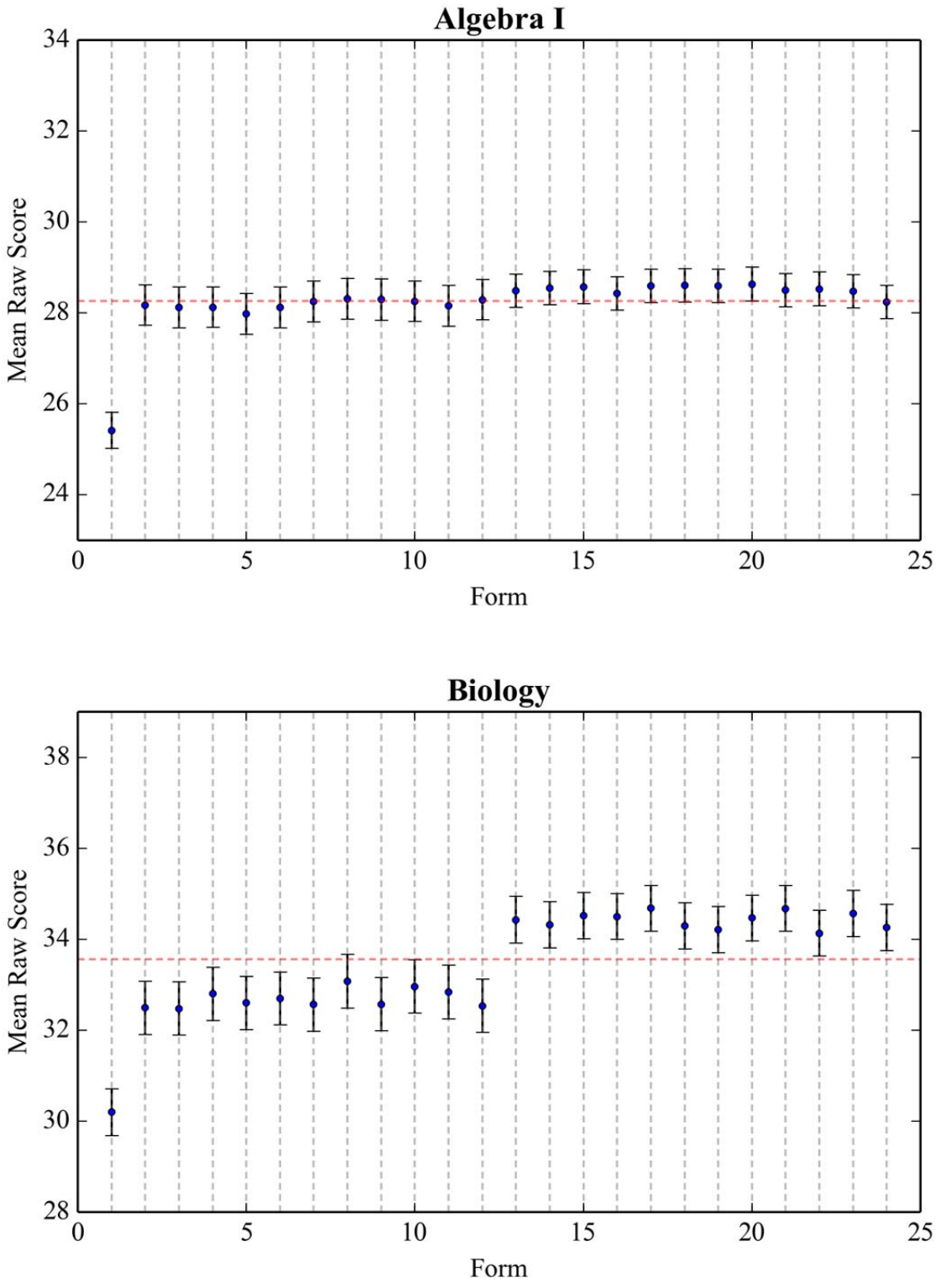
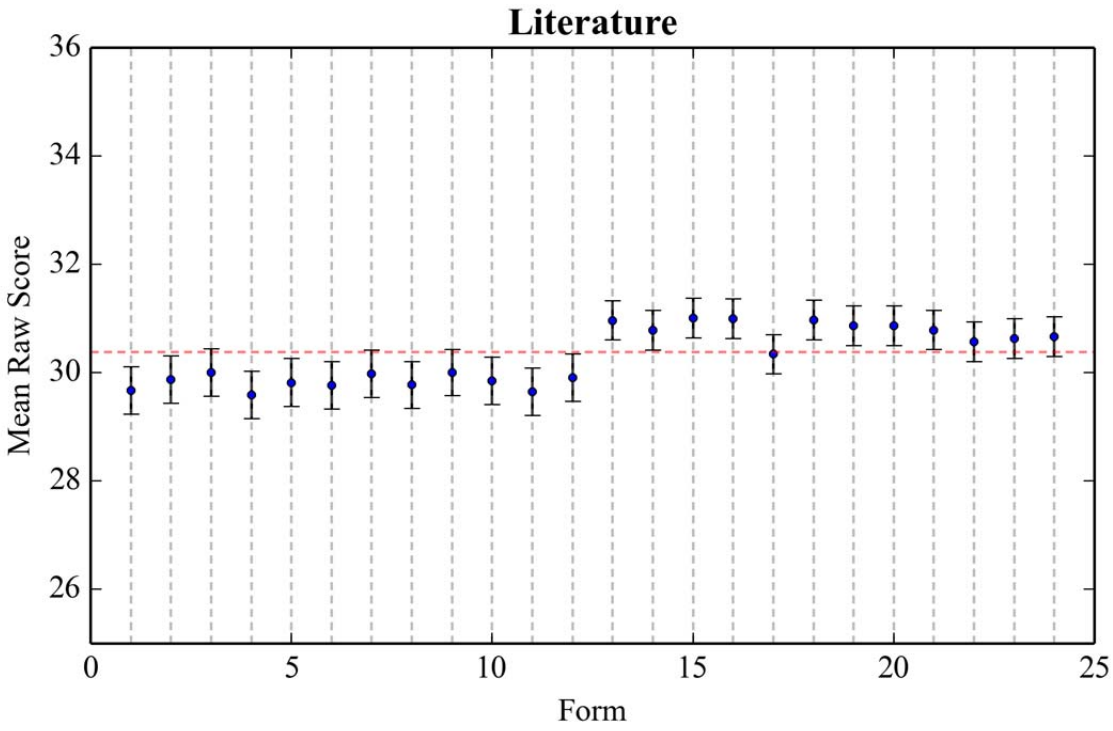


Figure 9–1 (continued). Form Mean Scores with +/- Three Standard Error (SE) Bands



Chapter Nine: Description of Data Sources

CHAPTER TEN: SUMMARY DEMOGRAPHIC AND ACCOMMODATION DATA FOR SPRING 2014 KEYSTONE EXAMS

ASSESSED STUDENTS

Students assessed on the Keystone Exams include students from public schools who are required to participate by virtue of being in the graduating class of 2017, students in a school district planning to use the Keystone Exams to meet graduation requirements, and students enrolled in Algebra I, Biology, or Literature during the 2013–2014 school year. Students graduating before 2017 also participated in the assessment. The operational Keystone Exams were administered in both paper-and-pencil test (PPT) and computer-based test (CBT) formats.

Statistical tables and associated commentary embedded in this chapter are based on data from the Spring 2014 test administration of the Keystone Exams. There were two other administrations during the school year, each of which involved fewer students than the spring. One occurred during Winter 2013/2014 and the other in the Summer 2014. Tables summarizing results from these two administrations can be found in Appendix I.

Results for this chapter are presented in sets of tables for the three Keystone Exams administered in Spring 2014 (Algebra I, Biology, and Literature). Accompanying each numbered table is a letter (A, B, or L) to designate the content area. Table set 10–1A through 10–1L provides a summary of tests processed and scored, which are displayed separately by student grade level. The first two rows present the number processed for each administration mode (PPT and CBT). The total number of tests processed is presented on the third row. The fourth row shows the number and percentage of students with a Keystone Exam score, while the fifth row presents the number and percentage not receiving a score. Please note that the percent of students assessed (received a total score) is typically in the high 90s across grade levels.

Table 10–1A. Students Assessed on the Spring 2014 Keystone Exam: Algebra I

	Other*	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	107	334	7,496	35,185	61,857	39,401	32,094	414	176,888
Total number of CBT processed	6	38	1,248	5,954	8,861	6,229	4,916	67	27,319
Total number of tests processed	113	372	8,744	41,139	70,718	45,630	37,010	481	204,207
Total number of tests processed with a score	108	372	8,584	40,799	69,073	43,680	34,878	426	197,920
	95.6	100.0	98.2	99.2	97.7	95.7	94.2	88.6	96.9
Total number of tests processed without a score	5	0	160	340	1,645	1,950	2,132	55	6,287
	4.4	0.0	1.8	0.8	2.3	4.3	5.8	11.4	3.1

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade.

Table 10–1B. Students Assessed on the Spring 2014 Keystone Exam: Biology

	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	51	161	43,389	65,031	32,077	474	141,183
Total number of CBT processed	0	9	7,939	12,087	5,541	97	25,673
Total number of tests processed	51	170	51,328	77,118	37,618	571	166,856
Total number of tests processed with a score	45 88.2	168 98.8	50,484 98.4	74,637 96.8	35,120 93.4	536 93.9	160,990 96.5
Total number of tests processed without a score	6 11.8	2 1.2	844 1.6	2,481 3.2	2,498 6.6	35 6.1	5,866 3.5

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

Table 10–1L. Students Assessed on the Spring 2014 Keystone Exam: Literature

	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	52	66	10,077	87,957	26,012	265	124,429
Total number of CBT processed	0	0	1,546	15,042	4,452	49	21,089
Total number of tests processed	52	66	11,623	102,999	30,464	314	145,518
Total number of tests processed with a score	42 80.8	66 100.0	11,254 96.8	100,381 97.5	28,563 93.8	276 87.9	140,582 96.6
Total number of tests processed without a score	10 19.2	0 0.0	369 3.2	2,618 2.5	1,901 6.2	38 12.1	4,936 3.4

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

REASONS FOR STUDENT NON-ASSESSMENT

As observed from the bottom row of Table set 10–1, a small percent of students were not assessed. Although there are a variety of reasons for this, the major ones pertain to:

- Extended absence from school that continued beyond the assessment window.
- Absence without make-up for at least one section of a test.
- Failure to meet the attempt criteria on one or more test modules and no exclusion code marked by school personnel. The attempt criteria required a minimum of five items to be completed in each module.
- Medical emergency.
- Other reasons (combined are the categories of: other, parental request due to a religious reason, multiple reasons coded).

The number of students without a total test score for each of these reasons is provided in Tables 10–2A through 10–2L. Associated with this number is the percent of the total of non-assessed students in each column (grade level) attributed to a particular reason.

Table 10–2A. Counts of Students without Scores on the Spring 2014 Keystone Exam: Algebra I

Reason for Non-Assessment	Other*	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	2	0	7	44	425	508	623	4	1,613
	40.0	0.0	4.4	12.9	25.8	26.1	29.2	7.3	25.7
Absent without make-up	2	0	2	12	170	278	322	5	791
	40.0	0.0	1.3	3.5	10.3	14.3	15.1	9.1	12.6
Non-attempt	1	0	137	187	796	923	778	16	2,838
	20.0	0.0	85.6	55.0	48.4	47.3	36.5	29.1	45.1
Medical emergency	0	0	10	81	125	88	76	4	384
	0.0	0.0	6.3	23.8	7.6	4.5	3.6	7.3	6.1
Other reasons	0	0	4	16	129	153	333	26	661
	0.0	0.0	2.5	4.7	7.8	7.8	15.6	47.3	10.5
Total not assessed	5	0	160	340	1,645	1,950	2,132	55	6,287

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade.

Table 10–2B. Counts of Students without Scores on the Spring 2014 Keystone Exam: Biology

Reason for Non-Assessment	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	1	1	234	744	865	7	1,852
	16.7	50.0	27.7	30.0	34.6	20.0	31.6
Absent without make-up	0	1	107	353	416	9	886
	0.0	50.0	12.7	14.2	16.7	25.7	15.1
Non-attempt	3	0	309	950	731	11	2,004
	50.0	0.0	36.6	38.3	29.3	31.4	34.2
Medical emergency	0	0	85	146	84	2	317
	0.0	0.0	10.1	5.9	3.4	5.7	5.4
Other reasons	2	0	109	288	402	6	807
	33.3	0.0	12.9	11.6	16.1	17.1	13.8
Total not assessed	6	2	844	2,481	2,498	35	5,866

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

Table 10–2L. Counts of Students without Scores on the Spring 2014 Keystone Exam: Literature

Reason for Non-Assessment	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	3	0	130	739	615	3	1,490
	30.0	0.0	35.2	28.2	32.4	7.9	30.2
Absent without make-up	1	0	44	376	321	6	748
	10.0	0.0	11.9	14.4	16.9	15.8	15.2
Non-attempt	6	0	134	1,015	635	15	1,805
	60.0	0.0	36.3	38.8	33.4	39.5	36.6
ELL in first year in U.S. schools	0	0	1	14	14	0	29
	0.0	0.0	0.3	0.5	0.7	0.0	0.6
Medical emergency	0	0	19	216	62	2	299
	0.0	0.0	5.1	8.3	3.3	5.3	6.1
Other reasons	0	0	41	258	254	12	565
	0.0	0.0	11.1	9.9	13.4	31.6	11.4
Total not assessed	10	0	369	2,618	1,901	38	4,936

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

DEMOGRAPHIC CHARACTERISTICS OF STUDENTS RECEIVING TEST SCORES

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

The following state summary statistic data analyses were completed using the final individual student data file containing records from the Spring 2014 administration, which was provided to the Pennsylvania Department of Education in July 2014. State summary statistics were based on students who received a total test score on the Spring 2014 administration with the exception of students who attended non-public schools or those who were home schooled. Also excluded were students who were not proficient.

Demographic data for students taking the Keystone Exams is presented separately for each course (Tables 10–3A, 10–3B, 10–3L). Results for accommodations received were collected separately by course and are presented in separate tables as well. For example, tables involving accommodations for Biology are found in Tables 10–4B, 10–5B, 10–6B, and 10–7B. Similar data from the Winter 2013/2014 and Summer 2014 test administrations can be found in Appendix I.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses involving demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. Some data such as accommodation information are recorded by school personnel directly on the student answer document (PPT) or in eDirect Test Setup (CBT) at the time a Keystone Exam is administered.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for each demographic category is presented in Tables 10–3A through 10–3L. Data is presented by grade level with PPT and CBT formats combined into a single composite. Shown at the bottom of the appropriate table is the number of assessed students contributing to summary statistics on which the column percentages are based.

Table 10–3A. Demographic Characteristics of Students taking the Spring 2014 Keystone Exam: Algebra I

Demographic or Educational Characteristic	Other*	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender									
Female	6 5.6	133 35.8	4,096 47.7	21,202 52.0	33,978 49.2	21,057 48.2	17,239 49.4	232 54.5	97,943 49.5
Male	24 22.2	239 64.2	4,487 52.3	19,584 48.0	35,008 50.7	22,607 51.8	17,622 50.5	193 45.3	99,764 50.4
Race/Ethnicity									
American Indian/Alaskan Native (not Hispanic)	0 0.0	1 0.3	6 0.1	38 0.1	117 0.2	58 0.1	54 0.2	0 0.0	274 0.1
Asian (not Hispanic)	8 7.4	119 32.0	828 9.6	1,626 4.0	1,876 2.7	896 2.1	785 2.3	7 1.6	6,145 3.1
Black or African American (not Hispanic)	5 4.6	1 0.3	245 2.9	2,705 6.6	13,447 19.5	8,742 20.0	7,578 21.7	71 16.7	32,794 16.6
Hispanic (any race)	0 0.0	3 0.8	226 2.6	1,885 4.6	7,851 11.4	5,079 11.6	4,089 11.7	78 18.3	19,211 9.7
Multi-Racial (not Hispanic)	1 0.9	9 2.4	123 1.4	628 1.5	1,365 2.0	855 2.0	559 1.6	2 0.5	3,542 1.8
White (not Hispanic)	15 13.9	239 64.2	7,147 83.3	33,860 83.0	44,268 64.1	28,002 64.1	21,767 62.4	266 62.4	135,564 68.5
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	8 0.1	43 0.1	54 0.1	26 0.1	28 0.1	1 0.2	160 0.1
Educational Category and Other Demographic Groups									
IEP (not gifted)	2 1.9	11 3.0	190 2.2	1,606 3.9	10,242 14.8	9,955 22.8	9,121 26.2	96 22.5	31,223 15.8
Student exited IEP in last 2 years	2 1.9	9 2.4	239 2.8	916 2.2	1,265 1.8	664 1.5	482 1.4	8 1.9	3,585 1.8
Title I	7 6.5	17 4.6	702 8.2	5,965 14.6	18,141 26.3	11,405 26.1	9,452 27.1	126 29.6	45,815 23.1
Title III served	0 0.0	1 0.3	7 0.1	168 0.4	2,226 3.2	1,579 3.6	1,419 4.1	28 6.6	5,428 2.7
Title III not served	0 0.0	0 0.0	3 0.0	35 0.1	289 0.4	182 0.4	158 0.5	0 0.0	667 0.3
Migrant student	0 0.0	0 0.0	1 0.0	4 0.0	46 0.1	46 0.1	25 0.1	0 0.0	122 0.1
ELL (enrolled after 5/24/13)	0 0.0	1 0.3	5 0.1	39 0.1	539 0.8	305 0.7	260 0.7	5 1.2	1,154 0.6
ELL (enrolled on or before 5/24/13)	0 0.0	0 0.0	5 0.1	164 0.4	1,970 2.9	1,458 3.3	1,314 3.8	23 5.4	4,934 2.5

Table 10–3A (continued). Demographic Characteristics of Students taking the Spring 2014 Keystone Exam: Algebra I

Demographic or Educational Characteristic	Other*	Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	13 0.2	94 0.2	279 0.4	239 0.5	202 0.6	0 0.0	827 0.4
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	2 0.5	16 0.2	96 0.2	234 0.3	109 0.2	177 0.5	0 0.0	634 0.3
Former ELL no longer monitored	1 0.9	11 3.0	128 1.5	700 1.7	1,430 2.1	624 1.4	575 1.6	1 0.2	3,470 1.8
Foreign exchange student	0 0.0	0 0.0	1 0.0	6 0.0	7 0.0	8 0.0	32 0.1	0 0.0	54 0.0
Economically disadvantaged	7 6.5	17 4.6	1,032 12.0	10,610 26.0	33,867 49.0	22,987 52.6	18,405 52.8	251 58.9	87,176 44.0
Historically Underperforming Subgroup	8 7.4	29 7.8	1,199 14.0	11,707 28.7	38,674 56.0	27,439 62.8	22,619 64.9	298 70.0	101,973 51.5
Enrollment in school of residence after 10/1/13	1 0.9	2 0.5	63 0.7	567 1.4	3,645 5.3	2,533 5.8	2,079 6.0	27 6.3	8,917 4.5
Enrollment in district of residence after 10/1/13	0 0.0	2 0.5	55 0.6	479 1.2	2,825 4.1	2,079 4.8	1,749 5.0	22 5.2	7,211 3.6
Enrollment as PA resident after 10/1/13	0 0.0	1 0.3	25 0.3	196 0.5	1,291 1.9	982 2.2	883 2.5	13 3.1	3,391 1.7
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	6 5.6	58 15.6	1,091 12.7	4,579 11.2	24,055 34.8	9,296 21.3	7,217 20.7	72 16.9	46,374 23.4
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	3 2.8	22 5.9	295 3.4	1,923 4.7	10,664 15.4	4,480 10.3	3,487 10.0	48 11.3	20,922 10.6
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	3 2.8	0 0.0	0 0.0	1 0.0	17 0.0	16 0.0	37 0.1	1 0.2	75 0.0
Number of assessed students	108	372	8,584	40,799	69,073	43,680	34,878	426	197,920

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade.

Table 10–3B. Demographic Characteristics of Students Taking the Spring 2014 Keystone Exam: Biology

Demographic or Educational Characteristic	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	12 26.7	77 45.8	25,540 50.6	36,414 48.8	17,785 50.6	257 47.9	80,085 49.7
Male	18 40.0	91 54.2	24,929 49.4	38,207 51.2	17,321 49.3	279 52.1	80,845 50.2
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	83 0.2	101 0.1	39 0.1	2 0.4	225 0.1
Asian (not Hispanic)	0 0.0	14 8.3	2,191 4.3	2,053 2.8	963 2.7	12 2.2	5,233 3.3
Black or African American (not Hispanic)	5 11.1	3 1.8	6,074 12.0	11,834 15.9	7,166 20.4	124 23.1	25,206 15.7
Hispanic (any race)	1 2.2	2 1.2	3,122 6.2	7,057 9.5	3,658 10.4	102 19.0	13,942 8.7
Multi-Racial (not Hispanic)	1 2.2	7 4.2	884 1.8	1,286 1.7	548 1.6	3 0.6	2,729 1.7
White (not Hispanic)	23 51.1	142 84.5	38,081 75.4	52,240 70.0	22,706 64.7	292 54.5	113,484 70.5
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	32 0.1	50 0.1	21 0.1	0 0.0	103 0.1
Educational Category and Other Demographic Groups							
IEP (not gifted)	7 15.6	5 3.0	5,176 10.3	12,317 16.5	7,300 20.8	124 23.1	24,929 15.5
Student exited IEP in last 2 years	0 0.0	4 2.4	883 1.7	1,110 1.5	474 1.3	9 1.7	2,480 1.5
Title I	5 11.1	52 31.0	7,929 15.7	15,775 21.1	9,243 26.3	217 40.5	33,221 20.6
Title III served	1 2.2	0 0.0	614 1.2	1,848 2.5	1,247 3.6	33 6.2	3,743 2.3
Title III not served	0 0.0	0 0.0	172 0.3	189 0.3	150 0.4	2 0.4	513 0.3
Migrant student	0 0.0	0 0.0	6 0.0	49 0.1	24 0.1	4 0.7	83 0.1
ELL (enrolled after 5/24/13)	1 2.2	0 0.0	137 0.3	311 0.4	229 0.7	2 0.4	680 0.4
ELL (enrolled on or before 5/24/13)	0 0.0	0 0.0	647 1.3	1,731 2.3	1,171 3.3	33 6.2	3,582 2.2

Table 10–3B (continued). Demographic Characteristics of Students taking the Spring 2014 Keystone Exam: Biology

Demographic or Educational Characteristic	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	163 0.3	369 0.5	194 0.6	0 0.0	726 0.5
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	114 0.2	187 0.3	168 0.5	1 0.2	470 0.3
Former ELL no longer monitored	0 0.0	0 0.0	988 2.0	1,312 1.8	622 1.8	5 0.9	2,927 1.8
Foreign exchange student	0 0.0	0 0.0	5 0.0	7 0.0	24 0.1	1 0.2	37 0.0
Economically disadvantaged	6 13.3	21 12.5	17,424 34.5	32,434 43.5	17,629 50.2	355 66.2	67,869 42.2
Historically Underperforming Subgroup	12 26.7	23 13.7	20,008 39.6	38,281 51.3	20,968 59.7	395 73.7	79,687 49.5
Enrollment in school of residence after 10/1/13	3 6.7	2 1.2	1,773 3.5	2,985 4.0	1,954 5.6	36 6.7	6,753 4.2
Enrollment in district of residence after 10/1/13	3 6.7	2 1.2	1,426 2.8	2,455 3.3	1,649 4.7	33 6.2	5,568 3.5
Enrollment as PA resident after 10/1/13	0 0.0	1 0.6	576 1.1	1,048 1.4	817 2.3	13 2.4	2,455 1.5
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	1 2.2	14 8.3	13,553 26.8	13,572 18.2	7,593 21.6	113 21.1	34,846 21.6
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	1 2.2	14 8.3	5,598 11.1	6,580 8.8	3,304 9.4	75 14.0	15,572 9.7
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	2 4.4	1 0.6	19 0.0	19 0.0	29 0.1	1 0.2	71 0.0
Number of assessed students	45	168	50,484	74,637	35,120	536	160,990

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

Table 10–3L. Demographic Characteristics of Students taking the Spring 2014 Keystone Exam: Literature

Demographic or Educational Characteristic	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	3 7.1	37 56.1	5,484 48.7	49,210 49.0	12,563 44.0	123 44.6	67,420 48.0
Male	3 7.1	29 43.9	5,769 51.3	51,151 51.0	15,982 56.0	153 55.4	73,087 52.0
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	22 0.2	137 0.1	44 0.2	0 0.0	203 0.1
Asian (not Hispanic)	0 0.0	2 3.0	303 2.7	3,509 3.5	851 3.0	11 4.0	4,676 3.3
Black or African American (not Hispanic)	0 0.0	20 30.3	2,459 21.9	13,673 13.6	6,050 21.2	59 21.4	22,261 15.8
Hispanic (any race)	0 0.0	0 0.0	1,258 11.2	7,827 7.8	3,408 11.9	53 19.2	12,546 8.9
Multi-Racial (not Hispanic)	0 0.0	1 1.5	169 1.5	1,631 1.6	477 1.7	0 0.0	2,278 1.6
White (not Hispanic)	4 9.5	43 65.2	7,035 62.5	73,518 73.2	17,686 61.9	153 55.4	98,439 70.0
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	5 0.0	64 0.1	26 0.1	0 0.0	95 0.1
Educational Category and Other Demographic Groups							
IEP (not gifted)	3 7.1	0 0.0	1,630 14.5	14,130 14.1	8,249 28.9	95 34.4	24,107 17.1
Student exited IEP in last 2 years	0 0.0	0 0.0	166 1.5	1,548 1.5	343 1.2	2 0.7	2,059 1.5
Title I	0 0.0	60 90.9	2,865 25.5	18,117 18.0	7,547 26.4	100 36.2	28,689 20.4
Title III served	0 0.0	0 0.0	240 2.1	1,607 1.6	1,461 5.1	26 9.4	3,334 2.4
Title III not served	0 0.0	0 0.0	28 0.2	197 0.2	153 0.5	0 0.0	378 0.3
Migrant student	0 0.0	0 0.0	8 0.1	51 0.1	23 0.1	2 0.7	84 0.1
ELL (enrolled after 5/24/13)	0 0.0	0 0.0	26 0.2	133 0.1	141 0.5	2 0.7	302 0.2
ELL (enrolled on or before 5/24/13)	0 0.0	0 0.0	243 2.2	1,657 1.7	1,466 5.1	24 8.7	3,390 2.4

Table 10–3L (continued). Demographic Characteristics of Students taking the Spring 2014 Keystone Exam: Literature

Demographic or Educational Characteristic	Other*	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	33 0.3	426 0.4	222 0.8	0 0.0	681 0.5
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	35 0.3	246 0.2	169 0.6	1 0.4	451 0.3
Former ELL no longer monitored	0 0.0	0 0.0	227 2.0	1,819 1.8	450 1.6	3 1.1	2,499 1.8
Foreign exchange student	0 0.0	0 0.0	1 0.0	13 0.0	29 0.1	0 0.0	43 0.0
Economically disadvantaged	2 4.8	34 51.5	5,313 47.2	38,198 38.1	15,215 53.3	175 63.4	58,937 41.9
Historically Underperforming Subgroup	4 9.5	34 51.5	6,001 53.3	45,028 44.9	18,873 66.1	217 78.6	70,157 49.9
Enrollment in school of residence after 10/1/13	2 4.8	0 0.0	612 5.4	3,469 3.5	1,867 6.5	32 11.6	5,982 4.3
Enrollment in district of residence after 10/1/13	1 2.4	0 0.0	539 4.8	2,866 2.9	1,551 5.4	28 10.1	4,985 3.5
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	214 1.9	1,125 1.1	759 2.7	13 4.7	2,111 1.5
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	2,573 22.9	16,646 16.6	6,190 21.7	63 22.8	25,472 18.1
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	1,739 15.5	7,585 7.6	2,994 10.5	48 17.4	12,366 8.8
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	4 9.5	0 0.0	15 0.1	20 0.0	34 0.1	2 0.7	75 0.1
Number of assessed students	42	66	11,254	100,381	28,563	276	140,582

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade.

PARTICIPATION BY ADMINISTRATION MODE

The number of students assessed by the two administration modes, paper/pencil test (PPT) or a computer-based test (CBT), was as follows (see Tables 10–4A through 10–4L):

- PPT: Algebra I (171,156), Biology (135,697), and Literature (119,786)
- CBT: Algebra I (26,764), Biology (25,293), and Literature (20,796)

TEST ACCOMMODATIONS PROVIDED

School personnel supplied information regarding accommodations that a student may have received while taking the Keystone Exams. Accommodations are classified in terms of presentation, response, setting, and timing to enable students to better manage disabilities that hinder their ability to learn and respond to assessments. An accommodations manual entitled *2014 Accommodations Guidelines* (PDE, revised 11/12/2013) was updated for use with the 2014 PSSA and Keystone Exams. This manual may be found on the PDE website at www.education.state.pa.us. A glossary of accommodation terms as applied to the Keystone Exams is provided in Table 10–10 at the end of this chapter.

Please note that one presentation accommodation and one response accommodation was termed electronic screen reader in the Winter 2013/2014 administration and computer assistive technology in the Spring 2014 and Summer 2014 administrations.

The frequency with which accommodations were utilized for PPT and CBT formats is summarized separately for each course exam in Tables 10–4A through 10–7L. Tabled values are based on all students whose scores contributed to state summary statistics in a given Keystone Exam. Because of the very small incidence of usage of many accommodations, combined with the fact that a number of accommodations are primarily accessed by only one of the two administration modes, meaningful comparisons between modes are rather limited. In the following tables, an NA denotes those instances in which a particular accommodation does not apply to one of the testing modes.

PRESENTATION ACCOMMODATIONS RECEIVED

Presentation accommodations are those that provide alternate ways for students to access and process printed instructional material and assessments. These include auditory, tactile, visual, and combined auditory/visual modes of presentation. The number of presentation accommodations provided in the 2014 Keystone Exams varied by course exam and test administration mode as follows:

- PPT: Algebra I, 12; Biology, 12; and Literature, 7
- CBT: Algebra I, 10; Biology, 10; and Literature, 5

As depicted in Tables 10–4A through 10–4L, the actual frequencies were quite low, generally representing less than one-tenth of one percent of assessed students in each course. The most notable exceptions, applicable to Algebra I and Biology only, were “All items/questions read aloud” and “Some items/questions read aloud.” Among accommodations specific to CBT, the use of audio was the most frequent. Although included in the table data, the Spanish version (Algebra I and Biology; PPT only) is not included in the counts listed above.

RESPONSE ACCOMMODATIONS RECEIVED

Response accommodations permit students to complete assignments, tests, and activities in different ways and to solve or organize problems using some type of assistive device or organizer. The number of response accommodations provided on the Spring 2014 Keystone Exams varied by subject as follows:

- PPT: Algebra I, 12; Biology, 12; and Literature, 9
- CBT: Algebra I, 9; Biology, 9; and Literature, 6

The frequency with which these accommodations were utilized is summarized in Tables 10–5A through 10–5L. The actual frequencies are quite low, representing less than one-tenth of one percent of assessed students in nearly all instances, regardless of administration mode.

SETTING ACCOMMODATIONS RECEIVED

Setting accommodations permit a change in the location in which a student receives instruction or participates in an assessment. In the Spring 2014 Keystone Exam administration, there were four categories of setting accommodations, which applied to both administration modes and to each course exam. As depicted in Tables 10–6A through 10–6L, the most common accommodation was small group setting for both PPT and CBT modes of administration, although the percentage of usage was somewhat higher for PPT.

TIMING ACCOMMODATIONS RECEIVED

Timing accommodations involve a change in the allowable length of time to complete assignments or assessments, including the way in which time is organized. There were four categories of timing accommodations, which applied to both administration modes and to each course exam. As depicted in Tables 10–7A through 10–7L, the most common accommodation was extended time for both PPT and CBT administration modes with slightly higher percentages for PPT than CBT in Algebra I and Literature.

Table 10–4A. Incidence of Presentation Accommodations Received on the Spring 2014 Keystone Exam: Algebra I

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	10 0.0	N/A N/A	10 0.0
Large print format	79 0.0	N/A N/A	79 0.0
Computer Assistive Technology	3 0.0	N/A N/A	3 0.0
Some test items/questions read aloud	1,193 0.7	240 0.9	1,433 0.7
All test items/questions read aloud	593 0.3	156 0.6	749 0.4
Test items/questions signed	10 0.0	2 0.0	12 0.0
Test items/questions interpreted for ELL student	130 0.1	2 0.0	132 0.1
Amplification device	11 0.0	1 0.0	12 0.0
Magnification device	6 0.0	5 0.0	11 0.0
Color overlay	0 0.0	N/A N/A	0 0.0
Other (per Accommodations Guidelines)	32 0.0	28 0.1	60 0.0
Spanish version	909 0.5	N/A N/A	909 0.5
Online Accommodations Received			
Audio	N/A N/A	1,164 4.3	1,164 0.6
Color Chooser	N/A N/A	72 0.3	72 0.0
Contrasting Text Chooser	N/A N/A	60 0.2	60 0.0
Number of assessed students	171,156	26,764	197,920

Table 10–4B. Incidence of Presentation Accommodations Received on the Spring 2014 Keystone Exam: Biology

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	7	N/A	7
	0.0	N/A	0.0
Large print format	62	N/A	62
	0.0	N/A	0.0
Computer Assistive Technology	2	N/A	2
	0.0	N/A	0.0
Some test items/questions read aloud	793	222	1,015
	0.6	0.9	0.6
All test items/questions read aloud	657	210	867
	0.5	0.8	0.5
Test items/questions signed	15	1	16
	0.0	0.0	0.0
Test items/questions interpreted for ELL student	47	2	49
	0.0	0.0	0.0
Amplification device	9	3	12
	0.0	0.0	0.0
Magnification device	1	3	4
	0.0	0.0	0.0
Color overlay	2	N/A	2
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	24	18	42
	0.0	0.1	0.0
Spanish version	549	N/A	549
	0.4	N/A	0.3
Online Accommodations Received			
Audio	N/A	1,283	1,283
	N/A	5.1	0.8
Color Chooser	N/A	207	207
	N/A	0.8	0.1
Contrasting Text Chooser	N/A	78	78
	N/A	0.3	0.0
Number of assessed students	135,697	25,293	160,990

Table 10–4L. Incidence of Presentation Accommodations Received on the Spring 2014 Keystone Exam: Literature

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	6	N/A	6
	0.0	N/A	0.0
Large print format	51	N/A	51
	0.0	N/A	0.0
Computer Assistive Technology	2	N/A	2
	0.0	N/A	0.0
Amplification device	9	1	10
	0.0	0.0	0.0
Magnification device	2	2	4
	0.0	0.0	0.0
Color overlay	3	N/A	3
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	13	14	27
	0.0	0.1	0.0
Online Accommodations Received			
Color Chooser	N/A	193	193
	N/A	0.9	0.1
Contrasting Text Chooser	N/A	65	65
	N/A	0.3	0.0
Number of assessed students	119,786	20,796	140,582

Table 10–5A. Incidence of Response Accommodations Received on the Spring 2014 Keystone Exam: Algebra I

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	71 0.0	3 0.0	74 0.0
Test administrator scribed open-ended responses at student's direction	98 0.1	7 0.0	105 0.1
Test administrator transcribed student responses	134 0.1	2 0.0	136 0.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	6 0.0	0 0.0	6 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	68 0.0	1 0.0	69 0.0
Keyboard, word processor, or computer	23 0.0	N/A N/A	23 0.0
Brailler/Notetaker	6 0.0	N/A N/A	6 0.0
Augmentative communication device	2 0.0	0 0.0	2 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	3 0.0	N/A N/A	3 0.0
Translation dictionary for ELL student	233 0.1	0 0.0	233 0.1
Other (per Accommodations Guidelines)	20 0.0	20 0.1	40 0.0
Number of assessed students	171,156	26,764	197,920

Table 10–5B. Incidence of Response Accommodations Received on the Spring 2014 Keystone Exam: Biology

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	65 0.0	2 0.0	67 0.0
Test administrator scribed open-ended responses at student's direction	83 0.1	3 0.0	86 0.1
Test administrator transcribed student responses	117 0.1	3 0.0	120 0.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	27 0.0	1 0.0	28 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	6 0.0	1 0.0	7 0.0
Keyboard, word processor, or computer	39 0.0	N/A N/A	39 0.0
Brailler/Notetaker	2 0.0	N/A N/A	2 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	0 0.0	1 0.0	1 0.0
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0
Translation dictionary for ELL student	166 0.1	1 0.0	167 0.1
Other (per Accommodations Guidelines)	25 0.0	20 0.1	45 0.0
Number of assessed students	135,697	25,293	160,990

Table 10–5L. Incidence of Response Accommodations Received on the Spring 2014 Keystone Exam: Literature

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	50 0.0	2 0.0	52 0.0
Test administrator scribed open-ended responses at student's direction	82 0.1	3 0.0	85 0.1
Test administrator transcribed student responses	109 0.1	2 0.0	111 0.1
Keyboard, word processor, or computer	53 0.0	N/A N/A	53 0.0
Brailler/Notetaker	3 0.0	N/A N/A	3 0.0
Augmentative communication device	1 0.0	0 0.0	1 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	2 0.0	N/A N/A	2 0.0
Other (per Accommodations Guidelines)	8 0.0	12 0.1	20 0.0
Number of assessed students	119,786	20,796	140,582

Table 10–6A. Incidence of Setting Accommodations Received on the Spring 2014 Keystone Exam: Algebra I

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	57 0.0	0 0.0	57 0.0
One-on-one setting	318 0.2	19 0.1	337 0.2
Small group setting	12,475 7.3	1,538 5.7	14,013 7.1
Other (per Accommodations Guidelines)	162 0.1	58 0.2	220 0.1
Number of assessed students	171,156	26,764	197,920

Table 10–6B. Incidence of Setting Accommodations Received on the Spring 2014 Keystone Exam: Biology

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	42 0.0	0 0.0	42 0.0
One-on-one setting	297 0.2	18 0.1	315 0.2
Small group setting	10,121 7.5	1,307 5.2	11,428 7.1
Other (per Accommodations Guidelines)	112 0.1	58 0.2	170 0.1
Number of assessed students	135,697	25,293	160,990

Table 10–6L. Incidence of Setting Accommodations Received on the Spring 2014 Keystone Exam: Literature

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	54 0.0	0 0.0	54 0.0
One-on-one setting	208 0.2	16 0.1	224 0.2
Small group setting	9,376 7.8	1,264 6.1	10,640 7.6
Other (per Accommodations Guidelines)	63 0.1	50 0.2	113 0.1
Number of assessed students	119,786	20,796	140,582

Table 10–7A. Incidence of Timing Accommodations Received on the Spring 2014 Keystone Exam: Algebra I

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	17,734 10.4	1,708 6.4	19,442 9.8
Frequent breaks	710 0.4	291 1.1	1,001 0.5
Changed test schedule	279 0.2	20 0.1	299 0.2
Other (per Accommodations Guidelines)	31 0.0	1 0.0	32 0.0
Number of assessed students	171,156	26,764	197,920

Table 10–7B. Incidence of Timing Accommodations Received on the Spring 2014 Keystone Exam: Biology

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	5,407 4.0	1,227 4.9	6,634 4.1
Frequent breaks	555 0.4	305 1.2	860 0.5
Changed test schedule	227 0.2	20 0.1	247 0.2
Other (per Accommodations Guidelines)	20 0.0	1 0.0	21 0.0
Number of assessed students	135,697	25,293	160,990

Table 10–7L. Incidence of Timing Accommodations Received on the Spring 2014 Keystone Exam: Literature

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	7,950 6.6	1,101 5.3	9,051 6.4
Frequent breaks	501 0.4	277 1.3	778 0.6
Changed test schedule	230 0.2	14 0.1	244 0.2
Other (per Accommodations Guidelines)	36 0.0	1 0.0	37 0.0
Number of assessed students	119,786	20,796	140,582

ACCOMMODATION RATE FOR NON-IEP AND IEP STUDENTS

A comparison between students without an IEP (non-IEP Students) and those with an IEP (IEP Students) with regard to having received an accommodation is provided in Table 10–8. In this data, accommodated means that a student received one or more of the total number of accommodations available for a given course; however, this varies somewhat with administration mode. The category of non-accommodated indicates that a student did not receive any accommodations during testing. The total number of accommodations available to students by administration mode varied by course exam as follows:

- PPT: Algebra I, 32; Biology, 32; and Literature, 24
- CBT: Algebra I, 27; Biology, 27; and Literature, 19

The general pattern of findings provided in Table 10–8 reveals a consistent and substantially higher percentage of IEP Students receiving an accommodation, in contrast to non-IEP Students. This same pattern holds true regardless of test administration mode or Keystone Exam. The comparisons between administration modes revealed that the accommodation rates for IEP students taking a PPT are close to those taking a CBT.

Table 10–8. Accommodations Rates for Non-IEP and IEP Students on the Spring 2014 Keystone Exams

Course Tested	Student Subgroup Tested	PPT	CBT	Total
		N/Pct	N/Pct	N/Pct
Algebra I	**Non-IEP Students**	144,399	22,298	166,697
	Non-Accommodated	128,680 89.1	21,307 95.6	149,987 90.0
	Accommodated	15,719 10.9	991 4.4	16,710 10.0
	IEP Students	26,757	4,466	31,223
	Non-Accommodated	14,237 53.2	2,392 53.6	16,629 53.3
	Accommodated	12,520 46.8	2,074 46.4	14,594 46.7
Biology	**Non-IEP Students**	114,845	21,216	136,061
	Non-Accommodated	109,945 95.7	20,809 98.1	130,754 96.1
	Accommodated	4,900 4.3	407 1.9	5,307 3.9
	IEP Students	20,852	4,077	24,929
	Non-Accommodated	11,085 53.2	2,084 51.1	13,169 52.8
	Accommodated	9,767 46.8	1,993 48.9	11,760 47.2
Literature	**Non-IEP Students**	99,412	17,063	116,475
	Non-Accommodated	92,803 93.4	16,803 98.5	109,606 94.1
	Accommodated	6,609 6.6	260 1.5	6,869 5.9
	IEP Students	20,374	3,733	24,107
	Non-Accommodated	11,019 54.1	2,175 58.3	13,194 54.7
	Accommodated	9,355 45.9	1,558 41.7	10,913 45.3

THE INCIDENCE OF ACCOMMODATIONS AND IEP AND ELL STATUS

As noted in Table 10–8, students with an IEP received an accommodation of some type far more often than non-IEP students. Certain accommodations with very low frequencies are specific to particular disabilities while others are far more common and may also apply to students classified as English Language Learners (ELL). Because the accommodations with the largest frequencies can potentially supply the most stable data when separated out for subgroup analysis, those in most common use were selected for display in Tables 10–9A through 10–9L. The most frequently occurring accommodations for assessed students were:

- Some test items/questions read aloud (Algebra I and Biology only)
- All test items/questions read aloud (Algebra I and Biology only)
- Small group setting
- Extended time
- Frequent breaks

Coding for IEP is dichotomous, as students are classified IEP and non-IEP. For purposes of this analysis, an English Language Learner (ELL) is an assessed student classified ELL and enrolled in a U.S. school before or after May 24, 2013. All other assessed students, including those who have exited an ESL/bilingual program and are in the first or second year of monitoring, are regarded as non-ELL.

Customarily, a considerably larger percentage of IEP students receive a given accommodation than non-IEP students. Although less frequent, certain accommodations also have a high frequency rate for ELL students. To separate out the effect of being classified IEP or ELL, four possible combinations are presented in Tables 10–9A through 10–9L. These include general education students (who are neither IEP nor ELL), students who are IEP but non-ELL, students who are ELL but non-IEP, and students who are both IEP and ELL. The bottom row for each administration mode provides the total number of assessed students in each of the four classifications.

For purposes of descriptively comparing the four IEP/ELL subgroups with respect to whether a subgroup displayed a larger percentage rate than another subgroup, a choice was made to use a difference of five or more percentage points as a criterion for judging importance. In many instances, the percentage difference between subgroups was of little practical significance (from zero to only several percentage points).

Although the separate presentation of data for PPT and CBT modes provides an impression of overall findings, the much smaller *n*-counts and accommodation rate by students taking a CBT renders an administration mode comparison less meaningful. Nevertheless, it is possible to make some cautious observations when sufficient *n*-counts and consistency are present as noted in the summary of findings below.

SUBGROUP COMPARISONS FOR PPT ADMINISTRATION MODE

Subgroup comparisons were regarded as viable for the PPT administration. There was little differentiation across subgroups for the two accommodations involving items/questions read aloud (Algebra I and Biology) and for frequent breaks (Algebra I, Biology, and Literature). Small group setting was by far the most prevalent accommodation for the IEP/non-ELL subgroup followed by the IEP/ELL and ELL/non-IEP subgroups. This pattern was consistent across all three course exams. Another consistent pattern was observed for extended time, which was more prevalent for the IEP/non-ELL, ELL/non-IEP, and IEP/ELL subgroups than for the General Education subgroup.

SUBGROUP COMPARISONS FOR CBT ADMINISTRATION MODE

For the CBT administration the ELL/Non-IEP and IEP/ELL subgroup *n*-counts for Algebra I were only 263 and 98, respectively, and even lower for Biology and Literature. Consequently, only the General Education and IEP/non-ELL subgroups had a sufficient sample size to support reasonable comparisons. A consistent pattern noted for all three course exams was the greater prevalence of small group setting, extended time, and frequent breaks by the IEP/non-ELL subgroup than for the General Education subgroup.

COMPARISONS BETWEEN PPT AND CBT

The only subgroups for which comparisons between PPT and CBT administration modes were deemed reasonable based on sample size were within the General Education and IEP/non-ELL subgroups. The findings are summarized below.

- The General Education subgroup displayed a very low incidence of accommodations, typically less than one percent, in nearly all instances for both PPT and CBT administrations. The difference between PPT and CBT in percent of students receiving an accommodation exceeded five percentage points in only one instance (extended time for Algebra I).
- For the IEP/non-ELL subgroup, small group setting was the only accommodation for which PPT administration consistently exceeded CBT by more than five percentage points (actually by more than 10 percentage points) in all three course exams. The lone instance in which students tested by CBT exceeded those responding by PPT was extended time for Biology.

Table 10–9A. Incidence of IEP and ELL Students Receiving Selected Accommodations on the Spring 2014 Keystone Exam: Algebra I

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test read aloud	107 0.1	966 3.7	88 1.8	32 3.8
	All test items/questions aloud	34 0.0	543 2.1	7 0.1	9 1.1
	Small group setting	956 0.7	10,796 41.7	448 9.2	275 32.4
	Extended time	13,622 9.8	3,387 13.1	641 13.1	84 9.9
	Frequent breaks	71 0.1	625 2.4	4 0.1	10 1.2
	Number assessed	139,522	25,907	4,877	850
CBT	Some test read aloud	13 0.1	200 4.6	9 3.4	18 18.4
	All test items/questions aloud	10 0.0	144 3.3	0 0.0	2 2.0
	Small group setting	55 0.2	1,441 33.0	10 3.8	32 32.7
	Extended time	791 3.6	858 19.6	42 16.0	17 17.3
	Frequent breaks	22 0.1	267 6.1	0 0.0	2 2.0
	Number assessed	22,035	4,368	263	98
Total	Some test read aloud	120 0.1	1,166 3.9	97 1.9	50 5.3
	All test items/questions aloud	44 0.0	687 2.3	7 0.1	11 1.2
	Small group setting	1,011 0.6	12,237 40.4	458 8.9	307 32.4
	Extended time	14,413 8.9	4,245 14.0	683 13.3	101 10.7
	Frequent breaks	93 0.1	892 2.9	4 0.1	12 1.3
	Number assessed	161,557	30,275	5,140	948

Table 10-9B. Incidence of IEP and ELL Students Receiving Selected Accommodations on the Spring 2014 Keystone Exam: Biology

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test items/questions read aloud	31 0.0	674 3.3	70 2.0	18 3.3
	All test items/questions aloud	20 0.0	605 3.0	11 0.3	21 3.8
	Small group setting	823 0.7	8,811 43.4	299 8.7	188 34.1
	Extended time	3,267 2.9	1,784 8.8	317 9.2	39 7.1
	Frequent breaks	48 0.0	486 2.4	4 0.1	17 3.1
	Number assessed	111,400	20,300	3,445	552
CBT	Some test items/questions read aloud	3 0.0	211 5.3	1 0.5	7 11.3
	All test items/questions aloud	10 0.0	196 4.9	1 0.5	3 4.8
	Small group setting	40 0.2	1,246 31.0	1 0.5	20 32.3
	Extended time	215 1.0	974 24.3	21 10.3	17 27.4
	Frequent breaks	14 0.1	287 7.1	0 0.0	4 6.5
	Number assessed	21,013	4,015	203	62
Total	Some test items/questions read aloud	34 0.0	885 3.6	71 1.9	25 4.1
	All test items/questions aloud	30 0.0	801 3.3	12 0.3	24 3.9
	Small group setting	863 0.7	10,057 41.4	300 8.2	208 33.9
	Extended time	3,482 2.6	2,758 11.3	338 9.3	56 9.1
	Frequent breaks	62 0.0	773 3.2	4 0.1	21 3.4
	Number assessed	132,413	24,315	3,648	614

Table 10–9L. Incidence of IEP and ELL Students Receiving Selected Accommodations on the Spring 2014 Keystone Exam: Literature

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Small group setting	643 0.7	8,226 41.5	309 10.8	198 34.4
	Extended time	5,399 5.6	2,180 11.0	305 10.6	66 11.5
	Frequent breaks	51 0.1	436 2.2	4 0.1	10 1.7
	Number assessed	96,539	19,798	2,873	576
CBT	Small group setting	46 0.3	1,192 32.4	4 2.1	22 40.0
	Extended time	199 1.2	859 23.4	27 14.4	16 29.1
	Frequent breaks	16 0.1	256 7.0	0 0.0	5 9.1
	Number assessed	16,875	3,678	188	55
Total	Small group setting	689 0.6	9,418 40.1	313 10.2	220 34.9
	Extended time	5,598 4.9	3,039 12.9	332 10.8	82 13.0
	Frequent breaks	67 0.1	692 2.9	4 0.1	15 2.4
	Number assessed	113,414	23,476	3,061	631

GLOSSARY OF ACCOMMODATION TERMS

Table 10–10 provides a brief description of accommodation terms as used in the PSSA and Keystone Exams. Accommodation data was supplied by school personnel as noted in the left column of the table. The right column contains an explanation derived from the PDE publication, *2014 Accommodations Guidelines* (PDE, revised 11/12/2013, pages 23–48). This manual may be found on the PDE website at www.education.state.pa.us.

Table 10–10. Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Presentation Accommodations	
Braille format	Students may use a Braille format of the test. Answers must then be transcribed into the answer booklet without alteration.
Large print format	Students with visual impairments may use a large print format. Answers must then be transcribed into the answer booklet without alteration.
Magnification device	Devices to magnify print may be used for students with visual impairments and/or print disabilities.
Color overlay	Students with visual impairments may place a color overlay on a printed page of the test document to make text more readable.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with severe visual disabilities that prevent them from accessing instructional material or performing the skill may use computer assistive technology; however, PDE must approve the program and functions prior to the test window.
Test items/questions/prompt signed (PSSA writing)	Deaf/hearing-impaired students may receive test directions from a qualified interpreter. Signing is also permitted for essay prompts in PSSA writing and all items in PSSA mathematics and science and for Algebra I and Biology Keystone Exams.
Test items/questions/prompt interpreted for ELL (PSSA writing)	A qualified interpreter may translate directions or clarify instructions for the assessments. The interpreter may translate but not define specific words or test questions on the PSSA mathematics, science, and writing (including a writing prompt) tests and Algebra I and Biology Keystone Exams. On the PSSA reading test, the interpreter may only translate directions and may not translate or define words in the passages or test questions.
Amplification device	In addition to using hearing aids, an amplification device to enhance clarity may be required.

Table 10–10 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Presentation Accommodations (continued)	
Other (PDE approval required)	Other presentation accommodations indicated in the *Accommodation Guidelines* may be provided; however, PDE approval is required prior to the test window.
Spanish version for PSSA (Math and Science) and Keystone Exams (Algebra I and Biology)	Students whose first language is Spanish and who have been enrolled in U.S. schools for fewer than three years may take this version.
Student used the following Online Presentation Accommodations	
Audio	An audio CD version of PSSA mathematics and science or Algebra I and Biology Keystone Exam test items/questions may be taken by students with severe hearing disabilities as documented by their IEPs.
Video sign language (per *Accommodations Guidelines*)	Eligible students who use a sign language accommodation during instructional periods may use a VSL on the PSSA mathematics and science assessments.
Color chooser or contrasting text chooser	The use of this accommodation enables a visually impaired student to change the background color or text color to make text more readable.
Student used the following Response Accommodations	
Brailler/Note taker (per *Accommodations Guidelines*)	Students using this device as part of their regular instructional program may use it on the assessments; however, they may not use the thesaurus, spelling, or grammar checker.
Test administrator scribed **open-ended** responses at student's direction	A test administrator may record word-for-word exactly what a student dictated directly into the test booklet. This includes OE responses on the Algebra I, Biology, and Literature Keystone Exams and PSSA mathematics and science.
Test administrator marked **multiple-choice** responses at student's direction	A test administrator may mark an answer booklet at the direction of a student (e.g., a student may point to an MC answer with the test administrator marking the response in the answer booklet).
Test administrator transcribed student responses (per *Accommodations Guidelines*)	A test administrator may transcribe (copy) a student's written, typed, or keyed response into a standard answer booklet.
Qualified Interpreter translated, transcribed, and/or scribed student's signed responses	A qualified interpreter may interpret a student's signed responses into written English for Algebra I and Biology Keystone Exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.

Table 10–10 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Response Accommodations (continued)	
Qualified Interpreter translated, transcribed, and/or scribed ELL student responses	A qualified interpreter may interpret a student's non-English oral responses into written English for Algebra I and Biology Keystone Exams, and PSSA mathematics and science assessments. Interpreters are not permitted to make corrections or change the meaning of the response.
Augmentative communication device	Students with severe communication difficulties may use a special device to convey responses, which must be transcribed into the answer booklet by the test administrator.
Keyboard, word processor, or computer (per *Accommodations Guidelines*)	This is an allowable accommodation as a typing function only for students with the identified need. Supports such as dictionaries, thesauri, spell checkers, and grammar checkers must be turned off. Answers must then be transcribed into the answer booklet without alteration.
Audio recording of student responses (per *Accommodations Guidelines*)	An electronic recording device may be used to record responses, which must be transcribed into the answer booklet by the test administrator. (Students who are unable to use a pencil or have illegible handwriting may answer MC questions orally. Answers must be recorded in the answer booklet without alteration during the testing period.)
Translation dictionary for ELL student	A word-to-word dictionary that translates native language to English (or vice versa) without word definitions or pictures is allowed on any portion of the Algebra I and Biology Keystone Exams, and PSSA mathematics and science tests.
Computer assistive technology (e.g., electronic screen reader) (PDE approval required)	Students with blindness or extremely low vision may use dictate text into a computer. Responses must be transcribed verbatim into student's regular answer booklet.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Setting Accommodations	
Hospital/home testing	A student who is confined to a hospital or to home during the testing window may be tested in that environment.
One-on-one setting (Keystone Exams and PSSA Math, Reading, Science, Writing)	One-on-one settings are necessitated in certain instances, such as to reduce distraction or in the use of certain devices. A separate room may be used to reduce distraction.

Table 10–10 (continued). Glossary of Accommodation Terms as Applied in the 2014 PSSA and 2013–2014 Keystone Exams

Type of Testing Accommodation	Explanation
Student used the following Setting Accommodations (continued)	
Small group setting	Some students may require a test setting with fewer students or a setting apart from all other students to minimize distraction.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.
Student used the following Timing Accommodations	
Extended time	Extended time may be allotted for each section of the test as a planned accommodation to enable students to finish.
Frequent breaks	Frequent breaks (breaks within a test section) may be scheduled for the completion of each test section; however, a test section must be completed within one school day.
Changed test schedule	Students whose disabilities prevent them from following a regular, planned test schedule may follow an individual schedule that enables test completion.
Other (per *Accommodations Guidelines* or PDE approval)	Other accommodations may be appropriate and available if they do not compromise the integrity of the assessment. Documentation must be provided to PDE.

CHAPTER ELEVEN: CLASSICAL ITEM STATISTICS

This chapter provides an overview of the two most familiar item-level statistics obtained from classical (traditional) item analysis: item difficulty and item discrimination. The following results pertain not only to the operational Keystone Exams items but also to the embedded field test items. Other statistics such as Rasch item statistics and test-level statistics are discussed in Chapter Twelve and Chapter Seventeen, respectively.

ITEM-LEVEL STATISTICS

Appendix J provides classical item statistics for all items (i.e., operational and embedded field test items) in the Algebra I, Biology, and Literature Exams. Results are organized by administration and then by content area. These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in Appendix J include *N*, the number of students taking the test form for which there are valid test scores; *p*-values (denoted as PVal) for multiple-choice (MC) items and item means (denoted as Mean) for constructed-response (CR) items (indicators of item difficulty); proportions of students who chose each response option for MC items (denoted as P(A), P(B), P(C), P(D)) or gained each score point for CR items (denoted as P(0), P(1), P(2), P(3), and/or P(4)); proportions of students who did not respond to an item (denoted as P(-) for MC items and P(B) for CR items); item-total correlations (denoted as Total, indicators of item discrimination); item-total correlations for each response option for MC items (denoted as PT(A), PT(B), PT(C), and PT(D)); and gained score point for CR items (denoted as PT(1), PT(2), PT(3), and PT(4)).

Appendix J also provides the Rasch measurement-based statistics in columns Rasch, Infit, and Outfit. Detailed explanations of these statistics can be found in Chapter Twelve. The differential item functioning (DIF) analysis on the embedded field test items is provided in the last three columns. The detailed explanation of DIF codes can be found in Chapter Five.

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For MC items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0/1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. So, this is also the *proportion correct* for the item, or as it is better known, the *p*-value. In theory, *p*-values can range from 0.00[2] to 1.00 on the proportion-correct scale. For example, if an item has a *p*-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item is relatively easy and/or the students who attempted the item are relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

[2] For MC items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

For CR items, mean scores can range from the minimum possible score (usually zero) to the maximum possible score (e.g., four points in the case of Algebra I CR items and three points in the case of Biology and Literature CR items). Sometimes a *pseudo p*-value is provided for a CR item by dividing the mean item score by the maximum possible item score.

The minimum and maximum extremes of the difficulty scale are virtually never seen in applied practice. However, understanding what those values are helps illustrate that relatively lower values correspond to more difficult items and that relatively higher values correspond to easier items. (Because of this, some assert that this index would be better referred to as the item's *easiness*.)

Item difficulty is an important consideration for the Keystone Exams because of the ranging achievement levels of students in Pennsylvania (Below Basic, Basic, Proficient, and Advanced). Items that are either very hard or very easy provide little information about student differences in achievement. However, an item answered correctly by a high percentage of students would suggest that the knowledge or skill the item taps has been mastered by most students. Conversely, an item answered correctly by a low percentage of students would suggest that few students have mastered the knowledge or skill the item taps. So, on a criteria-referenced test like the Keystone Exams, a test development goal is to include a wide range of item difficulties.

Utilizing the proportion of students who chose each option can be helpful for verifying keys. For example, if a large proportion of students chose a distractor instead of the key answer, it may, but not always, indicate that the key is not correct. The proportion of students omitting or not reaching an item is useful for identifying issues related to testing time and item/test layout. Keystone Exams are not speed tests. Therefore, students should have enough time to take the exams. An omit proportion greater than 0.05 for a single item could be an indication that students were not given enough time to take the test or an indication of an item/test layout problem. For example, some students might accidentally skip an item that follows a lengthy stem.

ITEM DISCRIMINATION

At the most general level, item discrimination[3] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the Keystone Exams overall) would be more likely to answer any given Keystone Exams item correctly, while students with low ability (i.e., those who perform poorly on the Keystone Exams overall) would be more likely to answer the same item incorrectly. For the Keystone Exams, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. As commonly practiced, Data Recognition Cooperation (DRC) removes the item score from the total score so that the resulting correlations will not be spuriously high. The correlation coefficient can range from -1.0 to +1.0. If the aforementioned expectation is met (high-scoring students tend to get the item right while low-scoring students do not), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero) indicating that the item is a good discriminator between high- and low-ability students.

Item-total correlation for each option is another indicator of an item's ability to differentiate between high and low achievers. It is expected that students with high ability would be less likely to choose any distractors, while students with low ability would be more likely to choose a distractor. In other words, the item-total correlations for the distractors are expected to be negative.

[3] As noted earlier, the discrimination index for dichotomous MC items is typically referred to as the *point-biserial correlation coefficient*. For CR items, the term *item-test correlation* is sometimes used.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[4] In other words, students who did well on the total test tended to do well on the item as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., items with extreme *p*-values) can have reduced power to discriminate and thus can have lower correlations.

Discrimination is an important consideration for the operational Keystone Exams because the use of more discriminating items on a test is associated with more reliable test scores. This in turn means that score estimates will be more precise (i.e., there will be smaller confidence intervals around the scores) and, perhaps more importantly, that more accurate performance level placements will be made. The issues of reliability, confidence intervals, and performance level classifications are further discussed in Chapter Eighteen.

SCATTER PLOTS OF ITEM DISCRIMINATION AND DIFFICULTY

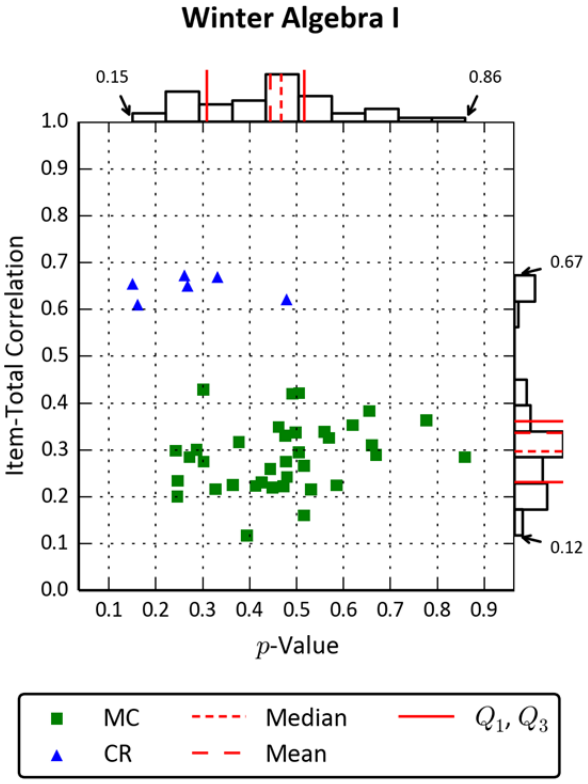
Figure 11–1 contains a series of scatter plots showing item discrimination (i.e., item-total correlation on *y*-axis) vs. item difficulty (i.e., *p*-value on *x*-axis) for the operational items in each content area exam by test administration. These plots provide information about item discrimination and difficulty in a single visual image for each Keystone Exam. This is because the *x*- and *y*-axes visually represent many important distributional indices:

- The minimum and maximum values are listed.
- Mean and median scores are indicated by the red dash lines.
- The first and third quartile (Q1 and Q2) are indicated by the red lines.
- Marginal histogram indicates the density of the individual data points.

It should be noted that pseudo *p*-values are used for CR items in these plots. Of course, the bivariate relationship between discrimination and difficulty is also presented. One does not usually expect any type of trend here. However, as noted earlier, it is often the case that items with extreme difficulties can have lower discrimination values, so this can be revealed in such a plot.

[4] It is legitimate to view the point-biserial correlation as a standardized mean. A positive value indicates that students who chose that response had a higher mean score than the average score; a negative value indicates that students who chose that response had a lower mean score than the average score.

Figure 11–1. Scatter Plots of Item Discrimination and Difficulty



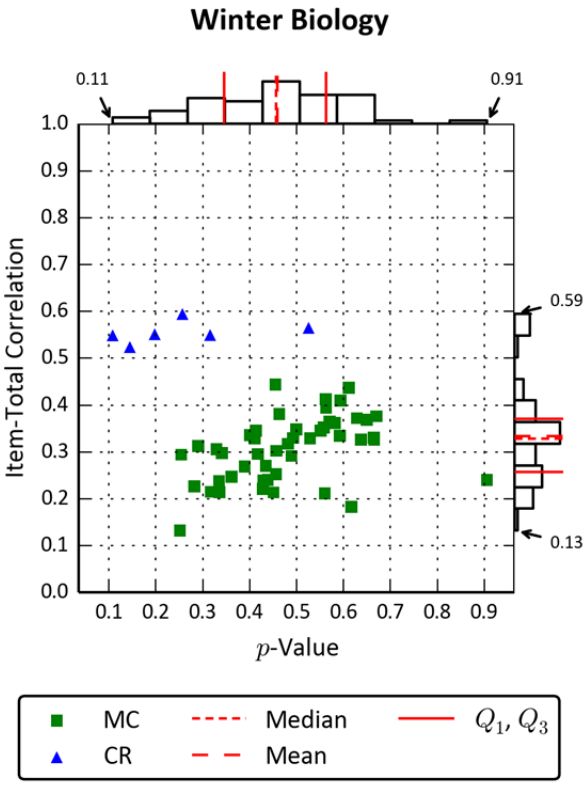
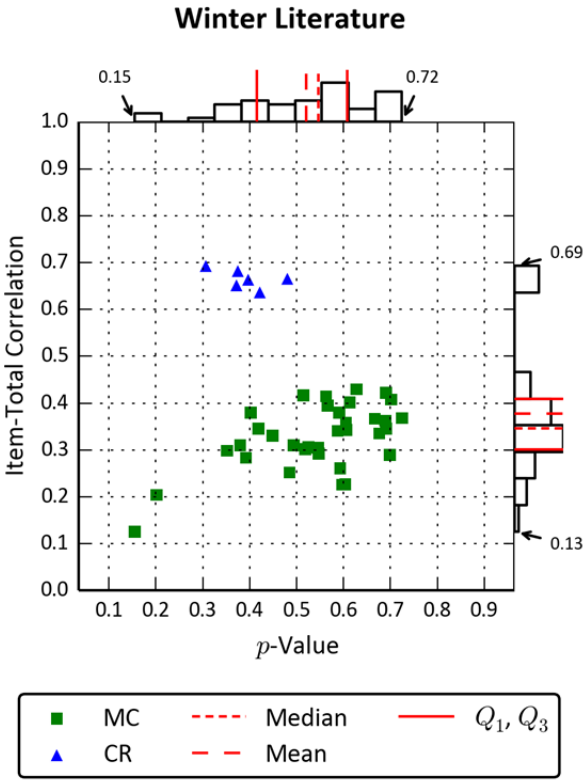


Figure 11–1 (continued). Scatter Plots of Item Discrimination and Difficulty



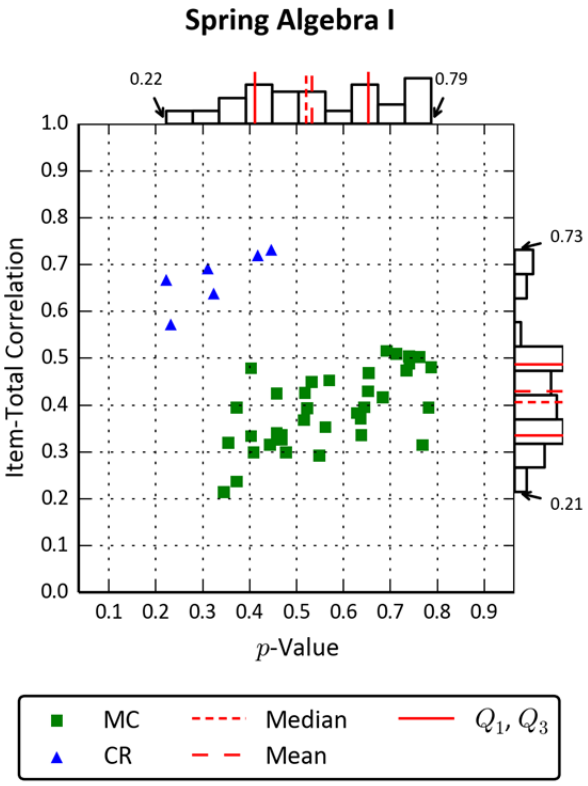
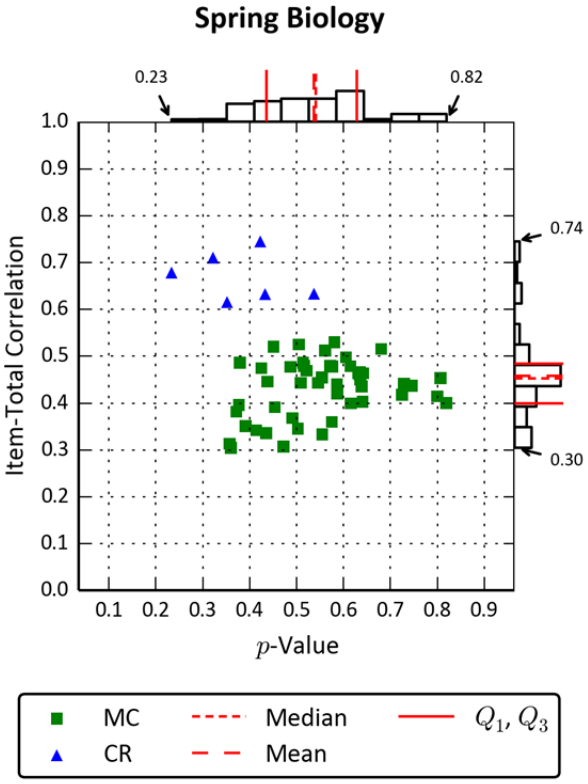


Figure 11–1 (continued). Scatter Plots of Item Discrimination and Difficulty



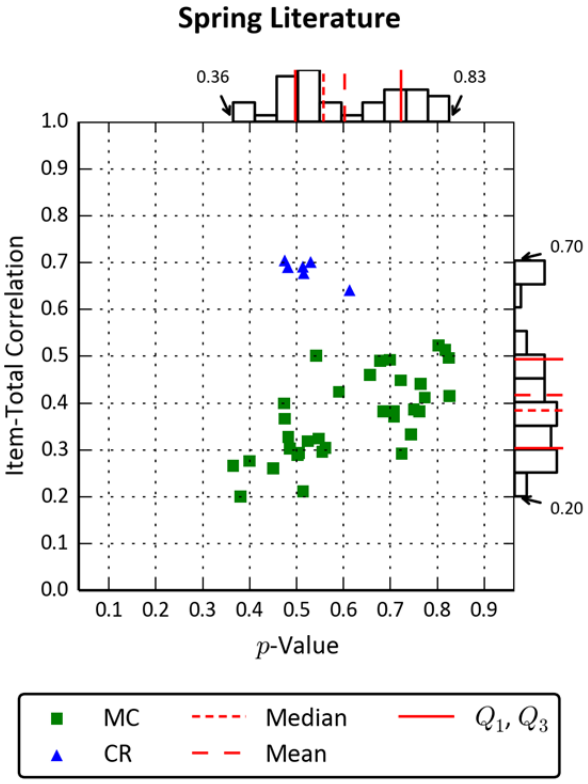
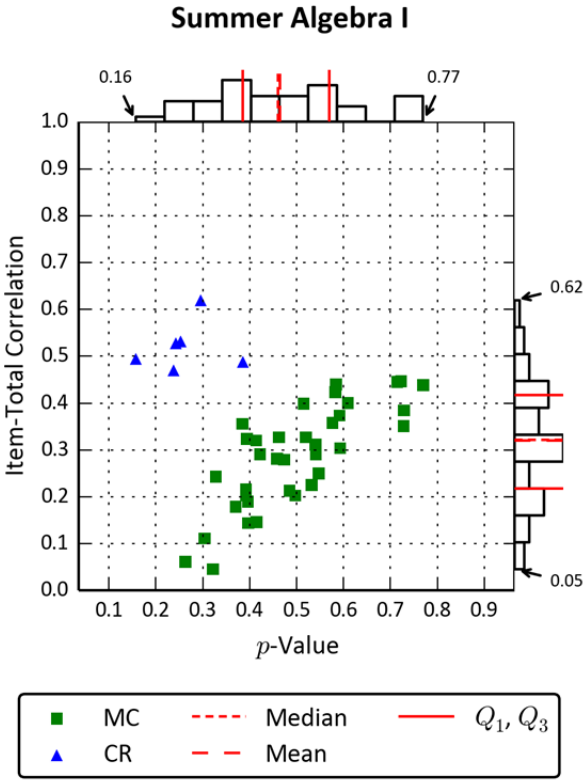


Figure 11–1 (continued). Scatter Plots of Item Discrimination and Difficulty



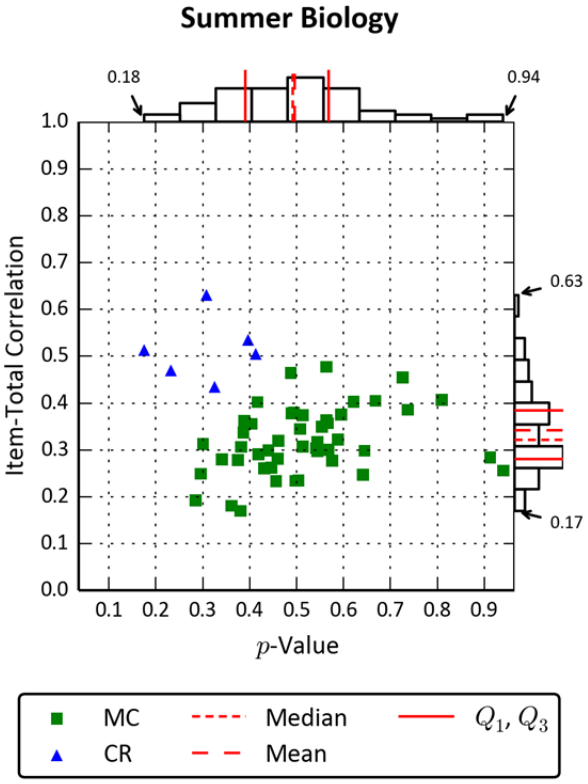
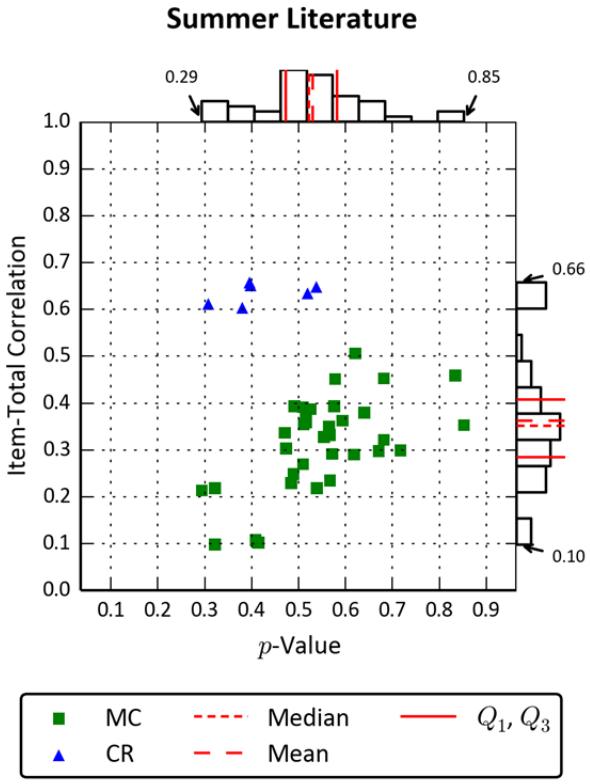


Figure 11–1 (continued). Scatter Plots of Item Discrimination and Difficulty



OBSERVATIONS AND INTERPRETATIONS

Table 11–1 provides the mean and median *p*-values and median[5] item-total correlations for the operational MC and CR items in each content area. The mean *p*-value for the operational MC items ranged from about 0.47 to 0.62 with the standard deviation (SD) ranging from 0.12 to 0.15, while the mean *p*-values for the CR items ranged from about 0.26 to 0.52 with the standard deviation ranging from 0.05 to 0.15. The median item-test correlations ranged from 0.49 to 0.62 and 0.23 to 0.51 for the MC and CR items, respectively. The CR correlations tended to be higher than the MC correlations, which is not surprising because the CR items include more score points.

It is impossible to make global conclusions about the overall test quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the item difficulties and discriminations were in expected and acceptable ranges.

[5] Given that the value of the item-total correlation coefficient is not a linear function of the magnitude of the relation between the item and total test scores, the median instead of the mean of the item-total correlation was calculated for this statistic.

Table 11–1. Mean and Median Statistics for Operational MC and CR Items

Administration	Content Area	Multiple-Choice Items				Constructed-Response Items			
		Mean *p*-Value	SD *p*-Value	Median *p*-Value	Median I-T Corr.	Mean *p*-Value	SD *p*-Value	Median *p*-Value	Median I-T Corr.
Winter	Algebra I	0.47	0.15	0.48	0.28	0.27	0.12	0.26	0.65
	Biology	0.48	0.13	0.46	0.32	0.26	0.15	0.23	0.55
	Literature	0.54	0.14	0.58	0.34	0.39	0.06	0.39	0.66
Spring	Algebra I	0.57	0.14	0.56	0.39	0.33	0.09	0.32	0.68
	Biology	0.56	0.12	0.56	0.44	0.38	0.10	0.39	0.66
	Literature	0.62	0.14	0.62	0.38	0.52	0.05	0.51	0.69
Summer	Algebra I	0.50	0.13	0.49	0.30	0.26	0.08	0.25	0.51
	Biology	0.52	0.14	0.51	0.31	0.31	0.09	0.32	0.51
	Literature	0.55	0.12	0.55	0.33	0.42	0.09	0.40	0.64

Note. I-T Corr. is the item-total test score correlation; SD represents the standard deviation.

Chapter Eleven: Classical Item Statistics

CHAPTER TWELVE: RASCH ITEM CALIBRATION

The particular item response theory (IRT) model used for the Keystone Exams is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and have been the methodology continually used to calibrate the Pennsylvania System of School Assessment (PSSA) items in recent history. Consequently, this model was chosen for the Keystone Exams. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make a number of strong assumptions related to dimensionality, local independence, and model-data fit. Resulting inferences derived from any application of IRT rest strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the operational Keystone Exams items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item on an assessment so that they are placed on a common scale. This chapter briefly introduces the Rasch model, reports the results from evaluations of the adequacy of the Rasch assumptions, and summarizes the Rasch item statistics for the Keystone Exams in Algebra I, Biology, and Literature.

DESCRIPTION OF THE RASCH MODEL

The Rasch partial credit model (RPCM) (Wright & Masters, 1982) was used to calibrate Keystone Exams items because both multiple-choice (MC) and constructed-response (CR) items were part of the assessment. The RPCM extends the Rasch model (Rasch, 1960) for dichotomous (0, 1) items so that it accommodates the polytomous CR items. Under the RPCM, for a given item *i* with m_i score categories, the probability of person *n* scoring *x* (*x* = 0, 1, 2,... m_i) is given by:

$$\pi_{nix} = \frac{\exp \sum_{j=0}^{x} (\beta_n - \delta_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{x} (\beta_n - \delta_{ij})}, \quad x = 0, 1, \ldots, m_i$$

where β_n represents a student's proficiency (ability) level, and δ_{ij} is the step difficulty of the *j*th step on item *i*. For dichotomous MC items, the RPCM reduces to the standard Rasch model and the single step difficulty is referred to as the item's difficulty. The Rasch model predicts the probability of person *n* getting item *i* correct as follows:

$$\Phi_{ni}\left(X = 1 \mid \beta_n\right) = \frac{\exp\left(\beta_n - \delta_{ij}\right)}{1 + \exp\left(\beta_n - \delta_{ij}\right)}.$$

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, it also provides person ability estimates that are independent of the items employed in the assessment, and, conversely, estimates item difficulty independently of the sample of examinees. (As noted in Chapter Eleven, interpretation of item *p*-values confounds item difficulty and student ability.)

SOFTWARE AND ESTIMATION ALGORITHM

Item calibration was implemented via WINSTEPS computer program (Linacre & Wright, 2013), which employs unconditional (UCON), joint-maximum-likelihood estimation (JMLE).

SAMPLE CHARACTERISTICS

The characteristics of calibration samples are reported in Chapter Nine. These samples only include the students who attempted the tests. All omits (no response) and multiple responses (more than one response selected) were scored as incorrect answers (coded as 0s) for calibration.

CHECKING RASCH ASSUMPTIONS

Because the Rasch model was the basis of all calibration and equating analyses associated with the Keystone Exams, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, and model-data fit at the item level. Though a variety of methods are available for assessing these issues, the Rasch analyses and criteria available from WINSTEPS were used here. It should be noted that only operational items were analyzed since they are the basis of student scores.

Given that Keystone Exams use a pre-equating design (see details in Chapter Fifteen), calibrations with and without anchoring all the item parameter estimates were conducted to check the item difficulty stability. After reviewing the analyses results for the winter, spring, and summer administrations, a decision was made to use the item difficulty estimated from the field test data to generate the raw-to-scaled-score conversion tables. In this chapter, the adequacy of the Rasch calibration assumptions was checked with all the item difficulties anchored to the pre-equated values.

UNIDIMENSIONALITY

Rasch models assume that one dominant dimension determines the difference in students' performances. WINSTEPS provides results from a principal components analysis (PCA) that can be used to assess the unidimensionality assumption. Different from standard applications of PCA, WINSTEPS conducts its PCA on the response residuals, not the original observations. That is, the primary dimension from the Rasch model is removed first and then the residual variance is analyzed. The purpose of the analysis is to verify whether any other dominant components exist among the residuals (i.e., they account for a practically significant amount of residual variance). If any other dimensions are found, the unidimensionality assumption would be violated.

For Keystone Exams, the standardized residuals were used to conduct the PCA because simulation studies indicate that it gives the most accurate reflection of secondary dimensions in the items (Linacre, 2013). Table 12–1 presents the PCA results by administration for each content area. The results include the eigenvalues and variance explained by each component. As can been seen from the table, the eigenvalues for the first component are much larger than those for the rest of the components. The first component explained about 19.2 to 38.2 percent of the total variances. The rest of the components explained only a small percentage of variance. These results suggest that each of the Keystone Exams essentially measure a single dominant dimension.

Table 12–1. Results from PCA of Residuals in WINSTEPS

Administration	Content Area	Component	Eigenvalue	Variance Explained
Winter	Algebra I	1	31.2	42.6%
		2	1.8	2.4%
		3	1.6	2.2%
		4	1.3	1.8%
		5	1.3	1.7%
	Biology	1	27.2	33.5%
		2	1.6	2.0%
		3	1.5	1.8%
		4	1.3	1.5%
		5	1.2	1.5%
	Literature	1	19.2	32.4%
		2	2.3	3.9%
		3	1.4	2.4%
		4	1.3	2.3%
		5	1.3	2.1%
Spring	Algebra I	1	38.2	47.7%
		2	1.9	2.4%
		3	1.5	1.9%
		4	1.3	1.6%
		5	1.2	1.5%
	Biology	1	34.8	39.2%
		2	1.6	1.8%
		3	1.4	1.5%
		4	1.3	1.4%
		5	1.2	1.3%
	Literature	1	22	35.5%
		2	2.3	3.8%
		3	1.5	2.4%
		4	1.2	1.9%
		5	1.2	1.9%
Summer	Algebra I	1	24.1	36.4%
		2	1.7	2.6%
		3	-	-
		4	-	-
		5	-	-
	Biology	1	23.9	30.7%
		2	2.1	2.7%
		3	1.8	2.4%
		4	1.5	2.0%
		5	1.5	1.9%
	Literature	1	18	31.1%
		2	2.3	3.9%
		3	1.6	2.8%
		4	1.5	2.6%
		5	1.5	2.5%

LOCAL INDEPENDENCE

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test *X* that is composed of items X_1, X_2,…X_I is locally independent with respect to the latent variable δ_n if, for all $x = (x_1, x_2,\ldots x_I)$ and δ_n ,

$$P_n\left(\mathbf{X}=\mathbf{x} \mid \delta_n\right)=\prod_{i=1}^{I} P\left(X_i=x_i \mid \delta_n\right) .$$

This formula essentially states that the probability of any pattern of responses across all items (*x*), after conditioning on the abilities (δ_n) measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the *strong form* of local independence. A *weak form* of local independence (WLI) was proposed by McDonald (1979). The distinction is important, since many indicators of local dependency are actually framed by WLI. The requirement here would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as shown below. (This is a *weaker* form because higher-order dependencies among items are allowed.) Based on the WLI, the following expression can be derived:

$$P\left(X_i=x_i, X_j=x_j \mid \delta_n\right)=P\left(X_i=x_i \mid \delta_n\right) P\left(X_j=x_j \mid \delta_n\right) .$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension also determine students' performance (this can be called *trait dependence*). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called *response dependence*. Many people treat the assumptions of *unidimensionality* and *local independence* as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions, and therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the Keystone Exams items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviations (residuals) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

Two types of residual correlations are available in WINSTEPS: raw and standardized residuals. It should be noted that the raw score residual correlation essentially corresponds to Yen's Q_3 index (Yen, 1993), a popular LI statistic. The expected value for the Q_3 statistic is approximately -1/(*k*-1) when no local

dependence exists, where *k* is test length. Thus, the expected Q_3 values should be approximately -0.026 or larger for the Keystone Exams (since Literature is the shortest test with 40 items). Index values that are greater than 0.20 indicate a degree of local dependence that probably should be examined by test developers (Chen & Thissen, 1997). Since the two residual correlations are very similar, the default *standardized residual correlation* in WINSTEPS was used for these analyses. Table 12–2 shows the summary statistics—mean, SD, minimum (Min), maximum (Max), and several percentiles (P_{10}, P_{25}, P_{50}, P_{75}, P_{90})—for all the residual correlations for each test. The total number of item pairs (*N*) and the number of pairs with residual correlations greater than 0.20 are also reported in this table. The mean residual correlations were slightly negative and the values were -0.02 after rounding. The vast majority of the correlations were very small, suggesting local item independence generally holds for the Keystone Exams in Algebra I, Biology, and Literature.

Table 12–2. Summary of Item Residual Correlations

Administration	Content Area	Statistics										
		N	Mean	SD	Min	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max	>0.20
Winter	Algebra I	861	-0.02	0.03	-0.10	-0.06	-0.04	-0.02	0.00	0.01	0.16	0
	Biology	1431	-0.02	0.02	-0.11	-0.04	-0.03	-0.02	-0.01	0.00	0.17	0
	Literature	780	-0.02	0.04	-0.13	-0.08	-0.04	-0.02	0.00	0.01	0.26	1
Spring	Algebra I	861	-0.02	0.03	-0.09	-0.06	-0.04	-0.02	-0.01	0.01	0.28	1
	Biology	1431	-0.02	0.02	-0.08	-0.04	-0.03	-0.02	-0.01	0.01	0.09	0
	Literature	780	-0.02	0.04	-0.11	-0.08	-0.04	-0.02	0.00	0.02	0.21	1
Summer	Algebra I	861	-0.02	0.04	-0.15	-0.07	-0.05	-0.02	0.00	0.02	0.23	2
	Biology	1431	-0.02	0.04	-0.17	-0.07	-0.05	-0.02	0.01	0.03	0.18	0
	Literature	780	-0.02	0.05	-0.18	-0.09	-0.06	-0.03	0.01	0.04	0.26	3

ITEM FIT

WINSTEPS provides two item-fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. Though both are informative, the Zstd values are very likely too sensitive to the large sample sizes observed on the Keystone Exams. In this situation it is recommended that the Zstd values be ignored if the MnSq values are acceptable (Linacre, 2009).

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low-information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit values since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0, and it can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding practically significant MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. In the results below, values outside of 0.7 to 1.3 are given practical importance.

Table 12–3 presents the summary statistics of infit and outfit mean square statistics for the Keystone Exams in Algebra I, Biology, and Literature, including the mean, SD, and minimum and maximum values. The number of items within the range of [0.7, 1.3] is also reported in Table 12–3. As can been seen, the mean values for both fit statistics were close to 1.00 for all the exams. Most of the items had fit statistics falling in the range of [0.7, 1.3].

Table 12–3. Summary of Infit and Outfit Mean Square Statistics

Administration	Content Area	Infit Mean Square					Outfit Mean Square				
		Mean	SD	Min	Max	[0.7, 1.3]	Mean	SD	Min	Max	[0.7, 1.3]
Winter	Algebra I	1.02	0.11	0.64	1.23	41/42	1.05	0.15	0.63	1.32	40/42
	Biology	0.99	0.09	0.66	1.18	53/54	0.99	0.13	0.56	1.31	51/54
	Literature	1.02	0.14	0.71	1.43	38/40	1.08	0.21	0.71	1.65	35/42
Spring	Algebra I	1.01	0.12	0.78	1.28	42/42	1.02	0.19	0.65	1.41	37/42
	Biology	0.99	0.1	0.78	1.18	54/54	0.98	0.15	0.62	1.3	53/54
	Literature	1.02	0.17	0.64	1.3	38/40	1.05	0.26	0.59	1.6	30/40
Summer	Algebra I	1.04	0.13	0.79	1.35	40/42	1.07	0.2	0.71	1.63	36/42
	Biology	0.97	0.13	0.5	1.3	52/54	0.97	0.16	0.45	1.43	50/54
	Literature	1	0.14	0.66	1.34	38/40	1.02	0.19	0.64	1.65	35/42

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as *logits*, rather than using the percent-correct metric. In the simplest case, a logit is a transformed *p*-value with the average *p*-value becoming a logit of zero. In this form, logits resemble *z*-scores or standard normal deviates; a very difficult item might have a logit of +4.0 and a very easy item might have a logit of –4.0. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over *p*-values. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0, respectively, are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero, whether the average item *p*-value for the student sample is 0.8 or 0.3.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items on any form at zero. Under normal circumstances where all students are administered the same set of items, any item with a *p*-value lower than the average item on the form receives a positive logit and any item with a *p*-value higher than the average receives a negative logit. Consequently, the logits for any calibration relate to an arbitrary origin defined

by the center of items on that form. Logits for both item difficulties and student abilities are placed on the same scale and relate to the same mean item difficulty.

There are a number of other choices that could be made for centering the item difficulties. Rather than using all the items, the origin could be defined by content. For the Keystone Exams, all test forms in a particular content area share the same operational item set. All items on each form can then be easily adjusted to a single origin by defining the origin as the mean of the operational items. With this done, the origins for all the forms will be statistically equal. For example, items on any two forms that are equally difficult will now have statistically equal logit difficulties.

Appendix J reports the item statistics including classical and Rasch logit difficulties for all the operational items and the field test items embedded in the spring forms. Table 12–4 summarizes the Rasch logit difficulties of the operational items on each test for each administration. The mean of MC item difficulty was no longer equal to zero as it was for the 2011 administration. This is because all the item parameter estimates were anchored to the pre-equated values. The mean item difficulty ranged from 0.05 to 0.36. The mean item difficulties for MC items were smaller than those for the CR items. Table 12–4 also shows the mean standard errors (SE) of the item difficulties, which were relatively small, suggesting that items were calibrated with very small errors. The minimum (Min) and maximum (Max) values and standard deviations (SD) suggest the Keystone Exams items covered a relatively wide range of difficulties.

Table 12–4. Summary of Rasch Item Difficulties

Administration	Content Area	Item Types	*N*	Mean Item Difficulty	Mean SE	SD	Min	Max
Winter	Algebra I	All	42	0.36	0.01	0.80	-1.81	1.74
		MC	36	0.23	0.01	0.76	-1.81	1.36
		CR	6	1.12	0.00	0.58	0.11	1.74
	Biology	All	54	0.10	0.01	0.70	-1.99	1.78
		MC	48	-0.03	0.01	0.60	-1.99	1.22
		CR	6	1.08	0.01	0.71	0.01	1.78
	Literature	All	40	0.34	0.01	0.77	-1.02	2.15
		MC	34	0.21	0.01	0.76	-1.02	2.15
		CR	6	1.09	0.01	0.28	0.73	1.38
Spring	Algebra I	All	42	0.17	0.00	0.86	-1.44	2.06
		MC	36	-0.02	0.01	0.77	-1.44	1.19
		CR	6	1.27	0.00	0.57	0.60	2.06
	Biology	All	54	0.02	0.01	0.68	-1.71	1.50
		MC	48	-0.07	0.01	0.65	-1.71	1.06
		CR	6	0.73	0.00	0.51	0.10	1.50
	Literature	All	40	0.21	0.01	0.82	-1.24	1.65
		MC	34	0.12	0.01	0.85	-1.24	1.65
		CR	6	0.75	0.00	0.19	0.52	1.03
Summer	Algebra I	All	42	0.29	0.05	0.82	-1.28	2.16
		MC	36	0.12	0.05	0.74	-1.28	1.48
		CR	6	1.30	0.03	0.51	0.90	2.16
	Biology	All	54	0.05	0.07	0.70	-2.10	1.35
		MC	48	-0.05	0.08	0.66	-2.10	1.03
		CR	6	0.86	0.05	0.36	0.48	1.35
	Literature	All	40	0.32	0.08	0.69	-1.84	1.68
		MC	34	0.22	0.09	0.69	-1.84	1.68
		CR	6	0.90	0.05	0.34	0.40	1.24

ITEM DIFFICULTY-STUDENT ABILITY MAP

The distributions of the Rasch item logits (item difficulty estimates) are shown on the item difficulty-student ability maps presented in Figure 12–1. In each item-student map, markers on the right-hand side represent student ability values, whereas markers on the left-hand side represent item difficulty parameter estimates. As noted earlier, the Rasch model enables placement of both items and students on the same scale. Consequently, one can easily visualize information about how the difficulty of the test items related to the ability distribution of students who took the test. The students located in the upper-right quadrant of any given plot have relatively higher ability. Items in the lower-left quadrant are relatively easier.[6] The three dashed lines (from bottom to top) represent the performance cuts: below basic/basic, basic/proficient, and proficient/advanced. The common pattern seen across all maps was that the item difficulties were comparable to the student ability levels. For Literature, the items were slightly easier relative to the student ability levels. It is also important to understand where the items are providing more accurate measurement. This issue is addressed more fully in Chapter Eighteen (see Figure 18–2).

[6] Of course, high-ability students have higher probabilities of correctly answering easier items. Similarly, low-ability students (in lower-right quadrant of any given plot) have lower probabilities of answering harder items (in upper-left quadrant).

Figure 12–1. Item Difficulty-Student Ability Maps

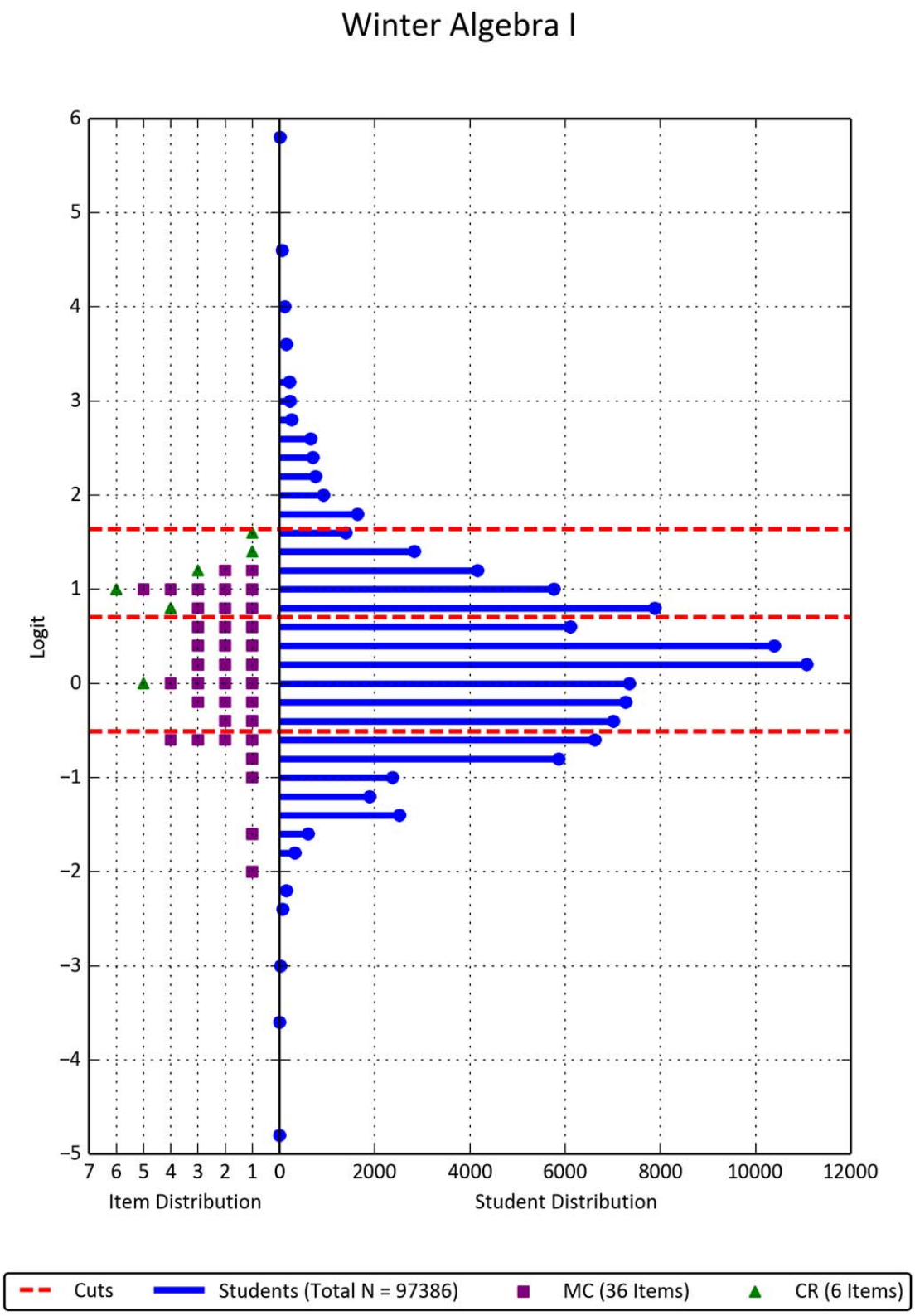


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

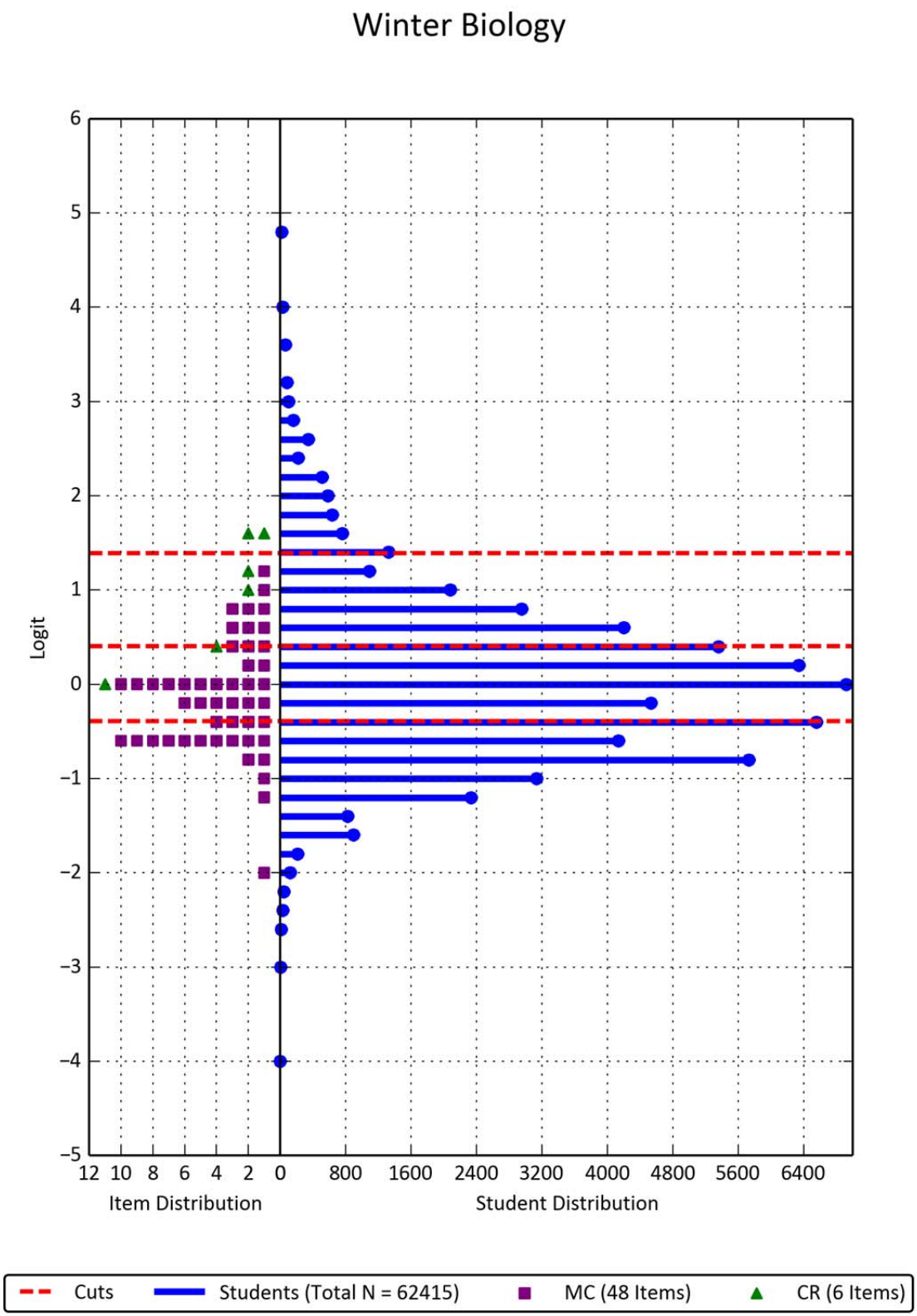


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

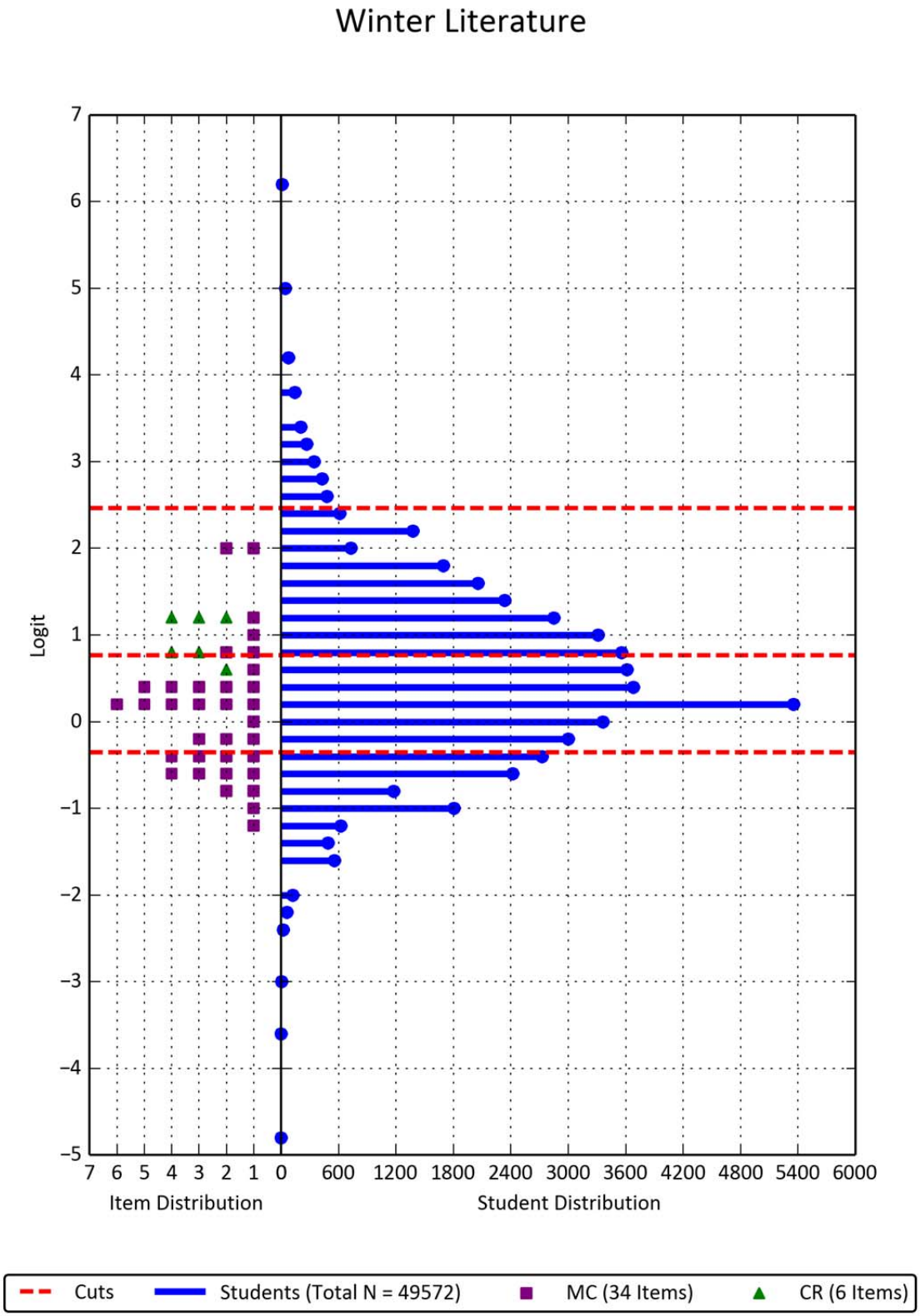


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

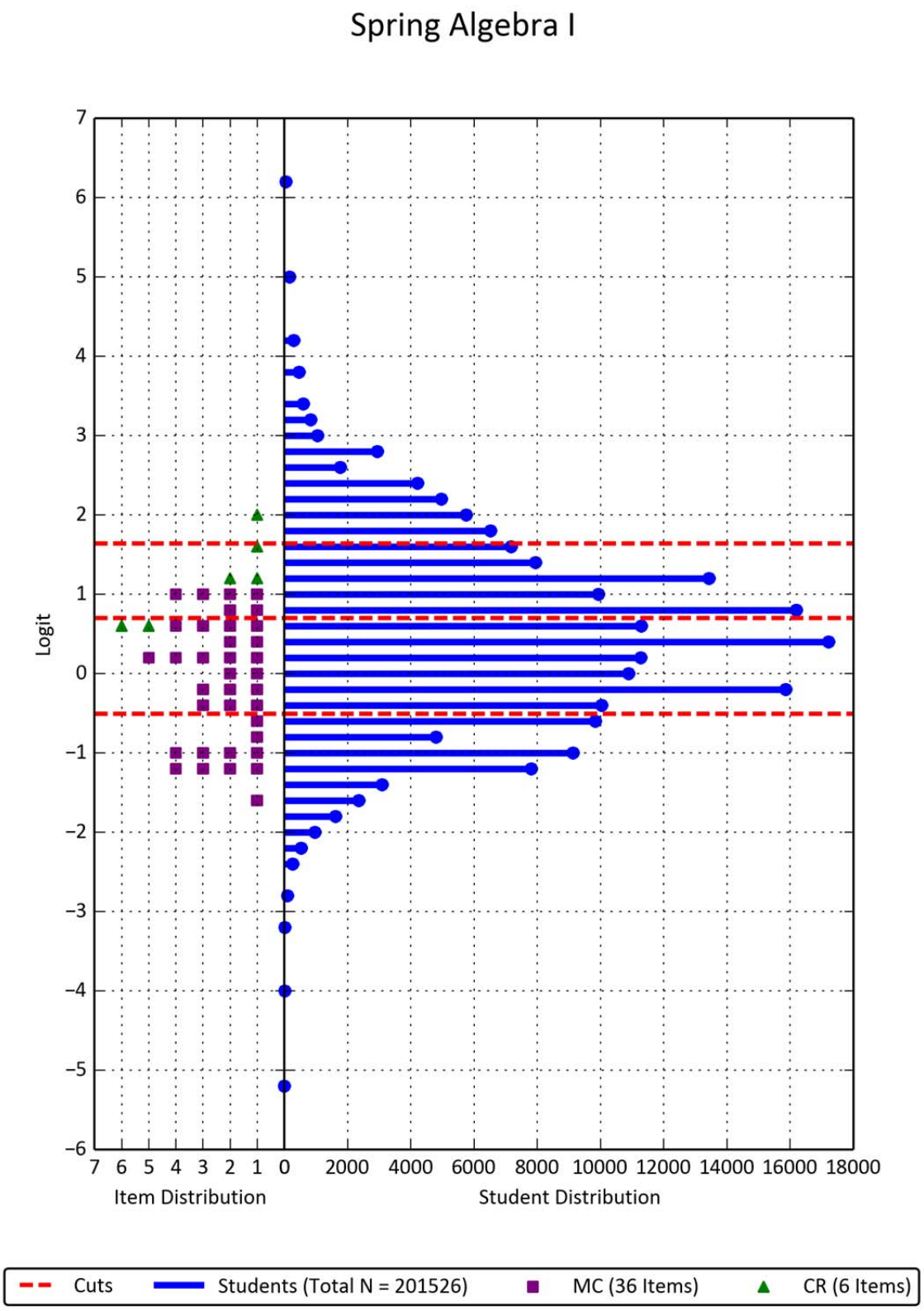


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

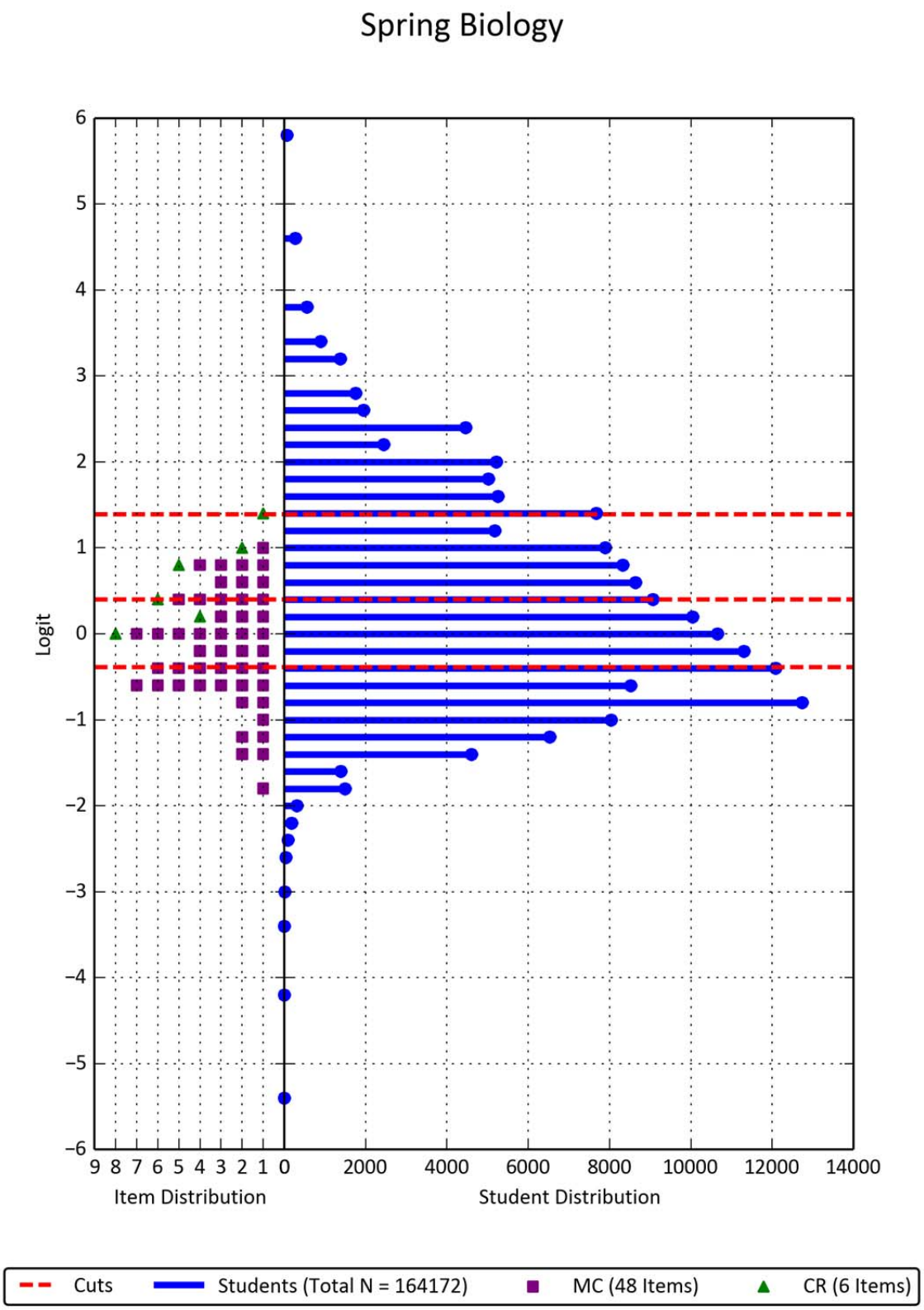


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

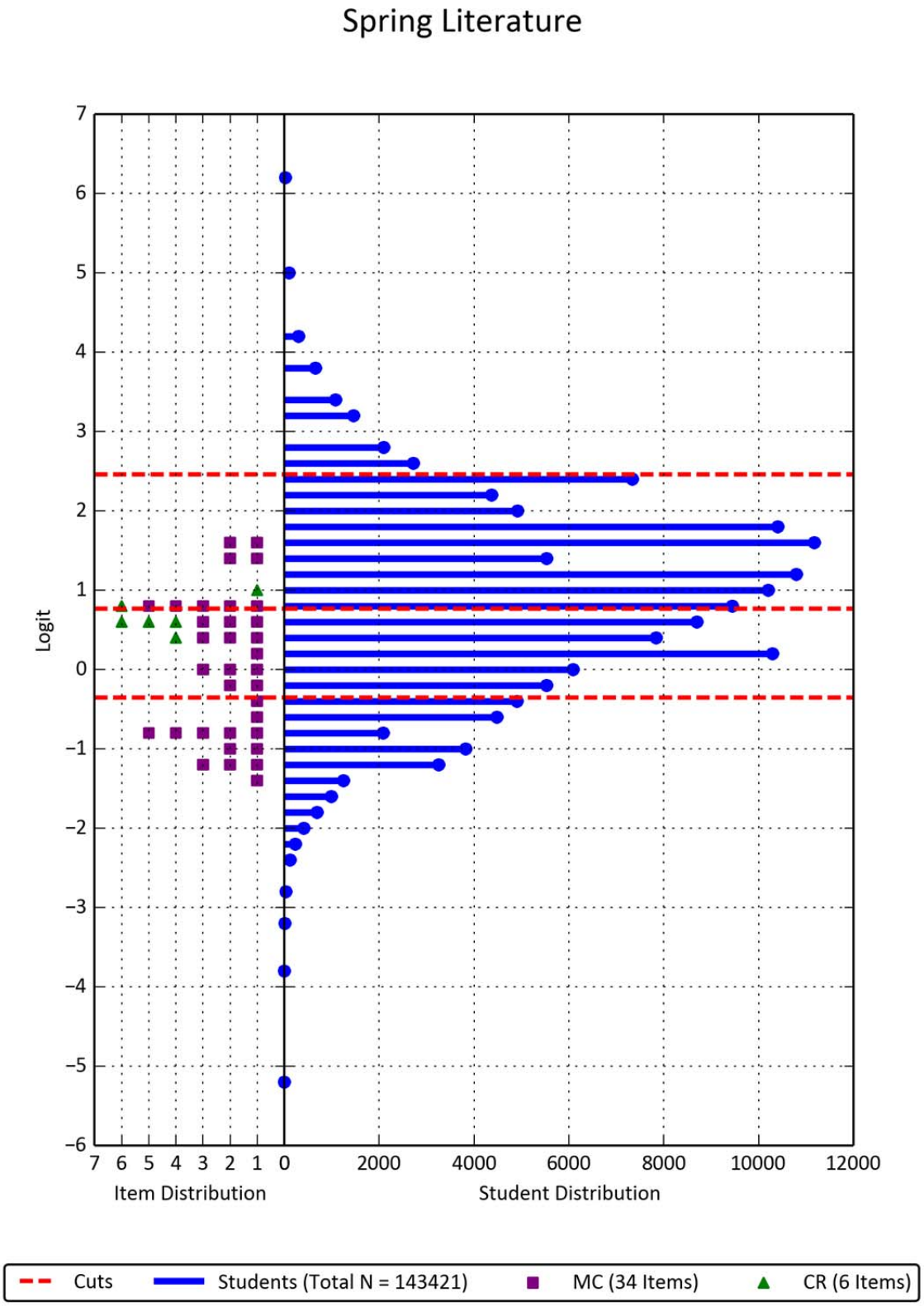


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

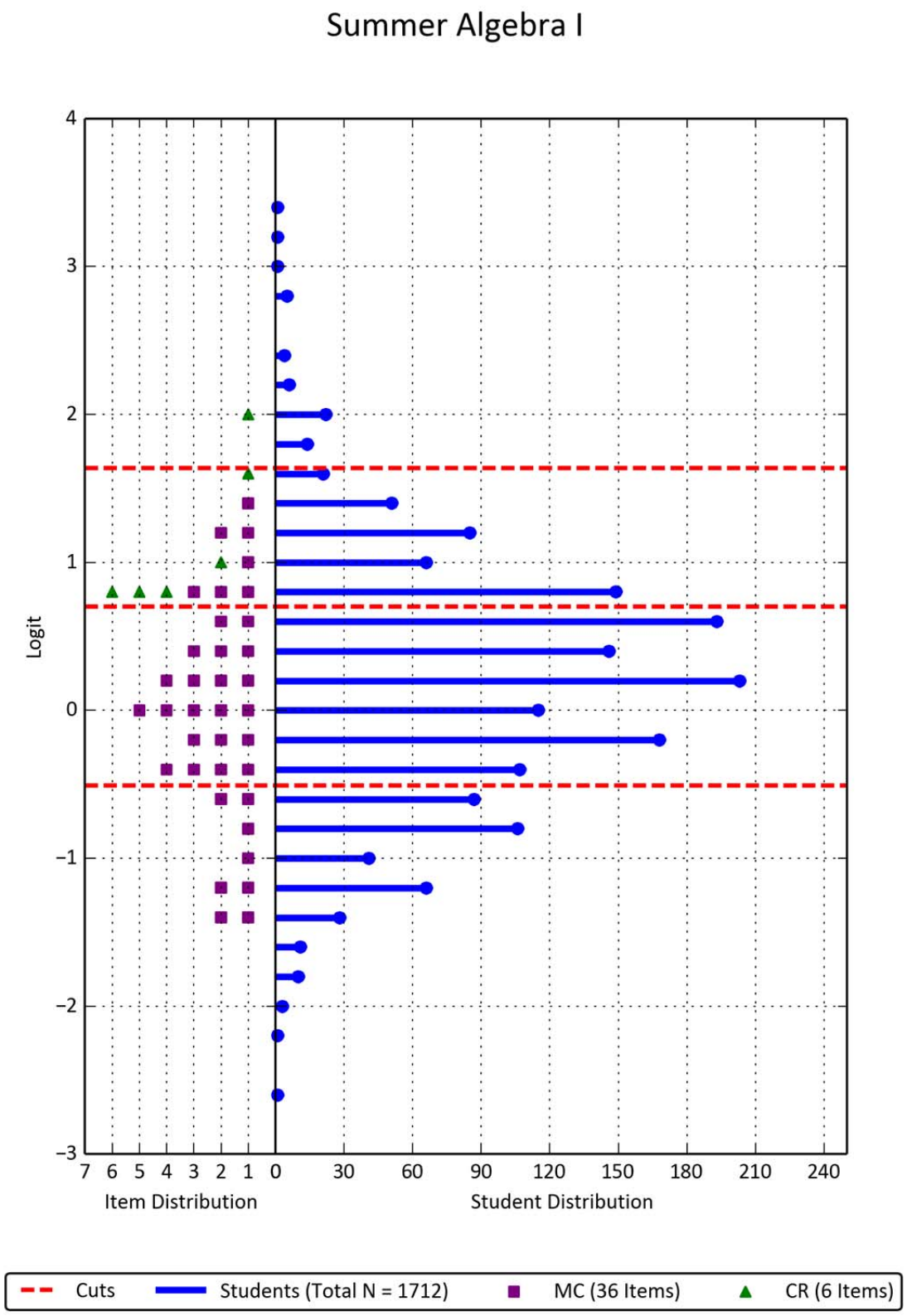


Figure 12–1 (continued). Item Difficulty-Student Ability Maps

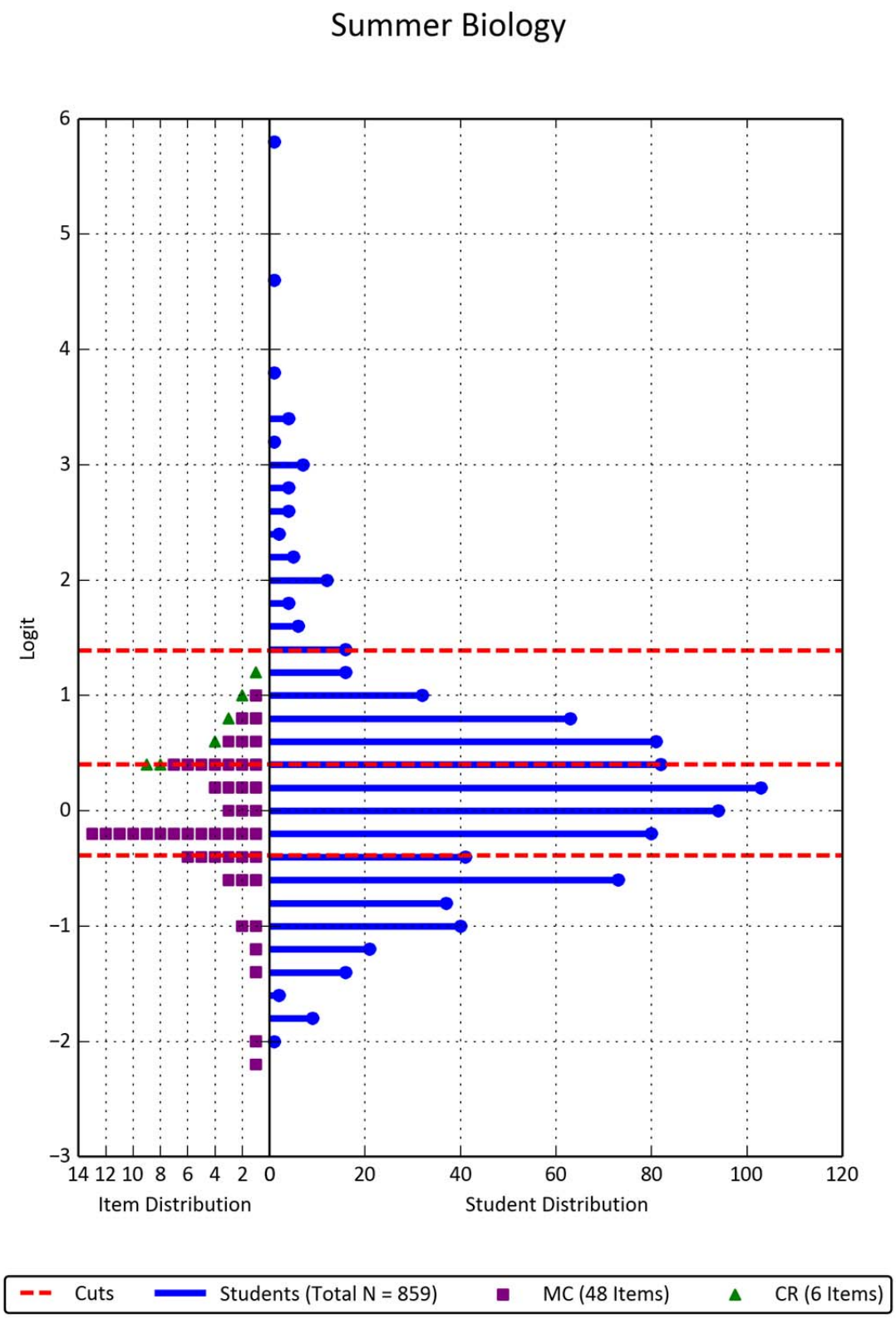
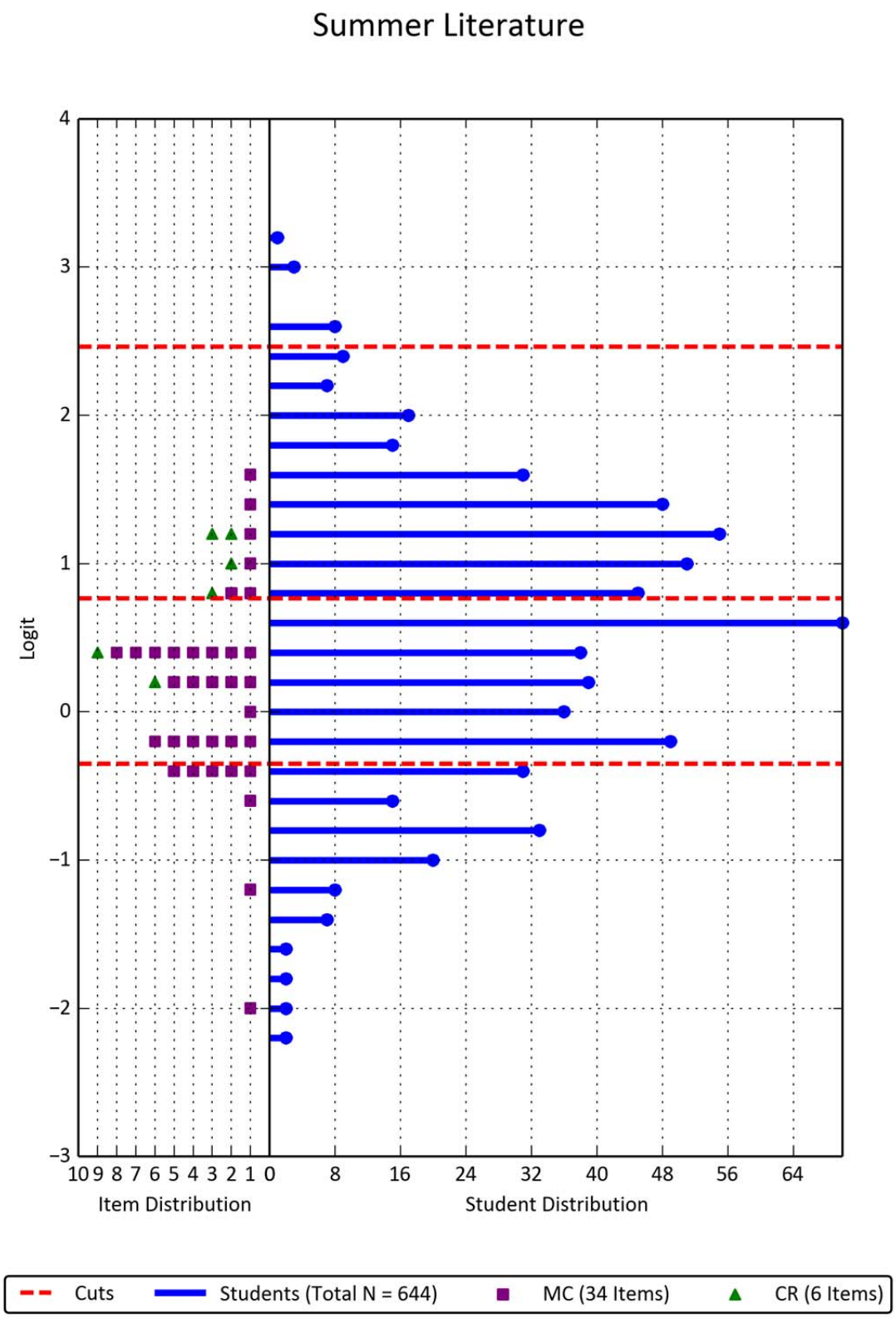


Figure 12–1 (continued). Item Difficulty-Student Ability Maps



CHAPTER THIRTEEN: STANDARD SETTING

STANDARD SETTING AND PERFORMANCE LEVEL DESCRIPTORS

The Keystone Performance Level Descriptors (PLDs) are paragraphs that describe the knowledge and skills expected at different performance levels with respect to the content standards (Pennsylvania Keystone Exams Assessment Anchor Content Standards and Eligible Content) for each of the Keystone Exams. Descriptors must be clearly written to ensure that all stakeholders have a common understanding of what describes expected performance at the various levels (i.e., Below Basic, Basic, Proficient, and Advanced). PLDs were developed, reviewed, and finalized by the PDE/QRT[7] and committees of Pennsylvania educators as required by the Chapter 4 Regulations. After the development and final review by PDE/QRT and Pennsylvania educators, the descriptors were prepared for use during the standard setting workshop. During this meeting, the descriptors were used to guide the standard setting process for each of the Keystone Exams. They were instrumental to the validity and defensibility of the standard setting process.

The standard setting for the Algebra I, Biology, and Literature Keystone Exams was conducted by Data Recognition Corporation (DRC) using a Bookmark procedure (Lewis, Mitzel, & Green, 1996) during a workshop held in Harrisburg, Pennsylvania, June 23–24, 2011. After the standard setting event, the descriptors were finalized. Along with the recommended cut scores, final PLDs for each of the Keystone Exams were submitted to the Pennsylvania Board of Education for final approval.

Below is a summary of the process that was used to guide the development of the Keystone Exams PLDs and a summary of the methodology and results of the standard setting workshop. Additional details about the standard setting event can be found in the *Keystone Standard Setting Technical Report* (Pennsylvania Department of Education, 2011).

DEVELOPMENT OVERVIEW FOR THE PERFORMANCE LEVEL DESCRIPTORS

The Keystone Exams PLDs were developed by Pennsylvania educators during two meetings. The goal of the first meeting was to have Pennsylvania educators review the general Pennsylvania Policy Definitions that describe, at a high level, performance expected for each level and complete an in-depth analysis of the Keystone Exams Assessment Anchors and Eligible Content in order to create a bulleted list describing, in detail, what students are expected to know and be able to do at each performance level. The goal of the second meeting was to have committees of Pennsylvania educators review the Pennsylvania Policy Definitions again and draft general descriptors (paragraphs) that build upon and/or summarize the information from the bulleted lists of what students are expected to know and be able to do at each performance level.

Guiding documents were prepared for each meeting. The guiding documents included the following:

- PowerPoint training presentations
- Meeting agendas
- Assessment Anchors and Eligible Content documents

[7] The PDE/QRT includes the representatives from the Pennsylvania Department of Education, members of the Quality Review Team, and/or others appointed by the Quality Review Team.

- Policy definitions
- Other relevant materials as needed to help guide the work of the committees

All meeting materials were submitted to PDE/QRT for review and approval before each Keystone Exams meeting following an agreed-upon development schedule. The following section provides specific information concerning each meeting.

ROLE OF FACILITATORS AND OBSERVERS FOR THE MEETINGS

The role of the facilitators was to ensure that a fair and orderly consensus process was followed for each meeting, that the committee members' work was adequately documented, and that the process stayed on schedule. The facilitators developed the agenda, prepared all meeting materials such as the PowerPoint training presentations and the task-guiding documents, and provided the initial training on the development of the specific descriptors (meeting 1) and the general descriptors (meeting 2). PDE/QRT members supported the facilitation process and/or served as observers of the process.

The facilitators also served as a resource, answering questions pertaining to the content of the standards (Assessment Anchor Content Standards and Eligible Content) and the documents developed to guide the process. Facilitators also summarized the results of each meeting, finalized the results, and prepared the specific descriptors/bulleted lists (meeting 1) and the general descriptors (meeting 2) for PDE/QRT review and approval.

PERFORMANCE LEVEL DESCRIPTORS MEETING 1

CREATING SPECIFIC LISTS DESCRIBING WHAT STUDENTS SHOULD KNOW AND BE ABLE TO DO AT EACH PERFORMANCE LEVEL

The first PLD meeting for Algebra I, Biology, and Literature Exams was held May 18–19, 2010, in Harrisburg, Pennsylvania. The purpose of the first meeting was to guide Pennsylvania educators in understanding the Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature for what the Commonwealth of Pennsylvania determined students should know and be able to do for a given Keystone Exam subject. Committee members applied this understanding to the development of a bulleted list of specific determinations as to the level of knowledge and skills deemed necessary for each performance level. The section below describes the process used in the first meeting.

TRAINING

Pennsylvania educators received general training on how to develop specific PLDs, including training on how to describe student performance in relation to the Keystone Exams Assessment Anchors and Eligible Content. The training also provided educators with a general overview of the Standards Aligned System (SAS) and the high-level plan for the Keystone Exams. Definitions of key terms (e.g., Assessment Anchor Content Standards, Eligible Content, Performance Level Descriptors) were provided along with information on the background and purpose of the Keystone Exams. Keystone Exams content-specific materials (e.g., Assessment Anchor Content Standards, Eligible Content, other guiding documents) were distributed. The PDE/QRT also provided information on the policy definitions for existing Pennsylvania assessments.

ANALYZING THE ASSESSMENT ANCHORS AND ELIGIBLE CONTENT AND THE GENERAL POLICY DEFINITIONS FOR PENNSYLVANIA ASSESSMENTS

Following the introductory training, educators were divided into groups according to each Keystone Exam. Each group focused specifically on the task at hand—developing the specific PLDs for a given Keystone Exam. Committee members were informed of the format of the specific descriptors (bulleted list) and the number of proposed performance levels for each Keystone Exam (Below Basic, Basic, Proficient, and Advanced). Committee members were then given time to familiarize themselves with the policy definitions and the Assessment Anchors and the Eligible Content for a given Keystone Exam. They were provided with PDE/QRT-approved guiding documents to facilitate the process. Beginning with Proficient, committee members were asked to draft, in bulleted-list format, each performance level for Basic, Proficient, and Advanced, making sure to consider the knowledge and skills required or deemed necessary for each performance level. Note: Educators were not asked to create a specific descriptor for Below Basic.

DRAFTING SPECIFIC DESCRIPTORS

Outlined below is the sequence of steps taken to develop specific descriptors. The sequence was not always followed exactly. For example, some steps occurred simultaneously; other steps were repeated as needed or reordered as necessary.

1. The committee began with the development of the bulleted list for Proficient to serve as a model for the work during the remainder of the development process. As a formative first task using the Assessment Anchors and Eligible Content and the Pennsylvania Policy Definition for Proficient, the committee was asked to discuss, deliberate, and reach consensus on its initial bulleted list of the knowledge and skills needed to be considered Proficient. During this process, members were encouraged to consult all available resources and guiding documents. Particular emphasis was placed on the alignment of the knowledge and skills necessary for Proficient performance with what students are expected to know and be able to do as defined by the Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature.
2. Once the committee drafted a bulleted list of the knowledge and skills needed to describe Proficient performance based upon the Assessment Anchors and Eligible Content, a group discussion took place. In reviewing the bulleted list for Proficient, the educators were specifically asked to determine whether all members agreed that the list included the appropriate knowledge and skills from the Assessment Anchors and Eligible Content to describe the Proficient performance level and that all Assessment Anchors and Eligible Content were sufficiently addressed.
3. The results of the discussion were summarized, and suggested revisions were made. The summary feedback was presented to the committee for additional consideration. An open discussion followed. Committee consensus was reached.
4. Following development of the bulleted list of the knowledge and skills needed for the Proficient performance level as determined by the committee, the committee began the development of the bulleted lists describing the specific knowledge and skills needed for Basic and Advanced. To complete the task, the committee members followed the procedures analogous to those used to develop the specific bulleted list for the Proficient performance level. These procedures included, as a formative first task, the committee's use of the Assessment Anchors and Eligible Content and the Pennsylvania Policy Definitions (e.g., Basic, Advanced) to discuss, deliberate, and reach consensus on its initial bulleted list of the knowledge and skills needed for Basic and then Advanced. This order of development—Proficient first, followed by Basic and then Advanced—was followed throughout the remainder of the process.

Once the initial drafts of the bulleted lists for Basic, Proficient, and Advanced were developed, a group discussion took place. To guide the discussion, the following questions were used to evaluate each specific descriptor (bulleted list) for a given performance level (Basic, Proficient, Advanced):

- Is the description of the performance level appropriate? If not, what revisions need to be made?
- Is the description of the specific Keystone Exam inappropriate because the list of knowledge and skills included in the description of the performance level is too demanding? If so, what revisions need to be made?
- Is the description inappropriate because the knowledge and skills included in the description of the performance level is inconsistent with the expectation of the high standards as reflected in the Policy Definition? If so, what revisions need to be made?
- Is the description inappropriate because the knowledge and skills included in the description of the performance level might be too easy? If so, what revisions need to be made?

5. The results of the discussion were summarized, and suggested revisions were listed. The summary feedback was presented to the committee for additional consideration. An open discussion followed. Depending upon the degree of concurrence, the facilitators proposed revisions based on the committee members' feedback to the specific descriptors (bulleted lists) for each descriptor. Committee consensus was reached.
6. Once consensus was reached, the bulleted lists or specific descriptions for each performance level were reviewed once again to confirm that all Assessment Anchors and Eligible Content were sufficiently addressed for each performance level and that the lists showed a clear progression from one performance level to the next. The results of the discussion were summarized, and suggested revisions were listed. The summary feedback was presented to the committee for additional consideration. An open discussion followed. Depending upon the degree of concurrence, the facilitators proposed revisions to the lists for each descriptor based on the committee members' feedback. Committee consensus was reached.
7. Following completion of the committee's work, the specific PLDs or bulleted lists of the knowledge and skills needed for each descriptor were collected. The bulleted lists were prepared for final review by the PDE/QRT. Upon approval by the PDE/QRT, the bulleted lists of the knowledge and skills describing each performance level were posted on the PDE website for additional review and feedback.

PERFORMANCE LEVEL DESCRIPTORS MEETING 2

CREATING GENERAL DESCRIPTIVE PARAGRAPHS DESCRIBING WHAT STUDENTS SHOULD KNOW AND BE ABLE TO DO AT EACH PERFORMANCE LEVEL

The second meeting for Algebra I, Biology, and Literature Exams took place in Harrisburg, Pennsylvania, on April 27–28, 2011. The second meeting built upon the work completed at the first meeting. The purpose of the second meeting was to guide the committee of Pennsylvania educators in developing general PLDs (paragraphs) for each of the performance levels (Basic, Proficient, and Advanced). These paragraphs were clearly written to ensure all stakeholders have a common understanding of what describes expected performance at the various levels. The paragraphs were not to be as specific as the bulleted lists but were to be aligned to the bulleted lists. In order to complete the task, the educators reviewed the Pennsylvania Policy Definitions for the performance levels.

Table 13–1. Pennsylvania Policy Definitions

Level	Description
Advanced	The Advanced Level reflects superior academic performance. Advanced work indicates an in-depth understanding and exemplary display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content.
Proficient	The Proficient Level reflects satisfactory academic performance. Proficient work indicates a solid understanding and adequate display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content.
Basic	The Basic Level reflects marginal academic performance. Basic work indicates a partial understanding and limited display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content. This work is approaching satisfactory performance, but has not been reached. There is a need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.
Below Basic	The Below Basic Level reflects inadequate academic performance. Below Basic work indicates little understanding and minimal display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

The committee members then reviewed the specific bulleted list describing the knowledge and skills for Proficient based upon the Assessment Anchors and Eligible Content to determine whether the list of knowledge and skills provided in the bulleted list was still in alignment with the Policy Definition for Proficient. This review by the committee also included an in-depth analysis of the Assessment Anchors and Eligible Content. The section below describes, in detail, the process used in the second meeting.

TRAINING

Pennsylvania educators received general training on how to develop general descriptors (paragraphs) that describe performance at the various levels, including training on how to describe student performance in relation to the Keystone Exams Assessment Anchors and Eligible Content. The training also included providing Pennsylvania educators with a general overview of the SAS and the high-level plan for the Keystone Exams. Definitions of key terms (e.g., Assessment Anchor Content Standard, Eligible Content,

specific and general Performance Level Descriptors) were provided along with information on the background and purpose of the Keystone Exams. A review of the Pennsylvania Policy Definitions was also included in the training, including a discussion of how the policy definition for Proficient relates to what it means to be Proficient on a given Keystone Exam. Content-specific materials (e.g., Policy Definitions, Assessment Anchor Content Standards and Eligible Content, specific descriptors or bulleted lists from the first meeting, other guiding documents) were also distributed.

ANALYZING THE ASSESSMENT ANCHORS AND ELIGIBLE CONTENT AND THE POLICY DEFINITION FOR PROFICIENT

Following the introductory training, Pennsylvania educators were divided into groups according to Keystone Exam. Each group focused specifically on the task at hand—developing the general PLD paragraphs (Basic, Proficient, and Advanced) for a given Keystone Exam. To begin the process, educators reviewed the Pennsylvania Policy Definition for Proficient.

DRAFTING GENERAL DESCRIPTOR PARAGRAPHS

Once the committee reviewed the bulleted list for alignment to the Policy Definition for Proficient, committee members were asked to describe, in general terms, the knowledge and skills deemed necessary for each performance level (Basic, Proficient, and Advanced), beginning with Proficient. As a formative first task, committee members were instructed to refer to the bulleted list of the knowledge and skills required or deemed necessary for each performance level. Outlined below is the sequence of steps for the process used to develop the general PLD paragraphs. The sequence was not always followed exactly. For example, some steps occurred simultaneously; other steps were repeated as needed or reordered as necessary.

The committee began with the development of the general descriptor paragraph for the Proficient performance level. This general descriptor served as a model for the committee's work during the remainder of the development process. Using the Assessment Anchors and Eligible Content, the specific descriptors (bulleted list) for Proficient, and the Pennsylvania Policy Definition for Proficient, the committee was asked to discuss, deliberate, and reach consensus on a written description of the knowledge and skills needed for Proficient. During the process, members were encouraged to consult all available resources and guiding documents. Particular emphasis was placed on the alignment of the knowledge and skills necessary for the Proficient performance descriptor to the Assessment Anchors and Eligible Content for the given Keystone Exam.

> *Note*: In order to help guide educators in the development of the general descriptor paragraph for Proficient, samples of descriptor paragraphs for Algebra I, Biology, and Literature (e.g., Georgia, North Carolina) were provided. The committee members were encouraged to approach the task by noting how the sample general descriptors must provide the right words to define performance—having a balance between keeping the description of Proficient general enough yet not as specific as the bulleted list. Committee members were also encouraged not to focus too heavily upon style, grammar, and mechanics at this stage. In other words, committee members were not to serve as "wordsmiths."

1. Once an initial draft paragraph summarizing the knowledge and skills needed to describe Proficient performance was developed, a group discussion took place. Committee members were asked to review the draft paragraph and determine whether the paragraph provided a clear description of what it means to be Proficient on a given Keystone Exam and the Policy Definition for Proficient. The goal of the discussion was to reach consensus.
2. Following development of the general paragraph describing Proficient, the committee began the development of the general paragraph describing Basic performance and the general paragraph describing Advanced performance. To complete the task, the committee members followed the procedures analogous to those used to develop the general paragraph describing Proficient performance on a given Keystone Exam. This process included, as a formative first task, using the Assessment Anchors and Eligible Content, the specific descriptors (bulleted lists), and the Pennsylvania Policy Definitions for a given level (e.g., Basic, Advanced) and discussing, deliberating, and reaching consensus on the knowledge and skills needed for Basic and the knowledge and skills needed for Advanced. This order of development—Proficient first, followed by Basic and then Advanced—was followed throughout the remainder of the process.
3. Once the initial draft paragraphs were developed for the other performance levels, a group discussion took place. In reviewing the state of development of the general PLD paragraphs at this stage, the committee members were asked to consider the following questions:
    - Does each paragraph clearly summarize the knowledge and skills required for a given performance level (Basic, Proficient, and Advanced)? If not, what revisions need to be made?
    - Does each paragraph provide for an appropriate description of the performance level? In other words, does each paragraph provide an overview or summary of the knowledge and skills appropriate for a given performance level? If not, what revisions need to be made?
    - Does any paragraph provide information that should not be included in the description of the performance level? If so, what revisions need to be made?
    - Is there information in any PLD paragraph that does not align well with the Pennsylvania Policy Definitions for a given performance level? If so, what revisions need to be made?
    - Do any paragraphs include information that might be inconsistent with the knowledge and skills defined by the Assessment Anchors and Eligible Content? If so, what revisions need to be made?
    - Does any paragraph include information describing performance that might be too demanding or too easy? If so, what revisions need to be made?
4. The results of the discussion were summarized, and revisions to each general PLD paragraph were made. Committee consensus was reached.
5. Once consensus was reached, the paragraphs describing performance at each level were reviewed again by the committee to confirm the following:
    - The PLD paragraphs show a clear progression from one performance level to the next level.
    - The PLD paragraphs are consistent with the Pennsylvania Policy Definitions.
    - The PLD paragraphs are aligned to the Assessment Anchors and Eligible Content.

6. The results of the discussion were summarized, suggested revisions were made, and committee members' feedback was incorporated into the paragraphs. Committee consensus was reached.
7. Following completion of the committee's work, the general PLD paragraphs were provided to PDE/QRT for final review and feedback. Upon approval by PDE/QRT, the general PLD paragraphs were used to guide the standard setting process.

STANDARD SETTING

A major purpose in the design of the standard setting workshop for the Keystone Exams is to establish procedures to set the performance cuts for the newly developed exams and, at the same time, adhere to the framework required by federal guidelines (USED, 2004) for setting performance levels. Federal guidelines (USED, 2004: Sect 2) specify that the setting of performance standards must involve the following elements:

- Formal adoption of performance categories that comprise at least three levels
- Pluralistic representation by education stakeholders, to include, for example, members of the public, school teachers and administrators, special education teachers, etc.
- Performance standards based primarily on expert judgment regarding content-based expectations of student achievement, but including the consideration of student impact data
- Descriptions of the competencies associated with each performance level

Accordingly, the standard setting workshop is designed to satisfy the following goals:

- A defensible and federally acceptable standard setting methodology that emphasizes a content-based approach for recommending the new performance standards
- The incorporation of PLDs developed by Pennsylvania educators into the standard setting process. (The larger goal around the incorporation of PLDs into the process is to help ensure the alignment of Pennsylvania's content standards to performance expectations as established by the recommended cut scores.)

The panelists were informed that the results from this meeting would be presented to the Board for review and possible adoption.

PANELIST RECRUITMENT

PDE selected committee members for the Algebra I, Biology, and Literature standard setting workshop mostly from members who participated in the May 2010 and April 2011 Performance Level Advisory committees. These committee members were selected as the starting pool because they represented the diversity of the Commonwealth of Pennsylvania, had a mix of teaching and committee experience, and, most importantly, were familiar with the PLDs of the Keystone Exams. From this list, PDE selected a subset of 25 members for Algebra I, 25 members for Biology, and 23 members for Literature to serve as eligible candidates. DRC, in collaboration with PDE and its Technical Advisory Committee (TAC), established a target of 15 to 20 participants for each of the Keystone Exams in Algebra I, Biology, and Literature.

Between March and June 2011, a great effort was made to recruit enough panelists to meet the target number of participants. In accordance with federal guidelines for representative committees and TAC's recommendation of recruiting a few committee members with higher education experience, the following background factors were applied in the recruitment decision:

- Gender
- Ethnicity
- Grade level and higher education experience
- Content expertise
- Geographic location
- Specializations
- Experience in developing state academic standards, state assessments, and other related activities

However, due to the unavailability of and the cancellation by some committee members, a total of 15, 13, and 11 panelists attended the standard setting workshop for Algebra I, Biology, and Literature, respectively. Table 13–2 contains the summary information about the characteristics of the selected panelists for each content area based on their self-reported responses to the Participant Survey. As can be seen from this table, there were committee members who considered themselves minority in the Algebra I and Literature groups. There were also committee members with administration and/or teaching experience in higher education, special education, and/or individualized education plan (IEP); those with experience working in different regions; and those with different lengths of teaching experience.

Table 13–2. Self-Reported Demographic Composition of Panelists by Content Area

Demographic Information		Algebra I		Biology		Literature	
		N	Percentage	*N*	Percentage	*N*	Percentage
Gender	**Male**	9	60.0%	5	38.5%	5	45.5%
	Female	6	40.0%	8	61.5%	6	54.5%
Ethnicity	**Asian**	1	6.7%	0	0.0%	0	0.0%
	American Indian	0	0.0%	0	0.0%	0	0.0%
	Black	1	6.7%	0	0.0%	1	9.1%
	Latino	0	0.0%	0	0.0%	0	0.0%
	Multi-Race	0	0.0%	0	0.0%	0	0.0%
	White	13	86.7%	13	100.0%	10	90.9%
Role	**Classroom Teacher**	8	53.3%	9	69.2%	4	36.4%
	Educator	3	20.0%	0	0.0%	0	0.0%
	Higher Education Educator	3	20.0%	1	7.7%	4	36.4%
	Other	1	6.7%	3	23.1%	3	27.3%
Special Education	**Yes**	7	46.7%	7	53.8%	4	36.4%
	No	2	13.3%	4	30.8%	3	27.3%
	N/A	6	40.0%	2	15.4%	4	36.4%
LEP	**Yes**	4	26.7%	5	38.5%	2	18.2%
	No	4	26.7%	6	46.2%	5	45.5%
	N/A	6	40.0%	2	15.4%	4	36.4%
	Missing	1	6.7%	0	0.0%	0	0.0%
Region	**Urban**	3	20.0%	2	15.4%	2	18.2%
	Suburban	7	46.7%	5	38.5%	5	45.5%
	Rural	4	26.7%	6	46.2%	3	27.3%
	Other	1	6.7%	0	0.0%	1	9.1%
Experience	**Less than 10 years**	0	0.0%	5	38.5%	0	0.0%
	10–20 years	4	26.7%	2	15.4%	4	36.4%
	20–30 years	8	53.3%	4	30.8%	3	27.3%
	More than 30 years	3	20.0%	2	15.4%	4	36.4%

MATERIALS PREPARATION

Workshop materials were developed and printed by DRC. The following is a list of materials that were available to panelists during the workshop:

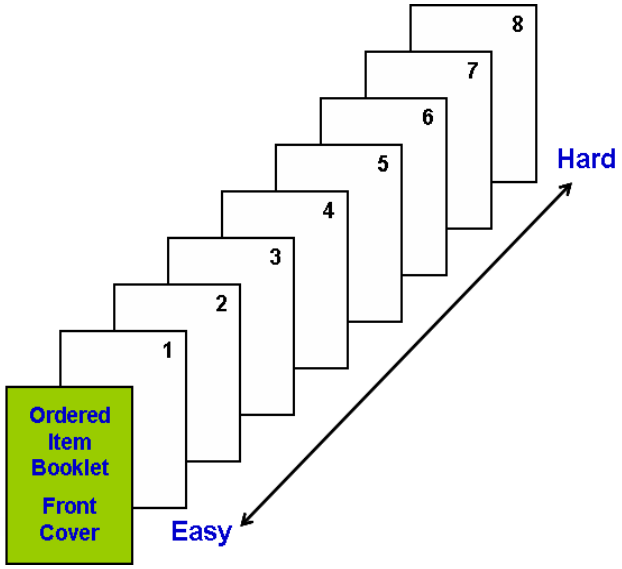
- Item Map
- Item Separation Map
- Ordered Item Booklet (OIB)
- Passages
- Scoring Rubrics
- 2011 Operational Test Form

- PLDs
- Content Standards
- Participant Rating Form
- Participant Survey
- Readiness Form
- Evaluation Form
- Adhesive bookmarks, pens, highlighters, etc.

Item Map. The item map is a summary document displaying relevant information regarding each item. It contains the OIB page number, the original test sequence, item type, key, and content standard. The item map is ordered by difficulty in the same manner as the ordered item booklet. The item separation map is a graphical display of the relative difficulty of each item.

Ordered Item Booklet. The ordered item booklet is composed of all the operational items included in the test given to students in Spring 2011. Items are ordered from the easiest to the hardest. Each page contains an item and a page number. For constructed-response (CR) items, each score point with a sample response has a unique location in the OIB. A visual illustration of the OIB is provided in Figure 13–1.

Figure 13–1. Illustration of Ordered Item Booklet



To ensure there was no item difficulty gap for the items in an OIB, a few field test items were added to the OIBs. Table 13–3 shows the number of items supplemented into the OIBs by content area.

Table 13–3. Number of Score Points in OIB and Number of Items Supplemented

Exam	Number of Score Points in OIB	Number of Items Supplemented
Algebra I	63	3
Biology	69	3
Literature	54	2

Details of all other materials can be found in the *Keystone Standard Setting Technical Report* (Pennsylvania Department of Education, 2011).

DATA PREPARATION

In Bookmark standard setting (Lewis et al., 1996), the locations of items are typically rescaled to produce better alignment with the task of asking panelists what a student should know and be able to do. A probability of 0.67 is often used to find the corresponding item location during rescaling because this probability aligns better with the likelihood panelists use to make their judgment on whether a borderline student should answer the item correctly or receive a score point or higher. For Keystone Exams, the multiple-choice (MC) items were calibrated using the familiar form of the dichotomous Rasch model. The CR items were calibrated using another model in the Rasch family, Master's partial-credit model (Wright & Masters, 1982). The latter model parameterizes each threshold needed to obtain the maximum score on the task. Consequently, there is one item difficulty parameter for each of the n – 1 score transitions (0/1, 1/2, etc.), or thresholds. Using the equated item parameters, the locations of items were rescaled to a response probability of 0.67 (i.e., RP=0.67). For MC items, the item locations were found by solving

$$\Phi_{ni} = \frac{\exp(\beta_n - \delta_i)}{1 + \exp(\beta_n - \delta_i)}$$

for the value of β_n that gives Φ_{ni} =0 .67. Φ_{ni} is the probability that person n scores 1 on item i; β_n is the ability of person n; and δ_i is the difficulty of item i.

For CR items, the probability of person n scoring x on item i is

$$\pi_{nix} = \frac{\exp \sum_{j=0}^{x} (\beta_n - \delta_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{x} (\beta_n - \delta_{ij})}, \quad x = 0, 1, \ldots, m_i$$

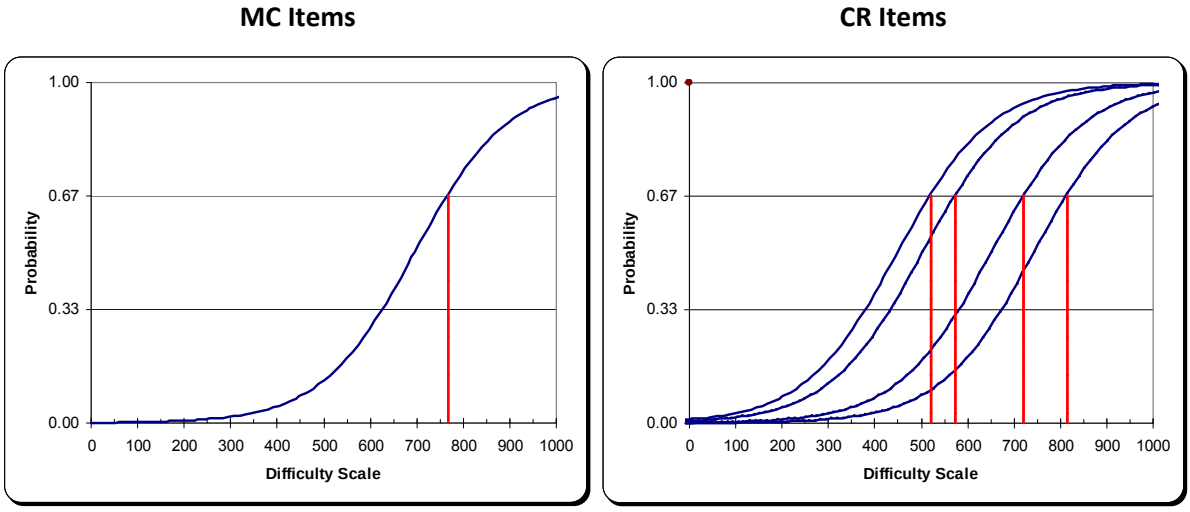
where m_i is the number of thresholds and, for notational convenience,

$$\exp \sum_{j=0}^{0} (\beta_n - \delta_{ij}) = 1.$$

This equation expresses the probability of person *n* scoring *x* on the m_i threshold of item *i* as a function of the person's measure (β_n) and the threshold difficulties (δ_{ij}) of the m_i thresholds for item *i*. The observation *x* is a count of the successfully completed item thresholds. The item location for a score point is determined by finding the β_n for the person who has a 0.67 probability of earning this score point or higher.

The figure below shows how the difficulty values of MC items and score values for the CR items were treated in determining their respective OIB placements. For an MC item (left plot), the difficulty is the point on the scale at which the examinees have a 0.67 probability of answering the item correctly. For the CR item (right plot), the four illustrated values (e.g., on a 0–1000 scale) indicate where the examinees have a 0.67 probability of earning a particular score point or higher. The item difficulty for the MC item is 768, and the four threshold values for the CR items are 521, 575, 723, and 815. The value of 521 is the location on the scale where examinees have a 0.67 probability of earning a score of 1 or higher (i.e., 2, 3, or 4). The value of 575 is where examinees have a 0.67 probability of earning a score of 2 or higher (i.e., 3 or 4). The value of 723 is where examinees have a 0.67 probability of earning a score of 3 or 4.

Figure 13–2. Example of Obtaining Item Difficulties for MC and CR Items



TRAINING

The overall training was conducted the first morning of the workshop. Participants were informed that they were to

- be responsible for all secure materials,
- verify their individual placements for each round of judgments, and
- participate in a discussion as a large group.

Content-specific training was conducted after content area groups assembled in different rooms. These training materials included the following:

- Item Map
- Item Separation Map
- OIBs
- Training Rubrics and/or Passages
- PLDs
- Rating Form

Panelists were told that the process includes iterations (rounds) of individual judgments, group discussions, and opportunities to revise judgments. In addition, impacts were presented (percentage of students in each performance level) based on the large groups' results and external data.

BOOKMARK PROCEDURE

DRC utilized a Bookmark method to set the performance standards. Bookmark is one in a broad category of methods commonly referred to as item mapping that focus on items rather than examinees. To begin the process, participants were asked to visualize the knowledge and skills of a student who is at the borderline between two performance levels based on the PLDs. Thereafter, participants were given an ordered item booklet (with items ordered from easiest to most difficult) and asked to assess whether this borderline student has a reasonably high probability of answering each item correctly. "Reasonably high" was defined as 0.67. In addition, an item map was presented that contained the response key, the content objective, and the item sequence in the test booklets. An item separation map was also presented that showed the relative difficulty of each item. Panelists were given a rating form to record their individual placements for all performance levels in each round. Before each round, panelists were asked to fill out a readiness form in order to proceed.

Round 1. The Bookmark procedure proceeded in three rounds. Round 1 began following the review and discussion of PLDs facilitated by a DRC test development specialist. Participants then reviewed the OIBs independently. During this review, they were asked to determine what academic knowledge, skills, and competencies were required for a barely Proficient, Basic, or Advanced student to respond correctly to each successively more difficult item.

Training by the overall psychometric lead during the bookmark placement session emphasized the following points:

- The bookmark represents a judgment of the divide between items that a student at the borderline of a performance level should master and those that are not necessary to master.
- Bookmark placement should not be thought of as separating two items but rather two groups of items. In other words, a placement should not hinge on distinctions drawn for adjacent items without some compelling reason, such as a large gap in content difficulty.

- Students with a scaled score at a given cut score should have approximately a 0.67 probability of correctly responding to a MC item or receiving a certain score point and higher for a CR item at the cut score. These same students should have a higher probability of success on easier items (before the bookmark placement) and a lower probability of success on harder items (after the bookmark placement).
- While placing their bookmarks, panelists should consider what students should know and be able to do in the context of the skills implied by the PLDs and the item content.
- Panelists could start with placing the Basic/Proficient cut point, next the Below Basic/Basic cut point, and finally the Proficient/Advanced cut point.

Panelists were asked to record their bookmark placements on the rating form after they filled out a readiness form, which indicated they had completed the training and understood the standard setting process and their roles. Panelists' judgments were entered into a spreadsheet program. The median ratings of all panelists were calculated. The median placements were treated as the recommended cut scores. In addition, the standard errors associated with the recommended bookmark placements were calculated and associated impact data were determined.

Round 2. Round 2 started with a discussion of Round 1 results. The individual panelists' Round 1 bookmark placements, the median bookmark placements, and the percentage of students in each performance level were presented. Panelists were instructed to verify the ratings entered into the program as correct. A large-group discussion followed. The panelists compared their results with others by considering questions such as why they made their Round 1 placements at the locations where they did and what skills and knowledge were required to answer the items. After that, the impact data, based on the median bookmark placement from Round 1 (using the Spring 2011 operational test score distributions), were provided to help panelists frame the effects of their judgments. During Round 2 discussion, there was no attempt by the facilitators to reach consensus.

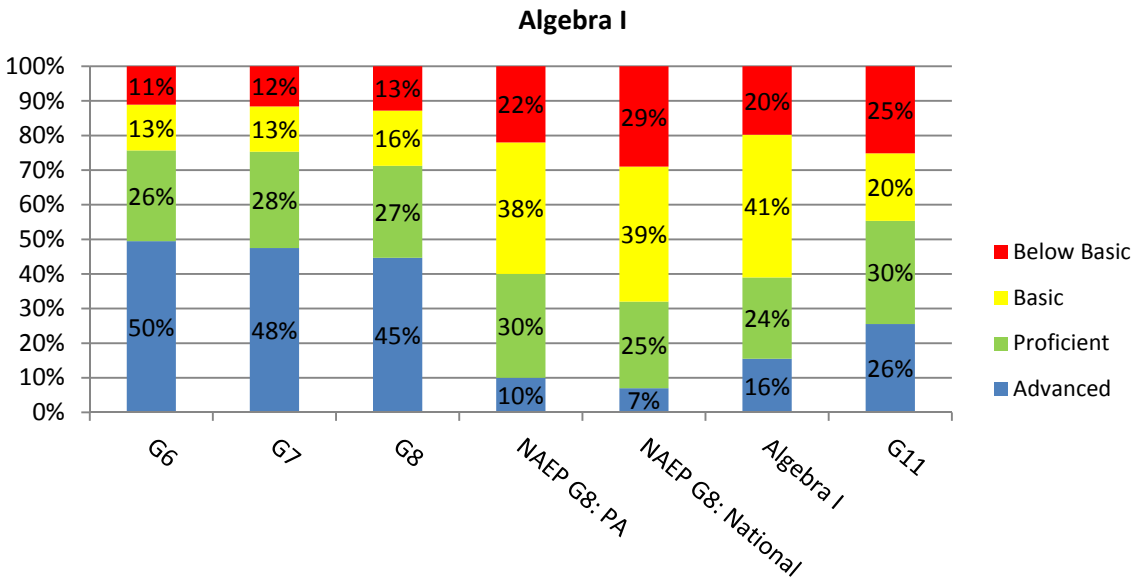
After Round 2 discussion, panelists were asked to make a second set of bookmark placements. Before they revised their Round 1 placements, they were asked to fill out the readiness form to make sure they understood how to adjust their placements (if they desired to do so) based on Round 1 information. The judgments were entered into the spreadsheet program to calculate the median cut scores for each table and the full panel. The associated impact data were also calculated.

Round 3. Round 3 began with a discussion of Round 2 results. The process followed in Round 2 was used. More specifically, the individual panelist's Round 2 bookmark placements, the median bookmark placements from Round 2, and the percentage of students in each performance level were presented. Panelists were instructed to verify the ratings entered into the program as correct. A table discussion followed. Panelists compared their results with others by considering questions such as why they made their Round 2 placements at the locations where they did and what skills and knowledge were required to answer the questions. The impact data, based on the median bookmark placement from Round 2, were provided to help panelists frame the effects of their judgments.

The Keystone Exams are one component of Pennsylvania's new system of high school graduation requirements. Because of the high-stakes consequences, the TAC strongly recommended bringing in external impact data to provide panelists with a reference outside of the Keystone Exams. The intent was to achieve reasonableness of results rather than to use the external data in a directive manner. DRC investigated Pennsylvania students' performance on the Pennsylvania System of School Assessment (PSSA), National Assessment of Educational Progress (NAEP), and Student Achievement Test (SAT) and presented external data as shown in Figures 13–3A to 13–3C before panelists made their Round 3 judgments. The panelists were informed of the following points:

- The PSSA and NAEP results were based on students' performance in 2009. The PSSA results were from grades 6–8 and 11. The NAEP results were from grade 8.
- All students in grades 6–8 and 11 in Pennsylvania took the PSSA. A sample that represents the Pennsylvania grade 8 students took the NAEP tests.
- The SAT results were based on the performance of students who took the SAT in 2010 or prior years.
- About 99% of students in the 2010 SAT data file indicated their expected graduation dates were in 2010; most of these students were in grade 11 in 2009. Therefore, the 2010 SAT data and the 2009 PSSA data were matched.
- Based on the matched sample, it was found that students with higher PSSA scores were more likely to take the SAT. To represent the full population in terms of demographics and PSSA scores, the matched sample was weighted by students' demographics and PSSA scores when calculating the impacts.

Figure 13–3A. External Impact Data

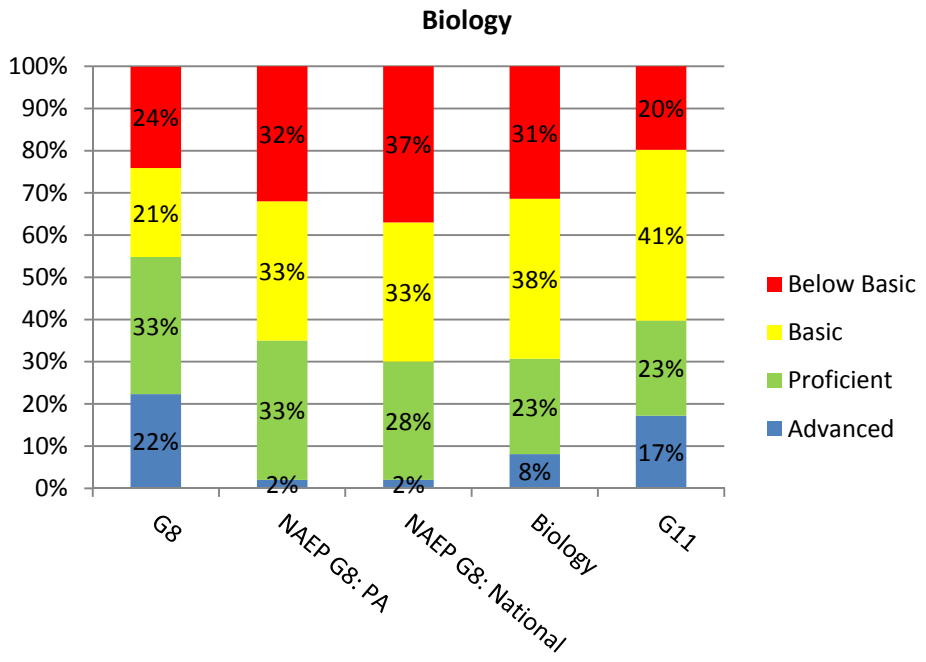


Performance Level	PSSA			NAEP Math		KE	PSSA
	G6	G7	G8	NAEP G8: PA	NAEP G8: National	Algebra I	G11
Below Basic	11.1%	11.6%	12.8%	22.0%	29.0%	19.8%	25.1%
Basic	13.2%	13.1%	16.0%	38.0%	39.0%	41.2%	19.5%
Proficient	26.2%	27.8%	26.6%	30.0%	25.0%	23.5%	29.8%
Advanced	49.5%	47.5%	44.7%	10.0%	7.0%	15.5%	25.5%
Below Basic + Basic	24.3%	24.7%	28.8%	60.0%	68.0%	61.0%	44.8%
Proficient + Advanced	**75.7%**	**75.3%**	**71.3%**	**40.0%**	**32.0%**	**39.0%**	**55.3%**
Total Percentage	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total N	128,421	132,803	135,909	3,600	161,700	93,703	135,676

College Ready - Yes
Projected
0.9%
7.8%
42.2%
91.2%
4.0%
64.9%
38.1%
61,118

SAT Math: College Ready - Yes	
PA	National
51.7%	54.0%
65,426	N/A

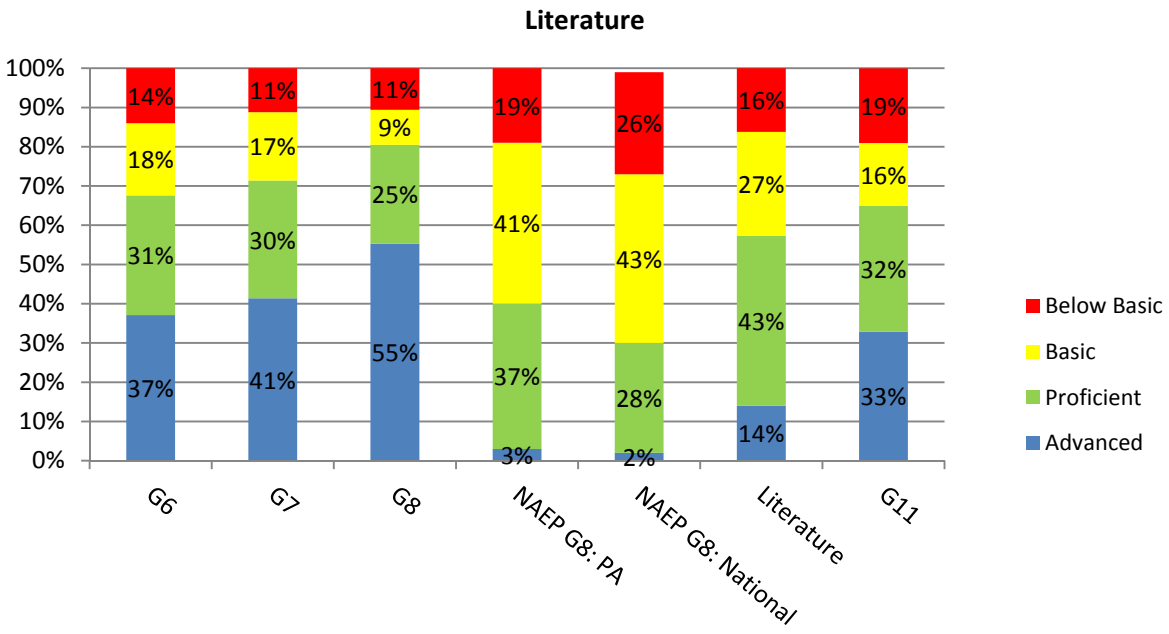
Figure 13–3B. External Impact Data



Performance Level	PSSA	NAEP Science		KE	PSSA
	G8	NAEP G8: PA	NAEP G8: National	Biology	G11
Below Basic	24.0%	32.0%	37.0%	31.4%	19.8%
Basic	21.1%	33.0%	33.0%	37.9%	40.5%
Proficient	32.5%	33.0%	28.0%	22.6%	22.5%
Advanced	22.3%	2.0%	2.0%	8.1%	17.2%
Below Basic + Basic	45.1%	65.0%	70.0%	69.3%	60.3%
Proficient + Advanced	**54.8%**	**35.0%**	**30.0%**	**30.7%**	**39.7%**
Total Percentage	100.0%	100.0%	100.0%	100.0%	100.0%
Total N	134,969	3,600	151,100	46,394	131,534

College Ready - Yes	SAT Total: College Ready - Yes	
Projected	PA	National
1.4%	38.7%	43.0%
9.1%		
45.9%		
86.6%		
6.6%		
63.8%		
29.4%		
60,311	65,426	N/A

Figure 13–3C. External Impact Data



Performance Level	PSSA			NAEP Reading		KE	PSSA	College Ready - Yes	SAT Critical Reading: College Ready - Yes	
	G6	G7	G8	NAEP G8: PA	NAEP G8: National	Literature	G11	Projected	PA	National
Below Basic	14.0%	11.2%	10.6%	19.0%	26.0%	16.2%	19.0%	1.2%		
Basic	18.4%	17.4%	8.9%	41.0%	43.0%	26.5%	16.0%	4.7%		
Proficient	30.5%	30.0%	25.2%	37.0%	28.0%	43.3%	32.1%	24.8%		
Advanced	37.1%	41.4%	55.3%	3.0%	2.0%	14.0%	32.9%	76.7%		
Below Basic + Basic	32.4%	28.6%	19.5%	60.0%	69.0%	42.7%	35.1%	2.7%	46.4%	50.0%
Proficient + Advanced	**67.6%**	**71.4%**	**80.5%**	**40.0%**	**30.0%**	**57.3%**	**64.9%**	**51.1%**		
Total Percentage	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	34.5%		
Total N	128,284	132,641	135,739	3,500	160,900	42,292	135,470	61,081	65,426	N/A

The Keystone Exams and PSSA results were presented to the panelists first. Panelists were encouraged to compare the impact data and discuss whether the results for the Keystone Exams were reasonable. The NAEP results were added next, and the SAT results were introduced last for comparison and discussion. While discussing the external data, panelists were reminded that all these tests were created for different purposes and might cover different content standards.

Before panelists provided their final judgments, they were instructed to fill out the readiness form to make sure they understood how to adjust their placements (if they desired to do so) based on the Round 2 information and external impact data. After their individual bookmark placements, panelists filled out the evaluation form. The judgments were entered into the spreadsheet program to calculate the median placements for the full panel. The associated impact data were also calculated. The Round 3 results were presented to the panelists for their information after the lunch break.

PANELISTS' RECOMMENDATIONS

Table 13–4 provides a summary of each round's median, minimum, and maximum ratings (i.e., bookmark page numbers) of the group.

Table 13–4. Summary of Panelists' Ratings for Each Round

Exam	Round	Bookmark Page Number								
		Below Basic/Basic			Basic/Proficient			Proficient/Advanced		
		Median	Min.	Max.	Median	Min.	Max.	Median	Min.	Max.
Algebra I	1	11	6	19	28	14	42	45	33	56
	2	11	6	13	26	17	33	42	40	46
	3	11	10	12	26	18	30	46	41	46
Biology	1	9	4	15	26	20	30	56	43	62
	2	8	7	14	24	21	30	54	50	60
	3	8	7	12	22	20	30	54	50	60
Literature	1	8	5	14	27	12	34	47	38	52
	2	9	8	15	23	15	34	46	38	48
	3	9	8	15	25	17	34	48	38	48

CUT POINTS AND STANDARD ERRORS

Each bookmark page number is associated with a bookmark difficulty (i.e., logit value). The logit cut is the bookmark difficulty corresponding to the median OIB page number minus one. The logit cut and the standard error (SE) of median logit based on panelists' Round 1 rating were used to establish the 1 and 2 SE confidence intervals. By bracketing the median cut score by 2 SEs, the 95% confidence interval was identified; the confidence interval can be used to estimate the effects of false positives (passing students who may not actually have sufficient knowledge and skills) or false negatives (failing students who do have sufficient knowledge and skills). PDE can use these standard errors to identify the appropriate cut score by taking into consideration the variance in the human judgments. Table 13–5 summarizes the logit cuts associated with Round 3 median ratings, median +/-1 SE, and median +/-2 SE. The corresponding impacts (percentages in performance level) are provided in this table as well. Note that BB represents Below Basic; B represents Basic; P represents Proficient; and A represents Advanced.

Table 13–5. Summary of Logit Cuts and Impacts

Exam	Stats	Logit Cut			Percentage in Performance Level (%)				
		BB/B	B/P	P/A	BB	B	P	A	P+A
Algebra I	Median-2SE	-0.7273	0.4291	1.3694	14.7	37.3	30.2	17.8	48.0
	Median-1SE	-0.6181	0.5659	1.5041	17.2	37.8	31.6	13.4	45.0
	Median	-0.5090	0.7027	1.6388	19.8	41.2	27.5	11.5	39.0
	Median+1SE	-0.3999	0.8395	1.7735	22.4	44.4	23.5	9.7	33.2
	Median+2SE	-0.2907	0.9763	1.9082	25.2	47.0	19.7	8.1	27.8
Biology	Median-2SE	-0.5977	0.3098	1.2500	22.5	38.9	27.9	10.7	38.6
	Median-1SE	-0.4933	0.3564	1.3205	28.3	33.1	29.3	9.3	38.6
	Median	-0.3888	0.4029	1.3910	31.4	32.7	27.8	8.1	35.9
	Median+1SE	-0.2843	0.4494	1.4615	34.5	32.2	25.2	8.1	33.3
	Median+2SE	-0.1799	0.4960	1.5320	40.7	26.0	26.4	6.9	33.3
Literature	Median-2SE	-0.6561	0.2338	1.7014	12.4	20.9	46.3	20.4	66.7
	Median-1SE	-0.5545	0.4116	1.9551	14.2	25.3	46.5	14.0	60.5
	Median	-0.4530	0.5894	2.2088	16.2	26.5	48.4	8.9	57.3
	Median+1SE	-0.3515	0.7672	2.4625	18.3	31.4	43.6	6.7	50.3
	Median+2SE	-0.2499	0.9450	2.7162	20.5	36.5	38.2	4.8	43.0

FINAL RESULTS

After reviewing the results in Table 13–5 and considering panelists' discussions at the standard setting workshop, PDE recommended using the logit cut scores associated with the median of panelists' Round 3 ratings for Algebra I and Biology. For Literature, PDE recommended the logits cuts associated with the Round 3 median plus 1 SE.

To avoid negative values on the logit scale, the scaling constants were determined next to linearly convert the logit values to scaled scores. The scaled cut scores for each performance level were obtained by linearly transforming the logit cuts. Details of the scaling process can be found in Chapter Fourteen. A brief description is below.

For Keystone Exams, the linear transformation from logits or Rasch measures to scaled scores was established by anchoring the logit cut for Basic/Proficient to a scaled score 1500 and fixing the slope constant to 50. The intercept constant was calculated next based on the known values 1500, 50, and the logits cut for Basic/Proficient for each content area. In addition, the bottom of the scale was truncated at the lowest obtainable scaled score (LOSS), 1200. The top of the scaled scores was truncated at the highest obtainable scaled score (HOSS), 1800. The recommended scaled score cuts and the corresponding impacts were provided to the Board on July 20, 2011, for approval. Table 13–6 presents the final scaling constants and the Board-approved scaled-score ranges for each performance level.

Table 13–6. Summary of Scaled-Score Ranges and Scaling Constants

Exam	Performance Level				Scaling Constants	
	Below Basic	Basic	Proficient	Advanced	Slope	Intercept
Algebra I	1200–1438	1439–1499	1500–1545	1546–1800	50	1464.365
Biology	1200–1459	1460–1499	1500–1548	1549–1800	50	1479.355
Literature	1200–1443	1444–1499	1500–1583	1584–1800	50	1461.140

The Keystone Exams are reported by total and modules. Although the panelists made recommendations based on the total test only, the Basic/Proficient cut for the total test is applied directly in setting the passing cut score for each module. In this case, the passing scaled score cut at module level is 1500.

CHAPTER FOURTEEN: SCALING

Scaling is used to transform test score values (i.e., raw scores) onto a scale that can be interpreted by users easily and correctly. Raw scores cannot be used to compare students' achievement across administrations because they depend on the difficulty of the tests. The same student can score higher on an easy test than on a difficult test. To overcome the limitation of raw scores, the scaled scores are introduced to report students' achievement in Algebra I, Biology, and Literature. This chapter describes the two major steps to convert a raw score to a scaled score (SS) and some key considerations for establishing the score scale for Keystone Exams.

RAW SCORES TO RASCH ABILITY ESTIMATES

The pre-equated item parameter estimates for the operational items (further discussed in Chapters Twelve and Fifteen) were used to obtain Rasch person ability estimates and asymptotic standard errors of measurement for each possible raw score value for the overall test, as well as each module. The generation of this raw score-to-Rasch ability was accomplished through application of the fundamental formulas in the Rasch measurement model. The combination of both dichotomously scored multiple-choice (MC) items as well as polytomously scored constructed-response (CR) items requires the use of a partial-credit model (RPCM) (Wright & Masters, 1982). The Newton-Raphson iterative procedure is used to obtain precise ability estimates:

$$b_r^{(t+1)} = b_r^t - \frac{r - \sum_i^L \sum_{k=1}^m kP_{rik}^{(t)}}{-\sum_i^L \left[\sum_{k=1}^m k^2 P_{rik}^{(t)} - \left(\sum_{k=1}^m kP_{rik}^{(t)} \right)^2 \right]}, \quad r=1, \ldots, M-1,$$

where b_r^t is the estimated ability of the student with score r after t iterations, k is the number of thresholds, L is the number of items, $M = \sum_i^L m_i$, and $P_{rik}^{(t)}$ is the probability, π_{nix}, defined earlier in Chapter Twelve:

$$\pi_{nix} = \frac{\exp \sum_{j=0}^x (\beta_n - \delta_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^x (\beta_n - \delta_{ij})}, \quad x = 0, 1, \ldots, m_i.$$

The asymptotic standard error of measurement (SEM) was estimated from the denominator of the final iteration:

$$SE(b_r) = \left[\sum_i^L \left[\sum_{k=1}^m k^2 P_{rik}^{(t)} - \left(\sum_{k=1}^m kP_{rik}^{(t)} \right)^2 \right] \right]^{-1/2}.$$

The Rasch ability estimates and the corresponding SEMs are then transformed to scaled scores and SEMs of scaled scores as discussed in the following section.

ZERO AND PERFECT SCORES

A direct ability estimate for zero (no points earned) or perfect (all points earned) raw scores can't be achieved. Thus, a default procedure for estimating such extreme scores was used for the Keystone Exams. Essentially, a fractional raw score (a value less than one, e.g., 0.3) was added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores.

RASCH ABILITY ESTIMATES TO SCALED SCORES

Generally, scaled scores are preferred over Rasch ability estimates for reporting purposes. One issue is that Rasch ability estimates are on a scale that includes negative and decimal values. By transforming the Rasch ability estimates to scaled scores, all reported values can become positive integers, which makes more sense to parents and students. Since Rasch ability estimates are comparative after equating (discussed further in Chapter Fifteen) to the base administration/year, the transformed scaled scores have a common scale across administrations, even though the corresponding raw scores may differ.

Scaled scores are usually obtained through some linear transformation of Rasch ability estimates. Before the linear equation is established for each content area, a few points were considered for the Keystone Exams:

- Avoid scales that might be confused with scores for other types of assessment, for example:
  - Scaled scores ranging from 0 to 100 (because this might be confused with percentage correct scores or percentile ranks)
  - Scaled scores ranging from 200 to 800 (because this might be confused with SAT scores)
  - Scaled scores with similar ranges as the ones for the Pennsylvania System of School Assessment (PSSA) or Classroom Diagnostic Tools (CDT)
- Avoid scales similar to raw scores from a base form.
- Avoid scales that might suggest the scores are more precise than they actually are (i.e., suggesting more precision than can actually be supported by the test scores).
- Avoid scales with negative numbers and decimals.

In terms of industry standard practice, a common perspective is that scaled scores should facilitate score interpretation while at the same time minimize misinterpretation and unwarranted inferences. Often this is done by incorporating some kind of meaning to the scores[8] (Peterson, Kolen, and Hoover, 1989). The incorporation of content meaning is one way to facilitate score interpretation. This might be done in several different ways. For example, the current PSSA scaled scores, like those of many other state assessments, try to input some content meaning by having the PSSA performance level cut scores have known values on the scaled-score metric. Such an approach appears to make good sense given the purposes of a criterion-referenced test like the PSSA.

[8] Not everyone agrees with this sentiment. Some have argued the opposite point, that is, any attempt to add meaning to test scores actually predisposes the scores to be misinterpreted (Angoff, 1984).

As a result, a scaled-score range of 1200 to 1800 and the Proficient scaled score cut, 1500, for all content areas were selected as the start point to establish the scales for the Keystone Exams in Algebra I, Biology, and Literature. It is worth noting that, although careful considerations were given to the selection of these values, they are completely arbitrary. For example, the label of 1500 could have been called 100 or any other value or letter without affecting any of the relationships among schools, administrations, students, or items. In other words, changing the scale would simply be changing the labels on the axis of a graph without moving any of the points.

LINEAR TRANSFORMATION FORMULAS

The scaled scores for the Keystone Exams are obtained through a linear transformation of the Rasch ability estimates ($\hat{\beta}$). Specifically,

$$SS = m\hat{\beta} + b,$$

where *m* is the slope and *b* is the intercept. The linear transformation for the Keystone Exams is derived by anchoring the Proficient cut (i.e., Rasch ability estimate) recommended by the panelists at the standard-setting workshop to the scaled score 1499.5 (i.e., 1500 after rounding), and then set the slope of the line. There could be many lines with different slopes going through the anchor point. However, the slope of the line has influence over the variability of the scaled scores. For Keystone Exams, the slope of 50 was chosen because it results in desired scaled score standard deviation. Once the scaled score, slope, and Rasch ability estimate are determined, the intercept *b* can be derived by the equation above. The final slopes and intercepts for deriving scaled scores for the Keystone Exams are provided in Table 14–1.

Table 14–1. Scaling Constants by Content Area

Exam	Scaling Constants	
	Slope	Intercept
Algebra I	50	1,464.365
Biology	50	1,479.355
Literature	50	1,461.140

ROUNDING

The linearly transformed scaled scores are always rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down.

LOWEST OBTAINABLE SCALED SCORES

The Keystone Exams in Algebra I, Biology, and Literature have a lowest obtainable scaled score (LOSS) of 1200. Any derived scaled score less than 1200 is truncated to this minimum value. The selection of a LOSS is mainly based on two considerations: 1) extreme low scaled scores may have an impact on the average of the scaled scores at school/district level and 2) score truncation makes sense from a score precision perspective given measurement errors at the extremes are large. The LOSS value 1200 is established by giving consideration to *chance* performance over the MC items (e.g., if 40 four-option MCs were on a test, approximately 10 points might be earned on guessing alone) and considering the percentage of students who would be awarded the LOSS values.

HIGHEST OBTAINABLE SCALED SCORES

A highest obtainable scale score (HOSS), 1800, is set for the Keystone Exams for the same reasons described for the LOSS value. However, unlike the LOSS value, which is set initially by giving consideration to guessing over MC items, it is somewhat more difficult to determine what rules should be applied to establish the HOSS. Based on the empirical results, the value 1800 corresponds to a logit value (or Rasch ability estimate) that ranged from 6 to 7, and 0 percent of students received this score.

RAW-TO-SCALED-SCORE TABLES

The final raw-to-scaled-score conversion tables can be found in Appendix K. Note that only the raw-to-scaled-score tables for each single administration were reported. In other words, these tables cannot be used to look for a student's best scaled score if it is combined from two different administrations. The conditional standard error of measurement (CSEM, see Chapter Eighteen for detailed discussion) and corresponding 1 CSEM confidence intervals are also provided in these tables.

CHAPTER FIFTEEN: EQUATING

Equating is a statistical process that is used to adjust scores on test forms so that scores on the forms can be used interchangeably (Kolen & Brennan, 2004), even though the test forms consist of different items. In large-scale testing programs, it is a common practice to have different item sets appear in different test forms across administrations. Students' raw scores (or number-correct scores) cannot be compared between forms or administrations because they depend on the difficulty of the items in a form. The same student can score higher on an easy test than on a difficult test.

To make meaningful comparisons of test scores across administrations, various equating models and procedures have been developed in the literature. For example, in terms of design, there are randomly equivalent groups design and common-item non-equivalent groups design. In terms of testing model, it can be classified as either classical test theory-based equating model or modern test theory-based (e.g., Rasch model or item response theory) equating model. In terms of when the equating is conducted in the assessment cycle, it can be classified as pre-equating or post-equating. The following sections will focus on the equating design and analyses for the winter, spring, and summer Keystone Exams administered in 2013–2014.

PRE- VS. POST-EQUATING

As with other Pennsylvania assessment programs, the Rasch model is used to guide the test design, form construction, calibration, scaling, and equating of the Keystone Exams. The key element of equating test forms using the Rasch model is to place the item parameters from different administrations on the same scale. This is also referred to as item equating. Once the item parameters from different operational test forms are on the same scale, the Newton Raphson procedure can be used to convert number-correct scores to scaled scores as described in Chapter Fourteen. As a result, the scaled scores can be compared across forms with different items.

A common practice in many K–12 large-scale assessment programs is to have all the items field tested before they go operational. Once the field test items' difficulties are placed on the base scale or common metric, in theory, one should not expect the Rasch item difficulties for these items to change, except within a reasonable range of measurement error, after they are administered in an operational test providing the Rasch model fits the data. Based on this theoretical advantage of using Rasch models, equating can be conducted using the item parameters calibrated from field test data. This statistical procedure is referred to as pre-equating. In contrast, post-equating involves the use of Rasch item difficulties calibrated from the data of the operational test to be equated.

Although, in theory, the two equating procedures should provide identical results when the model fits the data, each has its own advantages and disadvantages. The use of pre-equating can facilitate the operational process in terms of rapid score reporting, more time for quality control, and more flexibility in the assessment. One successful application of pre-equating is for computer-adaptive tests where test questions are tailored to the student's achievement as the test progresses. This allows for providing scores immediately after students finish the test. However, a variety of issues need to be considered when using pre-equating in practice. For example, students may not be motivated to take the field tests, especially standalone field tests, which may make the items appear harder in the field test than in the operational test (Eignor, 1985; Eignor & Stocking, 1986; Stocking & Eignor, 1986; Kolen & Harris, 1990). Other concerns for the field test items include item context, item position, and sample size. In contrast, the use of post-equating, when applicable, does not have the same motivational concerns as with pre-equating. Also, post-equating uses post-administration data and is sometimes considered to yield more accurate analysis results, given that the number of students who take the operational

tests is usually large. On the other hand, when the reporting window is extremely tight, as is the case with some graduation or end-of-course exams in various states, post-equating has to occur within a very short time, and hence it leaves less time for the equating analyses and quality control.

EQUATING DESIGN FOR KEYSTONE EXAMS

The Keystone Exams, like many other graduation or end-of-course exams, require a quick turnaround of testing results. After the exams are administered, the bulk of the time is consumed by various data-processing steps. As a result, the equating analyses must be produced in a short period of time, which puts the quality of final analysis results under great risk. In addition, the requirement that a student's final score is the combination of the two highest module scores from any operational test (see Chapter 16 for details) increases the complexity of equating analyses and score reporting for future administrations. To control the quality of post-administration processing and guarantee the accuracy of students' reports, pre-equating, one of the most promising applications of Rasch model or item response theory (see Lord, 1980, chap. 13), was proposed and implemented for the Keystone Exams.

To implement the pre-equating model in the Keystone Exams, more efforts have been made to enhance the accuracy of pre-equating results based on the findings from the literature. For example, to address the concerns regarding students' motivation to take field tests, it was decided that no Rasch item difficulty estimates from stand-alone field tests can be used to pre-equate test forms. Instead, all the field test items have to be embedded in an operational test before their Rasch item difficulty estimates can be used. This is based on the assumption that students should be equally motivated to take the operational and embedded field test items, especially when they are not aware of which item is a field test item. To minimize item context and item position effects (i.e., lack of motivation and fatigue), field test items were interspersed within the operational sections. With this design, students have a lesser chance of knowing the field test item positions. Fatigue effects due to field test items being placed in the last section of the operational test can be mitigated in this design as well.

To improve the accuracy of the Rasch item difficulties estimated from the field test data but used as the values for the operational items, Data Recognition Cooperation (DRC) scored as many students' responses to the field test items as possible, given that increasing sample size can increase the estimation accuracy. More specifically, DRC scored all students' responses to the multiple-choice (MC) items and approximately 2,000 students' responses to the constructed-response (CR) items. For the Spring 2013 administration, the details of the number of students for each form and item type can be found in the *2013 Pennsylvania Keystone Exams Technical Report* (Pennsylvania Department of Education, 2013).

POST-EQUATING CHECK ANALYSES

Although extra care has been taken to guarantee the success of pre-equating during the test design, form construction, and calibration of embedded field test items, is the pre-equated result (e.g., raw-to-scaled-score table) still valid given the sample change and item sequence change from the field test positions to operational test positions?

After the operational testing data was collected for the winter, spring, and summer 2013–2014 administrations, post-equating check analyses were conducted to validate the raw-to-scaled-score tables generated using the pre-equated item parameter estimates. The post-equating check analysis conducted at item level evaluated the item difficulty estimate stability. The analysis conducted at form level investigated whether or not the raw-to-scaled-score tables had changed significantly.

ANALYSES AT ITEM LEVEL

To conduct the evaluation of item difficulty parameter estimate stability, the operational items were calibrated using WINSTEPS. There were two approaches used in running WINSTEPS. The first one was that the item parameters for all operational items were anchored to the bank values (also referred to as old values). WINSTEPS provided the displacements between the anchor values and the values that would have been estimated from the current data. The items with displacement value of 0.5 or larger were further investigated as outliers. The second approach was to calibrate the item parameters freely in WINSTEPS. The newly calibrated values (referred to as new values) were equated to the bank scale by adjusting the new item parameter estimates by the difference of the means between the old bank values and the new values. These adjusted values are referred to as equated values. Tables L–1 to L–9 in Appendix L present the item sequence change; *n*-count; old, new, and equated item difficulty estimates (i.e., logit); the corresponding standard error of measurement (SEM); and displacement. A scatter plot of the old and equated values was plotted to check for outlier items. Outliers were identified as those items where the perpendicular distance to the line was greater than or equal to 1.96 standard deviations (see Figures 15–1 to 15–9). As can be seen from Appendix L and the figures below, most of the items had stable item difficulty estimates; most outliers were flagged consistently by both the scatter plot and displacement. Table 15–1 summarizes the outliers flagged by both criteria. These items were reviewed by DRC content specialists, but no obvious reasons were found to explain the item difficulty change.

Figure 15–1. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Algebra I: Winter

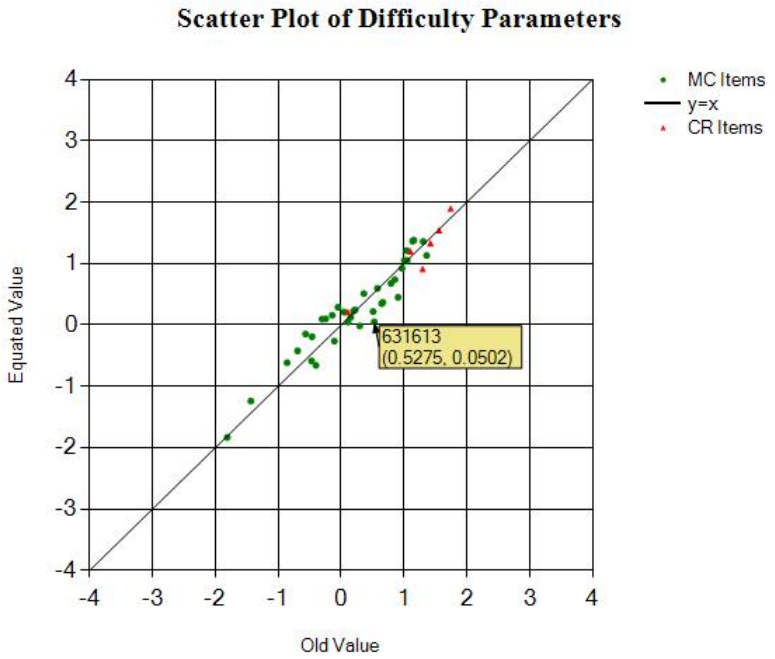


Figure 15–2. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Biology: Winter

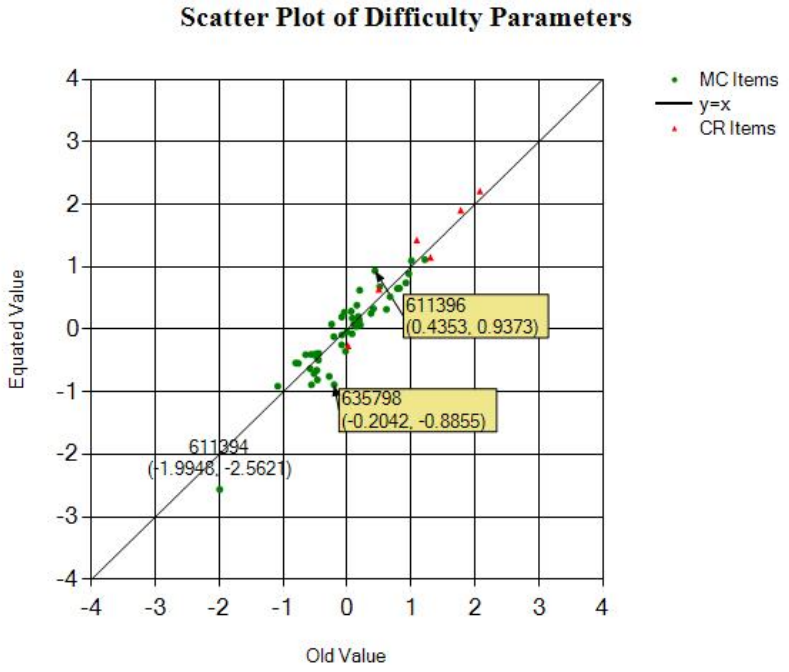


Figure 15–3. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Literature: Winter

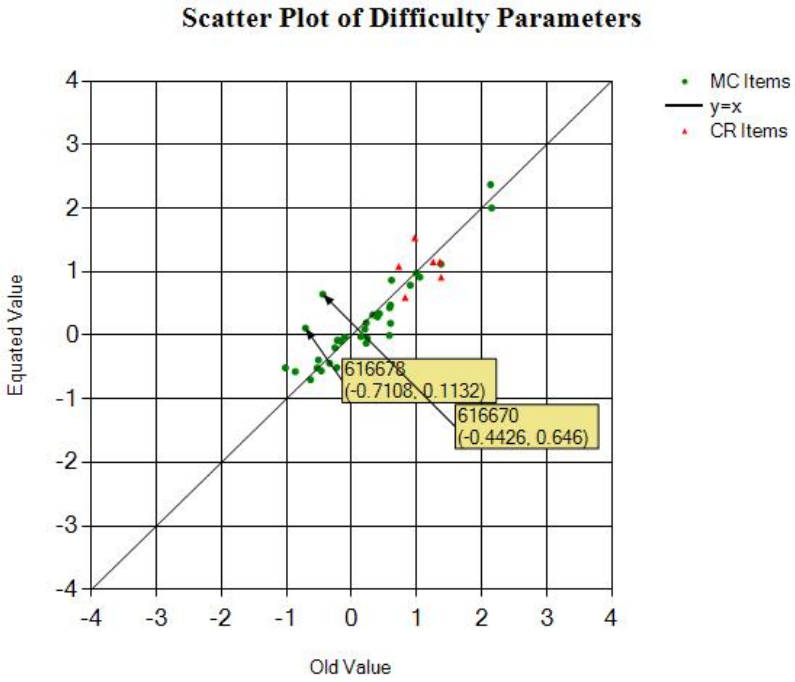


Figure 15–4. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Algebra I: Spring

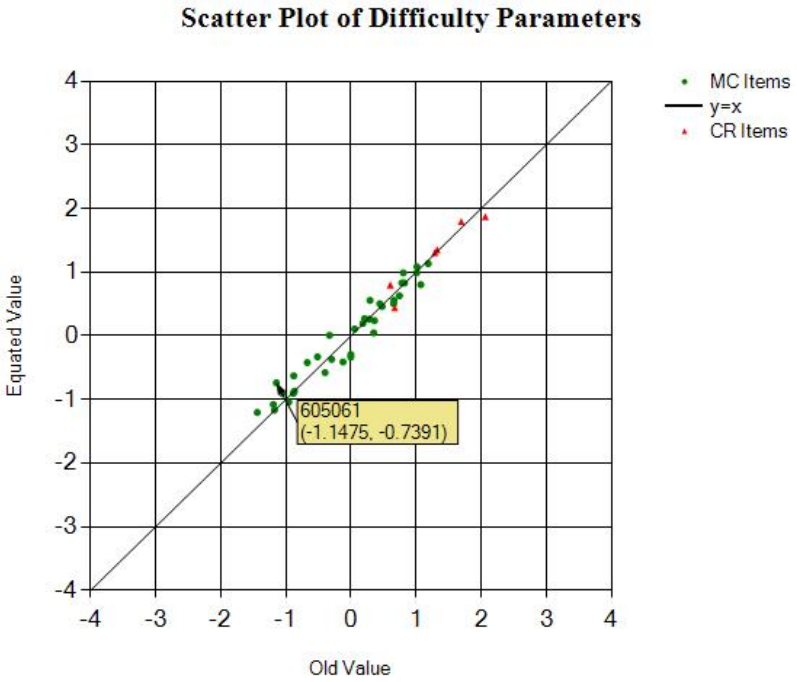


Figure 15–5. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Biology: Spring

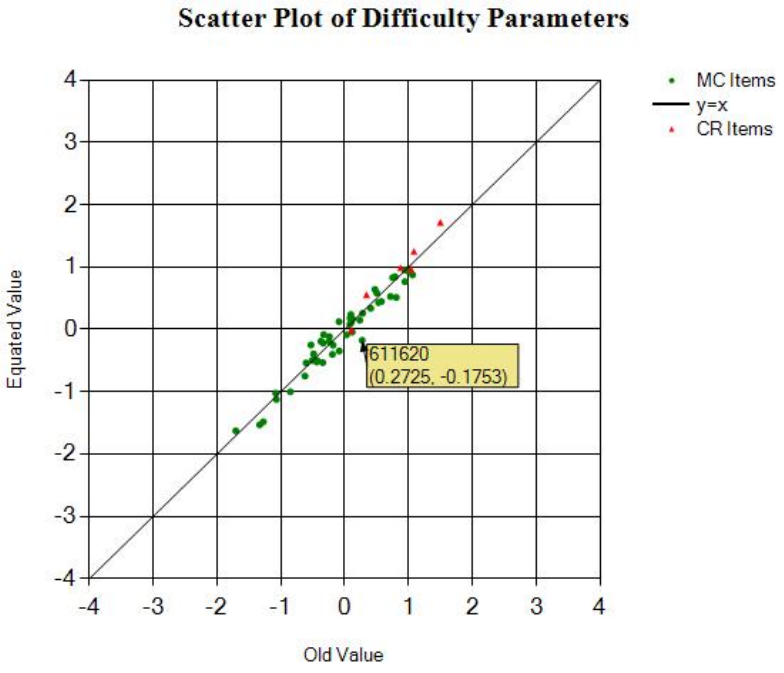


Figure 15–6. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Literature: Spring

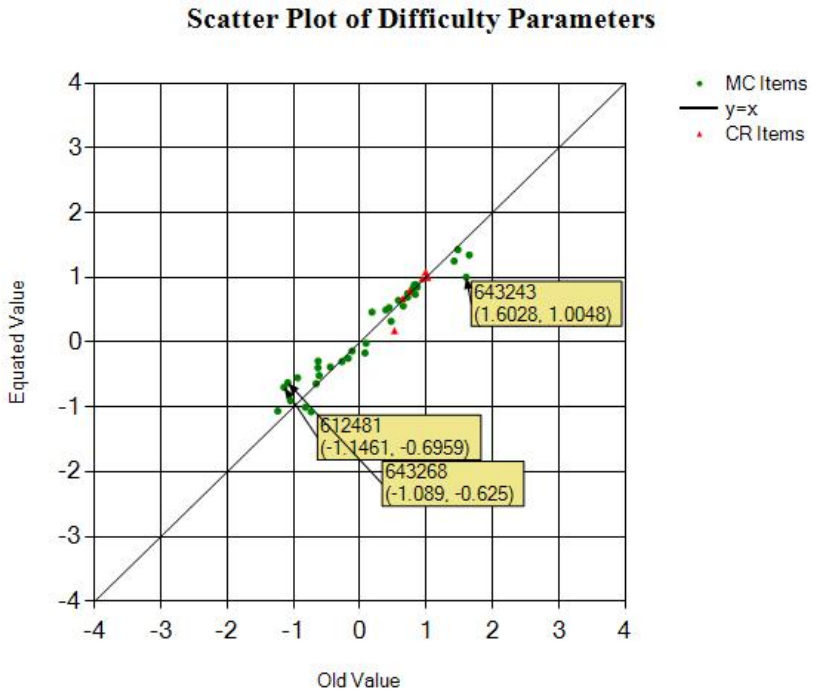


Figure 15–7. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Algebra I: Summer

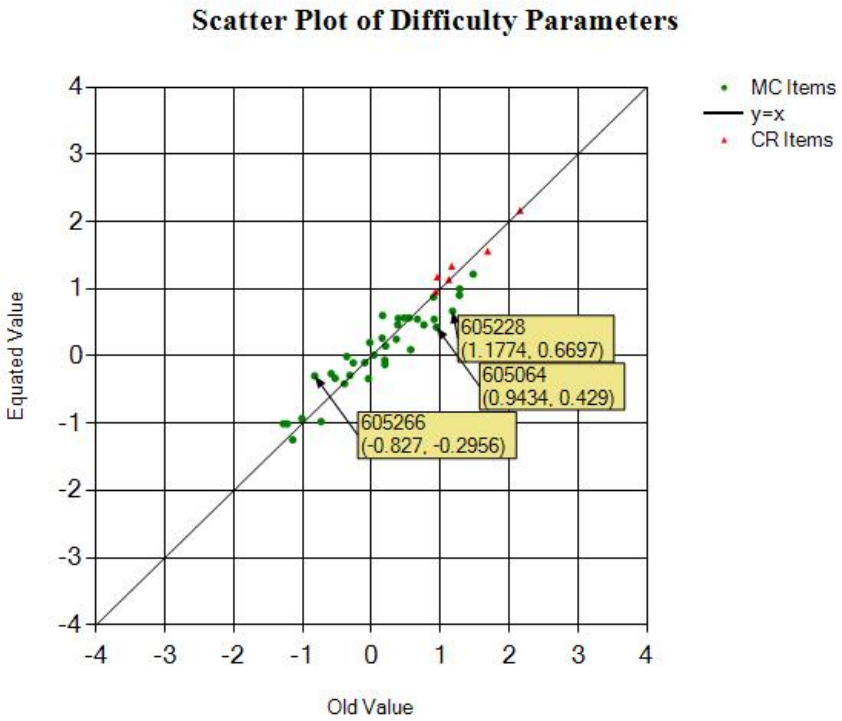


Figure 15–8. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Biology: Summer

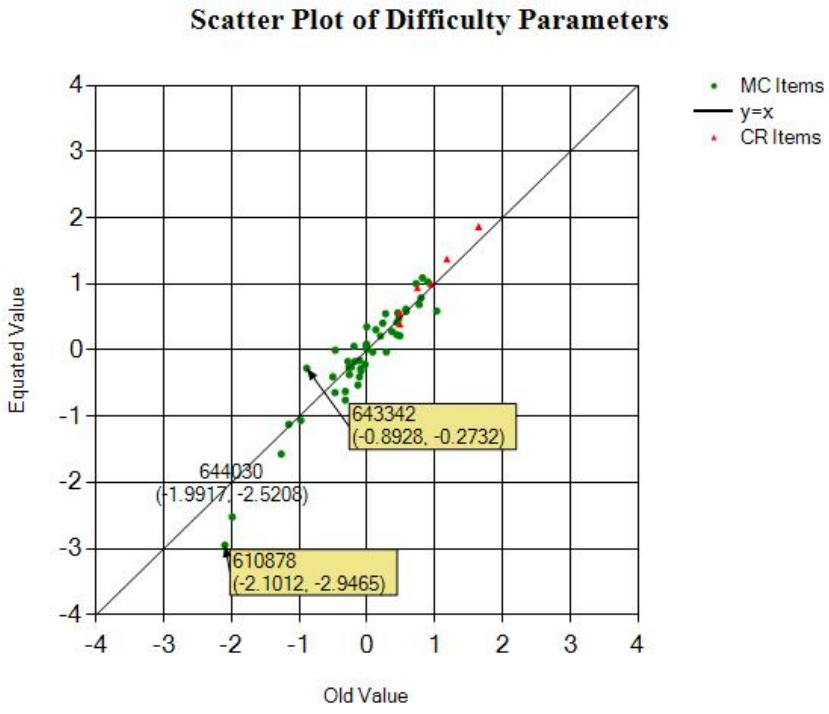


Figure 15–9. Scatter Plot of Old and Equated Item Parameter Difficulty Estimates for Literature: Summer

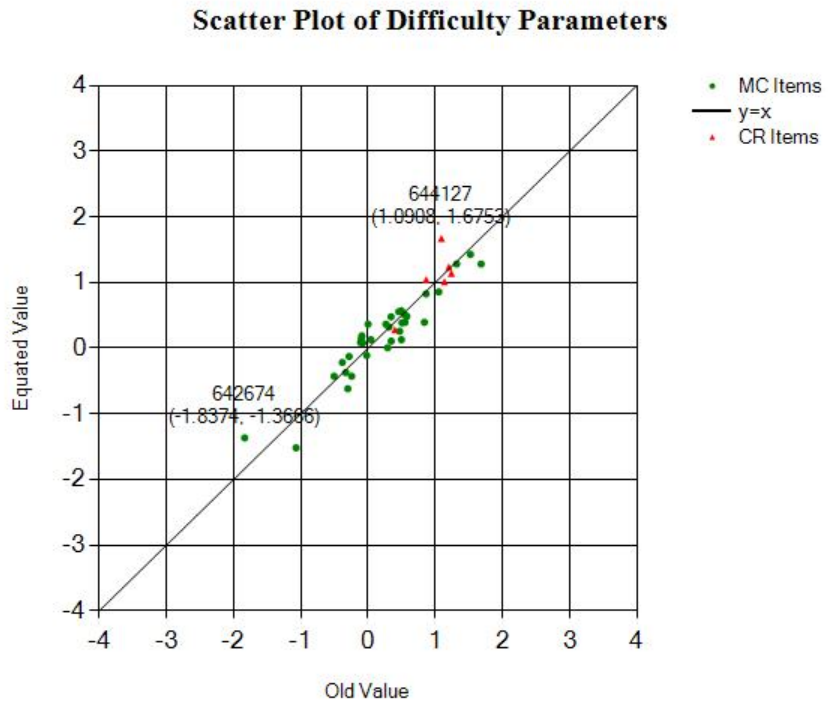


Table 15–1. Summary of Items Flagged by both the Scatter Plot and Displacement

Administration	Content Area	Item IDs
Winter	Algebra I	NA
	Biology	611396, 635798
	Literature	616678, 616670
Spring	Algebra I	NA
	Biology	NA
	Literature	643243
Summer	Algebra I	605064, 605266
	Biology	643342, 610878, 644030
	Literature	NA

ANALYSES AT FORM LEVEL

At the form level, the analyses focused on the comparison of pre- and post-equated raw-to-scaled score tables. The outliers, if any, were either kept or removed from the post-equating analyses. Tables L–10 to L–18 in Appendix L contain the raw-to-scaled-score tables produced under different conditions. The three performance level cuts are shown by the thicker lines. As can be seen, the post-equated scaled scores, whether outliers were removed or not, were very close or identical to the pre-equated scaled scores at each raw score point. The differences were within the standard error of measurement. The raw cut scores were the same or within one score point difference.

To summarize, both the item-level and form-level post-equating check analyses results indicate that the raw-to-scaled-score tables produced by using the pre-equated item difficulty parameter estimates can be used to score students.

EQUATING FOR THE EMBEDDED FIELD TEST ITEMS

Field test items were embedded in the spring operational forms to guarantee enough items would be available for future form construction. Equating was needed to place these embedded field test items onto the base or common scale established in Spring 2011. The equating was accomplished by running the calibration of field test items with item parameters of operational items fixed/anchored to the bank values using WINSTEPS. The final Rasch item difficulty estimates can be found in Appendix J.

CHAPTER SIXTEEN: SCORES AND SCORE REPORTS

This chapter provides information about the scores provided for the Pennsylvania Keystone Exams (e.g., scaled scores, performance levels, and module scores), how the scores are presented on score reports, and appropriate and inappropriate uses of the scores.

SCORING

Keystone Exams items include both multiple-choice (MC) and constructed-response (CR) items. Each correct response to an MC item receives a score of 1. Incorrect responses receive a score of 0. Scores on CR items range from 0 to 4, depending on the content area. Table 16–1 summarizes the types of items used in each content-area exam.

Table 16–1. Item Types Used by Content Area

Exam	Item Type		
	MC (1 point)	CR (3 point)	CR (4 point)
Algebra I	■		■
Biology	■	■	
Literature	■	■	

DESCRIPTION OF TOTAL-TEST SCORES

Different types of scores have been developed for Keystone Exams reporting. Since the underlying properties of these scores are not necessarily the same, the particular scores used depend on the purposes for which the test has been given. The following types of scores are provided for reporting overall performance on each Keystone Exam:

- Raw scores
- Scaled scores
- Performance levels

RAW SCORES

A raw score (or number-correct score) is the number of points a student earned over all the operational MC and CR items. By itself, the raw score has very limited utility. One limitation is that it can only be interpreted with reference to the total number of items on a specific exam (e.g., a raw score of 15 on a 20-item exam is different from a raw score of 15 on a 30-item exam). In addition, raw scores depend on the difficulty of test items across test forms (e.g., a raw score of 15 on a test with 20 easy items is different from a raw score of 15 on a test with 20 difficult items). Because the difficulty of the items on a test can change from administration to administration, raw scores should not be compared across administrations.

SCALED SCORES

Scaled scores were introduced in Chapter Fourteen. In the simplest sense, a scaled score is a transformed number-correct score. The specifics of the transformation processes for the Keystone Exams were also discussed in Chapter Fourteen. When all students take the same test items, as with the operational items on the Keystone Exams, the more points the student earns, the higher the associated scaled score will be.

The value of switching to the more abstract scaled-score metric is that it produces more general, interpretable, and equitable results. As noted above, a raw score of 30 is meaningless unless the maximum raw score is known. The difficulty of the test items was also mentioned as an additional challenge with interpreting raw scores. Number-correct scores are transformed to scaled scores to remove the effects of test length and item difficulty. (Strictly speaking, transformation of number-correct scores to percent-correct scores would also remove the effect of test length, but it would do nothing to adjust for the difficulty of the items.)

Another advantage of scaled scores is that they lend themselves to interpretations at what is referred to as an interval level, while raw scores do not. Interval-level scales allow an interpretation of a scaled score difference of 5 points to be the same whether the scores are 1295 vs. 1300 or 1445 vs. 1450. Raw-score differences, in this context, cannot be interpreted in this manner and are thus neither generalizable nor equitable.

A scaled score of 1500—or any other value for a particular content-area exam, such as Algebra I—should have the same absolute meaning in the current administration as it had in previous administrations when test scores are properly equated across administrations. More importantly, a significant increase in the scaled score from the previous administration to the current administration means that student performance improved[9]; it does not say anything about whether this administration's exam is easier or harder than last administration's exam. To make these interpretations requires no information about the length or the difficulty of the exam in either administration, although these variables are essential for the process of deriving the scaled scores.

There is considerable auxiliary information presented in this report that might aid in further contextualizing Keystone Exams scaled scores:

- Chapter Fourteen provides information on the development of the Keystone Exams scaled-score system, including transformation formulas, rounding rules, and general scale characteristics (e.g., minimum values).
- Chapter Seventeen provides total-test score statistics. In particular, Table 17–2 lists the scaled score means and standard deviations for the testing results.

[9] This example is not an endorsement of conducting a trend analysis with just two years of results. Further, small differences may not be statistically or practically significant.

PERFORMANCE LEVELS

Keystone Exams results are also reported using four performance levels: Below Basic, Basic, Proficient, and Advanced. The cut scores on the scaled-score metric (i.e., the lowest possible scaled score to enter the Basic, Proficient, and Advanced levels) were presented earlier in this report. However, the information is repeated below (Table 16–2) for convenience.

Table 16–2. Scaled Score Cuts for Each Performance Level by Content Area

Exam	Min	Scaled Score Cuts			Max
		BB/B	B/P	P/A	
Algebra I	1,200	1,439	1,500	1,546	1,800
Biology	1,200	1,460	1,500	1,549	1,800
Literature	1,200	1,444	1,500	1,584	1,800

Note. BB = Below Basic; B = Basic; P = Proficient; and A = Advanced

Performance Level Descriptors (PLDs) are another way to attach meaning to the scaled-score metric. They associate precise quantitative ranges of scaled scores with verbal, qualitative descriptions of student status. While much less precise, the qualitative description of the levels is one way for parents and teachers to interpret the student scores. They are also useful in assessing the status of the school. The Pennsylvania General PLDs developed by Pennsylvania Department of Education (PDE) and teacher panels are given below. These are also included on student score reports.

- **Advanced:** Superior academic performance indicating an in-depth understanding and exemplary display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content.
- **Proficient:** Satisfactory academic performance indicating a solid understanding and adequate display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content.
- **Basic:** Marginal academic performance indicating work approaching, but not yet reaching, satisfactory performance. Performance indicates a partial understanding and limited display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content. The student may need additional opportunities and/or increased student academic commitment to achieve the Proficient Level.
- **Below Basic:** Inadequate academic performance indicating little understanding and minimal display of the skills included in the Keystone Exams Assessment Anchors and Eligible Content. There is a major need for additional instructional opportunities and/or increased student academic commitment to achieve the Proficient Level.

DESCRIPTION OF MODULE SCORES

Each of the Keystone Exams in Algebra I, Biology, and Literature contains two modules. A module score describes performance of a student, school, or district on a particular module (content standard defined in the exam). The following types of scores are provided for Keystone Exams at module level:

- Raw scores
- Scaled scores
- Performance levels

MODULE RAW SCORES

Raw scores at module and assessment anchor levels were reported in different summary reports. As described earlier, a raw score is the number of points a student earned over all the operational MC and CR items; it depends on the difficulty and length of the test form; and it should not be compared across administrations. In the summary reports, the school, district, and/or state median points earned were reported at module and assessment anchor levels. These raw scores can provide some diagnostic information when they are compared with the minimum estimated points needed to pass. The latter is calculated by summing the probabilities of a barely proficient student answering the items included in a module or assessment anchor correctly. The sum is rounded up to the nearest integer. The probability is derived using the Rasch models discussed in Chapter Twelve.

MODULE SCALED SCORES

The module scaled scores were provided in the individual student report. For the Keystone Exams, the module scaled score represents a student's achievement on each module. They can be compared across administrations because they are statistically equated. However, it is not advisable to compare scores across modules because each module contains varying item content and difficulty. This variation is also the reason the total scaled score is not the average of the two modules' scaled scores.

MODULE PERFORMANCE LEVELS

Based on the testing results at the module level, students can be classified as Passed or Not Passed. The derived scaled score cut is 1500 for both modules. This cut score is determined by panelists' recommendations for the proficient cut of the corresponding total test. Note that a student who does not pass a module can still be Proficient or above on the total test if the student performs very well on the other module. If a student is not proficient on the total test but passes one module, although it is recommended that this student take both modules during retesting, the student can choose to take just the non-passed module because the final score is based on the highest combination of module scores.

APPROPRIATE SCORE USE

INDIVIDUAL STUDENTS

Scaled scores on the Keystone Exams indicate a student's achievement with respect to the Keystone Exams Assessment Anchors and Eligible Content. Scaled scores are primarily used to determine student performance level classifications (i.e., a criterion-referenced inference). Scaled scores that are based on Rasch models are typically assumed to be of the interval type, so comparisons may be made on differences in scaled scores. If this assumption holds, then it would be safe to infer for Algebra I that the ability difference between 1410 and 1420 represents the same ability difference that separates 1550 and 1560. Scaled scores can also be used to compare the performance of an individual student to the performance of a similar demographic or subgroup at a school or district. Test score standard errors (discussed in Chapter Eighteen) should be considered.

GROUPS OF STUDENTS

Test results can be used to evaluate performance over time. Mean scaled scores can be compared across administrations within the same content area to indicate whether a student's performance is improving across years. Generally, such trend analyses benefit from using mean results from as many test administrations as possible. Different cohorts of students are used (i.e., the same student or students are not tracked across grade levels). All scores can be analyzed within the same content area for any single administration to determine which demographic or program group had, for example, the highest average performance or the highest percentage of students at or above Proficient.

Module scores can help evaluate academic areas for relative strengths or weaknesses. These module scores provide information to identify areas where further diagnosis is warranted. Generalizations from test results may be made to the specific content domain represented by the academic standards measured in the Keystone Exams. However, all instruction and program evaluations should include as much information from other sources as possible to provide a complete picture of performance.

CAUTIONS FOR SCORE USE

EXTREME ERROR FOR EXTREME SCORES

Student scores toward the minimum or maximum ends of the score range will have very large standard errors of measurement (SEM) and, therefore, should be viewed very cautiously. The maximum scaled score only provides a very rough estimate of a student's ability. For example, if a student achieved the maximum scaled score, for example, 1776 for Biology in the winter administration, it cannot be determined whether this student could have achieved an even higher scaled score. If the test were 10 items longer, a different estimate might have been obtained. Similarly, if the items in a new test are more difficult than the items on a previous administration, the maximum scaled score would likely be higher on the new test because it would take a greater level of achievement to answer the items correctly. In this manner, extreme scaled scores may vary from one administration to the next even if the number of test items does not change. The fluctuation of extreme scaled scores complicates the comparisons of students with scaled scores at the extreme ends of the score distribution. To minimize confusion and potential misinterpretation, the minimum and maximum scaled scores possible on the Keystone Exams have been fixed (see Table 16–2) so they do not change between administrations.

UNIQUE SCALE FOR EACH CONTENT AREA

Scaling was conducted for each content-area exam separately. Therefore, the scaled scores should be interpreted only within each content area. The scaled scores are not status indicators in the same sense as percentile ranks (or scales that are essentially transformations of percentile ranks) and therefore cannot be used to profile relative strengths and weaknesses across content areas. As an example, the scaled scores of 1450 in Algebra I and 1400 in Biology gained by a student do not necessarily imply that the student performed better in Algebra I than in Biology.

USING KEYSTONE EXAMS RESULTS FOR OTHER PURPOSES

Other uses or inferences based on Keystone Exams results may or may not be valid as the validity evidence and arguments provided in Chapter Nineteen may not necessarily support other score uses and interpretations. According to the *Standards for Educational and Psychological Tests* (AERA, APA, & NCME, 1999), if a test is used in a way that has not been validated, it is incumbent on the user to justify the new use, collecting new evidence if necessary. Finally, a universal caveat for any test's result is that it should not be used for placement and educational planning alone. Instead, other information about the student (e.g., other test performance data) should be included.

REPORT DEVELOPMENT

Several months prior to the first release of reports for the Keystone Exams, PDE and DRC conducted focus groups with Pennsylvania educators and parents/guardians. In the focus groups, educators and parents/guardians provided feedback on report mock-ups for the Keystone Exams. Feedback from the focus groups was used to inform the design and content of the Keystone Exams individual and summary reports. The focus groups targeted educator and parent/guardian constituencies in three geographic regions of the state—the Pittsburgh area, the Harrisburg area, and the Philadelphia area.

Two preliminary educator groups were convened in Harrisburg on November 15 and 17, 2010. These groups, totaling 34 educators, reviewed the student report and provided feedback using both a survey and group discussion. Substantive changes to the individual student report were made on the basis of these meetings, with two different versions of the report emerging from these reviews. These two groups did not review the summary reports.

A second set of focus groups were conducted in December 2010 to review the updated reports. For the December meetings there were 35 panelists (22 educators & 13 parents) for six focus groups in Pittsburgh (December 3), Harrisburg (December 6), and King of Prussia (December 7). The three educator groups reviewed the two versions of the student report and the one version of the school summary report. The three parent groups reviewed the two versions of the student report.

Feedback from these two focus groups was taken into consideration during final report development. For more information about the focus groups, please refer to the *Keystone Exams Score Report Focus Group Findings* (Pennsylvania Department of Education, 2011).

REPORTS

The following score reports are provided to students, schools, and districts for the Keystone Exams in Algebra I, Biology, and Literature:

- Individual student report
- School summary report
- District summary report
- State summary report
- Report interpretation guide

INDIVIDUAL STUDENT REPORT

A student report is provided for all students who took the Keystone Exams. Two copies of the individual student report for all Keystone Exams were sent to each school district and charter school for distribution to parents, teachers, guidance counselors, and/or principals. School districts and charter schools may publish the results of the Keystone Exams school-level reports. This report is a two-page color document that provides the types of scores explained earlier in this chapter. Screenshots of the two pages from a sample individual student report are provided in Figures 16–1 and 16–2.

Figure 16–1. Page 1 of the Individual Student Report

PENNSYLVANIA KEYSTONE EXAMS

Student Report

Student Name:	SAMPLE STUDENT
PA Student ID:	*****12345
School:	SAMPLE HS
District:	SAMPLE SD
Test Date:	Spring 2011
Grade:	09

Content Area:
Algebra I

Student's Keystone Exam Result

		Goal Range	
Below Basic	Basic	Proficient	Advanced
		✓	

Dear Family:

This report provides information about your child's performance on a Pennsylvania test known as the Keystone Exam. Your child took this Keystone Exam in May 2011. On this page, you can see your child's overall performance – below basic, basic, proficient or advanced.

On this report, you will find specific information about your child's performance on the Algebra I Keystone Exam. It displays your child's Highest Total Test Scale Score to Date for Module 1 and Module 2. Module 1 assesses Operations and Linear Equations and Inequalities, and Module 2 assesses Linear Functions and Data Organization. No previous scores will be displayed because the May 2011 administration marks the first time this test was given.

For detailed information about how the Keystone Exams are being integrated into the Pennsylvania graduation requirements, please visit the Pennsylvania Department of Education's Standards Aligned System website at www.pdesas.org, or contact your child's school.

Sincerely,
Ronald J. Tomalis
Ronald J. Tomalis
Secretary of Education

About the Keystone Exams

The Keystone Exams are tests students take at the end of specific high school level courses, including for 2010-11: Algebra I, Biology and Literature. They are offered in both paper/pencil and online formats.

Keystone Exams are one component of Pennsylvania's new system of high school graduation requirements affecting students in the class of 2015 and beyond. These tests were developed by Pennsylvania educators and are aligned to the standards adopted by the Pennsylvania State Board of Education. The results help students, parents and educators understand how well we are meeting rigorous expectations for student achievement in core subject areas. In future years, under Pennsylvania's new system of graduation requirements, Keystone Exam results will help determine whether or not a student has mastered the standards associated with earning a high school diploma.

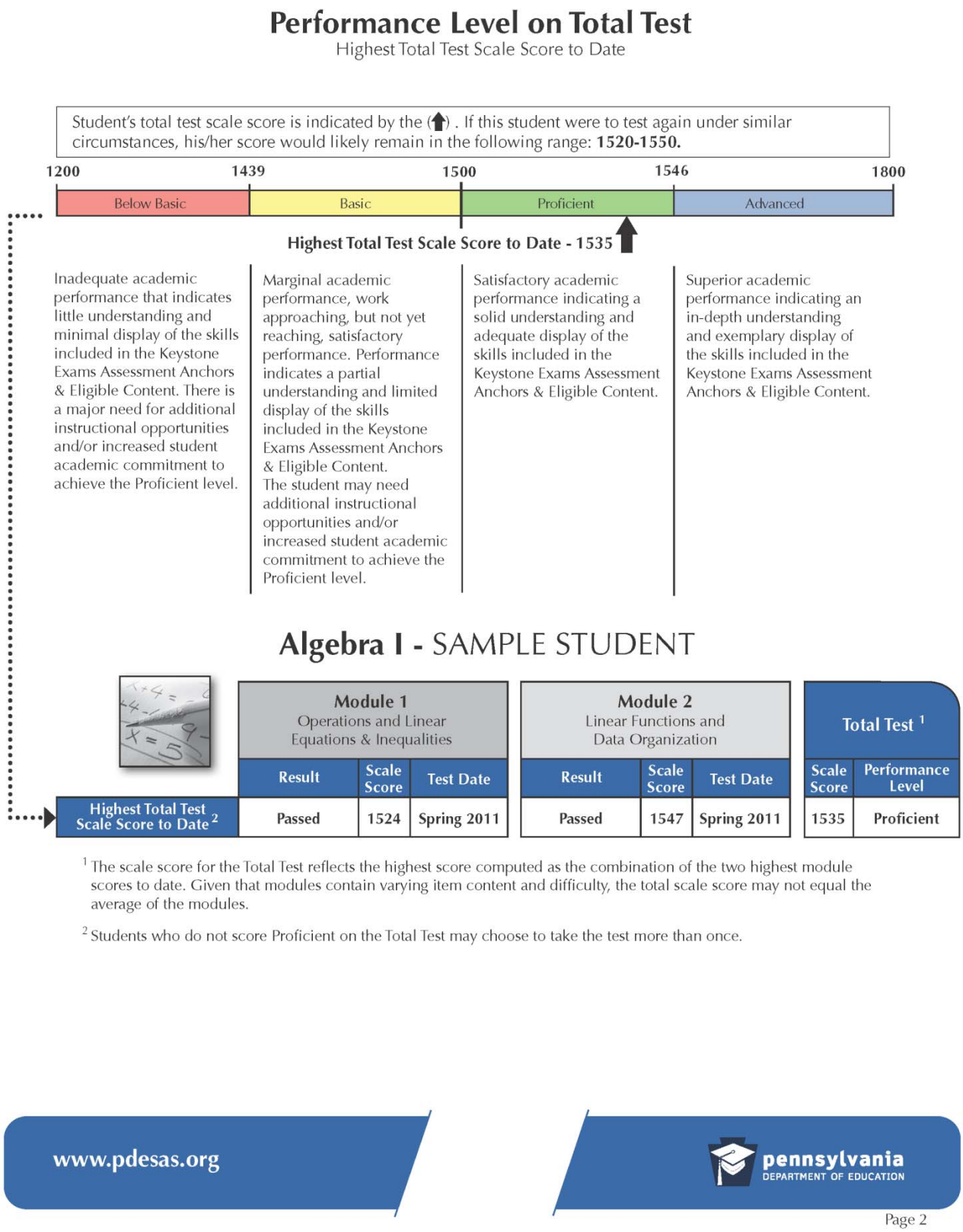
For more information about the Keystone Exams, please visit the Pennsylvania Department of Education's Standards Aligned System website at www.pdesas.org (select "Assessments" and then "Keystone Exams").

www.pdesas.org

pennsylvania
DEPARTMENT OF EDUCATION

Page 1

Figure 16–2. Page 2 of the Individual Student Report



SUMMARY REPORTS

Summary reports are provided at the school, district, and state levels. These reports contain summary information about the percentage of students in each of the four performance levels. Raw scores are also provided by assessment anchor to allow schools or districts to identify strengths and weaknesses at the content-strand level.

REPORT INTERPRETATION GUIDE

A report interpretation guide is provided to help parents and other Keystone Exams stakeholders better understand test result information presented in the individual student report. The report interpretation guide can be found on the PDE SAS website (www.pdesas.org/Assessment/Keystone).

CHAPTER SEVENTEEN: OPERATIONAL TEST STATISTICS

This chapter presents various summary statistics for the total-test scores based on the final data file described in Chapter Nine. Related information covered elsewhere in this report includes the item-level statistics that were presented in Chapters Eleven (classical item statistics) and Twelve (Rasch item statistics). The reader is referred to these chapters for additional consideration as item difficulty distributions can affect total score distributions.

PERFORMANCE LEVEL STATISTICS

Table 17–1 presents performance level percentages by test administration, content area, and student type. As can be seen from the table, the overall percentage in each performance level varied from administration to administration, depending on the ratio of the first-time testers and retesters. In general, retesters had a lower percentage of students in the Proficient and Advanced levels than the first-time testers did.

Table 17–1. Performance Level Percentages

Content Area	All Testers					First-Time Testers					Retesters				
	N	Percentage in Each Performance Level				*N*	Percentage in Each Performance Level				*N*	Percentage in Each Performance Level			
		Below Basic	Basic	Proficient	Advanced		Below Basic	Basic	Proficient	Advanced		Below Basic	Basic	Proficient	Advanced
Winter															
Algebra I	97,386	14.9	58.6	21.2	5.3	21,621	20.9	34.6	25.2	19.2	75,765	13.2	65.5	20.0	1.3
Biology	62,415	27.7	45.4	21.2	5.7	19,672	27.0	25.8	30.1	17.2	42,743	28.0	54.5	17.2	0.4
Literature	49,572	14.4	47.6	34.0	4.1	19,795	15.0	28.7	46.6	9.7	29,777	14.0	60.1	25.6	0.3
Spring															
Algebra I	201,526	16.05	43.5	25.7	14.7	124,954	16.8	31.7	28.8	22.7	76,572	14.9	62.6	20.8	1.7
Biology	164,172	26.94	31.3	23.9	17.9	119,274	24.7	22.5	28.5	24.4	44,898	33.0	54.7	11.8	0.4
Literature	143,421	12.82	34.6	46.7	5.9	113,477	11.8	27.3	53.5	7.4	29,944	16.7	62.2	21.0	0.2
Summer															
Algebra I	1,712	14.25	57.5	24.9	3.3	294	21.1	38.8	25.9	14.3	1,418	12.8	61.4	24.8	1.0
Biology	859	20.37	44.6	29.0	6.1	181	30.9	26.5	16.0	26.5	678	17.6	49.4	32.5	0.6
Literature	644	12.58	41.0	45.3	1.1	204	16.2	27.5	52.9	3.4	440	10.9	47.3	41.8	0.0

SCALED SCORES

Table 17–2 provides the scaled score means and standard deviations by test administration, content area, and student type. As can be seen from the table, in most of the cases, first-time testers had a higher average scaled score than retesters did.

Table 17–2. Means and Standard Deviations of Scaled Scores

Administration	Content Area	All Testers		First-Time Testers		Retesters	
		Mean	SD	Mean	SD	Mean	SD
Winter	Algebra I	1479.9	40.5	1493.5	60.2	1476.0	31.7
	Biology	1482.9	39.1	1497.7	54.4	1476.0	26.8
	Literature	1491.8	46.9	1508.6	58.2	1480.6	33.0
Spring	Algebra I	1489.4	52.2	1498.4	59.1	1474.6	33.3
	Biology	1497.1	55.4	1506.6	60.2	1471.8	27.1
	Literature	1504.8	52.6	1512.3	54.3	1476.2	32.3
Summer	Algebra I	1479.6	36.0	1483.4	51.9	1478.8	31.8
	Biology	1489.6	42.0	1502.1	69.0	1486.2	30.3
	Literature	1493.3	41.7	1499.0	53.3	1490.6	34.8

RAW SCORES

SUMMARY STATISTICS

The reader is referred to Appendix M to review summary statistics for the operational raw scores. The statistics reported include number of points possible (Pts.), number of items (Len.), number of students tested (*N*), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), and traditional standard error of measurement (SEM).

SCORE DISTRIBUTIONS

Raw score distributions are provided in Figure 17–1. As can be seen from the graphs, overall, the retesters scored lower than the first-time testers. For all testers, the distributions of raw scores for Algebra I and Biology are positively skewed while the distributions of raw scores for Literature are negatively skewed.

Figure 17–1. Raw Score Distributions

All Testers

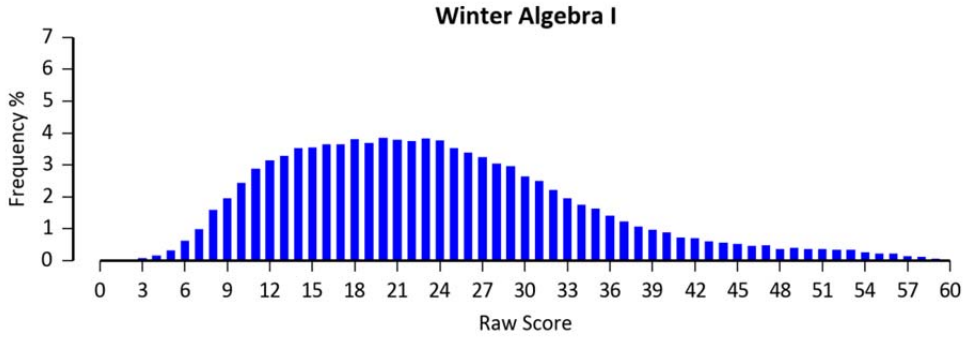
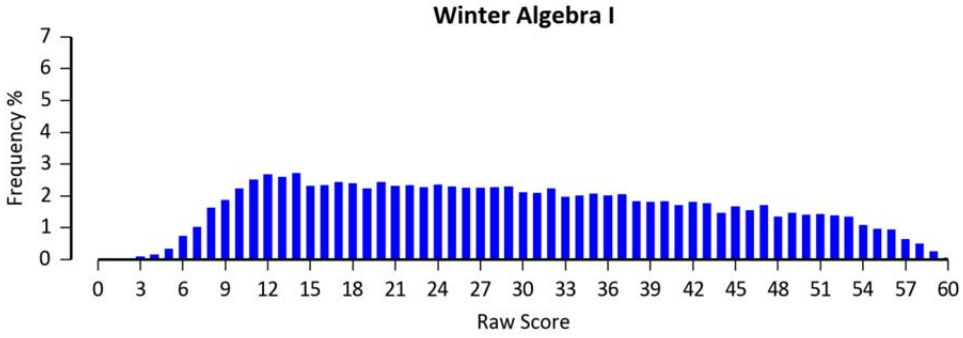
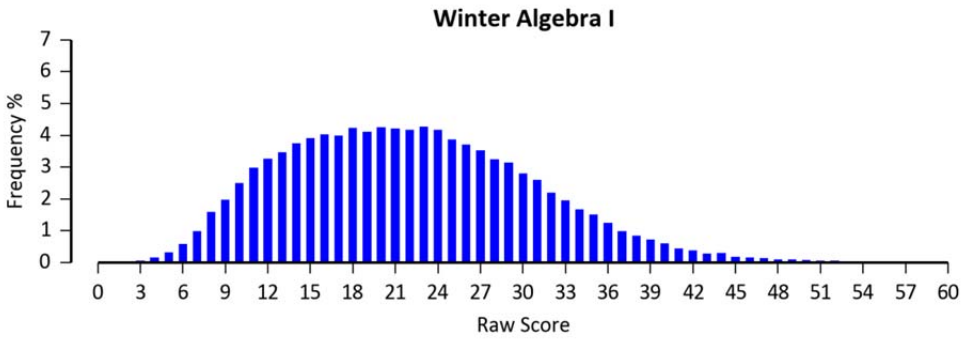


Figure 17–1 (continued). Raw Score Distributions

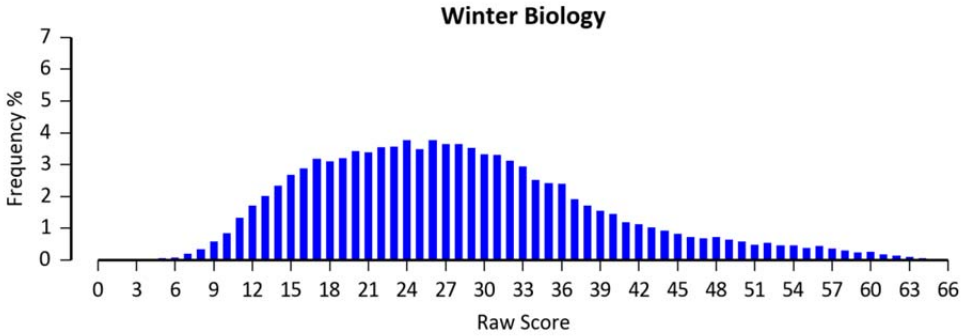
First-Time Testers



Retesters



All Testers



First-Time Testers

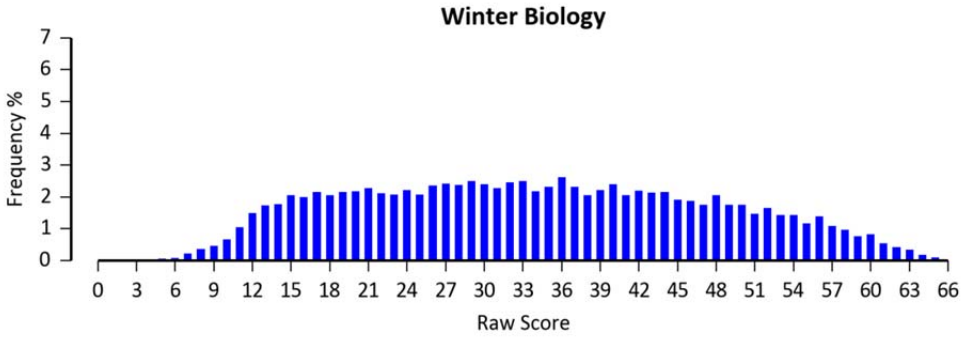
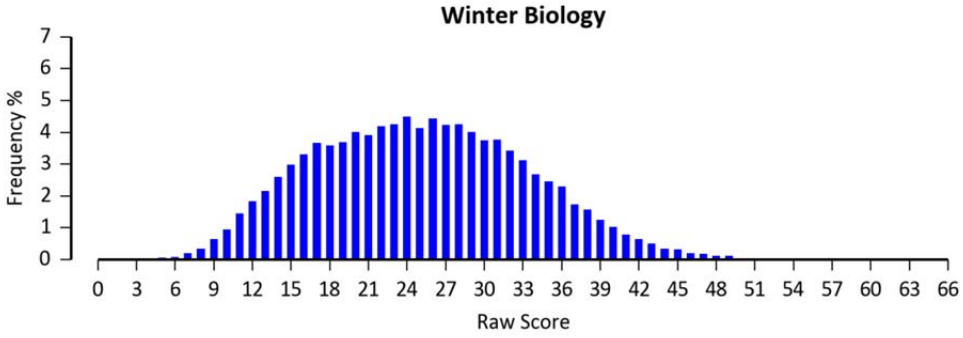
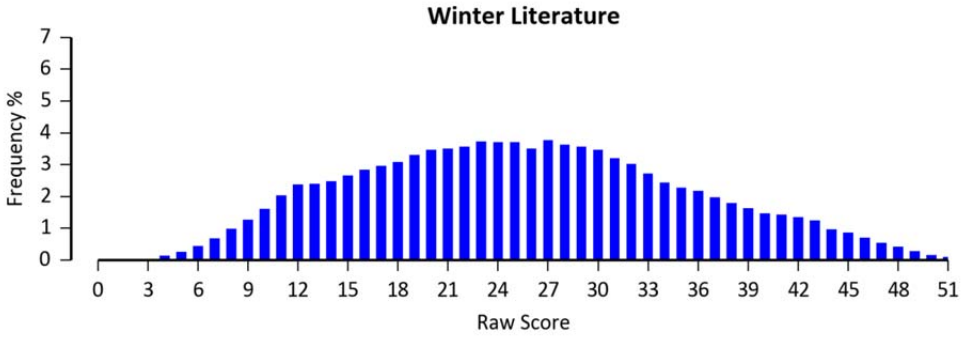


Figure 17–1 (continued). Raw Score Distributions

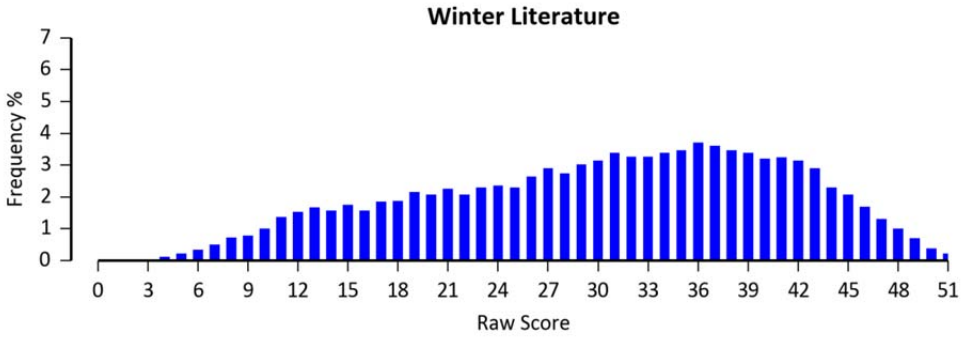
Retesters



All Testers



First-Time Testers



Retesters

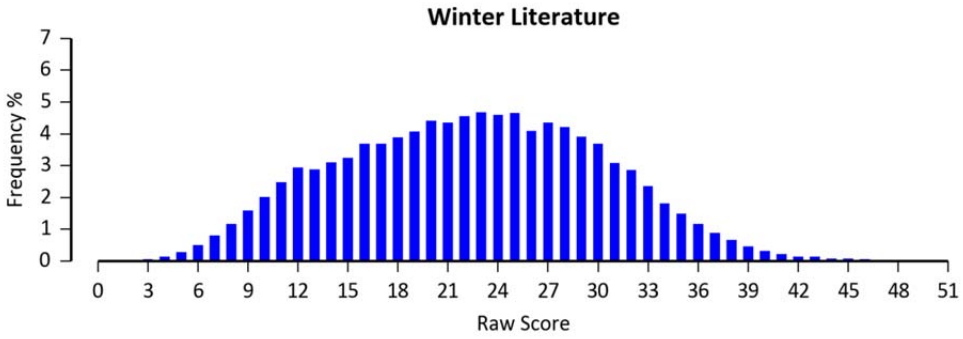
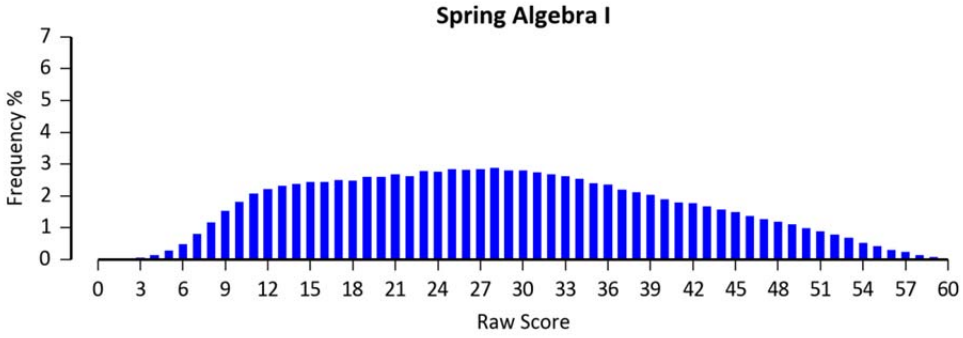
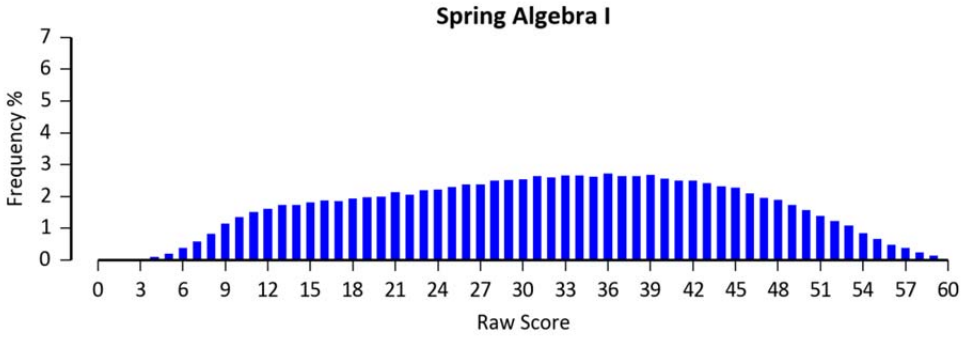


Figure 17–1 (continued). Raw Score Distributions

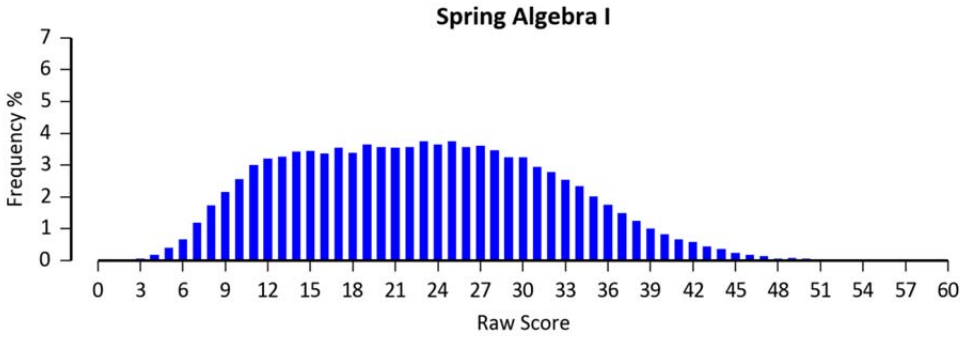
All Testers



First-Time Testers



Retesters



All Testers

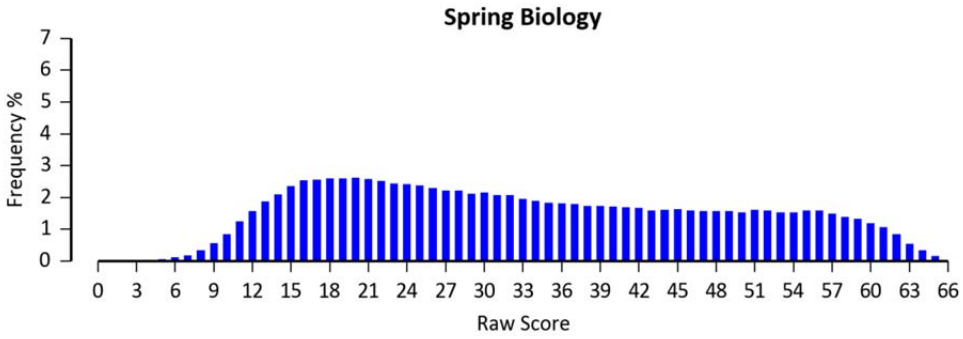
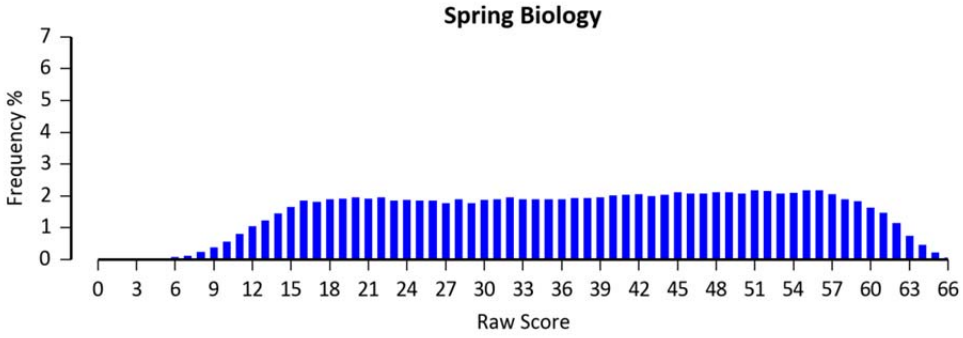
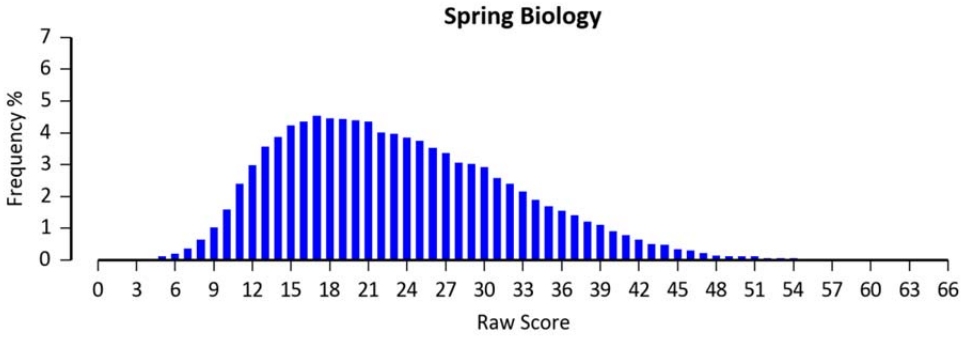


Figure 17–1 (continued). Raw Score Distributions

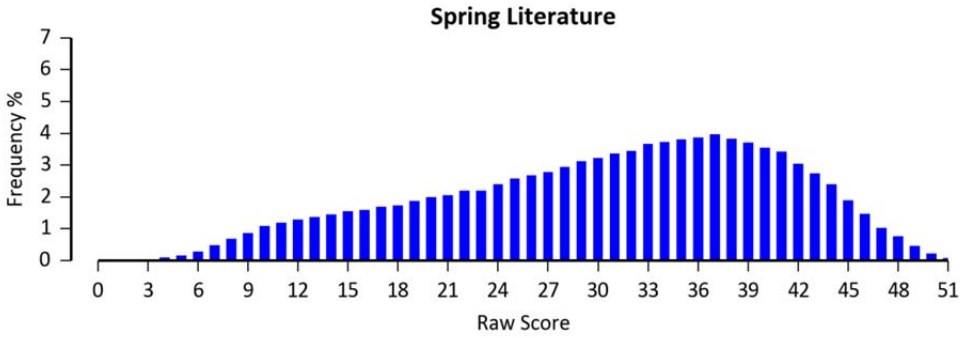
First-Time Testers



Retesters



All Testers



First-Time Testers

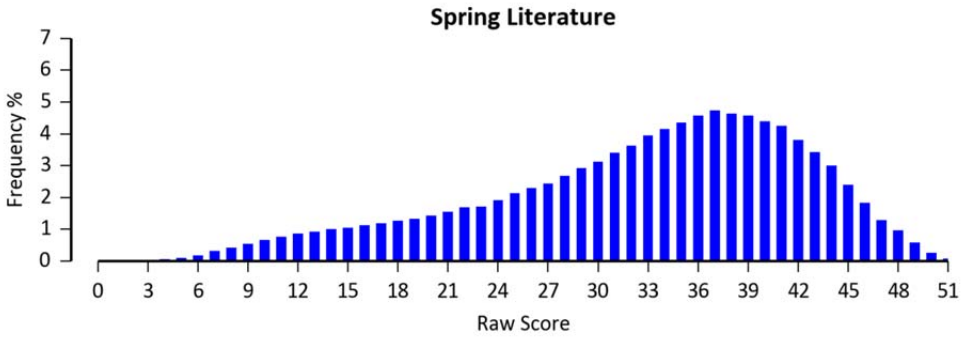
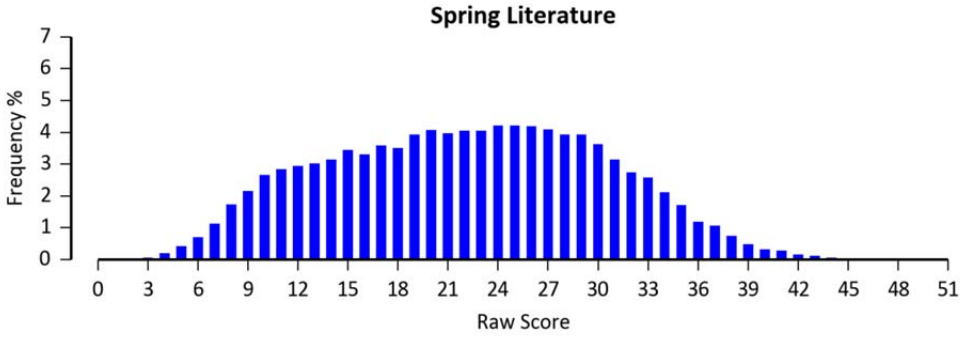
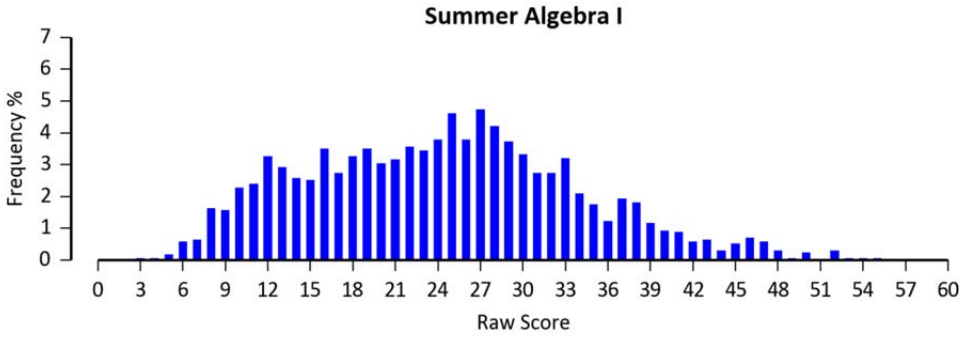


Figure 17–1 (continued). Raw Score Distributions

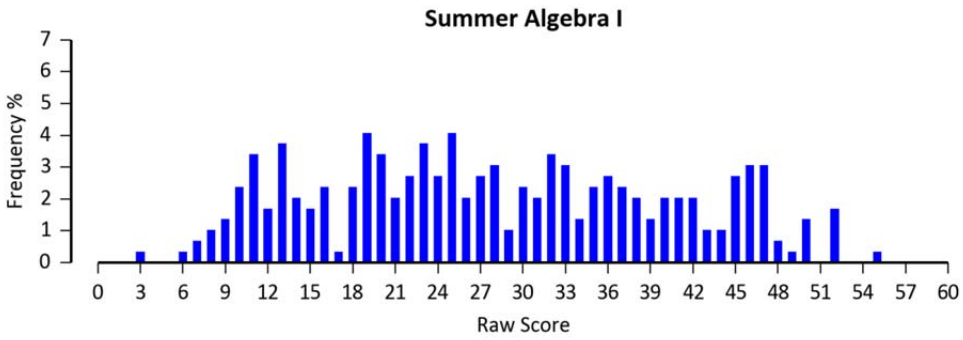
Retesters



All Testers



First-Time Testers



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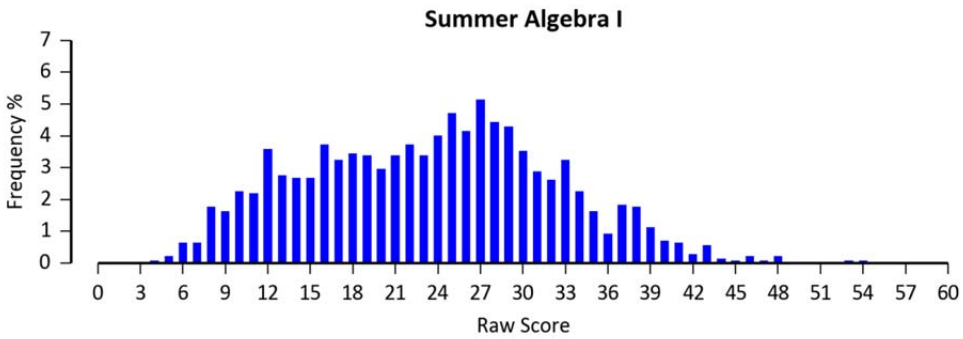
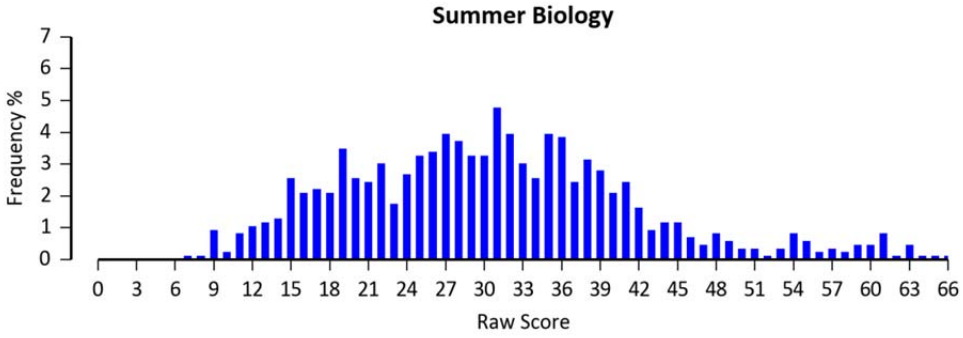
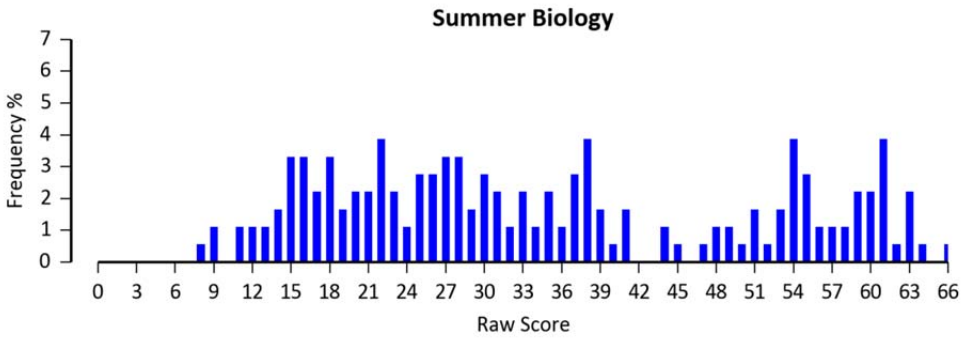


Figure 17–1 (continued). Raw Score Distributions

All Testers



First-Time Testers



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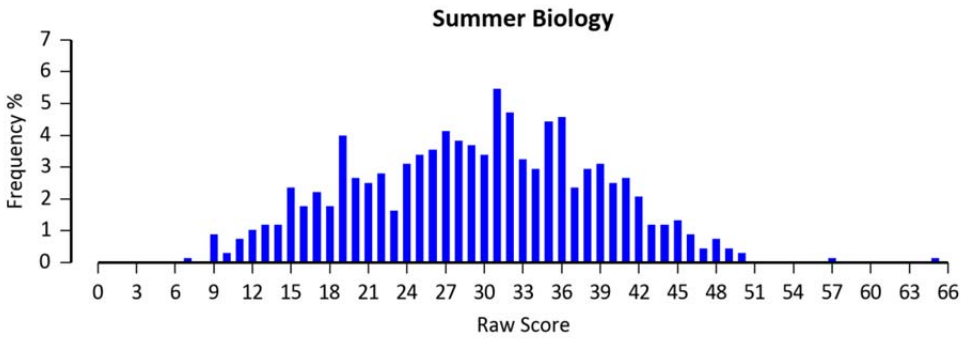


All Testers

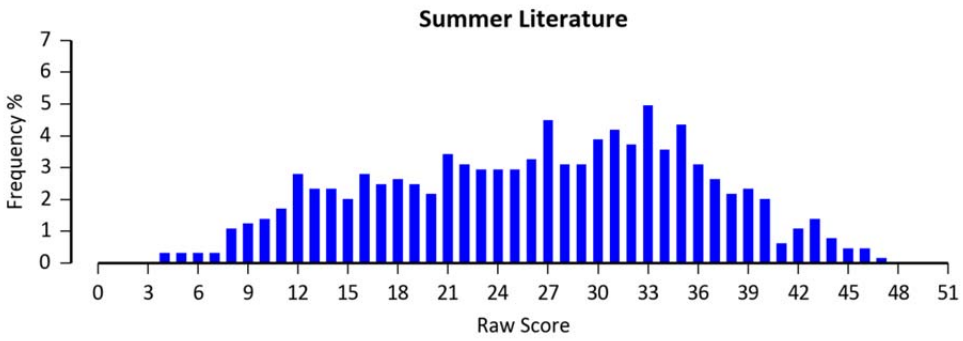
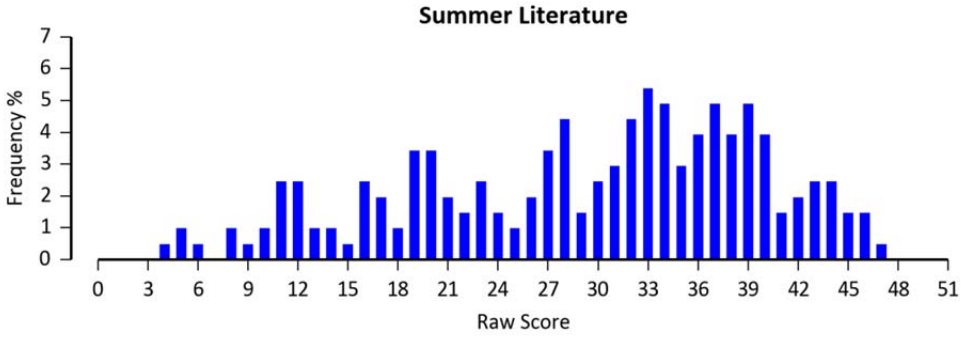
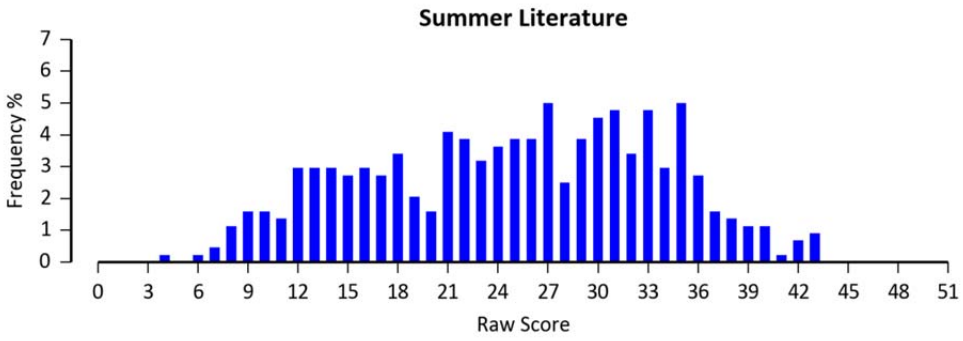


Figure 17–1 (continued). Raw Score Distributions

First-Time Testers



Retesters



Chapter Seventeen: Operational Test Statistics

CHAPTER EIGHTEEN: RELIABILITY

This chapter addresses the reliability of Pennsylvania Keystone Exams test scores. According to the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), reliability refers to

> the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable and repeatable for an individual test taker; the degree to which scores are free of errors of measurement for a given group (p. 25).

Frisbie (2005) highlighted several elements of this definition. First, reliability is a property of test scores, not of a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently make reference to a reliable test. While reliability concerns test scores (and not the test specifically), it's important to appreciate the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items/points tend to be more reliable than tests with fewer items/points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There are other reliability considerations that may be less evident from the definition above yet are still important for test users to understand. While freedom from measurement error is highlighted in the definition, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. (Validity is further discussed in Chapter Nineteen.)

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used, the raters who score the items). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand which specific type of error is being considered in a reliability study, and equally, if not more importantly, which types are not.

Understanding the distinction between relative error and absolute error is important because many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals with respect to their test performance is of interest. When specific score values are considered important (e.g., if cut scores are used), then absolute error is of interest, too. Generally, there is more error variance when considering the absolute scores of examinees, which, in turn, suggests lower reliability. Understanding examinee rank-order stability is also important; however, such stability might be well achieved even when the specific score values are considerably different.

As the above discussion suggests, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement
- Decision consistency
- Rater agreement

RELIABILITY INDICES

As shown below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: variance in true scores and variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.[10]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variance were true, the index would equal 1.0. The index would be 0.0 if none of the test score variance were true. Such scores would be pure random noise—that is, all measurement error. If the index had a value of 1.0, scores would be perfectly consistent—that is, contain no measurement error. Although values of 1.0 are never achieved in practice, it is clear that larger coefficients are more desirable as they indicate that test scores are less influenced by random error. (How big is big enough and how small is too small are issues considered in a later section.)

As noted in the introduction, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not take into account other sources of error, such as day-to-day variations (e.g., student health, testing environment) or rater inconsistency.

COEFFICIENT ALPHA

Although a number of reliability indices exist, perhaps the most frequently reported for achievement tests is coefficient alpha. Consequently, this index is the one reported for the Keystone Exams (see the column with title "r" in Appendix M). Alpha indicates the internal consistency over the responses to a set of items measuring an underlying trait, in this case, academic achievement, in content areas such as algebra, biology, and literature.

Alpha is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Variation in student performance from one sample of items to the next should be of particular concern for any achievement test user. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below:

[10] A Covariance term is not required as true scores and error are assumed to be uncorrelated in classical test theory.

Table 18–1. Two Hypothetical Vocabulary Tests

Test One	Test Two
Abase	Abate
Boon	Bilk
Capricious	Circuitous
Deface	Debase
....	....
Zealous	Zenith

If a representative group of students could take both of these tests, the correlation between the scores obtained would represent the parallel-forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings, and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the coefficient alpha index for those test scores were high, this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If coefficient alpha were low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected in alpha.

FORMULA

Consider the following data matrix representing the scores of persons (rows) on items (columns):

Table 18–2. Person × Item Score (*Xpi*) Infinite (Population-Universe) Matrix

Person	Item			
	1	2	. . . I	. . . k
1	*Y*11	*Y*12	. . . *Y*1*i*	. . . *X*1*k*
2	*Y*21	*Y*22	. . . *Y*2*i*	. . . *X*2*k*
. . . . .				
P	*Yp*1	*Yp*2	. . . *Ypi*	. . . *Xpk*
. . . . .				
N	*YN*1	*YN*2	. . . *YNi*	. . . *XNk*

Note. Adapted from Cronbach and Shavelson (2004).

Then, a general computational formula for alpha is as follows:

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Y_i}^2}{\sigma_X^2}\right)$$

where *N* is the number of parts (items or testlets), σ_X^2 is the variance of the observed total test scores, and σ_{Yi}^2 is the variance of part *i*.

FURTHER INTERPRETATIONS

RULES OF THUMB

Which reliability values are considered high enough? Which values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. Another approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For the Keystone Exams, comparisons to tests of similar lengths that were administered to similar student populations from other large-scale assessment programs would be relevant. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest ever observed, and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested earlier, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would mean that there is as much error variance as true-score variance in the scores.

IS ALPHA A LOWER LIMIT TO RELIABILITY?

According to Brennan (1998), the conventional wisdom that coefficient alpha is a lower limit to reliability is based largely on a misunderstanding. In reflecting on the 50th anniversary of his seminal 1951 article, Cronbach—in Cronbach and Shavelson (2004)—expressed similar misgivings about this conventional wisdom:

> one could argue that alpha was almost an unbiased estimate of the desired reliability. . . the *almost* in the preceding sentence refers to a small mathematical detail that causes the alpha coefficient to run a trifle lower than the desired value. This detail is of no consequence and does not support the statement made frequently in textbooks or in articles that alpha is a lower value to the reliability coefficient. That statement is justified by reasoning that starts with the definition of the desired coefficient as the expected consistency among measurements that had a higher degree of parallelism than the random parallel concept implied.

The assumptions for three common parallelism models are presented in Table 18–3. Alpha's assumptions come from the Essentially-Tau-Equivalent model, which does not require equal means or equal variances across test parts. Based on this, Brennan (1998) asserts that the lower-limit issue, as conceptualized by many, provides an answer to a question that is of minimal importance. Reframed differently, the goal of selecting a reliability coefficient is not to find the one that provides the highest coefficient, but the one that most accurately reflects the test data under study.

It is important to note that there are factors encountered in practice that may legitimately make coefficient alpha an underestimate of reliability. However, there are also factors that might make coefficient alpha an overestimate of reliability. Both possibilities are discussed further below and generally arise when the Essentially-Tau-Equivalent assumptions are strained.

Table 18–3. Summary of Expectations/Observable Relationships for Different Parallelism Models

Relationship	Degree of Measurement Parallelism*		
	Classically Parallel	Essentially-Tau Equivalent	Congeneric
Content Similarity	Yes	Yes	Yes
Equal Means across Parts	Yes	No	No
Equal Variances across Parts	Yes	No	No
Equal Covariances across Parts	Yes	Yes	No
Equal Covariances with other Variables	Yes	Yes	No

**Note*. Other models exist but are not considered here due to their limited application in practice.

BIASES THAT MIGHT MAKE ALPHA AN UNDERESTIMATE OF RELIABILITY

There are factors that might negatively bias coefficient alpha, making the apparent reliability lower than it may actually be. In practice, two situations frequently encountered that might cause this include tests that are composed of mixed item types (e.g., MC and CR items) and tests that include a planned stratification of the test items according to topics or subdomains.

Although both situations strictly violate the assumptions used in deriving the coefficient alpha (i.e., the tests are not based on equal part lengths in the former case and are not randomly parallel in the latter case), neither necessarily guarantees that the reliability will be markedly lower. In the latter case, reliability will be underestimated only when strand items are homogeneous enough for the average covariance within strata to exceed the average covariance between strata. Although both are potential influences for the Keystone Exams, the total test score reliabilities (i.e., r) reported in Appendix M ranged from 0.82 to 0.92, indicating highly consistent test scores for these instruments.

BIASES THAT MIGHT MAKE ALPHA AN OVERESTIMATE OF RELIABLITY

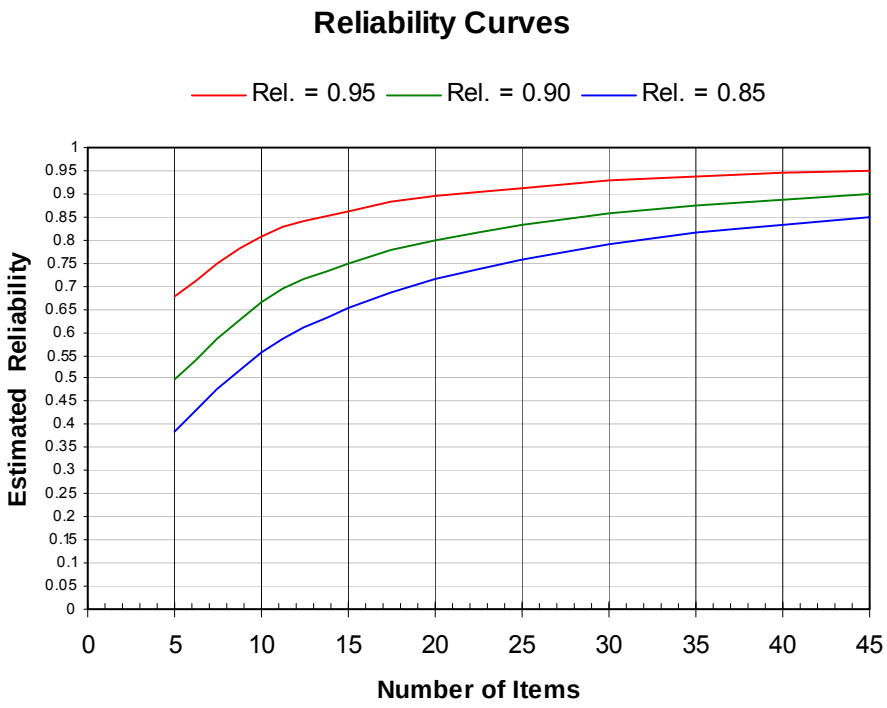
As emphasized in earlier sections, coefficient alpha only takes into account measurement error that arises from the selection of items used on a particular test form. There are other sources of random inaccuracy. One is due to the occasion of testing. Examples of other various random conditions that might affect students on any particular testing occasions include illness, fatigue, and anxiety. Also, when a test includes CR items, another source of random fluctuation can be the CR item scorers. In a sense, alpha may be positively biased because it does not take into account these other important sources of random error. Actually, any internal consistency reliability index might understate the overall problem of measurement error because they all ignore such sources of random error.

Another positive bias can occur when items are associated (clustered) with a common stimulus. Item bundles and testlets are other frequently used terms for this situation. One concrete example is when multiple reading comprehension items are associated with a common passage selection. Again, such a situation does not guarantee that the reliability estimate will be markedly affected, but the potential exists.

MODULE SCORE RELIABILITY

As noted in the introduction, reliabilities tend to be higher with an increase in test length and lower with a decrease in test length. Figure 18–1 illustrates this relationship for a hypothetical 45-point test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 10-item module would be expected to have a score reliability of just over 0.65. The use of the Spearman-Brown prophecy formula assumes all items are exchangeable, which in practice, they may not be. While such a chart may not perfectly model actual module correlations, the intent is only to illustrate the substantial impact that limited numbers of module items can have on module score reliability.

Figure 18–1. Example of the Relationship Between Test Length and Reliability



As can be seen in Appendix M, the reliability coefficients at the module level were always lower than those at the total test level. This is more likely because the number of items at the module level is half of the number of items in the total test.

STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. It always ranges between 0.0 and 1.0 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of test score precision that is better suited for determining the effect of measurement inconsistencies on the scores obtained by individual examinees. This is particularly so for conditional SEMs (CSEM) discussed further below.

TRADITIONAL STANDARD ERROR OF MEASUREMENT

A precise, theoretical interpretation of the SEM (see Appendix M) is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score,[11] there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing or the sampling of test items. The standard error is defined as the standard deviation[12] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

The SEM formula is provided below.

$$SEM = \sqrt{1 - reliability}$$

It indicates that the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value), the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value), the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account. Consider that an SEM of 3.0 on a 10-point test would be very different from an SEM of 3.0 on a 100-point test.

TRADITIONAL SEM CONFIDENCE INTERVALS

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual tests scores. SEMs help place reasonable limits (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, *X*, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between ±1 SEM about two-thirds of the time.[13] For ±2 SEM confidence intervals, the percentage increases to about 95 percent.

FURTHER INTERPRETATIONS

ONE SEM FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score levels. In reality, however, such confidence intervals vary according to one's score. Consequently, care should be taken when using the SEM for students with extreme scores. An alternate approach that conditions the SEM on a student's score estimate is described in the next sections.

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[11] True score is the score the person would receive if the measurement process were perfect.

[12] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

[13] Some prefer the following interpretation: if a student were tested an infinite number of times, the ±1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

RAW SCORE METRIC

The SEM approach is calculated using raw scores, and as such, the resulting confidence interval bands are on the raw score metric. Error bands on the scaled-score metric are considered in the next section.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the Keystone Exams SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided less complex interpretations.

One simpler description sometimes used is that a confidence interval represents the possible score range that one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing—such as a student might be sleepier one day than another, might be sick, or might not have eaten a good breakfast. There is a reliability index that captures this source of random error, and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the Keystone Exams. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on the occasion of testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test. (That is, the student took a test that covered exactly the same content but included a different set of items.) As an example, if the Algebra I score was 1450 and the SEM band was 1435 to 1465, then a student would be likely to receive a score somewhere between 1435 and 1465 if he or she took a different version of the test.

RESULTS AND OBSERVATIONS

Coefficient alpha results and associated (traditional) SEMs for various Keystone Exam scores are documented in Appendix M. Values were derived using the final data file (see Chapter Nine). The results are organized by administration and then content area. Each table also breaks out the modules and groups of interest such as the total student population (overall), gender, ethnicity, English language learner (ELL), students with an individualized education plan (IEP), and the economically disadvantaged (ED). The statistics reported include the number of points possible (Pts.), number of items (Len.), number of students tested (N), mean number of score points received (Mean), standard deviation of test scores (SD), reliability (r), and traditional standard error of measurement (SEM).

Note that these tables report the standard deviations of observed scores. Assuming normally distributed scores, one would expect about two-thirds of the observations to be within one standard deviation of the mean. An estimate of the standard deviation of the true scores can be computed as

$$\hat{\sigma}_T = \sqrt{\hat{\sigma}_x^2 - \hat{\sigma}_x^2(1-\hat{\rho}_{xx})}.$$

The overall test score reliability values are high (with a value of 0.82 or higher) for Algebra I, Biology, and Literature. The reliabilities at the module level are relatively low. This is most likely due to the fact that each module contains fewer items. It was also noted that reliabilities tend to go up in value with an increase in population heterogeneity and go down in value with a decrease in more homogeneous populations. Once again, there is no firm guideline regarding how low is too low. The lower a given reliability coefficient, the greater the potential for over-interpretation. As a point of reference, a reliability coefficient of 0.50 would suggest that there is as much error variance as true-score variance in the scores. It should be noted that the reliability of group mean scores (e.g., school or district means) tends to be higher than that of individual scores, suggesting interpretation of strand scores at these aggregate levels is likely reasonable.

RASCH CONDITIONAL STANDARD ERRORS OF MEASUREMENT

The CSEM also indicates the degree of measurement error but does so in scaled-score units and varies as a function of a student's actual scaled score. Therefore, the CSEM may be especially useful in characterizing measurement precision in the neighborhood of a score level used for decision making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model:

$$CSEM(\hat{\beta}_n) = \frac{1}{\sqrt{I(\hat{\beta}_n)}}$$

where $CSEM(\hat{\beta}_n)$ is conditional standard error of measurement and $I(\hat{\beta}_n)$ is test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability (β_n) metric. The conditional standard error on the scaled-score (SS) metric is determined simply by multiplying the $CSEM(\hat{\beta}_n)$ by the slope (multiplicative constant, *m*) of the linear transformation equation used to convert the Rasch ability estimates to scaled scores.

$$CSEM(\text{SS}) = CSEM(\hat{\beta}_n) * m$$

Chapter Fourteen provides the linear transformation formulas for each of the Keystone Exams.

RASCH CSEM CONFIDENCE INTERVALS

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scaled scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

FURTHER INTERPRETATIONS

DIFFERENT CSEMS FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score levels. The magnitude of the CSEM values is U-shaped, with larger CSEM values associated with lower and higher scores.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Twelve—the Rasch-based CSEMs (conditioned on score level) should not vary across groups.

SCALED-SCORE METRIC

The CSEM and associated confidence interval bands are on the scaled-score metric.

TYPE OF ERROR REFLECTED

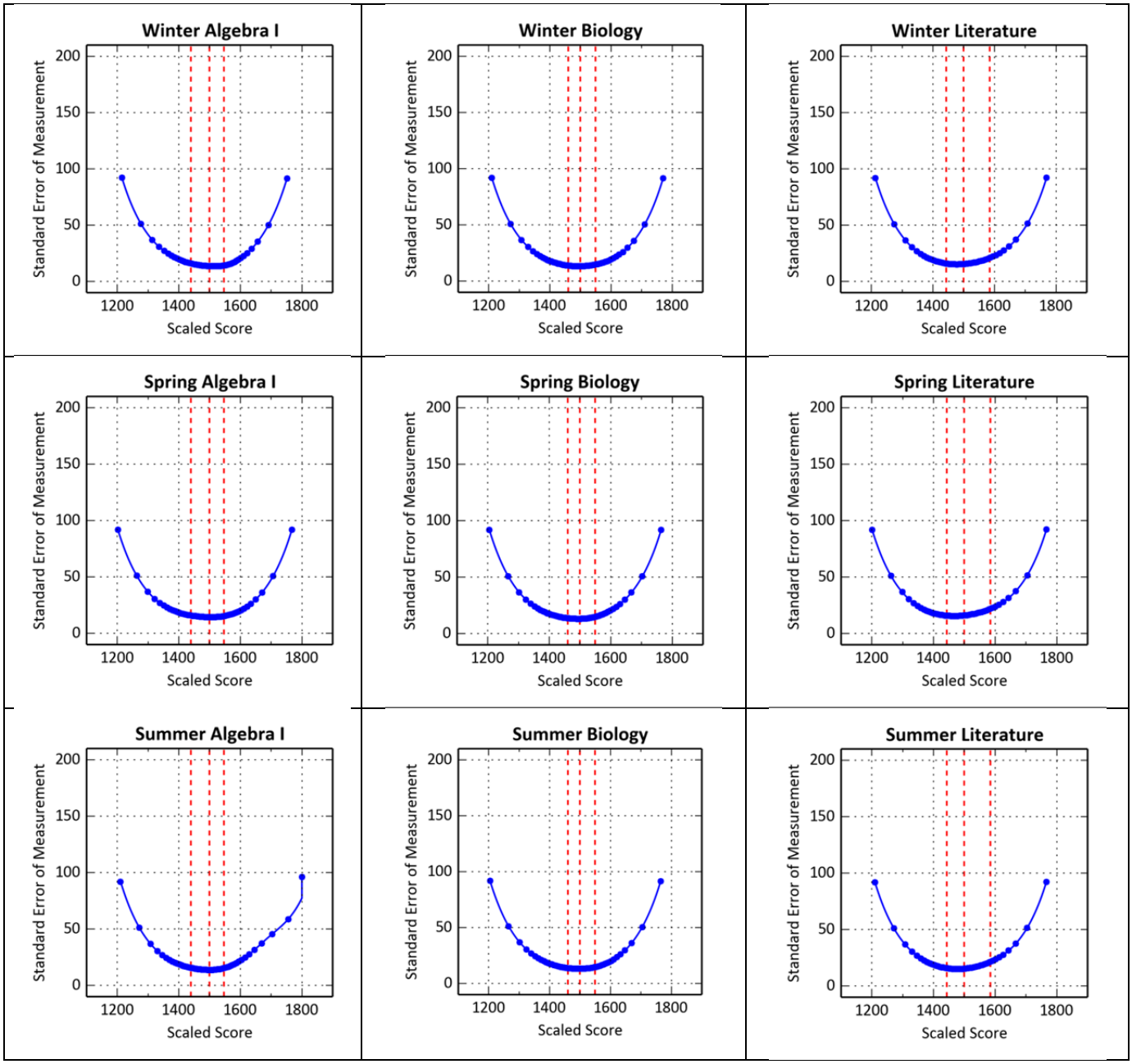
The CSEMs documented on the Keystone Exams score reports are the Rasch-based conditional standard errors of measurement described above. These are provided by the program WINSTEPS described in Chapter Twelve. As noted earlier, these CSEMs are based on the concept of statistical information. For the purpose of providing a simpler explanation of CSEMs to test score users, the earlier description of SEMs framed using the idea of internal consistency reliability was provided in the Keystone Exams score report interpretive guide.[14] Score report content is considered in greater detail in Chapter Sixteen.

RESULTS AND OBSERVATIONS

Figure 18–2 shows the Rasch CSEMs associated with each scaled-score level. (This information is also provided in tabular form in Appendix K.) Values were derived using the calibration data file described in Chapter Ten. The values are fairly consistent across a noticeably large range of the scaled scores, as demonstrated by the relatively flat bottoms of most plots. The values increase at both extremes (i.e., at smaller and larger scaled scores) giving these figures their typical U-shaped pattern. The three red-dashed lines represent the Basic, Proficient, and Advanced scaled score cuts, respectively, moving from lower to higher scaled-score values. CSEM values at the cut score lines are associated with smaller values, indicating more precise measurement occurs at these cuts.

[14] Because Rasch CSEMs are based on statistical information, it is questionable whether they account for error variance due to items. However, it seems difficult to construct a simple explanation of Rasch CSEMs for the general public.

Figure 18–2. Conditional Standard Error Plots for Each Administration and Content Area



RELIABILITY OF PERFORMANCE LEVEL CLASSIFICATION DECISIONS

Student performance on the Keystone Exams is classified into one of four achievement levels using the cut scores described in Chapter Thirteen. The reliability of the classification decisions can be assessed by two statistics: decision accuracy and decision consistency.

DECISION ACCURACY

Decision accuracy describes the extent to which performance level classification decisions based on the administered test form would agree with the decisions that would be made on the basis of a perfectly reliable test (i.e., if it was possible to know each examinee's true score). Decision accuracy answers the question: How does the actual classification of test takers, based on their single-form scores, agree with the classification that would be made on the basis of their true scores, if their true scores were somehow known?

DECISION CONSISTENCY

Decision consistency describes the extent to which classification decisions based on the administered test form would agree with the decisions made if a parallel alternate form had been administered. Decision consistency answers the question: What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test?

Since the true scores are unknown and it is not feasible to repeat the Keystone Exams in order to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data in order to project the consistency of classifications solely using data from the available administration (Hambleton and Novick, 1973). Although a number of procedures are available, two well-known methods were developed by Hanson and Brennan (1990) and Livingston and Lewis (1995), utilizing specific true score models. These approaches are fairly complex, and the cited sources contain details regarding the statistical models used to calculate the decision accuracy and consistency from a single administration.

For Keystone Exams, given that the two approaches provide similar results, true scores and single-form scores on forms parallel to the one actually given are estimated following the Livingston and Lewis (1995) method. The decision accuracy is estimated using an estimated joint distribution of reported performance-level classifications on the current form of the exam and the performance-level classifications based on the true score. Decision consistency is estimated using an estimated joint distribution of reported performance-level classifications on the current form of the exam and performance-level classifications on the parallel alternate form. In each case, the proportion of performance-level classifications with exact agreement is the sum of the entries in the diagonal of the contingency table representing the joint distribution. Reliability of classification at each performance-level cut score is estimated by collapsing the joint distribution at the passing score boundary into a 2-by-2 table and summing the two entries.

Several factors might affect the classification decision accuracy and consistency. One important factor is the reliability of the scores. All other things being equal, more reliable test scores tend to result in more similar reclassifications. Another factor is the location of the cut score in the score distribution. More consistent classifications are observed when the cut scores are located away from the mass of the score distribution. For example, when scores are close to being normally distributed, the mass is concentrated in the middle of the distribution, and thus, classifications tend to become more consistent when cut scores go up from

70 percent to 80 percent, or, alternatively, go down from 30 percent to 20 percent. The number of performance levels is also a consideration. Consistency indices for four performance levels should be lower than for those based on two categories. This is not surprising since classification using four levels would allow more opportunity to change achievement levels. Hence, there would be more classification errors with four achievement levels, resulting in lower consistency indices.

The results—derived using the program *BB-Class* (Brennan, 2004)—for the overall accuracy and consistency across all four performance levels as well as for the dichotomies created by the three cut scores are presented in Table 18–4.

Across all administrations and content areas, the overall decision accuracy ranged from 0.78 to 0.82 and the decision consistency ranged from 0.69 to 0.75. Dichotomous decisions have the higher accuracy and consistency values than the overall. The decision accuracy of the Basic/Proficient cut scores ranged from 0.90 to 0.94 and the decision consistency ranged from 0.86 to 0.91. These results indicate that at least 90% of students meeting or exceeding the Proficient cut score would receive the same classification if their true scores were known. If a parallel test were administered, at least 86 percent or more of students meeting or exceeding the Proficient cut score would be classified in the same way.

Table 18–4. Reliability of Performance-Level Classification Decisions

Administration	Content Area	Statistics	Overall	Below Basic/Basic	Basic/Proficient	Proficient/Advanced
Winter	Algebra I	Accuracy	0.78	0.87	0.93	0.98
		Consistency	0.69	0.82	0.90	0.97
	Biology	Accuracy	0.79	0.89	0.93	0.98
		Consistency	0.71	0.85	0.90	0.97
	Literature	Accuracy	0.80	0.91	0.91	0.98
		Consistency	0.72	0.88	0.88	0.97
Spring	Algebra I	Accuracy	0.79	0.92	0.92	0.95
		Consistency	0.70	0.89	0.88	0.93
	Biology	Accuracy	0.82	0.93	0.94	0.95
		Consistency	0.75	0.90	0.91	0.94
	Literature	Accuracy	0.80	0.94	0.91	0.95
		Consistency	0.73	0.92	0.87	0.93
Summer	Algebra I	Accuracy	0.79	0.90	0.91	0.98
		Consistency	0.71	0.86	0.88	0.97
	Biology	Accuracy	0.78	0.89	0.92	0.97
		Consistency	0.69	0.85	0.89	0.96
	Literature	Accuracy	0.82	0.93	0.90	0.99
		Consistency	0.75	0.90	0.86	0.99

RATER AGREEMENT

Because CR items are included on the Keystone Exams, another source of random error is related to the scorers of those items. Frisbie (2005) noted that "test score reliability differs from scorer reliability" and that "the need for one kind of estimate cannot be satisfied by the other." Additionally, the data most easily obtainable that captures this information comes from the "10 percent read behinds" collected during the scoring process. Partly because of the way these data are obtained and reported (i.e., it's **not** a ratio of true score variance over observed score variance), the term *rater agreement* is used here, not *rater reliability* or *inter-rater reliability* as these terms are somewhat misleading.

The rater agreements for the Keystone Exams are presented in Tables 18–5 to 18–7. In addition, the percentages awarded to each score point are also presented in these tables. As the table shows, the exact inter-rater agreement percentages ranged from 77 to 100 percent. Overall, Algebra I has the highest exact agreements while Literature has the lowest exact agreement. The percentages of exact and adjacent agreement for all content areas are 100 or close to 100.

Table 18–5. Inter-Rater Agreement and Percentage Awarded for Each Score Point of CR Items: Winter

Content Area	Item	Inter-Rater Agreement %		% Exact + Adjacent Agreement	Percentage Awarded for Each Score Point					
		Exact	Adjacent		0	1	2	3	4	B/NS
Algebra I	1A	100	0	100	50	43	-	-	-	7
	1B	99	1	100	55	18	20	-	-	7
	1C	100	0	100	70	23	-	-	-	7
	2	100	0	100	47	32	6	3	1	11
	3A	99	1	100	57	32	-	-	-	10
	3B	100	0	100	35	55	-	-	-	10
	3C	100	0	100	47	42	-	-	-	10
	3D	99	1	100	37	52	-	-	-	10
	4	94	6	100	32	34	14	8	3	9
	5A	99	1	100	75	13	-	-	-	12
	5B	93	7	100	57	31	-	-	-	12
	5C	99	1	100	82	7	-	-	-	12
	5D	99	1	100	79	10	-	-	-	12
	5MU	100	0	100	88	0	-	-	-	12
	6A	99	1	100	41	41	-	-	-	13
	6B	100	0	100	79	11	-	-	-	13
	6C	99	1	100	62	25	-	-	-	13
	6D	99	1	100	69	18	-	-	-	13
Biology	1	94	6	100	58	27	5	1	NA	8
	2	94	6	100	32	37	12	3	NA	15
	3	96	4	100	65	14	5	2	NA	13
	4	92	8	100	35	31	15	9	NA	10
	5	86	14	100	14	26	23	25	NA	11
	6	90	10	100	44	27	10	3	NA	15
Literature	1	81	19	100	17	32	30	9	NA	12
	2	83	17	100	17	41	23	6	NA	13
	3	86	14	100	25	37	18	4	NA	15
	4	80	20	100	14	46	20	6	NA	13
	5	81	19	100	9	32	35	11	NA	13
	6	84	16	100	14	33	29	7	NA	17

Note: Some of the Algebra I CR items were scored by part. For example, 1A in the second column means part A of item 1. B/NS in the last column represents blank/non-scorable. NA means not applicable.

Table 18–6. Inter-Rater Agreement and Percentage Awarded for Each Score Point for CR Items: Spring

Content Area	Item	Inter-Rater Agreement %		% Exact + Adjacent Agreement	Percentage Awarded for Each Score Point					
		Exact	Adjacent		0	1	2	3	4	B/NS
Algebra I	1	88	12	100	40	34	11	6	3	6
	2A	100	0	100	68	26	-	-	-	6
	2B	100	0	100	42	52	-	-	-	6
	2C	99	1	100	65	29	-	-	-	6
	2D	100	0	100	77	17	-	-	-	6
	3	92	8	100	17	26	20	20	9	8
	4	95	5	100	12	39	15	12	17	6
	5A	99	1	100	53	40	-	-	-	6
	5B	100	0	100	85	8	-	-	-	6
	5C	99	1	100	81	13	-	-	-	6
	5D	99	1	100	66	28	-	-	-	6
	6A	98	2	100	25	41	26	-	-	8
	6B	99	1	100	76	16	-	-	-	8
	6C	100	0	100	82	10	-	-	-	8
Biology	1	85	15	100	20	29	31	11	NA	8
	2	84	16	100	31	25	21	11	NA	11
	3	85	15	100	44	23	14	5	NA	13
	4	85	15	100	7	33	37	16	NA	7
	5	82	18	100	26	22	21	19	NA	12
	6	88	12	100	42	17	12	17	NA	12
Literature	1	77	23	100	9	35	35	14	NA	7
	2	79	21	100	10	33	40	8	NA	8
	3	79	21	100	7	27	40	15	NA	10
	4	86	14	100	4	19	53	17	NA	7
	5	77	23	100	10	35	36	10	NA	9
	6	77	23	100	10	25	39	14	NA	10

Note: Some of the Algebra I CR items were scored by part. For example, 1A in the second column means part A of item 1. B/NS in the last column represents blank/non-scorable. NA means not applicable.

Table 18–7. Inter-Rater Agreement and Percentage Awarded for Each Score Point for CR Items: Summer

Content Area	Item	Inter-Rater Agreement %		% Exact + Adjacent Agreement	Percentage Awarded for Each Score Point					
		Exact	Adjacent		0	1	2	3	4	B/NS
Algebra I	1A	100	0	100	41	56	-	-	-	4
	1B	100	0	100	67	30	-	-	-	4
	1C	99	1	100	75	21	-	-	-	4
	1D	100	0	100	88	8	-	-	-	4
	2A	99	1	100	75	19	-	-	-	6
	2B	100	0	100	70	25	-	-	-	6
	2C	97	3	100	81	9	4	-	-	6
	2MU	100	0	100	94	0	-	-	-	6
	3A	99	1	100	79	1	14	-	-	7
	3B	99	1	100	53	17	23	-	-	7
	4A	100	0	100	32	63	-	-	-	5
	4B	100	0	100	94	1	-	-	-	5
	4C	99	1	100	48	47	-	-	-	5
	4D	100	0	100	58	37	-	-	-	5
	5A	99	1	100	28	66	-	-	-	5
	5B	100	0	100	79	16	-	-	-	5
	5C	99	1	100	94	1	-	-	-	5
	5D	99	1	100	84	10	-	-	-	5
	5MU	100	0	100	94	0	-	-	-	5
	6A	99	1	100	55	38	-	-	-	7
	6B	100	0	100	52	40	-	-	-	7
	6C	98	2	100	82	10	-	-	-	7
	6D	99	1	100	80	12	-	-	-	7
Biology	1	93	7	100	58	22	8	4	NA	8
	2	93	7	100	30	34	19	6	NA	11
	3	92	8	100	37	36	10	4	NA	13
	4	86	14	100	20	36	24	13	NA	7
	5	91	9	100	21	36	27	9	NA	7
	6	80	19	99	24	38	20	6	NA	12
Literature	1	85	15	100	11	30	41	11	NA	6
	2	81	19	100	16	39	33	3	NA	10
	3	84	16	100	27	32	24	3	NA	15
	4	84	16	100	17	39	26	6	NA	12
	5	81	19	100	6	27	41	15	NA	10
	6	90	10	100	16	34	29	7	NA	16

Note: Some of the Algebra I CR items were scored by part. For example, 1A in the second column means part A of item 1. B/NS in the last column represents blank/non-scorable. NA means not applicable.

Chapter Eighteen: Reliability

CHAPTER NINETEEN: VALIDITY

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999, referred to as the *Standards*), validity is "the degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests" (p. 9). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on test content, response processes, the internal structure of the test, the relationships between test scores and other variables, and the consequences of testing. In addition, when Rasch models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of a variety of evidence to support the proposed test score interpretations and uses. The entire technical report describes the technical aspects of the Keystone Exams in support of their score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, equating, score reporting, and reliability. This chapter summarizes and synthesizes the evidence based on the framework of the *Standards*. The purposes and intended uses of the Keystone Exams are reviewed first, and then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE KEYSTONE EXAMS

The *Standards* emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the Pennsylvania Keystone Exams will be reviewed first. The Keystone Exams, which began in 2010–2011 for Algebra I, Biology, and Literature, are one component of Pennsylvania's new system of high school graduation requirements for students in the class of 2015 and beyond. Students take the exams toward the end of specific courses. The Keystone Exams results help school districts guide students toward meeting state standards. Students who do not score Proficient or above on a Keystone Exam module may choose to complete a project-based assessment for that module, provided that they meet the requirements detailed below.

- The student has taken the course.
- The student was unsuccessful in achieving a score of Proficient or Advanced on the Keystone Exam after at least two attempts.
- The student has met the district's attendance requirements for the course.
- The student has participated in a satisfactory manner in supplemental instructional services.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the Keystone Exams rests greatly on establishing a link between each piece of the assessment (i.e., the items) and what students should know and be able to do as prescribed by the Keystone Exams Assessment Anchors and Eligible Content. The Keystone Exams are intended to measure the knowledge and skills described in the Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature.

Chapter Nineteen: Validity

Lane (1999) suggests taking the following steps to support the content validity of an assessment. In the case of Keystone Exams, one should

- Evaluate the degree to which the test specifications represent and align with the knowledge and skills described in the Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature.
- Evaluate the alignment between the Keystone Exams items and test specifications to ensure representativeness.
- Evaluate the extent to which the curriculum aligns with the Assessment Anchors and Eligible Content.
- Conduct content reviews of the Keystone Exams items using a panel of content experts to see whether items measure the intended construct or are the sources of construct-irrelevant variance.
- Conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- Evaluate procedures for administration and scoring such as the appropriateness of instructions to examinees, time limit for the assessment, and training of raters.
- Submit operational tests to third-party independent reviews.

Chapters Two through Eight of this report present a considerable amount of evidence related to test content. As described in these chapters, all the items were developed and aligned with the Keystone Exams Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature. After development, items underwent multiple rounds of content and bias reviews. After being field tested, they were reviewed with respect to their statistical properties. Items selected for the operational assessment had to pass content, psychometric, and PDE reviews. Tests were administrated according to standardized procedures with allowable accommodations.

Some of the efforts made to ensure content validity are summarized below.

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the Keystone Exams items aligned with the Assessment Anchors and Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content, levels of cognitive complexity, and levels of difficulty.
- DRC selected qualified item writers and provided training to help ensure they wrote high-quality items.
- All newly developed items were first reviewed by content specialists and editors at DRC to make sure they measured the intended Assessment Anchors and Eligible Content for Algebra I, Biology, and Literature. Appropriateness for the intended students was also considered, as well as DOK, graphics, grammar/punctuation, language demand, and distractor reasonableness.
- Prior to field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
    - Overall quality and clarity
    - Anchor, Eligible Content, and/or standard alignment
    - Grade-level appropriateness

- Difficulty level
- DOK
- Appropriate sources of challenge (e.g., unintended content and skills)
- Correct answer
- Quality of distractors
- Graphics
- Appropriate language demand
- Freedom from bias

- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all the prior hurdles were tried out as embedded field test items in the operational test. Several statistical analyses were conducted on the field test data including classical item analyses, distractor analyses, and differential item functioning (DIF). Items were again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for particular groups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for students in particular groups by eliminating potential sources of construct-irrelevant variance.
- The Keystone Exams were administered according to standardized procedures with allowable accommodations. Students were given ample time to complete the tests (i.e., there were no speediness issues).
- As described in Chapter Eight, the raters for constructed-response (CR) items were carefully recruited and well trained. Their scoring was monitored throughout the scoring session to ensure that an acceptable level of scoring accuracy was maintained.

EVIDENCE BASED ON RESPONSE PROCESS

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match those identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or cognitive labs can be used to collect this type of evidence. In addition, when an assessment includes CR items, an examination of the extent to which the raters interpret and apply the scoring criteria accurately when assigning scores to students' responses on CR items also adds response-process validity evidence.

For the operational Keystone Exams offered in winter, spring, and summer, no cognitive lab studies were conducted to collect the response-process evidence. Rather, for all the Keystone Exams, well-organized scorer training and subsequent monitoring of rating accuracy helped ensure that raters strictly followed the scoring criteria and that no features unrelated to the rubric significantly affected their scoring.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (1999), internal-structure evidence refers to the degree to which the relationships between test items and test components conform to the construct on which the proposed test interpretations are based. For each Keystone Exam, one total test score as well as module scores were reported (see Chapter Sixteen for more information about the Keystone Exams scores). Several dimensionality studies were conducted in order to provide internal-structure evidence relating to the use of both types of scores.

ITEM-TEST CORRELATIONS

Item-test correlations are provided and discussed in Chapter Eleven. All values were positive and of acceptable magnitude.

DIFFERENTIAL ITEM FUNCTIONING (DIF)

DIF analyses with respect to gender, ethnicity, and test administration mode help address construct-irrelevant variance, which represents an important threat to the validity of achievement tests. As noted in Chapter Five, field test items were screened and reviewed for DIF. Only items approved by teacher committees were eligible for operational use. DIF analyses were conducted on the operational items again to monitor the bias code change. As can be seen in Table 19–1, there were a very few items where the bias code changed from A/B (i.e., A+, A-, B+, and B-) to C (i.e., C+ or C-). Given that most items selected to build the operational forms had no C-level DIF, the Keystone Exams can be considered valid from this perspective.

Table 19–1. Summary of Bias Code Change from Field Test to Operational Test

Administration	Content Area	Change	Male/Female	White/Black	PPT/CBT
Winter	Algebra I	C →A/B	0	1	0
		A/B → C	1	0	0
	Biology	C → A/B	0	0	0
		A/B → C	0	0	0
	Literature	C → A/B	5	1	1
		A/B → C	0	0	0
Spring	Algebra I	C → A/B	0	0	0
		A/B → C	0	0	0
	Biology	C → A/B	0	0	0
		A/B → C	0	0	0
	Literature	C → A/B	0	0	2
		A/B → C	0	0	0
Summer	Algebra I	C → A/B	0	0	0
		A/B → C	1	1	0
	Biology	C → A/B	0	0	0
		A/B → C	0	2	1
	Literature	C → A/B	2	1	0
		A/B → C	0	0	3

Note: PPT represents the paper-and-pencil-based test, and CBT represents the computer-based test.

DIMENSIONALITY

Dimensionality analyses were conducted for the winter, spring, and summer Keystone Exams using WINSTEPS's principle components analyses on response residuals for each content area. Results are shown in Chapter Twelve. The principal component analysis results provided evidence that each of the three Keystone Exams was essentially unidimensional, supporting the validity of using the total scores to estimate student's overall ability in each subject area.

MODULE CORRELATIONS

Correlations and disattenuated correlations among module scores for the Keystone Exams are presented below. Values were derived from the Keystone Exams final data files (see Chapter Nine). These data can also provide information on score dimensionality that is part of internal-structure evidence. All Keystone Exams have two modules. The intercorrelations between the modules within the content areas were positive and ranged from 0.74 to 0.88. The intercorrelations between modules in different content areas ranged from 0.45 to 0.71, which were relatively small as expected.

Table 19–2. Correlations among Algebra I, Biology, and Literature Modules

Administration	Content Area	Module	Algebra I		Biology		Literature	
			Module 1	Module 2	Module 1	Module 2	Module 1	Module 2
Winter	Algebra I	Module 1	-					
		Module 2	**0.77**	-				
	Biology	Module 1	0.54	0.52	-			
		Module 2	0.56	0.53	**0.78**	-		
	Literature	Module 1	0.54	0.51	0.62	0.62	-	
		Module 2	0.58	0.55	0.65	0.67	**0.79**	-
Spring	Algebra I	Module 1	-					
		Module 2	**0.85**	-				
	Biology	Module 1	0.64	0.63	-			
		Module 2	0.66	0.65	**0.88**	-		
	Literature	Module 1	0.58	0.56	0.69	0.71	-	
		Module 2	0.59	0.58	0.70	0.72	**0.83**	-
Summer	Algebra I	Module 1	-					
		Module 2	**0.74**	-				
	Biology	Module 1	0.47	0.45	-			
		Module 2	0.53	0.55	**0.79**	-		
	Literature	Module 1	0.63	0.64	0.62	0.61	-	
		Module 2	0.63	0.71	0.59	0.66	**0.78**	-

The correlations in Table 19–2 are based on the observed module scores. These observed-score correlations are weakened by existing measurement error contained within each module. As a result, disattenuated correlations could provide an estimate of the relationships among modules if there were no measurement error. (An important caveat is explained further below.) The disattenuated correlation coefficients (R_{12}) can be computed by using the formula (Spearman, 1904; Spearman, 1910) below:

$$R_{12} = \frac{r_{12}}{\sqrt{r_{11} r_{22}}},$$

where r_{12} is the observed correlation, and r_{11} and r_{22} are the reliabilities for Module 1 and Module 2. Disattenuated correlations very near 1.00 suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 suggest that different modules are measuring slightly different aspects of the same construct. Values markedly less than 1.00 suggest the modules reflect different constructs.

Table 19–3 shows the corresponding disattenuated correlations for each Keystone Exam. Given that none of these modules had perfect reliabilities (see Chapter Eighteen), the disattenuated module correlations are higher than their observed score counterparts.

Table 19–3. Disattenuated Correlations among Algebra I, Biology, and Literature Modules

Administration	Content Area	Module	Algebra I		Biology		Literature	
			Module 1	Module 2	Module 1	Module 2	Module 1	Module 2
Winter	Algebra I	Module 1	-					
		Module 2	**0.99**	-				
	Biology	Module 1	0.68	0.65	-			
		Module 2	0.71	0.67	**0.97**	-		
	Literature	Module 1	0.68	0.64	0.76	0.78	-	
		Module 2	0.72	0.70	0.79	0.82	**0.97**	-
Spring	Algebra I	Module 1	-					
		Module 2	**1.04**	-				
	Biology	Module 1	0.74	0.75	-			
		Module 2	0.77	0.78	**0.99**	-		
	Literature	Module 1	0.70	0.70	0.81	0.83	-	
		Module 2	0.70	0.71	0.81	0.83	**0.97**	-
Summer	Algebra I	Module 1	-					
		Module 2	**0.99**	-				
	Biology	Module 1	0.60	0.57	-			
		Module 2	0.68	0.70	**0.95**	-		
	Literature	Module 1	0.84	0.85	0.78	0.76	-	
		Module 2	0.82	0.91	0.72	0.80	**0.99**	-

The within-content-area correlations were high (e.g., above 0.95), suggesting that the within-content-area modules might be measuring essentially the same construct. This, in turn, suggests that the within-content-area module scores might not provide unique information about the strengths or weaknesses of many of the students.

On a fairly consistent basis, the correlations among the modules within each content area are higher than the correlations among modules across different content areas. In general, within-content-area module correlations are at or higher than 0.95, while across-content-area module correlations range from 0.57 to 0.91.

It should be noted that some caution is needed when interpreting the disattenuated results because the reliabilities used to calculate the disattenuated correlations are subject to both upward and downward biases. Consequently, some of the values in the table above may be higher or lower than they should be, depending on which bias prevails for any given pair of module scores. When the reliabilities are lower than they should be, the disattenuated correlations will be inflated and in some instances can appear higher than the theoretical correlation maximum value of 1.00.

EXPLORATORY FACTOR ANALYSIS

In order to further explore the internal structure of the Keystone Exams, an exploratory factor analysis (EFA) of the module scores across all the Keystone Exams content areas was conducted. The Keystone Exams final data file (see Chapter Nine) was used to create the observed correlation matrices shown in Table 19–2, which, in turn, were used in the EFA. In the Statistical Package for the Social Sciences (SPSS), Principle Axis Factor extraction was utilized with an oblique rotation (Promax) of the initial factor solution to improve interpretability. Oblique rotations allow for correlated factors, which seemed more appropriate for the Keystone Exams because of a priori expectations that academic achievement across subject areas should be correlated.

Table 19–4 presents the eigenvalues and the explained variance for the extracted factors for the Keystone Exams in Algebra I, Biology, and Literature. The scree plots of the eigenvalues and the first six factors can be found in Figure 19–1. The first factor accounts for 62.29 to 69.12 percent of the total variance, while the second factor explains 10.70 to 11.80 percent of the total variance. Only the first factor had an eigenvalue greater than 1.0, typically suggesting a one-factor solution using the Kaiser criterion. However, based on the belief that there should be three distinct factors (one for each content area), a three-factor solution was further explored.

Table 19–4. Eigenvalues and Explained Variance for Algebra I, Biology, and Literature Modules

Administration	Factor	Eigenvalue	Variance Explained (%)
Winter	1	3.74	**62.29**
	2	0.71	11.76
	3	0.58	9.65
	4	0.37	6.21
	5	0.31	5.12
	6	0.30	4.99
Spring	1	4.04	**67.28**
	2	0.64	10.70
	3	0.59	9.87
	4	0.25	4.18
	5	0.25	4.12
	6	0.23	3.85
Summer	1	4.15	**69.12**
	2	0.71	11.80
	3	0.50	8.34
	4	0.27	4.44
	5	0.23	3.82
	6	0.15	2.49

Figure 19–1. Scree Plot for Algebra I, Biology, and Literature Modules

Winter

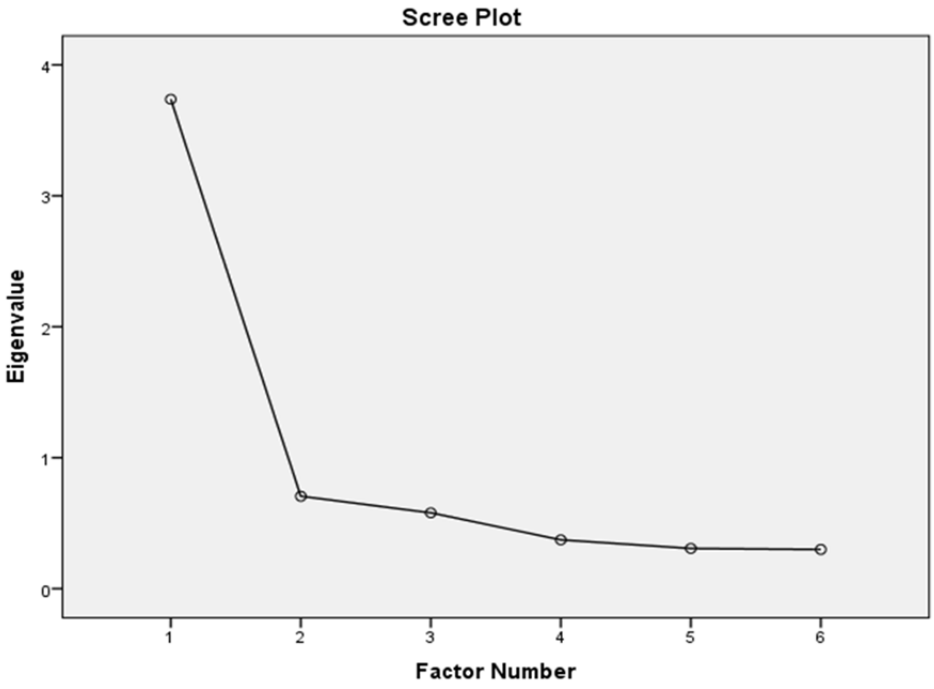
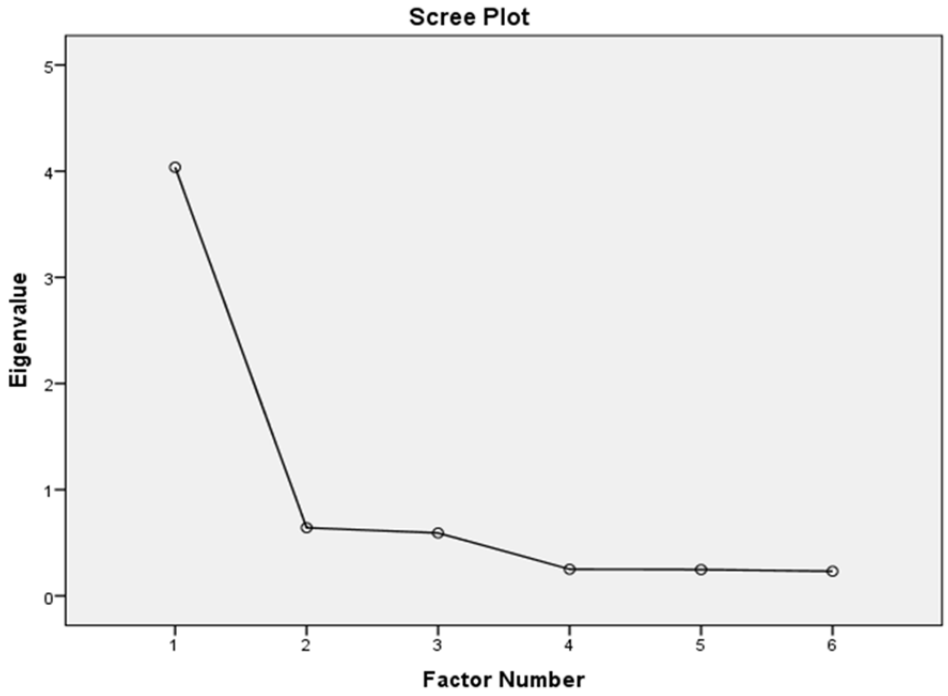
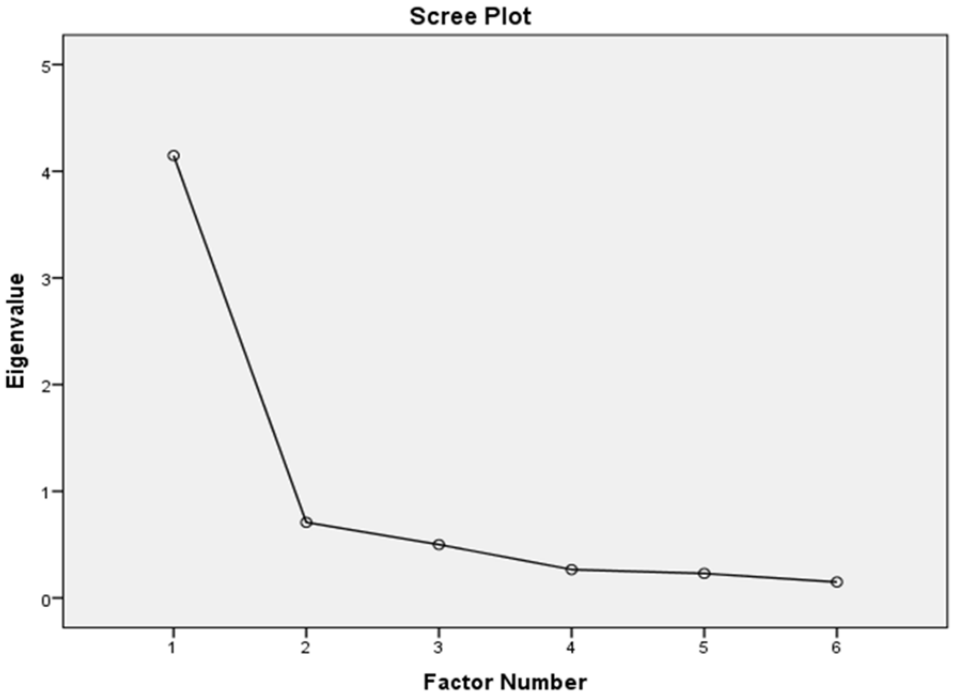


Figure 19–1 (continued). Scree Plot for Algebra I, Biology, and Literature Modules

Spring



Summer



The pattern loadings resulting from the three-factor solution are presented in Table 19–5. The pattern loadings have *simple structure*, which shows that the two Algebra I, Biology, and Literature modules clearly loaded on three different factors. The respective factor loadings were quite high. The factor correlation matrix showed that the correlations among the three latent factors are very close to the observed correlations (see Table 19–5) but lower than the disattenuated correlations.

Table 19–5. Pattern Matrix and Factor Correlation

Administration	Content Area	Module	Factor			Correlation
			1	2	3	
Winter	Algebra I	Module 1	**0.80**	0.03	0.03	Correlation (F1, F2) = 0.68
		Module 2	**0.81**	0.00	0.02	
	Biology	Module 1	0.02	0.05	**0.73**	Correlation (F1, F3) = 0.73
		Module 2	0.04	0.05	**0.73**	
	Literature	Module 1	0.00	**0.80**	0.03	Correlation (F2, F3) = 0.77
		Module 2	0.05	**0.78**	0.05	
Spring	Algebra I	Module 1	**0.83**	0.03	0.03	Correlation (F1, F2) = 0.70
		Module 2	**0.84**	0.01	0.02	
	Biology	Module 1	0.02	0.01	**0.84**	Correlation (F1, F3) = 0.72
		Module 2	0.04	0.05	**0.82**	
	Literature	Module 1	0.02	**0.83**	0.02	Correlation (F2, F3) = 0.72
		Module 2	0.03	**0.83**	0.03	
Summer	Algebra I	Module 1	-0.05	**0.80**	0.08	Correlation (F1, F2) = 0.72
		Module 2	0.05	**0.91**	-0.08	
	Biology	Module 1	-0.04	-0.04	**0.99**	Correlation (F1, F3) = 0.73
		Module 2	0.28	0.21	**0.50**	
	Literature	Module 1	**0.74**	-0.04	0.18	Correlation (F2, F3) = 0.65
		Module 2	**1.00**	0.04	-0.10	

Taken as a whole, all the internal structure evidence presented generally indicates that related elements of each of the Keystone Exams are correlated in the intended manner. Different Keystone Exams seem to measure different constructs. Additionally, the modules *within* each content area have stronger relationships than the *across* content area modules. This further supports using a total score to report students' performances in the different content areas.

The module scores present more of a mixed message. Since the modules in each content area were designed to measure distinct components of the content area, it is reasonable to expect that the inter-content module correlations should be positive and strong but, ideally, not extremely high. However, the disattenuated correlations imply that some modules are essentially measuring the same constructs for most of the students. Consequently, there may be less support for providing results for some module scores beyond the total score. While there is content rationale underlying the creation of the module scores, the empirical correlations illustrate that caution is required when using the module scores as a way to identify individual student's strengths and weaknesses. Certainly, instructional programs should not be based on module score information alone, but rather in conjunction with other sources of evidence available (e.g., teacher observations, other exam performance).

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (AERA, APA, & NCME, 1999), "Evidence based on relationships with other variables addresses questions about the degree to which relationships are consistent with the construct underlying the proposed interpretations" (p. 13). This category of evidence refers to external structure evidence and has been classified as three types of evidence: *convergent, discriminant*, and *criterion-related*. Convergent evidence is provided by relationships among students' performances on different assessments intended to measure a similar construct. Discriminant evidence is provided by relationships among students' performances on different tests intended to measure different constructs. Criterion-related evidence, either predictive or concurrent, is provided by relationships between students' test scores and their performances on a criterion measure (Cronbach, 1971; Messick, 1989).

The correlations among students' test scores on different Keystone Exams including Algebra I, Biology, and Literature are shown in Table 19–6 to provide some discriminant validity evidence. In this table, both the observed and disattenuated correlations (in the parentheses) are reported.

Table 19–6. Correlations Among Students' Performances

Administration	Content Area	Algebra I	Biology
Winter	Biology	0.63 (0.73)	-
	Literature	0.63 (0.72)	0.73 (0.83)
Spring	Biology	0.72 (0.77)	-
	Literature	0.66 (0.72)	0.77 (0.83)
Summer	Biology	0.59 (0.68)	-
	Literature	0.72 (0.84)	0.70 (0.80)

Each Keystone Exam assessment measures a different construct, so the correlations among them were not expected to be extremely high. The values in this table are consistent with this expectation. As can be seen, the correlations among the Keystone Exams ranged from 0.59 to 0.77.

External evidence for the Keystone Exams is examined by using students' scores on the 2014 Pennsylvania System of School Assessment (PSSA) as the external criteria. The final Algebra I, Biology and Literature data files were merged with the PSSA mathematics, science, and reading data using students' PAsecureIDs. Then the correlations between students' scores on the Keystone Exams and on the PSSA were calculated as one piece of external evidence. This analysis was attempted for all administrations of the Keystone Exams. However, only enough students were obtained for the spring administration. Table 19–7 summarizes the sample sizes and correlations by grade and content area after the file merging of the spring Keystone Exams and the PSSA.

Table 19–7. Number of Students with Both Spring Keystone Exams and PSSA Scores

Content Area	Grade 7		Grade 8	
	N	Correlation	*N*	Correlation
Algebra I/Mathematics	8,528	0.74	40,378	0.80
Biology/Science	NA	NA	188	0.91
Literature/Reading	NA	NA	71	0.74

The correlations within the same content area ranged from 0.74 to 0.91. These results suggest the Keystone Exams measured something similar but not identical to the corresponding PSSA tests. The results also provide external evidence in support of the Keystone Exams as a valid measure of students' achievement.

The collection of external evidence relating to the Keystone Exams is an ongoing process once the data are collected in the future. Other criterion-related evidence can be evaluated by the relationships between the Keystone Exams and criterion variables such as the Scholastic Aptitude Test (SAT), the American College Testing (ACT), or students' Grade Point Average (GPA) in their first college course.

EVIDENCE BASED ON CONSEQUENCES OF TESTS

Based on the *Standards* (AERA, APA, & NCME, 1999), evidence of the consequences of implementing an assessment program is an additional source of validity information. Both positive and negative (intended and unintended) consequences of score-based inferences must be investigated to fully evaluate the pool of validity evidence.

Lane and Stone (2002) summarized the general *intended* consequences for state assessments and accountability programs:

- Student, teacher, and administrator motivation and effort
- Curriculum and instruction practices (including content and strategies)
- Improved learning for all students
- Content and format of classroom assessments
- Professional development support
- Use and nature of test-preparation activities
- Student, teacher, administrator, and public awareness and beliefs about the assessment, criteria for judging performance, and the use of assessment results

Evidence for the improvement of student learning can be seen by looking at the increasing percentage of students who scored Proficient or Advanced across administrations. Table 19–8 provides the percentages of students who scored Proficient or Advanced by administration and content area. Values are derived from the first-time test takers for the purpose of comparison. The values for the Summer 2013 and 2014 administrations were not provided because most students were retesters. For Keystone Exams, because of the change of student population across administrations, extra care should be given while drawing any conclusions.

Table 19–8. Percentages of Students at Proficient or Advanced Across Administrations

Administration	Algebra I		Biology		Literature	
	N	%	*N*	%	*N*	%
Spring 2011	94,697	38.6	46,979	35.7	42,808	49.9
Winter 2012/013	177,302	54.8	138,506	41.9	138,379	66.4
Spring 2013	157,811	47.6	134,995	47.2	117,830	63.1
Winter 2013/2014	21,621	44.4	19,672	47.3	19,795	56.3
Spring 2014	124,954	51.5	119,274	52.9	113,477	60.9

Lane and Stone (2002) also summarized the possible *unintended* outcomes:

- Narrowing of curriculum and instruction to focus only on the specific standards assessed and ignoring the broader construct reflected in the specified standards
- Use of test-preparation materials that are closely linked to the assessment without making changes to instruction
- Use of unethical test-preparation materials or administration procedures
- Differential performance gains for subgroups of students
- Inappropriate or unfair uses of test scores, such as questionable practices in reassignment of teachers or principals
- For some students, decreased confidence and motivation to learn and to perform well on the assessment because of past experiences with assessments

As noted above, one important piece of consequential evidence pertains to the use of assessment results. As shown in Chapter Sixteen, there are several different types of scores and score reports used for the Keystone Exams. The extent to which various groups of users (e.g., students, teachers) interpret these scores and reports appropriately affects the validity of subsequent uses of these results. Chapter Sixteen is intended to provide accurate and clear test score and report information with the hope that this will help users avoid unintended uses and interpretations of the Keystone Exams results. Nevertheless, evidence pertaining to other consequences of the Keystone Exams needs continued research.

EVIDENCE RELATED TO THE USE OF RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and equating analyses associated with the Keystone Exams, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met, as well as the fit between the model and the test data. As discussed in Chapter Twelve, the underlying assumptions of Rasch models were essentially met for all the Keystone Exams data, indicating the appropriateness of using the Rasch models to analyze the Keystone Exams data.

Chapter Nineteen: Validity

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. On the whole, the early chapters of this technical report show that a strong link can be established between each Keystone Exams item and its associated Eligible Content. Details regarding how the operational Keystone Exams were assembled to reflect the state content standards and detailed information regarding educator reviews (including content, bias, and sensitivity reviews) are presented in Chapter Six.

Module score intercorrelations were also presented in this chapter. In general, within-content-area modules (e.g., Algebra I) were correlated more highly with themselves than they did with other content-area modules (e.g., Literature). Consequently, this provides some favorable evidence regarding the internal and external relationships between the tests' components.

Validity of score inferences is bolstered when test scores are consistent. Here, the reliabilities of the total test scores (presented in Chapter Eighteen) were very good, with many in the low 0.90s.

As reported in Chapter Five, DIF with respect to gender, ethnicity, and test administration mode helps address construct-irrelevant variance, which represents an important threat to the validity of inferences made from achievement test scores. As noted in that chapter, field test items are screened and reviewed for DIF. Only items approved by data review committees are eligible for operational use.

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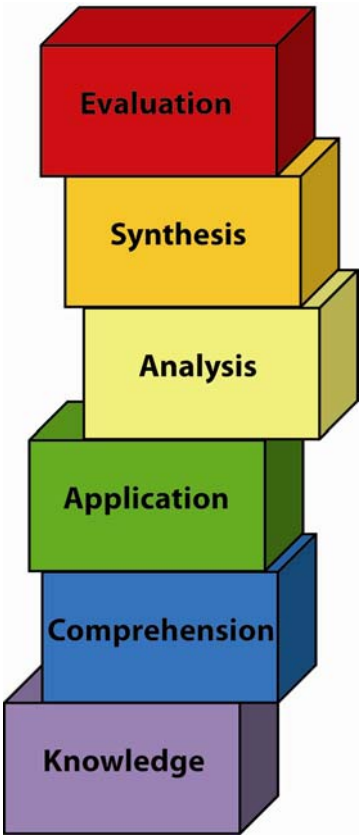
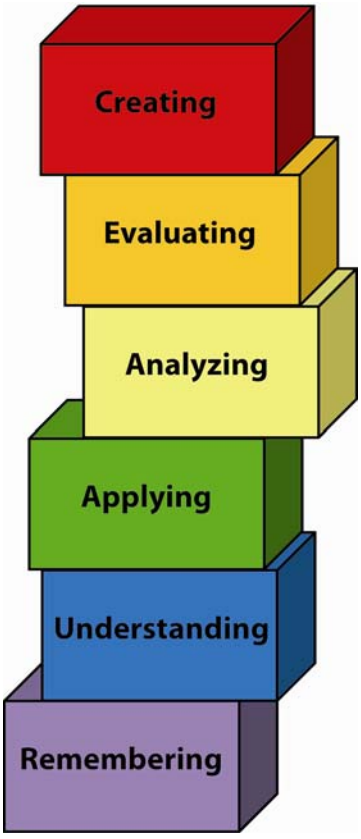
APPENDIX A: UNDERSTANDING DEPTH OF KNOWLEDGE AND COGNITIVE COMPLEXITY

One of the steps in the item review process involves Pennsylvania educators' review of items for cognitive complexity or the nature of thinking. One model for classifying thinking into cognitive levels of complexity is Bloom's Taxonomy. Bloom's Taxonomy was first presented in 1956 through the publication, The Taxonomy of Educational Objectives, The Classification of Educational Goals, Handbook I: Cognitive Domain. This taxonomy identifies six levels within the cognitive domain, from the simple recall or recognition of facts, at the lowest level, through increasingly more complex levels, to the highest level which is classified as evaluation.

During the late 1990s, the original Bloom's Taxonomy was revised (Anderson and Krathwohl, 2001). In the 2001 version of Bloom's Taxonomy, the names of the six major cognitive process categories or levels were revised to indicate action (verbs) rather than non-action (nouns) as noted in the graphic below.



Bloom's Taxonomy (1956)



Revised Taxonomy (2001)

More recently, Webb's Depth-of-Knowledge Levels have also been used in the review of items for cognitive demand. Webb's Depth of Knowledge was created by Norman Webb from the Wisconsin Center for Education Research. Webb's definition of depth of knowledge is the degree or complexity of knowledge that the content curriculum standards and expectations require. Therefore, when reviewing items for depth of knowledge, the item is reviewed to determine whether or not it is as demanding cognitively as what the actual content curriculum standard expects. In the case of the Pennsylvania Keystone items, the item meets the criterion if the depth of knowledge of the item is in alignment with the depth of knowledge of the Assessment Anchor as defined by the Eligible Content.

Webb's Depth of Knowledge includes four levels, from the lowest (basic recall) to the highest (extended thinking). Verb examples that represent each level in Webb's Depth of Knowledge can be found in the information that follows. However, verbs alone do not describe the depth of knowledge. Rather, depth of knowledge also focuses upon how well the students need to know the content before they can respond to a given item.

Because Bloom's Taxonomy (1956) is very familiar to many teachers, information comparing Bloom's Taxonomy and Webb's Depth of Knowledge is provided to Pennsylvania educators during the review of the Keystone items. The comparison serves as a "bridge" for teachers to understand Webb's Depth of Knowledge as compared to Bloom's Taxonomy.

ALGEBRA I DEPTH OF KNOWLEDGE

DEPTH OF KNOWLEDGE GUIDELINES FOR REVIEW OF ALGEBRA I, ALGEBRA II, AND GEOMETRY ITEMS

Committees of Pennsylvania educators review each Keystone Exam item, not only to determine whether or not the item measures what it is intended to measure, but also to determine whether or not the item aligns with the cognitive level or depth of knowledge of the Assessment Anchor as defined by the Eligible Content. The information below provides a definition of the four depth-of-knowledge levels. The charts at the end of the section also provide a comparison between Bloom's Taxonomy and Webb's Depth of Knowledge for mathematics (Algebra I, Algebra II, and Geometry). Included are examples of verbs (i.e., the action). Using this information as well as the charts, Pennsylvania educators are asked to determine the depth of knowledge of each item and to verify that the depth of knowledge of each item is in alignment with the depth of knowledge of the Assessment Anchor as defined by the Eligible Content.

DEFINITIONS OF WEBB'S DEPTH OF KNOWLEDGE

Level 1 (*Recall*) requires the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in mathematics, a one-step, well-defined, and straight algorithmic procedure should be included at this lowest level. Other key words that signify Level 1 include "identify," "recall," "recognize," "use," and "measure." Verbs such as "describe" and "explain" could be classified at different levels, depending on what is to be described and explained.

Level 2 (*Skill/Concept*) requires the engagement of some mental processing beyond a habitual response. A Level 2 item requires students to make some decisions as to how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe), or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply more than one step. For example, to compare data requires first identifying characteristics of objects or phenomena and then grouping or ordering the objects. Some action verbs, such as "explain," "describe," or "interpret," could be classified at different levels depending on the object of the action. For example, interpreting information from a simple graph, or reading information from the graph, are also at Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is at Level 3. Level 2 activities are not limited only to number skills, but may involve visualization skills and probability skills. Other Level 2 activities include noticing or describing non-trivial patterns; explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

Level 3 (*Strategic Thinking*) requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is at Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and deciding which concepts to apply in order to solve a complex problem.

Level 4 (*Extended Thinking*) requires complex reasoning, planning, developing, and thinking most likely over an extended period of time. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2. However, if the student is to conduct a river study that requires taking into consideration a number of variables, this would be a Level 4. At Level 4, the cognitive demands of the task should be high and the work should be very complex. Students should be required to make several connections—relate ideas *within* the content area or *among* content areas—and have to select one approach among many alternatives on how the situation should be solved, in order to be at this highest level. Level 4 activities include designing *and* conducting experiments and projects; developing and proving conjectures; making connections between a finding and related concepts and phenomena; combining and synthesizing ideas into new concepts; and critiquing experimental designs.

Note: Multiple-choice and constructed-response items can be written at a depth-of-knowledge Level 4; however, to design an item in this format is difficult, as it would require research, investigation, and application, often over an extended period of time (e.g., performance-based tasks; portfolios; research studies/projects).

(Webb, N. 1997, 1999, 2002, 2005, 2006)

Table A–1. Bloom's Taxonomy – Algebra I

Categories (1956)	Definition	Examples of Action Words*
Knowledge	Student remembers, or recalls appropriate previously learned information.	define; identify; name; select; state; order; (involves a one-step problem)
Comprehension	Student translates, comprehends, or interprets information based on prior learning.	convert; estimate; explain; express; factor; generalize; give example; identify; indicate; locate; picture; (involves two or more steps)
Application	Student selects, transfers, and uses data and principles to complete a task or problem with minimum directions.	apply; choose; compute; employ; interpret; graph; modify; operate; plot; practice; solve; use; (involves three or more steps)
Analysis	Student distinguishes, classifies, and relates assumptions, hypotheses, evidence, or structure of a statement or question.	compare; contrast; correlate; differentiate; discriminate; examine; infer; maximize; minimize; prioritize; subdivide; test
Synthesis	Student originates, integrates, and combines ideas into a product, plan, or proposal that is new to him or her.	arrange; collect; construct; design; develop; formulate; organize; set up; prepare; plan; propose; create experiment and record data
Evaluation	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	appraise; assess; defend estimate; evaluate; judge; predict; rate; validate; verify

Table A–2.Webb's Depth of Knowledge – Algebra I

Categories	Definition	Example of Action Words*
Recall	Student recalls facts, information, procedures, or definitions.	define; identify; name; select; state; order; one step
Basic Application of Skill/Concept	Student uses information, conceptual knowledge, and procedures.	apply; choose; compute; employ; interpret; graph; modify; operate; plot; practice; solve; use; two or more steps
Strategic Thinking	Student uses reasoning and develops a plan or sequence of steps; process has some complexity.	compare; contrast; correlate; differentiate; discriminate; examine; infer; maximize; minimize; prioritize; subdivide; test
Extended Thinking	Student conducts an investigation, needs time to think and process multiple conditions of the problem or task. (The item/task generally requires several days or weeks to complete.)	arrange; collect; construct; design; develop; formulate; organize; set up; prepare; plan; propose; create experiment and record data

*Some action words (verbs) can be classified at different depth-of-knowledge levels depending on the context of the item and the complexity of the action.

BIOLOGY DEPTH OF KNOWLEDGE

BIOLOGY DEPTH OF KNOWLEDGE

> *Note*: "Knowledge" can refer both to content knowledge and knowledge of scientific processes. This meaning of knowledge is consistent with the *National Science Education Standards* (NSES), which terms "Science as Inquiry" as its first Content Standard.

Committees of Pennsylvania educators review each Keystone Exam item, not only to determine whether or not the item measures what it is intended to measure, but also to determine whether or not the item aligns with the cognitive level or depth of knowledge of the Assessment Anchor as defined by the Eligible Content. The information below provides a definition of the four depth-of-knowledge levels. The charts at the end of the section also provide a comparison between Bloom's Taxonomy and Webb's Depth of Knowledge for biology. Included are examples of verbs (i.e., the action). Using this information as well as the charts, Pennsylvania educators are asked to determine the depth of knowledge of each item and to verify that the depth of knowledge of each item is in alignment with the depth of knowledge of the Assessment Anchor as defined by the Eligible Content.

DEFINITIONS OF WEBB'S DEPTH OF KNOWLEDGE

Level 1 (*Recall*) requires the recall of information, such as a fact, definition, term, or a simple procedure, as well as performance of a simple science process or procedure. Level 1 only requires students to demonstrate a rote response, use a well-known formula, follow a set procedure (like a recipe), or perform a clearly defined series of steps. A "simple" procedure is well defined and typically involves only one step. Verbs such as "identify," "recall," "recognize," "use," "calculate," and "measure" generally represent cognitive work at the recall level. Simple word problems that can be directly translated into and solved by a formula are considered Level 1. Verbs such as "describe" and "explain" could be classified at different depth-of-knowledge levels, depending on the complexity of what is to be described and explained.

A student answering a Level 1 item either knows the answer or does not: that is, the item does not need to be "figured out" or "solved." In other words, if the knowledge necessary to answer an item automatically provides the answer to it, then the item is at Level 1. If the knowledge needed to answer the item is not automatically provided in the stem, the item is at least at Level 2. Some examples that represent but do not constitute all Level 1 performance are as follows:

- Recall or recognize a fact, term, or property.
- Represent in words or diagrams a scientific concept or relationship.
- Provide or recognize a standard scientific representation for simple phenomenon.
- Perform a routine procedure, such as measuring length.

Level 2 (*Skills and Concepts*) requires the engagement of some mental processing beyond recalling. The content knowledge or process involved is **more complex** than in Level 1. Items require students to make some decisions as to how to approach the question or problem. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply **more than one step**. For example, to compare data requires first identifying characteristics of the objects or phenomena and then grouping or ordering the objects. Level 2 activities include making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts. Some action verbs, such as "explain," "describe," or "interpret," could be classified at different depth-of-knowledge levels, depending on the complexity of the action. For example, interpreting information from a simple graph, which requires reading information from the graph, is a Level 2. An item that requires interpretation from a complex graph, such as making decisions regarding features of the graph that need to be considered and how information from the graph can be aggregated, is at Level 3. Some examples that represent but do not constitute all of Level 2 performance are as follows:

- Specify and explain the relationship between facts, terms, properties, or variables.
- Describe and explain examples and non-examples of science concepts.
- Select a procedure according to specified criteria and perform it.
- Formulate a routine problem, given data and conditions.
- Organize, represent, and interpret data.

Level 3 (*Strategic Thinking*) requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. The cognitive demands at Level 3 are complex and abstract. The complexity does not result only from the fact that there could be multiple answers, a possibility for both Levels 1 and 2, but because the multi-step task requires more demanding reasoning. In most instances, requiring students to explain their thinking is at Level 3; requiring a very simple explanation or a word or two should be at Level 2. An activity that has more than one possible answer and requires students to justify the response they give would most likely be a Level 3. Experimental designs in Level 3 typically involve more than one dependent variable. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve non-routine problems. Some examples that represent but do not constitute all Level 3 performance are as follows:

- Identify research questions and design investigations for a scientific problem.
- Solve non-routine problems.
- Develop a scientific model for a complex situation.
- Form conclusions from experimental data.

Level 4 (*Extended Thinking*) requires high cognitive demands and complexity. Students are required to make several connections—relate ideas within the content area or among content areas—and have to select or devise one approach among many alternatives to solve the problem. Many on-demand assessment instruments will not include any assessment activities that could be classified as Level 4. However, standards, goals, and objectives can be stated in such a way as to expect students to perform extended thinking. "Develop generalizations of the results obtained and the strategies used and apply them to new problem situations," is an example of a grade 8 objective that is a Level 4. Many, but not all, performance assessments and open-ended assessment activities requiring significant thought will be Level 4.

Level 4 involves complex reasoning, experimental design and planning, and probably will require an extended period of time either for the science investigation required by an objective, or for carrying out the multiple steps of an assessment item. However, the extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student is asked to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2 activity. However, if the student conducts a river study that requires taking into consideration a number of variables, this would be a Level 4. Some examples that represent but do not constitute all Level 4 performance are as follows:

- Based on data provided from a complex experiment that is novel to the student, deduct the fundamental relationship between several controlled variables.
- Conduct an investigation, from specifying a problem to designing and carrying out an experiment, to analyzing its data and forming conclusions.

Note: Multiple-choice and constructed-response items can be written at a depth-of-knowledge Level 4; however, to design an item in this format is difficult, as it would require research, investigation, and application, often over an extended period of time (e.g. performance-based tasks, portfolios, research studies/projects).

(Webb, N. 1997, 1999, 2002, 2005, 2006)

Table A–3. Bloom's Taxonomy – Biology

Categories (1956)	Definition	Examples of Action Words*
Knowledge	Student remembers, or recalls appropriate previously learned information.	identify; recall; observe; recognize; use; calculate; measure; order
Comprehension	Student translates, comprehends, or interprets information based on prior learning.	explain; interpret; describe; classify; identify; recognize; predict
Application	Student selects, transfers, and uses data and principles to complete a task or problem with minimum directions.	apply; classify; experiment; interpret; use; order; calculate
Analysis	Student distinguishes, classifies, and relates assumptions, hypotheses, evidence, or structure of a statement or question.	analyze; order; explain; classify; arrange; compare; contrast; infer; calculate; categorize; examine; experiment; question; test
Synthesis	Student originates, integrates, and combines ideas into a product, plan, or proposal that is new to him or her.	combine; arrange; rearrange; modify; invent; design; construct; organize; predict; infer; conclude; create; experiment and record data
Evaluation	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	evaluate; measure; explain; compare; summarize; predict; test decide; rate; conclude

Table A–4. Webb's Depth of Knowledge – Biology

Categories	Definition	Examples of Action Words*
Recall	Student recalls facts, information, procedures, or definitions.	identify; recall; observe; recognize; use; calculate; measure; order
Basic Application of Skill/Concept	Student uses information, conceptual knowledge, and procedures.	explain; interpret; describe; classify; identify; order; recognize; predict; apply; use; calculate; organize; estimate; observe; collect; and display data
Strategic Thinking	Student uses reasoning and develops a plan or sequence of steps; process has some complexity.	analyze; order; explain; classify; arrange; compare; contrast; infer; interpret; calculate; categorize; examine; experiment; question; predict; evaluate; test
Extended Thinking	Student conducts an investigation, needs time to think and process multiple conditions of the problem or task. (The item/task generally requires several days or weeks to complete.)	combine; arrange; rearrange; propose; evaluate; modify; invent; design; construct; organize; predict; infer; conclude; evaluate; create; experiment and record data

*Some action words (verbs) can be classified at different depth-of-knowledge levels depending on the context of the item and the complexity of the action.

LITERATURE DEPTH OF KNOWLEDGE

LITERATURE DEPTH OF KNOWLEDGE

Note: The levels are based on Valencia and Wixson (2000, pp. 909–935).

Committees of Pennsylvania educators review each Keystone Exam item, not only to determine whether or not the item measures what it is intended to measure, but also to determine whether or not the item aligns with the cognitive level or depth of knowledge of the Assessment Anchor as defined by the Eligible Content. The information below provides a definition of the four depth-of-knowledge levels. The charts at the end of the section also provide a comparison between Bloom's Taxonomy and Webb's Depth of Knowledge for literature. Included are examples of verbs (i.e., the action). Using this information as well as the charts, Pennsylvania educators are asked to determine the depth of knowledge of each item and to verify that the depth of knowledge of each item is in alignment with the depth of knowledge of the Assessment Anchor as defined by the Eligible Content.

DEFINITIONS OF WEBB'S DEPTH OF KNOWLEDGE

Level 1 requires students to receive or recite facts or to use simple skills or abilities. Oral reading that does not include analysis of the text, as well as basic comprehension of a text, is included. Items require only a shallow understanding of the text presented and often consist of verbatim recall from text, slight paraphrasing of specific details from the text, or simple understanding of a single word or phrase. Some examples that represent but do not constitute all Level 1 performance are as follows:

- Support ideas by reference to verbatim or only slightly paraphrased details from the text.
- Use a dictionary to find the meanings of words.
- Recognize figurative language in a reading passage.

Level 2 requires the engagement of some mental processing beyond recalling or reproducing a response; it requires both comprehension and subsequent processing of text or portions of text. Inter-sentence analysis of inference is required. Some important concepts are covered, but not in a complex way. Content curriculum standards and items at this level may include words such as summarize, interpret, infer, classify, organize, collect, display, compare, and determine whether fact or opinion. Literal main ideas are stressed. A Level 2 item may require students to apply skills and concepts that are covered in Level 1. However, items require closer understanding of text, possibly through the item's paraphrasing of both the question and the answer. Some examples that represent but do not constitute all Level 2 performance are as follows:

- Use context cues to identify the meaning of unfamiliar words, phrases, and expressions that could otherwise have multiple meanings.
- Predict a logical outcome based on information in a selection.
- Identify and summarize the major events in a narrative.

Level 3 requires deeper knowledge. Students are encouraged to go beyond the text; however, they are still required to show understanding of the ideas in the text. Students may be encouraged to explain, generalize, or connect ideas. Content curriculum standards and items (Assessment Anchors as defined by the Eligible Content) at Level 3 involve reasoning and planning. Students must be able to support their thinking. Items may involve abstract theme identification, inference across an entire passage, or students' application of prior knowledge. Items may also involve more superficial connections between texts. Some examples that represent but do not constitute all Level 3 performance are as follows:

- Explain or recognize how the author's purpose affects the interpretation of a selection.
- Summarize information from multiple sources to address a specific topic.
- Analyze and describe the characteristics of various types of literature.

Level 4 requires higher-order thinking and deep knowledge. The content curriculum standard or item at this level will probably require an extended activity, with extended time provided for completing it. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require the application of significant conceptual understanding and higher-order thinking. Students take information from at least one passage of a text and are asked to apply this information to a new task. They may also be asked to develop hypotheses and perform complex analyses of the connections among texts. Some examples that represent but do not constitute all Level 4 performance are as follows:

- Analyze and synthesize information from more than one source.
- Examine and explain alternative perspectives across a variety of sources.
- Describe and illustrate how common themes are found across texts from different cultures.

Note: Multiple-choice and constructed-response items can be written at a depth-of-knowledge Level 4; however, to design an item in this format is difficult, as it would require research, investigation, and application, often over an extended period of time (e.g. performance-based tasks, portfolios, research studies/projects).

(Webb, N. 2005; Valencia and Wixson, 2000)

Table A–5. Bloom's Taxonomy – Literature

Categories (1956)	Definition	Examples of Action Words*
Knowledge	Student remembers, or recalls appropriate previously learned information.	define; identify; name; recall; recognize; select; tell
Comprehension	Student translates, comprehends, or interprets information based on prior learning.	describe; distinguish; explain; identify; indicate; interpret; locate; recognize; restate; summarize
Application	Student selects, transfers, and uses data and principles to complete a task or problem with minimum directions.	apply; choose; demonstrate; determine; interpret; inform; select; show; use
Analysis	Student distinguishes, classifies, and relates assumptions, hypotheses, evidence, or structure of a statement or question.	analyze; characterize; compare; contrast; discriminate; distinguish; explain; infer
Synthesis	Student originates, integrates, and combines ideas into a product, plan, or proposal that is new to him or her.	compose; create; develop; formulate; generalize; organize
Evaluation	Student appraises, assesses, or critiques on a basis of specific standards and criteria.	assess; conclude; convince; defend; evaluate; explain; justify; predict; prove; support

Table A–6. Webb's Depth of Knowledge – Literature

Categories	Definition	Examples of Action Words*
Recall	Student recalls facts, information, procedures, or definitions.	define; identify; locate; name; recall; recognize; sequence; tell
Basic Application of Skill/Concept	Student uses information, conceptual knowledge, and procedures.	apply; compare; comprehend; identify; describe; determine; infer; interpret; predict; summarize; use
Strategic Thinking	Student uses reasoning and develops a plan or sequence of steps; process has some complexity.	analyze; cite evidence; compare; contrast; draw conclusions; explain; generalize; infer; interpret; evaluate; recognize; summarize; support
Extended Thinking	Student conducts an investigation, needs time to think and process multiple conditions of the problem or task. (The item/task generally requires several days or weeks to complete.)	describe and illustrate; evaluate; examine and explain; analyze; synthesize

*Some action words (verbs) can be classified at different depth-of-knowledge levels depending on the context of the item and the complexity of the action.

APPENDIX B: GENERAL SCORING GUIDELINES

ALGEBRA I

ALGEBRA I CONSTRUCTED-RESPONSE QUESTIONS

GENERAL DESCRIPTION OF SCORING GUIDELINES

4 Points

- The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.
- The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3 Points

- The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.
- The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2 Points

- The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.
- The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1 Point

- The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0 Points

- The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task.

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BIOLOGY

BIOLOGY CONSTRUCTED-RESPONSE QUESTIONS

GENERAL DESCRIPTION OF SCORING GUIDELINES

3 Points

- The response demonstrates a *thorough* understanding of the scientific content, concepts, and/or procedures required by the task(s).
- The response provides a clear, complete, and correct response as required by the task(s). The response may contain a minor blemish or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

2 Points

- The response demonstrates a *partial* understanding of the scientific content, concepts, and/or procedures required by the task(s).
- The response is somewhat correct with *partial* understanding of the required scientific content, concepts, and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1 Point

- The response demonstrates a *minimal* understanding of the scientific content, concepts, and/or procedures required by the task(s).
- The response is somewhat correct with *minimal* understanding of the required scientific content, concepts, and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

0 Points

- The response provides *insufficient* evidence to demonstrate any understanding of the scientific content, concepts, and/or procedures as required by the task(s).
- The response may show only information copied or rephrased from the question or *insufficient* correct information to receive a score of 1.

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LITERATURE

LITERATURE MODULE 1

LITERATURE CONSTRUCTED-RESPONSE QUESTIONS

GENERAL DESCRIPTION OF SCORING GUIDELINES

3 Points

- The response provides a clear, complete, and accurate answer to the task.
- The response provides relevant and specific information from the passage.

2 Points

- The response provides a partial answer to the task.
- The response provides limited information from the passage and may include inaccuracies.

1 Point

- The response provides a minimal answer to the task.
- The response provides little or no information from the passage and may include inaccuracies.

OR

- The response relates minimally to the task.

0 Points

- The response is totally incorrect or irrelevant or contains insufficient information to demonstrate comprehension.

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APPENDIX C: ITEM AND TEST DEVELOPMENT PROCESS FOR THE KEYSTONE EXAMS

Table C–1. Item and Test Development Process for the Keystone Exams

Step	Description
1. Review Guiding Documentation	Each year item and test development specialists meet internally to review all guiding documentation related to the Keystone Exams. Documentation reviewed includes the test design blueprints, the Keystone Assessment Anchors and Eligible Content, the test item specifications, the test style specifications (style guide), and all test content descriptions.
2. Meet with PDE to Confirm Understanding of Program	The goal of the meeting each year is to ensure that item and test development teams have a clear understanding of PDE's vision for test development. A successful development cycle requires a clear understanding of Pennsylvania's content-area test specifications and of any unique interpretations of the Keystone Assessment Anchors (if any).
3. Create Preliminary Test Item Development Plan	Item and test development specialists generate a preliminary development plan which includes an overview of the program, the internal and external (PDE) review and approval processes, a projected schedule for development of test items—including the number of test items to be developed for review by PDE and subsequent review by the committees of Pennsylvania educators. Item and test development specialists also generate strategies for securing passages and developing passage-based items, etc.
4. Meet with PDE to Finalize Test Item Development Plan	Over the course of the meeting, item and test development specialists verify all steps in the development process including timelines and schedules for test item/test development.
5. Analyze Item Bank	Existing test items in the current Keystone Exams Item Bank are reviewed for technical psychometric quality as well as for their match to the Assessment Anchors. During this phase, test development specialists also make a tally of the test items by Assessment Anchor—including test development specialists' best thinking regarding the number of usable test items in the existing item bank. A tally is also made of the number of usable passages, as well as other stimulus prompts in the bank, including science scenarios.
6. Refine Test Item Development Plan to Include Writers and Subcontractors	Item and test development specialists identify the writers who will write the test items (test development specialists or other professional item writers, subcontractors, etc.), the estimated number of writers needed, the qualifications of writers, and the approximate number of test items to be submitted by each source.
7. Train Item Writers	Item and test development specialists train item writers, as needed. Item writers who have written for the Keystone Exams in the past receive updated information, as needed.

Table C–1 (continued). Item and Test Development Process for the Keystone Exams

Step	Description
8. Write and Review Items	Test items are written by item writers after training is complete, and feedback is provided by the item and test development specialists to item writers on a regular basis. As test items are written, they are reviewed and edited in a series of internal reviews. Item and test development specialists review and edit items to include, but not limited to, the following: match to Assessment Anchor/Eligible Content, relevance to purpose, accuracy of content, item difficulty, interest level, depth of knowledge and cognitive complexity, adherence to the principles of Universal Design, and freedom from issues of bias/fairness/sensitivity. At the same time, the process of procuring permissions also begins, including securing permissions for passages, art, etc.
9. Enter Test Items into Database	Upon acceptance from item writers, test items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*). Item data stored in the system database includes, but is not limited to, the following: readability, cognitive level, estimated level of difficulty, alignment to assessment anchors, and correlation to stimulus passages.
10. Prepare Item Set for Sample Item Review by PDE	Item and test development specialists prepare a subset of the items for review by PDE.
11. PDE Conducts Sample Item Review	After a subset of the items is submitted to PDE for review, PDE reviews the items and provides feedback to item and test development teams via a conference call. Items are revised per PDE feedback.
12. Continue to Write and Review Items	The remaining items are written, and feedback is provided by the item and test development specialists to item writers on a regular basis. Items are entered into the item management system, IDEAS (*Item Development and Educational Assessment System*) (See step 8 and step 9).
13. Review Items Prior to Test Item Review and Validation Sessions	Prior to New Item Content Review, all items are submitted to PDE for review. Item and test development specialists incorporate all PDE feedback, and PDE-requested edits to items are made.
14. Prepare for Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Item and test development specialists prepare all items and stimulus passages for review by the New Item Content Review Committee (consisting of Pennsylvania educators) and by the separate Bias, Fairness, and Sensitivity Committee (consisting of a panel of experts). Item and test development specialists also prepare training materials needed for training committee members to review items for content or for bias, fairness, and sensitivity issues. All training materials and other ancillary materials (e.g. agendas, presentations, etc.) are also developed and then submitted to PDE for review and approval. Invitations are also sent to Pennsylvania educators and national experts from PDE-approved committee lists.

Table C–1 (continued). Item and Test Development Process for the Keystone Exams

Step	Description
15. Conduct Test Item Review Sessions (the New Item Content Review and the Bias, Fairness, and Sensitivity Review)	Committees of Pennsylvania educators and national experts review items in two meetings: one addressing item content and quality, the other addressing bias, fairness, and sensitivity. PDE, with support from item and test development specialists, presents training on how to review new test items for content considerations or bias/fairness/sensitivity issues. At the New Item Content Review, suggested edits to test items are made and/or replacement test items are written during the actual item review so that both the committee and the PDE are able to observe changes to the test items and approve the test items during the committee review process. At the Bias, Fairness, and Sensitivity Review, experts in bias, fairness, and sensitivity review all test items and passages and come to a consensus about any issues that are noted. At both meetings the results are carefully documented.
16. Conduct Item Review Resolution and Cleanup	Following the conclusion of the New Item Content Review Committee meetings, PDE re-examines the consensus changes suggested by the committee members during the New Item Content Review Committee meetings. DRC item and test development specialists then record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the changes as requested by the committee, or PDE rejects the decision of the committee. If a committee decision is rejected, PDE provides an alternate decision for DRC to implement. During this cleanup process, PDE also interprets the report from the Bias, Fairness, and Sensitivity Committee meetings and subsequently applies changes to test items and passages. DRC item and test development specialists then apply the changes to the test items and passages per PDE's decisions.
17. Submit Field Test Items for Final Sign-Off	PDE-approved changes are applied to the items, non-permissioned passages, prompts, etc. (Changes reflect PDE's arbitration of the committee decisions.) Once all revisions to the items, non-permissioned passage text, and/or the art used by test items and passages are completed, the test items are submitted to PDE for final review and sign-off. (Changes requested to permissioned passages are sought from the publisher of record, and, if approved by the copyright holders, changes are implemented.) [PDE's approval process for field test items generally occurs simultaneously with PDE's approval of the core test forms. See step 25.]
To follow the path for new field test items, skip to step 22. OR To follow the chronological test development path, continue with step 18.	

Table C–1 (continued). Item and Test Development Process for the Keystone Exams

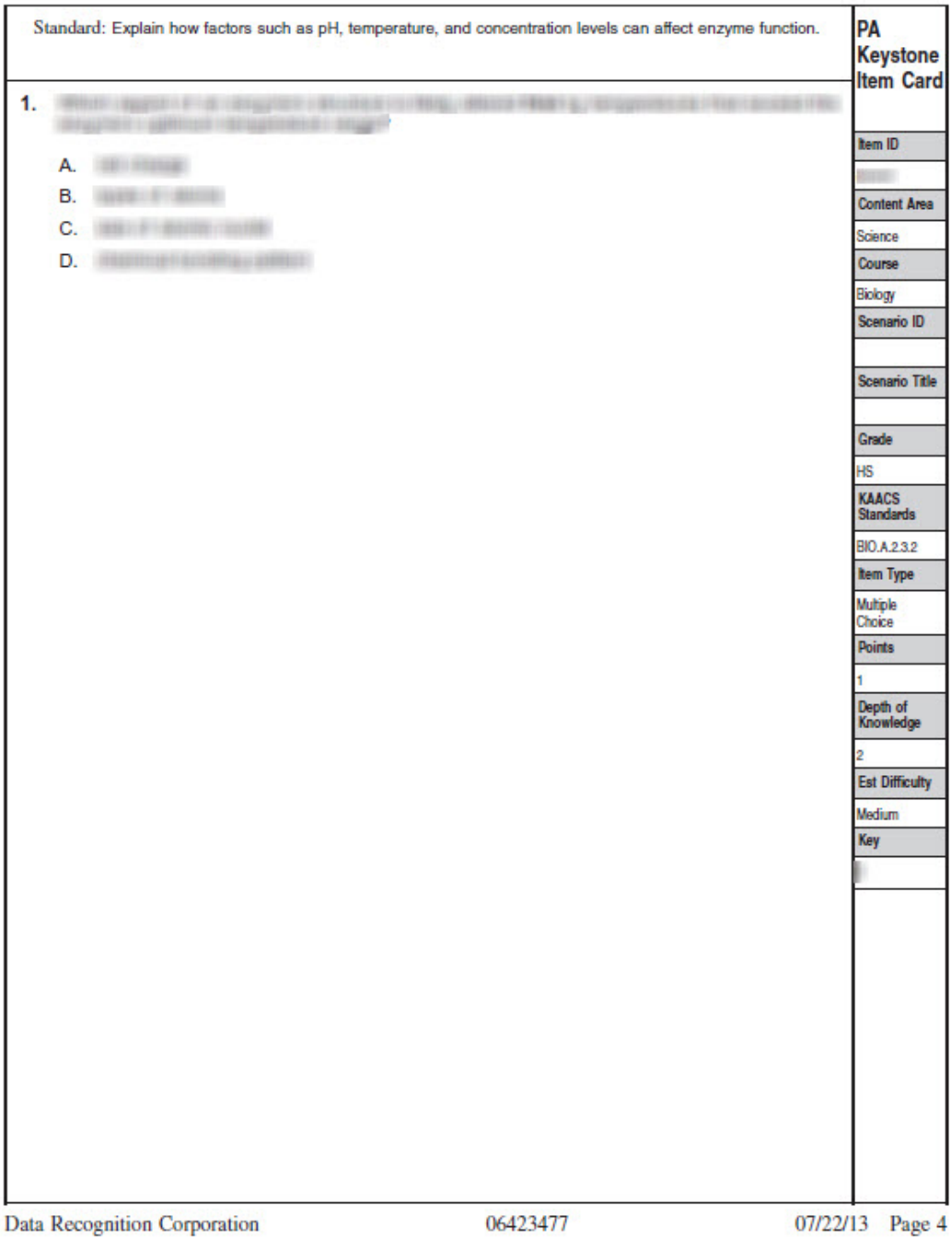
Step	Description
18. Review Results of the Field Test	Following the administration of a field test form and the subsequent rangefinding and field test scoring processes for field test items, performance data for all field test items are analyzed by DRC psychometricians and test development specialists. Test item performance data that meet certain triggering criteria are flagged for additional reviews by test development specialists. Flagged field test items with extreme performance data are considered psychometrically unusable and are removed from future operational consideration. Field test items with marginal performance data are prepared for the Field Test Item Data Review meeting.
19. Prepare for Field Test Item Data Review	Test development specialists prepare all items and stimulus passages for review by the Field Test Item Data Review Committee (which consists of Pennsylvania educators). Psychometricians also prepare training materials needed for training committee members to review items for their performance. All training materials and other ancillary materials (e.g. agendas, presentations, etc.) are submitted to PDE for review and approval. Invitations are also sent to Pennsylvania educators from PDE-approved committee lists.
20. Conduct Field Test Item Data Review	Committees of Pennsylvania educators review the performance data of flagged field test items. Psychometricians present training on how to review field test items based on their performance data. At the Item Data Review, committee members examine the performance of the items and determine whether the field test item is technically sound and appropriate for use on an operational Keystone Exams test. Since test items cannot be modified at the Field Test Item Data Review, the committee can either accept an item as is or the committee can reject the item.
21. Conduct Field Test Item Data Review Reconciliation	Following the conclusion of the Field Test Item Data Review Committee meetings, PDE re-examines the consensus decisions (accept or reject) suggested by the committee members during the Field Test Item Data Review Committee meetings. Test development specialists record all of PDE's follow-up decisions and changes. During this cleanup process, PDE either accepts the decisions of the data review committee, or PDE rejects the decisions of the data review committee. If a committee decision is not accepted, PDE provides an alternate decision for test development specialists to implement. All PDE-approved changes to the test items status (accepted or rejected) are incorporated into the *Item Development and Educational Assessment System*, IDEAS.
22. Select Items to Fill Core, Field Test, and Equating Block Positions in Core and Field Test Forms	After the PDE-approved changes to the new field test items is completed AND the results of the prior field test have been finalized following data review, test development specialists collaborate with psychometricians to follow the Test Design Blueprints and build requirements to make the initial selection of items for core and field-test positions for all test forms. In later administrations, core-to-core linking items will also be selected during this step.

Table C–1 (continued). Item and Test Development Process for the Keystone Exams

Step	Description
23. Review Core and Equating Block Selections	After test content and psychometric requirements have been achieved for core, the core items are provided to PDE for review and approval. Any changes to the content of the core requested by PDE are balanced with psychometric requirements until all core positions are approved by PDE, test development specialists, and psychometricians.
24. Construct Test Forms	Items, passages, and test components are assembled into forms using the form construction and typesetting function of DRC's *Item Development and Educational Assessment System*, IDEAS. Forms are reviewed internally for style and formatting requirements.
25. Review Typeset Forms	After forms are constructed in IDEAS, draft hard copies of the forms are produced and presented to PDE for review and approval. Any changes to the content of the core requested by PDE are balanced with psychometric requirements until all core positions are approved by PDE, test development specialists, and psychometricians. PDE also re-reviews all field test items appearing in the test forms. DRC applies changes to the field test items as required.
26. Print Test Forms	Following PDE's approval of the test forms, DRC completes a series of final proofing of all test forms. Final forms (along with ancillary materials) are then approved for printing.
27. Assemble Documentation of Test Materials	Metadata for each test item and form is documented and proofed, including: grade, form, session/section, item sequence, reporting category, Assessment Anchor, Descriptor, Eligible Content, number of points, item type, number of answer options, item usage, stimulus ID, etc.
To follow the path for new field test items, return to step 18.	

APPENDIX D: ITEM AND DATA REVIEW CARD EXAMPLES

ITEM REVIEW CARD EXAMPLE



Standard: Explain how factors such as pH, temperature, and concentration levels can affect enzyme function.

1. [redacted]

A. [redacted]
B. [redacted]
C. [redacted]
D. [redacted]

PA Keystone Item Card

Item ID
[redacted]
Content Area
Science
Course
Biology
Scenario ID
Scenario Title
Grade
HS
KAACS Standards
BIO.A.2.3.2
Item Type
Multiple Choice
Points
1
Depth of Knowledge
2
Est Difficulty
Medium
Key
[redacted]

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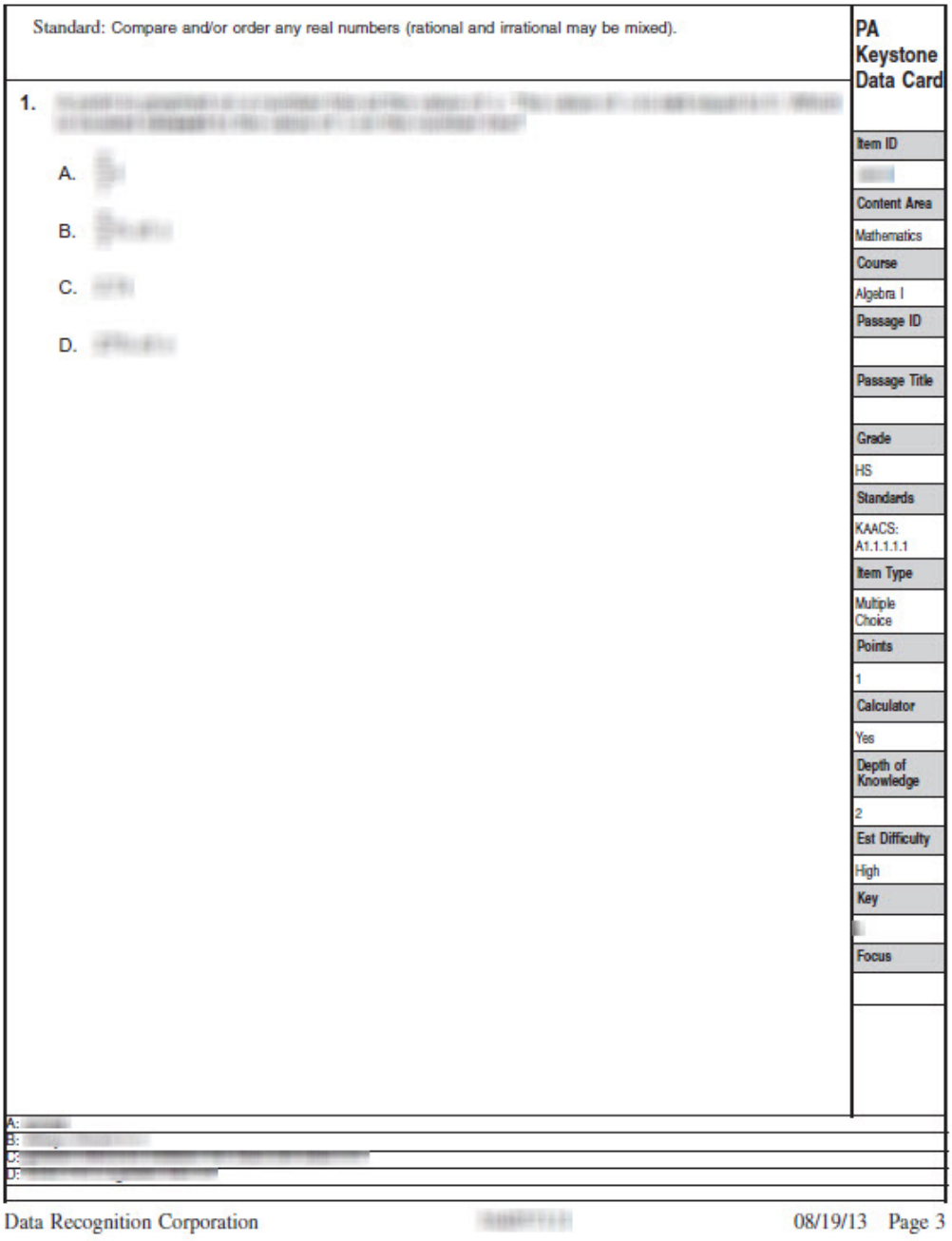
DATA REVIEW CARD EXAMPLE



Standard: Compare and/or order any real numbers (rational and irrational may be mixed).

1.

A.

B.

C.

D.

PA Keystone Data Card

Item ID
Content Area
Mathematics
Course
Algebra I
Passage ID
Passage Title
Grade
HS
Standards
KAACS: A1.1.1.1.1
Item Type
Multiple Choice
Points
1
Calculator
Yes
Depth of Knowledge
2
Est Difficulty
High
Key
Focus

A:
B:
C:
D:

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PA3 - Data Card continued

Administration

Form Name	Use Function	Rptg Flag	Seq	Period	Year	Session	Calc	Model/Ext	Grade
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	1	Yes		HS

Traditional Statistics

N	P-Val	Mean	Item Total Corr
[illegible]	0.34		0.10

Fit Statistics

Outfit t	Infit t	Outfit MnSq	Infit MnSq	Chi-sq	Deg Free	Item Fit	Fit
9.9	9.9	1.28	1.18				

IRT Statistics

Label	Final	Final S.E.	Preliminary	Preliminary S.E.
Location	1.39	0.02		

Distractor/Step Specific

Label	Proportion	Corr	Avg Meas	Threshold
A*	0.34	0.10		
B	0.24	0.11		
C	0.25	-0.22		
D	0.17	0.01		
MULTS	0.00			
OMITS	0.00			

DIF Analysis

Category	Bias Code	Num Value	N - Ref	N - Focal
MALEFEMALE	A-	-0.13	4709	4550
PAPERONLINE	A+	0.15	8242	1029
WHITEBLACK	A-	-0.23	6812	1245
WHITEHISPANIC	A-	-0.16	6812	726

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APPENDIX E: ITEM RATING SHEET AND CRITERIA GUIDELINES

ITEM RATING SHEET

Reviewer Signature: _____

Item Rating Sheet

Content Area: _____ **Module:** _____

August 2013		Content Alignment	Rigor Level Alignment				Technical Design			Universal Design		STATUS
Harrisburg, PA		Standards	Grade	Difficulty	Depth of Knowledge	Source of Challenge	Correct Answer	Distractors	Graphics	Language Demand	Bias	Acceptance Status
Unique ID	Pg #	—Higher —Lower —None	—Above —At —Below	—High —Medium —Low	—Recall —Application —Strategic Thinking	—Yes —No	—Yes —No	—Yes —No —N/A	—Yes —No —N/A	—Yes —No	—Yes —No	— Approved as is — Accepted with suggested revisions — Dissenting View

ITEM REVIEW CRITERIA GUIDELINES

The purpose of this form is to provide guidelines to the item review process in terms of item characteristics that are essential in building a fair and balanced assessment. Use these guidelines in conjunction with the Item Rating Sheet when recording your feedback on individual items.

Content Alignment		Options
Standards, Anchors, Eligible Content	Does the content of the item align with the Standard/Anchor/Eligible Content? Each item was written to assess a particular Standard/Anchor/ Eligible Content statement which is indicated on the individual Item Card. Consider the degree to which the item is, in fact, aligned with the indicated eligible content. In making this judgment, it is important to consider whether the **content** is aligned (e.g., do the eligible content and the item both deal with fractions) and whether the required **performance** is aligned (e.g., if the eligible content calls for a comparison to be made, is this reflected in the item).	**HIGHER**—Aligns to the higher level of the EC **LOWER**—Aligns to the lower level of the EC **NONE**—No alignment with EC

Rigor Level Alignment		Options
Grade	Is the item grade-level appropriate? Is the content consistent with the experiences of a student at the grade level assessed? Is the challenge level appropriate for the grade?	**ABOVE** Grade Level **AT** Grade Level **BELOW** Grade Level
Difficulty	Do you agree with the item's difficulty rating? Item Difficulty is indicated as Low, Medium, and High. Is your rating in agreement with the difficulty rating on the Item Form?	**HIGH** **MEDIUM** **LOW**
Depth of Knowledge	Depth of Knowledge is based on the alignment work of Norman Webb. Rate each item based on the cognitive demand, using the following levels: 1. Recall – ***Recall*** of a fact, information, or procedure. 2. Basic Application of Skill or Concept – ***Use*** of information, conceptual knowledge, procedures, two or more steps, etc. 3. Strategic Thinking – Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer. 4. Extended Thinking – Requires an investigation, time to think and process multiple conditions of the problem or task, and more than 10 minutes to do non-routine manipulations. (This level is generally not assessed in on-demand assessments.)	**4** = Extended Thinking **3** = Strategic Thinking **2** = Basic Application **1** = Recall

Rigor Level Alignment		Options
Source of Challenge	Is the source of challenge appropriately targeted to the content? The hardest part of the item (i.e., source of challenge) should be the content that is targeted. For example, in mathematics, the mathematics should be the major source of challenge rather than the wording or graphic. Students should not give an incorrect answer to a mathematics item because the reading level is too high or a graphic is flawed. Conversely, students should not give correct answers for reasons such as prior knowledge that make the answer to the question obvious (e.g., if the question asks which country has the largest population and students are to read a graph that includes China, there is no need to read the graph to answer the question).	**Y** = Yes **N** = No

Technical Design		Options
Correct Answer	Is there one clear, correct answer option? There should be no other answer that "could" be correct. CAUTION: This does not mean that "good" distractors are unfair.	**Y** = Yes **N** = No
Distractors	Are distractors fair and appropriate? Distractors that are appropriate offer students reasonable choices that can be arrived at by making common errors. There should be no distractors that make no sense at all. It should be possible to examine each option and to reason how a student with some deficiency in knowledge or skill could choose it. The distractors should be formatted according to acceptable standards of test construction (e.g., a phrase that is common to each distractor should be in the stem).	**Y** = Yes **N** = No **N/A** = OE items do not have distractors
Graphics	Are the graphics clear and accurate?	**Y** = Yes **N** = No **N/A** = No graphic

Universal Design		Options
Language Demand	Is language clear, well-formatted, and precise? Does the item use correct terminology for the content area? In order for all students to enter into the questions of the assessment, they must be able to understand them. If the items are formatted poorly, use unnecessarily complex words or phrases, or use figures or layouts that are difficult to understand, some students will give incorrect answers due to these factors rather than the content that is being assessed.	**Y** = Yes **N** = No
Bias	Is the item free of bias? All students will not be able to enter into the assessment if bias considerations are not resolved. Does the item contain clear bias problems? *A thorough, independent bias review* (separate from this meeting) *will be completed for all items*.	**Y** = Yes **N** = No

Status		Options
Acceptance Status	This is an overall judgment about the item. Based on the consensus of the committee, indicate whether the item was approved without revision to the content of the item or whether the item was accepted by the committee after revision of the content of the item. If there is a dissenting view (opposed to the committee consensus), record a	—**Approved** as is —**Accepted** with suggested revisions

	brief explanation of the dissenting view on the back of the Item Rating Sheet.	**—Dissenting View**

NOTES:

- If you leave a box blank on the Item Rating Sheet, it will be recorded to indicate that you did not have any specific feedback for that item or issue.
- If you object to the consensus of the committee, please note this on the item rating sheet and then record a brief explanation of the dissenting view on the back of the Item Rating Sheet.
- **Do NOT remove any items from the item binder at any time.**
- You must sign your item rating sheet.

APPENDIX F: KEYSTONE EXAMS TALLY SHEETS

ALGEBRA I–WINTER 2013/2014

Keystone Exam **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.1: Operations and Linear Equations & Inequalities	1			**Operations with Real Numbers and Expressions**	0	0	0	0
	1	1	1	Compare and/or order any real numbers.	0	0	0	0
	1	1	2	Simplify square roots.	0	0	0	0
	1	2	1	Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	0	0	0	0
	1	3	1	Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems.	1	0	1	0
	1	4	1	Use estimation to solve problems.	1	0	1	0
	1	5	1	Add, subtract, and/or multiply polynomial expressions (express answers in simplest form).	2	0	2	0
	1	5	2	Factor algebraic expressions, including difference of squares and trinomials.	1	0	1	0
	1	5	3	Simplify/reduce a rational algebraic expression.	1	0	1	0
	Total For Assessment Anchor A1.1.1				6	0	6	0
	2			**Linear Equations**	0	2	0	8
	2	1	1	Write, solve, and/or apply a linear equation.	1	0	1	0
	2	1	2	Use and/or identify an algebraic property to justify any step in an equation-solving process.	0	0	0	0
	2	1	3	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	2	2	1	Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination.	1	0	1	0
	2	2	2	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	Total For Assessment Anchor A1.1.2				4	2	4	8
	3			**Linear Inequalities**	0	1	0	4
	3	1	1	Write or solve compound inequalities and/or graph their solution sets on a number line .	1	0	1	0
	3	1	2	Identify or graph the solution set to a linear inequality on a number line.	2	0	2	0
	3	1	3	Interpret solutions to problems in the context of the problem situation.	2	0	2	0
	3	2	1	Write and/or solve a system of linear inequalities using graphing.	2	0	2	0
	3	2	2	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	Total For Assessment Anchor A1.1.3				8	1	8	4
Total For Reporting Category A1.1					18	3	18	12

Keystone Exam **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.2: Linear Functions and Data Organizations	1			**Functions**	0	2	0	8
	1	1	1	Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.	1	0	1	0
	1	1	2	Determine whether a relation is a function, given a set of points or a graph.	0	0	0	0
	1	1	3	Identify the domain or range of a relation.	1	0	1	0
	1	2	1	Create, interpret, and/or use the equation, graph, or table of a linear function.	1	0	1	0
	1	2	2	Translate from one representation of a linear function to another.	1	0	1	0
	Total For Assessment Anchor A1.2.1				4	2	4	8
	2			**Coordinate Geometry**	0	1	0	4
	2	1	1	Identify, describe, and/or use constant rates of change.	2	0	2	0
	2	1	2	Apply the concept of linear rate of change (slope) to solve problems.	2	0	2	0
	2	1	3	Write or identify a linear equation when given...	2	0	2	0
	2	1	4	Determine the slope and/or y-intercept represented by a linear equation or graph.	1	0	1	0
	2	2	1	Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.	1	0	1	0
	Total For Assessment Anchor A1.2.2				8	1	8	4
	3			**Data Analysis**	0	0	0	0
	3	1	1	Calculate and/or interpret the range, quartiles, and interquartile range of data.	1	0	1	0
	3	2	1	Estimate or calculate to make predictions based on a circle, line, bar graph, measures of central tendency, or other representations.	2	0	2	0
	3	2	2	Analyze data, make predictions, and/or answer questions based on displayed data.	2	0	2	0
	3	2	3	Make predictions using the equations or graphs of best-fit lines of scatter plots.	1	0	1	0
	3	3	1	Find probabilities for compound events.	0	0	0	0
	Total For Assessment Anchor A1.2.3				6	0	6	0
Total For Reporting Category A1.2					18	3	18	12

ALGEBRA I–SPRING 2014

Keystone Exam **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.1: Operations and Linear Equations & Inequalities	1			**Operations with Real Numbers and Expressions**	0	1	0	4
	1	1	1	Compare and/or order any real numbers.	1	0	1	0
	1	1	2	Simplify square roots.	0	0	0	0
	1	2	1	Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	1	0	1	0
	1	3	1	Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems.	1	0	1	0
	1	4	1	Use estimation to solve problems.	1	0	1	0
	1	5	1	Add, subtract, and/or multiply polynomial expressions (express answers in simplest form).	1	0	1	0
	1	5	2	Factor algebraic expressions, including difference of squares and trinomials.	0	0	0	0
	1	5	3	Simplify/reduce a rational algebraic expression.	1	0	1	0
	Total For Assessment Anchor A1.1.1				6	1	6	4
	2			**Linear Equations**	0	1	0	4
	2	1	1	Write, solve, and/or apply a linear equation.	1	0	1	0
	2	1	2	Use and/or identify an algebraic property to justify any step in an equation-solving process.	1	0	1	0
	2	1	3	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	2	2	1	Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination.	2	0	2	0
	2	2	2	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	Total For Assessment Anchor A1.1.2				6	1	6	4
	3			**Linear Inequalities**	0	1	0	4
	3	1	1	Write or solve compound inequalities and/or graph their solution sets on a number line .	1	0	1	0
	3	1	2	Identify or graph the solution set to a linear inequality on a number line.	1	0	1	0
	3	1	3	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	3	2	1	Write and/or solve a system of linear inequalities using graphing.	1	0	1	0
	3	2	2	Interpret solutions to problems in the context of the problem situation.	2	0	2	0
	Total For Assessment Anchor A1.1.3				6	1	6	4
Total For Reporting Category A1.1					18	3	18	12

Keystone Exam **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.2: Linear Functions and Data Organizations	1			**Functions**	0	1	0	4
	1	1	1	Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.	2	0	2	0
	1	1	2	Determine whether a relation is a function, given a set of points or a graph.	1	0	1	0
	1	1	3	Identify the domain or range of a relation.	1	0	1	0
	1	2	1	Create, interpret, and/or use the equation, graph, or table of a linear function.	1	0	1	0
	1	2	2	Translate from one representation of a linear function to another.	1	0	1	0
	Total For Assessment Anchor A1.2.1				6	1	6	4
	2			**Coordinate Geometry**	0	1	0	4
	2	1	1	Identify, describe, and/or use constant rates of change.	1	0	1	0
	2	1	2	Apply the concept of linear rate of change (slope) to solve problems.	1	0	1	0
	2	1	3	Write or identify a linear equation when given...	1	0	1	0
	2	1	4	Determine the slope and/or y-intercept represented by a linear equation or graph.	2	0	2	0
	2	2	1	Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.	1	0	1	0
	Total For Assessment Anchor A1.2.2				6	1	6	4
	3			**Data Analysis**	0	1	0	4
	3	1	1	Calculate and/or interpret the range, quartiles, and interquartile range of data.	2	0	2	0
	3	2	1	Estimate or calculate to make predictions based on a circle, line, bar graph, measures of central tendency, or other representations.	1	0	1	0
	3	2	2	Analyze data, make predictions, and/or answer questions based on displayed data.	1	0	1	0
	3	2	3	Make predictions using the equations or graphs of best-fit lines of scatter plots.	1	0	1	0
	3	3	1	Find probabilities for compound events.	1	0	1	0
	Total For Assessment Anchor A1.2.3				6	1	6	4
Total For Reporting Category A1.2					18	3	18	12

ALGEBRA I–SUMMER 2014

Keystone Exam — **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.1: Operations and Linear Equations & Inequalities	1			**Operations with Real Numbers and Expressions**	0	1	0	4
	1	1	1	Compare and/or order any real numbers.	0	0	0	0
	1	1	2	Simplify square roots.	1	0	1	0
	1	2	1	Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	1	0	1	0
	1	3	1	Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems.	1	0	1	0
	1	4	1	Use estimation to solve problems.	1	0	1	0
	1	5	1	Add, subtract, and/or multiply polynomial expressions (express answers in simplest form).	1	0	1	0
	1	5	2	Factor algebraic expressions, including difference of squares and trinomials.	1	0	1	0
	1	5	3	Simplify/reduce a rational algebraic expression.	0	0	0	0
	Total For Assessment Anchor A1.1.1				6	1	6	4
	2			**Linear Equations**	0	1	0	4
	2	1	1	Write, solve, and/or apply a linear equation.	2	0	2	0
	2	1	2	Use and/or identify an algebraic property to justify any step in an equation-solving process.	1	0	1	0
	2	1	3	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	2	2	1	Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination.	1	0	1	0
	2	2	2	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	Total For Assessment Anchor A1.1.2				6	1	6	4
	3			**Linear Inequalities**	0	1	0	4
	3	1	1	Write or solve compound inequalities and/or graph their solution sets on a number line .	1	0	1	0
	3	1	2	Identify or graph the solution set to a linear inequality on a number line.	1	0	1	0
	3	1	3	Interpret solutions to problems in the context of the problem situation.	2	0	2	0
	3	2	1	Write and/or solve a system of linear inequalities using graphing.	1	0	1	0
	3	2	2	Interpret solutions to problems in the context of the problem situation.	1	0	1	0
	Total For Assessment Anchor A1.1.3				6	1	6	4
Total For Reporting Category A1.1					18	3	18	12

Keystone Exam **Algebra I**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
A1.2: Linear Functions and Data Organizations	1			**Functions**	0	1	0	4
	1	1	1	Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.	1	0	1	0
	1	1	2	Determine whether a relation is a function, given a set of points or a graph.	1	0	1	0
	1	1	3	Identify the domain or range of a relation.	1	0	1	0
	1	2	1	Create, interpret, and/or use the equation, graph, or table of a linear function.	1	0	1	0
	1	2	2	Translate from one representation of a linear function to another.	2	0	2	0
	Total For Assessment Anchor A1.2.1				6	1	6	4
	2			**Coordinate Geometry**	0	1	0	4
	2	1	1	Identify, describe, and/or use constant rates of change.	2	0	2	0
	2	1	2	Apply the concept of linear rate of change (slope) to solve problems.	1	0	1	0
	2	1	3	Write or identify a linear equation when given...	1	0	1	0
	2	1	4	Determine the slope and/or y-intercept represented by a linear equation or graph.	1	0	1	0
	2	2	1	Draw, identify, find, and/or write an equation for a line of best fit for a scatter plot.	1	0	1	0
	Total For Assessment Anchor A1.2.2				6	1	6	4
	3			**Data Analysis**	0	1	0	4
	3	1	1	Calculate and/or interpret the range, quartiles, and interquartile range of data.	1	0	1	0
	3	2	1	Estimate or calculate to make predictions based on a circle, line, bar graph, measures of central tendency, or other representations.	2	0	2	0
	3	2	2	Analyze data, make predictions, and/or answer questions based on displayed data.	2	0	2	0
	3	2	3	Make predictions using the equations or graphs of best-fit lines of scatter plots.	1	0	1	0
	3	3	1	Find probabilities for compound events.	0	0	0	0
	Total For Assessment Anchor A1.2.3				6	1	6	4
Total For Reporting Category A1.2					18	3	18	12

BIOLOGY–WINTER 2013/2014

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.A: Basic Biological Principles	1			**Basic Biological Principles**	0	0	0	0
	1	1	1	Describe the characteristics of life shared by all prokaryotic and eukaryotic organisms.	1	0	1	0
	1	2	1	Compare cellular structures and their functions in prokaryotic and eukaryotic cells.	3	0	3	0
	1	2	2	Describe and interpret relationships between structure and function at various levels of biological organization.	3	0	3	0
	Total For Assessment Anchor BIO.A.1				7	0	7	0
	2			**The Chemical Basis for Life**	0	0	0	0
	2	1	1	Describe the unique properties of water and how these properties support life on Earth.	2	0	2	0
	2	2	1	Explain how carbon is uniquely suited to form biological macromolecules.	1	0	1	0
	2	2	2	Describe how biological macromolecules form from monomers.	1	0	1	0
	2	2	3	Compare the structure and function of carbohydrates, lipids, proteins, and nucleic acids in organisms.	1	0	1	0
	2	3	1	Describe the role of an enzyme as a catalyst in regulating a specific biochemical reaction.	1	1	1	3
	2	3	2	Explain how factors such as pH, temperature, and concentration levels can affect enzyme function.	1	0	1	0
	Total For Assessment Anchor BIO.A.2				7	1	7	3
	3			**Bioenergetics**	0	0	0	0
	3	1	1	Describe the fundamental roles of plastids (e.g., chloroplasts) and mitochondria in energy transformations.	1	1	1	3
	3	2	1	Compare the basic transformation of energy during photosynthesis and cellular respiration.	2	0	2	0
	3	2	2	Describe the role of ATP in biochemical reactions.	1	0	1	0
	Total For Assessment Anchor BIO.A.3				4	1	4	3
	4			**Homeostasis and Transport**	0	0	0	0
	4	1	1	Describe how the structure of the plasma membrane allows it to function as a regulatory structure and/or protective barrier for a cell.	1	0	1	0
	4	1	2	Compare the mechanisms that transport materials across the plasma membrane.	1	0	1	0
	4	1	3	Describe how membrane-bound cellular organelles.	1	1	1	3
	4	2	1	Explain how organisms maintain homeostasis.	3	0	3	0
	Total For Assessment Anchor BIO.A.4				6	1	6	3
Total For Reporting Category BIO.A					24	3	24	9

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.B: Cell Growth and Reproduction	1			**Cell Growth and Reproduction**	0	0	0	0
	1	1	1	Describe the events that occur during the cell cycle: interphase, nuclear division.	1	0	1	0
	1	1	2	Compare the processes and outcomes of mitotic and meiotic nuclear divisions.	2	0	2	0
	1	2	1	Describe how the process of DNA replication results in the transmission and/or conservation of genetic information.	2	0	2	0
	1	2	2	Explain the functional relationships between DNA, genes, alleles, and chromosomes and their roles in inheritance.	1	0	1	0
	Total For Assessment Anchor BIO.B.1				6	0	6	0
	2			**Genetics**	0	0	0	0
	2	1	1	Describe and/or predict observed patterns of inheritance.	1	0	1	0
	2	1	2	Describe processes that can alter composition or number of chromosomes.	1	0	1	0
	2	2	1	Describe how the processes of transcription and translation are similar in all organisms.	1	0	1	0
	2	2	2	Describe the role of ribosomes, endoplasmic reticulum, Golgi apparatus, and the nucleus in the production of specific types of proteins.	1	0	1	0
	2	3	1	Describe how genetic mutations alter the DNA sequence and may or may not affect phenotype.	1	0	1	0
	2	4	1	Explain how genetic engineering has impacted the fields of medicine, forensics, and agriculture.	2	0	2	0
	Total For Assessment Anchor BIO.B.2				7	0	7	0
	3			**Theory of Evolution**	0	0	0	0
	3	1	1	Explain how natural selection can impact allele frequencies of a population.	1	1	1	3
	3	1	2	Describe the factors that can contribute to the development of new species.	1	0	1	0
	3	1	3	Explain how genetic mutations may result in genotypic and phenotypic variations within a population.	1	0	1	0
	3	2	1	Interpret evidence supporting the theory of evolution.	1	0	1	0
	3	3	1	Distinguish between the scientific terms: hypothesis, inference, law, theory, principle, fact, and observation.	1	0	1	0
	Total For Assessment Anchor BIO.B.3				5	1	5	3
	4			**Ecology**	0	0	0	0
	4	1	1	Describe the levels of ecological organization.	1	0	1	0
	4	1	2	Describe characteristic biotic and abiotic components of aquatic and terrestrial ecosystems.	2	0	2	0
	4	2	1	Describe how energy flows through an ecosystem.	1	0	1	0
	4	2	2	Describe biotic interactions in an ecosystem.	1	0	1	0
	4	2	3	Describe how matter recycles through an ecosystem.	0	1	0	3
	4	2	4	Describe how ecosystems change in response to natural and human disturbances.	0	1	0	3
	4	2	5	Describe the effects of limiting factors on population dynamics and potential species extinction.	1	0	1	0
	Total For Assessment Anchor BIO.B.4				6	2	6	6
Total For Assessment Anchor BIO.B					24	3	24	9

BIOLOGY–SPRING 2014

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.A: Basic Biological Principles	1			**Basic Biological Principles**	0	0	0	0
	1	1	1	Describe the characteristics of life shared by all prokaryotic and eukaryotic organisms.	3	0	3	0
	1	2	1	Compare cellular structures and their functions in prokaryotic and eukaryotic cells.	2	0	2	0
	1	2	2	Describe and interpret relationships between structure and function at various levels of biological organization.	2	0	2	0
	Total For Assessment Anchor BIO.A.1				7	0	7	0
	2			**The Chemical Basis for Life**	0	0	0	0
	2	1	1	Describe the unique properties of water and how these properties support life on Earth.	1	0	1	0
	2	2	1	Explain how carbon is uniquely suited to form biological macromolecules.	1	0	1	0
	2	2	2	Describe how biological macromolecules form from monomers.	2	0	2	0
	2	2	3	Compare the structure and function of carbohydrates, lipids, proteins, and nucleic acids in organisms.	1	0	1	0
	2	3	1	Describe the role of an enzyme as a catalyst in regulating a specific biochemical reaction.	1	1	1	3
	2	3	2	Explain how factors such as pH, temperature, and concentration levels can affect enzyme function.	1	0	1	0
	Total For Assessment Anchor BIO.A.2				7	1	7	3
	3			**Bioenergetics**	0	0	0	0
	3	1	1	Describe the fundamental roles of plastids (e.g., chloroplasts) and mitochondria in energy transformations.	2	0	2	0
	3	2	1	Compare the basic transformation of energy during photosynthesis and cellular respiration.	2	0	2	0
	3	2	2	Describe the role of ATP in biochemical reactions.	1	1	1	3
	Total For Assessment Anchor BIO.A.3				5	1	5	3
	4			**Homeostasis and Transport**	0	0	0	0
	4	1	1	Describe how the structure of the plasma membrane allows it to function as a regulatory structure and/or protective barrier for a cell.	2	0	2	0
	4	1	2	Compare the mechanisms that transport materials across the plasma membrane.	1	0	1	0
	4	1	3	Describe how membrane-bound cellular organelles.	1	0	1	0
	4	2	1	Explain how organisms maintain homeostasis.	1	1	1	3
	Total For Assessment Anchor BIO.A.4				5	1	5	3
Total For Reporting Category BIO.A					24	3	24	9

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.B: Cell Growth and Reproduction	1			**Cell Growth and Reproduction**	0	0	0	0
	1	1	1	Describe the events that occur during the cell cycle: interphase, nuclear division.	1	0	1	0
	1	1	2	Compare the processes and outcomes of mitotic and meiotic nuclear divisions.	1	1	1	3
	1	2	1	Describe how the process of DNA replication results in the transmission and/or conservation of genetic information.	1	0	1	0
	1	2	2	Explain the functional relationships between DNA, genes, alleles, and chromosomes and their roles in inheritance.	1	0	1	0
	Total For Assessment Anchor BIO.B.1				4	1	4	3
	2			**Genetics**	0	0	0	0
	2	1	1	Describe and/or predict observed patterns of inheritance.	1	1	1	3
	2	1	2	Describe processes that can alter composition or number of chromosomes.	1	0	1	0
	2	2	1	Describe how the processes of transcription and translation are similar in all organisms.	1	0	1	0
	2	2	2	Describe the role of ribosomes, endoplasmic reticulum, Golgi apparatus, and the nucleus in the production of specific types of proteins.	1	0	1	0
	2	3	1	Describe how genetic mutations alter the DNA sequence and may or may not affect phenotype.	1	0	1	0
	2	4	1	Explain how genetic engineering has impacted the fields of medicine, forensics, and agriculture.	1	0	1	0
	Total For Assessment Anchor BIO.B.2				6	1	6	3
	3			**Theory of Evolution**	0	0	0	0
	3	1	1	Explain how natural selection can impact allele frequencies of a population.	2	0	2	0
	3	1	2	Describe the factors that can contribute to the development of new species.	2	0	2	0
	3	1	3	Explain how genetic mutations may result in genotypic and phenotypic variations within a population.	1	0	1	0
	3	2	1	Interpret evidence supporting the theory of evolution.	1	0	1	0
	3	3	1	Distinguish between the scientific terms: hypothesis, inference, law, theory, principle, fact, and observation.	1	0	1	0
	Total For Assessment Anchor BIO.B.3				7	0	7	0
	4			**Ecology**	0	0	0	0
	4	1	1	Describe the levels of ecological organization.	1	0	1	0
	4	1	2	Describe characteristic biotic and abiotic components of aquatic and terrestrial ecosystems.	1	0	1	0
	4	2	1	Describe how energy flows through an ecosystem.	1	1	1	3
	4	2	2	Describe biotic interactions in an ecosystem.	1	0	1	0
	4	2	3	Describe how matter recycles through an ecosystem.	1	0	1	0
	4	2	4	Describe how ecosystems change in response to natural and human disturbances.	1	0	1	0
	4	2	5	Describe the effects of limiting factors on population dynamics and potential species extinction.	1	0	1	0
	Total For Assessment Anchor BIO.B.4				7	1	7	3
Total For Assessment Anchor BIO.B					24	3	24	9

BIOLOGY–SUMMER 2014

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.A: Basic Biological Principles	1			**Basic Biological Principles**	0	0	0	0
	1	1	1	Describe the characteristics of life shared by all prokaryotic and eukaryotic organisms.	1	0	1	0
	1	2	1	Compare cellular structures and their functions in prokaryotic and eukaryotic cells.	2	0	2	0
	1	2	2	Describe and interpret relationships between structure and function at various levels of biological organization.	2	1	2	3
	Total For Assessment Anchor BIO.A.1				5	1	5	3
	2			**The Chemical Basis for Life**	0	0	0	0
	2	1	1	Describe the unique properties of water and how these properties support life on Earth.	1	0	1	0
	2	2	1	Explain how carbon is uniquely suited to form biological macromolecules.	2	0	2	0
	2	2	2	Describe how biological macromolecules form from monomers.	1	0	1	0
	2	2	3	Compare the structure and function of carbohydrates, lipids, proteins, and nucleic acids in organisms.	1	0	1	0
	2	3	1	Describe the role of an enzyme as a catalyst in regulating a specific biochemical reaction.	1	1	1	3
	2	3	2	Explain how factors such as pH, temperature, and concentration levels can affect enzyme function.	1	0	1	0
	Total For Assessment Anchor BIO.A.2				7	1	7	3
	3			**Bioenergetics**	0	0	0	0
	3	1	1	Describe the fundamental roles of plastids (e.g., chloroplasts) and mitochondria in energy transformations.	2	0	2	0
	3	2	1	Compare the basic transformation of energy during photosynthesis and cellular respiration.	1	0	1	0
	3	2	2	Describe the role of ATP in biochemical reactions.	1	1	1	3
	Total For Assessment Anchor BIO.A.3				4	1	4	3
	4			**Homeostasis and Transport**	0	0	0	0
	4	1	1	Describe how the structure of the plasma membrane allows it to function as a regulatory structure and/or protective barrier for a cell.	2	0	2	0
	4	1	2	Compare the mechanisms that transport materials across the plasma membrane.	2	0	2	0
	4	1	3	Describe how membrane-bound cellular organelles.	2	0	2	0
	4	2	1	Explain how organisms maintain homeostasis.	2	0	2	0
	Total For Assessment Anchor BIO.A.4				8	0	8	0
Total For Reporting Category BIO.A					24	3	24	9

Keystone Exam **Biology**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
BIO.B: Cell Growth and Reproduction	1			**Cell Growth and Reproduction**	0	0	0	0
	1	1	1	Describe the events that occur during the cell cycle: interphase, nuclear division.	1	0	1	0
	1	1	2	Compare the processes and outcomes of mitotic and meiotic nuclear divisions.	2	0	2	0
	1	2	1	Describe how the process of DNA replication results in the transmission and/or conservation of genetic information.	1	0	1	0
	1	2	2	Explain the functional relationships between DNA, genes, alleles, and chromosomes and their roles in inheritance.	2	0	2	0
	Total For Assessment Anchor BIO.B.1				6	0	6	0
	2			**Genetics**	0	0	0	0
	2	1	1	Describe and/or predict observed patterns of inheritance.	1	0	1	0
	2	1	2	Describe processes that can alter composition or number of chromosomes.	1	0	1	0
	2	2	1	Describe how the processes of transcription and translation are similar in all organisms.	1	0	1	0
	2	2	2	Describe the role of ribosomes, endoplasmic reticulum, Golgi apparatus, and the nucleus in the production of specific types of proteins.	1	0	1	0
	2	3	1	Describe how genetic mutations alter the DNA sequence and may or may not affect phenotype.	1	0	1	0
	2	4	1	Explain how genetic engineering has impacted the fields of medicine, forensics, and agriculture.	1	1	1	3
	Total For Assessment Anchor BIO.B.2				6	1	6	3
	3			**Theory of Evolution**	0	0	0	0
	3	1	1	Explain how natural selection can impact allele frequencies of a population.	2	0	2	0
	3	1	2	Describe the factors that can contribute to the development of new species.	1	0	1	0
	3	1	3	Explain how genetic mutations may result in genotypic and phenotypic variations within a population.	1	0	1	0
	3	2	1	Interpret evidence supporting the theory of evolution.	1	0	1	0
	3	3	1	Distinguish between the scientific terms: hypothesis, inference, law, theory, principle, fact, and observation.	0	1	0	3
	Total For Assessment Anchor BIO.B.3				5	1	5	3
	4			**Ecology**	0	0	0	0
	4	1	1	Describe the levels of ecological organization.	1	0	1	0
	4	1	2	Describe characteristic biotic and abiotic components of aquatic and terrestrial ecosystems.	1	0	1	0
	4	2	1	Describe how energy flows through an ecosystem.	0	1	0	3
	4	2	2	Describe biotic interactions in an ecosystem.	1	0	1	0
	4	2	3	Describe how matter recycles through an ecosystem.	2	0	2	0
	4	2	4	Describe how ecosystems change in response to natural and human disturbances.	1	0	1	0
	4	2	5	Describe the effects of limiting factors on population dynamics and potential species extinction.	1	0	1	0
	Total For Assessment Anchor BIO.B.4				7	1	7	3
Total For Assessment Anchor BIO.B					24	3	24	9

LITERATURE–WINTER 2013/2014

Keystone Exam — **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.F: Fiction	1			**Reading for Meaning—Fiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	1	0	1	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	1	0	1	0
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of fiction to effectively communicate an idea or concept.	0	1	0	3
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	0	0	0	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	2	0	2	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	2	0	2	0
	1	2	4	Draw conclusions about connotations of words.	0	0	0	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	0	0	0	0
	1	3	2	Summarize the key details and events of a fictional text, in part or as a whole.	0	0	0	0
	Total For Assessment Anchor L.F.1				6	1	6	3
	2			**Analyzing and Interpreting Literature—Fiction**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	2	1	2	3
	2	1	2	Cite evidence from a text to support generalizations.	1	0	1	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	0	0	0	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	2	4	Compare and evaluate the characteristics that distinguish narrative, poetry, and drama.	0	0	0	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of fiction:	0	0	0	0
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of fiction:	1	1	1	3
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of fiction:	0	0	0	0
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of fiction:	1	0	1	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of fiction:	1	0	1	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of fiction:	1	0	1	0
	2	4	1	Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.	2	0	2	0
	2	5	1	Identify, explain, interpret, describe, and/or analyze the effects of personification, simile, metaphor, hyperbole, satire, foreshadowing, flashback, imagery, allegory, symbolism, dialect, allusion, and irony in a text.	1	0	1	0
	2	5	2	Identify, explain, and analyze the structure of poems and sound devices.	1	0	1	0
	2	5	3	Identify and analyze how stage directions, monologue, dialogue, soliloquy, and dialect support dramatic script.	0	0	0	0
	Total For Assessment Anchor L.F.2				11	2	11	6
Total For Reporting Category L.F					17	3	17	9

Keystone Exam **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.N: Nonfiction	1			**Reading for Meaning—Nonfiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	1	0	1	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	0	0	0	0
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of nonfiction to effectively communicate an idea or concept.	0	0	0	0
	1	1	4	Explain how an author's use of key words or phrases in text informs and influences the reader.	0	0	0	0
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	1	0	1	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	0	0	0	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	3	0	3	0
	1	2	4	Draw conclusions about connotations of words.	1	0	1	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	2	0	2	0
	1	3	2	Summarize the key details and events of a nonfictional text, in part or as a whole.	1	0	1	0
	1	3	3	Analyze the interrelationships of ideas and events in text to determine how one idea or event may interact and influence another.	0	0	0	0
	Total For Assessment Anchor L.N.1				9	0	9	0
	2			**Data Analysis**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	1	1	1	3
	2	1	2	Cite evidence from a text to support generalizations.	0	0	0	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	1	0	1	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of nonfiction:	1	1	1	3
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of nonfiction:	0	0	0	0
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of nonfiction:	0	0	0	0
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of nonfiction:	0	0	0	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of nonfiction:	1	0	1	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of nonfiction:	1	0	1	0
	2	4	1	Identify, analyze, and evaluate the structure and format of complex informational texts.	0	0	0	0
	2	4	2	Identify, explain, compare, interpret, describe, and/or analyze the sequence of steps in a list of directions.	0	0	0	0
	2	4	3	Explain, interpret, and/or analyze the effect of text organization, including headings, graphics, and charts.	0	0	0	0
	2	4	4	Make connections between a text and the content of graphics and charts.	0	0	0	0
	2	4	5	Analyze and evaluate how graphics and charts clarify, simplify, and organize complex informational texts.	0	0	0	0
	2	5	1	Differentiate between fact and opinion.	1	0	1	0
	2	5	2	Explain, interpret, describe, and/or analyze the use of facts and opinions in a text.	1	0	1	0
	2	5	3	Distinguish essential from nonessential information.	0	0	0	0
	2	5	4	Identify, explain, and/or interpret bias and propaganda techniques in nonfictional text.	1	0	1	0
	2	5	5	Explain, describe, and/or analyze the effectiveness of bias (explicit and implicit) and propaganda techniques in nonfictional text.	0	0	0	0
	2	5	6	Explain, interpret, describe, and/or analyze the author's defense of a claim to make a point or construct an argument in nonfictional text.	0	1	0	3
	Total For Assessment Anchor L.N.2				8	3	8	9
Total For Reporting Category L.N					17	3	17	9

LITERATURE–SPRING 2014

Keystone Exam — **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.F: Fiction	1			**Reading for Meaning—Fiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	1	0	1	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	0	0	0	0
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of fiction to effectively communicate an idea or concept.	2	0	2	0
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	0	0	0	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	0	0	0	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	1	0	1	0
	1	2	4	Draw conclusions about connotations of words.	1	0	1	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	0	0	0	0
	1	3	2	Summarize the key details and events of a fictional text, in part or as a whole.	1	0	1	0
	Total For Assessment Anchor L.F.1				6	0	6	0
	2			**Analyzing and Interpreting Literature—Fiction**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	1	0	1	0
	2	1	2	Cite evidence from a text to support generalizations.	1	0	1	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	0	0	0	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	2	4	Compare and evaluate the characteristics that distinguish narrative, poetry, and drama.	1	0	1	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of fiction:	0	0	0	0
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of fiction:	2	1	2	3
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of fiction:	1	1	1	3
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of fiction:	0	0	0	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of fiction:	2	0	2	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of fiction:	0	1	0	3
	2	4	1	Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.	1	0	1	0
	2	5	1	Identify, explain, interpret, describe, and/or analyze the effects of personification, simile, metaphor, hyperbole, satire, foreshadowing, flashback, imagery, allegory, symbolism, dialect, allusion, and irony in a text.	1	0	1	0
	2	5	2	Identify, explain, and analyze the structure of poems and sound devices.	0	0	0	0
	2	5	3	Identify and analyze how stage directions, monologue, dialogue, soliloquy, and dialect support dramatic script.	1	0	1	0
	Total For Assessment Anchor L.F.2				11	3	11	9
Total For Reporting Category L.F					17	3	17	9

Keystone Exam **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.N: Nonfiction	1			**Reading for Meaning—Nonfiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	1	0	1	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	1	0	1	0
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of nonfiction to effectively communicate an idea or concept.	0	0	0	0
	1	1	4	Explain how an author's use of key words or phrases in text informs and influences the reader.	0	0	0	0
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	0	0	0	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	0	0	0	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	1	0	1	0
	1	2	4	Draw conclusions about connotations of words.	0	0	0	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	2	1	2	3
	1	3	2	Summarize the key details and events of a nonfictional text, in part or as a whole.	0	0	0	0
	1	3	3	Analyze the interrelationships of ideas and events in text to determine how one idea or event may interact and influence another.	1	0	1	0
	Total For Assessment Anchor L.N.1				6	1	6	3
	2			**Data Analysis**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	1	2	1	6
	2	1	2	Cite evidence from a text to support generalizations.	1	0	1	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	1	0	1	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of nonfiction:	1	0	1	0
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of nonfiction:	0	0	0	0
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of nonfiction:	1	0	1	0
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of nonfiction:	1	0	1	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of nonfiction:	2	0	2	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of nonfiction:	1	0	1	0
	2	4	1	Identify, analyze, and evaluate the structure and format of complex informational texts.	0	0	0	0
	2	4	2	Identify, explain, compare, interpret, describe, and/or analyze the sequence of steps in a list of directions.	0	0	0	0
	2	4	3	Explain, interpret, and/or analyze the effect of text organization, including headings, graphics, and charts.	1	0	1	0
	2	4	4	Make connections between a text and the content of graphics and charts.	0	0	0	0
	2	4	5	Analyze and evaluate how graphics and charts clarify, simplify, and organize complex informational texts.	0	0	0	0
	2	5	1	Differentiate between fact and opinion.	1	0	1	0
	2	5	2	Explain, interpret, describe, and/or analyze the use of facts and opinions in a text.	0	0	0	0
	2	5	3	Distinguish essential from nonessential information.	0	0	0	0
	2	5	4	Identify, explain, and/or interpret bias and propaganda techniques in nonfictional text.	0	0	0	0
	2	5	5	Explain, describe, and/or analyze the effectiveness of bias (explicit and implicit) and propaganda techniques in nonfictional text.	0	0	0	0
	2	5	6	Explain, interpret, describe, and/or analyze the author's defense of a claim to make a point or construct an argument in nonfictional text.	0	0	0	0
	Total For Assessment Anchor L.N.2				11	2	11	6
Total For Reporting Category L.N					17	3	17	9

LITERATURE–SUMMER 2014

Keystone Exam — **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.F: Fiction	1			**Reading for Meaning—Fiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	1	0	1	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	0	0	0	0
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of fiction to effectively communicate an idea or concept.	2	0	2	0
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	1	0	1	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	1	0	1	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	0	0	0	0
	1	2	4	Draw conclusions about connotations of words.	0	0	0	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	2	0	2	0
	1	3	2	Summarize the key details and events of a fictional text, in part or as a whole.	0	0	0	0
	Total For Assessment Anchor L.F.1				7	0	7	0
	2			**Analyzing and Interpreting Literature—Fiction**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	1	0	1	0
	2	1	2	Cite evidence from a text to support generalizations.	0	0	0	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	0	0	0	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	2	4	Compare and evaluate the characteristics that distinguish narrative, poetry, and drama.	0	0	0	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of fiction:	3	2	3	6
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of fiction:	1	0	1	0
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of fiction:	1	0	1	0
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of fiction:	0	0	0	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of fiction:	1	0	1	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of fiction:	2	0	2	0
	2	4	1	Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.	0	0	0	0
	2	5	1	Identify, explain, interpret, describe, and/or analyze the effects of personification, simile, metaphor, hyperbole, satire, foreshadowing, flashback, imagery, allegory, symbolism, dialect, allusion, and irony in a text.	1	1	1	3
	2	5	2	Identify, explain, and analyze the structure of poems and sound devices.	0	0	0	0
	2	5	3	Identify and analyze how stage directions, monologue, dialogue, soliloquy, and dialect support dramatic script.	0	0	0	0
	Total For Assessment Anchor L.F.2				10	3	10	9
Total For Reporting Category L.F					17	3	17	9

Keystone Exam **Literature**

Reporting Category	Assessment Anchor	Descriptor (Sub-anchor)	Eligible Content	Focus	Items: Number of Core Items MC	Items: Number of Core Items CR	Points: Core Points MC	Points: Core Points CR
L.N: Nonfiction	1			**Reading for Meaning—Nonfiction**	0	0	0	0
	1	1	1	Identify and/or analyze the author's intended purpose of a text.	0	0	0	0
	1	1	2	Explain, describe, and/or analyze examples of a text that support the author's intended purpose.	2	1	2	3
	1	1	3	Analyze, interpret, and evaluate how authors use techniques and elements of nonfiction to effectively communicate an idea or concept.	1	0	1	0
	1	1	4	Explain how an author's use of key words or phrases in text informs and influences the reader.	0	0	0	0
	1	2	1	Identify and/or apply a synonym or antonym of a word used in a text.	0	0	0	0
	1	2	2	Identify how the meaning of a word is changed when an affix is added; identify the meaning of a word with an affix from a text.	0	0	0	0
	1	2	3	Use context clues to determine or clarify the meaning of unfamiliar, multiple-meaning, or ambiguous words.	0	0	0	0
	1	2	4	Draw conclusions about connotations of words.	1	0	1	0
	1	3	1	Identify and/or explain stated or implied main ideas and relevant supporting details from a text.	1	0	1	0
	1	3	2	Summarize the key details and events of a nonfictional text, in part or as a whole.	1	0	1	0
	1	3	3	Analyze the interrelationships of ideas and events in text to determine how one idea or event may interact and influence another.	1	0	1	0
	Total For Assessment Anchor L.N.1				7	1	7	3
	2			**Data Analysis**	0	0	0	0
	2	1	1	Make inferences and/or draw conclusions based on analysis of a text.	1	0	1	0
	2	1	2	Cite evidence from a text to support generalizations.	1	0	1	0
	2	2	1	Analyze how literary form relates to and/or influences meaning of a text.	0	0	0	0
	2	2	2	Compare and evaluate the characteristics that distinguish fiction from literary nonfiction.	0	0	0	0
	2	2	3	Explain, interpret, compare, describe, analyze, and/or evaluate connections between texts.	0	0	0	0
	2	3	1	Explain, interpret, compare, describe, analyze, and/or evaluate character in a variety of nonfiction:	0	0	0	0
	2	3	2	Explain, interpret, compare, describe, analyze, and/or evaluate setting in a variety of nonfiction:	0	1	0	3
	2	3	3	Explain, interpret, compare, describe, analyze, and/or evaluate plot in a variety of nonfiction:	0	0	0	0
	2	3	4	Explain, interpret, compare, describe, analyze, and/or evaluate theme in a variety of nonfiction:	0	0	0	0
	2	3	5	Explain, interpret, compare, describe, analyze, and/or evaluate tone, style, and/or mood in a variety of nonfiction:	1	0	1	0
	2	3	6	Explain, interpret, compare, describe, analyze, and/or evaluate point of view in a variety of nonfiction:	1	0	1	0
	2	4	1	Identify, analyze, and evaluate the structure and format of complex informational texts.	0	0	0	0
	2	4	2	Identify, explain, compare, interpret, describe, and/or analyze the sequence of steps in a list of directions.	2	0	2	0
	2	4	3	Explain, interpret, and/or analyze the effect of text organization, including headings, graphics, and charts.	1	0	1	0
	2	4	4	Make connections between a text and the content of graphics and charts.	1	0	1	0
	2	4	5	Analyze and evaluate how graphics and charts clarify, simplify, and organize complex informational texts.	2	1	2	3
	2	5	1	Differentiate between fact and opinion.	0	0	0	0
	2	5	2	Explain, interpret, describe, and/or analyze the use of facts and opinions in a text.	0	0	0	0
	2	5	3	Distinguish essential from nonessential information.	0	0	0	0
	2	5	4	Identify, explain, and/or interpret bias and propaganda techniques in nonfictional text.	0	0	0	0
	2	5	5	Explain, describe, and/or analyze the effectiveness of bias (explicit and implicit) and propaganda techniques in nonfictional text.	0	0	0	0
	2	5	6	Explain, interpret, describe, and/or analyze the author's defense of a claim to make a point or construct an argument in nonfictional text.	0	0	0	0
	Total For Assessment Anchor L.N.2				10	2	10	6
Total For Reporting Category L.N					17	3	17	9

APPENDIX G: KEYSTONE EXAMS MODULE LAYOUT PLANS

Table G–1. Winter 2013/2014, Spring 2014, and Summer 2014 Algebra I Keystone Exams Section Layout Plan

	Module	Number of MC	Estimated MC Item Breakdown	Number of CR	Estimated CR Item Breakdown	Testing Time	Administration Time
Algebra I	1	23	18—Operational (Core) Items 5—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	75	85–90
	2	23	18—Operational (Core) Items 5—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	75	85–90

Table G–2. Winter 2013/2014, Spring 2014, and Summer 2014 Biology Keystone Exams Section Layout Plan

	Module	Number of MC	Estimated MC Item Breakdown	Number of CR	Estimated CR Item Breakdown	Testing Time	Administration Time
Biology	1	32	24—Operational (Core) Items; 8—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	72	82–87
	2	32	24—Operational (Core) Items; 8—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	72	82–87

Table G–3. Winter 2013/2014, Spring 2014, and Summer 2014 Literature Keystone Exams Section Layout Plan

	Module	Number of MC	Estimated MC Item Breakdown	Number of CR	Estimated CR Item Breakdown	Testing Time	Administration Time
Literature	1	23	17—Operational (Core) Items 6—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	73	83–88
	2	23	17—Operational (Core) Items 6—Embedded Field Test Items	4	3—Operational (Core) Items 1—Embedded Field Test Items	73	83–88

APPENDIX H: MEAN RAW SCORES BY FORM

Table H–1. Mean Raw Scores by Form

Column Heading	Definition
Form	Form
N	Number of students
L	Length
Pts	Points possible
Min	Minimum
Max	Maximum
Mean	Mean
Med	Median
SD	Standard deviation

ALGEBRA I: SPRING

Table H–2. Algebra I Mean Raw Scores by Form Table

Form	*N*	L	Pts	Min	Max	Mean	Med	*SD*
All	124954	42	60	0	60	31.6	32	12.7
1	5320	42	60	1	60	28.2	28	13.6
2	4153	42	60	3	60	31.9	32	12.7
3	4146	42	60	1	60	31.7	32	12.9
4	4146	42	60	3	60	31.9	33	12.8
5	4114	42	60	0	60	31.9	33	12.8
6	4155	42	60	1	60	31.8	32	12.7
7	4191	42	60	3	60	31.9	33	12.8
8	4131	42	60	3	60	32.1	33	12.8
9	4152	42	60	3	60	32.0	33	13.0
10	4153	42	60	3	60	31.9	32	12.9
11	4205	42	60	3	60	31.8	33	12.9
12	4210	42	60	4	60	31.6	32	12.8
13	6126	42	60	1	60	31.7	32	12.4
14	6135	42	60	2	60	31.7	32	12.5
15	6182	42	60	3	60	31.8	32	12.6
16	6148	42	60	3	60	31.6	32	12.4
17	6172	42	60	0	60	31.7	32	12.4
18	6155	42	60	3	60	31.8	32	12.4
19	6147	42	60	3	60	31.7	32	12.3
20	6214	42	60	1	60	31.8	32	12.5
21	6152	42	60	0	59	31.7	32	12.4
22	6165	42	60	2	60	31.6	32	12.6
23	6136	42	60	3	60	31.7	32	12.4
24	6146	42	60	2	60	31.4	32	12.5

BIOLOGY: SPRING

Table H–3. Biology Mean Raw Scores by Form Table

Form	*N*	L	Pts	Min	Max	Mean	Med	*SD*
All	119274	54	66	0	66	37.4	38	14.9
1	5275	54	66	3	66	33.4	31	15.5
2	3986	54	66	4	66	36.7	37	15.0
3	4028	54	66	4	66	36.6	37	15.1
4	4001	54	66	5	65	37.0	37	15.0
5	4018	54	66	6	66	36.6	38	15.2
6	3990	54	66	4	66	36.8	37	14.8
7	4022	54	66	5	66	36.6	37	14.9
8	4028	54	66	3	66	37.4	38	15.1
9	4025	54	66	4	65	36.7	37	15.0
10	4039	54	66	2	65	37.1	37	15.1
11	3974	54	66	5	65	37.2	38	15.0
12	4019	54	66	0	66	36.6	37	15.1
13	5809	54	66	5	66	38.2	39	14.8
14	5842	54	66	2	66	37.9	39	14.7
15	5869	54	66	5	66	38.2	39	14.6
16	5843	54	66	4	66	38.1	39	14.5
17	5845	54	66	2	66	38.3	39	14.6
18	5823	54	66	4	66	38.1	39	14.7
19	5797	54	66	4	66	38.0	39	14.7
20	5872	54	66	2	66	38.0	39	14.6
21	5786	54	66	5	66	38.3	39	14.6
22	5795	54	66	4	66	37.9	39	14.7
23	5798	54	66	1	66	38.3	39	14.7
24	5790	54	66	3	66	37.9	39	14.7

LITERATURE: SPRING

Table H–4. Literature Mean Raw Scores by Form Table

Form	*N*	L	Pts	Min	Max	Mean	Med	*SD*
All	113477	40	52	0	52	32.6	34	9.6
1	3972	40	52	3	51	32.0	34	9.9
2	3885	40	52	4	51	32.3	34	9.8
3	3901	40	52	2	52	32.4	34	9.9
4	3888	40	52	3	52	31.9	34	9.8
5	3880	40	52	4	51	32.3	34	9.9
6	3876	40	52	3	50	32.2	34	9.9
7	3910	40	52	3	52	32.3	34	9.8
8	3863	40	52	4	52	32.1	34	9.8
9	3854	40	52	4	51	32.3	34	9.6
10	3891	40	52	2	52	32.4	34	9.7
11	3895	40	52	2	51	32.1	34	9.8
12	3896	40	52	3	52	32.2	34	9.9
13	5578	40	52	4	51	33.0	34	9.2
14	5556	40	52	3	52	32.8	35	9.4
15	5593	40	52	3	52	33.0	35	9.6
16	5526	40	52	4	52	33.1	35	9.3
17	5610	40	52	3	52	32.3	34	9.3
18	5565	40	52	4	51	33.0	35	9.5
19	5532	40	52	0	52	33.0	35	9.4
20	5544	40	52	2	51	32.9	35	9.4
21	5623	40	52	3	52	32.7	34	9.5
22	5545	40	52	3	51	32.7	34	9.4
23	5521	40	52	4	52	32.7	34	9.3
24	5573	40	52	3	50	32.6	34	9.5

APPENDIX I: DEMOGRAPHIC AND ACCOMMODTION DATA

WINTER 2013/2014

Students Assessed on the Winter 2013/2014 Keystone: Algebra I

	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	91	1	43	455	11,623	32,367	37,212	2,073	83,865
Total number of CBT processed	0	2	13	279	2,317	6,301	6,658	580	16,150
Total number of tests processed	91	3	56	734	13,940	38,668	43,870	2,653	100,015
Total number of tests processed with a score	81 89.0	3 100.0	56 100.0	729 99.3	13,540 97.1	36,870 95.4	41,624 94.9	2,477 93.4	95,380 95.4
Total number of tests processed without a score	10 11.0	0 0.0	0 0.0	5 0.7	400 2.9	1,798 4.6	2,246 5.1	176 6.6	4,635 4.6

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Students Assessed on the Winter 2013/2014 Keystone: Biology

	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	67	1	1,890	16,388	31,147	1,696	51,189
Total number of CBT processed	0	0	791	4,065	7,474	723	13,053
Total number of tests processed	67	1	2,681	20,453	38,621	2,419	64,242
Total number of tests processed with a score	58 86.6	1 100.0	2,574 96.0	19,577 95.7	36,242 93.8	2,301 95.1	60,753 94.6
Total number of tests processed without a score	9 13.4	0 0.0	107 4.0	876 4.3	2,379 6.2	118 4.9	3,489 5.4

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Students Assessed on the Winter 2013/2014 Keystone: Literature

	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	48	2	796	11,612	27,871	1,271	41,600
Total number of CBT processed	0	0	75	2,809	5,523	565	8,972
Total number of tests processed	48	2	871	14,421	33,394	1,836	50,572
Total number of tests processed with a score	42	1	817	13,851	31,278	1,726	47,715
	87.5	50.0	93.8	96.0	93.7	94.0	94.4
Total number of tests processed without a score	6	1	54	570	2,116	110	2,857
	12.5	50.0	6.2	4.0	6.3	6.0	5.6

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Winter 2013/2014 Keystone: Algebra I

Reason for Non-Assessment	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	0	0	0	0	65	402	544	37	1,048
	0.0	0.0	0.0	0.0	16.3	22.4	24.2	21.0	22.6
Absent without make-up	0	0	0	0	70	284	325	15	694
	0.0	0.0	0.0	0.0	17.5	15.8	14.5	8.5	15.0
Non-attempt	9	0	0	5	169	812	914	98	2,007
	90.0	0.0	0.0	100.0	42.3	45.2	40.7	55.7	43.3
Medical emergency	0	0	0	0	28	77	88	8	201
	0.0	0.0	0.0	0.0	7.0	4.3	3.9	4.5	4.3
Other reasons	1	0	0	0	68	223	375	18	685
	10.0	0.0	0.0	0.0	17.0	12.4	16.7	10.2	14.8
Total not assessed	10	0	0	5	400	1,798	2,246	176	4,635

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Winter 2013/2014 Keystone: Biology

Reason for Non-Assessment	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	1	0	23	215	481	16	736
	11.1	0.0	21.5	24.5	20.2	13.6	21.1
Absent without make-up	0	0	20	150	382	11	563
	0.0	0.0	18.7	17.1	16.1	9.3	16.1
Non-attempt	7	0	34	345	908	74	1,368
	77.8	0.0	31.8	39.4	38.2	62.7	39.2
Medical emergency	0	0	4	43	100	6	153
	0.0	0.0	3.7	4.9	4.2	5.1	4.4
Other reasons	1	0	26	123	508	11	669
	11.1	0.0	24.3	14.0	21.4	9.3	19.2
Total not assessed	9	0	107	876	2,379	118	3,489

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Winter 2013/2014 Keystone: Literature

Reason for Non-Assessment	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	0 0.0	0 0.0	12 22.2	126 22.1	504 23.8	33 30.0	675 23.6
Absent without make-up	0 0.0	0 0.0	9 16.7	126 22.1	325 15.4	6 5.5	466 16.3
Non-attempt	5 83.3	1 100.0	19 35.2	217 38.1	811 38.3	58 52.7	1,111 38.9
ELL in first year in U.S. schools	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Medical emergency	0 0.0	0 0.0	2 3.7	25 4.4	98 4.6	5 4.5	130 4.6
Other reasons	1 16.7	0 0.0	12 22.2	76 13.3	378 17.9	8 7.3	475 16.6
Total not assessed	6	1	54	570	2,116	110	2,857

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Algebra I

Demographic or Educational Characteristic	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender									
Female	4 4.9	1 33.3	24 42.9	379 52.0	6,844 50.5	18,074 49.0	20,580 49.4	1,158 46.8	47,064 49.3
Male	4 4.9	2 66.7	32 57.1	349 47.9	6,694 49.4	18,779 50.9	21,024 50.5	1,314 53.0	48,198 50.5
Race/Ethnicity									
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	0 0.0	1 0.1	20 0.1	45 0.1	61 0.1	3 0.1	130 0.1
Asian (not Hispanic)	0 0.0	1 33.3	14 25.0	30 4.1	466 3.4	904 2.5	1,124 2.7	20 0.8	2,559 2.7
Black or African American (not Hispanic)	1 1.2	0 0.0	0 0.0	39 5.3	1,469 10.8	7,322 19.9	8,064 19.4	361 14.6	17,256 18.1
Hispanic (any race)	1 1.2	0 0.0	1 1.8	20 2.7	970 7.2	3,609 9.8	4,420 10.6	174 7.0	9,195 9.6
Multi-Racial (not Hispanic)	0 0.0	0 0.0	0 0.0	17 2.3	223 1.6	751 2.0	641 1.5	72 2.9	1,704 1.8
White (not Hispanic)	4 4.9	2 66.7	41 73.2	621 85.2	10,389 76.7	24,191 65.6	27,254 65.5	1,841 74.3	64,343 67.5
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	1 0.0	26 0.1	39 0.1	2 0.1	68 0.1
Educational Category and Other Demographic Groups									
IEP (not gifted)	3 3.7	0 0.0	1 1.8	18 2.5	1,018 7.5	6,179 16.8	8,675 20.8	687 27.7	16,581 17.4
Student exited IEP in last 2 years	0 0.0	0 0.0	3 5.4	10 1.4	286 2.1	656 1.8	622 1.5	27 1.1	1,604 1.7
Title I	5 6.2	0 0.0	3 5.4	86 11.8	2,087 15.4	8,972 24.3	9,302 22.3	304 12.3	20,759 21.8
Title III served	0 0.0	0 0.0	0 0.0	5 0.7	143 1.1	1,032 2.8	1,261 3.0	48 1.9	2,489 2.6
Title III not served	0 0.0	0 0.0	0 0.0	0 0.0	22 0.2	147 0.4	225 0.5	10 0.4	404 0.4
Migrant student	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	18 0.0	14 0.0	1 0.0	33 0.0
ELL (enrolled after 1/23/13)	0 0.0	0 0.0	0 0.0	0 0.0	34 0.3	84 0.2	147 0.4	4 0.2	269 0.3
ELL (enrolled on or before 1/23/13)	2 2.5	0 0.0	0 0.0	5 0.7	132 1.0	1,099 3.0	1,338 3.2	54 2.2	2,630 2.8

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Algebra I (continued)

Demographic or Educational Characteristic	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	1 1.8	2 0.3	28 0.2	150 0.4	217 0.5	3 0.1	401 0.4
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	0 0.0	0 0.0	36 0.3	104 0.3	233 0.6	12 0.5	385 0.4
Former ELL no longer monitored	0 0.0	0 0.0	2 3.6	1 0.1	240 1.8	688 1.9	829 2.0	29 1.2	1,789 1.9
Foreign exchange student	0 0.0	0 0.0	0 0.0	0 0.0	1 0.0	7 0.0	21 0.1	1 0.0	30 0.0
Economically disadvantaged	5 6.2	1 33.3	5 8.9	157 21.5	4,686 34.6	17,353 47.1	19,743 47.4	1,176 47.5	43,126 45.2
Historically Underperforming Subgroup	7 8.6	1 33.3	6 10.7	173 23.7	5,256 38.8	20,375 55.3	24,038 57.8	1,499 60.5	51,355 53.8
Enrollment in school of residence after 10/1/13	2 2.5	0 0.0	0 0.0	1 0.1	87 0.6	369 1.0	501 1.2	13 0.5	973 1.0
Enrollment in district of residence after 10/1/13	1 1.2	0 0.0	0 0.0	1 0.1	64 0.5	249 0.7	352 0.8	11 0.4	678 0.7
Enrollment as PA resident after 10/1/13	1 1.2	0 0.0	0 0.0	1 0.1	20 0.1	118 0.3	165 0.4	8 0.3	313 0.3
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	2 2.5	0 0.0	7 12.5	48 6.6	3,619 26.7	8,780 23.8	8,779 21.1	252 10.2	21,487 22.5
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	5 6.2	0 0.0	5 8.9	31 4.3	1,544 11.4	3,011 8.2	3,585 8.6	151 6.1	8,332 8.7
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	6 0.0	16 0.0	1 0.0	23 0.0
Number of assessed students	81	3	56	729	13,540	36,870	41,624	2,477	95,380

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Biology

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	3 5.2	0 0.0	1,223 47.5	9,907 50.6	18,342 50.6	1,152 50.1	30,627 50.4
Male	3 5.2	1 100.0	1,350 52.4	9,659 49.3	17,886 49.4	1,149 49.9	30,048 49.5
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	2 0.1	18 0.1	48 0.1	5 0.2	73 0.1
Asian (not Hispanic)	0 0.0	0 0.0	131 5.1	663 3.4	993 2.7	23 1.0	1,810 3.0
Black or African American (not Hispanic)	1 1.7	1 100.0	290 11.3	3,120 15.9	6,539 18.0	205 8.9	10,156 16.7
Hispanic (any race)	1 1.7	0 0.0	215 8.4	1,283 6.6	3,596 9.9	158 6.9	5,253 8.6
Multi-Racial (not Hispanic)	0 0.0	0 0.0	47 1.8	410 2.1	523 1.4	56 2.4	1,036 1.7
White (not Hispanic)	2 3.4	0 0.0	1,887 73.3	14,062 71.8	24,510 67.6	1,851 80.4	42,312 69.6
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	1 0.0	9 0.0	19 0.1	2 0.1	31 0.1
Educational Category and Other Demographic Groups							
IEP (not gifted)	2 3.4	0 0.0	281 10.9	3,010 15.4	6,626 18.3	510 22.2	10,429 17.2
Student exited IEP in last 2 years	0 0.0	0 0.0	44 1.7	330 1.7	518 1.4	27 1.2	919 1.5
Title I	4 6.9	1 100.0	213 8.3	2,821 14.4	7,869 21.7	190 8.3	11,098 18.3
Title III served	0 0.0	0 0.0	33 1.3	371 1.9	1,085 3.0	34 1.5	1,523 2.5
Title III not served	0 0.0	0 0.0	3 0.1	28 0.1	83 0.2	8 0.3	122 0.2
Migrant student	0 0.0	0 0.0	0 0.0	5 0.0	9 0.0	0 0.0	14 0.0
ELL (enrolled after 1/23/13)	0 0.0	0 0.0	3 0.1	35 0.2	91 0.3	5 0.2	134 0.2
ELL (enrolled on or before 1/23/13)	2 3.4	0 0.0	33 1.3	364 1.9	1,079 3.0	36 1.6	1,514 2.5

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Biology (continued)

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	5 0.2	73 0.4	163 0.4	5 0.2	246 0.4
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	2 0.1	32 0.2	182 0.5	10 0.4	226 0.4
Former ELL no longer monitored	0 0.0	0 0.0	66 2.6	370 1.9	764 2.1	31 1.3	1,231 2.0
Foreign exchange student	0 0.0	0 0.0	0 0.0	3 0.0	22 0.1	1 0.0	26 0.0
Economically disadvantaged	3 5.2	1 100.0	874 34.0	7,930 40.5	16,397 45.2	1,035 45.0	26,240 43.2
Historically Underperforming Subgroup	4 6.9	1 100.0	1,006 39.1	9,457 48.3	19,639 54.2	1,271 55.2	31,378 51.6
Enrollment in school of residence after 10/1/13	2 3.4	0 0.0	15 0.6	145 0.7	362 1.0	19 0.8	543 0.9
Enrollment in district of residence after 10/1/13	2 3.4	0 0.0	12 0.5	117 0.6	259 0.7	15 0.7	405 0.7
Enrollment as PA resident after 10/1/13	2 3.4	0 0.0	7 0.3	48 0.2	117 0.3	9 0.4	183 0.3
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	0 0.0	1 100.0	632 24.6	3,739 19.1	7,517 20.7	234 10.2	12,123 20.0
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	3 5.2	1 100.0	211 8.2	1,272 6.5	2,948 8.1	133 5.8	4,568 7.5
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	1 0.0	7 0.0	14 0.0	0 0.0	22 0.0
Number of assessed students	58	1	2,574	19,577	36,242	2,301	60,753

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Literature

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	4	1	386	6,608	13,569	662	21,230
	9.5	100.0	47.2	47.7	43.4	38.4	44.5
Male	4	0	431	7,238	17,689	1,063	26,425
	9.5	0.0	52.8	52.3	56.6	61.6	55.4
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0	0	3	11	39	2	55
	0.0	0.0	0.4	0.1	0.1	0.1	0.1
Asian (not Hispanic)	0	0	14	328	960	26	1,328
	0.0	0.0	1.7	2.4	3.1	1.5	2.8
Black or African American (not Hispanic)	1	0	135	2,088	6,262	261	8,747
	2.4	0.0	16.5	15.1	20.0	15.1	18.3
Hispanic (any race)	2	1	104	1,481	3,556	118	5,262
	4.8	100.0	12.7	10.7	11.4	6.8	11.0
Multi-Racial (not Hispanic)	1	0	25	237	469	36	768
	2.4	0.0	3.1	1.7	1.5	2.1	1.6
White (not Hispanic)	2	0	535	9,696	19,944	1,281	31,458
	4.8	0.0	65.5	70.0	63.8	74.2	65.9
Native Hawaiian or Other Pacific Islander (not Hispanic)	0	0	1	4	24	1	30
	0.0	0.0	0.1	0.0	0.1	0.1	0.1
Educational Category and Other Demographic Groups							
IEP (not gifted)	3	0	82	2,084	8,073	613	10,855
	7.1	0.0	10.0	15.0	25.8	35.5	22.7
Student exited IEP in last 2 years	0	0	28	198	462	21	709
	0.0	0.0	3.4	1.4	1.5	1.2	1.5
Title I	4	0	155	2,290	7,545	209	10,203
	9.5	0.0	19.0	16.5	24.1	12.1	21.4
Title III served	1	0	7	223	1,199	36	1,466
	2.4	0.0	0.9	1.6	3.8	2.1	3.1
Title III not served	0	0	2	46	206	15	269
	0.0	0.0	0.2	0.3	0.7	0.9	0.6
Migrant student	0	0	1	9	12	1	23
	0.0	0.0	0.1	0.1	0.0	0.1	0.0
ELL (enrolled after 1/23/13)	0	0	1	14	76	1	92
	0.0	0.0	0.1	0.1	0.2	0.1	0.2
ELL (enrolled on or before 1/23/13)	3	0	8	256	1,331	50	1,648
	7.1	0.0	1.0	1.8	4.3	2.9	3.5

Demographic Characteristics of Students taking the Winter 2013/2014 Keystone: Literature (continued)

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	1 0.1	65 0.5	228 0.7	5 0.3	299 0.6
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	2 0.2	28 0.2	220 0.7	8 0.5	258 0.5
Former ELL no longer monitored	0 0.0	0 0.0	18 2.2	233 1.7	642 2.1	19 1.1	912 1.9
Foreign exchange student	0 0.0	0 0.0	0 0.0	1 0.0	19 0.1	1 0.1	21 0.0
Economically disadvantaged	6 14.3	1 100.0	342 41.9	5,412 39.1	15,905 50.9	872 50.5	22,538 47.2
Historically Underperforming Subgroup	8 19.0	1 100.0	363 44.4	6,480 46.8	19,712 63.0	1,145 66.3	27,709 58.1
Enrollment in school of residence after 10/1/13	2 4.8	1 100.0	14 1.7	181 1.3	417 1.3	20 1.2	635 1.3
Enrollment in district of residence after 10/1/13	1 2.4	0 0.0	7 0.9	143 1.0	294 0.9	14 0.8	459 1.0
Enrollment as PA resident after 10/1/13	1 2.4	0 0.0	1 0.1	72 0.5	140 0.4	9 0.5	223 0.5
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	1 2.4	0 0.0	149 18.2	2,492 18.0	7,781 24.9	224 13.0	10,647 22.3
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	4 9.5	0 0.0	94 11.5	965 7.0	3,224 10.3	121 7.0	4,408 9.2
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	0 0.0	6 0.0	13 0.0	0 0.0	19 0.0
Number of assessed students	42	1	817	13,851	31,278	1,726	47,715

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Incidence of Presentation Accommodations Received on the Winter 2013/2014 Keystone: Algebra I

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	5	N/A	5
	0.0	N/A	0.0
Large print format	30	N/A	30
	0.0	N/A	0.0
Electronic screen reader	2	N/A	2
	0.0	N/A	0.0
Some test items/questions read aloud	459	156	615
	0.6	1.0	0.6
All test items/questions read aloud	302	70	372
	0.4	0.4	0.4
Test items/questions signed	10	1	11
	0.0	0.0	0.0
Test items/questions interpreted for ELL student	6	0	6
	0.0	0.0	0.0
Amplification device	4	2	6
	0.0	0.0	0.0
Magnification device	1	2	3
	0.0	0.0	0.0
Color overlay	0	N/A	0
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	17	10	27
	0.0	0.1	0.0
Spanish version	374	N/A	374
	0.5	N/A	0.4
Online Accommodations Received			
Audio	N/A	596	596
	N/A	3.8	0.6
Color Chooser	N/A	37	37
	N/A	0.2	0.0
Contrasting Text Chooser	N/A	N/A	N/A
	N/A	N/A	N/A
Number of assessed students	79,630	15,750	95,380

Incidence of Presentation Accommodations Received on the Winter 2013/2014 Keystone: Biology

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	1	N/A	1
	0.0	N/A	0.0
Large print format	17	N/A	17
	0.0	N/A	0.0
Electronic screen reader	1	N/A	1
	0.0	N/A	0.0
Some test items/questions read aloud	240	126	366
	0.5	1.0	0.6
All test items/questions read aloud	243	65	308
	0.5	0.5	0.5
Test items/questions signed	4	1	5
	0.0	0.0	0.0
Test items/questions interpreted for ELL student	0	1	1
	0.0	0.0	0.0
Amplification device	3	3	6
	0.0	0.0	0.0
Magnification device	1	1	2
	0.0	0.0	0.0
Color overlay	0	N/A	0
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	1	7	8
	0.0	0.1	0.0
Spanish version	183	N/A	183
	0.4	N/A	0.3
Online Accommodations Received			
Audio	N/A	566	566
	N/A	4.5	0.9
Color Chooser	N/A	51	51
	N/A	0.4	0.1
Contrasting Text Chooser	N/A	N/A	N/A
	N/A	N/A	N/A
Number of assessed students	48,120	12,633	60,753

Incidence of Presentation Accommodations Received on the Winter 2013/2014 Keystone: Literature

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	1	N/A	1
	0.0	N/A	0.0
Large print format	9	N/A	9
	0.0	N/A	0.0
Electronic screen reader	0	N/A	0
	0.0	N/A	0.0
Amplification device	3	1	4
	0.0	0.0	0.0
Magnification device	4	1	5
	0.0	0.0	0.0
Color overlay	0	N/A	0
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	26	5	31
	0.1	0.1	0.1
Online Accommodations Received			
Color Chooser	N/A	40	40
	N/A	0.5	0.1
Contrasting Text Chooser	N/A	N/A	N/A
	N/A	N/A	N/A
Number of assessed students	39,022	8,693	47,715

Incidence of Response Accommodations Received on the Winter 2013/2014 Keystone: Algebra I

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	32 0.0	0 0.0	32 0.0
Test administrator scribed open-ended responses at student's direction	31 0.0	2 0.0	33 0.0
Test administrator transcribed student responses	50 0.1	0 0.0	50 0.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	4 0.0	0 0.0	4 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	0 0.0	0 0.0	0 0.0
Keyboard, word processor, or computer	9 0.0	N/A N/A	9 0.0
Brailler/Notetaker	3 0.0	N/A N/A	3 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	1 0.0	0 0.0	1 0.0
Electronic screen reader	2 0.0	N/A N/A	2 0.0
Translation dictionary for ELL student	93 0.1	0 0.0	93 0.1
Other (per Accommodations Guidelines)	4 0.0	2 0.0	6 0.0
Number of assessed students	79,630	15,750	95,380

Incidence of Response Accommodations Received on the Winter 2013/2014 Keystone: Biology

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	30 0.1	0 0.0	30 0.0
Test administrator scribed open-ended responses at student's direction	33 0.1	3 0.0	36 0.1
Test administrator transcribed student responses	31 0.1	0 0.0	31 0.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	2 0.0	0 0.0	2 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	1 0.0	0 0.0	1 0.0
Keyboard, word processor, or computer	10 0.0	N/A N/A	10 0.0
Brailler/Notetaker	0 0.0	N/A N/A	0 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Electronic screen reader	0 0.0	N/A N/A	0 0.0
Translation dictionary for ELL student	77 0.2	0 0.0	77 0.1
Other (per Accommodations Guidelines)	5 0.0	2 0.0	7 0.0
Number of assessed students	48,120	12,633	60,753

Incidence of Response Accommodations Received on the Winter 2013/2014 Keystone: Literature

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	29 0.1	0 0.0	29 0.1
Test administrator scribed open-ended responses at student's direction	31 0.1	3 0.0	34 0.1
Test administrator transcribed student responses	38 0.1	0 0.0	38 0.1
Keyboard, word processor, or computer	14 0.0	N/A N/A	14 0.0
Brailler/Notetaker	1 0.0	N/A N/A	1 0.0
Augmentative communication device	1 0.0	0 0.0	1 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Electronic screen reader	0 0.0	N/A N/A	0 0.0
Other (per Accommodations Guidelines)	3 0.0	1 0.0	4 0.0
Number of assessed students	39,022	8,693	47,715

Incidence of Setting Accommodations Received on the Winter 2013/2014 Keystone: Algebra I

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	22 0.0	2 0.0	24 0.0
One-on-one setting	132 0.2	6 0.0	138 0.1
Small group setting	6,437 8.1	864 5.5	7,301 7.7
Other (per Accommodations Guidelines)	66 0.1	41 0.3	107 0.1
Number of assessed students	79,630	15,750	95,380

Incidence of Setting Accommodations Received on the Winter 2013/2014 Keystone: Biology

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	11 0.0	2 0.0	13 0.0
One-on-one setting	166 0.3	6 0.0	172 0.3
Small group setting	3,977 8.3	648 5.1	4,625 7.6
Other (per Accommodations Guidelines)	91 0.2	47 0.4	138 0.2
Number of assessed students	48,120	12,633	60,753

Incidence of Setting Accommodations Received on the Winter 2013/2014 Keystone: Literature

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	11	1	12
	0.0	0.0	0.0
One-on-one setting	68	4	72
	0.2	0.0	0.2
Small group setting	4,428	650	5,078
	11.3	7.5	10.6
Other (per Accommodations Guidelines)	17	51	68
	0.0	0.6	0.1
Number of assessed students	39,022	8,693	47,715

Incidence of Timing Accommodations Received on the Winter 2013/2014 Keystone: Algebra I

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	7,000 8.8	753 4.8	7,753 8.1
Frequent breaks	499 0.6	131 0.8	630 0.7
Changed test schedule	70 0.1	5 0.0	75 0.1
Other (per Accommodations Guidelines)	9 0.0	24 0.2	33 0.0
Number of assessed students	79,630	15,750	95,380

Incidence of Timing Accommodations Received on the Winter 2013/2014 Keystone: Biology

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	1,408 2.9	523 4.1	1,931 3.2
Frequent breaks	302 0.6	122 1.0	424 0.7
Changed test schedule	30 0.1	2 0.0	32 0.1
Other (per Accommodations Guidelines)	2 0.0	31 0.2	33 0.1
Number of assessed students	48,120	12,633	60,753

Incidence of Timing Accommodations Received on the Winter 2013/2014 Keystone: Literature

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	2,476 6.3	494 5.7	2,970 6.2
Frequent breaks	267 0.7	168 1.9	435 0.9
Changed test schedule	66 0.2	3 0.0	69 0.1
Other (per Accommodations Guidelines)	2 0.0	36 0.4	38 0.1
Number of assessed students	39,022	8,693	47,715

Accommodation Rate for Non-IEP and IEP Students on the Winter 2013/2014 Keystone

Course Tested	Student Subgroup Tested	PPT	CBT	Total
		N/Pct	N/Pct	N/Pct
Algebra I	**Non-IEP Students**	65,708	13,091	78,799
	Non-Accommodated	59,810 91.0	12,797 97.8	72,607 92.1
	Accommodated	5,898 9.0	294 2.2	6,192 7.9
	IEP Students	13,922	2,659	16,581
	Non-Accommodated	7,697 55.3	1,512 56.9	9,209 55.5
	Accommodated	6,225 44.7	1,147 43.1	7,372 44.5
Biology	**Non-IEP Students**	39,746	10,578	50,324
	Non-Accommodated	38,614 97.2	10,367 98.0	48,981 97.3
	Accommodated	1,132 2.8	211 2.0	1,343 2.7
	IEP Students	8,374	2,055	10,429
	Non-Accommodated	4,534 54.1	1,131 55.0	5,665 54.3
	Accommodated	3,840 45.9	924 45.0	4,764 45.7
Literature	**Non-IEP Students**	30,085	6,775	36,860
	Non-Accommodated	28,140 93.5	6,670 98.5	34,810 94.4
	Accommodated	1,945 6.5	105 1.5	2,050 5.6
	IEP Students	8,937	1,918	10,855
	Non-Accommodated	4,839 54.1	1,188 61.9	6,027 55.5
	Accommodated	4,098 45.9	730 38.1	4,828 44.5

Incidence of IEP and ELL Students Receiving Accommodations on the Winter 2013/2014 Keystone: Algebra I

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test items/questions read aloud	18 0.0	414 3.0	21 0.9	6 1.7
	All test items/questions read aloud	10 0.0	282 2.1	2 0.1	8 2.3
	Small group setting	648 1.0	5,399 39.8	254 10.5	136 39.4
	Extended time	4,853 7.7	1,836 13.5	279 11.6	32 9.3
	Frequent breaks	38 0.1	456 3.4	1 0.0	4 1.2
	Number assessed	63,300	13,577	2,408	345
CBT	Some test items/questions read aloud	5 0.0	149 5.7	1 0.8	1 4.0
	All test items/questions read aloud	0 0.0	69 2.6	0 0.0	1 4.0
	Small group setting	31 0.2	817 31.0	5 4.1	11 44.0
	Extended time	229 1.8	491 18.6	28 23.1	5 20.0
	Frequent breaks	8 0.1	120 4.6	0 0.0	3 12.0
	Number assessed	12,970	2,634	121	25
Total	Some test items/questions read aloud	23 0.0	563 3.5	22 0.9	7 1.9
	All test items/questions read aloud	10 0.0	351 2.2	2 0.1	9 2.4
	Small group setting	679 0.9	6,216 38.3	259 10.2	147 39.7
	Extended time	5,082 6.7	2,327 14.4	307 12.1	37 10.0
	Frequent breaks	46 0.1	576 3.6	1 0.0	7 1.9
	Number assessed	76,270	16,211	2,529	370

Incidence of IEP and ELL Students Receiving Accommodations on the Winter 2013/2014 Keystone: Biology

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test items/questions read aloud	4 0.0	222 2.7	12 0.9	2 1.2
	All test items/questions read aloud	3 0.0	231 2.8	2 0.2	7 4.1
	Small group setting	350 0.9	3,428 41.8	139 10.5	60 34.9
	Extended time	524 1.4	787 9.6	85 6.4	12 7.0
	Frequent breaks	22 0.1	271 3.3	8 0.6	1 0.6
	Number assessed	38,428	8,202	1,318	172
CBT	Some test items/questions read aloud	4 0.0	120 5.9	2 1.6	0 0.0
	All test items/questions read aloud	4 0.0	61 3.0	0 0.0	0 0.0
	Small group setting	14 0.1	613 30.3	8 6.3	13 41.9
	Extended time	84 0.8	405 20.0	27 21.3	7 22.6
	Frequent breaks	7 0.1	113 5.6	0 0.0	2 6.5
	Number assessed	10,451	2,024	127	31
Total	Some test items/questions read aloud	8 0.0	342 3.3	14 1.0	2 1.0
	All test items/questions read aloud	7 0.0	292 2.9	2 0.1	7 3.4
	Small group setting	364 0.7	4,041 39.5	147 10.2	73 36.0
	Extended time	608 1.2	1,192 11.7	112 7.8	19 9.4
	Frequent breaks	29 0.1	384 3.8	8 0.6	3 1.5
	Number assessed	48,879	10,226	1,445	203

Incidence of IEP and ELL Students Receiving Accommodations on the Winter 2013/2014 Keystone: Literature

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Small group setting	415 1.4	3,713 42.6	203 14.9	97 44.3
	Extended time	1,329 4.6	1,016 11.7	116 8.5	15 6.8
	Frequent breaks	16 0.1	242 2.8	6 0.4	3 1.4
	Number assessed	28,719	8,718	1,366	219
CBT	Small group setting	17 0.3	616 32.6	4 3.2	13 44.8
	Extended time	66 1.0	396 21.0	26 20.6	6 20.7
	Frequent breaks	12 0.2	152 8.0	0 0.0	4 13.8
	Number assessed	6,649	1,889	126	29
Total	Small group setting	432 1.2	4,329 40.8	207 13.9	110 44.4
	Extended time	1,395 3.9	1,412 13.3	142 9.5	21 8.5
	Frequent breaks	28 0.1	394 3.7	6 0.4	7 2.8
	Number assessed	35,368	10,607	1,492	248

SUMMER 2014

Students Assessed on the Summer 2014 Keystone: Algebra I

	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	9	0	8	137	569	340	114	2	1,179
Total number of CBT processed	0	1	4	77	307	149	35	0	573
Total number of tests processed	9	1	12	214	876	489	149	2	1,752
Total number of tests processed with a score	9 100.0	1 100.0	12 100.0	207 96.7	846 96.6	476 97.3	137 91.9	2 100.0	1,690 96.5
Total number of tests processed without a score	0 0.0	0 0.0	0 0.0	7 3.3	30 3.4	13 2.7	12 8.1	0 0.0	62 3.5

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Students Assessed on the Summer 2014 Keystone: Biology

	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	0	32	183	254	159	2	630
Total number of CBT processed	0	0	144	76	11	0	231
Total number of tests processed	0	32	327	330	170	2	861
Total number of tests processed with a score	0 0.0	32 100.0	323 98.8	321 97.3	160 94.1	2 100.0	838 97.3
Total number of tests processed without a score	0 0.0	0 0.0	4 1.2	9 2.7	10 5.9	0 0.0	23 2.7

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Students Assessed on the Summer 2014 Keystone: Literature

	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Total number of PPT processed	1	0	90	345	90	2	528
Total number of CBT processed	0	0	18	100	22	0	140
Total number of tests processed	1	0	108	445	112	2	668
Total number of tests processed with a score	1 100.0	0 0.0	106 98.1	427 96.0	94 83.9	2 100.0	630 94.3
Total number of tests processed without a score	0 0.0	0 0.0	2 1.9	18 4.0	18 16.1	0 0.0	38 5.7

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Summer 2014 Keystone: Algebra I

Reason for Non-Assessment	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	0 0.0	0 0.0	0 0.0	0 0.0	10 33.3	1 7.7	0 0.0	0 0.0	11 17.7
Absent without make-up	0 0.0	0 0.0	0 0.0	0 0.0	5 16.7	3 23.1	1 8.3	0 0.0	9 14.5
Non-attempt	0 0.0	0 0.0	0 0.0	7 100.0	15 50.0	9 69.2	4 33.3	0 0.0	35 56.5
Medical emergency	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Other reasons	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	7 58.3	0 0.0	7 11.3
Total not assessed	0	0	0	7	30	13	12	0	62

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Summer 2014 Keystone: Biology

Reason for Non-Assessment	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	0 0.0	0 0.0	0 0.0	4 44.4	0 0.0	0 0.0	4 17.4
Absent without make-up	0 0.0	0 0.0	1 25.0	2 22.2	2 20.0	0 0.0	5 21.7
Non-attempt	0 0.0	0 0.0	3 75.0	3 33.3	1 10.0	0 0.0	7 30.4
Medical emergency	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Other reasons	0 0.0	0 0.0	0 0.0	0 0.0	7 70.0	0 0.0	7 30.4
Total not assessed	0	0	4	9	10	0	23

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Counts of Students without Scores on the Summer 2014 Keystone: Literature

Reason for Non-Assessment	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Extended absence from school	0 0.0	0 0.0	0 0.0	2 11.1	2 11.1	0 0.0	4 10.5
Absent without make-up	0 0.0	0 0.0	0 0.0	2 11.1	1 5.6	0 0.0	3 7.9
Non-attempt	0 0.0	0 0.0	2 100.0	14 77.8	6 33.3	0 0.0	22 57.9
ELL in first year in U.S. schools	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Medical emergency	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Other reasons	0 0.0	0 0.0	0 0.0	0 0.0	9 50.0	0 0.0	9 23.7
Total not assessed	0	0	2	18	18	0	38

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Summer 2014 Keystone: Algebra I

Demographic or Educational Characteristic	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender									
Female	1 11.1	0 0.0	4 33.3	106 51.2	417 49.3	222 46.6	64 46.7	2 100.0	816 48.3
Male	0 0.0	1 100.0	8 66.7	101 48.8	418 49.4	253 53.2	73 53.3	0 0.0	854 50.5
Race/Ethnicity									
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.7	0 0.0	1 0.1
Asian (not Hispanic)	0 0.0	0 0.0	2 16.7	7 3.4	21 2.5	6 1.3	2 1.5	0 0.0	38 2.2
Black or African American (not Hispanic)	0 0.0	0 0.0	0 0.0	10 4.8	157 18.6	113 23.7	40 29.2	1 50.0	321 19.0
Hispanic (any race)	0 0.0	0 0.0	0 0.0	7 3.4	131 15.5	48 10.1	11 8.0	0 0.0	197 11.7
Multi-Racial (not Hispanic)	0 0.0	0 0.0	1 8.3	2 1.0	12 1.4	22 4.6	1 0.7	0 0.0	38 2.2
White (not Hispanic)	1 11.1	1 100.0	9 75.0	181 87.4	504 59.6	285 59.9	82 59.9	1 50.0	1,064 63.0
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1	0 0.0	0 0.0	0 0.0	1 0.1
Educational Category and Other Demographic Groups									
IEP (not gifted)	0 0.0	0 0.0	0 0.0	8 3.9	139 16.4	88 18.5	26 19.0	0 0.0	261 15.4
Student exited IEP in last 2 years	0 0.0	0 0.0	0 0.0	3 1.4	11 1.3	10 2.1	1 0.7	0 0.0	25 1.5
Title I	0 0.0	0 0.0	0 0.0	32 15.5	227 26.8	216 45.4	46 33.6	1 50.0	522 30.9
Title III served	0 0.0	0 0.0	0 0.0	0 0.0	35 4.1	7 1.5	5 3.6	0 0.0	47 2.8
Title III not served	0 0.0	0 0.0	0 0.0	0 0.0	4 0.5	12 2.5	3 2.2	0 0.0	19 1.1
Migrant student	0 0.0	0 0.0	0 0.0	1 0.5	6 0.7	5 1.1	0 0.0	0 0.0	12 0.7
ELL (enrolled after 8/2/13)	0 0.0	0 0.0	0 0.0	0 0.0	2 0.2	0 0.0	0 0.0	0 0.0	2 0.1
ELL (enrolled on or before 8/2/13)	0 0.0	0 0.0	0 0.0	0 0.0	33 3.9	7 1.5	5 3.6	0 0.0	45 2.7

Demographic Characteristics of Students taking the Summer 2014 Keystone: Algebra I (continued)

Demographic or Educational Characteristic	Other*	Gr.6	Gr.7	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	0 0.0	1 0.5	4 0.5	2 0.4	0 0.0	0 0.0	7 0.4
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	0 0.0	2 1.0	5 0.6	1 0.2	1 0.7	0 0.0	9 0.5
Former ELL no longer monitored	0 0.0	0 0.0	0 0.0	1 0.5	10 1.2	8 1.7	1 0.7	0 0.0	20 1.2
Foreign exchange student	0 0.0	0 0.0	1 8.3	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	1 0.1
Economically disadvantaged	0 0.0	0 0.0	3 25.0	37 17.9	330 39.0	202 42.4	55 40.1	0 0.0	627 37.1
Historically Underperforming Subgroup	0 0.0	0 0.0	3 25.0	44 21.3	411 48.6	246 51.7	72 52.6	0 0.0	776 45.9
Enrollment in school of residence after 10/1/13	1 11.1	0 0.0	0 0.0	11 5.3	34 4.0	10 2.1	2 1.5	0 0.0	58 3.4
Enrollment in district of residence after 10/1/13	1 11.1	0 0.0	0 0.0	8 3.9	28 3.3	6 1.3	2 1.5	0 0.0	45 2.7
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	0 0.0	3 1.4	17 2.0	2 0.4	1 0.7	0 0.0	23 1.4
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	0 0.0	1 100.0	3 25.0	8 3.9	190 22.5	28 5.9	8 5.8	0 0.0	238 14.1
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	0 0.0	1 100.0	1 8.3	6 2.9	107 12.6	28 5.9	5 3.6	0 0.0	148 8.8
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Number of assessed students	9	1	12	207	846	476	137	2	1,690

*Other combines students coded as (1) below Grade 6, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Summer 2014 Keystone: Biology

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	0 0.0	18 56.3	178 55.1	144 44.9	83 51.9	1 50.0	424 50.6
Male	0 0.0	14 43.8	142 44.0	175 54.5	76 47.5	1 50.0	408 48.7
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	0 0.0	1 0.3	0 0.0	0 0.0	1 0.1
Asian (not Hispanic)	0 0.0	11 34.4	14 4.3	14 4.4	0 0.0	0 0.0	39 4.7
Black or African American (not Hispanic)	0 0.0	0 0.0	56 17.3	44 13.7	57 35.6	0 0.0	157 18.7
Hispanic (any race)	0 0.0	0 0.0	34 10.5	45 14.0	19 11.9	1 50.0	99 11.8
Multi-Racial (not Hispanic)	0 0.0	0 0.0	4 1.2	4 1.2	6 3.8	0 0.0	14 1.7
White (not Hispanic)	0 0.0	21 65.6	211 65.3	211 65.7	77 48.1	1 50.0	521 62.2
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Educational Category and Other Demographic Groups							
IEP (not gifted)	0 0.0	0 0.0	56 17.3	62 19.3	18 11.3	0 0.0	136 16.2
Student exited IEP in last 2 years	0 0.0	1 3.1	5 1.5	5 1.6	0 0.0	0 0.0	11 1.3
Title I	0 0.0	0 0.0	58 18.0	59 18.4	114 71.3	1 50.0	232 27.7
Title III served	0 0.0	0 0.0	2 0.6	6 1.9	4 2.5	0 0.0	12 1.4
Title III not served	0 0.0	0 0.0	15 4.6	2 0.6	0 0.0	0 0.0	17 2.0
Migrant student	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled after 8/2/13)	0 0.0	0 0.0	0 0.0	1 0.3	0 0.0	0 0.0	1 0.1
ELL (enrolled on or before 8/2/13)	0 0.0	0 0.0	2 0.6	6 1.9	4 2.5	0 0.0	12 1.4

Demographic Characteristics of Students taking the Summer 2014 Keystone: Biology (continued)

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	1 0.3	0 0.0	0 0.0	0 0.0	1 0.1
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	0 0.0	4 1.2	1 0.6	0 0.0	5 0.6
Former ELL no longer monitored	0 0.0	1 3.1	4 1.2	4 1.2	0 0.0	0 0.0	9 1.1
Foreign exchange student	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Economically disadvantaged	0 0.0	0 0.0	99 30.7	100 31.2	76 47.5	0 0.0	275 32.8
Historically Underperforming Subgroup	0 0.0	0 0.0	144 44.6	140 43.6	89 55.6	0 0.0	373 44.5
Enrollment in school of residence after 10/1/13	0 0.0	1 3.1	14 4.3	10 3.1	2 1.3	0 0.0	27 3.2
Enrollment in district of residence after 10/1/13	0 0.0	0 0.0	9 2.8	5 1.6	2 1.3	0 0.0	16 1.9
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	6 1.9	4 1.2	0 0.0	0 0.0	10 1.2
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	34 10.5	18 5.6	5 3.1	0 0.0	57 6.8
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	26 8.0	16 5.0	4 2.5	0 0.0	46 5.5
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Number of assessed students	0	32	323	321	160	2	838

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Demographic Characteristics of Students taking the Summer 2014 Keystone: Literature

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Gender							
Female	1 100.0	0 0.0	40 37.7	192 45.0	35 37.2	2 100.0	270 42.9
Male	0 0.0	0 0.0	66 62.3	235 55.0	58 61.7	0 0.0	359 57.0
Race/Ethnicity							
American Indian/Alaskan Native (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	2 2.1	0 0.0	2 0.3
Asian (not Hispanic)	0 0.0	0 0.0	1 0.9	12 2.8	2 2.1	0 0.0	15 2.4
Black or African American (not Hispanic)	0 0.0	0 0.0	39 36.8	113 26.5	25 26.6	1 50.0	178 28.3
Hispanic (any race)	0 0.0	0 0.0	5 4.7	46 10.8	8 8.5	1 50.0	60 9.5
Multi-Racial (not Hispanic)	0 0.0	0 0.0	0 0.0	22 5.2	2 2.1	0 0.0	24 3.8
White (not Hispanic)	1 100.0	0 0.0	61 57.5	233 54.6	54 57.4	0 0.0	349 55.4
Native Hawaiian or Other Pacific Islander (not Hispanic)	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Educational Category and Other Demographic Groups							
IEP (not gifted)	0 0.0	0 0.0	18 17.0	75 17.6	19 20.2	0 0.0	112 17.8
Student exited IEP in last 2 years	0 0.0	0 0.0	1 0.9	7 1.6	1 1.1	0 0.0	9 1.4
Title I	0 0.0	0 0.0	6 5.7	224 52.5	25 26.6	2 100.0	257 40.8
Title III served	0 0.0	0 0.0	0 0.0	6 1.4	2 2.1	0 0.0	8 1.3
Title III not served	0 0.0	0 0.0	0 0.0	17 4.0	1 1.1	0 0.0	18 2.9
Migrant student	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
ELL (enrolled after 8/2/13)	0 0.0	0 0.0	0 0.0	0 0.0	1 1.1	0 0.0	1 0.2
ELL (enrolled on or before 8/2/13)	0 0.0	0 0.0	0 0.0	6 1.4	1 1.1	0 0.0	7 1.1

Demographic Characteristics of Students taking the Summer 2014 Keystone: Literature (continued)

Demographic or Educational Characteristic	Other*	Gr.8	Gr.9	Gr.10	Gr.11	Gr.12	Total
	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct	N/Pct
Exited ESL/bilingual program and in first year of monitoring	0 0.0	0 0.0	0 0.0	1 0.2	1 1.1	0 0.0	2 0.3
Exited ESL/bilingual program and in 2nd year of monitoring	0 0.0	0 0.0	0 0.0	5 1.2	1 1.1	0 0.0	6 1.0
Former ELL no longer monitored	0 0.0	0 0.0	1 0.9	3 0.7	1 1.1	0 0.0	5 0.8
Foreign exchange student	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Economically disadvantaged	0 0.0	0 0.0	41 38.7	208 48.7	27 28.7	0 0.0	276 43.8
Historically Underperforming Subgroup	0 0.0	0 0.0	52 49.1	250 58.5	41 43.6	0 0.0	343 54.4
Enrollment in school of residence after 10/1/13	1 100.0	0 0.0	5 4.7	10 2.3	3 3.2	0 0.0	19 3.0
Enrollment in district of residence after 10/1/13	1 100.0	0 0.0	3 2.8	8 1.9	3 3.2	0 0.0	15 2.4
Enrollment as PA resident after 10/1/13	0 0.0	0 0.0	2 1.9	2 0.5	1 1.1	0 0.0	5 0.8
Enrollment in school of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	43 40.6	32 7.5	5 5.3	0 0.0	80 12.7
Enrollment in district of residence after 10/1/12 but on/before 10/1/13	0 0.0	0 0.0	43 40.6	30 7.0	3 3.2	0 0.0	76 12.1
Home schooled	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Court/agency placed	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Number of assessed students	1	0	106	427	94	2	630

*Other combines students coded as (1) below Grade 8, (2) ungraded, or (3) without a coded grade

Incidence of Presentation Accommodations Received on the Summer 2014 Keystone: Algebra I

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	0	N/A	0
	0.0	N/A	0.0
Large print format	0	N/A	0
	0.0	N/A	0.0
Computer Assistive Technology	0	N/A	0
	0.0	N/A	0.0
Some test items/questions read aloud	4	0	4
	0.4	0.0	0.2
All test items/questions read aloud	6	3	9
	0.5	0.5	0.5
Test items/questions signed	0	0	0
	0.0	0.0	0.0
Test items/questions interpreted for ELL student	0	0	0
	0.0	0.0	0.0
Amplification device	0	0	0
	0.0	0.0	0.0
Magnification device	0	0	0
	0.0	0.0	0.0
Color overlay	0	N/A	0
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	0	0	0
	0.0	0.0	0.0
Spanish version	0	N/A	0
	0.0	N/A	0.0
Online Accommodations Received			
Audio	N/A	17	17
	N/A	3.1	1.0
Color Chooser	N/A	0	0
	N/A	0.0	0.0
Contrasting Text Chooser	N/A	0	0
	N/A	0.0	0.0
Number of assessed students	1,137	553	1,690

Incidence of Presentation Accommodations Received on the Summer 2014 Keystone: Biology

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	0	N/A	0
	0.0	N/A	0.0
Large print format	0	N/A	0
	0.0	N/A	0.0
Computer Assistive Technology	0	N/A	0
	0.0	N/A	0.0
Some test items/questions read aloud	3	0	3
	0.5	0.0	0.4
All test items/questions read aloud	2	2	4
	0.3	0.9	0.5
Test items/questions signed	0	0	0
	0.0	0.0	0.0
Test items/questions interpreted for ELL student	0	0	0
	0.0	0.0	0.0
Amplification device	0	0	0
	0.0	0.0	0.0
Magnification device	0	0	0
	0.0	0.0	0.0
Color overlay	0	N/A	0
	0.0	N/A	0.0
Other (per Accommodations Guidelines)	0	0	0
	0.0	0.0	0.0
Spanish version	1	N/A	1
	0.2	N/A	0.1
Online Accommodations Received			
Audio	N/A	3	3
	N/A	1.3	0.4
Color Chooser	N/A	0	0
	N/A	0.0	0.0
Contrasting Text Chooser	N/A	0	0
	N/A	0.0	0.0
Number of assessed students	611	227	838

Incidence of Presentation Accommodations Received on the Summer 2014 Keystone: Literature

Type of Presentation Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Braille format	0 0.0	N/A N/A	0 0.0
Large print format	0 0.0	N/A N/A	0 0.0
Computer Assistive Technology	0 0.0	N/A N/A	0 0.0
Amplification device	0 0.0	0 0.0	0 0.0
Magnification device	0 0.0	0 0.0	0 0.0
Color overlay	0 0.0	N/A N/A	0 0.0
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Online Accommodations Received			
Color Chooser	N/A N/A	0 0.0	0 0.0
Contrasting Text Chooser	N/A N/A	0 0.0	0 0.0
Number of assessed students	504	126	630

Incidence of Response Accommodations Received on the Summer 2014 Keystone: Algebra I

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	0 0.0	0 0.0	0 0.0
Test administrator scribed open-ended responses at student's direction	1 0.1	0 0.0	1 0.1
Test administrator transcribed student responses	1 0.1	0 0.0	1 0.1
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	0 0.0	0 0.0	0 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	0 0.0	0 0.0	0 0.0
Keyboard, word processor, or computer	1 0.1	N/A N/A	1 0.1
Brailler/Notetaker	0 0.0	N/A N/A	0 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	0 0.0	N/A N/A	0 0.0
Translation dictionary for ELL student	0 0.0	0 0.0	0 0.0
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	1,137	553	1,690

Incidence of Response Accommodations Received on the Summer 2014 Keystone: Biology

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	0 0.0	0 0.0	0 0.0
Test administrator scribed open-ended responses at student's direction	0 0.0	0 0.0	0 0.0
Test administrator transcribed student responses	0 0.0	0 0.0	0 0.0
Qualified interpreter translated, transcribed, and/or scribed student's signed responses	0 0.0	0 0.0	0 0.0
Qualified interpreter translated, transcribed, and/or scribed ELL student responses	0 0.0	0 0.0	0 0.0
Keyboard, word processor, or computer	0 0.0	N/A N/A	0 0.0
Brailler/Notetaker	0 0.0	N/A N/A	0 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	0 0.0	N/A N/A	0 0.0
Translation dictionary for ELL student	0 0.0	0 0.0	0 0.0
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	611	227	838

Incidence of Response Accommodations Received on the Summer 2014 Keystone: Literature

Type of Response Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Test administrator marked multiple-choice responses at student's direction	0 0.0	0 0.0	0 0.0
Test administrator scribed open-ended responses at student's direction	0 0.0	0 0.0	0 0.0
Test administrator transcribed student responses	1 0.2	0 0.0	1 0.2
Keyboard, word processor, or computer	0 0.0	N/A N/A	0 0.0
Brailler/Notetaker	0 0.0	N/A N/A	0 0.0
Augmentative communication device	0 0.0	0 0.0	0 0.0
Audio recording of student responses	0 0.0	0 0.0	0 0.0
Computer Assistive Technology	0 0.0	N/A N/A	0 0.0
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	504	126	630

Incidence of Setting Accommodations Received on the Summer 2014 Keystone: Algebra I

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	2 0.2	0 0.0	2 0.1
One-on-one setting	4 0.4	0 0.0	4 0.2
Small group setting	66 5.8	6 1.1	72 4.3
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	1,137	553	1,690

Incidence of Setting Accommodations Received on the Summer 2014 Keystone: Biology

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	1 0.2	0 0.0	1 0.1
One-on-one setting	0 0.0	0 0.0	0 0.0
Small group setting	40 6.5	3 1.3	43 5.1
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	611	227	838

Incidence of Setting Accommodations Received on the Summer 2014 Keystone: Literature

Type of Setting Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Hospital/home setting	1 0.2	0 0.0	1 0.2
One-on-one setting	1 0.2	0 0.0	1 0.2
Small group setting	37 7.3	5 4.0	42 6.7
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	504	126	630

Incidence of Timing Accommodations Received on the Summer 2014 Keystone: Algebra I

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	43 3.8	28 5.1	71 4.2
Frequent breaks	4 0.4	4 0.7	8 0.5
Changed test schedule	3 0.3	0 0.0	3 0.2
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	1,137	553	1,690

Incidence of Timing Accommodations Received on the Summer 2014 Keystone: Biology

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	9 1.5	10 4.4	19 2.3
Frequent breaks	1 0.2	2 0.9	3 0.4
Changed test schedule	1 0.2	0 0.0	1 0.1
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	611	227	838

Incidence of Timing Accommodations Received on the Summer 2014 Keystone: Literature

Type of Timing Accommodation	PPT	CBT	Total
	N/Pct	N/Pct	N/Pct
Extended time	25 5.0	5 4.0	30 4.8
Frequent breaks	1 0.2	4 3.2	5 0.8
Changed test schedule	1 0.2	0 0.0	1 0.2
Other (per Accommodations Guidelines)	0 0.0	0 0.0	0 0.0
Number of assessed students	504	126	630

Accommodation Rate for Non-IEP and IEP Students on the Summer 2014 Keystone

Course Tested	Student Subgroup Tested	PPT	CBT	Total
		N/Pct	N/Pct	N/Pct
Algebra I	**Non-IEP Students**	956	473	1,429
	Non-Accommodated	917 95.9	464 98.1	1,381 96.6
	Accommodated	39 4.1	9 1.9	48 3.4
	IEP Students	181	80	261
	Non-Accommodated	124 68.5	61 76.3	185 70.9
	Accommodated	57 31.5	19 23.8	76 29.1
Biology	**Non-IEP Students**	502	200	702
	Non-Accommodated	498 99.2	195 97.5	693 98.7
	Accommodated	4 0.8	5 2.5	9 1.3
	IEP Students	109	27	136
	Non-Accommodated	67 61.5	21 77.8	88 64.7
	Accommodated	42 38.5	6 22.2	48 35.3
Literature	**Non-IEP Students**	416	102	518
	Non-Accommodated	404 97.1	102 100.0	506 97.7
	Accommodated	12 2.9	0 0.0	12 2.3
	IEP Students	88	24	112
	Non-Accommodated	49 55.7	19 79.2	68 60.7
	Accommodated	39 44.3	5 20.8	44 39.3

Incidence of IEP and ELL Students Receiving Accommodations on the Summer 2014 Keystone: Algebra I

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test items/questions read aloud	1 0.1	3 1.7	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	6 3.4	0 0.0	0 0.0
	Small group setting	15 1.6	50 28.4	0 0.0	1 20.0
	Extended time	23 2.5	20 11.4	0 0.0	0 0.0
	Frequent breaks	1 0.1	3 1.7	0 0.0	0 0.0
	Number assessed	932	176	24	5
CBT	Some test items/questions read aloud	0 0.0	0 0.0	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	3 4.2	0 0.0	0 0.0
	Small group setting	0 0.0	6 8.5	0 0.0	0 0.0
	Extended time	8 1.7	19 26.8	1 11.1	0 0.0
	Frequent breaks	0 0.0	4 5.6	0 0.0	0 0.0
	Number assessed	464	71	9	9
Total	Some test items/questions read aloud	1 0.1	3 1.2	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	9 3.6	0 0.0	0 0.0
	Small group setting	15 1.1	56 22.7	0 0.0	1 7.1
	Extended time	31 2.2	39 15.8	1 3.0	0 0.0
	Frequent breaks	1 0.1	7 2.8	0 0.0	0 0.0
	Number assessed	1,396	247	33	14

Incidence of IEP and ELL Students Receiving Accommodations on the Summer 2014 Keystone: Biology

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Some test items/questions read aloud	0 0.0	3 2.8	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	2 1.9	0 0.0	0 0.0
	Small group setting	1 0.2	39 36.1	0 0.0	0 0.0
	Extended time	3 0.6	6 5.6	0 0.0	0 0.0
	Frequent breaks	0 0.0	1 0.9	0 0.0	0 0.0
	Number assessed	493	108	9	1
CBT	Some test items/questions read aloud	0 0.0	0 0.0	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	2 8.0	0 0.0	0 0.0
	Small group setting	0 0.0	3 12.0	0 0.0	0 0.0
	Extended time	4 2.0	6 24.0	0 0.0	0 0.0
	Frequent breaks	1 0.5	1 4.0	0 0.0	0 0.0
	Number assessed	199	25	1	2
Total	Some test items/questions read aloud	0 0.0	3 2.3	0 0.0	0 0.0
	All test items/questions read aloud	0 0.0	4 3.0	0 0.0	0 0.0
	Small group setting	1 0.1	42 31.6	0 0.0	0 0.0
	Extended time	7 1.0	12 9.0	0 0.0	0 0.0
	Frequent breaks	1 0.1	2 1.5	0 0.0	0 0.0
	Number assessed	692	133	10	3

Incidence of IEP and ELL Students Receiving Accommodations on the Summer 2014 Keystone: Literature

Classification of Students Regarding IEP and ELL					
Accommodation Received by Administration Mode		General Education (non-IEP or ELL)	IEP and non-ELL	ELL and non-IEP	Both IEP and ELL
		N/Pct	N/Pct	N/Pct	N/Pct
PPT	Small group setting	1 0.2	36 40.9	0 0.0	0 0.0
	Extended time	11 2.7	14 15.9	0 0.0	0 0.0
	Frequent breaks	0 0.0	1 1.1	0 0.0	0 0.0
	Number assessed	410	88	6	0
CBT	Small group setting	0 0.0	5 21.7	0 0.0	0 0.0
	Extended time	0 0.0	5 21.7	0 0.0	0 0.0
	Frequent breaks	0 0.0	4 17.4	0 0.0	0 0.0
	Number assessed	101	23	1	1
Total	Small group setting	1 0.2	41 36.9	0 0.0	0 0.0
	Extended time	11 2.2	19 17.1	0 0.0	0 0.0
	Frequent breaks	0 0.0	5 4.5	0 0.0	0 0.0
	Number assessed	511	111	7	1

APPENDIX J: ITEM STATISTICS

Table J–1. Item Statistics

Column Heading	Definition
Ref	Reference line number
ID	Item ID
Form	Test form
N	Number of students
PVal	*P*-Value
P( )	Proportion selecting given response (- = blank)
ITCorr	Item total correlation
Corr( )	Correlation of options/points and total test score
Meas	Rasch item difficulty measure estimate
SEM	Standard error of Rasch item difficulty measure estimate
z	*z* fit statistic
MS	Mean square fit statistic
M/F	Male/Female DIF code
W/B	White/Black DIF code
W/H	White/Hispanic DIF code
O/P	Online computer-based test/paper-pencil-based test DIF code

ALGEBRA I MULTIPLE-CHOICE ITEMS

Table J–2. Algebra I Multiple-Choice Item Statistics: Winter

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	605111	0	97386	0.86	0.86	0.07	0.04	0.03	0.00	0.00	0.28	0.28	-0.14	-0.18	-0.15	-1.81	0.01	-9.90	0.86	-9.90	0.80
2	605203	0	97386	0.48	0.28	0.48	0.18	0.06	0.00	0.00	0.28	-0.13	0.28	-0.14	-0.10	0.51	0.01	9.90	1.10	9.90	1.13
3	632351	0	97386	0.50	0.22	0.50	0.14	0.15	0.00	0.00	0.34	-0.11	0.34	-0.23	-0.13	0.15	0.01	-0.37	1.00	-1.75	0.99
4	605293	0	97386	0.43	0.18	0.25	0.43	0.13	0.00	0.00	0.23	-0.06	-0.15	0.23	-0.08	0.91	0.01	9.90	1.23	9.90	1.32
5	633249	0	97386	0.48	0.13	0.13	0.48	0.25	0.00	0.00	0.24	-0.14	-0.20	0.24	-0.01	0.05	0.01	9.90	1.09	9.90	1.11
6	605286	0	97386	0.29	0.15	0.40	0.16	0.29	0.00	0.00	0.30	-0.09	-0.11	-0.13	0.30	1.36	0.01	9.90	1.10	9.90	1.18
7	632150	0	97386	0.48	0.13	0.08	0.31	0.48	0.00	0.00	0.33	-0.10	-0.19	-0.17	0.33	0.20	0.01	1.15	1.00	-0.73	1.00
8	631597	0	97386	0.62	0.21	0.14	0.62	0.04	0.00	0.00	0.35	-0.11	-0.29	0.35	-0.15	-0.69	0.01	7.84	1.02	9.19	1.05
9	633398	0	97386	0.53	0.15	0.18	0.13	0.53	0.00	0.00	0.22	-0.17	-0.04	-0.09	0.22	0.30	0.01	9.90	1.12	9.90	1.16
10	605189	0	97386	0.45	0.17	0.45	0.27	0.11	0.01	0.00	0.22	-0.10	0.22	-0.11	-0.05	0.64	0.01	9.90	1.16	9.90	1.21
11	605054	0	97386	0.27	0.55	0.12	0.27	0.05	0.01	0.00	0.28	-0.12	-0.09	0.28	-0.14	1.04	0.01	-9.80	0.97	3.92	1.02
12	605295	0	97386	0.36	0.36	0.25	0.20	0.18	0.01	0.00	0.23	0.23	-0.10	-0.13	-0.01	0.86	0.01	9.90	1.12	9.90	1.17
13	605137	0	97386	0.49	0.09	0.13	0.28	0.49	0.01	0.00	0.42	-0.22	-0.19	-0.17	0.42	-0.14	0.01	-9.90	0.95	-9.90	0.94
14	605162	0	97386	0.25	0.25	0.58	0.11	0.06	0.01	0.00	0.23	0.23	-0.01	-0.18	-0.13	1.31	0.01	6.18	1.02	9.90	1.13
15	605264	0	97386	0.57	0.11	0.57	0.17	0.14	0.01	0.00	0.33	-0.13	0.33	-0.16	-0.15	-0.46	0.01	9.90	1.04	9.90	1.06
16	632349	0	97386	0.41	0.15	0.27	0.41	0.16	0.01	0.00	0.22	-0.18	0.00	0.22	-0.10	0.36	0.01	9.90	1.08	9.90	1.13
17	632350	0	97386	0.50	0.14	0.14	0.50	0.21	0.01	0.00	0.29	-0.12	-0.19	0.29	-0.07	-0.25	0.01	9.90	1.08	9.90	1.08
18	633263	0	97386	0.46	0.19	0.46	0.19	0.15	0.01	0.00	0.35	-0.18	0.35	-0.16	-0.10	-0.05	0.01	7.12	1.02	2.59	1.01
19	632158	0	97386	0.78	0.07	0.11	0.78	0.04	0.00	0.00	0.36	-0.19	-0.21	0.36	-0.18	-1.44	0.01	-6.23	0.97	-9.90	0.87
20	605238	0	97386	0.52	0.18	0.52	0.23	0.07	0.00	0.00	0.27	-0.09	0.27	-0.12	-0.18	0.11	0.01	9.90	1.05	9.90	1.07
21	633411	0	97386	0.67	0.15	0.10	0.07	0.67	0.00	0.00	0.29	-0.12	-0.15	-0.18	0.29	-0.40	0.01	-9.90	0.95	-9.90	0.96
22	631613	0	97386	0.52	0.14	0.16	0.52	0.18	0.00	0.00	0.16	-0.09	-0.05	0.16	-0.08	0.53	0.01	9.90	1.23	9.90	1.29
23	605153	0	97386	0.24	0.24	0.26	0.31	0.19	0.00	0.00	0.30	0.30	-0.04	-0.15	-0.10	1.16	0.01	-9.90	0.92	-2.91	0.99
24	632152	0	97386	0.59	0.59	0.27	0.10	0.04	0.00	0.00	0.22	0.22	-0.09	-0.16	-0.12	-0.11	0.01	9.90	1.07	9.90	1.10
25	605281	0	97386	0.25	0.23	0.19	0.32	0.25	0.01	0.00	0.20	-0.04	-0.09	-0.07	0.20	1.14	0.01	1.47	1.01	9.90	1.08
26	605306	0	97386	0.56	0.08	0.56	0.15	0.21	0.00	0.00	0.34	-0.18	0.34	-0.14	-0.17	-0.57	0.01	9.90	1.08	9.90	1.12
27	605166	0	97386	0.30	0.44	0.13	0.13	0.30	0.00	0.00	0.43	-0.25	-0.13	-0.08	0.43	1.05	0.01	-9.90	0.90	-9.90	0.88
28	605124	0	97386	0.33	0.28	0.33	0.17	0.22	0.01	0.00	0.22	-0.11	0.22	-0.12	0.00	0.97	0.01	9.90	1.10	9.90	1.19
29	605105	0	97386	0.38	0.09	0.38	0.33	0.20	0.01	0.00	0.32	-0.20	0.32	-0.11	-0.10	0.79	0.01	9.90	1.04	9.90	1.08

Appendix J: Item Statistics

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
30	605154	0	97386	0.51	0.51	0.33	0.06	0.10	0.00	0.00	0.42	0.42	-0.27	-0.20	-0.10	-0.30	0.01	-8.43	0.98	-7.02	0.97
31	605119	0	97386	0.30	0.30	0.13	0.17	0.39	0.01	0.00	0.27	0.27	-0.11	-0.08	-0.11	1.01	0.01	5.34	1.02	9.90	1.09
32	633261	0	97386	0.39	0.12	0.39	0.25	0.22	0.01	0.00	0.12	-0.18	0.12	-0.04	0.06	0.58	0.01	9.90	1.18	9.90	1.27
33	633004	0	97386	0.44	0.19	0.18	0.17	0.44	0.01	0.00	0.26	-0.10	-0.05	-0.17	0.26	0.66	0.01	9.90	1.13	9.90	1.17
34	632358	0	97386	0.65	0.65	0.12	0.11	0.12	0.01	0.00	0.38	0.38	-0.21	-0.18	-0.16	-0.47	0.01	-9.90	0.90	-9.90	0.86
35	605245	0	97386	0.47	0.24	0.47	0.19	0.10	0.01	0.00	0.22	-0.08	0.22	-0.11	-0.09	0.22	0.01	9.90	1.09	9.90	1.14
36	605246	0	97386	0.66	0.09	0.16	0.66	0.08	0.01	0.00	0.31	-0.15	-0.15	0.31	-0.15	-0.86	0.01	9.90	1.05	9.90	1.10

Table J–3. Biology Multiple-Choice Item Statistics: Winter

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	611394	0	62415	0.91	0.02	0.91	0.05	0.02	0.00	0.00	0.24	-0.12	0.24	-0.16	-0.12	-1.99	0.01	-9.90	0.66	-9.90	0.56
2	607115	0	62415	0.56	0.56	0.17	0.10	0.17	0.00	0.00	0.35	0.35	-0.07	-0.22	-0.22	-0.44	0.01	-9.90	0.97	-7.69	0.97
3	609821	0	62415	0.64	0.12	0.15	0.64	0.09	0.00	0.00	0.33	-0.15	-0.20	0.33	-0.11	-0.28	0.01	-9.90	0.96	-9.90	0.94
4	610881	0	62415	0.62	0.62	0.08	0.15	0.15	0.00	0.00	0.18	0.18	-0.12	-0.11	-0.05	-0.47	0.01	9.90	1.07	9.90	1.12
5	635600	0	62415	0.67	0.09	0.13	0.67	0.11	0.00	0.00	0.33	-0.20	-0.12	0.33	-0.16	-0.56	0.01	-9.90	0.93	-9.90	0.90
6	611167	0	62415	0.40	0.11	0.21	0.28	0.40	0.00	0.00	0.34	-0.18	-0.04	-0.20	0.34	0.62	0.01	9.90	1.07	9.90	1.09
7	610906	0	62415	0.65	0.13	0.10	0.65	0.13	0.00	0.00	0.37	-0.16	-0.22	0.37	-0.17	-0.47	0.01	-9.90	0.90	-9.90	0.87
8	607102	0	62415	0.44	0.44	0.09	0.27	0.19	0.00	0.00	0.24	0.24	-0.13	-0.12	-0.06	0.19	0.01	9.90	1.07	9.90	1.09
9	607735	0	62415	0.42	0.21	0.18	0.18	0.42	0.00	0.00	0.30	0.01	-0.24	-0.14	0.30	0.37	0.01	9.90	1.05	9.90	1.06
10	611014	0	62415	0.39	0.17	0.28	0.16	0.39	0.00	0.00	0.27	-0.13	-0.07	-0.14	0.27	0.15	0.01	8.34	1.02	6.16	1.03
11	635759	0	62415	0.46	0.46	0.26	0.18	0.10	0.00	0.00	0.30	0.30	-0.10	-0.12	-0.20	0.21	0.01	9.90	1.03	9.17	1.04
12	607571	0	62415	0.29	0.40	0.17	0.15	0.29	0.00	0.00	0.31	-0.02	-0.18	-0.18	0.31	0.96	0.01	3.30	1.02	9.90	1.07
13	608264	0	62415	0.56	0.31	0.56	0.06	0.07	0.00	0.00	0.21	-0.01	0.21	-0.22	-0.17	-0.49	0.01	9.90	1.09	9.90	1.14
14	608265	0	62415	0.49	0.24	0.11	0.49	0.16	0.00	0.00	0.29	-0.05	-0.19	0.29	-0.16	0.08	0.01	9.90	1.04	8.72	1.04
15	635798	0	62415	0.67	0.13	0.67	0.12	0.08	0.00	0.00	0.33	-0.12	0.33	-0.16	-0.21	-0.20	0.01	-9.90	0.97	-9.90	0.95
16	607700	0	62415	0.59	0.59	0.13	0.12	0.15	0.00	0.00	0.33	0.33	-0.13	-0.14	-0.19	-0.81	0.01	9.90	1.03	9.90	1.10
17	635764	0	62415	0.41	0.20	0.41	0.17	0.21	0.00	0.00	0.35	-0.17	0.35	-0.12	-0.13	-0.04	0.01	-7.32	0.98	-4.76	0.98
18	635744	0	62415	0.56	0.18	0.13	0.56	0.12	0.00	0.00	0.39	-0.23	-0.20	0.39	-0.11	-0.65	0.01	-7.13	0.98	-9.90	0.95
19	608319	0	62415	0.56	0.18	0.10	0.15	0.56	0.00	0.00	0.41	-0.13	-0.24	-0.21	0.41	-0.56	0.01	-9.90	0.94	-9.90	0.92
20	607107	0	62415	0.49	0.12	0.49	0.19	0.18	0.01	0.00	0.33	-0.19	0.33	-0.18	-0.06	-0.08	0.01	-2.81	0.99	-4.37	0.98
21	635770	0	62415	0.67	0.06	0.12	0.15	0.67	0.00	0.00	0.38	-0.20	-0.22	-0.15	0.38	-1.09	0.01	-6.17	0.98	-6.83	0.95
22	635794	0	62415	0.33	0.29	0.22	0.33	0.15	0.01	0.00	0.24	-0.07	-0.08	0.24	-0.12	0.82	0.01	9.90	1.11	9.90	1.19
23	607701	0	62415	0.34	0.12	0.33	0.21	0.34	0.01	0.00	0.30	-0.19	0.00	-0.18	0.30	0.20	0.01	-7.19	0.98	-1.06	1.00
24	607777	0	62415	0.46	0.15	0.12	0.28	0.46	0.01	0.00	0.44	-0.19	-0.19	-0.19	0.44	-0.24	0.01	-9.90	0.92	-9.90	0.89
25	608379	0	62415	0.58	0.58	0.17	0.15	0.10	0.00	0.00	0.36	0.36	-0.18	-0.24	-0.08	-0.45	0.01	-9.90	0.95	-9.90	0.94
26	607755	0	62415	0.45	0.11	0.45	0.22	0.22	0.00	0.00	0.21	-0.19	0.21	-0.06	-0.05	0.19	0.01	9.90	1.10	9.90	1.15
27	608092	0	62415	0.53	0.28	0.53	0.10	0.08	0.00	0.00	0.33	-0.15	0.33	-0.21	-0.11	-0.09	0.01	-2.67	0.99	-2.34	0.99
28	612599	0	62415	0.63	0.63	0.10	0.19	0.08	0.00	0.00	0.37	0.37	-0.17	-0.20	-0.18	-0.52	0.01	-9.90	0.91	-9.90	0.89
29	611396	0	62415	0.28	0.28	0.23	0.27	0.22	0.00	0.00	0.23	0.23	-0.09	-0.05	-0.09	0.44	0.01	-4.73	0.98	3.94	1.02
30	612591	0	62415	0.43	0.14	0.19	0.43	0.24	0.00	0.00	0.22	-0.20	-0.02	0.22	-0.07	0.17	0.01	9.90	1.08	9.90	1.10
31	611066	0	62415	0.50	0.15	0.13	0.50	0.22	0.00	0.00	0.35	-0.18	-0.15	0.35	-0.14	-0.21	0.01	-7.85	0.98	-6.24	0.97

Appendix J: Item Statistics

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
32	610891	0	62415	0.25	0.24	0.25	0.26	0.25	0.00	0.00	0.29	-0.12	-0.07	-0.10	0.29	1.01	0.01	-9.04	0.96	4.26	1.03
33	607750	0	62415	0.36	0.21	0.25	0.17	0.36	0.00	0.00	0.25	-0.10	0.01	-0.20	0.25	0.67	0.01	9.90	1.10	9.90	1.14
34	608357	0	62415	0.55	0.09	0.55	0.27	0.08	0.00	0.00	0.35	-0.19	0.35	-0.14	-0.19	-0.03	0.01	-2.57	0.99	-5.05	0.98
35	611465	0	62415	0.32	0.09	0.26	0.33	0.32	0.00	0.00	0.21	-0.19	-0.02	-0.07	0.21	0.92	0.01	9.90	1.15	9.90	1.22
36	611476	0	62415	0.48	0.48	0.28	0.08	0.16	0.00	0.00	0.32	0.32	-0.16	-0.22	-0.08	0.00	0.01	1.39	1.00	1.10	1.00
37	609394	0	62415	0.43	0.16	0.14	0.26	0.43	0.00	0.00	0.27	-0.13	-0.16	-0.06	0.27	0.08	0.01	9.90	1.03	9.90	1.06
38	609393	0	62415	0.57	0.57	0.13	0.22	0.07	0.00	0.00	0.36	0.36	-0.17	-0.17	-0.18	-0.48	0.01	-9.90	0.96	-9.90	0.95
39	608381	0	62415	0.40	0.22	0.19	0.40	0.18	0.00	0.00	0.34	-0.06	-0.18	0.34	-0.16	0.41	0.01	0.92	1.00	3.31	1.01
40	612586	0	62415	0.34	0.34	0.34	0.21	0.11	0.00	0.00	0.21	0.21	0.00	-0.13	-0.14	0.78	0.01	9.90	1.13	9.90	1.18
41	612666	0	62415	0.61	0.12	0.07	0.20	0.61	0.00	0.00	0.44	-0.24	-0.22	-0.19	0.44	-0.58	0.01	-9.90	0.88	-9.90	0.84
42	610918	0	62415	0.46	0.12	0.46	0.29	0.12	0.00	0.00	0.25	-0.14	0.25	-0.10	-0.09	0.10	0.01	9.90	1.06	9.90	1.07
43	608349	0	62415	0.25	0.11	0.47	0.16	0.25	0.00	0.00	0.13	-0.21	0.15	-0.16	0.13	1.22	0.01	9.90	1.18	9.90	1.31
44	608277	0	62415	0.41	0.24	0.41	0.17	0.17	0.00	0.00	0.33	-0.07	0.33	-0.23	-0.09	0.06	0.01	-5.38	0.98	-5.85	0.98
45	608245	0	62415	0.59	0.22	0.10	0.08	0.59	0.01	0.00	0.41	-0.18	-0.22	-0.20	0.41	-0.76	0.01	-9.90	0.96	-9.90	0.94
46	608279	0	62415	0.43	0.13	0.12	0.43	0.32	0.01	0.00	0.24	-0.10	-0.13	0.24	-0.07	-0.09	0.01	9.90	1.07	9.90	1.10
47	611463	0	62415	0.33	0.15	0.26	0.25	0.33	0.00	0.00	0.31	-0.13	-0.15	-0.06	0.31	0.51	0.01	-7.80	0.97	-3.53	0.98
48	608358	0	62415	0.46	0.46	0.12	0.21	0.20	0.00	0.00	0.38	0.38	-0.23	-0.12	-0.16	0.14	0.01	-9.90	0.96	-9.90	0.95

Table J–4. Literature Multiple-Choice Item Statistics: Winter

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	610362	0	49572	0.69	0.69	0.10	0.08	0.13	0.00	0.00	0.36	0.36	-0.21	-0.26	-0.10	-0.23	0.01	-9.90	0.93	-9.90	0.91
2	610359	0	49572	0.68	0.13	0.10	0.68	0.08	0.00	0.00	0.34	-0.10	-0.21	0.34	-0.20	-0.34	0.01	-4.69	0.98	0.57	1.00
3	610356	0	49572	0.20	0.25	0.49	0.06	0.20	0.00	0.00	0.20	-0.14	0.00	-0.08	0.20	2.15	0.01	9.90	1.11	9.90	1.54
4	610357	0	49572	0.57	0.11	0.57	0.14	0.18	0.00	0.00	0.39	-0.14	0.39	-0.20	-0.21	0.20	0.01	-7.73	0.97	-7.93	0.95
5	610364	0	49572	0.60	0.06	0.12	0.22	0.60	0.00	0.00	0.23	-0.20	-0.20	0.01	0.23	0.24	0.01	9.90	1.12	9.90	1.26
6	610366	0	49572	0.55	0.55	0.16	0.09	0.20	0.00	0.00	0.29	0.29	-0.22	-0.27	0.03	0.60	0.01	9.90	1.12	9.90	1.17
7	610363	0	49572	0.59	0.23	0.10	0.59	0.08	0.00	0.00	0.34	-0.12	-0.22	0.34	-0.17	0.58	0.01	9.90	1.08	9.90	1.10
8	610361	0	49572	0.59	0.18	0.12	0.59	0.10	0.00	0.00	0.26	-0.13	-0.08	0.26	-0.17	-0.11	0.01	9.90	1.11	9.90	1.23
9	610365	0	49572	0.61	0.18	0.61	0.07	0.13	0.00	0.00	0.40	-0.19	0.40	-0.25	-0.17	0.22	0.01	-9.90	0.95	-9.90	0.93
10	616676	0	49572	0.67	0.14	0.67	0.06	0.13	0.00	0.00	0.37	-0.14	0.37	-0.22	-0.20	-0.51	0.01	1.22	1.01	7.65	1.07
11	616683	0	49572	0.70	0.07	0.15	0.07	0.70	0.00	0.00	0.41	-0.23	-0.19	-0.22	0.41	-0.87	0.01	7.23	1.04	2.48	1.03
12	616677	0	49572	0.55	0.12	0.17	0.17	0.55	0.00	0.00	0.30	-0.16	-0.13	-0.13	0.30	0.22	0.01	9.90	1.07	9.90	1.11
13	616671	0	49572	0.49	0.08	0.49	0.34	0.09	0.00	0.00	0.25	-0.18	0.25	-0.07	-0.14	0.60	0.01	9.90	1.13	9.90	1.17
14	616678	0	49572	0.56	0.21	0.13	0.56	0.09	0.00	0.00	0.41	-0.12	-0.28	0.41	-0.20	-0.71	0.01	9.90	1.32	9.90	1.31
15	616675	0	49572	0.60	0.15	0.18	0.60	0.06	0.00	0.00	0.23	-0.07	-0.10	0.23	-0.17	-0.22	0.01	9.90	1.16	9.90	1.28
16	616670	0	49572	0.45	0.45	0.13	0.37	0.05	0.00	0.00	0.33	0.33	-0.24	-0.06	-0.23	-0.44	0.01	9.90	1.43	9.90	1.65
17	616681	0	49572	0.49	0.17	0.49	0.25	0.08	0.00	0.00	0.31	-0.15	0.31	-0.07	-0.23	0.58	0.01	9.90	1.08	9.90	1.10
18	614553	0	49572	0.61	0.16	0.61	0.08	0.15	0.00	0.00	0.34	-0.13	0.34	-0.22	-0.16	-0.17	0.01	8.53	1.03	6.56	1.05
19	614556	0	49572	0.35	0.35	0.26	0.27	0.12	0.00	0.00	0.30	0.30	0.02	-0.21	-0.17	1.37	0.01	9.90	1.13	9.90	1.26
20	614560	0	49572	0.42	0.29	0.24	0.42	0.05	0.00	0.00	0.35	-0.14	-0.18	0.35	-0.13	0.90	0.01	9.49	1.04	9.90	1.08
21	614557	0	49572	0.72	0.72	0.13	0.07	0.07	0.00	0.00	0.37	0.37	-0.20	-0.21	-0.16	-0.63	0.01	-9.90	0.93	-9.90	0.90
22	614562	0	49572	0.38	0.23	0.25	0.38	0.14	0.00	0.00	0.31	-0.10	-0.10	0.31	-0.19	1.00	0.01	9.90	1.05	9.90	1.12
23	614554	0	49572	0.39	0.42	0.11	0.39	0.08	0.00	0.00	0.28	-0.07	-0.19	0.28	-0.16	1.05	0.01	9.90	1.10	9.90	1.21
24	614563	0	49572	0.51	0.09	0.17	0.22	0.51	0.00	0.00	0.42	-0.23	-0.20	-0.16	0.42	0.43	0.01	-9.90	0.96	-9.02	0.95
25	614559	0	49572	0.63	0.12	0.11	0.63	0.14	0.00	0.00	0.43	-0.18	-0.25	0.43	-0.20	-0.26	0.01	-9.90	0.94	-9.90	0.91
26	614543	0	49572	0.70	0.09	0.10	0.11	0.70	0.01	0.00	0.29	-0.15	-0.25	-0.03	0.29	-0.47	0.01	-2.79	0.99	9.90	1.23
27	614547	0	49572	0.69	0.69	0.07	0.14	0.09	0.00	0.00	0.35	0.35	-0.22	-0.16	-0.14	-1.02	0.01	9.90	1.22	9.90	1.40
28	614541	0	49572	0.61	0.08	0.61	0.05	0.26	0.01	0.00	0.36	-0.26	0.36	-0.23	-0.11	-0.18	0.01	4.98	1.02	7.13	1.05
29	614542	0	49572	0.40	0.12	0.40	0.40	0.08	0.01	0.00	0.38	-0.23	-0.10	0.38	-0.21	0.61	0.01	-5.42	0.98	-2.57	0.99
30	614544	0	49572	0.69	0.69	0.11	0.13	0.06	0.01	0.00	0.42	0.42	-0.29	-0.16	-0.18	-0.53	0.01	-9.90	0.92	-9.90	0.89
31	614545	0	49572	0.15	0.15	0.16	0.48	0.20	0.01	0.00	0.13	0.13	-0.10	0.10	-0.12	2.14	0.01	-1.41	0.99	9.90	1.39

Appendix J: Item Statistics

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
32	614550	0	49572	0.59	0.13	0.59	0.20	0.07	0.01	0.00	0.38	-0.16	0.38	-0.17	-0.22	0.14	0.01	-6.88	0.98	-3.93	0.98
33	614546	0	49572	0.52	0.13	0.52	0.20	0.14	0.01	0.00	0.31	-0.14	0.31	-0.14	-0.13	0.40	0.01	9.90	1.07	9.90	1.08
34	614539	0	49572	0.52	0.36	0.07	0.52	0.05	0.01	0.00	0.30	-0.05	-0.25	0.30	-0.25	0.33	0.01	9.90	1.07	9.90	1.11

Table J–5. Algebra I Multiple-Choice Item Statistics: Spring

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	605307	0	201526	0.78	0.10	0.08	0.78	0.03	0.00	0.00	0.39	-0.24	-0.22	0.39	-0.16					-1.18	0.01	-9.90	0.93	-9.90	0.85
2	640584	0	201526	0.52	0.12	0.52	0.22	0.15	0.00	0.00	0.37	-0.12	0.37	-0.21	-0.17					0.21	0.01	9.90	1.07	9.90	1.09
3	640632	0	201526	0.35	0.36	0.26	0.03	0.35	0.00	0.00	0.32	-0.23	-0.04	-0.16	0.32					1.01	0.01	9.90	1.09	9.90	1.17
4	605053	0	201526	0.52	0.12	0.52	0.15	0.21	0.00	0.00	0.39	-0.13	0.39	-0.25	-0.16					0.36	0.01	9.90	1.04	9.90	1.05
5	605219	0	201526	0.41	0.12	0.29	0.18	0.41	0.00	0.00	0.30	-0.19	-0.12	-0.07	0.30					1.07	0.01	9.90	1.19	9.90	1.32
6	640604	0	201526	0.76	0.76	0.11	0.09	0.04	0.00	0.00	0.50	0.50	-0.31	-0.28	-0.19					-0.96	0.01	-9.90	0.80	-9.90	0.65
7	605092	0	201526	0.40	0.13	0.22	0.40	0.25	0.00	0.00	0.33	-0.15	-0.25	0.33	-0.02					0.78	0.01	9.90	1.09	9.90	1.16
8	640530	0	201526	0.74	0.74	0.03	0.08	0.14	0.00	0.00	0.50	0.50	-0.16	-0.24	-0.36					-0.89	0.01	-9.90	0.82	-9.90	0.71
9	605169	0	201526	0.68	0.08	0.15	0.68	0.08	0.00	0.00	0.42	-0.17	-0.27	0.42	-0.18					-0.40	0.01	-9.90	0.93	-9.90	0.89
10	605161	0	201526	0.64	0.10	0.64	0.11	0.13	0.01	0.00	0.40	-0.18	0.40	-0.25	-0.15					-0.30	0.01	-2.04	1.00	-7.35	0.97
11	640619	0	201526	0.34	0.34	0.21	0.27	0.17	0.01	0.00	0.21	0.21	-0.13	-0.02	-0.09					1.19	0.01	9.90	1.22	9.90	1.41
12	605308	0	201526	0.55	0.55	0.33	0.08	0.04	0.01	0.00	0.29	0.29	-0.08	-0.23	-0.20					0.06	0.01	9.90	1.15	9.90	1.22
13	640548	0	201526	0.74	0.07	0.09	0.09	0.74	0.01	0.00	0.49	-0.25	-0.27	-0.23	0.49					-1.06	0.01	-9.90	0.89	-9.90	0.83
14	640600	0	201526	0.46	0.11	0.26	0.46	0.16	0.01	0.00	0.34	-0.29	-0.10	0.34	-0.08					0.29	0.01	9.90	1.11	9.90	1.16
15	605077	0	201526	0.52	0.17	0.52	0.13	0.18	0.01	0.00	0.43	-0.19	0.43	-0.21	-0.17					0.28	0.01	-0.05	1.00	-0.75	1.00
16	640593	0	201526	0.46	0.11	0.19	0.23	0.46	0.01	0.00	0.42	-0.19	-0.23	-0.13	0.42					0.66	0.01	3.59	1.01	9.07	1.03
17	640625	0	201526	0.37	0.23	0.37	0.22	0.17	0.01	0.00	0.39	-0.11	0.39	-0.15	-0.20					0.80	0.01	-0.60	1.00	9.90	1.05
18	605136	0	201526	0.65	0.65	0.06	0.15	0.12	0.01	0.00	0.47	0.47	-0.22	-0.27	-0.20					-0.67	0.01	-3.79	0.99	-9.89	0.95
19	641461	0	201526	0.73	0.09	0.73	0.13	0.04	0.00	0.00	0.47	-0.22	0.47	-0.31	-0.21					-0.87	0.01	-9.90	0.87	-9.90	0.76
20	641502	0	201526	0.47	0.25	0.12	0.16	0.47	0.00	0.00	0.33	-0.14	-0.19	-0.11	0.33					0.66	0.01	9.90	1.13	9.90	1.19
21	641532	0	201526	0.77	0.05	0.14	0.77	0.04	0.00	0.00	0.31	-0.18	-0.18	0.31	-0.14					-1.19	0.01	9.90	1.07	9.90	1.12
22	641474	0	201526	0.64	0.64	0.16	0.13	0.07	0.00	0.00	0.34	0.34	-0.19	-0.14	-0.16					-0.01	0.01	9.90	1.05	9.90	1.08
23	641437	0	201526	0.63	0.14	0.19	0.04	0.63	0.00	0.00	0.38	-0.27	-0.14	-0.19	0.38					0.00	0.01	-1.13	1.00	4.50	1.01
24	641515	0	201526	0.44	0.44	0.18	0.14	0.24	0.00	0.00	0.32	0.32	-0.06	-0.14	-0.20					0.74	0.01	9.90	1.13	9.90	1.20
25	605272	0	201526	0.57	0.15	0.19	0.57	0.08	0.00	0.00	0.45	-0.32	-0.19	0.45	-0.11					-0.33	0.01	9.90	1.04	4.91	1.02
26	641538	0	201526	0.47	0.22	0.47	0.22	0.09	0.00	0.00	0.34	-0.18	0.34	-0.17	-0.07					0.44	0.01	9.90	1.10	9.90	1.15
27	605129	0	201526	0.65	0.18	0.65	0.08	0.09	0.00	0.00	0.43	-0.18	0.43	-0.22	-0.27					-0.12	0.01	-9.90	0.94	-9.90	0.90
28	605260	0	201526	0.64	0.07	0.19	0.64	0.10	0.00	0.00	0.37	-0.22	-0.21	0.37	-0.12					-0.51	0.01	9.90	1.07	9.90	1.14
29	605296	0	201526	0.48	0.13	0.11	0.27	0.48	0.00	0.00	0.30	-0.09	-0.22	-0.10	0.30					0.48	0.01	9.90	1.14	9.90	1.20
30	605142	0	201526	0.69	0.13	0.08	0.69	0.09	0.00	0.00	0.52	-0.30	-0.26	0.52	-0.21					-0.88	0.01	-9.90	0.94	-9.90	0.83
31	605221	0	201526	0.37	0.14	0.37	0.34	0.14	0.00	0.00	0.24	-0.20	0.24	-0.02	-0.09					1.01	0.01	9.90	1.19	9.90	1.35

Appendix J: Item Statistics

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	605126	0	201526	0.79	0.79	0.11	0.06	0.05	0.00	0.00	0.48	0.48	-0.29	-0.24	-0.22					-1.44	0.01	-9.90	0.93	-9.90	0.77
33	641449	0	201526	0.56	0.11	0.56	0.14	0.19	0.00	0.00	0.35	-0.17	0.35	-0.19	-0.13					0.35	0.01	9.90	1.08	9.90	1.10
34	605282	0	201526	0.53	0.09	0.22	0.15	0.53	0.00	0.00	0.45	-0.23	-0.20	-0.19	0.45					0.18	0.01	-9.90	0.97	-9.90	0.96
35	641468	0	201526	0.40	0.09	0.34	0.17	0.40	0.00	0.00	0.48	-0.20	-0.23	-0.18	0.48					0.82	0.01	-9.90	0.93	-9.90	0.95
36	605061	0	201526	0.71	0.12	0.09	0.71	0.07	0.00	0.00	0.51	-0.28	-0.26	0.51	-0.23					-1.15	0.01	7.46	1.02	-9.90	0.90
37	674485	1	5320	0.37	0.20	0.20	0.22	0.37	0.00	0.00	0.36	-0.13	-0.04	-0.24	0.36	A-	A+	A+	A-	1.05	0.05	3.25	1.07	4.46	1.16
38	674451	1	5320	0.53	0.05	0.53	0.34	0.08	0.00	0.00	0.49	-0.14	0.49	-0.40	-0.09	A-	A-	A-	A+	0.22	0.05	-2.72	0.95	-2.17	0.94
39	674468	1	5320	0.33	0.33	0.29	0.18	0.20	0.00	0.00	0.30	0.30	-0.05	-0.14	-0.15	A-	A-	A+	A-	1.28	0.05	1.54	1.04	3.96	1.16
40	666550	1	5320	0.49	0.49	0.13	0.28	0.10	0.00	0.00	0.44	0.44	-0.21	-0.13	-0.29	A+	A+	A-	A-	0.42	0.05	-1.08	0.98	-0.10	1.00
41	674496	1	5320	0.35	0.28	0.19	0.35	0.17	0.01	0.00	0.20	0.07	-0.22	0.20	-0.09	A-	A+	A-	A+	1.15	0.05	9.90	1.28	9.90	1.49
42	678742	1	5320	0.41	0.16	0.41	0.09	0.33	0.00	0.00	0.14	-0.20	0.14	-0.21	0.14	A+	A-	A+	A+	0.83	0.05	9.90	1.37	9.90	1.49
43	678756	1	5320	0.38	0.38	0.11	0.38	0.12	0.00	0.00	0.30	0.30	-0.27	0.02	-0.21	A-	A-	A+	A-	0.96	0.05	4.71	1.10	4.47	1.15
44	678790	1	5320	0.15	0.18	0.47	0.15	0.19	0.00	0.00	-0.15	-0.03	0.22	-0.15	-0.12	A-	A-	A-	A-	2.50	0.07	9.90	1.52	9.90	3.10
45	678812	1	5320	0.40	0.23	0.17	0.40	0.20	0.00	0.00	0.19	-0.03	-0.22	0.19	0.01	A-	A-	A-	A+	0.88	0.05	9.90	1.33	9.90	1.50
46	682077	1	5320	0.30	0.09	0.30	0.25	0.36	0.01	0.00	0.15	-0.12	0.15	-0.07	0.00	A+	A-	A+	A+	1.43	0.05	9.59	1.26	9.90	1.54
47	674380	2	4153	0.63	0.16	0.11	0.63	0.09	0.00	0.00	0.49	-0.29	-0.22	0.49	-0.20	A+	A-	A-	A+	0.02	0.06	-2.64	0.94	-3.50	0.87
48	666570	2	4153	0.68	0.11	0.68	0.12	0.09	0.00	0.00	0.47	-0.22	0.47	-0.19	-0.30	A-	A-	A-	A+	-0.25	0.06	-1.09	0.97	-1.36	0.94
49	674385	2	4153	0.55	0.55	0.14	0.14	0.18	0.00	0.00	0.38	0.38	-0.11	-0.26	-0.16	A-	A+	A-	A-	0.46	0.06	2.80	1.06	3.23	1.11
50	674511	2	4153	0.73	0.07	0.73	0.06	0.14	0.00	0.00	0.43	-0.19	0.43	-0.28	-0.21	A+	A-	A-	A+	-0.54	0.06	-2.37	0.93	-1.88	0.90
51	674509	2	4153	0.74	0.05	0.06	0.14	0.74	0.00	0.00	0.58	-0.24	-0.30	-0.37	0.58	A+	A-	A-	A-	-0.64	0.06	-6.98	0.80	-6.86	0.65
52	666561	2	4153	0.29	0.22	0.31	0.18	0.29	0.00	0.00	0.15	-0.22	0.20	-0.17	0.15	A-	A-	A+	A-	1.85	0.06	9.08	1.28	9.90	1.64
53	678735	2	4153	0.47	0.28	0.19	0.47	0.06	0.00	0.00	0.23	-0.06	-0.08	0.23	-0.24	A-	A+	A-	A-	0.88	0.06	8.50	1.20	7.55	1.27
54	678780	2	4153	0.29	0.29	0.35	0.17	0.19	0.00	0.00	0.23	0.23	-0.03	-0.15	-0.08	A-	A+	A+	A-	1.83	0.06	6.54	1.19	8.23	1.48
55	678750	2	4153	0.26	0.52	0.04	0.17	0.26	0.00	0.00	0.37	0.01	-0.22	-0.33	0.37	A-	C-	B-	A+	1.99	0.06	1.10	1.03	4.96	1.30
56	666566	2	4153	0.42	0.17	0.42	0.20	0.20	0.01	0.00	0.17	-0.12	0.17	-0.11	0.02	A-	A-	A-	A+	1.10	0.06	9.90	1.29	9.90	1.46
57	681811	3	4146	0.47	0.24	0.06	0.47	0.23	0.00	0.00	0.31	-0.11	-0.20	0.31	-0.14	A+	A-	A+	A+	0.87	0.06	6.39	1.15	7.44	1.27
58	674458	3	4146	0.48	0.16	0.25	0.10	0.48	0.00	0.00	0.49	-0.21	-0.30	-0.12	0.49	A+	A+	A+	A-	0.79	0.06	-3.26	0.93	-2.61	0.91
59	674388	3	4146	0.70	0.70	0.09	0.11	0.10	0.00	0.00	0.46	0.46	-0.26	-0.20	-0.24	A+	A+	A+	A-	-0.39	0.06	-0.86	0.98	-1.58	0.92
60	674449	3	4146	0.72	0.10	0.72	0.09	0.08	0.00	0.00	0.46	-0.21	0.46	-0.27	-0.23	A-	A-	A-	A+	-0.49	0.06	-2.72	0.92	-3.03	0.84
61	657733	3	4146	0.42	0.05	0.09	0.42	0.44	0.00	0.00	0.39	-0.13	-0.26	0.39	-0.18	A+	A+	A+	A+	1.10	0.06	1.26	1.03	2.09	1.08
62	678772	3	4146	0.82	0.82	0.12	0.03	0.03	0.00	0.00	0.41	0.41	-0.27	-0.21	-0.19	A-	A-	A-	A+	-1.24	0.07	-2.43	0.90	-1.37	0.89
63	678760	3	4146	0.46	0.46	0.16	0.25	0.13	0.00	0.00	0.46	0.46	-0.23	-0.26	-0.08	A+	A+	A+	A-	0.90	0.06	-0.23	0.99	1.22	1.04

Appendix J: Item Statistics

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
64	678810	3	4146	0.55	0.38	0.55	0.05	0.02	0.00	0.00	0.33	-0.21	0.33	-0.17	-0.17	A-	A+	A+	A+	0.46	0.06	4.89	1.12	4.09	1.15
65	678718	3	4146	0.31	0.09	0.31	0.34	0.26	0.00	0.00	0.16	-0.13	0.16	0.08	-0.16	B-	A-	A-	A+	1.70	0.06	9.90	1.29	9.90	1.71
66	681815	3	4146	0.54	0.16	0.11	0.54	0.19	0.00	0.00	0.31	-0.24	-0.15	0.31	-0.03	A+	A-	A+	A+	0.50	0.06	6.60	1.16	6.65	1.25
67	674466	4	4146	0.16	0.08	0.16	0.19	0.57	0.00	0.00	0.13	-0.02	0.13	-0.15	0.04	A-	A-	A-	A+	2.74	0.07	2.80	1.12	9.90	2.11
68	693193	4	4146	0.57	0.08	0.07	0.29	0.57	0.00	0.00	0.42	-0.22	-0.22	-0.20	0.42	C-	A-	A-	A+	0.36	0.06	1.01	1.02	0.68	1.02
69	657750	4	4146	0.42	0.42	0.19	0.27	0.12	0.00	0.00	0.25	0.25	-0.16	0.00	-0.19	A-	A-	A-	A-	1.14	0.06	8.04	1.19	7.84	1.29
70	674446	4	4146	0.36	0.36	0.12	0.23	0.29	0.00	0.00	0.33	0.33	-0.17	-0.16	-0.08	A+	A-	A-	A+	1.43	0.06	2.98	1.07	4.21	1.17
71	674456	4	4146	0.72	0.04	0.19	0.72	0.04	0.00	0.00	0.48	-0.23	-0.33	0.48	-0.18	A+	A+	A+	A+	-0.51	0.06	-2.37	0.93	-3.44	0.83
72	678808	4	4146	0.20	0.20	0.17	0.45	0.18	0.00	0.00	-0.05	-0.05	-0.16	0.13	0.04	A-	A+	A-	A-	2.41	0.07	8.16	1.32	9.90	2.17
73	681813	4	4146	0.25	0.30	0.25	0.30	0.15	0.00	0.00	0.23	-0.25	0.23	0.18	-0.19	A+	A-	A+	A+	2.10	0.06	2.30	1.07	6.65	1.44
74	678814	4	4146	0.62	0.05	0.26	0.06	0.62	0.00	0.00	0.20	-0.19	-0.01	-0.20	0.20	A-	A-	A-	A+	0.08	0.06	9.90	1.29	8.42	1.35
75	678731	4	4146	0.56	0.56	0.17	0.22	0.06	0.00	0.00	0.36	0.36	-0.24	-0.13	-0.14	A+	A-	A+	A-	0.41	0.06	2.83	1.07	2.31	1.08
76	678770	4	4146	0.74	0.07	0.74	0.13	0.05	0.00	0.00	0.52	-0.24	0.52	-0.34	-0.23	A+	A+	A+	A+	-0.62	0.06	-5.98	0.82	-5.42	0.72
77	674383	5	4114	0.43	0.43	0.23	0.17	0.17	0.00	0.00	0.42	0.42	-0.12	-0.28	-0.13	A-	A-	A-	A+	1.07	0.06	-1.44	0.97	0.02	1.00
78	681999	5	4114	0.41	0.20	0.17	0.41	0.21	0.00	0.00	0.29	-0.07	-0.15	0.29	-0.14	A+	A-	A-	A+	1.16	0.06	6.71	1.16	7.17	1.29
79	657749	5	4114	0.73	0.73	0.07	0.15	0.04	0.00	0.00	0.53	0.53	-0.25	-0.33	-0.24	B+	A-	A+	A+	-0.57	0.06	-5.78	0.83	-5.45	0.71
80	674493	5	4114	0.37	0.22	0.21	0.20	0.37	0.00	0.00	0.34	-0.04	-0.24	-0.12	0.34	A-	A-	A+	A+	1.40	0.06	1.85	1.04	2.68	1.11
81	666551	5	4114	0.77	0.12	0.77	0.06	0.04	0.00	0.00	0.42	-0.21	0.42	-0.27	-0.21	A+	A-	A+	A+	-0.86	0.07	-0.94	0.97	-0.36	0.97
82	678752	5	4114	0.75	0.09	0.09	0.07	0.75	0.00	0.00	0.51	-0.27	-0.28	-0.24	0.51	B+	A+	A+	B+	-0.66	0.06	-5.64	0.83	-5.13	0.72
83	678739	5	4114	0.40	0.32	0.40	0.19	0.08	0.00	0.00	0.29	-0.03	0.29	-0.20	-0.17	A-	A+	A+	A+	1.20	0.06	5.46	1.13	7.10	1.29
84	666560	5	4114	0.40	0.23	0.22	0.40	0.15	0.00	0.00	0.21	0.06	-0.18	0.21	-0.16	A-	A-	A-	A+	1.25	0.06	9.90	1.27	9.90	1.55
85	678736	5	4114	0.70	0.07	0.13	0.70	0.09	0.00	0.00	0.47	-0.17	-0.28	0.47	-0.25	A-	A-	A-	A+	-0.40	0.06	-2.20	0.94	-2.76	0.86
86	674156	5	4114	0.54	0.13	0.54	0.11	0.22	0.00	0.00	0.38	-0.21	0.38	-0.22	-0.10	A+	A+	A+	A+	0.49	0.06	4.34	1.10	3.37	1.12
87	674395	6	4155	0.67	0.15	0.07	0.10	0.67	0.00	0.00	0.58	-0.31	-0.32	-0.26	0.58	A+	A-	A+	A+	-0.20	0.06	-7.54	0.81	-6.15	0.74
88	681810	6	4155	0.43	0.43	0.26	0.19	0.11	0.00	0.00	0.23	0.23	-0.19	0.04	-0.14	A-	A-	A+	A+	1.04	0.06	8.65	1.20	8.64	1.33
89	674439	6	4155	0.41	0.12	0.22	0.41	0.25	0.00	0.00	0.14	-0.09	-0.12	0.14	0.02	A-	A+	A+	A+	1.14	0.06	9.90	1.31	9.90	1.52
90	657751	6	4155	0.40	0.34	0.09	0.40	0.16	0.00	0.00	0.21	-0.05	-0.12	0.21	-0.10	A-	A-	A-	A-	1.20	0.06	9.90	1.26	9.90	1.43
91	666554	6	4155	0.47	0.15	0.47	0.14	0.24	0.00	0.00	0.28	-0.09	0.28	-0.23	-0.05	A-	A-	A-	A-	0.87	0.06	6.44	1.15	5.32	1.19
92	678728	6	4155	0.69	0.69	0.08	0.06	0.17	0.00	0.00	0.55	0.55	-0.23	-0.23	-0.37	A+	A-	A-	A+	-0.30	0.06	-6.47	0.83	-6.22	0.72
93	682100	6	4155	0.57	0.07	0.21	0.57	0.15	0.00	0.00	0.30	-0.18	-0.16	0.30	-0.09	A-	A-	B-	A+	0.35	0.06	5.72	1.13	4.09	1.15
94	678809	6	4155	0.61	0.14	0.11	0.14	0.61	0.00	0.00	0.45	-0.18	-0.29	-0.20	0.45	A-	A-	A-	A+	0.12	0.06	-0.02	1.00	-0.41	0.98
95	678753	6	4155	0.39	0.25	0.24	0.39	0.11	0.00	0.00	0.35	-0.15	-0.15	0.35	-0.14	A+	A-	A-	A+	1.25	0.06	2.90	1.07	4.97	1.20

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
96	682045	6	4155	0.58	0.07	0.24	0.10	0.58	0.00	0.00	0.41	-0.21	-0.14	-0.27	0.41	A+	A-	A+	A+	0.29	0.06	-0.44	0.99	-0.24	0.99
97	674504	7	4191	0.78	0.78	0.03	0.07	0.12	0.00	0.00	0.41	0.41	-0.18	-0.27	-0.23	A+	A-	A-	A+	-0.88	0.07	-0.87	0.97	-1.57	0.89
98	674396	7	4191	0.53	0.15	0.26	0.53	0.06	0.00	0.00	0.38	-0.04	-0.30	0.38	-0.19	A+	A-	A-	A+	0.55	0.06	2.84	1.06	3.37	1.11
99	674437	7	4191	0.64	0.09	0.18	0.64	0.09	0.00	0.00	0.38	-0.20	-0.13	0.38	-0.26	A-	B-	B-	A+	-0.03	0.06	2.50	1.06	1.49	1.06
100	674508	7	4191	0.30	0.30	0.24	0.27	0.19	0.00	0.00	0.17	0.17	-0.05	-0.08	-0.04	A+	A-	A-	A-	1.79	0.06	5.55	1.16	7.61	1.42
101	674381	7	4191	0.47	0.28	0.47	0.13	0.11	0.00	0.00	0.41	-0.12	0.41	-0.23	-0.22	A+	A-	A+	A+	0.85	0.06	0.55	1.01	1.32	1.04
102	657738	7	4191	0.26	0.26	0.26	0.13	0.35	0.00	0.00	0.12	0.12	0.04	-0.20	0.00	A-	A-	A-	A-	2.02	0.06	5.96	1.19	8.73	1.57
103	657744	7	4191	0.38	0.38	0.25	0.26	0.11	0.00	0.00	0.23	0.23	-0.07	-0.13	-0.08	A-	A+	A+	A-	1.32	0.06	6.90	1.17	9.23	1.39
104	678781	7	4191	0.57	0.10	0.57	0.21	0.11	0.00	0.00	0.37	-0.14	0.37	-0.20	-0.19	A-	A-	A-	A+	0.33	0.06	3.14	1.07	1.73	1.06
105	678751	7	4191	0.19	0.19	0.20	0.41	0.19	0.00	0.00	0.01	-0.09	-0.18	0.22	0.01	A-	A-	A-	A-	2.49	0.07	6.52	1.27	9.90	1.99
106	678813	7	4191	0.14	0.49	0.10	0.26	0.14	0.00	0.00	0.06	0.01	-0.07	-0.02	0.06	A-	A+	A+	A-	2.90	0.08	1.80	1.09	9.90	2.37
107	674429	8	4131	0.37	0.37	0.30	0.15	0.17	0.01	0.00	0.25	0.25	-0.10	-0.13	-0.06	A+	A-	A+	A-	1.40	0.06	4.72	1.11	6.00	1.25
108	657739	8	4131	0.42	0.42	0.10	0.33	0.15	0.00	0.00	0.16	0.16	-0.09	0.02	-0.17	A+	A-	A-	A+	1.15	0.06	9.90	1.28	9.90	1.40
109	674447	8	4131	0.60	0.11	0.60	0.12	0.17	0.00	0.00	0.56	-0.31	0.56	-0.26	-0.24	A-	A-	A-	A+	0.22	0.06	-8.25	0.82	-6.66	0.77
110	682065	8	4131	0.41	0.28	0.19	0.41	0.12	0.00	0.00	0.32	-0.18	-0.18	0.32	0.00	A-	A-	A-	A+	1.17	0.06	4.14	1.09	5.86	1.22
111	674486	8	4131	0.36	0.41	0.12	0.11	0.36	0.00	0.00	0.26	-0.07	-0.15	-0.12	0.26	A-	A-	A-	A-	1.45	0.06	5.22	1.13	7.47	1.32
112	678763	8	4131	0.30	0.16	0.09	0.30	0.45	0.00	0.00	0.19	0.02	-0.11	0.19	-0.12	A-	A+	A-	A-	1.77	0.06	5.69	1.16	9.90	1.55
113	678746	8	4131	0.30	0.03	0.30	0.51	0.16	0.00	0.00	0.02	-0.17	0.02	0.06	-0.03	A+	A+	A+	A-	1.78	0.06	9.90	1.37	9.90	1.73
114	678802	8	4131	0.65	0.09	0.18	0.65	0.08	0.00	0.00	0.40	-0.17	-0.24	0.40	-0.19	A-	A-	A-	A+	-0.06	0.06	1.47	1.04	1.80	1.08
115	678725	8	4131	0.50	0.50	0.17	0.21	0.12	0.00	0.00	0.36	0.36	-0.09	-0.21	-0.18	A+	A-	A-	A-	0.73	0.05	2.87	1.06	2.93	1.10
116	674154	8	4131	0.51	0.31	0.51	0.10	0.08	0.00	0.00	0.37	-0.01	0.37	-0.32	-0.29	A-	A+	A+	A+	0.68	0.05	1.77	1.04	1.52	1.05
117	674515	9	4152	0.52	0.28	0.16	0.52	0.04	0.00	0.00	0.52	-0.27	-0.29	0.52	-0.16	A-	A-	A+	A+	0.62	0.06	-4.65	0.90	-4.11	0.87
118	674150	9	4152	0.81	0.81	0.05	0.08	0.06	0.00	0.00	0.46	0.46	-0.26	-0.30	-0.17	A+	A+	A-	A-	-1.10	0.07	-2.52	0.91	-1.98	0.85
119	674464	9	4152	0.19	0.18	0.19	0.33	0.29	0.00	0.00	0.02	-0.12	0.02	0.01	0.07	A+	A+	A+	A+	2.54	0.07	6.34	1.26	9.90	2.12
120	674384	9	4152	0.58	0.21	0.09	0.58	0.12	0.00	0.00	0.41	-0.17	-0.30	0.41	-0.14	A-	A-	A-	A+	0.31	0.06	2.27	1.05	2.65	1.10
121	681817	9	4152	0.53	0.22	0.53	0.12	0.13	0.00	0.00	0.47	-0.25	0.47	-0.14	-0.25	A-	A-	A-	A-	0.57	0.06	-1.14	0.97	-1.01	0.97
122	678792	9	4152	0.25	0.08	0.39	0.25	0.27	0.00	0.00	0.22	-0.01	-0.13	0.22	-0.06	A-	A+	A-	A-	2.12	0.06	3.51	1.11	8.13	1.57
123	678787	9	4152	0.50	0.18	0.50	0.21	0.10	0.00	0.00	0.40	-0.13	0.40	-0.20	-0.22	A+	A+	A-	A+	0.70	0.06	1.35	1.03	1.41	1.05
124	678738	9	4152	0.51	0.51	0.20	0.17	0.12	0.00	0.00	0.28	0.28	-0.18	-0.09	-0.10	A+	A-	A+	A+	0.67	0.06	6.75	1.16	6.83	1.24
125	678758	9	4152	0.45	0.26	0.23	0.45	0.06	0.00	0.00	0.35	-0.19	-0.16	0.35	-0.10	A-	A-	A-	A-	0.99	0.06	4.92	1.11	6.78	1.25
126	678806	9	4152	0.49	0.10	0.49	0.22	0.19	0.00	0.00	0.41	-0.11	0.41	-0.17	-0.26	A-	A-	A-	A+	0.77	0.06	1.43	1.03	1.93	1.06
127	674497	10	4153	0.24	0.45	0.13	0.24	0.18	0.00	0.00	0.06	0.26	-0.17	0.06	-0.25	A-	A+	A+	A+	2.16	0.06	7.26	1.26	9.90	2.01

Appendix J: Item Statistics

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
128	674386	10	4153	0.40	0.10	0.40	0.25	0.24	0.00	0.00	0.29	-0.11	0.29	-0.14	-0.11	A-	A-	A-	A+	1.21	0.06	8.05	1.20	9.62	1.40
129	674513	10	4153	0.43	0.23	0.17	0.17	0.43	0.00	0.00	0.44	-0.20	-0.17	-0.18	0.44	A+	A-	A-	A+	1.06	0.06	-0.07	1.00	0.54	1.02
130	674462	10	4153	0.20	0.20	0.22	0.35	0.23	0.00	0.00	0.20	0.20	0.04	-0.08	-0.14	A-	A-	A-	A-	2.44	0.07	3.34	1.13	7.02	1.60
131	674431	10	4153	0.80	0.08	0.80	0.04	0.07	0.00	0.00	0.45	-0.26	0.45	-0.25	-0.20	A+	A-	A-	A+	-1.02	0.07	-3.67	0.87	-3.25	0.78
132	678773	10	4153	0.44	0.16	0.34	0.44	0.06	0.00	0.00	0.32	-0.24	-0.04	0.32	-0.22	A-	A-	A-	A+	1.04	0.06	4.20	1.10	4.78	1.17
133	678723	10	4153	0.16	0.25	0.44	0.15	0.16	0.00	0.00	0.24	-0.20	0.06	-0.08	0.24	A-	A+	A+	A+	2.75	0.07	0.23	1.01	7.44	1.79
134	678775	10	4153	0.27	0.12	0.17	0.43	0.27	0.00	0.00	0.21	-0.20	-0.02	-0.03	0.21	A-	A+	A+	A-	1.97	0.06	3.36	1.10	6.94	1.44
135	678767	10	4153	0.63	0.63	0.16	0.14	0.07	0.00	0.00	0.34	0.34	-0.26	-0.07	-0.17	A+	A-	A-	A+	0.02	0.06	4.15	1.11	4.71	1.20
136	678785	10	4153	0.67	0.04	0.12	0.67	0.17	0.00	0.00	0.40	-0.21	-0.22	0.40	-0.20	A-	A+	A+	A+	-0.20	0.06	0.46	1.01	0.17	1.01
137	674460	11	4205	0.62	0.11	0.62	0.13	0.14	0.00	0.00	0.41	-0.20	0.41	-0.13	-0.26	A+	A-	A+	A-	0.06	0.06	1.61	1.04	0.55	1.02
138	674495	11	4205	0.67	0.67	0.09	0.16	0.08	0.00	0.00	0.42	0.42	-0.28	-0.14	-0.23	A-	A+	A-	A-	-0.22	0.06	-0.92	0.98	0.78	1.04
139	674500	11	4205	0.49	0.20	0.15	0.16	0.49	0.00	0.00	0.30	-0.09	-0.13	-0.18	0.30	A-	A-	A-	A+	0.73	0.05	8.02	1.18	7.29	1.26
140	674387	11	4205	0.54	0.54	0.24	0.16	0.07	0.00	0.00	0.32	0.32	-0.14	-0.17	-0.15	A+	A+	A-	A+	0.52	0.06	5.01	1.11	4.00	1.14
141	674487	11	4205	0.43	0.14	0.20	0.22	0.43	0.00	0.00	0.47	-0.06	-0.33	-0.19	0.47	A+	A-	A-	A-	1.04	0.06	-3.55	0.92	-1.82	0.94
142	678748	11	4205	0.55	0.07	0.55	0.32	0.06	0.00	0.00	0.35	-0.29	0.35	-0.13	-0.15	A-	A-	A-	A+	0.45	0.06	3.33	1.08	2.84	1.10
143	666563	11	4205	0.41	0.21	0.22	0.41	0.16	0.00	0.00	0.32	-0.10	-0.23	0.32	-0.04	A+	A+	A-	A+	1.19	0.06	5.07	1.12	6.20	1.24
144	678724	11	4205	0.45	0.12	0.21	0.21	0.45	0.00	0.00	0.29	-0.08	-0.11	-0.18	0.29	A+	A-	A-	A+	0.93	0.06	7.54	1.17	7.05	1.25
145	678796	11	4205	0.26	0.34	0.20	0.26	0.20	0.01	0.00	0.06	0.05	-0.16	0.06	0.05	A-	A-	A-	A+	2.02	0.06	9.90	1.33	9.90	1.88
146	666556	11	4205	0.72	0.72	0.09	0.10	0.09	0.01	0.00	0.50	0.50	-0.26	-0.20	-0.31	A-	A-	A-	A+	-0.47	0.06	-3.41	0.90	-3.41	0.83
147	674489	12	4210	0.31	0.21	0.31	0.20	0.28	0.00	0.00	0.10	0.12	0.10	-0.23	0.00	A-	A-	A+	A-	1.66	0.06	8.47	1.23	9.06	1.45
148	674438	12	4210	0.45	0.09	0.29	0.45	0.17	0.00	0.00	0.19	-0.09	-0.13	0.19	-0.03	A+	A-	A+	A+	0.93	0.05	9.90	1.22	9.48	1.32
149	674512	12	4210	0.39	0.39	0.24	0.21	0.16	0.00	0.00	0.21	0.21	0.06	-0.16	-0.16	A-	A-	A+	A+	1.26	0.05	7.36	1.17	7.78	1.30
150	674391	12	4210	0.67	0.10	0.10	0.12	0.67	0.00	0.00	0.28	-0.05	-0.25	-0.12	0.28	A+	A-	A-	A+	-0.22	0.06	4.23	1.11	3.54	1.16
151	674445	12	4210	0.30	0.33	0.15	0.22	0.30	0.00	0.00	0.36	-0.14	-0.27	0.00	0.36	A+	A-	A-	A-	1.75	0.06	-0.50	0.99	2.08	1.10
152	657728	12	4210	0.39	0.09	0.04	0.39	0.48	0.00	0.00	0.14	-0.20	-0.25	0.14	0.08	A-	A-	A-	A+	1.25	0.05	9.90	1.30	9.90	1.49
153	682039	12	4210	0.69	0.69	0.11	0.09	0.10	0.00	0.00	0.34	0.34	-0.24	-0.15	-0.12	A+	A-	A-	A+	-0.30	0.06	3.04	1.08	1.78	1.08
154	682153	12	4210	0.17	0.17	0.48	0.18	0.17	0.00	0.00	0.08	0.08	0.15	-0.16	-0.12	A-	A-	A+	A+	2.60	0.07	4.48	1.19	9.90	2.00
155	678743	12	4210	0.13	0.09	0.18	0.60	0.13	0.00	0.00	-0.01	-0.14	-0.08	0.15	-0.01	A+	A-	A-	A-	2.93	0.08	2.99	1.15	9.75	2.18
156	678782	12	4210	0.45	0.40	0.09	0.45	0.06	0.00	0.00	0.39	-0.14	-0.26	0.39	-0.20	A-	A-	A-	A+	0.92	0.05	2.62	1.05	3.77	1.12
157	674482	13	6126	0.24	0.32	0.23	0.24	0.20	0.00	0.00	0.19	-0.21	0.01	0.19	0.04	A-	A-	A-	A+	2.10	0.06	5.38	1.18	9.88	1.71
158	657755	13	6126	0.49	0.49	0.06	0.36	0.09	0.00	0.00	0.41	0.41	-0.17	-0.24	-0.16	A+	A+	A-	A-	0.75	0.05	-0.81	0.98	-0.83	0.97
159	674397	13	6126	0.24	0.22	0.24	0.41	0.13	0.00	0.00	0.14	0.00	0.14	-0.05	-0.09	A+	A-	A-	A-	2.12	0.06	5.92	1.20	9.90	1.86

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
160	674444	13	6126	0.61	0.06	0.16	0.61	0.17	0.00	0.00	0.43	-0.17	-0.24	0.43	-0.21	A-	A-	A-	A+	0.14	0.06	-2.77	0.94	-3.19	0.89
161	674499	13	6126	0.39	0.24	0.39	0.22	0.14	0.01	0.00	0.39	0.01	0.39	-0.32	-0.17	A-	A-	A-	A+	1.25	0.06	-1.54	0.97	-0.08	1.00
162	682132	13	6126	0.47	0.47	0.18	0.16	0.18	0.00	0.00	0.22	0.22	-0.16	-0.11	-0.02	A-	A-	A-	A+	0.82	0.05	7.52	1.17	7.66	1.26
163	678779	13	6126	0.86	0.03	0.86	0.08	0.02	0.00	0.00	0.37	-0.11	0.37	-0.29	-0.18	A+	A-	B-	A+	-1.55	0.08	-3.41	0.85	-3.41	0.72
164	657727	13	6126	0.57	0.16	0.11	0.16	0.57	0.00	0.00	0.28	-0.20	-0.14	-0.07	0.28	A+	A+	A-	A-	0.34	0.06	6.34	1.15	5.43	1.19
165	678799	13	6126	0.21	0.18	0.29	0.21	0.31	0.00	0.00	-0.11	0.02	0.12	-0.11	-0.04	A-	A-	A-	A-	2.29	0.07	9.90	1.46	9.90	2.43
166	678754	13	6126	0.51	0.21	0.51	0.13	0.14	0.00	0.00	0.26	-0.09	0.26	-0.18	-0.09	A+	A-	A+	A+	0.62	0.05	6.85	1.15	6.20	1.20
167	674478	14	6135	0.19	0.30	0.16	0.19	0.34	0.00	0.00	-0.11	0.13	-0.08	-0.11	0.02	A-	A-	A-	A+	2.41	0.07	9.90	1.50	9.90	2.78
168	657731	14	6135	0.30	0.30	0.42	0.09	0.19	0.00	0.00	0.25	0.25	0.07	-0.24	-0.21	A-	A+	A+	A+	1.74	0.06	1.96	1.05	4.96	1.24
169	674389	14	6135	0.37	0.29	0.37	0.16	0.17	0.00	0.00	0.02	0.08	0.02	-0.14	0.02	A+	A-	A+	A+	1.32	0.06	9.90	1.36	9.90	1.58
170	673948	14	6135	0.14	0.16	0.39	0.14	0.31	0.00	0.00	0.15	-0.27	-0.08	0.15	0.18	A-	A-	A-	A+	2.84	0.07	0.79	1.04	8.92	1.98
171	674491	14	6135	0.51	0.15	0.11	0.24	0.51	0.00	0.00	0.22	-0.07	-0.10	-0.12	0.22	A+	A-	A-	A+	0.65	0.05	9.11	1.20	8.03	1.25
172	678755	14	6135	0.29	0.29	0.25	0.21	0.25	0.00	0.00	0.19	0.19	0.03	-0.10	-0.13	A-	A+	A+	A-	1.76	0.06	6.08	1.17	8.61	1.44
173	666564	14	6135	0.54	0.16	0.54	0.08	0.22	0.00	0.00	0.36	-0.05	0.36	-0.14	-0.30	A-	A-	A+	A+	0.48	0.05	2.92	1.06	2.85	1.09
174	678800	14	6135	0.15	0.17	0.16	0.53	0.15	0.00	0.00	-0.23	0.25	0.10	-0.10	-0.23	A+	A+	A+	A+	2.79	0.07	7.16	1.36	9.90	3.07
175	678801	14	6135	0.57	0.08	0.16	0.57	0.18	0.00	0.00	0.29	-0.21	-0.24	0.29	0.01	A-	A-	A-	A+	0.33	0.05	4.65	1.10	4.75	1.16
176	666562	14	6135	0.51	0.51	0.14	0.14	0.20	0.00	0.00	0.37	0.37	-0.13	-0.17	-0.19	A-	A+	A+	A-	0.65	0.05	1.62	1.03	1.43	1.04
177	674490	15	6182	0.68	0.08	0.09	0.68	0.15	0.00	0.00	0.40	-0.28	-0.21	0.40	-0.14	A+	A-	A-	A+	-0.27	0.06	-1.59	0.96	-1.67	0.92
178	674498	15	6182	0.37	0.37	0.24	0.24	0.14	0.00	0.00	0.23	0.23	-0.13	-0.05	-0.10	A-	A-	A-	A-	1.36	0.06	7.86	1.19	9.69	1.41
179	657729	15	6182	0.46	0.10	0.26	0.17	0.46	0.00	0.00	0.46	-0.10	-0.26	-0.22	0.46	A-	A-	A-	A+	0.88	0.05	-2.04	0.96	-1.49	0.95
180	674382	15	6182	0.50	0.07	0.29	0.14	0.50	0.00	0.00	0.37	-0.26	-0.14	-0.15	0.37	A-	A-	A-	A+	0.72	0.05	3.53	1.08	3.79	1.12
181	657745	15	6182	0.36	0.21	0.36	0.31	0.12	0.00	0.00	0.31	-0.04	0.31	-0.15	-0.20	A-	A-	A-	A+	1.43	0.06	2.95	1.07	5.47	1.23
182	678777	15	6182	0.70	0.19	0.70	0.08	0.02	0.00	0.00	0.40	-0.28	0.40	-0.17	-0.18	A-	A-	A-	A+	-0.37	0.06	-1.66	0.95	-1.68	0.92
183	673953	15	6182	0.32	0.24	0.22	0.32	0.22	0.00	0.00	0.11	0.07	-0.10	0.11	-0.09	A-	A-	A-	A-	1.63	0.06	9.46	1.26	9.90	1.55
184	678769	15	6182	0.58	0.09	0.58	0.26	0.06	0.00	0.00	0.35	-0.18	0.35	-0.15	-0.23	A-	A-	A-	A+	0.28	0.06	2.66	1.06	1.84	1.07
185	678765	15	6182	0.59	0.19	0.11	0.59	0.11	0.00	0.00	0.24	-0.11	-0.13	0.24	-0.12	A-	A-	A-	A+	0.24	0.06	7.57	1.18	6.28	1.24
186	678715	15	6182	0.33	0.28	0.24	0.15	0.33	0.00	0.00	0.16	0.01	-0.02	-0.19	0.16	A-	A+	A-	A-	1.56	0.06	8.32	1.22	8.40	1.40
187	657735	16	6148	0.38	0.38	0.21	0.25	0.16	0.00	0.00	0.37	0.37	-0.12	-0.16	-0.16	A+	A+	A+	A-	1.31	0.06	1.42	1.03	3.59	1.13
188	674419	16	6148	0.59	0.17	0.14	0.59	0.10	0.00	0.00	0.31	-0.05	-0.21	0.31	-0.19	A+	A-	A-	A-	0.21	0.06	3.87	1.09	3.91	1.14
189	674505	16	6148	0.20	0.43	0.21	0.16	0.20	0.00	0.00	0.16	0.12	-0.16	-0.16	0.16	A+	A+	A+	A-	2.38	0.07	1.81	1.07	7.18	1.57
190	674433	16	6148	0.31	0.17	0.28	0.24	0.31	0.01	0.00	0.25	-0.09	-0.05	-0.13	0.25	A+	A-	A-	A-	1.68	0.06	3.38	1.09	6.61	1.32
191	674427	16	6148	0.82	0.06	0.04	0.82	0.08	0.00	0.00	0.47	-0.19	-0.24	0.47	-0.32	A+	A-	A-	A+	-1.15	0.07	-4.47	0.83	-4.04	0.73

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
192	678774	16	6148	0.53	0.23	0.53	0.10	0.13	0.00	0.00	0.42	-0.25	0.42	-0.17	-0.15	A+	A+	A+	A+	0.52	0.05	-0.43	0.99	-0.68	0.98
193	678784	16	6148	0.34	0.15	0.34	0.22	0.29	0.00	0.00	0.15	-0.10	0.15	-0.04	-0.04	A-	A-	A+	A-	1.49	0.06	8.10	1.20	9.64	1.43
194	678761	16	6148	0.22	0.35	0.29	0.14	0.22	0.00	0.00	0.13	0.16	-0.11	-0.22	0.13	A-	A-	A+	A+	2.25	0.06	6.36	1.23	9.90	2.06
195	674153	16	6148	0.69	0.69	0.05	0.15	0.12	0.00	0.00	0.47	0.47	-0.23	-0.26	-0.24	A-	A+	A+	A-	-0.29	0.06	-3.20	0.92	-3.95	0.83
196	678741	16	6148	0.32	0.16	0.28	0.32	0.23	0.00	0.00	0.08	0.01	-0.04	0.08	-0.06	A-	A+	A+	A+	1.60	0.06	9.90	1.33	9.90	1.57
197	657754	17	6172	0.31	0.10	0.30	0.31	0.28	0.00	0.00	0.24	-0.18	-0.08	0.24	-0.04	A-	A+	A+	A+	1.65	0.06	7.37	1.20	9.20	1.44
198	666568	17	6172	0.22	0.45	0.18	0.15	0.22	0.00	0.00	0.29	0.07	-0.30	-0.10	0.29	A+	A+	A+	A-	2.22	0.06	1.05	1.03	4.27	1.28
199	666553	17	6172	0.51	0.28	0.51	0.11	0.10	0.00	0.00	0.38	-0.09	0.38	-0.26	-0.23	A+	A-	A-	A-	0.66	0.05	2.61	1.06	2.51	1.08
200	674423	17	6172	0.38	0.12	0.36	0.38	0.14	0.00	0.00	0.02	-0.05	0.01	0.02	0.01	A+	A+	A-	A-	1.28	0.05	9.90	1.39	9.90	1.61
201	674791	17	6172	0.42	0.42	0.19	0.29	0.10	0.00	0.00	0.41	0.41	-0.21	-0.11	-0.21	A-	A-	A-	A-	1.10	0.05	-0.93	0.98	0.05	1.00
202	678730	17	6172	0.44	0.44	0.20	0.18	0.18	0.00	0.00	0.42	0.42	-0.21	-0.13	-0.19	A-	A-	A-	A+	1.01	0.05	-1.86	0.96	0.90	1.03
203	657734	17	6172	0.27	0.26	0.23	0.27	0.24	0.00	0.00	0.09	0.04	-0.03	0.09	-0.10	A-	A-	A-	A-	1.94	0.06	8.42	1.26	9.90	1.74
204	678778	17	6172	0.49	0.49	0.19	0.27	0.04	0.00	0.00	0.41	0.41	-0.15	-0.28	-0.08	C-	A-	A-	A+	0.74	0.05	-1.21	0.97	-0.75	0.98
205	678794	17	6172	0.34	0.22	0.16	0.34	0.27	0.00	0.00	0.07	0.01	-0.17	0.07	0.06	A-	A-	A-	A+	1.51	0.06	9.90	1.34	9.90	1.62
206	678797	17	6172	0.16	0.15	0.62	0.06	0.16	0.00	0.00	0.18	0.16	-0.22	-0.06	0.18	A-	A+	A+	A+	2.71	0.07	2.65	1.11	8.73	1.86
207	674501	18	6155	0.50	0.07	0.39	0.04	0.50	0.00	0.00	0.51	-0.28	-0.30	-0.20	0.51	A-	A-	A-	A+	0.68	0.05	-5.29	0.89	-4.39	0.87
208	674455	18	6155	0.51	0.11	0.23	0.51	0.16	0.00	0.00	0.26	-0.06	-0.12	0.26	-0.17	A+	A-	A+	A+	0.67	0.05	9.90	1.24	9.49	1.34
209	657741	18	6155	0.45	0.19	0.15	0.21	0.45	0.00	0.00	0.39	-0.12	-0.21	-0.17	0.39	A+	A-	A-	A+	0.96	0.05	2.30	1.05	2.20	1.07
210	674148	18	6155	0.52	0.26	0.15	0.52	0.07	0.00	0.00	0.38	-0.18	-0.19	0.38	-0.15	A-	A-	A-	A+	0.61	0.05	3.04	1.07	2.83	1.09
211	657740	18	6155	0.51	0.26	0.51	0.10	0.13	0.00	0.00	0.39	-0.16	0.39	-0.16	-0.24	A+	A+	A+	A+	0.64	0.05	2.77	1.06	3.24	1.11
212	678727	18	6155	0.43	0.08	0.14	0.43	0.35	0.00	0.00	0.42	-0.12	-0.22	0.42	-0.20	B-	B-	A-	A+	1.05	0.06	-0.40	0.99	2.00	1.07
213	678803	18	6155	0.30	0.29	0.30	0.27	0.13	0.00	0.00	0.19	-0.13	0.19	-0.01	-0.07	A-	A+	A+	A-	1.77	0.06	5.52	1.16	9.45	1.52
214	673954	18	6155	0.23	0.46	0.13	0.18	0.23	0.00	0.00	0.28	0.11	-0.27	-0.21	0.28	A-	A-	B-	A+	2.20	0.06	2.76	1.09	4.98	1.34
215	678759	18	6155	0.43	0.21	0.43	0.14	0.22	0.00	0.00	0.38	-0.16	0.38	-0.21	-0.12	A-	A-	A-	A+	1.07	0.06	3.66	1.08	4.59	1.16
216	678722	18	6155	0.52	0.30	0.11	0.52	0.07	0.00	0.00	0.48	-0.25	-0.28	0.48	-0.16	A+	A+	A+	A+	0.59	0.05	-3.89	0.92	-2.61	0.92
217	674453	19	6147	0.39	0.24	0.39	0.16	0.22	0.00	0.00	0.39	-0.12	0.39	-0.18	-0.18	A+	A+	A-	A-	1.25	0.06	-0.24	0.99	0.86	1.03
218	674502	19	6147	0.44	0.11	0.14	0.31	0.44	0.00	0.00	0.38	-0.23	-0.23	-0.08	0.38	A+	A-	A-	A+	0.98	0.05	1.60	1.03	2.58	1.08
219	674516	19	6147	0.66	0.09	0.17	0.66	0.07	0.00	0.00	0.40	-0.26	-0.19	0.40	-0.17	A+	A-	A-	A+	-0.15	0.06	-2.35	0.94	-1.19	0.95
220	674441	19	6147	0.31	0.39	0.31	0.12	0.17	0.00	0.00	0.20	-0.14	0.20	-0.08	0.01	A+	A+	A-	A+	1.66	0.06	7.68	1.21	9.26	1.46
221	657732	19	6147	0.40	0.38	0.13	0.40	0.09	0.00	0.00	0.06	0.10	-0.11	0.06	-0.13	A+	A+	A+	A+	1.20	0.06	9.90	1.37	9.90	1.65
222	657736	19	6147	0.70	0.05	0.70	0.10	0.16	0.00	0.00	0.45	-0.22	0.45	-0.19	-0.28	A-	A-	A-	A+	-0.36	0.06	-1.53	0.96	-1.35	0.94
223	678745	19	6147	0.60	0.05	0.15	0.60	0.20	0.00	0.00	0.18	-0.13	-0.08	0.18	-0.07	A-	A-	A-	A-	0.19	0.06	9.41	1.23	9.16	1.35

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
224	678734	19	6147	0.30	0.30	0.12	0.29	0.29	0.00	0.00	0.19	0.19	-0.15	-0.07	0.00	A+	A+	A-	A-	1.74	0.06	4.29	1.12	5.96	1.30
225	678768	19	6147	0.18	0.43	0.26	0.18	0.13	0.00	0.00	0.05	-0.03	-0.02	0.05	0.02	A-	A-	A-	A+	2.53	0.07	5.27	1.22	9.73	1.91
226	678721	19	6147	0.51	0.08	0.51	0.24	0.17	0.00	0.00	0.43	-0.16	0.43	-0.23	-0.19	A+	A+	A+	A+	0.64	0.05	-1.62	0.97	-1.41	0.96
227	674474	20	6214	0.39	0.18	0.39	0.16	0.27	0.00	0.00	0.22	-0.02	0.22	-0.13	-0.11	A-	A-	A+	A+	1.25	0.06	8.22	1.20	8.30	1.32
228	657742	20	6214	0.37	0.15	0.27	0.37	0.20	0.00	0.00	0.44	0.01	-0.34	0.44	-0.16	A-	A+	A-	A+	1.33	0.06	-2.90	0.93	-1.28	0.95
229	674507	20	6214	0.32	0.32	0.18	0.20	0.29	0.00	0.00	0.16	0.16	-0.06	-0.09	-0.02	A+	A+	A-	A-	1.61	0.06	6.61	1.18	8.41	1.40
230	674442	20	6214	0.23	0.14	0.55	0.08	0.23	0.00	0.00	0.47	-0.22	-0.23	0.00	0.47	A+	A-	A-	A-	2.20	0.06	-6.71	0.79	-3.60	0.79
231	674492	20	6214	0.55	0.14	0.15	0.55	0.15	0.00	0.00	0.34	-0.18	-0.07	0.34	-0.21	A+	A+	A-	A+	0.46	0.05	3.13	1.07	3.38	1.11
232	678798	20	6214	0.27	0.13	0.27	0.29	0.30	0.00	0.00	0.18	0.05	0.18	-0.16	-0.05	A-	A+	A+	A-	1.89	0.06	6.63	1.20	9.90	1.69
233	681814	20	6214	0.49	0.49	0.17	0.21	0.13	0.00	0.00	0.38	0.38	-0.19	-0.16	-0.15	A+	A+	A-	A-	0.75	0.05	1.43	1.03	1.29	1.04
234	678717	20	6214	0.72	0.12	0.72	0.11	0.05	0.00	0.00	0.35	-0.15	0.35	-0.23	-0.15	A+	A-	A-	A+	-0.49	0.06	0.17	1.00	-0.92	0.95
235	678793	20	6214	0.23	0.37	0.22	0.23	0.18	0.00	0.00	-0.01	0.08	-0.20	-0.01	0.12	A-	A-	A-	A-	2.19	0.06	9.90	1.40	9.90	2.11
236	678762	20	6214	0.40	0.17	0.12	0.30	0.40	0.01	0.00	0.22	-0.10	-0.10	-0.08	0.22	A+	A-	A-	A-	1.21	0.06	4.98	1.11	5.73	1.21
237	674392	21	6152	0.28	0.42	0.17	0.13	0.28	0.00	0.00	0.30	-0.11	-0.08	-0.15	0.30	A-	A-	A-	A-	1.88	0.06	2.90	1.08	5.34	1.29
238	674494	21	6152	0.49	0.33	0.49	0.08	0.10	0.00	0.00	0.34	-0.03	0.34	-0.28	-0.27	A+	A+	A+	A-	0.71	0.05	2.53	1.05	2.54	1.08
239	657743	21	6152	0.23	0.33	0.33	0.23	0.11	0.00	0.00	0.25	0.00	-0.07	0.25	-0.22	A-	A+	A-	A-	2.19	0.06	0.53	1.02	4.14	1.27
240	674421	21	6152	0.32	0.32	0.16	0.38	0.13	0.01	0.00	0.24	0.24	-0.03	-0.13	-0.10	A+	A+	A+	A-	1.62	0.06	3.80	1.10	5.28	1.24
241	674151	21	6152	0.31	0.41	0.18	0.31	0.09	0.00	0.00	0.28	-0.02	-0.21	0.28	-0.11	A+	A+	A-	A+	1.66	0.06	3.96	1.10	6.12	1.29
242	678732	21	6152	0.55	0.19	0.55	0.13	0.13	0.00	0.00	0.24	-0.20	0.24	-0.14	0.03	A+	A-	A+	A+	0.44	0.05	9.77	1.22	7.94	1.27
243	678720	21	6152	0.83	0.06	0.05	0.06	0.83	0.00	0.00	0.49	-0.24	-0.27	-0.28	0.49	A+	A+	A-	A+	-1.24	0.07	-5.68	0.78	-6.25	0.58
244	678791	21	6152	0.66	0.04	0.06	0.66	0.24	0.00	0.00	0.32	-0.23	-0.26	0.32	-0.09	A-	A+	A-	A+	-0.12	0.06	2.83	1.07	2.71	1.11
245	678733	21	6152	0.22	0.22	0.27	0.36	0.14	0.00	0.00	0.20	0.20	-0.15	0.06	-0.13	A-	A+	A+	A-	2.21	0.06	1.17	1.04	6.40	1.45
246	678776	21	6152	0.38	0.22	0.15	0.25	0.38	0.00	0.00	0.41	-0.32	-0.14	-0.03	0.41	A-	A-	A-	A+	1.31	0.06	0.61	1.01	2.46	1.09
247	674393	22	6165	0.51	0.22	0.51	0.14	0.13	0.00	0.00	0.40	-0.10	0.40	-0.24	-0.22	A+	A-	A+	A+	0.65	0.05	0.57	1.01	0.45	1.01
248	681809	22	6165	0.50	0.50	0.22	0.10	0.18	0.00	0.00	0.26	0.26	-0.20	-0.21	0.04	A+	A-	A-	A-	0.68	0.05	6.38	1.14	5.62	1.20
249	674425	22	6165	0.36	0.08	0.29	0.27	0.36	0.00	0.00	0.43	-0.26	-0.16	-0.14	0.43	A-	A-	A-	A-	1.39	0.06	-2.39	0.94	-0.71	0.97
250	674409	22	6165	0.26	0.46	0.19	0.26	0.08	0.00	0.00	0.24	-0.15	-0.06	0.24	-0.03	A+	A-	A-	A-	1.95	0.06	3.71	1.12	5.57	1.33
251	666552	22	6165	0.30	0.18	0.17	0.35	0.30	0.00	0.00	0.10	-0.03	-0.14	0.04	0.10	A+	A+	A+	A-	1.73	0.06	8.87	1.26	9.44	1.51
252	678764	22	6165	0.30	0.30	0.35	0.30	0.04	0.00	0.00	0.24	-0.17	-0.03	0.24	-0.10	B-	A-	A-	A-	1.73	0.06	4.13	1.12	7.19	1.38
253	678811	22	6165	0.64	0.08	0.64	0.22	0.06	0.00	0.00	0.45	-0.22	0.45	-0.24	-0.22	A+	A-	A-	A+	-0.03	0.06	-0.95	0.98	-1.10	0.95
254	657737	22	6165	0.53	0.12	0.17	0.53	0.18	0.00	0.00	0.38	-0.14	-0.21	0.38	-0.17	A+	A+	A+	A+	0.52	0.05	2.38	1.05	2.17	1.07
255	678737	22	6165	0.41	0.25	0.41	0.16	0.17	0.00	0.00	0.29	-0.10	0.29	-0.13	-0.13	A-	A+	A+	A+	1.11	0.06	4.67	1.11	5.92	1.22

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
256	674155	22	6165	0.86	0.04	0.05	0.04	0.86	0.00	0.00	0.42	-0.21	-0.25	-0.23	0.42	A+	C-	C-	A+	-1.57	0.08	-4.28	0.81	-4.48	0.62
257	657730	23	6136	0.44	0.26	0.19	0.11	0.44	0.00	0.00	0.29	-0.03	-0.16	-0.23	0.29	A-	A-	A-	A+	0.98	0.05	5.26	1.11	4.57	1.15
258	674448	23	6136	0.84	0.07	0.84	0.05	0.04	0.00	0.00	0.43	-0.24	0.43	-0.24	-0.21	A+	A-	A-	A+	-1.32	0.07	-3.31	0.86	-3.65	0.73
259	674488	23	6136	0.34	0.34	0.22	0.16	0.29	0.00	0.00	0.22	0.22	-0.09	-0.20	0.02	A-	A-	A-	A-	1.53	0.06	8.24	1.21	9.78	1.45
260	674149	23	6136	0.60	0.05	0.12	0.60	0.22	0.00	0.00	0.48	-0.20	-0.25	0.48	-0.25	A+	A+	A-	A+	0.20	0.06	-1.25	0.97	-2.53	0.92
261	674413	23	6136	0.53	0.18	0.20	0.53	0.09	0.01	0.00	0.40	-0.21	-0.22	0.40	-0.10	A+	A-	A-	A-	0.55	0.05	2.09	1.04	2.20	1.07
262	678757	23	6136	0.30	0.53	0.09	0.30	0.08	0.00	0.00	0.17	0.16	-0.31	0.17	-0.25	A-	A-	A-	A+	1.73	0.06	8.12	1.23	9.90	1.54
263	681812	23	6136	0.44	0.21	0.24	0.11	0.44	0.00	0.00	0.13	0.01	-0.06	-0.13	0.13	A+	A+	A+	A+	0.99	0.05	9.90	1.29	9.90	1.43
264	678740	23	6136	0.54	0.54	0.18	0.16	0.12	0.00	0.00	0.26	0.26	-0.27	-0.03	-0.04	A+	A-	A-	A-	0.51	0.05	7.50	1.17	7.16	1.23
265	678804	23	6136	0.30	0.07	0.45	0.19	0.30	0.00	0.00	0.11	-0.15	0.11	-0.18	0.11	A-	A-	A-	A-	1.76	0.06	9.02	1.26	9.59	1.51
266	678747	23	6136	0.56	0.23	0.56	0.15	0.06	0.00	0.00	0.35	-0.10	0.35	-0.22	-0.22	A-	A-	A-	A+	0.39	0.05	2.42	1.05	2.51	1.08
267	674472	24	6146	0.30	0.37	0.14	0.19	0.30	0.00	0.00	0.20	0.01	-0.15	-0.10	0.20	A+	A+	A+	A-	1.74	0.06	5.59	1.16	7.38	1.40
268	673949	24	6146	0.42	0.42	0.13	0.30	0.14	0.00	0.00	0.35	0.35	-0.16	-0.14	-0.17	A+	A+	A+	A-	1.05	0.05	3.42	1.08	4.05	1.15
269	673950	24	6146	0.49	0.26	0.49	0.14	0.10	0.00	0.00	0.36	-0.13	0.36	-0.18	-0.18	A-	A-	A+	A+	0.69	0.05	3.66	1.08	3.81	1.13
270	674454	24	6146	0.40	0.40	0.16	0.28	0.14	0.00	0.00	0.26	0.26	-0.17	-0.07	-0.09	A-	A+	A-	A-	1.15	0.05	7.72	1.18	8.27	1.33
271	674506	24	6146	0.52	0.09	0.52	0.26	0.12	0.00	0.00	0.32	-0.09	0.32	-0.23	-0.09	A-	A+	A-	A+	0.58	0.05	6.81	1.15	5.45	1.19
272	657748	24	6146	0.41	0.17	0.21	0.41	0.20	0.00	0.00	0.25	-0.13	-0.16	0.25	-0.03	A+	A-	A-	A+	1.12	0.05	7.47	1.17	8.51	1.33
273	673951	24	6146	0.74	0.05	0.17	0.74	0.04	0.00	0.00	0.42	-0.21	-0.27	0.42	-0.19	A-	A-	A-	A-	-0.65	0.06	-0.04	1.00	-1.68	0.91
274	678766	24	6146	0.50	0.08	0.12	0.30	0.50	0.00	0.00	0.32	-0.21	-0.09	-0.16	0.32	A+	A-	A+	A-	0.66	0.05	4.97	1.11	3.82	1.13
275	678771	24	6146	0.78	0.13	0.78	0.07	0.02	0.00	0.00	0.46	-0.27	0.46	-0.28	-0.19	A-	B-	A-	A+	-0.89	0.06	-3.56	0.89	-3.45	0.79
276	678726	24	6146	0.38	0.23	0.18	0.20	0.38	0.00	0.00	0.24	-0.07	-0.11	-0.11	0.24	A-	A-	A-	A+	1.26	0.06	6.85	1.16	6.36	1.26

Table J–6. Biology Multiple-Choice Item Statistics: Spring

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	611003	0	164172	0.82	0.82	0.07	0.05	0.06	0.00	0.00	0.40	0.40	-0.26	-0.22	-0.17					-1.71	0.01	-9.90	0.94	-9.90	0.77
2	643379	0	164172	0.81	0.03	0.03	0.13	0.81	0.00	0.00	0.45	-0.22	-0.21	-0.30	0.45					-1.33	0.01	-9.90	0.78	-9.90	0.62
3	642332	0	164172	0.44	0.27	0.05	0.44	0.24	0.00	0.00	0.34	-0.27	-0.16	0.34	-0.02					0.72	0.01	9.90	1.17	9.90	1.25
4	643382	0	164172	0.56	0.56	0.12	0.21	0.11	0.00	0.00	0.51	0.51	-0.30	-0.30	-0.11					-0.24	0.01	-9.90	0.93	-9.90	0.89
5	642848	0	164172	0.64	0.07	0.64	0.06	0.23	0.00	0.00	0.40	-0.13	0.40	-0.20	-0.27					-0.34	0.01	-2.00	1.00	-9.90	0.95
6	635780	0	164172	0.58	0.16	0.15	0.58	0.11	0.00	0.00	0.36	-0.14	-0.22	0.36	-0.14					-0.37	0.01	9.90	1.12	9.90	1.12
7	607713	0	164172	0.45	0.09	0.45	0.27	0.19	0.00	0.00	0.39	-0.17	0.39	-0.14	-0.21					0.53	0.01	9.90	1.08	9.90	1.11
8	642319	0	164172	0.68	0.11	0.08	0.68	0.13	0.00	0.00	0.52	-0.25	-0.26	0.52	-0.27					-0.62	0.01	-9.90	0.84	-9.90	0.75
9	607723	0	164172	0.63	0.63	0.22	0.09	0.05	0.00	0.00	0.46	0.46	-0.22	-0.28	-0.22					-0.51	0.01	-9.90	0.95	-9.90	0.89
10	611016	0	164172	0.44	0.08	0.32	0.15	0.44	0.00	0.00	0.45	-0.24	-0.16	-0.22	0.45					0.81	0.01	9.90	1.06	9.90	1.10
11	607120	0	164172	0.38	0.38	0.13	0.32	0.16	0.00	0.00	0.49	0.49	-0.21	-0.14	-0.27					0.75	0.01	-9.90	0.93	-9.90	0.96
12	641185	0	164172	0.42	0.15	0.25	0.17	0.42	0.00	0.00	0.47	-0.21	-0.27	-0.11	0.47					0.50	0.01	-9.90	0.97	-4.58	0.98
13	644771	0	164172	0.55	0.12	0.55	0.19	0.13	0.01	0.00	0.33	-0.21	0.33	-0.15	-0.09					0.03	0.01	9.90	1.12	9.90	1.18
14	644772	0	164172	0.64	0.16	0.06	0.14	0.64	0.01	0.00	0.46	-0.14	-0.26	-0.30	0.46					-0.60	0.01	-9.90	0.96	-9.90	0.89
15	607719	0	164172	0.59	0.59	0.20	0.05	0.16	0.01	0.00	0.42	0.42	-0.25	-0.21	-0.15					-0.18	0.01	4.78	1.01	-3.72	0.99
16	641259	0	164172	0.58	0.11	0.12	0.19	0.58	0.01	0.00	0.48	-0.16	-0.27	-0.24	0.48					-0.24	0.01	-9.90	0.95	-9.90	0.94
17	642342	0	164172	0.51	0.25	0.51	0.13	0.10	0.01	0.00	0.44	-0.15	0.44	-0.23	-0.23					0.24	0.01	4.09	1.01	-2.95	0.99
18	642314	0	164172	0.58	0.58	0.15	0.13	0.14	0.01	0.00	0.53	0.53	-0.27	-0.25	-0.23					-0.34	0.01	-9.90	0.90	-9.90	0.85
19	642336	0	164172	0.41	0.15	0.28	0.41	0.14	0.01	0.00	0.34	-0.26	-0.03	0.34	-0.16					0.47	0.01	9.90	1.12	9.90	1.17
20	640662	0	164172	0.38	0.23	0.18	0.21	0.38	0.01	0.00	0.40	-0.21	-0.14	-0.11	0.40					0.79	0.01	9.90	1.05	9.90	1.10
21	642325	0	164172	0.45	0.10	0.18	0.26	0.45	0.01	0.00	0.52	-0.21	-0.32	-0.15	0.52					0.57	0.01	-9.90	0.93	-9.90	0.92
22	607693	0	164172	0.55	0.26	0.55	0.07	0.11	0.01	0.00	0.45	-0.21	0.45	-0.22	-0.23					-0.33	0.01	8.73	1.02	-1.39	0.99
23	610485	0	164172	0.61	0.10	0.12	0.61	0.16	0.01	0.00	0.50	-0.20	-0.28	0.50	-0.23					-0.09	0.01	-9.90	0.91	-9.90	0.85
24	642316	0	164172	0.64	0.64	0.06	0.12	0.18	0.01	0.00	0.44	0.44	-0.25	-0.23	-0.18					-0.44	0.01	-9.90	0.96	-9.90	0.95
25	641281	0	164172	0.64	0.06	0.64	0.11	0.20	0.00	0.00	0.45	-0.19	0.45	-0.24	-0.25					-0.43	0.01	-9.90	0.95	-9.90	0.90
26	608301	0	164172	0.73	0.10	0.07	0.10	0.73	0.00	0.00	0.44	-0.18	-0.26	-0.25	0.44					-1.08	0.01	-9.90	0.93	-9.90	0.89
27	608099	0	164172	0.75	0.04	0.12	0.10	0.75	0.00	0.00	0.44	-0.18	-0.22	-0.29	0.44					-1.07	0.01	-9.90	0.90	-9.90	0.81
28	610915	0	164172	0.72	0.11	0.72	0.12	0.04	0.00	0.00	0.42	-0.26	0.42	-0.19	-0.20					-0.85	0.01	-9.90	0.92	-9.90	0.85
29	641205	0	164172	0.80	0.07	0.05	0.80	0.08	0.00	0.00	0.41	-0.24	-0.20	0.41	-0.22					-1.28	0.01	-9.90	0.81	-9.90	0.76
30	644021	0	164172	0.61	0.11	0.61	0.07	0.20	0.00	0.00	0.48	-0.20	0.48	-0.27	-0.25					-0.49	0.01	-9.90	0.95	-9.90	0.95
31	641275	0	164172	0.50	0.20	0.14	0.15	0.50	0.00	0.00	0.35	-0.12	-0.09	-0.26	0.35					0.09	0.01	9.90	1.12	9.90	1.23

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	644026	0	164172	0.51	0.51	0.12	0.21	0.17	0.00	0.00	0.53	0.53	-0.21	-0.25	-0.25					0.12	0.01	-9.90	0.91	-9.90	0.88
33	642857	0	164172	0.39	0.20	0.26	0.15	0.39	0.00	0.00	0.35	-0.17	-0.12	-0.14	0.35					0.94	0.01	9.90	1.16	9.90	1.24
34	642873	0	164172	0.62	0.62	0.12	0.21	0.06	0.00	0.00	0.40	0.40	-0.26	-0.16	-0.20					-0.19	0.01	5.63	1.01	1.14	1.00
35	643397	0	164172	0.47	0.35	0.06	0.47	0.12	0.00	0.00	0.31	-0.05	-0.24	0.31	-0.23					0.41	0.01	9.90	1.18	9.90	1.22
36	611474	0	164172	0.55	0.16	0.55	0.11	0.18	0.00	0.00	0.44	-0.24	0.44	-0.24	-0.15					0.12	0.01	0.34	1.00	-3.85	0.99
37	643350	0	164172	0.51	0.51	0.20	0.19	0.09	0.00	0.00	0.49	0.49	-0.16	-0.32	-0.16					-0.09	0.01	-9.90	0.97	-9.85	0.96
38	612595	0	164172	0.64	0.11	0.14	0.64	0.11	0.00	0.00	0.47	-0.18	-0.29	0.47	-0.20					-0.43	0.01	-9.90	0.93	-9.90	0.88
39	610876	0	164172	0.59	0.14	0.19	0.59	0.08	0.00	0.00	0.44	-0.26	-0.16	0.44	-0.22					-0.53	0.01	9.90	1.05	6.69	1.03
40	642860	0	164172	0.52	0.14	0.19	0.14	0.52	0.00	0.00	0.47	-0.18	-0.22	-0.22	0.47					0.08	0.01	-9.90	0.97	-9.90	0.95
41	611620	0	164172	0.57	0.21	0.11	0.57	0.10	0.00	0.00	0.48	-0.23	-0.23	0.48	-0.21					0.27	0.01	-6.94	0.98	-9.90	0.96
42	644023	0	164172	0.37	0.37	0.24	0.25	0.13	0.00	0.00	0.38	0.38	-0.12	-0.15	-0.18					1.06	0.01	9.90	1.11	9.90	1.24
43	644022	0	164172	0.49	0.30	0.11	0.10	0.49	0.00	0.00	0.37	-0.11	-0.22	-0.20	0.37					0.10	0.01	9.90	1.10	9.90	1.13
44	611058	0	164172	0.49	0.14	0.30	0.49	0.07	0.00	0.00	0.48	-0.21	-0.23	0.48	-0.21					0.28	0.01	-9.90	0.97	-9.90	0.95
45	643787	0	164172	0.36	0.36	0.26	0.24	0.14	0.00	0.00	0.30	0.30	-0.09	-0.15	-0.11					0.99	0.01	9.90	1.17	9.90	1.30
46	608280	0	164172	0.63	0.16	0.12	0.08	0.63	0.00	0.00	0.46	-0.18	-0.25	-0.25	0.46					-0.48	0.01	-9.90	0.94	-9.90	0.90
47	611397	0	164172	0.36	0.36	0.25	0.24	0.15	0.00	0.00	0.31	0.31	-0.04	-0.14	-0.19					0.94	0.01	9.90	1.16	9.90	1.26
48	643398	0	164172	0.52	0.13	0.17	0.18	0.52	0.00	0.00	0.48	-0.18	-0.22	-0.23	0.48					0.10	0.01	-9.90	0.96	-9.90	0.94
49	683611	1	5275	0.56	0.21	0.13	0.56	0.11	0.00	0.00	0.41	-0.17	-0.20	0.41	-0.21	A+	A+	A-	A+	-0.10	0.05	2.58	1.05	1.95	1.06
50	683612	1	5275	0.58	0.07	0.24	0.11	0.58	0.00	0.00	0.45	-0.26	-0.22	-0.21	0.45	A+	A+	A-	A-	-0.21	0.05	-1.56	0.97	-2.24	0.93
51	678905	1	5275	0.40	0.40	0.18	0.14	0.28	0.00	0.00	0.32	0.32	-0.27	-0.16	0.01	A-	A-	A+	A-	0.71	0.05	6.25	1.15	5.31	1.17
52	678538	1	5275	0.21	0.22	0.15	0.42	0.21	0.00	0.00	0.15	-0.07	-0.18	0.06	0.15	A+	A+	A-	A-	1.90	0.06	5.64	1.19	8.75	1.61
53	677984	1	5275	0.36	0.20	0.36	0.24	0.20	0.00	0.00	0.35	-0.16	0.35	-0.24	0.00	A-	A-	A-	A+	0.96	0.05	4.20	1.10	5.73	1.21
54	671329	1	5275	0.71	0.71	0.15	0.07	0.08	0.00	0.00	0.43	0.43	-0.26	-0.21	-0.19	A+	A-	A-	A-	-0.92	0.05	-2.09	0.95	-0.14	0.99
55	678873	1	5275	0.48	0.12	0.48	0.17	0.24	0.00	0.00	0.49	-0.22	0.49	-0.23	-0.21	A-	A+	A-	A+	0.30	0.05	-0.80	0.98	-1.20	0.97
56	671334	1	5275	0.64	0.08	0.64	0.14	0.14	0.00	0.00	0.46	-0.26	0.46	-0.29	-0.14	A+	A+	A-	A+	-0.57	0.05	-2.74	0.94	-0.22	0.99
57	682190	1	5275	0.37	0.37	0.27	0.26	0.10	0.00	0.00	0.27	0.27	-0.06	-0.13	-0.14	A+	A+	A+	A-	0.91	0.05	7.12	1.18	7.20	1.26
58	682191	1	5275	0.33	0.17	0.26	0.23	0.33	0.00	0.00	0.34	-0.11	-0.07	-0.19	0.34	A-	A-	A-	A+	1.10	0.05	3.44	1.09	5.87	1.23
59	679210	1	5275	0.47	0.22	0.47	0.17	0.13	0.00	0.00	0.46	-0.32	0.46	-0.19	-0.07	A-	A-	A+	A-	0.32	0.05	-1.19	0.98	-0.48	0.99
60	679207	1	5275	0.50	0.50	0.19	0.19	0.12	0.00	0.00	0.42	0.42	-0.19	-0.24	-0.11	A+	A+	A+	A-	0.21	0.05	1.21	1.03	0.68	1.02
61	678973	1	5275	0.44	0.15	0.25	0.44	0.16	0.00	0.00	0.30	-0.04	-0.17	0.30	-0.16	A-	A-	A-	A+	0.52	0.05	8.91	1.21	8.50	1.27
62	679980	1	5275	0.44	0.14	0.18	0.23	0.44	0.00	0.00	0.36	-0.22	-0.21	-0.04	0.36	A-	B-	A+	A+	0.51	0.05	3.72	1.08	4.10	1.13
63	674168	1	5275	0.75	0.75	0.08	0.07	0.10	0.00	0.00	0.47	0.47	-0.20	-0.24	-0.29	A+	A-	A-	A+	-1.18	0.06	-5.30	0.87	-4.28	0.77

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
64	683550	1	5275	0.49	0.21	0.16	0.49	0.13	0.00	0.00	0.40	-0.11	-0.26	0.40	-0.16	A+	A+	A-	A-	0.22	0.05	2.91	1.06	2.31	1.07
65	679672	2	3986	0.62	0.62	0.25	0.06	0.06	0.00	0.00	0.50	0.50	-0.32	-0.27	-0.15	A-	A-	A+	A-	-0.16	0.06	-3.86	0.91	-3.22	0.87
66	679671	2	3986	0.46	0.20	0.46	0.20	0.14	0.00	0.00	0.40	-0.16	0.40	-0.20	-0.16	A+	A+	A-	A-	0.67	0.05	2.12	1.05	1.77	1.06
67	677988	2	3986	0.65	0.65	0.09	0.16	0.10	0.00	0.00	0.39	0.39	-0.18	-0.24	-0.14	A+	A-	A+	A-	-0.31	0.06	0.32	1.01	0.89	1.04
68	678537	2	3986	0.27	0.20	0.38	0.15	0.27	0.00	0.00	0.28	-0.21	0.04	-0.17	0.28	A+	A+	A+	A-	1.75	0.06	1.17	1.03	4.17	1.23
69	674094	2	3986	0.60	0.21	0.60	0.05	0.14	0.00	0.00	0.25	-0.01	0.25	-0.21	-0.21	A-	A-	A-	B+	-0.07	0.06	6.41	1.16	4.41	1.18
70	674367	2	3986	0.37	0.22	0.17	0.23	0.37	0.00	0.00	0.40	-0.12	-0.24	-0.13	0.40	A+	A+	A-	A-	1.12	0.06	2.16	1.05	3.24	1.12
71	671335	2	3986	0.56	0.56	0.23	0.12	0.09	0.00	0.00	0.48	0.48	-0.22	-0.27	-0.19	A-	A-	A-	A+	0.16	0.06	-2.66	0.94	-2.99	0.90
72	674139	2	3986	0.65	0.14	0.65	0.11	0.09	0.00	0.00	0.45	-0.19	0.45	-0.26	-0.21	A+	A+	A+	A+	-0.35	0.06	-2.15	0.95	-2.52	0.89
73	682410	2	3986	0.57	0.10	0.14	0.19	0.57	0.00	0.00	0.44	-0.24	-0.15	-0.23	0.44	A+	A-	A-	A+	0.10	0.06	-0.11	1.00	-0.84	0.97
74	682402	2	3986	0.52	0.52	0.17	0.08	0.24	0.00	0.00	0.38	0.38	-0.23	-0.16	-0.14	A-	A-	A-	A-	0.36	0.05	3.89	1.09	4.15	1.14
75	680557	2	3986	0.59	0.25	0.08	0.59	0.09	0.00	0.00	0.29	-0.08	-0.22	0.29	-0.16	A+	A+	A+	A-	0.01	0.06	8.02	1.19	8.16	1.34
76	642872	2	3986	0.53	0.30	0.53	0.12	0.05	0.00	0.00	0.25	-0.02	0.25	-0.22	-0.21	A+	A-	A+	A+	0.29	0.05	9.56	1.23	8.32	1.30
77	642880	2	3986	0.54	0.14	0.19	0.54	0.13	0.00	0.00	0.29	-0.14	-0.14	0.29	-0.11	A+	A-	A-	A-	0.23	0.05	7.06	1.16	5.56	1.20
78	677872	2	3986	0.69	0.17	0.07	0.07	0.69	0.00	0.00	0.56	-0.29	-0.30	-0.28	0.56	A+	A-	B-	A+	-0.54	0.06	-6.45	0.84	-5.41	0.75
79	678303	2	3986	0.39	0.39	0.24	0.22	0.15	0.00	0.00	0.38	0.38	-0.32	-0.05	-0.07	A-	A+	A-	A+	1.03	0.06	2.63	1.06	4.25	1.15
80	682710	2	3986	0.47	0.19	0.47	0.18	0.15	0.00	0.00	0.43	-0.15	0.43	-0.24	-0.16	A+	A+	A+	A+	0.61	0.05	-0.15	1.00	-0.42	0.99
81	679675	3	4028	0.53	0.15	0.14	0.17	0.53	0.00	0.00	0.52	-0.19	-0.27	-0.26	0.52	A+	A+	A-	A-	0.29	0.05	-4.97	0.90	-4.61	0.86
82	679685	3	4028	0.26	0.23	0.26	0.28	0.22	0.00	0.00	0.05	-0.11	0.05	-0.04	0.10	A-	A-	A-	A+	1.76	0.06	9.26	1.30	9.90	1.72
83	680199	3	4028	0.38	0.17	0.22	0.22	0.38	0.00	0.00	0.48	-0.25	-0.11	-0.22	0.48	A-	A-	B-	A+	1.06	0.05	-3.58	0.92	-2.35	0.92
84	673887	3	4028	0.73	0.12	0.73	0.08	0.07	0.00	0.00	0.53	-0.29	0.53	-0.28	-0.24	A-	A-	A-	A+	-0.78	0.06	-6.79	0.82	-6.63	0.68
85	677975	3	4028	0.29	0.29	0.13	0.28	0.29	0.00	0.00	0.30	-0.26	-0.11	0.05	0.30	A-	A+	A+	A-	1.57	0.06	2.22	1.06	5.05	1.24
86	677990	3	4028	0.32	0.32	0.13	0.18	0.37	0.00	0.00	0.09	0.09	-0.29	-0.13	0.21	A-	A+	A+	A-	1.37	0.06	9.90	1.33	9.90	1.52
87	677971	3	4028	0.61	0.12	0.61	0.18	0.09	0.00	0.00	0.37	-0.17	0.37	-0.17	-0.21	A+	A+	A-	A-	-0.10	0.05	3.11	1.07	1.60	1.06
88	677993	3	4028	0.32	0.32	0.29	0.25	0.14	0.00	0.00	0.08	0.08	0.05	0.06	-0.24	A-	A+	A+	A+	1.43	0.06	9.90	1.40	9.90	1.66
89	682714	3	4028	0.46	0.12	0.46	0.11	0.31	0.00	0.00	0.23	-0.19	0.23	-0.24	0.06	A-	A+	A+	A-	0.67	0.05	9.90	1.25	9.90	1.37
90	682718	3	4028	0.35	0.20	0.35	0.33	0.12	0.00	0.00	0.31	-0.17	0.31	-0.07	-0.14	A+	A+	A+	A-	1.22	0.06	4.67	1.12	6.72	1.27
91	644782	3	4028	0.69	0.14	0.69	0.12	0.05	0.00	0.00	0.28	-0.18	0.28	-0.06	-0.21	A-	A-	B-	A+	-0.56	0.06	3.23	1.08	4.35	1.22
92	673881	3	4028	0.77	0.04	0.14	0.77	0.05	0.00	0.00	0.32	-0.05	-0.25	0.32	-0.16	A+	A-	A-	A+	-1.06	0.06	-0.51	0.98	0.74	1.05
93	678985	3	4028	0.70	0.09	0.11	0.70	0.09	0.00	0.00	0.53	-0.30	-0.31	0.53	-0.20	A-	A-	A-	A-	-0.64	0.06	-4.85	0.88	-4.47	0.79
94	642908	3	4028	0.19	0.47	0.19	0.08	0.25	0.00	0.00	0.09	0.06	0.09	-0.28	0.02	A-	A-	A+	A+	2.23	0.07	4.29	1.16	9.90	1.89
95	680248	3	4028	0.58	0.15	0.13	0.58	0.13	0.00	0.00	0.42	-0.17	-0.26	0.42	-0.16	A+	A+	A-	A+	0.02	0.05	0.15	1.00	-1.26	0.96

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Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
96	643400	3	4028	0.40	0.19	0.13	0.40	0.28	0.00	0.00	0.30	-0.22	-0.26	0.30	0.06	A+	A+	A-	A+	0.95	0.05	5.32	1.13	5.90	1.20
97	684523	4	4001	0.45	0.41	0.07	0.06	0.45	0.00	0.00	0.18	0.03	-0.15	-0.27	0.18	A-	A-	A+	A+	0.71	0.05	9.60	1.22	8.64	1.28
98	673851	4	4001	0.31	0.31	0.40	0.12	0.17	0.00	0.00	0.39	0.39	-0.13	-0.09	-0.22	A+	A+	A-	A-	1.49	0.06	-0.82	0.98	1.97	1.08
99	671333	4	4001	0.50	0.11	0.11	0.50	0.27	0.00	0.00	0.42	-0.26	-0.18	0.42	-0.16	A-	A-	A-	A-	0.45	0.05	0.43	1.01	-0.04	1.00
100	680200	4	4001	0.30	0.25	0.32	0.30	0.13	0.00	0.00	0.11	0.00	0.00	0.11	-0.14	A-	A+	A-	A+	1.54	0.06	9.90	1.31	9.90	1.66
101	682772	4	4001	0.39	0.16	0.12	0.33	0.39	0.00	0.00	0.46	-0.11	-0.10	-0.32	0.46	A+	A-	A+	A+	1.07	0.06	-2.29	0.95	-1.47	0.95
102	677981	4	4001	0.37	0.37	0.16	0.14	0.33	0.00	0.00	0.42	0.42	-0.20	-0.19	-0.13	A-	A-	A+	A+	1.15	0.06	-2.62	0.94	-0.37	0.99
103	680192	4	4001	0.61	0.61	0.16	0.08	0.15	0.00	0.00	0.39	0.39	-0.17	-0.21	-0.18	A-	A-	A-	A-	-0.08	0.06	1.38	1.03	0.33	1.01
104	682254	4	4001	0.62	0.19	0.09	0.10	0.62	0.00	0.00	0.39	-0.09	-0.26	-0.25	0.39	A+	A-	A-	A-	-0.15	0.06	0.65	1.01	2.83	1.11
105	682709	4	4001	0.45	0.45	0.27	0.16	0.12	0.00	0.00	0.42	0.42	-0.14	-0.26	-0.15	A-	A-	A-	A-	0.73	0.05	-1.12	0.98	-1.05	0.97
106	682708	4	4001	0.27	0.27	0.23	0.29	0.20	0.00	0.00	0.25	0.25	-0.16	-0.14	0.04	A+	A+	A+	A-	1.73	0.06	1.22	1.04	4.22	1.22
107	641201	4	4001	0.30	0.33	0.29	0.30	0.07	0.00	0.00	0.30	-0.08	-0.14	0.30	-0.15	A-	A-	A-	A-	1.54	0.06	2.32	1.07	5.34	1.25
108	683548	4	4001	0.42	0.13	0.42	0.38	0.07	0.00	0.00	0.27	-0.19	0.27	-0.03	-0.20	A-	A-	A-	A+	0.89	0.05	6.66	1.16	6.73	1.23
109	677864	4	4001	0.47	0.13	0.21	0.47	0.19	0.00	0.00	0.27	-0.21	-0.14	0.27	-0.01	A-	A+	A-	A+	0.64	0.05	8.78	1.20	8.18	1.26
110	682773	4	4001	0.71	0.11	0.71	0.08	0.10	0.00	0.00	0.50	-0.23	0.50	-0.29	-0.26	A-	A-	A-	A+	-0.66	0.06	-5.66	0.86	-5.52	0.74
111	641267	4	4001	0.47	0.17	0.17	0.20	0.47	0.00	0.00	0.43	-0.19	-0.20	-0.17	0.43	A+	A+	A-	A-	0.65	0.05	0.69	1.01	0.10	1.00
112	677861	4	4001	0.56	0.56	0.09	0.17	0.18	0.00	0.00	0.33	0.33	-0.23	-0.11	-0.15	A+	A+	A-	A+	0.17	0.05	5.17	1.11	5.24	1.18
113	684499	5	4018	0.65	0.06	0.19	0.65	0.10	0.00	0.00	0.45	-0.24	-0.26	0.45	-0.17	A-	A+	A-	A+	-0.32	0.06	0.07	1.00	-1.48	0.94
114	678941	5	4018	0.40	0.22	0.09	0.29	0.40	0.00	0.00	0.40	-0.04	-0.18	-0.28	0.40	A+	A+	A+	A+	0.95	0.06	2.32	1.05	2.45	1.08
115	678544	5	4018	0.28	0.50	0.28	0.13	0.09	0.00	0.00	0.09	0.09	0.09	-0.10	-0.17	A+	A-	A-	A-	1.66	0.06	9.90	1.30	9.90	1.75
116	682255	5	4018	0.61	0.13	0.61	0.12	0.14	0.00	0.00	0.34	-0.21	0.34	-0.12	-0.16	A-	A+	A-	A+	-0.14	0.06	4.88	1.12	3.70	1.15
117	677992	5	4018	0.48	0.08	0.48	0.26	0.19	0.00	0.00	0.47	-0.23	0.47	-0.27	-0.15	A-	A-	A+	A+	0.58	0.05	-2.39	0.95	-1.87	0.94
118	673861	5	4018	0.61	0.04	0.26	0.08	0.61	0.00	0.00	0.43	-0.18	-0.20	-0.29	0.43	A-	A-	A-	A+	-0.11	0.06	0.48	1.01	-0.75	0.97
119	678534	5	4018	0.56	0.22	0.56	0.14	0.07	0.00	0.00	0.15	-0.07	0.15	0.00	-0.16	A+	A+	A+	A+	0.12	0.05	9.90	1.34	9.90	1.54
120	683583	5	4018	0.49	0.18	0.49	0.21	0.12	0.00	0.00	0.43	-0.21	0.43	-0.14	-0.22	A-	A+	A-	A+	0.53	0.05	2.81	1.06	2.01	1.06
121	682194	5	4018	0.65	0.65	0.20	0.09	0.05	0.00	0.00	0.46	0.46	-0.24	-0.25	-0.21	A+	A-	A-	A+	-0.36	0.06	-2.58	0.94	-1.27	0.94
122	684516	5	4018	0.32	0.14	0.24	0.29	0.32	0.00	0.00	0.24	-0.22	-0.08	0.00	0.24	A-	A+	A-	A+	1.41	0.06	7.36	1.20	8.33	1.39
123	680872	5	4018	0.78	0.04	0.07	0.78	0.11	0.00	0.00	0.46	-0.24	-0.28	0.46	-0.23	A+	A+	A+	A+	-1.15	0.06	-3.86	0.87	-3.60	0.76
124	673880	5	4018	0.61	0.61	0.13	0.17	0.09	0.00	0.00	0.49	0.49	-0.23	-0.28	-0.19	A+	A+	A-	A+	-0.10	0.06	-3.24	0.93	-3.30	0.88
125	678972	5	4018	0.59	0.11	0.59	0.12	0.18	0.00	0.00	0.47	-0.25	0.47	-0.31	-0.13	A+	A-	A-	A+	0.00	0.06	-1.42	0.97	-0.72	0.97
126	677996	5	4018	0.57	0.13	0.57	0.13	0.17	0.00	0.00	0.50	-0.25	0.50	-0.22	-0.24	A-	A+	A+	A-	0.11	0.05	-3.90	0.91	-3.80	0.87
127	678976	5	4018	0.67	0.13	0.10	0.10	0.67	0.00	0.00	0.57	-0.29	-0.24	-0.33	0.57	A+	A-	A-	A+	-0.43	0.06	-6.40	0.84	-6.42	0.73

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
128	678898	5	4018	0.45	0.45	0.21	0.17	0.16	0.00	0.00	0.32	0.32	-0.09	-0.13	-0.19	A-	A-	A-	A+	0.72	0.05	5.99	1.14	5.78	1.19
129	678884	6	3990	0.47	0.19	0.21	0.47	0.13	0.00	0.00	0.26	0.07	-0.21	0.26	-0.20	A+	A+	A+	A+	0.63	0.05	9.51	1.22	8.46	1.30
130	681052	6	3990	0.49	0.08	0.49	0.26	0.17	0.00	0.00	0.49	-0.18	0.49	-0.34	-0.13	A+	A-	A-	A+	0.51	0.05	-3.29	0.93	-3.20	0.90
131	673889	6	3990	0.46	0.10	0.32	0.12	0.46	0.00	0.00	0.48	-0.27	-0.12	-0.31	0.48	A-	A-	A+	A-	0.69	0.05	-3.68	0.92	-2.62	0.92
132	673893	6	3990	0.48	0.48	0.09	0.22	0.21	0.00	0.00	0.34	0.34	-0.20	-0.10	-0.17	A-	A-	A+	A-	0.54	0.05	5.23	1.12	3.87	1.13
133	678934	6	3990	0.38	0.19	0.19	0.38	0.24	0.00	0.00	0.39	-0.08	-0.25	0.39	-0.14	A-	A-	A-	A+	1.08	0.06	0.68	1.02	1.82	1.07
134	678935	6	3990	0.49	0.24	0.10	0.17	0.49	0.00	0.00	0.39	-0.17	-0.25	-0.13	0.39	A-	A-	A-	A+	0.51	0.05	1.38	1.03	0.91	1.03
135	678417	6	3990	0.45	0.13	0.45	0.23	0.19	0.00	0.00	0.39	-0.19	0.39	-0.21	-0.11	A-	A+	A-	A+	0.74	0.05	0.40	1.01	1.27	1.04
136	677995	6	3990	0.60	0.13	0.13	0.13	0.60	0.00	0.00	0.47	-0.18	-0.19	-0.31	0.47	A+	A+	A+	A+	-0.06	0.06	-2.19	0.95	-2.47	0.90
137	679657	6	3990	0.48	0.18	0.48	0.21	0.13	0.00	0.00	0.40	-0.11	0.40	-0.24	-0.18	A-	A+	A-	A-	0.54	0.05	2.72	1.06	2.62	1.09
138	679660	6	3990	0.67	0.10	0.11	0.67	0.12	0.00	0.00	0.50	-0.30	-0.26	0.50	-0.18	A-	A-	A+	A-	-0.42	0.06	-3.06	0.92	-2.88	0.86
139	641215	6	3990	0.58	0.17	0.58	0.12	0.13	0.00	0.00	0.37	-0.08	0.37	-0.25	-0.22	A-	A-	A-	A+	0.05	0.06	2.67	1.06	2.11	1.08
140	677875	6	3990	0.41	0.31	0.12	0.41	0.16	0.00	0.00	0.29	-0.08	-0.17	0.29	-0.13	A+	A-	A+	A+	0.94	0.06	5.56	1.13	5.34	1.19
141	683580	6	3990	0.40	0.40	0.08	0.44	0.08	0.00	0.00	0.35	0.35	-0.24	-0.08	-0.23	A-	A-	A-	A+	0.97	0.06	2.72	1.06	4.26	1.15
142	677857	6	3990	0.26	0.33	0.26	0.14	0.27	0.00	0.00	0.19	-0.14	0.19	-0.08	0.02	A-	A+	A-	A-	1.78	0.06	4.24	1.13	7.55	1.44
143	641197	6	3990	0.32	0.15	0.18	0.32	0.35	0.00	0.00	0.23	-0.15	-0.28	0.23	0.11	A+	A+	A+	A-	1.42	0.06	5.92	1.16	6.88	1.32
144	681522	6	3990	0.43	0.43	0.16	0.15	0.25	0.00	0.00	0.38	0.38	-0.21	-0.21	-0.07	A+	A-	A-	A+	0.83	0.05	2.49	1.06	3.11	1.11
145	683615	7	4022	0.29	0.29	0.47	0.11	0.13	0.00	0.00	0.25	0.25	-0.11	-0.06	-0.11	A+	A+	A+	A-	1.57	0.06	4.68	1.13	7.48	1.37
146	683614	7	4022	0.33	0.26	0.30	0.11	0.33	0.00	0.00	0.35	-0.14	-0.06	-0.23	0.35	A+	A-	A+	A-	1.35	0.06	-1.25	0.97	2.19	1.09
147	642343	7	4022	0.16	0.33	0.28	0.24	0.16	0.00	0.00	0.14	0.04	0.03	-0.19	0.14	A-	A+	A-	A-	2.54	0.07	1.90	1.08	8.56	1.83
148	678301	7	4022	0.23	0.23	0.14	0.43	0.20	0.00	0.00	0.19	0.19	0.00	-0.21	0.05	A+	A+	A+	A+	1.98	0.06	4.60	1.16	9.54	1.64
149	678533	7	4022	0.45	0.45	0.19	0.16	0.20	0.00	0.00	0.14	0.14	-0.12	-0.02	-0.03	A+	A-	A-	A-	0.69	0.05	9.90	1.35	9.90	1.50
150	677983	7	4022	0.29	0.28	0.23	0.20	0.29	0.00	0.00	0.39	-0.13	-0.12	-0.16	0.39	A-	A+	A-	A-	1.61	0.06	-1.89	0.95	2.48	1.12
151	678904	7	4022	0.49	0.49	0.15	0.22	0.15	0.00	0.00	0.52	0.52	-0.25	-0.22	-0.23	A-	A+	A-	A+	0.52	0.05	-5.32	0.89	-4.53	0.86
152	678867	7	4022	0.64	0.23	0.09	0.64	0.04	0.00	0.00	0.60	-0.39	-0.28	0.60	-0.21	A-	A-	A+	A+	-0.26	0.06	-9.44	0.79	-7.31	0.72
153	682198	7	4022	0.78	0.08	0.78	0.08	0.07	0.00	0.00	0.46	-0.25	0.46	-0.29	-0.19	A+	A-	A-	A-	-1.08	0.06	-2.73	0.91	-2.33	0.84
154	682195	7	4022	0.30	0.16	0.30	0.30	0.23	0.00	0.00	0.19	-0.11	-0.10	0.19	0.00	A-	A+	A+	A-	1.51	0.06	4.94	1.14	9.34	1.45
155	682252	7	4022	0.56	0.10	0.23	0.56	0.11	0.00	0.00	0.45	-0.27	-0.21	0.45	-0.17	A+	A-	A-	A-	0.12	0.05	-0.63	0.99	-1.23	0.96
156	679977	7	4022	0.61	0.07	0.19	0.13	0.61	0.00	0.00	0.45	-0.25	-0.24	-0.18	0.45	A-	B-	A-	A+	-0.09	0.06	-1.78	0.96	-0.55	0.98
157	677871	7	4022	0.46	0.08	0.35	0.46	0.10	0.00	0.00	0.26	-0.27	0.05	0.26	-0.27	A-	A+	A+	A+	0.65	0.05	9.19	1.21	8.24	1.28
158	678897	7	4022	0.41	0.41	0.10	0.30	0.19	0.00	0.00	0.33	0.33	-0.20	-0.11	-0.13	A+	A-	A-	A-	0.94	0.05	4.39	1.10	4.34	1.15
159	681050	7	4022	0.48	0.48	0.12	0.25	0.14	0.00	0.00	0.45	0.45	-0.19	-0.24	-0.16	A+	A-	A-	A-	0.56	0.05	-1.32	0.97	-0.92	0.97

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
160	684051	7	4022	0.67	0.17	0.08	0.08	0.67	0.00	0.00	0.48	-0.29	-0.23	-0.19	0.48	A+	A-	A-	A+	-0.43	0.06	-2.35	0.94	-0.77	0.96
161	644753	8	4028	0.22	0.22	0.45	0.17	0.15	0.00	0.00	0.18	0.18	0.09	-0.15	-0.17	A-	A-	A-	A-	2.10	0.07	2.26	1.08	7.72	1.58
162	644754	8	4028	0.70	0.08	0.05	0.17	0.70	0.00	0.00	0.56	-0.25	-0.24	-0.37	0.56	A-	A-	A-	A-	-0.55	0.06	-6.38	0.83	-6.10	0.70
163	642326	8	4028	0.69	0.21	0.69	0.04	0.06	0.00	0.00	0.32	-0.21	0.32	-0.21	-0.10	A+	A-	A-	A-	-0.49	0.06	5.16	1.15	6.03	1.35
164	677970	8	4028	0.66	0.12	0.13	0.66	0.09	0.00	0.00	0.41	-0.19	-0.25	0.41	-0.17	A+	A-	A-	A+	-0.35	0.06	0.79	1.02	-0.68	0.97
165	678885	8	4028	0.54	0.15	0.54	0.19	0.12	0.00	0.00	0.52	-0.21	0.52	-0.24	-0.27	A-	A+	A-	A-	0.30	0.06	-4.51	0.90	-4.69	0.84
166	673855	8	4028	0.39	0.39	0.20	0.11	0.30	0.00	0.00	0.20	0.20	-0.06	-0.23	0.01	A+	A-	A-	A-	1.08	0.06	7.82	1.21	7.50	1.30
167	680244	8	4028	0.45	0.18	0.13	0.24	0.45	0.00	0.00	0.48	-0.12	-0.30	-0.22	0.48	A+	A-	A-	A+	0.78	0.06	-1.77	0.96	-1.18	0.96
168	674102	8	4028	0.82	0.04	0.08	0.06	0.82	0.00	0.00	0.53	-0.26	-0.30	-0.30	0.53	A+	C-	B-	B+	-1.36	0.07	-6.70	0.74	-5.95	0.56
169	682192	8	4028	0.47	0.47	0.28	0.17	0.08	0.00	0.00	0.40	0.40	-0.12	-0.24	-0.20	A-	A-	A+	A-	0.65	0.06	1.24	1.03	1.41	1.05
170	682193	8	4028	0.48	0.15	0.16	0.21	0.48	0.00	0.00	0.36	-0.18	-0.18	-0.12	0.36	A-	A-	A+	A-	0.61	0.06	5.53	1.13	5.29	1.18
171	641266	8	4028	0.46	0.21	0.46	0.25	0.07	0.00	0.00	0.25	0.00	0.25	-0.20	-0.15	A-	A+	A-	A-	0.71	0.06	8.13	1.20	7.71	1.28
172	678967	8	4028	0.35	0.21	0.23	0.35	0.22	0.00	0.00	0.16	-0.07	0.02	0.16	-0.14	A-	A+	A-	A+	1.33	0.06	9.90	1.30	9.90	1.56
173	678893	8	4028	0.65	0.08	0.15	0.12	0.65	0.00	0.00	0.52	-0.29	-0.25	-0.25	0.52	A+	A-	A+	A+	-0.29	0.06	-5.24	0.87	-5.37	0.77
174	679684	8	4028	0.42	0.12	0.19	0.42	0.27	0.00	0.00	0.19	-0.14	-0.24	0.19	0.11	A-	A-	A-	A+	0.94	0.06	9.72	1.25	9.60	1.37
175	678981	8	4028	0.66	0.09	0.66	0.15	0.10	0.00	0.00	0.43	-0.23	0.43	-0.21	-0.21	A-	A+	A+	A+	-0.35	0.06	-2.99	0.92	-2.56	0.88
176	678975	8	4028	0.72	0.09	0.07	0.12	0.72	0.00	0.00	0.47	-0.21	-0.28	-0.25	0.47	A+	A-	A-	A-	-0.68	0.06	-0.96	0.97	0.44	1.03
177	683616	9	4025	0.44	0.44	0.13	0.08	0.35	0.00	0.00	0.43	0.43	-0.33	-0.28	-0.05	A-	A-	A+	A-	0.77	0.05	0.67	1.01	1.14	1.03
178	683618	9	4025	0.31	0.16	0.31	0.24	0.28	0.00	0.00	0.15	-0.17	0.15	-0.09	0.07	A+	A-	A-	A-	1.47	0.06	9.90	1.30	9.90	1.56
179	671325	9	4025	0.56	0.12	0.56	0.22	0.10	0.00	0.00	0.40	-0.16	0.40	-0.26	-0.14	A+	A+	A-	A+	0.17	0.05	0.47	1.01	1.55	1.05
180	673888	9	4025	0.52	0.52	0.28	0.16	0.05	0.00	0.00	0.25	0.25	-0.13	-0.16	-0.04	A+	A-	A+	A+	0.36	0.05	9.90	1.23	9.32	1.31
181	677994	9	4025	0.26	0.36	0.14	0.26	0.23	0.00	0.00	0.06	0.05	-0.17	0.06	0.03	A+	A+	A+	A-	1.78	0.06	8.21	1.25	9.90	1.95
182	677986	9	4025	0.49	0.15	0.49	0.19	0.17	0.00	0.00	0.29	-0.19	0.29	-0.02	-0.19	A-	A-	A-	A+	0.52	0.05	7.31	1.17	6.79	1.21
183	674088	9	4025	0.70	0.12	0.08	0.70	0.10	0.00	0.00	0.46	-0.26	-0.22	0.46	-0.21	A+	A+	A+	A+	-0.62	0.06	-2.49	0.94	-3.50	0.84
184	678545	9	4025	0.73	0.09	0.08	0.73	0.09	0.00	0.00	0.43	-0.23	-0.23	0.43	-0.20	A-	A-	A-	A+	-0.81	0.06	-2.16	0.94	-1.41	0.92
185	682197	9	4025	0.54	0.09	0.54	0.11	0.27	0.00	0.00	0.29	-0.28	0.29	-0.20	-0.01	A-	A-	A+	A-	0.27	0.05	7.75	1.18	6.18	1.20
186	682196	9	4025	0.65	0.65	0.10	0.16	0.08	0.00	0.00	0.53	0.53	-0.24	-0.28	-0.27	A-	A-	A-	A+	-0.34	0.06	-5.97	0.86	-5.81	0.78
187	674115	9	4025	0.66	0.15	0.09	0.66	0.09	0.00	0.00	0.46	-0.22	-0.29	0.46	-0.18	A-	A-	A-	A+	-0.41	0.06	-2.59	0.94	-3.25	0.87
188	678295	9	4025	0.48	0.28	0.48	0.13	0.11	0.00	0.00	0.28	0.01	0.28	-0.26	-0.17	A-	A-	A-	A+	0.58	0.05	7.94	1.18	7.29	1.23
189	683549	9	4025	0.59	0.03	0.21	0.16	0.59	0.00	0.00	0.33	-0.23	-0.24	-0.06	0.33	A-	A-	A-	A+	-0.02	0.05	6.15	1.14	6.27	1.23
190	642871	9	4025	0.46	0.31	0.46	0.13	0.10	0.00	0.00	0.31	0.00	0.31	-0.28	-0.19	A+	A-	A-	A+	0.66	0.05	6.97	1.16	6.36	1.20
191	678986	9	4025	0.74	0.05	0.14	0.07	0.74	0.00	0.00	0.54	-0.29	-0.27	-0.31	0.54	A+	A-	A-	A+	-0.82	0.06	-7.45	0.80	-6.34	0.69

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
192	642877	9	4025	0.54	0.54	0.22	0.18	0.06	0.00	0.00	0.51	0.51	-0.21	-0.31	-0.19	A-	A-	A-	A+	0.24	0.05	-5.17	0.89	-5.19	0.85
193	679665	10	4039	0.60	0.11	0.11	0.60	0.18	0.00	0.00	0.25	-0.15	-0.13	0.25	-0.08	A+	A+	A-	A-	-0.01	0.05	8.38	1.20	5.22	1.20
194	679662	10	4039	0.44	0.21	0.44	0.16	0.18	0.00	0.00	0.35	-0.21	0.35	-0.07	-0.16	A-	A+	A+	A+	0.78	0.05	2.87	1.07	3.90	1.13
195	677985	10	4039	0.39	0.13	0.28	0.19	0.39	0.00	0.00	0.08	-0.14	0.10	-0.09	0.08	A+	A+	A-	A-	1.07	0.06	9.90	1.40	9.90	1.53
196	642833	10	4039	0.65	0.65	0.11	0.14	0.09	0.00	0.00	0.38	0.38	-0.21	-0.22	-0.13	A+	A-	A-	A-	-0.31	0.06	0.87	1.02	2.03	1.09
197	673874	10	4039	0.89	0.05	0.89	0.03	0.03	0.00	0.00	0.36	-0.21	0.36	-0.19	-0.20	A+	A-	A-	A+	-1.98	0.08	-3.44	0.83	-2.72	0.72
198	678416	10	4039	0.58	0.14	0.08	0.20	0.58	0.00	0.00	0.46	-0.23	-0.15	-0.26	0.46	A+	A+	A-	A-	0.06	0.05	-0.52	0.99	-1.24	0.96
199	680559	10	4039	0.61	0.07	0.15	0.16	0.61	0.00	0.00	0.48	-0.24	-0.27	-0.19	0.48	A+	A+	A-	A+	-0.11	0.06	-1.81	0.96	-2.50	0.91
200	678536	10	4039	0.63	0.05	0.11	0.21	0.63	0.00	0.00	0.50	-0.25	-0.33	-0.21	0.50	A+	A-	A-	A+	-0.19	0.06	-4.05	0.91	-3.74	0.86
201	682715	10	4039	0.48	0.25	0.48	0.12	0.15	0.00	0.00	0.47	-0.25	0.47	-0.27	-0.11	A+	A-	A-	A-	0.60	0.05	-1.96	0.96	-1.24	0.96
202	682713	10	4039	0.38	0.38	0.10	0.33	0.19	0.00	0.00	0.22	0.22	-0.27	0.04	-0.11	A-	A-	A+	A-	1.13	0.06	9.90	1.26	9.90	1.42
203	642381	10	4039	0.55	0.55	0.33	0.07	0.05	0.00	0.00	0.09	0.09	0.11	-0.23	-0.16	A+	A+	A+	A-	0.23	0.05	9.90	1.41	9.90	1.59
204	677856	10	4039	0.27	0.27	0.12	0.35	0.27	0.00	0.00	0.19	-0.01	-0.26	0.01	0.19	A-	A-	A+	A-	1.77	0.06	6.79	1.21	9.40	1.56
205	677883	10	4039	0.55	0.55	0.08	0.16	0.21	0.00	0.00	0.49	0.49	-0.24	-0.22	-0.24	A+	B-	A-	A+	0.25	0.05	-1.08	0.98	-0.70	0.98
206	673885	10	4039	0.50	0.50	0.15	0.21	0.14	0.00	0.00	0.46	0.46	-0.25	-0.20	-0.17	A+	A-	A-	A+	0.51	0.05	-0.52	0.99	-0.01	1.00
207	641191	10	4039	0.61	0.14	0.61	0.04	0.21	0.00	0.00	0.36	-0.26	0.36	-0.21	-0.10	A+	A+	A+	A+	-0.10	0.06	3.26	1.08	3.89	1.16
208	677877	10	4039	0.63	0.12	0.63	0.17	0.07	0.00	0.00	0.53	-0.21	0.53	-0.30	-0.27	A-	A-	A-	A+	-0.19	0.06	-4.48	0.90	-4.54	0.83
209	684525	11	3974	0.42	0.17	0.12	0.42	0.29	0.00	0.00	0.10	-0.08	-0.22	0.10	0.12	A+	A-	A+	A+	0.91	0.05	9.90	1.34	9.90	1.47
210	684524	11	3974	0.46	0.20	0.46	0.14	0.19	0.00	0.00	0.44	-0.16	0.44	-0.18	-0.23	A-	A+	A-	A-	0.69	0.05	-1.82	0.96	-0.49	0.99
211	673856	11	3974	0.57	0.16	0.57	0.15	0.12	0.00	0.00	0.14	-0.09	0.14	-0.10	0.01	A-	A-	A-	A+	0.14	0.05	9.90	1.36	9.90	1.51
212	642845	11	3974	0.56	0.56	0.17	0.18	0.09	0.00	0.00	0.28	0.28	-0.07	-0.15	-0.20	A-	A-	A-	A-	0.21	0.05	6.17	1.14	6.56	1.23
213	678298	11	3974	0.33	0.21	0.33	0.23	0.23	0.00	0.00	0.22	-0.09	0.22	-0.02	-0.14	A+	A+	A-	A+	1.38	0.06	5.56	1.14	8.47	1.37
214	678945	11	3974	0.42	0.42	0.25	0.18	0.14	0.00	0.00	0.41	0.41	-0.07	-0.21	-0.26	A-	A+	A-	A-	0.89	0.05	0.05	1.00	0.91	1.03
215	642834	11	3974	0.49	0.07	0.09	0.34	0.49	0.00	0.00	0.32	-0.24	-0.20	-0.08	0.32	A+	A-	A-	A+	0.55	0.05	4.30	1.09	4.50	1.14
216	678906	11	3974	0.32	0.17	0.30	0.20	0.32	0.00	0.00	0.23	-0.19	-0.01	-0.07	0.23	A+	A+	A+	A+	1.44	0.06	7.92	1.21	8.20	1.37
217	680886	11	3974	0.40	0.14	0.40	0.32	0.15	0.00	0.00	0.27	-0.18	0.27	-0.06	-0.11	A+	A+	A+	A+	1.03	0.06	5.46	1.13	5.62	1.19
218	680884	11	3974	0.24	0.33	0.29	0.24	0.13	0.00	0.00	0.06	0.06	-0.07	0.06	-0.07	A-	A-	A+	A+	1.97	0.06	7.18	1.24	9.90	1.73
219	678970	11	3974	0.48	0.17	0.22	0.48	0.13	0.00	0.00	0.37	-0.13	-0.20	0.37	-0.15	A-	A-	A-	A+	0.60	0.05	4.89	1.11	4.41	1.14
220	679979	11	3974	0.59	0.13	0.59	0.14	0.14	0.00	0.00	0.45	-0.20	0.45	-0.26	-0.17	A-	A-	A-	A+	0.05	0.06	0.30	1.01	-0.37	0.99
221	642354	11	3974	0.48	0.16	0.48	0.20	0.16	0.00	0.00	0.35	-0.13	0.35	-0.21	-0.12	A+	A+	A-	A+	0.61	0.05	2.69	1.06	2.89	1.09
222	677873	11	3974	0.66	0.07	0.21	0.05	0.66	0.00	0.00	0.51	-0.27	-0.27	-0.27	0.51	A-	A-	A-	A+	-0.35	0.06	-6.40	0.85	-4.42	0.82
223	681250	11	3974	0.61	0.07	0.23	0.61	0.09	0.00	0.00	0.38	-0.23	-0.16	0.38	-0.20	A-	A-	A-	A+	-0.05	0.06	1.73	1.04	2.22	1.08

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
224	678892	11	3974	0.81	0.08	0.81	0.06	0.05	0.00	0.00	0.48	-0.26	0.48	-0.27	-0.24	A+	A-	A-	B+	-1.31	0.07	-6.11	0.78	-5.66	0.62
225	684504	12	4019	0.69	0.17	0.07	0.69	0.08	0.00	0.00	0.48	-0.34	-0.20	0.48	-0.17	A+	A-	A-	A+	-0.55	0.06	-3.21	0.92	-3.08	0.85
226	684506	12	4019	0.60	0.18	0.10	0.11	0.60	0.00	0.00	0.52	-0.19	-0.25	-0.32	0.52	A+	A+	A-	A-	-0.09	0.05	-3.43	0.92	-3.60	0.87
227	678524	12	4019	0.39	0.18	0.25	0.39	0.18	0.00	0.00	0.36	-0.09	-0.26	0.36	-0.06	A-	A-	A-	A-	1.05	0.06	2.18	1.05	3.24	1.12
228	677978	12	4019	0.32	0.36	0.14	0.32	0.17	0.00	0.00	0.27	-0.04	-0.13	0.27	-0.15	A-	A+	A-	A+	1.44	0.06	5.52	1.15	8.51	1.41
229	679986	12	4019	0.57	0.12	0.57	0.24	0.07	0.00	0.00	0.41	-0.21	0.41	-0.18	-0.22	A-	A-	A-	A-	0.09	0.05	2.65	1.06	1.07	1.04
230	674117	12	4019	0.73	0.07	0.13	0.73	0.07	0.00	0.00	0.44	-0.25	-0.21	0.44	-0.24	A+	A-	A-	A+	-0.79	0.06	-2.38	0.93	-3.11	0.83
231	673862	12	4019	0.55	0.55	0.15	0.10	0.19	0.00	0.00	0.39	0.39	-0.13	-0.20	-0.21	A+	A-	A-	A-	0.19	0.05	2.75	1.06	1.65	1.06
232	674599	12	4019	0.49	0.17	0.49	0.18	0.16	0.00	0.00	0.50	-0.18	0.50	-0.30	-0.18	A-	A-	A-	A+	0.52	0.05	-1.82	0.96	-1.75	0.95
233	679659	12	4019	0.49	0.10	0.49	0.26	0.15	0.00	0.00	0.29	-0.19	0.29	-0.08	-0.13	A-	A-	A-	A-	0.49	0.05	8.88	1.21	8.49	1.29
234	679656	12	4019	0.33	0.33	0.18	0.33	0.15	0.00	0.00	0.17	0.00	-0.18	0.17	-0.03	A-	A-	A-	A-	1.34	0.06	8.69	1.24	9.44	1.43
235	674346	12	4019	0.59	0.14	0.11	0.16	0.59	0.00	0.00	0.45	-0.15	-0.21	-0.27	0.45	A-	A+	A+	A-	-0.03	0.05	0.19	1.00	0.67	1.03
236	683581	12	4019	0.52	0.10	0.21	0.52	0.17	0.00	0.00	0.39	-0.23	-0.12	0.39	-0.20	A-	A-	A+	A+	0.33	0.05	3.21	1.07	1.90	1.06
237	680874	12	4019	0.52	0.22	0.14	0.52	0.12	0.00	0.00	0.46	-0.19	-0.28	0.46	-0.15	A+	A-	A-	A+	0.36	0.05	0.07	1.00	-0.11	1.00
238	679963	12	4019	0.50	0.27	0.12	0.50	0.11	0.00	0.00	0.36	-0.16	-0.20	0.36	-0.15	A+	A+	A-	A-	0.44	0.05	3.84	1.09	2.34	1.08
239	683466	12	4019	0.58	0.15	0.14	0.12	0.58	0.00	0.00	0.46	-0.24	-0.23	-0.17	0.46	A+	A-	A-	A+	0.04	0.05	-1.60	0.96	-1.58	0.94
240	642357	12	4019	0.22	0.22	0.21	0.20	0.37	0.00	0.00	0.24	0.24	-0.12	-0.05	-0.06	A-	A+	A-	A-	2.06	0.06	3.21	1.11	7.96	1.57
241	643368	13	5809	0.48	0.20	0.48	0.10	0.21	0.00	0.00	0.23	0.02	0.23	-0.13	-0.19	A+	A-	A-	A+	0.68	0.05	9.90	1.23	9.62	1.32
242	681521	13	5809	0.32	0.35	0.32	0.13	0.19	0.00	0.00	0.26	-0.06	0.26	-0.17	-0.08	A-	A+	A-	A+	1.55	0.06	4.46	1.12	5.88	1.27
243	681247	13	5809	0.62	0.62	0.15	0.08	0.14	0.00	0.00	0.56	0.56	-0.28	-0.30	-0.25	A+	A-	A+	A-	-0.06	0.06	-7.78	0.83	-7.18	0.75
244	677979	13	5809	0.26	0.26	0.30	0.21	0.24	0.00	0.00	0.21	0.21	0.02	-0.19	-0.04	A+	A+	A+	A+	1.91	0.06	1.52	1.05	7.09	1.41
245	682774	13	5809	0.54	0.30	0.09	0.07	0.54	0.00	0.00	0.30	-0.10	-0.19	-0.19	0.30	A-	A+	A+	A-	0.36	0.05	6.12	1.13	3.79	1.12
246	678540	13	5809	0.58	0.09	0.58	0.21	0.12	0.00	0.00	0.47	-0.23	0.47	-0.26	-0.18	A-	A+	A-	A-	0.17	0.05	-3.15	0.93	-3.55	0.88
247	680193	13	5809	0.38	0.42	0.10	0.38	0.11	0.00	0.00	0.31	-0.09	-0.18	0.31	-0.16	A-	A-	A+	A-	1.22	0.06	4.49	1.11	4.87	1.18
248	678903	13	5809	0.34	0.10	0.34	0.37	0.18	0.00	0.00	0.38	-0.19	0.38	-0.25	0.00	A-	A+	A-	A-	1.40	0.06	1.26	1.03	4.86	1.20
249	682711	13	5809	0.51	0.19	0.24	0.51	0.07	0.00	0.00	0.25	-0.18	-0.01	0.25	-0.18	A+	A-	A-	A-	0.55	0.05	9.50	1.21	9.02	1.30
250	682712	13	5809	0.55	0.55	0.09	0.12	0.24	0.00	0.00	0.38	0.38	-0.26	-0.21	-0.12	A-	A+	A-	A+	0.31	0.05	1.42	1.03	0.54	1.02
251	677878	13	5809	0.44	0.14	0.07	0.44	0.35	0.00	0.00	0.18	-0.26	-0.25	0.18	0.14	B-	A-	A-	A+	0.87	0.05	9.90	1.29	9.90	1.35
252	678901	13	5809	0.32	0.16	0.38	0.14	0.32	0.00	0.00	0.35	-0.22	-0.07	-0.15	0.35	A+	A+	A+	A+	1.50	0.06	0.04	1.00	2.19	1.09
253	680873	13	5809	0.44	0.44	0.18	0.24	0.14	0.00	0.00	0.41	0.41	-0.17	-0.16	-0.19	A+	A-	A-	A+	0.89	0.05	0.62	1.01	1.21	1.04
254	678984	13	5809	0.31	0.19	0.32	0.17	0.31	0.00	0.00	0.29	-0.06	-0.06	-0.22	0.29	A-	A-	A-	A-	1.56	0.06	3.11	1.09	6.12	1.28
255	677855	13	5809	0.59	0.59	0.04	0.05	0.31	0.00	0.00	0.49	0.49	-0.21	-0.19	-0.33	A-	A-	A-	A+	0.10	0.05	-2.59	0.94	-2.15	0.93

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
256	642886	13	5809	0.22	0.06	0.06	0.66	0.22	0.00	0.00	0.15	-0.11	-0.27	0.06	0.15	A+	A+	A+	A-	2.15	0.06	6.45	1.24	9.53	1.69
257	678941	14	5842	0.41	0.19	0.10	0.30	0.41	0.00	0.00	0.40	-0.05	-0.17	-0.27	0.40	A+	A+	A+	A+	1.04	0.06	1.70	1.04	2.23	1.08
258	684501	14	5842	0.45	0.26	0.13	0.15	0.45	0.00	0.00	0.49	-0.16	-0.27	-0.23	0.49	A-	A+	A-	A+	0.81	0.05	-4.39	0.90	-3.17	0.90
259	678546	14	5842	0.34	0.39	0.34	0.18	0.08	0.00	0.00	0.25	-0.06	0.25	-0.08	-0.21	A-	A+	A+	A-	1.39	0.06	5.39	1.14	6.64	1.29
260	673873	14	5842	0.60	0.12	0.17	0.60	0.11	0.00	0.00	0.52	-0.27	-0.20	0.52	-0.29	A+	A+	A-	A+	0.03	0.06	-5.35	0.88	-4.75	0.83
261	677987	14	5842	0.46	0.09	0.19	0.26	0.46	0.00	0.00	0.34	-0.25	-0.20	-0.03	0.34	A-	A+	A-	A+	0.78	0.05	4.95	1.11	4.73	1.16
262	642344	14	5842	0.49	0.14	0.11	0.26	0.49	0.00	0.00	0.31	-0.32	-0.20	0.04	0.31	A-	A-	A+	A+	0.61	0.05	7.02	1.16	6.37	1.22
263	680242	14	5842	0.63	0.07	0.63	0.10	0.20	0.00	0.00	0.43	-0.27	0.43	-0.34	-0.09	A-	A-	A-	A-	-0.11	0.06	0.25	1.01	-0.57	0.98
264	677976	14	5842	0.68	0.07	0.68	0.11	0.14	0.00	0.00	0.41	-0.26	0.41	-0.24	-0.14	A+	A-	A-	A+	-0.41	0.06	0.50	1.01	0.98	1.05
265	680887	14	5842	0.39	0.39	0.23	0.12	0.26	0.00	0.00	0.31	0.31	-0.13	-0.24	-0.05	A-	A-	A-	A-	1.12	0.06	5.98	1.15	5.43	1.21
266	680885	14	5842	0.33	0.33	0.23	0.28	0.16	0.00	0.00	0.34	0.34	-0.11	-0.10	-0.19	A+	A-	A+	A+	1.44	0.06	3.12	1.08	5.72	1.26
267	677854	14	5842	0.73	0.73	0.11	0.11	0.04	0.00	0.00	0.48	0.48	-0.24	-0.28	-0.24	A+	A-	A+	A-	-0.71	0.06	-2.12	0.94	-1.15	0.93
268	679982	14	5842	0.50	0.11	0.21	0.50	0.17	0.00	0.00	0.35	-0.25	-0.11	0.35	-0.14	A+	A-	A-	A-	0.56	0.05	4.38	1.10	3.14	1.10
269	679254	14	5842	0.66	0.09	0.12	0.13	0.66	0.00	0.00	0.51	-0.27	-0.26	-0.22	0.51	A-	A-	A-	A+	-0.30	0.06	-3.71	0.91	-3.66	0.84
270	683555	14	5842	0.62	0.62	0.08	0.06	0.23	0.00	0.00	0.46	0.46	-0.23	-0.22	-0.25	A-	A-	A-	A+	-0.07	0.06	-0.39	0.99	0.35	1.01
271	643346	14	5842	0.55	0.07	0.20	0.18	0.55	0.00	0.00	0.43	-0.25	-0.09	-0.29	0.43	A+	A-	A-	A+	0.31	0.05	3.35	1.08	2.60	1.09
272	679255	14	5842	0.71	0.71	0.09	0.09	0.11	0.00	0.00	0.47	0.47	-0.29	-0.24	-0.19	A-	A-	A-	A+	-0.59	0.06	-3.97	0.89	-2.88	0.85
273	680245	15	5869	0.36	0.36	0.24	0.23	0.16	0.00	0.00	0.37	0.37	0.09	-0.32	-0.22	A+	A-	A-	A-	1.30	0.06	3.07	1.08	4.22	1.17
274	680195	15	5869	0.71	0.05	0.05	0.20	0.71	0.00	0.00	0.46	-0.24	-0.28	-0.25	0.46	A+	A-	A-	A+	-0.55	0.06	-4.29	0.89	-3.88	0.81
275	673872	15	5869	0.49	0.25	0.12	0.49	0.14	0.00	0.00	0.44	-0.18	-0.27	0.44	-0.16	A+	A-	A+	A-	0.62	0.05	1.14	1.02	1.63	1.05
276	680558	15	5869	0.47	0.20	0.21	0.47	0.13	0.00	0.00	0.43	-0.15	-0.27	0.43	-0.14	A+	A+	A-	A+	0.72	0.05	0.09	1.00	0.57	1.02
277	678871	15	5869	0.50	0.22	0.50	0.17	0.11	0.00	0.00	0.30	-0.08	0.30	-0.11	-0.25	A-	A+	A+	A-	0.58	0.05	8.62	1.20	8.17	1.27
278	678868	15	5869	0.58	0.22	0.11	0.08	0.58	0.00	0.00	0.33	-0.07	-0.27	-0.18	0.33	A-	A-	A-	A+	0.15	0.05	5.93	1.14	3.38	1.12
279	678541	15	5869	0.49	0.49	0.17	0.20	0.14	0.00	0.00	0.38	0.38	-0.22	-0.18	-0.10	A+	A+	A-	A-	0.62	0.05	2.53	1.06	3.70	1.12
280	678876	15	5869	0.43	0.22	0.43	0.14	0.21	0.00	0.00	0.26	-0.13	0.26	-0.19	-0.02	A+	A+	A+	A+	0.96	0.05	9.79	1.23	9.90	1.36
281	682407	15	5869	0.38	0.12	0.38	0.32	0.17	0.00	0.00	0.36	-0.14	0.36	-0.11	-0.19	A-	A-	A-	A-	1.21	0.06	1.71	1.04	3.78	1.14
282	684511	15	5869	0.71	0.08	0.14	0.71	0.07	0.00	0.00	0.50	-0.20	-0.31	0.50	-0.25	A-	B-	A-	A-	-0.57	0.06	-3.42	0.91	-3.00	0.85
283	679260	15	5869	0.60	0.60	0.12	0.25	0.02	0.00	0.00	0.45	0.45	-0.22	-0.27	-0.19	A-	A-	A-	A-	0.04	0.05	-0.85	0.98	-1.38	0.95
284	678968	15	5869	0.74	0.10	0.06	0.09	0.74	0.00	0.00	0.49	-0.24	-0.28	-0.24	0.49	A+	B-	B-	A+	-0.76	0.06	-4.57	0.87	-4.73	0.75
285	677853	15	5869	0.67	0.09	0.16	0.67	0.07	0.00	0.00	0.42	-0.20	-0.23	0.42	-0.20	A+	A-	A-	A+	-0.33	0.06	-1.67	0.96	-1.52	0.93
286	679962	15	5869	0.44	0.12	0.32	0.12	0.44	0.00	0.00	0.43	-0.18	-0.23	-0.14	0.43	A+	A+	A+	A-	0.86	0.05	0.49	1.01	1.94	1.06
287	677863	15	5869	0.45	0.18	0.17	0.19	0.45	0.00	0.00	0.38	-0.14	-0.07	-0.27	0.38	A+	A+	A+	A+	0.84	0.05	2.03	1.04	1.76	1.06

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
288	677865	15	5869	0.50	0.50	0.22	0.15	0.13	0.00	0.00	0.40	0.40	-0.13	-0.19	-0.22	A+	A+	A-	A-	0.55	0.05	1.15	1.02	0.97	1.03
289	679676	16	5843	0.50	0.24	0.13	0.50	0.13	0.00	0.00	0.36	-0.19	-0.22	0.36	-0.08	A-	A-	A-	A+	0.57	0.05	2.06	1.04	1.78	1.05
290	679677	16	5843	0.53	0.53	0.14	0.19	0.14	0.00	0.00	0.46	0.46	-0.20	-0.25	-0.18	A+	A+	A-	A-	0.43	0.05	-2.80	0.94	-2.85	0.91
291	674083	16	5843	0.59	0.15	0.11	0.59	0.14	0.00	0.00	0.39	-0.18	-0.21	0.39	-0.17	A+	A-	A-	A+	0.10	0.05	1.90	1.04	0.49	1.02
292	674084	16	5843	0.74	0.12	0.74	0.06	0.08	0.00	0.00	0.35	-0.15	0.35	-0.21	-0.20	A-	B-	B-	A+	-0.71	0.06	0.10	1.00	1.07	1.06
293	674135	16	5843	0.73	0.09	0.05	0.73	0.14	0.00	0.00	0.41	-0.27	-0.24	0.41	-0.15	A+	A-	A-	A+	-0.64	0.06	-0.88	0.98	-1.84	0.90
294	678936	16	5843	0.71	0.71	0.08	0.10	0.11	0.00	0.00	0.55	0.55	-0.29	-0.32	-0.24	A+	A-	A-	A+	-0.53	0.06	-6.06	0.85	-6.34	0.71
295	677969	16	5843	0.58	0.58	0.19	0.14	0.09	0.00	0.00	0.46	0.46	-0.19	-0.23	-0.24	A+	A-	A-	A+	0.18	0.05	-1.94	0.96	-2.22	0.93
296	678940	16	5843	0.44	0.14	0.24	0.18	0.44	0.00	0.00	0.44	-0.19	-0.23	-0.13	0.44	A-	A-	A-	A-	0.88	0.05	-2.84	0.94	-1.76	0.95
297	679734	16	5843	0.64	0.08	0.20	0.64	0.08	0.00	0.00	0.37	-0.24	-0.15	0.37	-0.20	A-	A-	A-	A-	-0.14	0.06	2.68	1.06	3.03	1.13
298	680300	16	5843	0.22	0.15	0.42	0.21	0.22	0.00	0.00	0.24	-0.11	0.02	-0.16	0.24	A-	A-	A+	A-	2.15	0.06	1.93	1.07	5.48	1.36
299	673878	16	5843	0.72	0.11	0.72	0.07	0.10	0.00	0.00	0.32	-0.10	0.32	-0.17	-0.22	A+	A-	A-	A+	-0.62	0.06	1.84	1.05	1.87	1.10
300	678890	16	5843	0.50	0.50	0.05	0.24	0.20	0.00	0.00	-0.03	-0.03	-0.23	0.02	0.14	A+	A+	A-	A+	0.55	0.05	9.90	1.53	9.90	1.77
301	671326	16	5843	0.53	0.22	0.11	0.53	0.15	0.00	0.00	0.32	-0.12	-0.20	0.32	-0.12	A-	A-	A+	A+	0.44	0.05	6.14	1.14	5.05	1.16
302	674126	16	5843	0.71	0.13	0.71	0.10	0.06	0.00	0.00	0.39	-0.15	0.39	-0.27	-0.18	A+	A-	A-	A+	-0.53	0.06	0.58	1.02	1.38	1.07
303	677882	16	5843	0.55	0.55	0.18	0.09	0.18	0.00	0.00	0.50	0.50	-0.18	-0.27	-0.26	A-	A-	A-	A+	0.32	0.05	-2.54	0.95	-2.42	0.92
304	642386	16	5843	0.38	0.27	0.23	0.12	0.38	0.00	0.00	0.29	-0.11	-0.12	-0.11	0.29	A-	A-	A+	A+	1.20	0.06	4.40	1.11	5.25	1.19
305	684509	17	5845	0.48	0.09	0.10	0.48	0.33	0.00	0.00	0.33	-0.24	-0.20	0.33	-0.07	A-	A-	A+	A+	0.70	0.06	3.80	1.09	3.32	1.11
306	684508	17	5845	0.15	0.10	0.15	0.60	0.15	0.00	0.00	0.15	-0.17	-0.27	0.20	0.15	B-	A-	A-	A+	2.78	0.08	1.55	1.08	8.35	1.94
307	678965	17	5845	0.46	0.46	0.21	0.10	0.23	0.00	0.00	0.40	0.40	-0.18	-0.29	-0.08	A-	A-	A-	A-	0.79	0.06	1.04	1.02	1.16	1.04
308	674343	17	5845	0.69	0.11	0.10	0.69	0.10	0.00	0.00	0.41	-0.16	-0.26	0.41	-0.19	A+	A-	A-	A+	-0.41	0.06	-0.23	0.99	-1.08	0.94
309	678415	17	5845	0.67	0.07	0.17	0.09	0.67	0.00	0.00	0.48	-0.26	-0.29	-0.18	0.48	A+	A-	A-	A+	-0.31	0.06	-3.31	0.92	-2.54	0.88
310	642337	17	5845	0.44	0.14	0.09	0.44	0.33	0.00	0.00	0.30	-0.17	-0.32	0.30	0.00	A-	A-	A-	A+	0.90	0.06	4.59	1.11	5.72	1.20
311	673850	17	5845	0.43	0.22	0.43	0.15	0.20	0.00	0.00	0.37	-0.23	0.37	-0.29	0.04	A-	A+	A-	A-	0.97	0.06	1.96	1.05	3.19	1.11
312	678875	17	5845	0.76	0.07	0.09	0.76	0.07	0.00	0.00	0.46	-0.27	-0.25	0.46	-0.20	A+	A-	B-	A+	-0.85	0.06	-1.93	0.94	-1.33	0.91
313	682403	17	5845	0.44	0.07	0.44	0.27	0.22	0.00	0.00	0.31	-0.17	0.31	-0.26	0.02	A-	A-	A-	A-	0.89	0.06	6.18	1.15	6.51	1.23
314	682405	17	5845	0.54	0.17	0.09	0.54	0.20	0.00	0.00	0.42	-0.26	-0.25	0.42	-0.10	A-	A-	A-	A-	0.39	0.06	-0.94	0.98	-1.35	0.95
315	674121	17	5845	0.72	0.05	0.17	0.72	0.06	0.00	0.00	0.46	-0.16	-0.36	0.46	-0.14	A+	A-	A-	A-	-0.58	0.06	-2.12	0.94	-0.80	0.95
316	641284	17	5845	0.39	0.28	0.15	0.39	0.18	0.00	0.00	0.22	0.03	-0.19	0.22	-0.13	A-	A-	A-	A+	1.16	0.06	8.01	1.20	8.02	1.31
317	678979	17	5845	0.46	0.46	0.28	0.08	0.19	0.00	0.00	0.35	0.35	-0.11	-0.22	-0.18	A+	A-	A-	A-	0.79	0.06	1.30	1.03	1.59	1.05
318	679973	17	5845	0.70	0.06	0.70	0.06	0.17	0.00	0.00	0.45	-0.25	0.45	-0.29	-0.20	A+	A-	A-	A-	-0.49	0.06	-1.41	0.96	-0.62	0.97
319	674166	17	5845	0.53	0.13	0.20	0.14	0.53	0.00	0.00	0.43	-0.12	-0.24	-0.23	0.43	A+	A-	A-	A-	0.44	0.06	-1.01	0.98	-0.67	0.98

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
320	678891	17	5845	0.26	0.26	0.32	0.28	0.13	0.00	0.00	0.14	0.14	0.03	-0.01	-0.20	A-	A+	A+	A-	1.90	0.06	4.96	1.16	8.58	1.53
321	679680	18	5823	0.13	0.21	0.57	0.09	0.13	0.00	0.00	0.18	-0.20	0.11	-0.13	0.18	A-	A-	A+	A-	2.85	0.07	-0.35	0.98	4.33	1.44
322	679673	18	5823	0.64	0.64	0.08	0.18	0.10	0.00	0.00	0.50	0.50	-0.18	-0.29	-0.26	A+	A-	A+	A+	-0.17	0.06	-3.35	0.92	-4.04	0.84
323	678938	18	5823	0.66	0.06	0.18	0.66	0.10	0.00	0.00	0.47	-0.21	-0.28	0.47	-0.21	A-	A-	A-	A-	-0.27	0.06	-2.76	0.93	-2.61	0.89
324	682775	18	5823	0.44	0.44	0.19	0.21	0.16	0.00	0.00	0.32	0.32	-0.18	0.00	-0.24	A-	A-	A-	A+	0.89	0.05	4.97	1.11	5.35	1.17
325	682771	18	5823	0.32	0.16	0.34	0.32	0.18	0.00	0.00	0.19	-0.04	0.03	0.19	-0.23	A-	A-	A-	A+	1.52	0.06	8.19	1.22	9.90	1.48
326	680196	18	5823	0.36	0.12	0.45	0.36	0.07	0.00	0.00	0.31	-0.27	-0.01	0.31	-0.19	A-	A-	A-	A-	1.31	0.06	3.70	1.09	5.88	1.23
327	642865	18	5823	0.46	0.24	0.15	0.46	0.15	0.00	0.00	0.32	-0.12	-0.17	0.32	-0.13	A-	A+	A-	A+	0.74	0.05	5.90	1.13	5.56	1.18
328	642347	18	5823	0.41	0.21	0.23	0.15	0.41	0.00	0.00	0.36	-0.07	-0.06	-0.34	0.36	A-	A+	A-	A-	1.03	0.05	2.33	1.05	2.62	1.09
329	680888	18	5823	0.56	0.11	0.14	0.19	0.56	0.00	0.00	0.49	-0.17	-0.23	-0.27	0.49	A+	A-	A+	A-	0.27	0.05	-2.62	0.94	-2.64	0.92
330	680889	18	5823	0.53	0.53	0.37	0.06	0.04	0.00	0.00	0.22	0.22	-0.03	-0.22	-0.21	A-	A-	A-	A-	0.43	0.05	8.60	1.20	7.50	1.25
331	642356	18	5823	0.79	0.06	0.79	0.08	0.06	0.00	0.00	0.35	-0.18	0.35	-0.22	-0.15	A+	A-	A-	A+	-1.05	0.06	-0.47	0.98	0.72	1.05
332	674100	18	5823	0.49	0.49	0.24	0.15	0.12	0.00	0.00	0.42	0.42	-0.15	-0.22	-0.20	A-	A+	A-	A-	0.63	0.05	-0.11	1.00	-0.41	0.99
333	677852	18	5823	0.39	0.23	0.18	0.39	0.20	0.00	0.00	0.13	-0.13	-0.11	0.13	0.09	A-	A-	A-	A-	1.15	0.05	9.90	1.33	9.90	1.49
334	642380	18	5823	0.62	0.14	0.15	0.62	0.09	0.00	0.00	0.33	-0.29	-0.09	0.33	-0.10	A-	A-	A-	A-	-0.05	0.05	5.19	1.12	4.95	1.20
335	681520	18	5823	0.45	0.45	0.29	0.14	0.12	0.00	0.00	0.29	0.29	-0.15	-0.10	-0.13	A+	A+	A+	A+	0.82	0.05	6.92	1.16	6.57	1.21
336	678989	18	5823	0.57	0.12	0.57	0.19	0.13	0.00	0.00	0.39	-0.13	0.39	-0.24	-0.17	A-	A-	A-	A+	0.23	0.05	1.08	1.02	1.84	1.06
337	683617	19	5797	0.38	0.38	0.13	0.23	0.26	0.00	0.00	0.30	0.30	-0.20	0.00	-0.18	A-	A-	A-	A-	1.21	0.06	4.50	1.11	5.52	1.21
338	683610	19	5797	0.42	0.13	0.24	0.21	0.42	0.00	0.00	0.39	-0.17	-0.12	-0.20	0.39	A-	A+	A-	A+	0.99	0.05	2.56	1.06	3.06	1.11
339	673892	19	5797	0.63	0.63	0.04	0.15	0.18	0.00	0.00	0.33	0.33	-0.13	-0.32	-0.05	A+	A-	A-	A-	-0.10	0.06	3.83	1.09	2.44	1.10
340	678937	19	5797	0.55	0.55	0.21	0.07	0.17	0.00	0.00	0.47	0.47	-0.21	-0.26	-0.21	A-	A+	A+	A+	0.29	0.05	-3.42	0.93	-3.14	0.90
341	680560	19	5797	0.63	0.07	0.11	0.19	0.63	0.00	0.00	0.56	-0.21	-0.29	-0.32	0.56	A+	A-	A-	A-	-0.12	0.06	-7.66	0.83	-6.46	0.75
342	677982	19	5797	0.50	0.23	0.13	0.50	0.14	0.00	0.00	0.39	-0.14	-0.22	0.39	-0.17	A-	A-	A-	A+	0.57	0.05	4.32	1.10	3.86	1.13
343	678535	19	5797	0.65	0.18	0.08	0.10	0.65	0.00	0.00	0.53	-0.26	-0.29	-0.25	0.53	A+	A-	A-	A+	-0.20	0.06	-5.98	0.87	-5.26	0.79
344	678532	19	5797	0.54	0.54	0.16	0.11	0.19	0.00	0.00	0.34	0.34	-0.18	-0.26	-0.06	A-	A-	A+	A+	0.38	0.05	5.10	1.11	4.11	1.14
345	682411	19	5797	0.37	0.37	0.19	0.22	0.22	0.00	0.00	0.34	0.34	-0.16	-0.18	-0.06	A+	A-	A-	A-	1.23	0.06	1.93	1.05	3.97	1.15
346	682408	19	5797	0.63	0.12	0.15	0.63	0.10	0.00	0.00	0.38	-0.17	-0.25	0.38	-0.13	A+	A-	A-	A-	-0.14	0.06	3.15	1.07	1.38	1.06
347	679976	19	5797	0.57	0.57	0.18	0.16	0.08	0.00	0.00	0.26	0.26	-0.12	-0.10	-0.16	A+	A-	A+	A+	0.20	0.05	7.12	1.16	5.13	1.19
348	681523	19	5797	0.62	0.13	0.62	0.13	0.11	0.00	0.00	0.45	-0.25	0.45	-0.23	-0.17	A+	A-	A-	A-	-0.06	0.05	-1.48	0.97	-1.97	0.92
349	678988	19	5797	0.60	0.60	0.15	0.15	0.10	0.00	0.00	0.39	0.39	-0.16	-0.19	-0.21	A-	A-	A-	A-	0.05	0.05	1.68	1.04	0.93	1.04
350	678977	19	5797	0.54	0.28	0.54	0.08	0.09	0.00	0.00	0.32	-0.06	0.32	-0.23	-0.24	A+	A-	A-	A-	0.34	0.05	5.55	1.12	4.23	1.15
351	641293	19	5797	0.68	0.14	0.10	0.68	0.08	0.00	0.00	0.49	-0.24	-0.26	0.49	-0.24	A+	A-	A-	A-	-0.37	0.06	-2.48	0.94	-2.49	0.88

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Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
352	642878	19	5797	0.47	0.15	0.24	0.47	0.14	0.00	0.00	0.25	-0.12	-0.04	0.25	-0.18	A+	A-	A-	A+	0.72	0.05	9.90	1.25	8.94	1.31
353	679666	20	5872	0.73	0.73	0.11	0.10	0.07	0.00	0.00	0.45	0.45	-0.24	-0.27	-0.18	A-	A-	A-	A-	-0.67	0.06	-0.41	0.99	-1.96	0.90
354	679663	20	5872	0.58	0.18	0.58	0.13	0.11	0.00	0.00	0.45	-0.16	0.45	-0.26	-0.23	A+	A-	A-	A-	0.15	0.05	0.42	1.01	0.32	1.01
355	671328	20	5872	0.71	0.07	0.14	0.08	0.71	0.00	0.00	0.50	-0.25	-0.25	-0.28	0.50	A+	A-	A-	A-	-0.58	0.06	-4.47	0.88	-4.73	0.79
356	678946	20	5872	0.63	0.16	0.13	0.63	0.09	0.00	0.00	0.46	-0.23	-0.23	0.46	-0.22	A-	A-	A-	A+	-0.10	0.06	-2.04	0.95	-3.18	0.89
357	678418	20	5872	0.51	0.51	0.10	0.30	0.09	0.00	0.00	0.45	0.45	-0.19	-0.23	-0.22	A+	A-	A-	A-	0.50	0.05	-1.49	0.97	-0.98	0.97
358	677991	20	5872	0.47	0.18	0.23	0.47	0.12	0.00	0.00	0.35	-0.14	-0.10	0.35	-0.23	A-	A+	A+	A+	0.70	0.05	4.58	1.10	4.22	1.12
359	678942	20	5872	0.69	0.11	0.12	0.69	0.08	0.00	0.00	0.51	-0.27	-0.27	0.51	-0.24	A+	A-	A-	A-	-0.45	0.06	-5.15	0.87	-5.71	0.77
360	678866	20	5872	0.44	0.44	0.07	0.19	0.31	0.00	0.00	0.10	0.10	-0.13	-0.08	0.03	A+	A-	A-	A-	0.89	0.05	9.90	1.32	9.90	1.44
361	682717	20	5872	0.44	0.20	0.44	0.15	0.21	0.00	0.00	0.32	-0.06	0.32	-0.18	-0.17	A+	A-	A-	A-	0.86	0.05	4.11	1.09	4.63	1.14
362	682716	20	5872	0.67	0.09	0.12	0.12	0.67	0.00	0.00	0.40	-0.27	-0.21	-0.13	0.40	A+	A-	A-	A-	-0.30	0.06	0.92	1.02	2.44	1.10
363	680249	20	5872	0.55	0.18	0.11	0.55	0.16	0.00	0.00	0.19	-0.08	-0.21	0.19	0.01	A+	A-	A-	A-	0.32	0.05	9.57	1.21	7.81	1.25
364	678900	20	5872	0.64	0.64	0.14	0.15	0.07	0.00	0.00	0.43	0.43	-0.21	-0.25	-0.18	A+	A+	A+	A-	-0.15	0.06	-3.21	0.93	-3.06	0.89
365	677884	20	5872	0.39	0.43	0.06	0.39	0.12	0.00	0.00	0.16	0.11	-0.26	0.16	-0.21	A-	A-	A+	A+	1.13	0.06	9.90	1.29	9.90	1.42
366	641211	20	5872	0.42	0.42	0.16	0.28	0.13	0.00	0.00	0.28	0.28	-0.13	-0.08	-0.16	A+	A+	A+	A-	0.97	0.05	7.80	1.18	8.95	1.30
367	641192	20	5872	0.54	0.16	0.21	0.54	0.09	0.00	0.00	0.43	-0.18	-0.21	0.43	-0.20	A+	A-	A+	A+	0.36	0.05	-0.26	0.99	-0.02	1.00
368	677880	20	5872	0.34	0.17	0.15	0.34	0.34	0.00	0.00	0.07	-0.05	-0.16	0.09	0.07	A+	A+	A+	A-	1.40	0.06	9.90	1.34	9.90	1.54
369	680134	21	5786	0.69	0.09	0.69	0.08	0.14	0.00	0.00	0.47	-0.29	0.47	-0.18	-0.24	A-	A-	A-	A-	-0.44	0.06	-3.31	0.92	-2.87	0.87
370	679669	21	5786	0.67	0.11	0.10	0.12	0.67	0.00	0.00	0.54	-0.22	-0.28	-0.31	0.54	A+	A-	A-	A+	-0.29	0.06	-6.67	0.85	-6.82	0.74
371	677974	21	5786	0.50	0.39	0.50	0.02	0.09	0.00	0.00	0.38	-0.24	0.38	-0.15	-0.19	A+	A+	A+	A-	0.58	0.05	1.84	1.04	1.74	1.05
372	673863	21	5786	0.30	0.11	0.16	0.43	0.30	0.00	0.00	0.22	-0.18	0.04	-0.11	0.22	A+	A-	A+	A+	1.65	0.06	6.59	1.18	6.51	1.31
373	673891	21	5786	0.50	0.19	0.10	0.50	0.21	0.00	0.00	0.35	-0.06	-0.18	0.35	-0.24	A+	A-	A-	A+	0.58	0.05	4.44	1.10	4.38	1.13
374	678862	21	5786	0.37	0.37	0.12	0.36	0.15	0.00	0.00	0.45	0.45	-0.29	-0.13	-0.16	A-	A+	A+	A+	1.23	0.05	-1.71	0.96	0.90	1.03
375	673852	21	5786	0.50	0.18	0.50	0.13	0.18	0.00	0.00	0.26	-0.15	0.26	-0.29	0.06	A-	A+	A+	A+	0.57	0.05	9.43	1.21	8.79	1.28
376	643783	21	5786	0.26	0.26	0.20	0.31	0.22	0.00	0.00	0.04	0.04	-0.03	0.00	-0.01	A+	A-	A-	A+	1.87	0.06	9.90	1.43	9.90	1.92
377	678987	21	5786	0.52	0.52	0.17	0.20	0.11	0.00	0.00	0.46	0.46	-0.23	-0.17	-0.24	A-	A-	A-	A+	0.50	0.05	-1.49	0.97	-1.06	0.97
378	683582	21	5786	0.75	0.75	0.10	0.11	0.05	0.00	0.00	0.54	0.54	-0.31	-0.30	-0.24	A-	A-	A-	A+	-0.75	0.06	-7.01	0.81	-7.06	0.65
379	679258	21	5786	0.63	0.14	0.63	0.12	0.10	0.00	0.00	0.47	-0.21	0.47	-0.23	-0.24	A+	A+	A-	A-	-0.10	0.05	-1.55	0.96	-1.34	0.95
380	643396	21	5786	0.36	0.36	0.20	0.36	0.09	0.00	0.00	0.30	0.03	-0.32	0.30	-0.10	A+	A-	A+	A-	1.33	0.06	5.10	1.12	5.01	1.19
381	643388	21	5786	0.40	0.24	0.40	0.22	0.14	0.00	0.00	0.28	-0.03	0.28	-0.20	-0.12	A+	A-	A+	A+	1.08	0.05	5.89	1.14	7.61	1.26
382	677867	21	5786	0.40	0.16	0.14	0.29	0.40	0.00	0.00	0.26	-0.06	-0.24	-0.05	0.26	A-	A+	A-	A-	1.07	0.05	6.80	1.16	6.95	1.24
383	643403	21	5786	0.68	0.68	0.11	0.11	0.10	0.00	0.00	0.44	0.44	-0.25	-0.25	-0.15	A+	A-	A-	A+	-0.36	0.06	-2.44	0.94	-2.78	0.88

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
384	642895	21	5786	0.13	0.27	0.27	0.33	0.13	0.00	0.00	-0.03	-0.07	-0.02	0.11	-0.03	A+	A+	A+	A-	2.92	0.08	3.04	1.15	9.90	2.50
385	644730	22	5795	0.43	0.17	0.16	0.43	0.25	0.00	0.00	0.21	-0.06	-0.19	0.21	-0.03	A+	A+	A-	A+	0.93	0.06	8.21	1.20	8.16	1.29
386	644773	22	5795	0.49	0.10	0.49	0.12	0.29	0.00	0.00	0.21	-0.21	0.21	-0.20	0.06	A-	A+	A-	A-	0.58	0.06	9.87	1.24	9.54	1.33
387	680201	22	5795	0.65	0.12	0.14	0.65	0.09	0.00	0.00	0.47	-0.25	-0.22	0.47	-0.23	A-	A+	A+	A-	-0.23	0.06	-3.43	0.91	-3.93	0.84
388	683858	22	5795	0.46	0.31	0.12	0.46	0.11	0.00	0.00	0.17	0.12	-0.27	0.17	-0.16	A-	A+	A-	A+	0.75	0.06	9.90	1.25	9.08	1.31
389	643782	22	5795	0.47	0.06	0.25	0.22	0.47	0.00	0.00	0.28	-0.24	-0.02	-0.17	0.28	A-	A-	A-	A+	0.72	0.06	5.92	1.14	5.17	1.17
390	673853	22	5795	0.54	0.54	0.17	0.10	0.19	0.00	0.00	0.50	0.50	-0.21	-0.28	-0.22	A-	A-	A-	A-	0.37	0.06	-3.62	0.92	-3.80	0.88
391	679211	22	5795	0.60	0.11	0.08	0.60	0.20	0.00	0.00	0.38	-0.24	-0.26	0.38	-0.10	A+	A-	A-	A+	0.03	0.06	0.54	1.01	-0.51	0.98
392	678299	22	5795	0.30	0.23	0.35	0.12	0.30	0.00	0.00	0.21	-0.15	0.08	-0.21	0.21	A-	A-	A-	A+	1.63	0.06	6.09	1.18	8.16	1.43
393	682199	22	5795	0.36	0.36	0.06	0.19	0.38	0.00	0.00	0.31	0.31	-0.22	-0.09	-0.12	A-	A+	A+	A+	1.25	0.06	2.90	1.07	4.18	1.16
394	682201	22	5795	0.48	0.12	0.48	0.12	0.28	0.00	0.00	0.24	-0.28	0.24	-0.21	0.09	A-	A-	A-	A-	0.62	0.06	9.90	1.25	9.90	1.36
395	673883	22	5795	0.38	0.38	0.16	0.34	0.13	0.00	0.00	0.17	0.17	-0.17	0.00	-0.06	A-	A+	A-	A+	1.19	0.06	8.67	1.23	8.69	1.35
396	677885	22	5795	0.47	0.07	0.20	0.26	0.47	0.00	0.00	0.38	-0.25	-0.25	-0.06	0.38	A-	A+	A+	A+	0.68	0.06	2.77	1.06	2.67	1.08
397	679981	22	5795	0.31	0.33	0.31	0.09	0.26	0.00	0.00	0.19	0.10	0.19	-0.14	-0.21	A-	A-	A-	A-	1.54	0.06	6.65	1.19	8.47	1.42
398	673882	22	5795	0.49	0.33	0.11	0.49	0.08	0.00	0.00	0.40	-0.14	-0.26	0.40	-0.21	A+	A+	A+	A-	0.62	0.06	-0.39	0.99	-0.09	1.00
399	677879	22	5795	0.66	0.09	0.66	0.16	0.08	0.00	0.00	0.50	-0.27	0.50	-0.27	-0.21	A-	A-	A-	A+	-0.29	0.06	-3.19	0.92	-3.03	0.87
400	678894	22	5795	0.46	0.17	0.46	0.13	0.24	0.00	0.00	0.36	-0.24	0.36	-0.28	0.02	A+	A-	A-	A+	0.76	0.06	3.26	1.08	3.40	1.11
401	680167	23	5798	0.70	0.14	0.70	0.10	0.07	0.00	0.00	0.45	-0.24	0.45	-0.28	-0.15	A+	A+	A+	A-	-0.46	0.06	-4.14	0.89	-1.29	0.93
402	679674	23	5798	0.45	0.27	0.13	0.45	0.14	0.00	0.00	0.32	-0.07	-0.22	0.32	-0.15	A-	A-	A-	A+	0.82	0.06	5.53	1.14	5.70	1.20
403	642849	23	5798	0.45	0.17	0.15	0.45	0.23	0.00	0.00	0.13	0.03	-0.11	0.13	-0.08	A+	A+	A+	A-	0.82	0.06	9.90	1.34	9.90	1.45
404	680243	23	5798	0.50	0.21	0.11	0.50	0.18	0.00	0.00	0.38	-0.12	-0.24	0.38	-0.16	A-	A+	A+	A+	0.58	0.06	2.36	1.06	1.65	1.06
405	678874	23	5798	0.70	0.09	0.70	0.10	0.11	0.00	0.00	0.51	-0.29	0.51	-0.31	-0.18	A-	A-	A-	A+	-0.49	0.06	-4.92	0.86	-5.13	0.74
406	673854	23	5798	0.52	0.52	0.17	0.17	0.14	0.00	0.00	0.48	0.48	-0.27	-0.17	-0.21	A-	A+	A+	A+	0.47	0.06	-3.63	0.92	-3.52	0.88
407	678539	23	5798	0.48	0.48	0.17	0.23	0.12	0.00	0.00	0.47	0.47	-0.20	-0.20	-0.22	A-	A+	A-	A+	0.69	0.06	-0.64	0.98	-0.26	0.99
408	679987	23	5798	0.72	0.09	0.03	0.16	0.72	0.00	0.00	0.47	-0.28	-0.22	-0.24	0.47	A-	B-	B-	A+	-0.58	0.06	-2.67	0.92	-1.63	0.91
409	679751	23	5798	0.61	0.61	0.15	0.07	0.18	0.00	0.00	0.40	0.40	-0.29	-0.20	-0.11	A-	A-	A+	A-	0.04	0.06	4.34	1.11	3.95	1.17
410	679728	23	5798	0.30	0.22	0.25	0.23	0.30	0.00	0.00	0.05	-0.07	0.08	-0.07	0.05	A+	A-	A-	A+	1.69	0.06	9.90	1.37	9.90	1.78
411	644028	23	5798	0.66	0.66	0.04	0.04	0.26	0.00	0.00	0.48	0.48	-0.22	-0.24	-0.31	A-	A-	A-	A-	-0.26	0.06	-2.25	0.94	-2.98	0.86
412	678304	23	5798	0.51	0.51	0.11	0.14	0.24	0.00	0.00	0.32	0.32	-0.24	-0.26	0.03	A+	A+	A-	A+	0.54	0.06	4.21	1.10	2.67	1.09
413	679967	23	5798	0.33	0.35	0.15	0.17	0.33	0.00	0.00	0.37	-0.03	-0.15	-0.27	0.37	A+	A+	A-	A+	1.50	0.06	2.20	1.06	2.25	1.10
414	677858	23	5798	0.32	0.15	0.32	0.32	0.20	0.00	0.00	0.21	-0.16	-0.04	0.21	-0.05	A+	A+	A+	A-	1.52	0.06	5.59	1.16	7.39	1.36
415	680876	23	5798	0.71	0.10	0.71	0.13	0.06	0.00	0.00	0.42	-0.24	0.42	-0.21	-0.21	A+	A-	A-	A-	-0.55	0.06	-2.49	0.93	-3.33	0.82

Appendix J: Item Statistics

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
416	674108	23	5798	0.68	0.13	0.08	0.68	0.11	0.00	0.00	0.39	-0.21	-0.22	0.39	-0.17	A+	A-	A-	A+	-0.35	0.06	-1.16	0.97	0.13	1.01
417	677972	24	5790	0.32	0.46	0.32	0.10	0.13	0.00	0.00	0.25	0.02	0.25	-0.19	-0.21	A-	A-	A+	A+	1.52	0.06	5.54	1.15	7.14	1.34
418	674080	24	5790	0.60	0.60	0.11	0.19	0.10	0.00	0.00	0.46	0.46	-0.27	-0.22	-0.17	A+	A-	A-	A+	0.05	0.06	-1.10	0.97	-2.30	0.92
419	677989	24	5790	0.58	0.08	0.25	0.58	0.08	0.00	0.00	0.60	-0.27	-0.38	0.60	-0.21	A-	A-	A-	A+	0.15	0.06	-9.21	0.81	-7.85	0.75
420	681248	24	5790	0.36	0.25	0.23	0.36	0.17	0.00	0.00	0.20	-0.03	0.01	0.20	-0.23	A+	A+	A-	A-	1.30	0.06	7.19	1.19	7.90	1.33
421	643774	24	5790	0.40	0.40	0.16	0.16	0.28	0.00	0.00	0.30	0.30	-0.05	-0.19	-0.14	A+	A+	A+	A-	1.07	0.06	4.64	1.11	5.32	1.19
422	673865	24	5790	0.79	0.03	0.14	0.79	0.04	0.00	0.00	0.42	-0.19	-0.28	0.42	-0.19	A-	A-	A-	A+	-1.07	0.07	-4.18	0.86	-3.98	0.74
423	678943	24	5790	0.53	0.13	0.17	0.18	0.53	0.00	0.00	0.50	-0.24	-0.19	-0.25	0.50	A+	A+	A-	A-	0.40	0.05	-3.75	0.92	-4.11	0.87
424	673858	24	5790	0.59	0.17	0.59	0.07	0.17	0.00	0.00	0.44	-0.29	0.44	-0.21	-0.14	A-	A-	A-	A+	0.10	0.06	-1.84	0.96	-1.09	0.96
425	679658	24	5790	0.39	0.15	0.15	0.32	0.39	0.00	0.00	0.31	-0.22	-0.20	-0.01	0.31	A+	A-	A-	A+	1.13	0.06	5.62	1.14	5.67	1.21
426	679661	24	5790	0.43	0.18	0.43	0.23	0.15	0.00	0.00	0.18	-0.05	0.18	-0.13	-0.03	A+	A-	A-	A+	0.92	0.06	9.90	1.35	9.90	1.52
427	678909	24	5790	0.57	0.14	0.23	0.06	0.57	0.00	0.00	0.30	-0.15	-0.10	-0.22	0.30	A+	A-	A-	A+	0.20	0.06	6.19	1.14	4.69	1.17
428	677868	24	5790	0.62	0.15	0.62	0.08	0.15	0.00	0.00	0.48	-0.22	0.48	-0.26	-0.23	A+	A-	A-	A-	-0.05	0.06	-3.74	0.91	-4.26	0.84
429	673879	24	5790	0.64	0.11	0.64	0.12	0.13	0.00	0.00	0.17	-0.02	0.17	-0.08	-0.15	A+	A-	A-	A+	-0.18	0.06	9.90	1.29	7.59	1.35
430	678971	24	5790	0.36	0.19	0.19	0.36	0.25	0.00	0.00	0.11	-0.08	-0.05	0.11	0.00	A+	A-	A-	A-	1.30	0.06	9.90	1.31	9.90	1.54
431	642888	24	5790	0.52	0.52	0.24	0.18	0.07	0.00	0.00	0.36	0.36	-0.13	-0.28	-0.07	A+	A-	A-	A-	0.47	0.05	1.96	1.04	3.14	1.10
432	678983	24	5790	0.63	0.63	0.20	0.10	0.06	0.00	0.00	0.52	0.52	-0.23	-0.28	-0.28	A-	A-	A-	A+	-0.11	0.06	-4.20	0.90	-4.27	0.84

Table J–7. Literature Multiple-Choice Item Statistics: Spring

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	612481	0	143421	0.77	0.11	0.02	0.09	0.77	0.00	0.00	0.41	-0.21	-0.21	-0.26	0.41					-1.15	0.01	9.90	1.20	9.90	1.16
2	612472	0	143421	0.75	0.06	0.75	0.15	0.03	0.00	0.00	0.39	-0.22	0.39	-0.22	-0.21					-0.94	0.01	9.90	1.19	9.90	1.22
3	612448	0	143421	0.55	0.21	0.55	0.17	0.07	0.00	0.00	0.32	-0.09	0.32	-0.21	-0.18					0.44	0.01	9.90	1.12	9.90	1.18
4	612454	0	143421	0.52	0.52	0.16	0.05	0.26	0.00	0.00	0.32	0.32	-0.20	-0.25	-0.06					0.58	0.01	9.90	1.11	9.90	1.14
5	612452	0	143421	0.80	0.05	0.05	0.09	0.80	0.00	0.00	0.52	-0.27	-0.28	-0.30	0.52					-1.05	0.01	-9.90	0.88	-9.90	0.69
6	612455	0	143421	0.72	0.05	0.15	0.72	0.07	0.00	0.00	0.29	-0.20	-0.07	0.29	-0.22					-0.63	0.01	9.90	1.19	9.90	1.48
7	612447	0	143421	0.50	0.09	0.50	0.15	0.26	0.00	0.00	0.29	-0.21	0.29	-0.10	-0.11					0.72	0.01	9.90	1.14	9.90	1.20
8	612450	0	143421	0.76	0.10	0.09	0.76	0.05	0.00	0.00	0.44	-0.23	-0.24	0.44	-0.24					-0.66	0.01	-9.90	0.93	-9.90	0.87
9	643272	0	143421	0.71	0.71	0.10	0.11	0.08	0.00	0.00	0.38	0.38	-0.21	-0.28	-0.07					-0.63	0.01	9.90	1.15	9.90	1.26
10	643277	0	143421	0.71	0.04	0.71	0.17	0.08	0.00	0.00	0.37	-0.27	0.37	-0.17	-0.18					-0.27	0.01	6.04	1.02	6.69	1.04
11	643271	0	143421	0.49	0.12	0.19	0.49	0.20	0.00	0.00	0.30	-0.28	-0.08	0.30	-0.05					0.80	0.01	9.90	1.12	9.90	1.18
12	643274	0	143421	0.40	0.29	0.40	0.12	0.18	0.00	0.00	0.28	-0.12	0.28	-0.17	-0.05					1.42	0.01	9.90	1.14	9.90	1.33
13	643268	0	143421	0.76	0.14	0.03	0.76	0.06	0.00	0.00	0.38	-0.18	-0.25	0.38	-0.23					-1.09	0.01	9.90	1.23	9.90	1.39
14	643269	0	143421	0.59	0.59	0.11	0.06	0.24	0.00	0.00	0.42	0.42	-0.23	-0.30	-0.15					0.47	0.01	-8.71	0.98	-6.99	0.97
15	643243	0	143421	0.45	0.25	0.08	0.45	0.21	0.00	0.00	0.26	-0.01	-0.17	0.26	-0.18					1.60	0.01	9.90	1.30	9.90	1.60
16	643275	0	143421	0.36	0.36	0.14	0.31	0.18	0.00	0.00	0.27	0.27	-0.15	-0.02	-0.16					1.48	0.01	9.90	1.13	9.90	1.30
17	643242	0	143421	0.51	0.15	0.29	0.04	0.51	0.00	0.00	0.21	-0.16	0.00	-0.24	0.21					0.72	0.01	9.90	1.24	9.90	1.34
18	614704	0	143421	0.68	0.04	0.12	0.15	0.68	0.00	0.00	0.38	-0.25	-0.23	-0.15	0.38					0.08	0.01	-6.58	0.98	-2.81	0.99
19	614710	0	143421	0.55	0.55	0.19	0.08	0.18	0.00	0.00	0.30	0.30	-0.13	-0.10	-0.18					0.39	0.01	9.90	1.16	9.90	1.21
20	614708	0	143421	0.82	0.06	0.82	0.09	0.03	0.00	0.00	0.51	-0.26	0.51	-0.32	-0.24					-0.82	0.01	-9.90	0.75	-9.90	0.59
21	614707	0	143421	0.82	0.05	0.08	0.82	0.05	0.00	0.00	0.50	-0.27	-0.28	0.50	-0.25					-1.24	0.01	-9.90	0.91	-9.90	0.70
22	614711	0	143421	0.66	0.05	0.13	0.66	0.16	0.00	0.00	0.46	-0.28	-0.26	0.46	-0.19					0.09	0.01	-9.90	0.93	-9.90	0.91
23	614709	0	143421	0.54	0.14	0.14	0.18	0.54	0.00	0.00	0.50	-0.27	-0.23	-0.20	0.50					0.65	0.01	-9.90	0.90	-9.90	0.89
24	614703	0	143421	0.83	0.83	0.12	0.03	0.02	0.00	0.00	0.41	0.41	-0.23	-0.27	-0.23					-0.74	0.01	-9.90	0.80	-9.90	0.71
25	614712	0	143421	0.74	0.03	0.04	0.74	0.18	0.00	0.00	0.33	-0.28	-0.27	0.33	-0.11					-0.62	0.01	9.90	1.08	9.90	1.20
26	614705	0	143421	0.68	0.04	0.68	0.07	0.22	0.00	0.00	0.49	-0.28	0.49	-0.30	-0.24					-0.12	0.01	-9.90	0.90	-9.90	0.86
27	643253	0	143421	0.70	0.06	0.14	0.10	0.70	0.00	0.00	0.49	-0.28	-0.24	-0.24	0.49					-0.18	0.01	-9.90	0.88	-9.90	0.84
28	643251	0	143421	0.47	0.16	0.12	0.47	0.24	0.00	0.00	0.40	-0.24	-0.22	0.40	-0.08					0.84	0.01	1.84	1.00	9.90	1.05
29	643252	0	143421	0.50	0.09	0.50	0.24	0.16	0.00	0.00	0.29	-0.25	0.29	-0.12	-0.04					0.83	0.01	9.90	1.13	9.90	1.21
30	643254	0	143421	0.38	0.31	0.38	0.10	0.21	0.00	0.00	0.20	-0.12	0.20	-0.17	0.04					1.65	0.01	9.90	1.26	9.90	1.57
31	643249	0	143421	0.72	0.12	0.72	0.10	0.05	0.00	0.00	0.45	-0.19	0.45	-0.30	-0.19					-0.45	0.01	-9.90	0.96	-7.43	0.96

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	643247	0	143421	0.47	0.47	0.19	0.08	0.26	0.00	0.00	0.37	0.37	-0.23	-0.20	-0.08					0.82	0.01	9.90	1.04	9.90	1.08
33	643255	0	143421	0.56	0.17	0.09	0.56	0.17	0.00	0.00	0.30	-0.04	-0.25	0.30	-0.16					0.18	0.01	9.90	1.19	9.90	1.29
34	643250	0	143421	0.48	0.11	0.23	0.17	0.48	0.00	0.00	0.33	-0.21	-0.02	-0.22	0.33					0.86	0.01	9.90	1.09	9.90	1.14
35	667525	1	3972	0.85	0.08	0.04	0.03	0.85	0.00	0.00	0.52	-0.32	-0.30	-0.22	0.52	A+	A-	A-	A+	-1.18	0.07	-4.77	0.79	-5.33	0.61
36	667529	1	3972	0.75	0.75	0.06	0.14	0.05	0.00	0.00	0.28	0.28	-0.21	-0.07	-0.20	A+	A-	A-	A-	-0.39	0.06	5.12	1.17	4.40	1.25
37	667515	1	3972	0.29	0.29	0.46	0.06	0.20	0.00	0.00	0.18	0.18	-0.02	-0.24	-0.04	A-	A+	A-	A+	2.05	0.06	5.46	1.15	9.56	1.56
38	667523	1	3972	0.30	0.08	0.12	0.50	0.30	0.00	0.00	0.25	-0.15	-0.02	-0.13	0.25	A-	A-	A+	A+	1.99	0.06	4.23	1.11	8.53	1.47
39	667522	1	3972	0.33	0.09	0.33	0.47	0.11	0.00	0.00	0.14	-0.24	0.14	0.12	-0.16	A-	A+	A+	A+	1.86	0.06	8.60	1.22	9.90	1.52
40	669176	1	3972	0.69	0.11	0.69	0.09	0.10	0.00	0.00	0.31	-0.12	0.31	-0.18	-0.16	A-	A-	A-	A+	-0.04	0.06	2.17	1.06	2.35	1.11
41	683201	1	3972	0.81	0.81	0.05	0.02	0.12	0.00	0.00	0.36	0.36	-0.27	-0.26	-0.14	B-	A-	A-	A+	-0.80	0.07	0.28	1.01	0.94	1.06
42	673034	1	3972	0.82	0.05	0.82	0.04	0.08	0.00	0.00	0.44	-0.28	0.44	-0.26	-0.19	A-	A-	A-	A+	-0.88	0.07	-1.10	0.96	-1.36	0.90
43	673048	1	3972	0.71	0.10	0.12	0.71	0.08	0.00	0.00	0.45	-0.23	-0.22	0.45	-0.24	A-	A-	A-	A+	-0.12	0.06	-2.79	0.92	-3.62	0.84
44	673049	1	3972	0.76	0.07	0.76	0.05	0.12	0.00	0.00	0.39	-0.26	0.39	-0.30	-0.10	A+	A-	A-	A+	-0.45	0.06	-1.18	0.96	0.37	1.02
45	673050	1	3972	0.49	0.03	0.49	0.45	0.03	0.00	0.00	0.24	-0.26	0.24	-0.06	-0.27	A-	A-	A-	A+	1.04	0.05	8.05	1.17	8.66	1.29
46	673033	1	3972	0.70	0.70	0.12	0.10	0.08	0.00	0.00	0.45	0.45	-0.23	-0.20	-0.26	A-	A-	A-	A-	-0.10	0.06	-1.32	0.96	-1.94	0.91
47	667526	2	3885	0.80	0.02	0.06	0.80	0.11	0.00	0.00	0.16	-0.20	-0.14	0.16	0.01	A-	A-	A-	A-	-0.68	0.07	4.23	1.17	7.17	1.56
48	667527	2	3885	0.58	0.05	0.30	0.58	0.06	0.00	0.00	0.41	-0.20	-0.21	0.41	-0.23	A+	A-	A-	A+	0.62	0.06	0.37	1.01	0.27	1.01
49	667530	2	3885	0.66	0.16	0.66	0.05	0.13	0.00	0.00	0.41	-0.12	0.41	-0.26	-0.27	A-	A-	A-	A+	0.19	0.06	-0.01	1.00	-1.02	0.96
50	669183	2	3885	0.71	0.09	0.16	0.04	0.71	0.00	0.00	0.42	-0.27	-0.18	-0.23	0.42	A-	A+	A-	A+	-0.10	0.06	-1.58	0.95	-2.06	0.90
51	667528	2	3885	0.63	0.21	0.10	0.63	0.07	0.00	0.00	0.34	-0.11	-0.22	0.34	-0.22	A-	A-	A-	A+	0.37	0.06	1.74	1.04	0.79	1.03
52	667511	2	3885	0.66	0.66	0.14	0.16	0.03	0.00	0.00	0.38	0.38	-0.20	-0.19	-0.20	B-	A-	A-	A+	0.18	0.06	-0.01	1.00	-0.20	0.99
53	683200	2	3885	0.84	0.06	0.05	0.05	0.84	0.00	0.00	0.55	-0.29	-0.34	-0.25	0.55	A-	B-	A-	A+	-0.99	0.07	-6.25	0.75	-6.62	0.56
54	673046	2	3885	0.41	0.03	0.54	0.41	0.02	0.00	0.00	0.20	-0.23	-0.07	0.20	-0.16	A-	A-	A-	A+	1.46	0.05	7.03	1.16	7.92	1.30
55	673051	2	3885	0.64	0.14	0.08	0.13	0.64	0.00	0.00	0.33	-0.17	-0.21	-0.10	0.33	A-	A-	A+	A+	0.29	0.06	4.20	1.11	4.35	1.17
56	673047	2	3885	0.51	0.35	0.05	0.51	0.09	0.00	0.00	0.32	-0.04	-0.26	0.32	-0.28	A-	A-	A-	A+	0.96	0.05	4.54	1.10	5.43	1.17
57	673052	2	3885	0.76	0.76	0.07	0.11	0.05	0.00	0.00	0.50	0.50	-0.24	-0.31	-0.24	A-	A-	A-	A+	-0.45	0.06	-4.30	0.86	-4.59	0.75
58	673045	2	3885	0.68	0.15	0.05	0.12	0.68	0.00	0.00	0.37	-0.26	-0.29	-0.03	0.37	A-	A-	A-	A+	0.10	0.06	0.40	1.01	0.98	1.04
59	681363	3	3901	0.64	0.17	0.11	0.07	0.64	0.00	0.00	0.43	-0.10	-0.29	-0.29	0.43	A-	A-	A-	A-	0.31	0.06	-1.39	0.97	0.14	1.00
60	681346	3	3901	0.53	0.53	0.27	0.07	0.13	0.00	0.00	0.22	0.22	0.01	-0.23	-0.16	A-	A-	B-	A+	0.88	0.05	9.85	1.22	9.40	1.32
61	681357	3	3901	0.73	0.04	0.73	0.03	0.19	0.00	0.00	0.47	-0.32	0.47	-0.31	-0.21	A-	C-	B-	A+	-0.22	0.06	-1.31	0.96	-1.40	0.93
62	681360	3	3901	0.85	0.07	0.85	0.04	0.03	0.00	0.00	0.50	-0.27	0.50	-0.28	-0.28	A+	A-	A-	A+	-1.15	0.07	-3.92	0.83	-5.32	0.61
63	681365	3	3901	0.49	0.33	0.49	0.13	0.04	0.00	0.00	0.32	-0.10	0.32	-0.17	-0.24	A+	A-	A-	A+	1.06	0.05	6.11	1.13	6.96	1.24

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
64	681331	3	3901	0.67	0.10	0.13	0.67	0.10	0.00	0.00	0.19	-0.15	-0.05	0.19	-0.08	A+	A+	A+	A-	0.16	0.06	8.96	1.25	8.94	1.40
65	614639	3	3901	0.92	0.92	0.03	0.02	0.03	0.00	0.00	0.43	0.43	-0.28	-0.24	-0.19	A-	C-	A-	A+	-1.95	0.09	-2.03	0.87	-3.29	0.63
66	614637	3	3901	0.95	0.02	0.95	0.02	0.01	0.00	0.00	0.39	-0.21	0.39	-0.22	-0.23	A-	B-	A-	B+	-2.42	0.11	-2.99	0.76	-4.81	0.40
67	614640	3	3901	0.79	0.07	0.03	0.79	0.11	0.00	0.00	0.42	-0.27	-0.22	0.42	-0.21	A-	A-	A-	A-	-0.66	0.07	0.75	1.03	-0.34	0.98
68	614636	3	3901	0.75	0.16	0.02	0.75	0.07	0.00	0.00	0.39	-0.26	-0.23	0.39	-0.15	A-	B-	B-	A+	-0.37	0.06	1.32	1.04	0.28	1.01
69	614641	3	3901	0.85	0.85	0.07	0.04	0.04	0.00	0.00	0.39	0.39	-0.25	-0.21	-0.15	A+	B-	A-	A+	-1.14	0.07	-2.42	0.89	-2.01	0.84
70	614643	3	3901	0.71	0.04	0.08	0.17	0.71	0.00	0.00	0.26	-0.15	-0.22	-0.06	0.26	A-	A-	A+	A-	-0.07	0.06	4.86	1.14	6.22	1.31
71	681352	4	3888	0.70	0.70	0.03	0.06	0.21	0.00	0.00	0.43	0.43	-0.23	-0.20	-0.27	A+	A-	A-	A+	-0.10	0.06	-2.88	0.92	-2.97	0.87
72	681362	4	3888	0.79	0.08	0.04	0.08	0.79	0.00	0.00	0.55	-0.26	-0.30	-0.33	0.55	A-	C-	A-	A+	-0.71	0.07	-5.10	0.82	-5.53	0.68
73	681350	4	3888	0.73	0.06	0.14	0.73	0.07	0.00	0.00	0.43	-0.25	-0.22	0.43	-0.21	A-	A-	A-	A+	-0.28	0.06	-1.47	0.95	-1.29	0.93
74	681361	4	3888	0.57	0.57	0.06	0.12	0.25	0.00	0.00	0.26	0.26	-0.21	-0.23	-0.01	A-	A-	A+	A+	0.62	0.06	7.23	1.17	6.99	1.25
75	681347	4	3888	0.18	0.32	0.27	0.18	0.22	0.00	0.00	0.02	0.09	0.05	0.02	-0.18	A-	A-	A-	A-	2.76	0.07	4.23	1.18	9.90	2.10
76	681364	4	3888	0.39	0.12	0.21	0.28	0.39	0.00	0.00	0.37	-0.17	-0.28	-0.02	0.37	A-	A+	A-	A-	1.51	0.06	-0.16	1.00	2.60	1.10
77	614634	4	3888	0.84	0.07	0.84	0.06	0.02	0.00	0.00	0.36	-0.23	0.36	-0.16	-0.21	A+	A-	B-	A+	-1.11	0.07	-0.03	1.00	0.65	1.05
78	614638	4	3888	0.89	0.06	0.03	0.02	0.89	0.00	0.00	0.41	-0.23	-0.23	-0.24	0.41	A+	A+	A-	A+	-1.57	0.08	-2.28	0.88	-2.78	0.73
79	614642	4	3888	0.59	0.19	0.05	0.18	0.59	0.00	0.00	0.49	-0.38	-0.23	-0.12	0.49	A-	A-	C-	B+	0.52	0.06	-3.90	0.91	-3.60	0.88
80	614633	4	3888	0.63	0.10	0.63	0.04	0.23	0.00	0.00	0.40	-0.25	0.40	-0.27	-0.16	A-	A-	A-	A+	0.31	0.06	-0.97	0.98	-1.10	0.96
81	614635	4	3888	0.86	0.86	0.04	0.05	0.04	0.00	0.00	0.47	0.47	-0.31	-0.22	-0.23	A+	A-	A-	A+	-1.28	0.08	-5.51	0.75	-3.54	0.71
82	614646	4	3888	0.84	0.05	0.05	0.84	0.06	0.00	0.00	0.44	-0.22	-0.23	0.44	-0.27	A+	A+	A-	A+	-1.13	0.07	-1.93	0.91	-2.27	0.82
83	681367	5	3880	0.34	0.08	0.37	0.21	0.34	0.00	0.00	0.23	-0.16	-0.14	0.01	0.23	A+	A+	A-	A+	1.82	0.06	4.97	1.12	5.38	1.24
84	681370	5	3880	0.53	0.53	0.20	0.08	0.18	0.00	0.00	0.17	0.17	-0.06	-0.33	0.09	A-	A-	B-	A-	0.84	0.05	9.90	1.26	9.90	1.36
85	681390	5	3880	0.22	0.11	0.31	0.22	0.35	0.00	0.00	0.12	-0.19	0.01	0.12	0.02	A-	B-	A-	A-	2.51	0.06	3.69	1.13	8.96	1.68
86	681386	5	3880	0.54	0.26	0.54	0.08	0.11	0.00	0.00	0.26	-0.11	0.26	-0.14	-0.13	A+	A-	A-	A+	0.80	0.05	6.36	1.14	6.53	1.21
87	681387	5	3880	0.14	0.20	0.25	0.14	0.40	0.00	0.00	-0.15	-0.07	0.03	-0.15	0.15	A+	A-	A+	A-	3.08	0.07	3.92	1.19	9.90	2.92
88	681393	5	3880	0.56	0.11	0.56	0.12	0.20	0.00	0.00	0.21	-0.05	0.21	-0.17	-0.08	A+	A+	A+	A+	0.70	0.05	8.53	1.19	8.09	1.26
89	683312	5	3880	0.66	0.66	0.11	0.16	0.06	0.00	0.00	0.34	0.34	-0.20	-0.16	-0.15	A-	A-	A-	A+	0.17	0.06	2.24	1.06	2.17	1.09
90	683310	5	3880	0.70	0.08	0.09	0.70	0.13	0.00	0.00	0.51	-0.29	-0.32	0.51	-0.19	A-	A-	A-	A+	-0.06	0.06	-5.38	0.85	-6.13	0.75
91	683415	5	3880	0.86	0.05	0.86	0.05	0.04	0.00	0.00	0.52	-0.30	0.52	-0.29	-0.26	A-	B-	B-	B+	-1.21	0.08	-3.74	0.83	-5.68	0.58
92	683290	5	3880	0.53	0.12	0.53	0.09	0.27	0.00	0.00	0.40	-0.16	0.40	-0.24	-0.18	A-	A+	A-	A-	0.88	0.05	-0.55	0.99	0.02	1.00
93	683314	5	3880	0.69	0.69	0.12	0.09	0.10	0.00	0.00	0.40	0.40	-0.21	-0.22	-0.18	A+	A-	A-	A+	0.03	0.06	0.45	1.01	1.27	1.05
94	683308	5	3880	0.72	0.72	0.08	0.08	0.11	0.00	0.00	0.44	0.44	-0.26	-0.26	-0.16	A+	A-	B-	A+	-0.19	0.06	-2.49	0.93	-2.43	0.89
95	681385	6	3876	0.71	0.09	0.71	0.14	0.06	0.00	0.00	0.37	-0.21	0.37	-0.21	-0.15	A-	A-	A-	A+	-0.11	0.06	0.81	1.02	0.14	1.01

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
96	681384	6	3876	0.29	0.31	0.17	0.23	0.29	0.00	0.00	0.20	-0.05	-0.08	-0.08	0.20	A-	A-	A+	A+	2.07	0.06	3.64	1.10	5.84	1.33
97	681258	6	3876	0.71	0.71	0.12	0.13	0.03	0.00	0.00	0.40	0.40	-0.24	-0.18	-0.22	A-	A-	A-	B+	-0.12	0.06	-2.07	0.94	-1.96	0.91
98	681252	6	3876	0.48	0.35	0.13	0.04	0.48	0.00	0.00	0.19	0.00	-0.16	-0.21	0.19	C-	A-	A+	A+	1.07	0.05	9.14	1.19	8.27	1.28
99	681388	6	3876	0.38	0.20	0.27	0.38	0.16	0.00	0.00	0.15	-0.14	0.09	0.15	-0.16	A+	A-	A-	A-	1.61	0.06	8.34	1.20	9.90	1.50
100	681392	6	3876	0.37	0.37	0.10	0.12	0.41	0.00	0.00	0.26	0.26	-0.18	-0.12	-0.06	A+	A-	A+	A+	1.64	0.06	4.46	1.10	6.98	1.30
101	683307	6	3876	0.82	0.10	0.05	0.03	0.82	0.00	0.00	0.50	-0.26	-0.32	-0.25	0.50	A-	A-	A-	A+	-0.84	0.07	-4.41	0.83	-4.46	0.72
102	683311	6	3876	0.55	0.06	0.55	0.09	0.29	0.00	0.00	0.25	-0.22	0.25	-0.20	-0.02	A-	A-	A-	A+	0.74	0.05	7.26	1.16	7.10	1.23
103	683306	6	3876	0.65	0.15	0.08	0.65	0.13	0.00	0.00	0.40	-0.24	-0.18	0.40	-0.17	A-	A-	A-	A+	0.25	0.06	0.44	1.01	0.05	1.00
104	683309	6	3876	0.63	0.20	0.13	0.04	0.63	0.00	0.00	0.36	-0.22	-0.08	-0.29	0.36	A+	A+	A+	A-	0.31	0.06	0.47	1.01	-0.04	1.00
105	683417	6	3876	0.59	0.20	0.06	0.15	0.59	0.00	0.00	0.38	-0.10	-0.26	-0.24	0.38	A-	A-	A-	B+	0.54	0.06	-0.29	0.99	0.39	1.01
106	683287	6	3876	0.39	0.38	0.17	0.39	0.06	0.00	0.00	0.20	0.08	-0.20	0.20	-0.24	A+	A-	A+	A+	1.54	0.06	9.90	1.23	8.85	1.36
107	681403	7	3910	0.19	0.05	0.23	0.54	0.19	0.00	0.00	0.05	-0.20	-0.07	0.10	0.05	A-	A-	A+	A-	2.74	0.07	4.76	1.19	9.90	2.08
108	681401	7	3910	0.37	0.17	0.28	0.18	0.37	0.00	0.00	0.33	-0.05	-0.08	-0.26	0.33	A-	A-	A-	A-	1.66	0.06	1.38	1.03	3.11	1.13
109	681481	7	3910	0.91	0.04	0.03	0.91	0.02	0.00	0.00	0.50	-0.32	-0.27	0.50	-0.24	A+	B-	C-	C+	-1.76	0.09	-5.25	0.70	-7.17	0.36
110	681407	7	3910	0.32	0.32	0.54	0.06	0.08	0.00	0.00	0.15	0.15	-0.01	-0.22	-0.03	A-	A-	A-	A-	1.95	0.06	6.42	1.17	8.96	1.47
111	681408	7	3910	0.78	0.10	0.07	0.78	0.05	0.00	0.00	0.46	-0.22	-0.28	0.46	-0.25	A+	A-	A-	A+	-0.55	0.06	-1.87	0.94	-3.00	0.82
112	681406	7	3910	0.44	0.16	0.44	0.23	0.16	0.00	0.00	0.24	-0.14	0.24	0.01	-0.19	A+	A+	A+	A-	1.30	0.06	6.77	1.15	6.92	1.25
113	683322	7	3910	0.76	0.76	0.13	0.05	0.06	0.00	0.00	0.47	0.47	-0.28	-0.24	-0.23	B-	B-	B-	A+	-0.40	0.06	-2.21	0.93	-2.48	0.86
114	683329	7	3910	0.64	0.09	0.16	0.10	0.64	0.00	0.00	0.30	-0.19	-0.02	-0.26	0.30	A-	A-	A-	A+	0.28	0.06	2.63	1.07	2.51	1.10
115	683327	7	3910	0.50	0.50	0.10	0.29	0.11	0.00	0.00	0.37	0.37	-0.25	-0.12	-0.19	B-	B-	A-	A+	0.99	0.05	-0.07	1.00	-0.05	1.00
116	683319	7	3910	0.78	0.10	0.78	0.07	0.05	0.00	0.00	0.52	-0.25	0.52	-0.30	-0.29	A-	A-	A-	B+	-0.58	0.07	-6.35	0.79	-6.61	0.63
117	683328	7	3910	0.70	0.15	0.70	0.08	0.07	0.00	0.00	0.44	-0.23	0.44	-0.28	-0.18	B-	C-	A-	A+	-0.06	0.06	-2.59	0.93	-2.90	0.87
118	683330	7	3910	0.58	0.15	0.17	0.09	0.58	0.00	0.00	0.33	-0.16	-0.10	-0.23	0.33	A-	A-	A-	A+	0.61	0.06	4.16	1.10	4.91	1.17
119	681402	8	3863	0.55	0.17	0.55	0.15	0.13	0.00	0.00	0.21	-0.02	0.21	-0.21	-0.06	A+	A+	A+	A-	0.74	0.05	7.71	1.17	8.02	1.24
120	681429	8	3863	0.22	0.22	0.24	0.10	0.44	0.00	0.00	0.14	0.14	-0.14	-0.19	0.13	A+	A-	A-	A+	2.49	0.06	2.87	1.10	8.00	1.58
121	681399	8	3863	0.38	0.35	0.13	0.38	0.14	0.00	0.00	0.34	-0.11	-0.22	0.34	-0.11	A+	A-	A-	A-	1.57	0.06	1.07	1.02	4.51	1.17
122	681405	8	3863	0.55	0.07	0.07	0.31	0.55	0.00	0.00	0.28	-0.17	-0.23	-0.08	0.28	A+	A-	A-	A+	0.74	0.05	5.73	1.12	6.32	1.19
123	681404	8	3863	0.57	0.57	0.09	0.14	0.19	0.00	0.00	0.30	0.30	-0.20	-0.17	-0.08	A+	A-	A-	A+	0.61	0.05	5.71	1.13	4.89	1.15
124	681396	8	3863	0.47	0.22	0.47	0.21	0.10	0.00	0.00	0.33	-0.12	0.33	-0.10	-0.23	A-	A-	A-	A+	1.11	0.05	2.46	1.05	2.70	1.08
125	683450	8	3863	0.69	0.13	0.10	0.69	0.08	0.00	0.00	0.51	-0.25	-0.32	0.51	-0.20	B-	B-	B-	A+	-0.02	0.06	-5.52	0.86	-5.80	0.78
126	683326	8	3863	0.52	0.52	0.11	0.13	0.24	0.00	0.00	0.32	0.32	-0.35	-0.25	0.09	A-	A-	A-	A+	0.90	0.05	3.36	1.07	4.17	1.12
127	683449	8	3863	0.63	0.17	0.14	0.63	0.06	0.00	0.00	0.33	-0.09	-0.25	0.33	-0.17	A-	A-	A-	A+	0.32	0.06	2.67	1.06	2.89	1.10

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
128	683318	8	3863	0.49	0.24	0.12	0.16	0.49	0.00	0.00	0.36	-0.10	-0.27	-0.13	0.36	A-	A-	A+	A+	1.03	0.05	0.47	1.01	0.80	1.02
129	683324	8	3863	0.37	0.16	0.37	0.06	0.40	0.00	0.00	0.13	-0.09	0.13	-0.26	0.07	A-	A+	A-	A-	1.60	0.06	9.90	1.26	9.90	1.48
130	683320	8	3863	0.63	0.10	0.16	0.63	0.11	0.00	0.00	0.37	-0.18	-0.13	0.37	-0.23	A-	A-	A-	A+	0.31	0.06	1.22	1.03	2.40	1.08
131	678042	9	3854	0.78	0.06	0.78	0.03	0.12	0.00	0.00	0.46	-0.25	0.46	-0.21	-0.28	A+	B-	A-	A+	-0.56	0.06	-4.25	0.86	-2.61	0.85
132	678040	9	3854	0.59	0.10	0.10	0.21	0.59	0.00	0.00	0.50	-0.17	-0.31	-0.26	0.50	A+	A+	C-	B+	0.55	0.05	-4.50	0.91	-3.90	0.89
133	678044	9	3854	0.64	0.14	0.04	0.18	0.64	0.00	0.00	0.38	-0.23	-0.24	-0.15	0.38	A+	A+	A-	A+	0.30	0.06	-0.31	0.99	-0.44	0.98
134	682778	9	3854	0.24	0.24	0.22	0.40	0.14	0.00	0.00	0.01	0.01	-0.12	0.11	-0.03	A-	A+	A+	A+	2.40	0.06	6.78	1.23	9.90	1.79
135	682781	9	3854	0.78	0.11	0.07	0.78	0.04	0.00	0.00	0.32	-0.22	-0.13	0.32	-0.15	A+	A+	A-	A+	-0.53	0.06	1.06	1.04	1.96	1.12
136	678066	9	3854	0.37	0.17	0.37	0.09	0.37	0.00	0.00	0.29	-0.12	0.29	-0.20	-0.07	A-	A-	A-	A+	1.67	0.06	1.60	1.04	4.55	1.17
137	683335	9	3854	0.85	0.85	0.09	0.04	0.02	0.00	0.00	0.51	0.51	-0.35	-0.26	-0.20	A-	B-	A-	A+	-1.07	0.07	-4.39	0.81	-5.48	0.62
138	683461	9	3854	0.63	0.63	0.10	0.22	0.05	0.00	0.00	0.38	0.38	-0.22	-0.21	-0.14	B-	A-	A-	A+	0.35	0.06	0.37	1.01	-0.35	0.99
139	683337	9	3854	0.11	0.21	0.06	0.11	0.62	0.00	0.00	0.01	-0.17	-0.31	0.01	0.29	B-	A+	A+	A-	3.44	0.08	0.84	1.05	9.90	2.45
140	683342	9	3854	0.73	0.09	0.73	0.10	0.07	0.00	0.00	0.48	-0.25	0.48	-0.26	-0.23	A-	A-	B-	A-	-0.22	0.06	-2.64	0.92	-4.05	0.82
141	683341	9	3854	0.56	0.23	0.11	0.56	0.09	0.00	0.00	0.14	-0.08	-0.04	0.14	-0.08	A+	A-	A-	A+	0.68	0.05	9.31	1.20	8.43	1.27
142	683460	9	3854	0.43	0.43	0.24	0.08	0.25	0.00	0.00	0.29	0.29	-0.12	-0.22	-0.07	A-	A-	A-	A-	1.34	0.05	3.13	1.06	4.78	1.15
143	678068	10	3891	0.63	0.14	0.17	0.63	0.06	0.00	0.00	0.37	-0.16	-0.20	0.37	-0.20	A+	A-	A-	A+	0.37	0.06	0.56	1.01	0.29	1.01
144	678043	10	3891	0.66	0.66	0.05	0.08	0.21	0.00	0.00	0.33	0.33	-0.21	-0.12	-0.19	A-	A-	A-	A+	0.21	0.06	3.27	1.09	2.84	1.11
145	678067	10	3891	0.17	0.09	0.03	0.17	0.70	0.00	0.00	-0.14	-0.33	-0.27	-0.14	0.44	A+	B+	A+	A-	2.87	0.07	6.45	1.29	9.90	2.61
146	678069	10	3891	0.65	0.06	0.12	0.18	0.65	0.00	0.00	0.33	-0.19	-0.15	-0.16	0.33	A+	B-	B-	A+	0.27	0.06	0.33	1.01	0.30	1.01
147	678045	10	3891	0.54	0.29	0.54	0.10	0.06	0.00	0.00	0.38	-0.18	0.38	-0.17	-0.23	A+	A-	A-	A-	0.79	0.05	0.66	1.01	1.54	1.05
148	678041	10	3891	0.39	0.39	0.21	0.21	0.18	0.00	0.00	0.24	0.24	-0.12	-0.11	-0.05	A-	A-	A+	A-	1.54	0.06	5.77	1.13	7.05	1.27
149	683343	10	3891	0.56	0.56	0.11	0.22	0.11	0.00	0.00	0.27	0.27	-0.12	-0.16	-0.10	A-	A+	A-	A+	0.72	0.05	5.36	1.12	4.56	1.15
150	683332	10	3891	0.49	0.13	0.24	0.14	0.49	0.00	0.00	0.29	-0.17	-0.15	-0.06	0.29	C-	A-	A-	A+	1.07	0.05	5.29	1.11	5.03	1.16
151	683338	10	3891	0.65	0.19	0.05	0.12	0.65	0.00	0.00	0.40	-0.13	-0.31	-0.23	0.40	A-	A-	A-	A+	0.25	0.06	-1.15	0.97	-0.80	0.97
152	683339	10	3891	0.49	0.06	0.36	0.10	0.49	0.00	0.00	0.32	-0.24	-0.08	-0.21	0.32	A-	A-	A-	A+	1.07	0.05	3.80	1.08	4.20	1.13
153	683336	10	3891	0.82	0.03	0.82	0.11	0.04	0.00	0.00	0.46	-0.25	0.46	-0.29	-0.20	A-	A-	A-	B+	-0.82	0.07	-3.23	0.87	-3.79	0.75
154	683340	10	3891	0.49	0.25	0.49	0.19	0.07	0.00	0.00	0.30	-0.05	0.30	-0.12	-0.30	A-	A-	A-	B+	1.07	0.05	3.82	1.08	4.64	1.15
155	678055	11	3895	0.49	0.27	0.12	0.11	0.49	0.00	0.00	0.08	-0.03	0.00	-0.07	0.08	A+	A+	A-	A+	1.00	0.06	9.90	1.30	9.90	1.40
156	678048	11	3895	0.42	0.13	0.38	0.07	0.42	0.00	0.00	0.28	-0.16	-0.13	-0.06	0.28	A-	A+	A-	A+	1.37	0.06	5.26	1.12	7.25	1.29
157	682784	11	3895	0.84	0.08	0.84	0.04	0.03	0.00	0.00	0.42	-0.23	0.42	-0.23	-0.23	A+	A-	B-	A+	-1.07	0.07	-3.13	0.87	-3.27	0.75
158	678049	11	3895	0.34	0.08	0.34	0.16	0.41	0.00	0.00	0.19	-0.15	0.19	-0.13	0.00	A+	A-	A-	A+	1.76	0.06	8.12	1.21	9.90	1.58
159	678050	11	3895	0.68	0.07	0.08	0.68	0.17	0.00	0.00	0.43	-0.21	-0.22	0.43	-0.22	A+	A-	A-	A+	0.03	0.06	-1.04	0.97	-1.73	0.93

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
160	678046	11	3895	0.74	0.06	0.05	0.74	0.15	0.00	0.00	0.29	-0.19	-0.15	0.29	-0.13	A+	A+	A-	A+	-0.32	0.06	1.28	1.04	2.28	1.12
161	643278	11	3895	0.62	0.09	0.14	0.14	0.62	0.00	0.00	0.46	-0.23	-0.20	-0.24	0.46	A-	A-	B-	A+	0.35	0.06	-3.49	0.92	-3.21	0.89
162	643282	11	3895	0.57	0.57	0.20	0.15	0.08	0.00	0.00	0.37	0.37	-0.22	-0.17	-0.12	A-	A-	A-	A-	0.63	0.06	1.80	1.04	2.19	1.07
163	643285	11	3895	0.69	0.05	0.20	0.69	0.05	0.00	0.00	0.29	-0.25	-0.05	0.29	-0.25	A-	A-	A-	A-	-0.02	0.06	2.56	1.07	3.63	1.17
164	643293	11	3895	0.71	0.71	0.05	0.15	0.09	0.00	0.00	0.32	0.32	-0.23	-0.12	-0.17	A+	A+	A+	A-	-0.13	0.06	3.97	1.12	3.14	1.15
165	643284	11	3895	0.84	0.07	0.06	0.04	0.84	0.00	0.00	0.50	-0.22	-0.30	-0.31	0.50	A-	B-	B-	A+	-1.01	0.07	-4.50	0.82	-4.52	0.68
166	643280	11	3895	0.78	0.07	0.78	0.11	0.04	0.00	0.00	0.40	-0.28	0.40	-0.15	-0.24	A+	B-	B-	A+	-0.57	0.07	-2.25	0.92	-1.20	0.93
167	678051	12	3896	0.72	0.72	0.10	0.11	0.08	0.00	0.00	0.37	0.37	-0.26	-0.23	-0.07	A-	A-	B-	A+	-0.17	0.06	1.49	1.04	1.22	1.06
168	682782	12	3896	0.42	0.42	0.24	0.20	0.15	0.00	0.00	0.26	0.26	-0.05	-0.08	-0.21	A+	A+	A-	A+	1.41	0.06	6.26	1.14	9.19	1.36
169	678054	12	3896	0.48	0.16	0.48	0.04	0.32	0.00	0.00	0.27	-0.18	0.27	-0.21	-0.05	A-	B-	A-	A+	1.09	0.05	7.35	1.16	7.60	1.26
170	678052	12	3896	0.68	0.08	0.15	0.68	0.09	0.00	0.00	0.42	-0.21	-0.21	0.42	-0.23	A-	A-	A-	A+	0.03	0.06	-1.47	0.96	-2.50	0.90
171	678053	12	3896	0.39	0.39	0.30	0.27	0.05	0.00	0.00	0.26	0.26	-0.02	-0.16	-0.23	A+	A-	A+	A-	1.56	0.06	3.77	1.09	6.55	1.27
172	678047	12	3896	0.61	0.07	0.19	0.12	0.61	0.00	0.00	0.42	-0.28	-0.15	-0.22	0.42	A+	A-	A+	A+	0.42	0.06	-1.72	0.96	-1.01	0.97
173	643291	12	3896	0.61	0.61	0.15	0.20	0.04	0.00	0.00	0.38	0.38	-0.23	-0.19	-0.13	C-	A-	A-	A-	0.42	0.06	1.52	1.04	1.13	1.04
174	643294	12	3896	0.68	0.15	0.04	0.68	0.13	0.00	0.00	0.38	-0.19	-0.25	0.38	-0.17	A-	A-	A-	A+	0.07	0.06	1.38	1.04	2.17	1.09
175	643281	12	3896	0.87	0.04	0.05	0.87	0.04	0.00	0.00	0.42	-0.23	-0.26	0.42	-0.20	A+	A-	A-	A+	-1.36	0.08	-2.62	0.87	-1.70	0.85
176	643292	12	3896	0.67	0.11	0.11	0.11	0.67	0.00	0.00	0.51	-0.23	-0.25	-0.29	0.51	A-	B-	B-	A+	0.10	0.06	-4.64	0.88	-3.80	0.85
177	643279	12	3896	0.59	0.09	0.59	0.09	0.23	0.00	0.00	0.36	-0.30	0.36	-0.13	-0.12	A-	A-	A-	A+	0.57	0.06	2.78	1.06	2.62	1.09
178	643283	12	3896	0.63	0.07	0.63	0.19	0.10	0.00	0.00	0.36	-0.27	0.36	-0.11	-0.20	A-	A-	A-	A+	0.32	0.06	2.34	1.06	3.01	1.11
179	678057	13	5578	0.39	0.31	0.11	0.19	0.39	0.00	0.00	0.29	-0.07	-0.17	-0.13	0.29	A+	A-	A+	A-	1.62	0.06	4.30	1.10	6.10	1.23
180	682760	13	5578	0.88	0.06	0.02	0.88	0.04	0.00	0.00	0.29	-0.10	-0.19	0.29	-0.21	A-	A-	A-	A-	-1.29	0.08	1.69	1.09	2.78	1.28
181	678060	13	5578	0.85	0.85	0.06	0.03	0.05	0.00	0.00	0.44	0.44	-0.25	-0.23	-0.24	A-	A-	A-	A-	-1.02	0.07	-1.36	0.94	-3.48	0.74
182	678056	13	5578	0.58	0.58	0.13	0.20	0.09	0.00	0.00	0.34	0.34	-0.20	-0.13	-0.17	A-	A-	A-	A+	0.68	0.05	2.21	1.05	1.87	1.06
183	678065	13	5578	0.59	0.07	0.07	0.28	0.59	0.00	0.00	0.36	-0.18	-0.21	-0.17	0.36	A-	A+	A+	A+	0.65	0.05	1.17	1.02	2.08	1.07
184	678063	13	5578	0.88	0.05	0.04	0.88	0.03	0.00	0.00	0.42	-0.25	-0.28	0.42	-0.16	A+	A-	A-	A+	-1.28	0.08	-2.77	0.86	-3.56	0.70
185	640810	13	5578	0.84	0.03	0.12	0.84	0.02	0.00	0.00	0.46	-0.26	-0.31	0.46	-0.20	A+	A-	B-	A+	-0.88	0.07	-2.72	0.89	-3.96	0.73
186	640815	13	5578	0.65	0.65	0.07	0.25	0.04	0.00	0.00	0.30	0.30	-0.28	-0.13	-0.08	A+	A-	A+	A-	0.35	0.06	4.00	1.10	3.06	1.11
187	640814	13	5578	0.60	0.12	0.19	0.08	0.60	0.00	0.00	0.44	-0.20	-0.21	-0.24	0.44	A-	A-	A-	A-	0.58	0.05	-1.18	0.97	-0.35	0.99
188	640833	13	5578	0.75	0.09	0.10	0.75	0.06	0.00	0.00	0.48	-0.22	-0.28	0.48	-0.25	A-	A+	A-	A-	-0.23	0.06	-3.23	0.90	-4.64	0.78
189	640816	13	5578	0.53	0.53	0.18	0.05	0.24	0.00	0.00	0.26	0.26	-0.13	-0.21	-0.07	A-	A-	A-	A+	0.94	0.05	7.15	1.15	6.82	1.21
190	640817	13	5578	0.16	0.07	0.16	0.12	0.65	0.00	0.00	0.05	-0.23	0.05	-0.11	0.16	A+	A+	A+	A-	3.02	0.07	3.55	1.17	9.90	2.41
191	678064	14	5556	0.50	0.28	0.50	0.17	0.06	0.00	0.00	0.18	-0.09	0.18	-0.14	0.03	A-	A-	A-	A+	1.06	0.05	9.90	1.23	9.90	1.33

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
192	678058	14	5556	0.42	0.33	0.18	0.42	0.07	0.00	0.00	0.18	-0.07	-0.08	0.18	-0.10	A-	A+	A-	A+	1.46	0.05	8.84	1.19	9.90	1.36
193	678061	14	5556	0.49	0.21	0.15	0.15	0.49	0.00	0.00	0.33	-0.06	-0.29	-0.10	0.33	A+	A-	A+	A+	1.11	0.05	1.61	1.03	3.03	1.09
194	682762	14	5556	0.61	0.14	0.61	0.10	0.15	0.00	0.00	0.42	-0.28	0.42	-0.18	-0.14	A-	A-	A-	A+	0.51	0.05	-1.30	0.97	-1.04	0.97
195	678062	14	5556	0.76	0.04	0.76	0.11	0.09	0.00	0.00	0.41	-0.20	0.41	-0.23	-0.23	A+	A-	A-	A+	-0.33	0.06	-3.07	0.90	-2.28	0.88
196	678059	14	5556	0.42	0.42	0.06	0.41	0.11	0.00	0.00	0.24	0.24	-0.27	0.02	-0.20	A-	A-	A-	A-	1.43	0.05	6.46	1.13	8.02	1.27
197	640811	14	5556	0.46	0.34	0.06	0.14	0.46	0.00	0.00	0.37	-0.05	-0.28	-0.27	0.37	A+	A+	A+	A+	1.24	0.05	-0.16	1.00	0.80	1.02
198	640818	14	5556	0.79	0.79	0.07	0.06	0.08	0.00	0.00	0.38	0.38	-0.22	-0.20	-0.17	A+	A-	A-	A+	-0.55	0.06	-2.20	0.92	-1.71	0.90
199	640819	14	5556	0.61	0.07	0.20	0.61	0.12	0.00	0.00	0.40	-0.23	-0.22	0.40	-0.15	A-	A-	A-	A-	0.52	0.05	-0.26	0.99	-0.91	0.97
200	640834	14	5556	0.71	0.12	0.12	0.06	0.71	0.00	0.00	0.40	-0.09	-0.27	-0.28	0.40	A+	A-	A+	A-	-0.02	0.06	-0.20	0.99	1.23	1.05
201	640812	14	5556	0.65	0.12	0.65	0.14	0.09	0.00	0.00	0.32	-0.15	0.32	-0.06	-0.28	A+	A-	A-	A+	0.32	0.06	3.33	1.08	4.04	1.15
202	640813	14	5556	0.74	0.14	0.74	0.06	0.06	0.00	0.00	0.39	-0.14	0.39	-0.27	-0.26	A+	A+	A-	A+	-0.23	0.06	-1.02	0.97	0.45	1.02
203	614650	15	5593	0.84	0.07	0.06	0.84	0.02	0.00	0.00	0.31	-0.16	-0.21	0.31	-0.13	A+	A-	A-	A+	-0.98	0.07	1.37	1.06	2.54	1.23
204	614651	15	5593	0.55	0.04	0.24	0.55	0.17	0.00	0.00	0.32	-0.21	-0.16	0.32	-0.13	A+	A-	B-	A+	0.83	0.05	3.85	1.08	4.08	1.14
205	614657	15	5593	0.79	0.05	0.79	0.03	0.13	0.00	0.00	0.39	-0.19	0.39	-0.22	-0.23	A+	A-	A-	A+	-0.55	0.07	-0.31	0.99	-1.03	0.93
206	614653	15	5593	0.55	0.55	0.31	0.09	0.05	0.00	0.00	0.36	0.36	-0.23	-0.15	-0.11	A+	A-	A-	A+	0.87	0.05	1.50	1.03	1.31	1.04
207	614647	15	5593	0.72	0.72	0.10	0.09	0.08	0.00	0.00	0.43	0.43	-0.20	-0.23	-0.22	A-	A-	A-	A+	-0.09	0.06	-0.45	0.99	-0.66	0.97
208	614649	15	5593	0.92	0.04	0.92	0.02	0.01	0.00	0.00	0.38	-0.24	0.38	-0.20	-0.19	A+	A-	A-	B+	-1.93	0.10	-3.38	0.78	-4.30	0.51
209	673021	15	5593	0.84	0.04	0.07	0.05	0.84	0.00	0.00	0.46	-0.25	-0.28	-0.22	0.46	A-	A-	A-	A+	-0.99	0.07	-2.49	0.89	-2.49	0.80
210	683304	15	5593	0.74	0.74	0.18	0.03	0.04	0.00	0.00	0.35	0.35	-0.15	-0.28	-0.21	A-	B-	A-	A+	-0.21	0.06	-0.91	0.97	0.35	1.02
211	683270	15	5593	0.83	0.05	0.83	0.05	0.07	0.00	0.00	0.43	-0.27	0.43	-0.27	-0.17	A-	B-	A-	A+	-0.82	0.07	-1.63	0.93	-2.60	0.81
212	673016	15	5593	0.76	0.08	0.09	0.76	0.06	0.00	0.00	0.46	-0.17	-0.26	0.46	-0.29	A-	B-	A-	A+	-0.36	0.06	-4.44	0.86	-4.16	0.77
213	673013	15	5593	0.66	0.15	0.66	0.06	0.13	0.00	0.00	0.36	-0.15	0.36	-0.27	-0.15	A-	A-	A-	A+	0.28	0.06	1.53	1.04	1.36	1.06
214	683317	15	5593	0.74	0.74	0.04	0.05	0.18	0.00	0.00	0.45	0.45	-0.29	-0.30	-0.20	A+	A-	A-	A+	-0.17	0.06	-3.52	0.90	-2.61	0.87
215	614648	16	5526	0.69	0.02	0.17	0.12	0.69	0.00	0.00	0.17	-0.18	-0.11	-0.04	0.17	A+	A-	A-	A+	0.11	0.06	5.64	1.16	6.91	1.33
216	614654	16	5526	0.64	0.14	0.04	0.18	0.64	0.00	0.00	0.25	-0.16	-0.23	-0.04	0.25	A-	A-	A-	A+	0.40	0.06	5.95	1.15	5.48	1.21
217	614652	16	5526	0.80	0.80	0.01	0.13	0.06	0.00	0.00	0.28	0.28	-0.21	-0.11	-0.21	A+	A-	B-	A+	-0.55	0.07	2.02	1.08	3.47	1.24
218	614655	16	5526	0.73	0.14	0.73	0.05	0.08	0.00	0.00	0.45	-0.21	0.45	-0.26	-0.25	A+	A-	A+	A-	-0.12	0.06	-2.33	0.93	-3.59	0.83
219	614656	16	5526	0.84	0.09	0.06	0.84	0.01	0.00	0.00	0.45	-0.28	-0.25	0.45	-0.20	A+	A-	A-	A-	-0.92	0.07	-1.23	0.95	-2.18	0.84
220	614658	16	5526	0.81	0.04	0.10	0.05	0.81	0.00	0.00	0.41	-0.26	-0.13	-0.30	0.41	A+	B-	A-	A+	-0.67	0.07	-1.61	0.94	-0.87	0.94
221	673015	16	5526	0.76	0.11	0.06	0.08	0.76	0.00	0.00	0.45	-0.25	-0.21	-0.25	0.45	A-	B-	B-	A+	-0.28	0.06	-3.89	0.88	-3.70	0.81
222	673014	16	5526	0.57	0.26	0.11	0.57	0.06	0.00	0.00	0.18	-0.02	-0.18	0.18	-0.09	A+	A+	A-	A+	0.72	0.05	9.90	1.25	9.90	1.37
223	673022	16	5526	0.43	0.22	0.43	0.20	0.15	0.00	0.00	0.20	-0.03	0.20	-0.08	-0.14	B-	A-	A+	A-	1.44	0.05	8.53	1.18	7.86	1.28

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
224	673017	16	5526	0.52	0.21	0.20	0.07	0.52	0.00	0.00	0.16	-0.19	0.08	-0.12	0.16	A-	A-	A-	A+	0.98	0.05	9.90	1.25	9.90	1.39
225	683325	16	5526	0.79	0.13	0.04	0.79	0.04	0.00	0.00	0.44	-0.20	-0.32	0.44	-0.26	A+	A-	A-	A+	-0.48	0.07	-3.15	0.89	-2.49	0.85
226	673020	16	5526	0.63	0.63	0.06	0.08	0.23	0.00	0.00	0.42	0.42	-0.28	-0.26	-0.15	A+	A-	A-	A+	0.42	0.06	-1.09	0.97	-1.05	0.96
227	612423	17	5610	0.89	0.05	0.89	0.04	0.02	0.00	0.00	0.39	-0.21	0.39	-0.23	-0.18	A-	B-	C-	A+	-1.43	0.08	-0.99	0.95	-2.34	0.80
228	612421	17	5610	0.80	0.06	0.04	0.10	0.80	0.00	0.00	0.48	-0.27	-0.21	-0.29	0.48	A+	A-	A-	A+	-0.68	0.06	-4.14	0.86	-3.35	0.81
229	682735	17	5610	0.27	0.24	0.26	0.27	0.22	0.00	0.00	0.14	-0.10	0.09	0.14	-0.14	A-	A-	A-	A+	2.14	0.06	4.19	1.12	7.29	1.40
230	612429	17	5610	0.32	0.29	0.32	0.18	0.20	0.00	0.00	0.19	-0.16	0.19	0.02	-0.05	A-	B-	A-	A-	1.87	0.06	6.14	1.15	7.68	1.35
231	612428	17	5610	0.56	0.56	0.09	0.09	0.25	0.00	0.00	0.21	0.21	-0.16	-0.16	-0.01	A+	A-	A-	A+	0.71	0.05	8.79	1.18	9.22	1.27
232	612431	17	5610	0.75	0.09	0.09	0.07	0.75	0.00	0.00	0.49	-0.21	-0.26	-0.29	0.49	A+	A-	A-	A+	-0.31	0.06	-4.74	0.86	-5.07	0.78
233	683361	17	5610	0.77	0.06	0.14	0.77	0.03	0.00	0.00	0.52	-0.23	-0.39	0.52	-0.17	A-	A-	A-	A-	-0.43	0.06	-4.65	0.86	-5.66	0.74
234	673040	17	5610	0.81	0.81	0.14	0.03	0.02	0.00	0.00	0.33	0.33	-0.18	-0.23	-0.19	A+	A-	A-	A+	-0.75	0.07	-1.62	0.94	-0.59	0.96
235	673041	17	5610	0.21	0.40	0.21	0.12	0.27	0.00	0.00	0.03	-0.05	0.03	-0.17	0.15	A-	A-	A+	A+	2.54	0.06	7.26	1.27	9.90	1.83
236	683357	17	5610	0.10	0.06	0.73	0.10	0.11	0.00	0.00	-0.18	-0.16	0.29	-0.18	-0.11	A+	A+	A-	A+	3.56	0.09	4.39	1.31	9.90	4.24
237	673043	17	5610	0.74	0.74	0.11	0.07	0.07	0.00	0.00	0.35	0.35	-0.13	-0.21	-0.22	A-	A-	B-	A+	-0.28	0.06	1.72	1.05	3.49	1.17
238	673039	17	5610	0.57	0.07	0.30	0.06	0.57	0.00	0.00	0.22	-0.22	0.01	-0.24	0.22	A-	A+	A+	A-	0.68	0.05	8.25	1.17	8.22	1.24
239	612432	18	5565	0.60	0.60	0.24	0.07	0.09	0.00	0.00	0.34	0.34	-0.19	-0.19	-0.11	A-	A-	A-	A+	0.60	0.05	1.19	1.03	0.34	1.01
240	612422	18	5565	0.59	0.24	0.59	0.10	0.07	0.00	0.00	0.41	-0.24	0.41	-0.16	-0.19	A+	A-	A-	A+	0.63	0.05	-1.23	0.97	-1.35	0.96
241	612424	18	5565	0.87	0.06	0.04	0.03	0.87	0.00	0.00	0.47	-0.29	-0.23	-0.24	0.47	A+	B-	A-	A+	-1.20	0.08	-4.36	0.80	-5.72	0.57
242	612426	18	5565	0.67	0.18	0.08	0.67	0.07	0.00	0.00	0.39	-0.19	-0.21	0.39	-0.22	A-	A-	A-	A+	0.18	0.06	-0.15	1.00	-0.40	0.98
243	682736	18	5565	0.35	0.17	0.12	0.35	0.36	0.00	0.00	0.13	-0.21	-0.14	0.13	0.14	A-	A-	A-	A+	1.82	0.06	9.90	1.28	9.90	1.57
244	682737	18	5565	0.33	0.33	0.33	0.24	0.09	0.00	0.00	0.16	0.16	0.04	-0.16	-0.09	A-	A-	A-	A+	1.92	0.06	6.29	1.16	8.29	1.40
245	673036	18	5565	0.40	0.27	0.40	0.20	0.12	0.00	0.00	0.16	-0.09	0.16	0.02	-0.13	A-	A-	A-	A+	1.56	0.06	9.90	1.26	9.90	1.46
246	673035	18	5565	0.50	0.06	0.50	0.24	0.20	0.00	0.00	0.34	-0.24	0.34	-0.17	-0.10	A-	A-	A-	A+	1.09	0.05	2.92	1.06	5.02	1.16
247	673044	18	5565	0.46	0.16	0.25	0.46	0.13	0.00	0.00	0.16	-0.07	-0.07	0.16	-0.07	A-	A+	A-	A+	1.28	0.05	9.90	1.24	9.90	1.39
248	673037	18	5565	0.48	0.39	0.05	0.08	0.48	0.00	0.00	0.28	-0.03	-0.29	-0.22	0.28	A+	A-	A+	A+	1.18	0.05	5.56	1.11	6.48	1.21
249	673042	18	5565	0.75	0.08	0.07	0.10	0.75	0.00	0.00	0.50	-0.25	-0.28	-0.26	0.50	A+	A-	A+	A+	-0.28	0.06	-5.12	0.85	-4.39	0.79
250	673038	18	5565	0.70	0.70	0.08	0.12	0.11	0.00	0.00	0.49	0.49	-0.28	-0.28	-0.20	A-	A-	A+	A-	0.05	0.06	-3.18	0.92	-3.95	0.84
251	610376	19	5532	0.71	0.71	0.05	0.21	0.04	0.00	0.00	0.34	0.34	-0.17	-0.21	-0.17	A+	A-	A+	A-	0.02	0.06	0.74	1.02	0.91	1.04
252	610368	19	5532	0.48	0.18	0.48	0.24	0.10	0.00	0.00	0.27	-0.13	0.27	-0.11	-0.13	A-	A+	A+	A-	1.15	0.05	4.36	1.09	5.67	1.17
253	610377	19	5532	0.57	0.10	0.17	0.57	0.16	0.00	0.00	0.35	-0.22	-0.13	0.35	-0.16	A+	A-	A-	A+	0.74	0.05	1.01	1.02	0.83	1.02
254	610371	19	5532	0.77	0.13	0.05	0.04	0.77	0.00	0.00	0.46	-0.18	-0.33	-0.28	0.46	A-	B-	B-	A+	-0.39	0.06	-4.84	0.85	-3.78	0.81
255	610378	19	5532	0.60	0.03	0.17	0.20	0.60	0.00	0.00	0.25	-0.22	-0.17	-0.05	0.25	A-	A-	A+	A-	0.58	0.05	6.10	1.14	5.29	1.17

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
256	610372	19	5532	0.38	0.08	0.38	0.06	0.47	0.00	0.00	0.01	-0.16	0.01	-0.19	0.18	A-	A+	A+	A-	1.63	0.05	9.90	1.29	9.90	1.53
257	683439	19	5532	0.54	0.27	0.11	0.08	0.54	0.00	0.00	0.39	-0.08	-0.27	-0.26	0.39	A-	A+	A+	A-	0.87	0.05	0.01	1.00	0.64	1.02
258	683442	19	5532	0.42	0.10	0.26	0.42	0.21	0.00	0.00	0.30	-0.19	-0.06	0.30	-0.15	B-	A-	A-	A-	1.45	0.05	2.67	1.05	4.82	1.16
259	683444	19	5532	0.75	0.75	0.11	0.11	0.03	0.00	0.00	0.44	0.44	-0.26	-0.20	-0.24	A-	A-	A-	A-	-0.28	0.06	-1.07	0.97	-2.16	0.89
260	683438	19	5532	0.39	0.18	0.30	0.39	0.13	0.00	0.00	-0.03	0.04	-0.01	-0.03	0.03	A-	A-	A-	A-	1.57	0.05	9.90	1.39	9.90	1.70
261	683435	19	5532	0.71	0.12	0.07	0.10	0.71	0.00	0.00	0.41	-0.14	-0.18	-0.31	0.41	A-	A-	A+	A+	-0.03	0.06	-2.97	0.92	-2.09	0.91
262	683434	19	5532	0.37	0.15	0.25	0.37	0.22	0.00	0.00	0.17	-0.10	-0.05	0.17	-0.05	A+	A+	A+	A-	1.69	0.06	4.21	1.09	6.15	1.24
263	610374	20	5544	0.68	0.11	0.15	0.68	0.06	0.00	0.00	0.40	-0.24	-0.22	0.40	-0.12	A+	A-	A-	A+	0.13	0.06	-0.99	0.97	-1.02	0.96
264	610373	20	5544	0.90	0.06	0.90	0.02	0.02	0.00	0.00	0.38	-0.26	0.38	-0.21	-0.14	A+	A-	C-	A+	-1.50	0.08	-2.30	0.87	-2.65	0.75
265	610369	20	5544	0.78	0.06	0.09	0.08	0.78	0.00	0.00	0.39	-0.22	-0.19	-0.22	0.39	A+	A+	A-	A-	-0.46	0.06	-1.84	0.94	-2.10	0.89
266	610370	20	5544	0.56	0.56	0.21	0.08	0.15	0.00	0.00	0.19	0.19	0.00	-0.21	-0.09	A+	A-	A-	A-	0.75	0.05	8.89	1.19	8.19	1.25
267	682734	20	5544	0.36	0.10	0.41	0.36	0.13	0.00	0.00	0.12	-0.16	0.08	0.12	-0.15	A-	A-	A+	A+	1.73	0.06	9.18	1.21	9.90	1.47
268	610367	20	5544	0.27	0.27	0.16	0.34	0.23	0.00	0.00	0.20	0.20	-0.13	-0.11	0.03	A+	A-	A-	A+	2.21	0.06	2.54	1.07	5.53	1.30
269	683441	20	5544	0.54	0.25	0.54	0.14	0.07	0.00	0.00	0.24	-0.07	0.24	-0.15	-0.14	A-	A+	A+	A+	0.85	0.05	4.35	1.09	4.37	1.13
270	683443	20	5544	0.59	0.03	0.34	0.03	0.59	0.00	0.00	0.33	-0.20	-0.18	-0.22	0.33	A-	A-	A-	A-	0.61	0.05	3.74	1.08	3.75	1.12
271	683437	20	5544	0.74	0.04	0.74	0.17	0.05	0.00	0.00	0.42	-0.26	0.42	-0.24	-0.20	A-	A+	A-	B+	-0.21	0.06	-1.29	0.96	-0.44	0.98
272	683440	20	5544	0.47	0.47	0.10	0.21	0.22	0.00	0.00	0.24	0.24	-0.22	-0.19	0.07	A-	A+	A+	A-	1.22	0.05	5.01	1.10	5.20	1.16
273	683436	20	5544	0.20	0.20	0.15	0.05	0.60	0.00	0.00	0.01	0.01	-0.21	-0.31	0.28	A-	A-	A-	A-	2.68	0.07	5.46	1.21	9.90	1.88
274	683433	20	5544	0.69	0.07	0.69	0.13	0.11	0.00	0.00	0.34	-0.24	0.34	-0.16	-0.13	A-	A-	A+	A+	0.09	0.06	-0.51	0.99	0.46	1.02
275	643240	21	5623	0.88	0.05	0.88	0.05	0.01	0.00	0.00	0.45	-0.26	0.45	-0.31	-0.15	A-	A-	A-	A+	-1.36	0.08	-4.09	0.80	-4.50	0.62
276	643256	21	5623	0.83	0.83	0.06	0.08	0.02	0.00	0.00	0.42	0.42	-0.29	-0.20	-0.21	A-	B-	C-	A+	-0.90	0.07	-3.64	0.85	-3.08	0.79
277	643241	21	5623	0.69	0.05	0.11	0.15	0.69	0.00	0.00	0.43	-0.21	-0.28	-0.18	0.43	A+	A-	A-	A+	0.06	0.06	-2.13	0.94	-1.94	0.92
278	643238	21	5623	0.44	0.03	0.48	0.44	0.05	0.00	0.00	0.32	-0.21	-0.12	0.32	-0.27	A+	A-	A+	A-	1.36	0.05	3.09	1.06	4.32	1.14
279	643239	21	5623	0.56	0.56	0.15	0.15	0.13	0.00	0.00	0.25	0.25	-0.17	-0.11	-0.07	A+	A-	B-	A-	0.75	0.05	6.02	1.13	6.31	1.20
280	643289	21	5623	0.44	0.28	0.12	0.44	0.17	0.00	0.00	0.27	-0.12	-0.10	0.27	-0.13	A-	A-	A-	A+	1.35	0.05	5.13	1.11	6.82	1.23
281	673032	21	5623	0.80	0.80	0.05	0.13	0.02	0.00	0.00	0.35	0.35	-0.25	-0.21	-0.12	A-	A-	A-	A-	-0.63	0.07	1.53	1.06	0.17	1.01
282	673031	21	5623	0.59	0.59	0.14	0.17	0.09	0.00	0.00	0.39	0.39	-0.21	-0.16	-0.19	A-	A-	A-	A+	0.58	0.05	-0.35	0.99	-0.07	1.00
283	683404	21	5623	0.89	0.04	0.89	0.03	0.03	0.00	0.00	0.48	-0.26	0.48	-0.27	-0.27	A-	B-	A-	A+	-1.52	0.08	-4.45	0.77	-6.29	0.47
284	673030	21	5623	0.70	0.04	0.03	0.70	0.23	0.00	0.00	0.37	-0.23	-0.29	0.37	-0.17	A+	A-	A-	A+	0.04	0.06	-0.93	0.97	-1.36	0.94
285	673024	21	5623	0.82	0.06	0.10	0.82	0.02	0.00	0.00	0.45	-0.25	-0.23	0.45	-0.26	A-	A-	A-	A+	-0.76	0.07	-2.17	0.92	-2.25	0.85
286	673025	21	5623	0.61	0.17	0.61	0.10	0.11	0.00	0.00	0.32	-0.07	0.32	-0.21	-0.20	A+	A-	A-	A+	0.50	0.05	4.01	1.09	4.44	1.15
287	643237	22	5545	0.78	0.10	0.07	0.78	0.05	0.00	0.00	0.37	-0.23	-0.19	0.37	-0.16	A-	A-	A-	A+	-0.52	0.06	-2.57	0.91	-3.16	0.82

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
288	643257	22	5545	0.76	0.08	0.02	0.14	0.76	0.00	0.00	0.43	-0.16	-0.22	-0.31	0.43	A+	A-	A-	A-	-0.39	0.06	-0.48	0.98	-0.61	0.97
289	643236	22	5545	0.77	0.77	0.12	0.06	0.05	0.00	0.00	0.34	0.34	-0.16	-0.20	-0.20	A+	A-	A-	A-	-0.45	0.06	1.35	1.04	0.80	1.04
290	643258	22	5545	0.38	0.10	0.38	0.15	0.37	0.00	0.00	0.28	-0.23	0.28	-0.06	-0.09	A-	A-	A-	A-	1.64	0.06	2.63	1.06	4.64	1.19
291	643260	22	5545	0.64	0.09	0.64	0.13	0.13	0.00	0.00	0.34	-0.23	0.34	-0.22	-0.05	A-	A-	A-	A+	0.34	0.06	0.94	1.02	1.00	1.04
292	643259	22	5545	0.79	0.12	0.06	0.03	0.79	0.00	0.00	0.49	-0.31	-0.22	-0.27	0.49	A+	A-	A-	A+	-0.57	0.07	-4.00	0.87	-4.14	0.77
293	673029	22	5545	0.57	0.05	0.26	0.11	0.57	0.00	0.00	0.48	-0.27	-0.29	-0.15	0.48	A-	A-	A-	A+	0.69	0.06	-5.51	0.89	-4.01	0.88
294	683400	22	5545	0.60	0.20	0.07	0.13	0.60	0.00	0.00	0.40	-0.18	-0.15	-0.24	0.40	C-	A-	A-	A+	0.56	0.06	1.34	1.03	1.25	1.04
295	683419	22	5545	0.72	0.12	0.72	0.12	0.04	0.00	0.00	0.42	-0.24	0.42	-0.24	-0.16	A-	A-	A-	A+	-0.10	0.06	-0.71	0.98	-0.20	0.99
296	673028	22	5545	0.44	0.17	0.16	0.44	0.23	0.00	0.00	0.20	0.03	-0.13	0.20	-0.15	A-	A-	A-	A+	1.35	0.06	6.66	1.15	8.35	1.30
297	673023	22	5545	0.47	0.47	0.28	0.13	0.13	0.00	0.00	0.30	0.30	-0.03	-0.15	-0.24	B-	B-	B-	A-	1.20	0.05	4.69	1.10	4.56	1.15
298	673026	22	5545	0.75	0.07	0.07	0.75	0.11	0.00	0.00	0.48	-0.29	-0.29	0.48	-0.19	A-	A-	A-	A+	-0.29	0.06	-4.14	0.88	-4.11	0.80
299	642659	23	5521	0.72	0.09	0.06	0.72	0.13	0.00	0.00	0.31	-0.19	-0.29	0.31	-0.04	A-	A-	A-	A+	-0.11	0.06	0.96	1.03	2.74	1.13
300	642670	23	5521	0.62	0.15	0.62	0.07	0.16	0.00	0.00	0.41	-0.21	0.41	-0.24	-0.17	A-	A-	A-	A+	0.44	0.06	-0.59	0.99	-0.35	0.99
301	642655	23	5521	0.64	0.64	0.10	0.12	0.13	0.00	0.00	0.43	0.43	-0.26	-0.15	-0.23	A-	A-	B-	A+	0.32	0.06	-1.69	0.96	-1.86	0.94
302	642673	23	5521	0.30	0.20	0.30	0.24	0.26	0.00	0.00	0.14	-0.08	0.14	-0.07	0.00	A+	A+	A-	A-	2.07	0.06	5.16	1.14	9.90	1.59
303	642656	23	5521	0.43	0.18	0.21	0.43	0.17	0.00	0.00	0.21	-0.11	-0.10	0.21	-0.04	A-	A-	A-	A+	1.37	0.05	8.61	1.18	8.84	1.30
304	642657	23	5521	0.79	0.79	0.04	0.14	0.04	0.00	0.00	0.48	0.48	-0.26	-0.29	-0.24	A-	C-	A-	A+	-0.54	0.06	-4.21	0.86	-5.21	0.73
305	667518	23	5521	0.57	0.27	0.08	0.08	0.57	0.00	0.00	0.35	-0.14	-0.19	-0.21	0.35	A+	A-	A-	A+	0.69	0.05	2.24	1.05	2.11	1.06
306	669207	23	5521	0.53	0.04	0.33	0.10	0.53	0.00	0.00	0.32	-0.26	-0.09	-0.22	0.32	A-	A-	A-	A+	0.88	0.05	3.72	1.08	3.37	1.10
307	667509	23	5521	0.87	0.04	0.04	0.05	0.87	0.00	0.00	0.46	-0.22	-0.26	-0.27	0.46	A+	A-	A-	A+	-1.21	0.08	-3.16	0.85	-3.97	0.69
308	667512	23	5521	0.75	0.07	0.75	0.12	0.06	0.00	0.00	0.50	-0.27	0.50	-0.26	-0.27	A-	A+	A-	A+	-0.29	0.06	-5.71	0.83	-5.87	0.73
309	667520	23	5521	0.74	0.07	0.04	0.74	0.15	0.00	0.00	0.46	-0.29	-0.28	0.46	-0.19	A+	A-	A+	B-	-0.20	0.06	-1.80	0.95	-2.45	0.89
310	667516	23	5521	0.67	0.11	0.12	0.67	0.10	0.00	0.00	0.27	-0.13	-0.14	0.27	-0.13	A+	A+	A-	A+	0.17	0.06	5.37	1.14	5.80	1.23
311	642654	24	5573	0.57	0.05	0.17	0.20	0.57	0.00	0.00	0.37	-0.22	-0.14	-0.19	0.37	A-	B-	B-	A+	0.69	0.05	1.59	1.03	1.00	1.03
312	642653	24	5573	0.75	0.75	0.11	0.06	0.08	0.00	0.00	0.43	0.43	-0.22	-0.22	-0.23	A-	B-	A-	A+	-0.31	0.06	-2.64	0.92	-3.87	0.82
313	642671	24	5573	0.40	0.09	0.40	0.30	0.20	0.00	0.00	0.28	-0.18	0.28	-0.03	-0.18	A+	A-	A-	A+	1.53	0.05	2.23	1.05	5.83	1.22
314	642660	24	5573	0.39	0.09	0.40	0.39	0.12	0.00	0.00	0.27	-0.12	-0.11	0.27	-0.13	A+	A-	A-	A+	1.60	0.06	5.26	1.12	6.63	1.26
315	642672	24	5573	0.59	0.08	0.16	0.17	0.59	0.00	0.00	0.34	-0.25	-0.11	-0.15	0.34	B-	B-	B-	A+	0.61	0.05	1.64	1.04	1.71	1.05
316	642658	24	5573	0.42	0.08	0.16	0.34	0.42	0.00	0.00	0.26	-0.20	-0.13	-0.05	0.26	A+	A-	A-	A+	1.44	0.05	7.96	1.17	8.14	1.30
317	667519	24	5573	0.41	0.16	0.18	0.41	0.24	0.00	0.00	0.19	-0.19	0.01	0.19	-0.06	A-	A+	A-	A+	1.45	0.05	8.69	1.19	8.67	1.32
318	667514	24	5573	0.67	0.67	0.11	0.16	0.06	0.00	0.00	0.34	0.34	-0.11	-0.19	-0.22	A-	A-	A-	A+	0.17	0.06	3.63	1.09	4.07	1.16
319	669208	24	5573	0.73	0.73	0.15	0.07	0.04	0.00	0.00	0.42	0.42	-0.23	-0.24	-0.21	A+	A-	A-	A+	-0.19	0.06	-1.50	0.96	-2.60	0.88

Appendix J: Item Statistics

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
320	667517	24	5573	0.82	0.07	0.82	0.06	0.04	0.00	0.00	0.47	-0.21	0.47	-0.26	-0.29	A+	A+	A-	A+	-0.81	0.07	-1.37	0.95	-2.57	0.83
321	667521	24	5573	0.68	0.06	0.68	0.14	0.13	0.00	0.00	0.39	-0.14	0.39	-0.28	-0.15	A+	A-	A+	A-	0.14	0.06	-0.82	0.98	-0.36	0.99
322	667510	24	5573	0.77	0.77	0.06	0.09	0.08	0.00	0.00	0.52	0.52	-0.26	-0.27	-0.29	A+	A-	A-	A+	-0.43	0.06	-3.60	0.89	-4.36	0.78

Table J–8. Algebra I Multiple-Choice Item Statistics: Summer

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	640540	0	1712	0.55	0.24	0.07	0.14	0.55	0.00	0.00	0.25	-0.09	-0.21	-0.09	0.25	0.19	0.05	3.96	1.07	3.72	1.08
2	605089	0	1712	0.53	0.53	0.25	0.11	0.11	0.00	0.00	0.23	0.23	-0.08	-0.14	-0.11	0.19	0.05	4.88	1.08	4.48	1.10
3	605171	0	1712	0.59	0.13	0.59	0.17	0.11	0.00	0.00	0.30	-0.21	0.30	-0.10	-0.13	-0.05	0.05	-0.31	0.99	-0.32	0.99
4	605249	0	1712	0.71	0.05	0.09	0.15	0.71	0.00	0.00	0.45	-0.17	-0.22	-0.29	0.45	-1.01	0.06	-4.96	0.87	-4.49	0.83
5	640536	0	1712	0.40	0.21	0.40	0.19	0.20	0.00	0.00	0.14	-0.04	0.14	-0.13	-0.01	0.91	0.06	9.87	1.24	9.90	1.38
6	640561	0	1712	0.58	0.07	0.58	0.16	0.19	0.00	0.00	0.42	-0.20	0.42	-0.24	-0.18	-0.32	0.05	-5.01	0.91	-4.96	0.88
7	640573	0	1712	0.30	0.28	0.27	0.30	0.15	0.00	0.00	0.11	0.05	-0.11	0.11	-0.07	1.28	0.06	8.00	1.25	9.71	1.47
8	640553	0	1712	0.41	0.26	0.13	0.19	0.41	0.00	0.00	0.32	-0.07	-0.22	-0.14	0.32	0.38	0.05	-0.94	0.98	-0.87	0.98
9	640528	0	1712	0.39	0.39	0.13	0.24	0.24	0.00	0.00	0.20	0.20	-0.04	-0.16	-0.04	0.55	0.05	4.07	1.08	4.87	1.13
10	640577	0	1712	0.54	0.19	0.17	0.54	0.10	0.00	0.00	0.31	-0.08	-0.19	0.31	-0.17	-0.10	0.05	-0.19	1.00	-0.35	0.99
11	605228	0	1712	0.37	0.10	0.36	0.37	0.17	0.00	0.00	0.18	-0.21	-0.06	0.18	0.02	1.18	0.06	9.90	1.31	9.90	1.46
12	605076	0	1712	0.61	0.61	0.11	0.14	0.13	0.00	0.00	0.40	0.40	-0.19	-0.26	-0.12	-0.39	0.05	-4.89	0.91	-4.47	0.89
13	640541	0	1712	0.32	0.31	0.32	0.24	0.12	0.00	0.00	0.05	-0.01	0.05	-0.04	0.01	1.28	0.06	9.90	1.35	9.90	1.63
14	640569	0	1712	0.52	0.52	0.18	0.22	0.08	0.00	0.00	0.40	0.40	-0.21	-0.19	-0.13	0.04	0.05	-4.20	0.93	-3.77	0.92
15	605090	0	1712	0.39	0.39	0.21	0.23	0.16	0.00	0.00	0.22	0.22	-0.10	-0.11	-0.04	0.47	0.05	3.20	1.06	3.54	1.09
16	640617	0	1712	0.50	0.18	0.50	0.10	0.21	0.00	0.00	0.20	-0.15	0.20	-0.15	0.01	0.57	0.05	9.23	1.18	9.56	1.27
17	640546	0	1712	0.59	0.07	0.18	0.16	0.59	0.00	0.00	0.37	-0.21	-0.14	-0.20	0.37	-0.53	0.05	-1.00	0.98	-0.95	0.97
18	605116	0	1712	0.47	0.26	0.47	0.14	0.12	0.00	0.00	0.28	-0.11	0.28	-0.20	-0.06	-0.03	0.05	2.49	1.04	2.00	1.04
19	641489	0	1712	0.26	0.41	0.26	0.20	0.12	0.01	0.00	0.06	0.02	0.06	-0.07	-0.03	1.48	0.06	7.88	1.28	9.08	1.51
20	641446	0	1712	0.77	0.03	0.08	0.77	0.13	0.00	0.00	0.44	-0.18	-0.21	0.44	-0.30	-1.14	0.06	-7.39	0.80	-7.56	0.71
21	641477	0	1712	0.40	0.08	0.21	0.32	0.40	0.00	0.00	0.19	-0.22	-0.10	0.02	0.19	0.67	0.05	5.72	1.12	5.22	1.15
22	605152	0	1712	0.73	0.73	0.10	0.12	0.05	0.00	0.00	0.38	0.38	-0.15	-0.24	-0.22	-1.23	0.06	-0.65	0.98	-0.80	0.96
23	641522	0	1712	0.72	0.05	0.07	0.15	0.72	0.00	0.00	0.45	-0.23	-0.24	-0.24	0.45	-0.73	0.05	-9.90	0.79	-8.96	0.74
24	641480	0	1712	0.33	0.14	0.34	0.19	0.33	0.00	0.00	0.24	-0.15	0.02	-0.18	0.24	0.90	0.05	1.88	1.04	2.31	1.08
25	605102	0	1712	0.48	0.12	0.48	0.18	0.21	0.00	0.00	0.21	-0.08	0.21	-0.10	-0.10	0.20	0.05	4.66	1.08	5.02	1.12
26	641534	0	1712	0.41	0.13	0.41	0.17	0.28	0.00	0.00	0.15	-0.11	0.15	-0.14	0.05	0.76	0.05	9.26	1.20	9.90	1.32
27	605127	0	1712	0.52	0.09	0.31	0.52	0.08	0.00	0.00	0.33	-0.18	-0.12	0.33	-0.20	-0.36	0.05	2.66	1.05	1.66	1.04
28	605259	0	1712	0.46	0.25	0.16	0.13	0.46	0.00	0.00	0.33	-0.06	-0.28	-0.10	0.33	0.36	0.05	-0.07	1.00	-0.31	0.99
29	641496	0	1712	0.46	0.07	0.16	0.30	0.46	0.00	0.00	0.28	-0.10	-0.16	-0.12	0.28	0.15	0.05	1.20	1.02	0.83	1.02
30	605064	0	1712	0.42	0.42	0.15	0.16	0.26	0.00	0.00	0.29	0.29	-0.18	-0.16	-0.04	0.94	0.06	7.69	1.19	7.28	1.27
31	605266	0	1712	0.58	0.08	0.25	0.08	0.58	0.00	0.00	0.44	-0.24	-0.19	-0.26	0.44	-0.83	0.06	3.14	1.08	0.87	1.03

Appendix J: Item Statistics

Item Information			Classical												Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
32	641518	0	1712	0.54	0.06	0.09	0.54	0.30	0.00	0.00	0.29	-0.18	-0.19	0.29	-0.10	-0.27	0.05	2.24	1.04	1.65	1.04
33	605080	0	1712	0.39	0.39	0.03	0.18	0.39	0.00	0.00	0.32	0.32	-0.17	-0.14	-0.14	0.39	0.05	-1.68	0.97	-1.96	0.95
34	641481	0	1712	0.58	0.16	0.14	0.58	0.12	0.00	0.00	0.36	-0.26	-0.17	0.36	-0.06	-0.59	0.05	1.53	1.03	1.58	1.05
35	641457	0	1712	0.38	0.11	0.38	0.31	0.19	0.00	0.00	0.36	-0.15	0.36	-0.13	-0.17	0.16	0.05	-1.96	0.97	-1.93	0.96
36	605227	0	1712	0.73	0.08	0.12	0.73	0.06	0.00	0.00	0.35	-0.26	-0.16	0.35	-0.13	-1.28	0.06	1.26	1.04	0.84	1.04

Table J–9. Biology Multiple-Choice Item Statistics: Summer

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	610878	0	859	0.94	0.02	0.02	0.02	0.94	0.00	0.00	0.26	-0.18	-0.12	-0.13	0.26	-2.10	0.11	-8.54	0.50	-5.81	0.45
2	641184	0	859	0.64	0.64	0.12	0.09	0.15	0.00	0.00	0.25	0.25	-0.18	-0.15	-0.04	-0.32	0.07	0.11	1.00	1.60	1.07
3	643366	0	859	0.54	0.09	0.10	0.26	0.54	0.00	0.00	0.32	-0.17	-0.10	-0.18	0.32	-0.28	0.07	0.38	1.01	0.17	1.01
4	635795	0	859	0.39	0.25	0.14	0.39	0.23	0.00	0.00	0.36	-0.26	-0.15	0.36	-0.03	0.27	0.07	-2.13	0.95	-1.88	0.93
5	641180	0	859	0.50	0.13	0.15	0.50	0.22	0.00	0.00	0.23	-0.06	-0.18	0.23	-0.08	-0.01	0.07	3.28	1.08	2.06	1.08
6	641270	0	859	0.56	0.56	0.10	0.10	0.23	0.00	0.00	0.36	0.36	-0.10	-0.17	-0.23	-0.23	0.07	-1.78	0.96	-1.80	0.93
7	642861	0	859	0.58	0.12	0.20	0.58	0.10	0.00	0.00	0.28	-0.20	-0.08	0.28	-0.13	-0.09	0.07	1.06	1.02	0.71	1.03
8	611163	0	859	0.59	0.59	0.09	0.21	0.10	0.00	0.00	0.38	0.38	-0.23	-0.19	-0.13	-0.51	0.07	-1.57	0.96	-1.49	0.93
9	643372	0	859	0.42	0.16	0.20	0.22	0.42	0.00	0.00	0.40	-0.17	-0.19	-0.15	0.40	0.44	0.07	-2.38	0.94	-1.84	0.93
10	641263	0	859	0.59	0.20	0.13	0.59	0.07	0.00	0.00	0.37	-0.21	-0.19	0.37	-0.14	-0.11	0.07	-2.76	0.94	-2.63	0.90
11	642318	0	859	0.30	0.30	0.33	0.06	0.31	0.00	0.00	0.25	0.25	-0.08	-0.16	-0.09	0.90	0.08	0.27	1.01	1.36	1.07
12	611155	0	859	0.67	0.04	0.24	0.05	0.67	0.00	0.00	0.41	-0.18	-0.30	-0.13	0.41	-0.32	0.07	-5.83	0.87	-4.22	0.83
13	644946	0	859	0.40	0.40	0.20	0.25	0.14	0.00	0.00	0.36	0.36	-0.21	-0.15	-0.08	0.47	0.07	-1.02	0.97	-0.93	0.96
14	644757	0	859	0.49	0.27	0.49	0.15	0.08	0.00	0.00	0.38	-0.14	0.38	-0.24	-0.16	-0.19	0.07	-1.18	0.97	-1.29	0.95
15	611161	0	859	0.64	0.26	0.64	0.05	0.04	0.01	0.00	0.30	-0.15	0.30	-0.17	-0.16	-0.47	0.07	-1.25	0.97	-1.10	0.95
16	641182	0	859	0.56	0.56	0.09	0.22	0.12	0.01	0.00	0.48	0.48	-0.24	-0.30	-0.12	-0.27	0.07	-6.12	0.86	-4.50	0.83
17	611158	0	859	0.42	0.42	0.29	0.06	0.23	0.01	0.00	0.29	0.29	-0.16	-0.22	-0.02	0.23	0.07	0.66	1.02	1.75	1.06
18	611410	0	859	0.34	0.18	0.18	0.29	0.34	0.01	0.00	0.28	-0.15	-0.17	-0.01	0.28	0.80	0.08	1.31	1.04	1.67	1.08
19	642333	0	859	0.51	0.23	0.51	0.09	0.16	0.01	0.00	0.31	-0.17	0.31	-0.17	-0.07	0.28	0.07	1.96	1.05	1.47	1.05
20	607721	0	859	0.46	0.09	0.27	0.17	0.46	0.01	0.00	0.28	-0.10	-0.09	-0.17	0.28	0.48	0.07	3.14	1.08	3.20	1.13
21	642867	0	859	0.37	0.29	0.14	0.19	0.37	0.01	0.00	0.28	-0.05	-0.06	-0.21	0.28	0.57	0.08	1.15	1.03	1.04	1.04
22	641177	0	859	0.54	0.10	0.19	0.54	0.15	0.01	0.00	0.30	-0.15	-0.12	0.30	-0.15	-0.11	0.07	0.40	1.01	0.47	1.02
23	641271	0	859	0.49	0.19	0.49	0.05	0.26	0.01	0.00	0.38	-0.17	0.38	-0.22	-0.15	-0.01	0.07	-1.95	0.96	-1.97	0.93
24	643378	0	859	0.29	0.40	0.22	0.29	0.09	0.01	0.00	0.19	0.00	-0.07	0.19	-0.17	0.82	0.08	0.77	1.02	1.67	1.08
25	644030	0	859	0.91	0.02	0.91	0.03	0.03	0.00	0.00	0.28	-0.16	0.28	-0.17	-0.15	-1.99	0.10	-6.27	0.63	-5.08	0.52
26	641212	0	859	0.45	0.45	0.15	0.21	0.20	0.00	0.00	0.26	0.26	-0.12	-0.21	0.00	0.37	0.07	2.53	1.06	2.48	1.09
27	642352	0	859	0.30	0.13	0.30	0.37	0.20	0.00	0.00	0.31	-0.15	0.31	-0.09	-0.12	0.72	0.08	-2.11	0.94	-0.99	0.96
28	610864	0	859	0.55	0.10	0.55	0.24	0.11	0.00	0.00	0.35	-0.12	0.35	-0.22	-0.14	-0.03	0.07	-1.24	0.97	-1.20	0.96
29	642904	0	859	0.46	0.21	0.12	0.21	0.46	0.00	0.00	0.23	-0.06	-0.21	-0.06	0.23	0.44	0.07	4.17	1.11	3.03	1.12
30	607162	0	859	0.51	0.51	0.17	0.24	0.08	0.00	0.00	0.37	0.37	-0.19	-0.20	-0.11	0.08	0.07	-1.75	0.96	-1.52	0.95
31	612598	0	859	0.50	0.03	0.50	0.09	0.37	0.00	0.00	0.23	-0.17	0.23	-0.18	-0.07	-0.01	0.07	3.07	1.07	2.99	1.11

Appendix J: Item Statistics

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
32	641265	0	859	0.57	0.57	0.18	0.15	0.10	0.00	0.00	0.30	0.30	-0.11	-0.18	-0.13	-0.09	0.07	0.27	1.01	-0.26	0.99
33	643404	0	859	0.39	0.13	0.39	0.26	0.22	0.00	0.00	0.34	-0.14	0.34	-0.20	-0.07	0.45	0.07	-1.00	0.97	-0.43	0.98
34	607761	0	859	0.49	0.11	0.28	0.12	0.49	0.00	0.00	0.46	-0.16	-0.25	-0.22	0.46	-0.01	0.07	-5.26	0.89	-3.95	0.86
35	608247	0	859	0.59	0.08	0.19	0.59	0.14	0.00	0.00	0.32	-0.13	-0.21	0.32	-0.12	-0.26	0.07	-0.89	0.98	-1.07	0.96
36	611067	0	859	0.54	0.54	0.12	0.09	0.24	0.00	0.00	0.30	0.30	-0.21	-0.09	-0.12	-0.18	0.07	0.67	1.02	0.54	1.02
37	643342	0	859	0.57	0.04	0.08	0.31	0.57	0.00	0.00	0.36	-0.16	-0.21	-0.18	0.36	-0.89	0.08	5.45	1.19	2.74	1.17
38	643343	0	859	0.74	0.06	0.10	0.10	0.74	0.00	0.00	0.39	-0.19	-0.19	-0.22	0.39	-1.16	0.08	-2.41	0.91	-2.30	0.84
39	608020	0	859	0.62	0.28	0.62	0.07	0.02	0.00	0.00	0.40	-0.24	0.40	-0.24	-0.16	-0.14	0.07	-4.16	0.91	-3.28	0.88
40	644027	0	859	0.46	0.14	0.46	0.24	0.15	0.00	0.00	0.32	-0.13	0.32	-0.17	-0.10	0.20	0.07	0.15	1.00	0.61	1.02
41	642874	0	859	0.44	0.29	0.44	0.22	0.05	0.00	0.00	0.30	-0.08	0.30	-0.13	-0.24	0.13	0.07	0.80	1.02	-0.03	1.00
42	643402	0	859	0.38	0.17	0.24	0.21	0.38	0.00	0.00	0.31	-0.16	-0.06	-0.15	0.31	0.58	0.08	0.55	1.02	0.09	1.00
43	643399	0	859	0.73	0.73	0.07	0.09	0.10	0.00	0.00	0.45	0.45	-0.25	-0.26	-0.20	-0.98	0.08	-5.46	0.82	-4.65	0.73
44	607581	0	859	0.36	0.32	0.24	0.36	0.07	0.00	0.00	0.18	0.01	-0.13	0.18	-0.13	0.77	0.08	4.04	1.13	4.84	1.23
45	607827	0	859	0.51	0.16	0.16	0.51	0.17	0.00	0.00	0.34	-0.16	-0.19	0.34	-0.11	-0.47	0.07	2.94	1.08	1.38	1.06
46	641190	0	859	0.38	0.06	0.38	0.17	0.38	0.00	0.00	0.17	-0.14	-0.02	-0.10	0.17	1.03	0.08	7.32	1.30	7.25	1.43
47	608311	0	859	0.81	0.07	0.81	0.07	0.05	0.00	0.00	0.41	-0.19	0.41	-0.23	-0.24	-1.27	0.08	-6.73	0.74	-5.38	0.64
48	642382	0	859	0.43	0.15	0.43	0.31	0.11	0.00	0.00	0.26	-0.07	0.26	-0.09	-0.18	0.00	0.07	2.70	1.06	1.49	1.06

Table J–10. Literature Multiple-Choice Item Statistics: Summer

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
1	614624	0	644	0.85	0.06	0.04	0.05	0.85	0.00	0.00	0.35	-0.20	-0.22	-0.17	0.35	-1.07	0.10	-5.19	0.74	-4.40	0.65
2	614623	0	644	0.72	0.72	0.03	0.04	0.22	0.00	0.00	0.30	0.30	-0.21	-0.16	-0.17	-0.30	0.09	-1.14	0.96	-0.77	0.96
3	614625	0	644	0.54	0.25	0.11	0.10	0.54	0.00	0.00	0.22	0.07	-0.22	-0.23	0.22	0.47	0.09	4.01	1.13	4.57	1.20
4	614618	0	644	0.68	0.11	0.68	0.12	0.09	0.00	0.00	0.32	-0.15	0.32	-0.19	-0.14	-0.24	0.09	-0.48	0.98	-0.50	0.97
5	614621	0	644	0.57	0.14	0.24	0.57	0.06	0.00	0.00	0.33	-0.16	-0.14	0.33	-0.20	0.04	0.09	1.11	1.04	0.73	1.03
6	614619	0	644	0.32	0.32	0.15	0.25	0.27	0.00	0.00	0.10	0.10	-0.16	-0.01	0.04	1.68	0.10	6.63	1.34	7.14	1.65
7	614622	0	644	0.67	0.17	0.67	0.11	0.05	0.00	0.00	0.30	-0.12	0.30	-0.15	-0.22	-0.33	0.09	0.88	1.03	1.00	1.06
8	614627	0	644	0.41	0.19	0.22	0.41	0.18	0.00	0.00	0.10	-0.03	-0.07	0.10	-0.02	0.86	0.09	6.58	1.22	6.22	1.31
9	642676	0	644	0.47	0.28	0.16	0.47	0.08	0.01	0.00	0.30	-0.11	-0.11	0.30	-0.21	0.46	0.09	1.59	1.05	1.67	1.07
10	642714	0	644	0.32	0.32	0.18	0.45	0.04	0.00	0.00	0.22	0.22	-0.19	0.03	-0.19	1.32	0.09	1.83	1.07	3.04	1.19
11	642717	0	644	0.57	0.57	0.04	0.14	0.25	0.00	0.00	0.23	0.23	-0.27	-0.19	0.03	0.50	0.09	3.82	1.12	3.59	1.15
12	642674	0	644	0.83	0.08	0.03	0.83	0.05	0.00	0.00	0.46	-0.26	-0.25	0.46	-0.21	-1.84	0.13	1.49	1.13	-0.68	0.90
13	642675	0	644	0.58	0.19	0.06	0.16	0.58	0.01	0.00	0.45	-0.23	-0.23	-0.18	0.45	-0.08	0.09	-1.64	0.94	-1.64	0.92
14	642666	0	644	0.29	0.23	0.12	0.35	0.29	0.01	0.00	0.21	-0.04	-0.20	-0.01	0.21	1.52	0.09	1.88	1.08	2.56	1.19
15	642661	0	644	0.51	0.51	0.20	0.17	0.12	0.00	0.00	0.39	0.39	-0.22	-0.10	-0.19	0.55	0.09	-1.02	0.97	-0.42	0.98
16	642718	0	644	0.49	0.16	0.49	0.25	0.10	0.01	0.00	0.25	-0.17	0.25	0.00	-0.17	0.58	0.09	3.20	1.10	3.22	1.14
17	642665	0	644	0.48	0.48	0.09	0.15	0.27	0.01	0.00	0.23	0.23	-0.15	-0.07	-0.08	0.55	0.09	3.68	1.12	3.34	1.14
18	641557	0	644	0.47	0.28	0.47	0.21	0.04	0.00	0.00	0.34	-0.17	0.34	-0.13	-0.19	0.50	0.09	0.48	1.01	0.65	1.03
19	641558	0	644	0.52	0.26	0.10	0.52	0.13	0.00	0.00	0.36	-0.15	-0.27	0.36	-0.11	0.26	0.09	0.26	1.01	0.15	1.01
20	641550	0	644	0.62	0.06	0.11	0.21	0.62	0.00	0.00	0.29	-0.20	-0.15	-0.11	0.29	-0.02	0.09	1.18	1.04	1.61	1.08
21	641551	0	644	0.41	0.27	0.41	0.24	0.09	0.00	0.00	0.11	0.02	0.11	0.01	-0.24	1.05	0.09	6.93	1.25	6.27	1.35
22	641605	0	644	0.59	0.59	0.11	0.17	0.13	0.00	0.00	0.36	0.36	-0.23	-0.15	-0.15	0.29	0.09	-0.58	0.98	-0.47	0.98
23	641554	0	644	0.62	0.13	0.13	0.62	0.11	0.00	0.00	0.51	-0.25	-0.25	0.51	-0.23	-0.28	0.09	-2.78	0.90	-3.08	0.84
24	641559	0	644	0.51	0.08	0.15	0.51	0.26	0.00	0.00	0.27	-0.32	-0.10	0.27	-0.03	0.84	0.09	4.15	1.14	4.62	1.22
25	641552	0	644	0.57	0.13	0.57	0.16	0.14	0.00	0.00	0.29	-0.14	0.29	-0.19	-0.07	0.34	0.09	1.65	1.05	2.21	1.09
26	641556	0	644	0.57	0.57	0.15	0.17	0.11	0.00	0.00	0.35	0.35	-0.13	-0.15	-0.23	-0.10	0.09	1.62	1.06	1.43	1.07
27	612457	0	644	0.64	0.64	0.08	0.20	0.07	0.00	0.00	0.38	0.38	-0.19	-0.16	-0.24	-0.38	0.09	0.53	1.02	-0.04	1.00
28	612463	0	644	0.52	0.16	0.13	0.20	0.52	0.00	0.00	0.37	-0.15	-0.20	-0.15	0.37	0.00	0.09	1.70	1.06	1.32	1.06
29	612461	0	644	0.52	0.15	0.13	0.19	0.52	0.01	0.00	0.39	-0.19	-0.23	-0.10	0.39	0.31	0.09	-0.84	0.97	-0.91	0.96
30	612459	0	644	0.55	0.55	0.21	0.15	0.08	0.01	0.00	0.33	0.33	-0.08	-0.21	-0.18	-0.09	0.09	2.33	1.08	2.87	1.15
31	612464	0	644	0.49	0.36	0.08	0.49	0.07	0.00	0.00	0.39	-0.10	-0.36	0.39	-0.20	0.34	0.09	-0.81	0.97	-1.29	0.95

Appendix J: Item Statistics

Item Information			Classical												Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	P(*)	ITCorr	Corr(A)	Corr(B)	Corr(C)	Corr(D)	Meas	SEM	*z*	MS	*z*	MS
32	616845	0	644	0.68	0.09	0.68	0.08	0.14	0.01	0.00	0.45	-0.27	0.45	-0.23	-0.19	-0.51	0.09	-1.97	0.92	-2.15	0.87
33	612466	0	644	0.58	0.08	0.18	0.58	0.16	0.00	0.00	0.39	-0.27	-0.19	0.39	-0.11	-0.11	0.09	0.16	1.01	0.36	1.02
34	612456	0	644	0.51	0.11	0.51	0.24	0.13	0.00	0.00	0.35	-0.24	0.35	-0.11	-0.15	0.51	0.09	0.08	1.00	0.33	1.01

Table J–11. Algebra I Constructed-Response Item Statistics: Winter

Item Information			Classical														Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Meas	SEM	*z*	MS	*z*	MS
1	632536	0	97386	0.33	0.37	0.24	0.17	0.14	0.08	0.03	0.67	-0.50	-0.08	0.11	0.32	0.46	0.90	0.00	0.15	1.00	-9.90	0.94
2	608731	0	97386	0.15	0.56	0.33	0.06	0.03	0.01	0.07	0.65	-0.55	0.24	0.30	0.32	0.27	1.74	0.00	-9.90	0.64	-9.90	0.63
3	633311	0	97386	0.48	0.25	0.17	0.19	0.21	0.19	0.07	0.62	-0.46	-0.17	0.00	0.22	0.45	0.11	0.00	-9.90	0.90	-9.90	0.92
4	607147	0	97386	0.26	0.37	0.36	0.15	0.08	0.03	0.04	0.67	-0.49	-0.04	0.24	0.38	0.36	1.10	0.00	-9.90	0.77	-9.90	0.74
5	633313	0	97386	0.16	0.61	0.24	0.08	0.04	0.03	0.07	0.61	-0.48	0.13	0.22	0.28	0.39	1.56	0.00	-9.90	0.92	-9.90	0.83
6	613668	0	97386	0.27	0.43	0.32	0.10	0.07	0.09	0.09	0.65	-0.48	-0.01	0.14	0.25	0.49	1.30	0.00	9.90	1.14	9.90	1.13

Table J–12. Biology Constructed-Response Item Statistics: Winter

Item Information			Classical											Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Meas	SEM	*z*	MS	*z*	MS
1	607788	0	62415	0.14	0.64	0.29	0.05	0.01	0.03	0.52	-0.42	0.20	0.36	0.27	1.78	0.01	-9.90	0.82	-9.90	0.79
2	612577	0	62415	0.26	0.44	0.39	0.13	0.04	0.10	0.59	-0.45	0.08	0.34	0.38	1.30	0.01	-9.90	0.90	-9.90	0.88
3	607773	0	62415	0.11	0.77	0.15	0.06	0.02	0.08	0.55	-0.49	0.24	0.34	0.30	1.78	0.01	-9.90	0.76	-9.90	0.63
4	608334	0	62415	0.32	0.41	0.33	0.17	0.10	0.04	0.55	-0.43	0.00	0.26	0.39	0.50	0.00	-9.90	0.91	-9.90	0.90
5	608338	0	62415	0.53	0.21	0.28	0.25	0.27	0.06	0.56	-0.42	-0.18	0.11	0.45	0.01	0.00	-0.15	1.00	1.54	1.01
6	611077	0	62415	0.20	0.57	0.29	0.11	0.03	0.10	0.55	-0.45	0.14	0.32	0.34	1.09	0.01	-9.90	0.82	-9.90	0.76

Table J–13. Literature Constructed-Response Item Statistics: Winter

Item Information			Classical											Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Meas	SEM	*z*	MS	*z*	MS
1	613661	0	49572	0.42	0.24	0.34	0.32	0.09	0.06	0.64	-0.47	-0.15	0.34	0.40	1.38	0.01	4.57	1.03	6.91	1.05
2	616673	0	49572	0.37	0.25	0.44	0.24	0.07	0.07	0.68	-0.48	-0.14	0.42	0.40	1.26	0.01	-9.90	0.74	-9.90	0.73
3	616672	0	49572	0.31	0.37	0.39	0.19	0.05	0.10	0.69	-0.58	0.07	0.43	0.35	0.97	0.01	-9.90	0.80	-9.90	0.78
4	614566	0	49572	0.37	0.23	0.49	0.22	0.06	0.07	0.65	-0.48	-0.10	0.39	0.36	1.36	0.01	-9.90	0.71	-9.90	0.71
5	614551	0	49572	0.48	0.17	0.34	0.38	0.11	0.07	0.67	-0.45	-0.26	0.31	0.44	0.82	0.01	-9.90	0.74	-9.90	0.74
6	614552	0	49572	0.40	0.27	0.35	0.31	0.07	0.11	0.66	-0.50	-0.13	0.39	0.39	0.73	0.01	-9.90	0.83	-9.90	0.82

Table J–14. Algebra I Constructed-Response Item Statistics: Spring

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	608732	0	201526	0.22	0.44	0.35	0.12	0.06	0.03	0.03	0.67	-0.57	0.11	0.32	0.32	0.30					1.69	0.00	-9.90	0.78	-9.90	0.75
2	644452	0	201526	0.32	0.29	0.33	0.22	0.12	0.05	0.03	0.64	-0.47	-0.11	0.22	0.35	0.32					1.29	0.00	2.10	1.01	-2.08	0.99
3	640128	0	201526	0.42	0.23	0.27	0.21	0.21	0.09	0.05	0.72	-0.52	-0.22	0.11	0.40	0.39					0.60	0.00	-9.90	0.87	-9.90	0.86
4	609334	0	201526	0.45	0.15	0.40	0.15	0.12	0.18	0.03	0.73	-0.45	-0.34	0.12	0.25	0.53					0.67	0.00	-9.90	0.89	-9.90	0.85
5	640899	0	201526	0.23	0.46	0.27	0.17	0.08	0.02	0.03	0.57	-0.49	0.07	0.24	0.32	0.24					2.06	0.00	9.90	1.28	9.90	1.35
6	644797	0	201526	0.31	0.29	0.37	0.20	0.10	0.04	0.05	0.69	-0.50	-0.11	0.26	0.37	0.34					1.32	0.00	-9.90	0.80	-9.90	0.80
7	665047	1	2163	0.11	0.73	0.17	0.05	0.04	0.01	0.04	0.56	-0.58	0.35	0.26	0.26	0.19	A-	A-	A-	A-	2.49	0.03	-0.79	0.96	-3.18	0.78
8	672736	1	2163	0.28	0.31	0.37	0.22	0.09	0.01	0.02	0.68	-0.54	-0.06	0.36	0.38	0.14	A+	C-	A-	A+	1.87	0.03	-4.31	0.88	-4.99	0.86
9	681299	2	1663	0.26	0.42	0.26	0.18	0.10	0.03	0.03	0.70	-0.63	0.07	0.31	0.37	0.27	A+	A-	A+	A-	1.97	0.03	-5.46	0.82	-6.58	0.73
10	666558	2	1663	0.36	0.38	0.19	0.15	0.17	0.11	0.04	0.72	-0.58	-0.10	0.13	0.36	0.45	A+	A-	A-	A+	1.35	0.03	-3.91	0.87	-3.56	0.84
11	664667	3	1647	0.36	0.27	0.35	0.15	0.13	0.10	0.02	0.68	-0.59	-0.03	0.16	0.31	0.39	A+	A+	A+	A-	1.30	0.03	-0.14	0.99	-1.08	0.96
12	678821	3	1647	0.38	0.21	0.35	0.20	0.18	0.06	0.03	0.77	-0.56	-0.23	0.21	0.45	0.34	A-	A-	A+	B-	1.30	0.03	-9.40	0.71	-9.90	0.69
13	672731	4	1640	0.25	0.53	0.18	0.16	0.06	0.08	0.03	0.63	-0.61	0.13	0.27	0.23	0.37	A+	A-	A-	B-	1.82	0.03	-0.57	0.98	-2.80	0.84
14	678824	4	1640	0.22	0.44	0.35	0.15	0.05	0.02	0.04	0.63	-0.62	0.24	0.35	0.22	0.18	A+	A-	A-	A-	2.26	0.03	-1.79	0.93	-4.29	0.83
15	674407	5	1607	0.14	0.65	0.21	0.08	0.05	0.00	0.03	0.60	-0.60	0.30	0.30	0.33	0.07	A-	A+	A-	A-	3.27	0.04	-4.67	0.80	-5.66	0.66
16	678815	5	1607	0.25	0.44	0.29	0.16	0.08	0.03	0.04	0.58	-0.51	0.07	0.26	0.28	0.26	A+	A-	A-	B-	2.06	0.03	1.66	1.06	0.20	1.01
17	673351	6	1686	0.47	0.17	0.25	0.23	0.21	0.14	0.01	0.70	-0.45	-0.30	0.02	0.31	0.47	A-	A-	A-	A-	0.83	0.03	-2.14	0.93	-2.69	0.91
18	678826	6	1686	0.31	0.19	0.51	0.18	0.09	0.03	0.02	0.64	-0.46	-0.15	0.34	0.34	0.21	A+	A-	A-	A-	1.77	0.03	-2.21	0.92	-3.15	0.89
19	674406	7	1611	0.32	0.12	0.53	0.29	0.05	0.01	0.03	0.61	-0.35	-0.30	0.42	0.29	0.15	A+	A-	B-	B-	1.99	0.04	-4.83	0.83	-5.08	0.83
20	665789	7	1611	0.22	0.51	0.24	0.14	0.07	0.03	0.01	0.70	-0.64	0.13	0.36	0.34	0.28	A+	A-	A-	A+	2.12	0.03	-7.46	0.73	-7.40	0.66
21	674405	8	1704	0.21	0.44	0.35	0.17	0.04	0.00	0.02	0.65	-0.59	0.17	0.41	0.25	0.13	B-	B-	A-	A-	2.74	0.04	-5.55	0.82	-6.39	0.77
22	682639	8	1704	0.30	0.42	0.20	0.18	0.12	0.07	0.02	0.62	-0.54	-0.03	0.24	0.33	0.31	A-	A-	A-	A-	1.67	0.03	1.79	1.06	2.27	1.11
23	674404	9	1678	0.39	0.24	0.34	0.16	0.11	0.15	0.02	0.69	-0.52	-0.16	0.13	0.30	0.44	A+	A-	A-	B-	1.13	0.03	-0.73	0.97	-2.18	0.92
24	657756	9	1678	0.39	0.17	0.35	0.29	0.14	0.06	0.02	0.64	-0.46	-0.18	0.14	0.34	0.33	A+	A-	A-	A-	1.30	0.03	-1.13	0.96	-1.13	0.96
25	665889	10	1618	0.06	0.85	0.09	0.04	0.01	0.00	0.03	0.47	-0.49	0.32	0.28	0.18	0.06	A-	A+	A-	A+	3.77	0.05	-2.74	0.82	-5.05	0.47
26	665178	10	1618	0.31	0.46	0.17	0.13	0.16	0.08	0.03	0.72	-0.68	0.08	0.19	0.39	0.36	A-	A-	A-	A-	1.62	0.03	-4.72	0.83	-5.16	0.74
27	665857	11	1688	0.11	0.71	0.20	0.05	0.03	0.01	0.04	0.58	-0.58	0.34	0.27	0.27	0.21	A-	A-	A-	A-	2.78	0.04	-5.39	0.74	-6.57	0.58
28	666526	11	1688	0.31	0.29	0.27	0.38	0.05	0.01	0.02	0.63	-0.57	0.00	0.39	0.23	0.20	A+	A-	A-	A-	2.04	0.03	-1.23	0.96	-1.67	0.94
29	674399	12	1720	0.27	0.31	0.37	0.22	0.10	0.00	0.02	0.51	-0.42	-0.01	0.23	0.34	0.08	A-	A-	A+	A-	2.62	0.03	3.81	1.13	3.23	1.11
30	672279	12	1720	0.19	0.51	0.30	0.12	0.05	0.02	0.02	0.53	-0.43	0.08	0.26	0.29	0.22	A-	A-	A-	A+	2.29	0.03	-0.30	0.99	1.19	1.06
31	681301	13	1685	0.39	0.22	0.37	0.12	0.19	0.09	0.03	0.72	-0.53	-0.20	0.13	0.43	0.37	A-	A-	A-	A-	1.15	0.03	-5.15	0.84	-6.03	0.79

Item Information			Classical													DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	678820	13	1685	0.19	0.54	0.23	0.17	0.04	0.01	0.02	0.67	-0.61	0.16	0.41	0.30	0.19	A+	A-	A+	A-	2.45	0.03	-6.94	0.76	-5.88	0.72
33	674398	14	1685	0.22	0.33	0.47	0.19	0.01	0.00	0.02	0.65	-0.59	0.16	0.47	0.11	-	A+	A-	A-	A-	2.42	0.04	-7.48	0.78	-7.93	0.77
34	678819	14	1685	0.41	0.21	0.30	0.21	0.18	0.10	0.02	0.73	-0.56	-0.20	0.15	0.37	0.40	A+	A-	A-	A-	1.10	0.03	-6.87	0.79	-6.84	0.78
35	672276	15	1675	0.07	0.77	0.20	0.03	0.00	0.00	0.05	0.44	-0.44	0.36	0.23	0.07	0.04	A+	A-	A-	A+	4.08	0.05	-0.77	0.96	-2.85	0.81
36	672280	15	1675	0.32	0.33	0.33	0.16	0.11	0.07	0.04	0.73	-0.59	-0.04	0.24	0.36	0.39	A+	A-	A-	A-	1.54	0.03	-7.16	0.76	-7.59	0.73
37	672278	16	1685	0.26	0.36	0.40	0.12	0.08	0.04	0.04	0.66	-0.57	0.07	0.29	0.33	0.28	A+	A-	A-	A-	1.84	0.03	-5.22	0.81	-6.57	0.76
38	666536	16	1685	0.10	0.64	0.34	0.02	0.00	0.00	0.03	0.41	-0.40	0.36	0.13	0.08	0.07	A-	A-	A-	A-	3.43	0.05	0.24	1.01	0.13	1.01
39	673353	17	1738	0.09	0.74	0.18	0.05	0.02	0.01	0.04	0.51	-0.52	0.33	0.26	0.23	0.11	A-	A-	A+	A-	3.11	0.04	-1.71	0.91	-4.05	0.72
40	672733	17	1738	0.42	0.12	0.38	0.25	0.17	0.07	0.01	0.68	-0.39	-0.32	0.08	0.42	0.35	A-	B-	A-	A-	1.05	0.03	-4.50	0.86	-4.86	0.85
41	672732	18	1692	0.06	0.78	0.20	0.01	0.01	0.00	0.05	0.44	-0.45	0.39	0.14	0.11	0.11	A-	A-	A-	A-	3.62	0.05	-0.03	1.00	-1.90	0.86
42	673350	18	1692	0.45	0.17	0.26	0.25	0.23	0.09	0.02	0.72	-0.52	-0.26	0.11	0.37	0.39	A+	A-	B-	A-	1.02	0.03	-4.21	0.87	-4.50	0.86
43	682824	19	1680	0.34	0.34	0.27	0.18	0.13	0.09	0.01	0.61	-0.49	-0.08	0.19	0.29	0.35	A-	B-	A-	A-	1.40	0.03	2.96	1.11	2.22	1.09
44	672735	19	1680	0.34	0.35	0.22	0.21	0.16	0.06	0.01	0.69	-0.61	-0.03	0.22	0.38	0.30	A-	C-	B-	A-	1.52	0.03	-2.48	0.92	-3.30	0.87
45	673352	20	1692	0.29	0.24	0.46	0.21	0.06	0.02	0.02	0.65	-0.50	-0.08	0.34	0.32	0.22	A+	A-	A-	A-	1.88	0.03	-5.09	0.83	-5.42	0.82
46	673356	20	1692	0.34	0.40	0.21	0.14	0.14	0.10	0.02	0.74	-0.66	0.00	0.20	0.34	0.44	A-	A-	A-	A-	1.42	0.03	-7.14	0.77	-5.91	0.75
47	674402	21	1690	0.32	0.24	0.38	0.24	0.10	0.03	0.02	0.66	-0.51	-0.11	0.30	0.34	0.24	A+	A-	A-	A-	1.69	0.03	-4.23	0.86	-4.58	0.85
48	678822	21	1690	0.22	0.39	0.41	0.16	0.04	0.01	0.02	0.65	-0.57	0.14	0.37	0.30	0.14	A+	A-	A-	A-	2.48	0.04	-5.99	0.80	-7.25	0.75
49	665677	22	1672	0.30	0.30	0.34	0.24	0.09	0.02	0.01	0.55	-0.36	-0.16	0.26	0.33	0.23	A+	A-	A-	A-	1.97	0.03	3.21	1.11	3.22	1.12
50	672275	22	1672	0.39	0.20	0.33	0.24	0.15	0.08	0.01	0.70	-0.47	-0.25	0.17	0.36	0.39	A-	B-	A-	A-	1.19	0.03	-3.86	0.88	-3.95	0.87
51	672277	23	1675	0.50	0.22	0.21	0.17	0.15	0.24	0.02	0.73	-0.55	-0.21	0.03	0.19	0.55	A+	A-	A-	A-	0.68	0.02	-3.55	0.88	-3.95	0.84
52	666557	23	1675	0.28	0.37	0.34	0.16	0.06	0.07	0.01	0.69	-0.61	0.04	0.35	0.24	0.37	A-	A-	A-	A-	1.65	0.03	-5.83	0.79	-6.63	0.75
53	681303	24	1725	0.25	0.25	0.51	0.21	0.01	0.01	0.02	0.62	-0.46	-0.05	0.47	0.19	0.15	A+	A-	A-	A-	2.43	0.04	-5.03	0.83	-5.45	0.83
54	678816	24	1725	0.06	0.75	0.24	0.01	0.00	0.00	0.02	0.43	-0.42	0.40	0.14	0.03	-	A-	A-	A-	A-	4.53	0.06	-1.17	0.96	-2.15	0.87

Table J–15. Biology Constructed-Response Item Statistics: Spring

Item Information			Classical											DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	641295	0	164172	0.43	0.25	0.31	0.32	0.11	0.04	0.63	-0.52	-0.11	0.35	0.36					0.52	0.00	-9.90	0.91	-9.90	0.95
2	611041	0	164172	0.35	0.40	0.26	0.22	0.12	0.07	0.62	-0.54	0.02	0.32	0.38					0.87	0.00	9.90	1.08	9.90	1.11
3	641308	0	164172	0.23	0.56	0.24	0.15	0.06	0.09	0.68	-0.65	0.23	0.41	0.33					1.50	0.00	-9.90	0.81	-9.90	0.74
4	608246	0	164172	0.54	0.10	0.35	0.38	0.16	0.03	0.63	-0.36	-0.33	0.17	0.49					0.10	0.00	-9.90	0.89	-9.90	0.91
5	609831	0	164172	0.42	0.35	0.23	0.22	0.20	0.08	0.75	-0.61	-0.10	0.26	0.56					0.34	0.00	-9.90	0.85	-9.90	0.84
6	641226	0	164172	0.32	0.52	0.18	0.12	0.18	0.08	0.71	-0.62	0.01	0.26	0.56					1.04	0.00	-9.86	0.96	-9.90	0.87
7	682812	1	2066	0.24	0.45	0.42	0.09	0.04	0.04	0.55	-0.54	0.30	0.25	0.25	A-	B-	A-	A+	1.77	0.04	2.59	1.09	1.52	1.05
8	682675	1	2066	0.35	0.46	0.19	0.18	0.17	0.07	0.76	-0.69	0.04	0.32	0.54	A+	A-	A+	A-	0.91	0.03	-6.60	0.80	-6.84	0.73
9	683353	2	1708	0.38	0.27	0.40	0.24	0.08	0.02	0.63	-0.52	-0.04	0.36	0.34	A+	B-	A-	A-	1.23	0.03	-1.55	0.95	-1.98	0.94
10	641217	2	1708	0.59	0.15	0.23	0.34	0.29	0.03	0.61	-0.48	-0.18	0.08	0.45	A-	C-	A-	A+	0.12	0.03	1.38	1.04	2.77	1.10
11	677887	3	1763	0.42	0.29	0.31	0.26	0.14	0.04	0.64	-0.55	-0.04	0.30	0.39	A+	A-	A-	A+	0.91	0.03	0.13	1.00	-0.05	1.00
12	682805	3	1763	0.31	0.45	0.27	0.18	0.10	0.04	0.68	-0.62	0.10	0.38	0.40	C+	A-	A-	A+	1.42	0.03	-4.09	0.87	-5.27	0.80
13	678999	4	1700	0.53	0.21	0.25	0.29	0.25	0.04	0.51	-0.41	-0.14	0.14	0.37	A-	A-	A+	A+	0.39	0.03	8.23	1.28	8.62	1.33
14	608329	4	1700	0.26	0.49	0.31	0.15	0.05	0.06	0.67	-0.65	0.25	0.40	0.29	A+	A-	A-	B-	1.83	0.04	-4.87	0.84	-5.88	0.77
15	678997	5	1730	0.18	0.64	0.22	0.09	0.05	0.02	0.59	-0.58	0.29	0.32	0.31	A+	A-	A-	A-	2.15	0.04	-4.17	0.84	-4.52	0.75
16	644203	5	1730	0.28	0.43	0.33	0.20	0.04	0.03	0.59	-0.58	0.21	0.37	0.21	A-	A-	A-	A+	1.82	0.04	1.24	1.04	-0.08	1.00
17	679992	6	1717	0.19	0.54	0.36	0.08	0.02	0.03	0.49	-0.43	0.20	0.32	0.19	A-	A-	A-	A-	2.53	0.04	0.97	1.04	-0.19	0.99
18	678296	6	1717	0.65	0.11	0.17	0.37	0.35	0.03	0.65	-0.45	-0.29	0.00	0.52	B+	A-	A-	A-	-0.19	0.03	-2.86	0.91	-2.22	0.92
19	683190	7	1750	0.33	0.42	0.20	0.36	0.02	0.02	0.51	-0.40	-0.12	0.46	0.18	A+	A+	A-	A-	2.01	0.03	6.44	1.21	6.06	1.28
20	641306	7	1750	0.23	0.54	0.27	0.14	0.05	0.03	0.59	-0.55	0.19	0.36	0.30	A+	A-	A-	A+	1.98	0.04	-0.68	0.97	-2.04	0.91
21	682820	8	1539	0.29	0.51	0.23	0.15	0.11	0.04	0.66	-0.60	0.11	0.34	0.42	A+	A+	A-	A-	1.57	0.03	-3.74	0.86	-4.45	0.78
22	683305	8	1539	0.32	0.32	0.45	0.18	0.05	0.03	0.46	-0.32	-0.07	0.33	0.25	A+	A+	A-	C-	1.66	0.04	4.93	1.18	4.76	1.18
23	684217	9	1815	0.27	0.45	0.34	0.16	0.05	0.04	0.50	-0.44	0.11	0.31	0.24	A+	A-	A-	A-	1.76	0.03	4.25	1.15	4.09	1.16
24	680318	9	1815	0.23	0.56	0.25	0.13	0.06	0.07	0.59	-0.56	0.21	0.35	0.29	B+	A-	A-	A+	1.90	0.03	-0.37	0.99	-2.60	0.87
25	644200	10	1755	0.16	0.69	0.17	0.13	0.01	0.04	0.60	-0.58	0.27	0.44	0.18	A-	A-	A-	A-	2.67	0.04	-5.25	0.80	-4.85	0.69
26	684060	10	1755	0.29	0.46	0.29	0.15	0.10	0.06	0.67	-0.59	0.11	0.32	0.43	A+	A-	A-	A+	1.51	0.03	-4.55	0.85	-5.16	0.79
27	677888	11	1701	0.37	0.36	0.28	0.24	0.12	0.05	0.67	-0.59	0.02	0.34	0.40	A+	A-	A-	A+	1.22	0.03	-3.36	0.89	-3.92	0.86
28	644204	11	1701	0.58	0.21	0.18	0.29	0.33	0.04	0.72	-0.59	-0.19	0.12	0.54	A-	C-	C-	A+	0.25	0.03	-5.24	0.84	-4.20	0.84
29	641222	12	1761	0.26	0.51	0.26	0.15	0.08	0.07	0.58	-0.53	0.15	0.30	0.34	A+	A-	A+	A-	1.70	0.03	2.14	1.08	0.88	1.04
30	682669	12	1761	0.56	0.11	0.31	0.37	0.21	0.03	0.61	-0.41	-0.28	0.15	0.45	B+	A-	B-	A+	0.14	0.03	-0.37	0.99	0.23	1.01
31	678932	13	1726	0.52	0.22	0.24	0.28	0.26	0.02	0.69	-0.48	-0.28	0.17	0.56	A+	B-	A-	A-	0.50	0.03	-4.19	0.87	-4.12	0.86

Appendix J: Item Statistics

Item Information			Classical												DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	679213	13	1726	0.35	0.36	0.31	0.25	0.08	0.05	0.52	-0.44	0.01	0.29	0.30	A+	B-	A-	A-	1.43	0.03	5.83	1.20	5.42	1.20
33	679212	14	1741	0.30	0.42	0.31	0.23	0.05	0.04	0.69	-0.65	0.16	0.43	0.29	A+	A-	A-	A-	1.78	0.03	-5.90	0.82	-6.26	0.78
34	677891	14	1741	0.26	0.49	0.31	0.14	0.06	0.03	0.60	-0.56	0.20	0.34	0.30	A+	A-	A+	A+	1.89	0.03	0.28	1.01	-1.50	0.94
35	678998	15	1745	0.41	0.25	0.36	0.30	0.10	0.03	0.55	-0.43	-0.10	0.29	0.33	A+	B-	A-	A+	1.11	0.03	3.06	1.10	3.44	1.11
36	641231	15	1745	0.50	0.32	0.17	0.23	0.29	0.04	0.61	-0.54	-0.06	0.15	0.47	C+	A-	A-	A+	0.63	0.03	5.39	1.19	5.23	1.25
37	644152	16	1744	0.65	0.14	0.17	0.30	0.39	0.04	0.62	-0.49	-0.25	0.09	0.46	A-	B-	C-	A+	-0.03	0.03	-0.60	0.98	1.71	1.07
38	677890	16	1744	0.42	0.22	0.43	0.21	0.14	0.04	0.64	-0.46	-0.17	0.30	0.44	A+	A-	A-	A-	0.98	0.03	-3.24	0.90	-3.92	0.88
39	682993	17	1589	0.42	0.38	0.18	0.23	0.21	0.03	0.49	-0.46	0.12	0.03	0.42	A+	A+	A+	A-	0.97	0.03	9.90	1.42	9.90	1.62
40	678994	17	1589	0.32	0.34	0.42	0.19	0.05	0.03	0.53	-0.38	-0.05	0.37	0.29	A+	B-	A+	A-	1.69	0.04	1.12	1.04	0.95	1.03
41	677889	18	1772	0.25	0.60	0.17	0.12	0.11	0.06	0.65	-0.64	0.22	0.31	0.41	A+	A-	A+	A-	1.73	0.03	-4.69	0.83	-5.48	0.69
42	678996	18	1772	0.46	0.33	0.14	0.36	0.17	0.03	0.47	-0.39	-0.12	0.22	0.32	A+	A-	A-	A+	0.91	0.03	9.90	1.44	9.90	1.51
43	682915	19	1764	0.23	0.59	0.21	0.13	0.07	0.03	0.61	-0.57	0.18	0.36	0.34	A-	A-	A-	A-	1.94	0.03	-2.69	0.90	-3.50	0.82
44	678421	19	1764	0.69	0.08	0.17	0.35	0.40	0.02	0.57	-0.40	-0.30	0.04	0.42	A-	C-	C-	B+	-0.38	0.03	0.67	1.02	3.22	1.13
45	682984	20	1725	0.38	0.32	0.27	0.35	0.05	0.03	0.29	-0.19	-0.07	0.13	0.26	A+	A-	A-	A-	1.42	0.03	9.90	1.61	9.90	1.73
46	641228	20	1725	0.15	0.72	0.13	0.10	0.04	0.05	0.54	-0.54	0.27	0.33	0.27	A+	A+	A-	A+	2.28	0.04	-1.34	0.94	-2.93	0.77
47	682911	21	1777	0.30	0.47	0.24	0.22	0.07	0.04	0.65	-0.58	0.08	0.42	0.33	A+	A-	A-	A-	1.69	0.03	-3.97	0.87	-4.60	0.81
48	684325	21	1777	0.45	0.18	0.38	0.33	0.11	0.03	0.56	-0.47	-0.07	0.24	0.33	A+	B-	A-	A+	0.90	0.03	1.86	1.06	2.16	1.07
49	679989	22	1507	0.43	0.27	0.32	0.26	0.15	0.02	0.55	-0.44	-0.11	0.27	0.35	A+	A+	A-	A-	0.94	0.03	3.96	1.14	4.04	1.15
50	679991	22	1507	0.31	0.46	0.26	0.18	0.10	0.03	0.68	-0.62	0.11	0.36	0.41	B+	A+	A-	A-	1.51	0.03	-5.09	0.83	-5.62	0.76
51	678424	23	1541	0.41	0.33	0.28	0.21	0.18	0.03	0.71	-0.61	-0.03	0.27	0.49	A-	A-	A+	A+	1.09	0.03	-4.38	0.86	-5.10	0.81
52	682676	23	1541	0.44	0.35	0.21	0.21	0.23	0.02	0.67	-0.58	-0.05	0.24	0.49	A+	A-	A-	A-	0.95	0.03	0.44	1.02	-0.07	1.00
53	683360	24	1702	0.26	0.52	0.27	0.13	0.08	0.03	0.59	-0.53	0.14	0.30	0.38	A+	A-	A+	A-	1.77	0.03	-2.01	0.93	-1.78	0.92
54	682671	24	1702	0.30	0.43	0.30	0.21	0.07	0.03	0.61	-0.55	0.11	0.35	0.32	B+	A-	A-	A+	1.67	0.03	0.04	1.00	-1.43	0.94

Table J–16. Literature Constructed-Response Item Statistics: Spring

Item Information			Classical												DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
1	613852	0	143421	0.52	0.12	0.36	0.37	0.15	0.03	0.68	-0.49	-0.29	0.33	0.40					0.63	0.00	-9.90	0.85	-9.90	0.85
2	644720	0	143421	0.48	0.15	0.34	0.42	0.09	0.04	0.69	-0.54	-0.23	0.42	0.33					1.03	0.00	-9.90	0.64	-9.90	0.65
3	644721	0	143421	0.53	0.14	0.28	0.42	0.16	0.07	0.70	-0.53	-0.28	0.32	0.41					0.65	0.00	-9.90	0.78	-9.90	0.78
4	614714	0	143421	0.61	0.07	0.20	0.55	0.18	0.03	0.64	-0.45	-0.33	0.20	0.39					0.52	0.00	-9.90	0.86	-9.90	0.87
5	644058	0	143421	0.47	0.16	0.36	0.38	0.10	0.05	0.70	-0.56	-0.21	0.41	0.35					0.94	0.00	-9.90	0.67	-9.90	0.67
6	644056	0	143421	0.51	0.17	0.26	0.41	0.15	0.07	0.69	-0.55	-0.21	0.32	0.41					0.76	0.00	-9.90	0.77	-9.90	0.77
7	669194	1	1696	0.52	0.10	0.36	0.43	0.11	0.02	0.68	-0.51	-0.31	0.38	0.35	B+	A+	A+	A-	0.82	0.04	-8.31	0.75	-8.42	0.75
8	683203	1	1696	0.53	0.10	0.35	0.42	0.14	0.03	0.69	-0.52	-0.32	0.37	0.36	A+	A-	A-	A-	0.74	0.04	-8.13	0.76	-8.13	0.76
9	669196	2	1680	0.49	0.15	0.35	0.40	0.11	0.03	0.68	-0.52	-0.24	0.39	0.35	A+	A+	A-	A-	1.13	0.04	-7.67	0.77	-7.78	0.77
10	683204	2	1680	0.58	0.08	0.34	0.35	0.23	0.03	0.68	-0.49	-0.34	0.23	0.44	B+	A+	A+	A-	0.49	0.03	-6.58	0.81	-6.57	0.80
11	681264	3	1691	0.46	0.17	0.35	0.39	0.08	0.04	0.67	-0.53	-0.19	0.41	0.32	A+	A+	A+	A-	1.25	0.04	-6.95	0.79	-6.93	0.79
12	614644	3	1691	0.57	0.07	0.30	0.48	0.15	0.02	0.67	-0.46	-0.36	0.29	0.38	C+	A+	B+	A+	0.46	0.04	-7.15	0.78	-7.29	0.78
13	681366	4	1628	0.52	0.14	0.29	0.44	0.12	0.03	0.74	-0.58	-0.26	0.39	0.39	A+	A-	A+	A-	0.93	0.04	-9.90	0.69	-9.90	0.69
14	614645	4	1628	0.51	0.06	0.46	0.38	0.10	0.02	0.62	-0.46	-0.31	0.35	0.32	B+	A-	A-	A-	0.72	0.04	-5.32	0.83	-5.18	0.84
15	681261	5	1668	0.53	0.08	0.35	0.47	0.10	0.02	0.64	-0.42	-0.37	0.39	0.33	A+	A-	A-	A-	0.84	0.04	-6.60	0.80	-6.64	0.80
16	683313	5	1668	0.50	0.12	0.35	0.44	0.09	0.03	0.66	-0.48	-0.29	0.41	0.31	A+	A+	A-	A-	1.04	0.04	-6.42	0.80	-6.53	0.80
17	681394	6	1654	0.50	0.13	0.33	0.45	0.09	0.04	0.70	-0.56	-0.25	0.43	0.32	C+	A-	A-	A+	1.03	0.04	-8.79	0.74	-8.56	0.74
18	683413	6	1654	0.47	0.17	0.35	0.40	0.09	0.06	0.66	-0.50	-0.22	0.41	0.32	B+	A+	A-	B-	1.19	0.04	-6.03	0.82	-6.37	0.81
19	681397	7	1659	0.49	0.13	0.36	0.43	0.08	0.02	0.70	-0.49	-0.31	0.44	0.34	B+	A+	A-	B-	1.13	0.04	-8.59	0.74	-8.67	0.74
20	683321	7	1659	0.46	0.16	0.36	0.43	0.05	0.04	0.71	-0.55	-0.24	0.53	0.25	A+	A-	A-	A-	1.48	0.04	-9.58	0.72	-9.46	0.71
21	681319	8	1685	0.45	0.19	0.37	0.36	0.08	0.04	0.71	-0.61	-0.12	0.45	0.30	C+	A+	A-	A+	1.31	0.03	-9.90	0.72	-9.90	0.71
22	683451	8	1685	0.45	0.16	0.40	0.39	0.06	0.04	0.69	-0.57	-0.17	0.46	0.27	B+	A-	A-	A-	1.35	0.04	-8.94	0.74	-8.78	0.74
23	682779	9	1688	0.55	0.09	0.30	0.49	0.12	0.02	0.66	-0.47	-0.34	0.36	0.34	B+	B+	A+	A-	0.77	0.04	-7.59	0.77	-7.62	0.77
24	683459	9	1688	0.56	0.08	0.29	0.50	0.13	0.02	0.68	-0.46	-0.37	0.32	0.38	B+	A+	B+	A-	0.65	0.04	-8.48	0.74	-8.39	0.74
25	682780	10	1670	0.48	0.12	0.38	0.41	0.08	0.02	0.70	-0.54	-0.25	0.44	0.31	B+	A+	A-	A-	1.14	0.04	-9.21	0.73	-9.20	0.73
26	683334	10	1670	0.51	0.13	0.31	0.45	0.11	0.04	0.69	-0.54	-0.26	0.40	0.33	A+	A+	A+	A+	1.01	0.04	-7.54	0.77	-7.61	0.77
27	682799	11	1597	0.52	0.09	0.37	0.40	0.13	0.02	0.70	-0.47	-0.36	0.36	0.40	B+	A+	A-	A-	0.74	0.04	-9.06	0.73	-9.23	0.73
28	644223	11	1597	0.44	0.21	0.36	0.34	0.09	0.03	0.70	-0.59	-0.11	0.41	0.34	A+	A+	A-	A-	1.33	0.04	-8.84	0.74	-8.93	0.73
29	682798	12	1683	0.42	0.19	0.46	0.28	0.08	0.05	0.66	-0.55	-0.09	0.39	0.32	B+	A-	A-	A-	1.40	0.04	-6.91	0.79	-7.23	0.78
30	644221	12	1683	0.45	0.16	0.39	0.37	0.07	0.05	0.71	-0.56	-0.21	0.47	0.31	B+	A-	A+	A-	1.28	0.04	-9.36	0.73	-9.46	0.73
31	682806	13	1678	0.43	0.21	0.37	0.35	0.07	0.03	0.68	-0.57	-0.10	0.42	0.31	C+	A+	A+	A-	1.51	0.03	-9.38	0.73	-9.43	0.73

Item Information			Classical												DIF				Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	M/F	W/B	W/H	O/P	Meas	SEM	*z*	MS	*z*	MS
32	643193	13	1678	0.44	0.20	0.37	0.33	0.10	0.03	0.66	-0.55	-0.11	0.38	0.34	C+	A+	A-	A-	1.37	0.03	-7.46	0.78	-7.61	0.77
33	682808	14	1747	0.54	0.13	0.27	0.44	0.15	0.03	0.70	-0.51	-0.32	0.35	0.39	A+	A-	A-	C-	0.92	0.03	-9.16	0.74	-9.33	0.73
34	643195	14	1747	0.52	0.14	0.30	0.43	0.13	0.04	0.67	-0.52	-0.24	0.36	0.35	C+	A+	A+	A-	1.03	0.03	-7.17	0.79	-7.25	0.79
35	614659	15	1683	0.52	0.12	0.33	0.42	0.13	0.03	0.68	-0.48	-0.31	0.36	0.38	B+	A-	A-	A-	0.97	0.04	-7.50	0.78	-7.71	0.77
36	673018	15	1683	0.49	0.17	0.32	0.38	0.13	0.04	0.72	-0.56	-0.22	0.37	0.40	A+	A-	A+	A+	1.14	0.03	-9.74	0.72	-9.74	0.72
37	614660	16	1659	0.56	0.07	0.30	0.50	0.13	0.01	0.68	-0.47	-0.37	0.34	0.37	B+	A+	A-	A-	0.72	0.04	-8.38	0.74	-8.37	0.74
38	683331	16	1659	0.56	0.07	0.31	0.48	0.14	0.03	0.73	-0.51	-0.41	0.39	0.37	B+	A+	A-	A-	0.69	0.04	-9.90	0.68	-9.90	0.68
39	613845	17	1725	0.50	0.14	0.35	0.38	0.13	0.04	0.70	-0.54	-0.24	0.35	0.39	B+	A-	A-	A-	0.94	0.03	-9.90	0.71	-9.90	0.71
40	683366	17	1725	0.55	0.08	0.29	0.51	0.12	0.03	0.68	-0.47	-0.37	0.37	0.35	B+	A+	A+	A-	0.69	0.04	-8.96	0.73	-8.73	0.73
41	613846	18	1685	0.53	0.11	0.34	0.42	0.13	0.02	0.68	-0.49	-0.30	0.34	0.38	C+	A+	A+	A-	0.87	0.04	-7.69	0.77	-7.70	0.77
42	683365	18	1685	0.62	0.06	0.21	0.53	0.20	0.02	0.71	-0.44	-0.43	0.19	0.46	C+	A+	A+	A-	0.30	0.04	-9.79	0.70	-9.81	0.70
43	613271	19	1685	0.52	0.13	0.33	0.39	0.14	0.03	0.69	-0.55	-0.23	0.33	0.39	B+	A+	A-	A-	0.96	0.03	-8.95	0.74	-8.99	0.74
44	683537	19	1685	0.45	0.17	0.36	0.41	0.06	0.03	0.72	-0.60	-0.16	0.48	0.28	A+	A+	A+	A-	1.48	0.04	-9.90	0.69	-9.90	0.68
45	613270	20	1686	0.47	0.16	0.34	0.41	0.08	0.02	0.68	-0.56	-0.18	0.41	0.32	B+	A+	A+	A-	1.28	0.03	-9.15	0.73	-9.04	0.73
46	683540	20	1686	0.55	0.09	0.29	0.49	0.13	0.03	0.69	-0.50	-0.35	0.36	0.36	C+	A+	A+	A-	0.74	0.04	-9.00	0.73	-9.01	0.73
47	644219	21	1705	0.46	0.19	0.34	0.38	0.10	0.01	0.71	-0.59	-0.15	0.41	0.34	C+	A-	A+	A-	1.29	0.03	-9.71	0.72	-9.51	0.72
48	683411	21	1705	0.45	0.17	0.38	0.36	0.09	0.03	0.66	-0.52	-0.18	0.40	0.33	B+	A+	A+	A-	1.32	0.03	-7.52	0.78	-7.66	0.78
49	644220	22	1644	0.47	0.19	0.31	0.41	0.10	0.03	0.70	-0.56	-0.20	0.42	0.34	A+	A+	A-	A-	1.23	0.03	-8.47	0.75	-8.65	0.74
50	683414	22	1644	0.48	0.14	0.37	0.41	0.08	0.04	0.65	-0.47	-0.28	0.42	0.31	A+	A-	A+	A-	1.18	0.04	-6.13	0.81	-6.19	0.81
51	643741	23	1678	0.46	0.21	0.32	0.36	0.11	0.02	0.68	-0.52	-0.21	0.39	0.37	B+	A-	A+	A-	1.26	0.03	-8.52	0.75	-8.67	0.74
52	669204	23	1678	0.60	0.07	0.30	0.39	0.24	0.02	0.69	-0.45	-0.40	0.21	0.46	C+	A+	A+	A-	0.35	0.03	-8.97	0.74	-8.93	0.74
53	643742	24	1697	0.46	0.16	0.42	0.30	0.12	0.03	0.67	-0.48	-0.24	0.37	0.38	A+	B-	A-	A+	1.14	0.03	-8.20	0.76	-8.51	0.75
54	669206	24	1697	0.56	0.08	0.32	0.43	0.16	0.02	0.70	-0.50	-0.37	0.34	0.39	C+	A+	B-	A+	0.61	0.04	-8.83	0.74	-8.93	0.74

Table J–17. Algebra I Constructed-Response Item Statistics: Summer

Item Information			Classical													Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(4)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Corr(4)	Meas	SEM	*z*	MS	*z*	MS
1	616434	0	1712	0.30	0.37	0.30	0.15	0.13	0.05	0.01	0.62	-0.47	-0.06	0.16	0.37	0.33	0.90	0.03	-5.23	0.83	-5.33	0.80
2	644449	0	1712	0.16	0.61	0.23	0.09	0.05	0.02	0.04	0.49	-0.45	0.16	0.24	0.27	0.18	1.69	0.03	1.78	1.08	-0.06	1.00
3	616748	0	1712	0.24	0.53	0.15	0.22	0.03	0.07	0.05	0.53	-0.50	0.15	0.19	0.18	0.34	0.93	0.02	-0.81	0.97	-0.90	0.95
4	616749	0	1712	0.39	0.25	0.22	0.27	0.26	0.00	0.02	0.49	-0.42	-0.06	0.13	0.33	0.15	1.17	0.03	4.22	1.13	4.33	1.16
5	644984	0	1712	0.24	0.28	0.51	0.19	0.02	0.00	0.03	0.47	-0.40	0.06	0.32	0.16	-	2.16	0.04	-2.71	0.91	-2.80	0.91
6	631622	0	1712	0.25	0.40	0.31	0.20	0.07	0.03	0.06	0.53	-0.43	0.03	0.21	0.29	0.25	0.96	0.03	-4.45	0.85	-4.47	0.84

Table J–18. Biology Constructed-Response Item Statistics: Summer

Item Information			Classical											Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Meas	SEM	*z*	MS	*z*	MS
1	641219	0	859	0.18	0.64	0.23	0.08	0.04	0.05	0.51	-0.41	0.12	0.23	0.40	1.35	0.05	-3.38	0.82	-2.47	0.83
2	629467	0	859	0.31	0.39	0.35	0.20	0.06	0.08	0.63	-0.48	-0.02	0.39	0.38	0.95	0.04	-5.53	0.76	-5.36	0.74
3	609398	0	859	0.23	0.49	0.37	0.10	0.04	0.10	0.47	-0.35	0.07	0.24	0.34	1.18	0.05	0.57	1.03	0.02	1.00
4	607815	0	859	0.41	0.26	0.37	0.24	0.13	0.05	0.50	-0.36	-0.11	0.20	0.38	0.48	0.04	0.94	1.04	0.52	1.02
5	610912	0	859	0.40	0.27	0.37	0.27	0.09	0.05	0.54	-0.44	-0.05	0.29	0.30	0.48	0.05	0.06	1.00	0.00	1.00
6	611079	0	859	0.33	0.34	0.40	0.20	0.06	0.10	0.43	-0.36	0.03	0.26	0.23	0.74	0.04	-0.42	0.98	0.44	1.02

Table J–19. Literature Constructed-Response Item Statistics: Summer

Item Information			Classical											Rasch		Infit		Outfit	
Ref	ID	Form	*N*	PVal	P(0)	P(1)	P(2)	P(3)	P(B)	ITCorr	Corr(0)	Corr(1)	Corr(2)	Corr(3)	Meas	SEM	*z*	MS	*z*	MS
1	614631	0	644	0.52	0.12	0.32	0.43	0.12	0.03	0.63	-0.42	-0.32	0.35	0.35	0.59	0.05	-6.61	0.70	-6.51	0.70
2	644128	0	644	0.40	0.22	0.40	0.34	0.03	0.06	0.65	-0.55	-0.07	0.49	0.19	1.20	0.05	-7.82	0.66	-7.80	0.64
3	644127	0	644	0.31	0.39	0.33	0.25	0.03	0.10	0.61	-0.58	0.13	0.44	0.17	1.09	0.05	-4.87	0.78	-5.20	0.74
4	643690	0	644	0.38	0.25	0.41	0.28	0.06	0.07	0.60	-0.55	0.04	0.35	0.27	1.24	0.06	-3.33	0.84	-3.40	0.83
5	613847	0	644	0.54	0.12	0.30	0.42	0.16	0.06	0.65	-0.48	-0.26	0.28	0.39	0.40	0.06	-3.54	0.83	-3.64	0.82
6	613848	0	644	0.40	0.26	0.37	0.30	0.07	0.09	0.66	-0.49	-0.17	0.45	0.33	0.86	0.06	-2.60	0.87	-2.79	0.86

APPENDIX K: RAW-TO-SCALED SCORE CONVERSION TABLES

Table K–1. Raw-to-Scaled Score Conversion Tables

Column Heading	Definition
Raw	Raw score
SS	Scaled score
CSEM	Conditional standard error of measurement
LCI	Lower confidence interval
UCI	Upper confidence interval

WINTER

Table K–2. Algebra I Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1215	92	1200	1307
1	1277	51	1226	1328
2	1314	37	1277	1351
3	1336	31	1305	1367
4	1352	27	1325	1379
5	1365	24	1341	1389
6	1376	23	1353	1399
7	1386	21	1365	1407
8	1394	20	1374	1414
9	1402	19	1383	1421
10	1409	18	1391	1427
11	1415	18	1397	1433
12	1421	17	1404	1438
13	1427	17	1410	1444
14	1432	16	1416	1448
15	1438	16	1422	1454
16	1442	15	1427	1457
17	1447	15	1432	1462
18	1452	15	1437	1467
19	1456	15	1441	1471
20	1460	14	1446	1474
21	1464	14	1450	1478
22	1468	14	1454	1482
23	1472	14	1458	1486
24	1476	14	1462	1490
25	1480	14	1466	1494
26	1484	14	1470	1498
27	1488	14	1474	1502
28	1491	14	1477	1505
29	1495	13	1482	1508

Raw	SS	CSEM	LCI	UCI
30	1499	13	1486	1512
31	1502	13	1489	1515
32	1506	13	1493	1519
33	1509	13	1496	1522
34	1513	13	1500	1526
35	1516	13	1503	1529
36	1520	13	1507	1533
37	1523	13	1510	1536
38	1527	13	1514	1540
39	1530	13	1517	1543
40	1534	13	1521	1547
41	1538	14	1524	1552
42	1541	14	1527	1555
43	1545	14	1531	1559
44	1549	14	1535	1563
45	1553	14	1539	1567
46	1557	15	1542	1572
47	1561	15	1546	1576
48	1566	15	1551	1581
49	1571	16	1555	1587
50	1576	16	1560	1592
51	1581	17	1564	1598
52	1587	18	1569	1605
53	1594	19	1575	1613
54	1602	20	1582	1622
55	1611	22	1589	1633
56	1622	25	1597	1647
57	1636	29	1607	1665
58	1657	35	1622	1692
59	1691	50	1641	1741
60	1751	91	1660	1800

Table K–3. Biology Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1210	92	1200	1302
1	1271	51	1220	1322
2	1307	36	1271	1343
3	1329	30	1299	1359
4	1345	26	1319	1371
5	1357	24	1333	1381
6	1368	22	1346	1390
7	1377	21	1356	1398
8	1385	19	1366	1404
9	1392	19	1373	1411
10	1399	18	1381	1417
11	1405	17	1388	1422
12	1411	17	1394	1428
13	1416	16	1400	1432
14	1421	16	1405	1437
15	1426	15	1411	1441
16	1431	15	1416	1446
17	1435	15	1420	1450
18	1439	15	1424	1454
19	1443	14	1429	1457
20	1448	14	1434	1462
21	1451	14	1437	1465
22	1455	14	1441	1469
23	1459	14	1445	1473
24	1463	13	1450	1476
25	1466	13	1453	1479
26	1470	13	1457	1483
27	1473	13	1460	1486
28	1477	13	1464	1490
29	1480	13	1467	1493
30	1484	13	1471	1497
31	1487	13	1474	1500
32	1490	13	1477	1503
33	1494	13	1481	1507
34	1497	13	1484	1510
35	1500	13	1487	1513
36	1504	13	1491	1517
37	1507	13	1494	1520
38	1511	13	1498	1524
39	1514	13	1501	1527
40	1517	13	1504	1530
41	1521	13	1508	1534
42	1525	13	1512	1538
43	1528	14	1514	1542
44	1532	14	1518	1546

Raw	SS	CSEM	LCI	UCI
45	1536	14	1522	1550
46	1540	14	1526	1554
47	1544	14	1530	1558
48	1548	14	1534	1562
49	1552	15	1537	1567
50	1556	15	1541	1571
51	1561	15	1546	1576
52	1566	16	1550	1582
53	1571	16	1555	1587
54	1576	16	1560	1592
55	1581	17	1564	1598
56	1587	18	1569	1605
57	1594	18	1576	1612
58	1601	19	1582	1620
59	1608	20	1588	1628
60	1617	21	1596	1638
61	1627	23	1604	1650
62	1639	26	1613	1665
63	1654	29	1625	1683
64	1675	36	1639	1711
62	1710	50	1660	1760
66	1770	91	1679	1800

Table K–4. Literature Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1213	92	1200	1305
1	1274	51	1223	1325
2	1310	36	1274	1346
3	1332	30	1302	1362
4	1348	27	1321	1375
5	1361	24	1337	1385
6	1372	22	1350	1394
7	1381	21	1360	1402
8	1389	20	1369	1409
9	1397	19	1378	1416
10	1404	18	1386	1422
11	1410	18	1392	1428
12	1416	17	1399	1433
13	1422	17	1405	1439
14	1428	16	1412	1444
15	1433	16	1417	1449
16	1438	16	1422	1454
17	1443	16	1427	1459
18	1448	16	1432	1464
19	1453	15	1438	1468
20	1457	15	1442	1472
21	1462	15	1447	1477
22	1467	15	1452	1482
23	1471	15	1456	1486
24	1476	15	1461	1491
25	1480	15	1465	1495
26	1485	15	1470	1500
27	1489	15	1474	1504
28	1494	15	1479	1509
29	1498	15	1483	1513
30	1503	15	1488	1518
31	1508	15	1493	1523
32	1512	16	1496	1528
33	1517	16	1501	1533
34	1522	16	1506	1538
35	1528	16	1512	1544
36	1533	16	1517	1549
37	1538	17	1521	1555
38	1544	17	1527	1561
39	1550	18	1532	1568
40	1556	18	1538	1574
41	1563	19	1544	1582
42	1570	19	1551	1589
43	1578	20	1558	1598
44	1586	21	1565	1607

Raw	SS	CSEM	LCI	UCI
45	1595	22	1573	1617
46	1605	23	1582	1628
47	1617	25	1592	1642
48	1631	27	1604	1658
49	1647	31	1616	1678
50	1670	37	1633	1707
51	1707	51	1656	1758
52	1769	92	1677	1800

SPRING

Table K–5. Algebra I Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1202	92	1200	1294
1	1263	51	1212	1314
2	1300	37	1263	1337
3	1322	30	1292	1352
4	1338	27	1311	1365
5	1351	24	1327	1375
6	1362	23	1339	1385
7	1371	21	1350	1392
8	1380	20	1360	1400
9	1388	19	1369	1407
10	1395	19	1376	1414
11	1402	18	1384	1420
12	1408	17	1391	1425
13	1414	17	1397	1431
14	1419	17	1402	1436
15	1425	16	1409	1441
16	1430	16	1414	1446
17	1435	16	1419	1451
18	1440	16	1424	1456
19	1445	15	1430	1460
20	1450	15	1435	1465
21	1454	15	1439	1469
22	1459	15	1444	1474
23	1463	15	1448	1478
24	1467	15	1452	1482
25	1472	15	1457	1487
26	1476	14	1462	1490
27	1480	14	1466	1494
28	1484	14	1470	1498
29	1488	14	1474	1502
30	1492	14	1478	1506
31	1496	14	1482	1510

Raw	SS	CSEM	LCI	UCI
32	1500	14	1486	1514
33	1504	14	1490	1518
34	1508	14	1494	1522
35	1512	14	1498	1526
36	1516	14	1502	1530
37	1520	14	1506	1534
38	1524	14	1510	1538
39	1528	14	1514	1542
40	1533	15	1518	1548
41	1537	15	1522	1552
42	1541	15	1526	1556
43	1546	15	1531	1561
44	1550	15	1535	1565
45	1555	15	1540	1570
46	1560	16	1544	1576
47	1565	16	1549	1581
48	1570	17	1553	1587
49	1576	17	1559	1593
50	1582	18	1564	1600
51	1588	18	1570	1606
52	1595	19	1576	1614
53	1603	20	1583	1623
54	1612	22	1590	1634
55	1622	23	1599	1645
56	1634	26	1608	1660
57	1649	30	1619	1679
58	1671	36	1635	1707
59	1706	51	1655	1757
60	1767	92	1675	1800

Table K–6. Biology Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1205	92	1200	1297
1	1266	51	1215	1317
2	1302	36	1266	1338
3	1324	30	1294	1354
4	1340	26	1314	1366
5	1352	24	1328	1376
6	1363	22	1341	1385
7	1372	21	1351	1393
8	1380	19	1361	1399
9	1387	19	1368	1406
10	1394	18	1376	1412
11	1400	17	1383	1417
12	1405	17	1388	1422
13	1411	16	1395	1427
14	1416	16	1400	1432
15	1421	15	1406	1436
16	1425	15	1410	1440
17	1430	15	1415	1445
18	1434	15	1419	1449
19	1438	14	1424	1452
20	1442	14	1428	1456
21	1446	14	1432	1460
22	1450	14	1436	1464
23	1454	14	1440	1468
24	1457	13	1444	1470
25	1461	13	1448	1474
26	1465	13	1452	1478
27	1468	13	1455	1481
28	1472	13	1459	1485
29	1475	13	1462	1488
30	1478	13	1465	1491
31	1482	13	1469	1495
32	1485	13	1472	1498
33	1488	13	1475	1501
34	1492	13	1479	1505
35	1495	13	1482	1508
36	1498	13	1485	1511
37	1502	13	1489	1515
38	1505	13	1492	1518
39	1508	13	1495	1521
40	1512	13	1499	1525
41	1515	13	1502	1528
42	1518	13	1505	1531
43	1522	13	1509	1535
44	1525	13	1512	1538

Raw	SS	CSEM	LCI	UCI
45	1529	13	1516	1542
46	1533	14	1519	1547
47	1536	14	1522	1550
48	1540	14	1526	1554
49	1544	14	1530	1558
50	1548	15	1533	1563
51	1553	15	1538	1568
52	1557	15	1542	1572
53	1562	16	1546	1578
54	1567	16	1551	1583
55	1572	17	1555	1589
56	1578	17	1561	1595
57	1584	18	1566	1602
58	1591	19	1572	1610
59	1599	20	1579	1619
60	1608	22	1586	1630
61	1618	23	1595	1641
62	1630	26	1604	1656
63	1646	30	1616	1676
64	1667	36	1631	1703
62	1703	51	1652	1754
66	1764	92	1672	1800

Table K–7. Literature Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1201	92	1200	1293
1	1262	51	1211	1313
2	1298	36	1262	1334
3	1320	30	1290	1350
4	1336	27	1309	1363
5	1349	24	1325	1373
6	1360	22	1338	1382
7	1369	21	1348	1390
8	1378	20	1358	1398
9	1385	19	1366	1404
10	1392	18	1374	1410
11	1399	18	1381	1417
12	1405	17	1388	1422
13	1411	17	1394	1428
14	1417	17	1400	1434
15	1422	16	1406	1438
16	1427	16	1411	1443
17	1432	16	1416	1448
18	1437	16	1421	1453
19	1442	16	1426	1458
20	1447	15	1432	1462
21	1452	15	1437	1467
22	1457	15	1442	1472
23	1461	15	1446	1476
24	1466	15	1451	1481
25	1471	15	1456	1486
26	1475	15	1460	1490
27	1480	15	1465	1495
28	1485	15	1470	1500
29	1490	15	1475	1505
30	1494	16	1478	1510
31	1499	16	1483	1515
32	1504	16	1488	1520
33	1509	16	1493	1525
34	1515	16	1499	1531
35	1520	17	1503	1537
36	1526	17	1509	1543
37	1531	17	1514	1548
38	1537	17	1520	1554
39	1544	18	1526	1562
40	1550	18	1532	1568
41	1557	19	1538	1576
42	1564	20	1544	1584
43	1572	20	1552	1592
44	1581	21	1560	1602

Raw	SS	CSEM	LCI	UCI
45	1590	22	1568	1612
46	1601	24	1577	1625
47	1613	25	1588	1638
48	1626	28	1598	1654
49	1644	31	1613	1675
50	1667	37	1630	1704
51	1704	51	1653	1755
52	1767	92	1675	1800

SUMMER

Table K–8. Algebra Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1211	92	1200	1303
1	1272	51	1221	1323
2	1308	37	1271	1345
3	1330	30	1300	1360
4	1346	27	1319	1373
5	1359	24	1335	1383
6	1370	22	1348	1392
7	1379	21	1358	1400
8	1388	20	1368	1408
9	1395	19	1376	1414
10	1402	18	1384	1420
11	1408	18	1390	1426
12	1414	17	1397	1431
13	1420	17	1403	1437
14	1425	16	1409	1441
15	1431	16	1415	1447
16	1435	16	1419	1451
17	1440	15	1425	1455
18	1445	15	1430	1460
19	1449	15	1434	1464
20	1454	15	1439	1469
21	1458	14	1444	1472
22	1462	14	1448	1476
23	1466	14	1452	1480
24	1470	14	1456	1484
25	1474	14	1460	1488
26	1478	14	1464	1492
27	1481	14	1467	1495
28	1485	14	1471	1499
29	1489	14	1475	1503
30	1493	14	1479	1507

Raw	SS	CSEM	LCI	UCI
31	1496	14	1482	1510
32	1500	14	1486	1514
33	1504	14	1490	1518
34	1507	14	1493	1521
35	1511	14	1497	1525
36	1515	14	1501	1529
37	1518	14	1504	1532
38	1522	14	1508	1536
39	1526	14	1512	1540
40	1530	14	1516	1544
41	1534	14	1520	1548
42	1538	15	1523	1553
43	1542	15	1527	1557
44	1547	15	1532	1562
45	1552	15	1537	1567
46	1556	16	1540	1572
47	1562	16	1546	1578
48	1567	17	1550	1584
49	1573	18	1555	1591
50	1580	19	1561	1599
51	1587	20	1567	1607
52	1595	21	1574	1616
53	1605	22	1583	1627
54	1615	25	1590	1640
55	1629	27	1602	1656
56	1646	31	1615	1677
57	1669	37	1632	1706
58	1703	45	1658	1748
59	1755	59	1696	1814
60	1800	96	1704	1800

Table K–9. Biology Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1204	92	1200	1296
1	1266	51	1215	1317
2	1302	37	1265	1339
3	1324	30	1294	1354
4	1340	27	1313	1367
5	1353	24	1329	1377
6	1364	22	1342	1386
7	1373	21	1352	1394
8	1381	20	1361	1401
9	1388	19	1369	1407
10	1395	18	1377	1413
11	1401	17	1384	1418
12	1407	17	1390	1424
13	1413	16	1397	1429
14	1418	16	1402	1434
15	1423	16	1407	1439
16	1428	15	1413	1443
17	1432	15	1417	1447
18	1436	15	1421	1451
19	1441	14	1427	1455
20	1445	14	1431	1459
21	1449	14	1435	1463
22	1453	14	1439	1467
23	1456	14	1442	1470
24	1460	14	1446	1474
25	1464	13	1451	1477
26	1467	13	1454	1480
27	1471	13	1458	1484
28	1474	13	1461	1487
29	1478	13	1465	1491
30	1481	13	1468	1494
31	1485	13	1472	1498
32	1488	13	1475	1501
33	1491	13	1478	1504
34	1495	13	1482	1508
35	1498	13	1485	1511
36	1501	13	1488	1514
37	1505	13	1492	1518
38	1508	13	1495	1521
39	1511	13	1498	1524
40	1515	13	1502	1528
41	1518	13	1505	1531
42	1522	13	1509	1535
43	1525	13	1512	1538
44	1529	13	1516	1542

Raw	SS	CSEM	LCI	UCI
45	1532	14	1518	1546
46	1536	14	1522	1550
47	1540	14	1526	1554
48	1544	14	1530	1558
49	1548	14	1534	1562
50	1552	15	1537	1567
51	1556	15	1541	1571
52	1561	15	1546	1576
53	1566	16	1550	1582
54	1571	16	1555	1587
55	1576	17	1559	1593
56	1582	17	1565	1599
57	1588	18	1570	1606
58	1595	19	1576	1614
59	1602	20	1582	1622
60	1611	21	1590	1632
61	1621	23	1598	1644
62	1633	26	1607	1659
63	1648	29	1619	1677
64	1669	36	1633	1705
62	1704	50	1654	1754
66	1765	91	1674	1800

Table K–10. Literature Raw-to-Scaled Score Conversion Table

Raw	SS	CSEM	LCI	UCI
0	1210	92	1200	1302
1	1271	51	1220	1322
2	1308	37	1271	1345
3	1330	30	1300	1360
4	1346	27	1319	1373
5	1359	24	1335	1383
6	1370	22	1348	1392
7	1379	21	1358	1400
8	1388	20	1368	1408
9	1395	19	1376	1414
10	1402	18	1384	1420
11	1409	18	1391	1427
12	1415	17	1398	1432
13	1421	17	1404	1438
14	1426	16	1410	1442
15	1431	16	1415	1447
16	1436	16	1420	1452
17	1441	16	1425	1457
18	1446	15	1431	1461
19	1451	15	1436	1466
20	1455	15	1440	1470
21	1460	15	1445	1475
22	1464	15	1449	1479
23	1469	15	1454	1484
24	1473	15	1458	1488
25	1478	15	1463	1493
26	1482	15	1467	1497
27	1486	15	1471	1501
28	1491	15	1476	1506
29	1495	15	1480	1510
30	1500	15	1485	1515
31	1505	15	1490	1520
32	1509	15	1494	1524
33	1514	16	1498	1530
34	1519	16	1503	1535
35	1524	16	1508	1540
36	1529	16	1513	1545
37	1535	17	1518	1552
38	1540	17	1523	1557
39	1546	17	1529	1563
40	1552	18	1534	1570
41	1559	18	1541	1577
42	1566	19	1547	1585
43	1574	20	1554	1594

Raw	SS	CSEM	LCI	UCI
44	1582	21	1561	1603
45	1591	22	1569	1613
46	1601	23	1578	1624
47	1613	25	1588	1638
48	1627	28	1599	1655
49	1644	31	1613	1675
50	1667	37	1630	1704
51	1704	51	1653	1755
52	1766	92	1674	1800

APPENDIX L: POST-EQUATING CHECK ANALYSES RESULTS

ITEM LEVEL

Table L–1. Evaluation of Algebra I Item Difficulty Stability: Winter

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
605111	MC	-10	4213	97384	-1.81	0.07	-2.08	0.01	-1.83	-0.12
605203	MC	-10	3698	97384	0.51	0.05	-0.03	0.01	0.22	-0.28
632351	MC	-10	3652	97384	0.15	0.05	-0.12	0.01	0.13	-0.03
605293	MC	-10	4165	97384	0.91	0.05	0.20	0.01	0.45	-0.43
633249	MC	-9	3671	97384	0.05	0.05	-0.04	0.01	0.21	0.17
605286	MC	-8	4213	97384	1.36	0.05	0.88	0.01	1.13	-0.18
632150	MC	-6	4207	97384	0.20	0.05	-0.02	0.01	0.23	0.03
631597	MC	-2	3682	97384	-0.69	0.05	-0.67	0.01	-0.42	0.25
633398	MC	-1	3672	97384	0.30	0.05	-0.27	0.01	-0.02	-0.32
605189	MC	5	4195	97384	0.64	0.05	0.10	0.01	0.35	-0.28
605054	MC	5	3698	97384	1.04	0.05	0.96	0.01	1.21	0.22
605295	MC	5	3687	97384	0.86	0.05	0.49	0.01	0.74	-0.09
605137	MC	8	4207	97384	-0.14	0.05	-0.09	0.01	0.16	0.30
605162	MC	8	3682	97384	1.31	0.05	1.11	0.01	1.36	0.11
605264	MC	12	3671	97384	-0.46	0.05	-0.44	0.01	-0.19	0.26
632349	MC	10	4213	97384	0.36	0.05	0.26	0.01	0.51	0.17
632350	MC	12	3652	97384	-0.25	0.05	-0.15	0.01	0.10	0.35
633263	MC	15	3703	97384	-0.05	0.05	0.04	0.01	0.29	0.35
632158	MC	-10	4207	97384	-1.44	0.06	-1.49	0.01	-1.24	0.13
605238	MC	-11	3687	97384	0.11	0.05	-0.20	0.01	0.05	-0.07
633411	MC	-10	4213	97384	-0.40	0.05	-0.91	0.01	-0.66	-0.30
631613	MC	-10	4195	97384	0.53	0.05	-0.20	0.01	0.05	-0.48
605153	MC	-7	3703	97384	1.16	0.05	1.13	0.01	1.38	0.28
632152	MC	-7	4213	97384	-0.11	0.05	-0.51	0.01	-0.26	-0.18
605281	MC	-4	3671	97384	1.14	0.05	1.12	0.01	1.36	0.28
605306	MC	-2	4207	97384	-0.57	0.05	-0.40	0.01	-0.15	0.41
605166	MC	-4	4195	97384	1.05	0.05	0.80	0.01	1.05	0.05
605124	MC	3	4213	97384	0.97	0.05	0.67	0.01	0.92	-0.01
605105	MC	6	4207	97384	0.79	0.05	0.43	0.01	0.68	-0.09
605154	MC	7	3664	97384	-0.30	0.05	-0.15	0.01	0.09	0.40
605119	MC	7	4195	97384	1.01	0.05	0.80	0.01	1.05	0.09
633261	MC	10	3697	97384	0.58	0.05	0.35	0.01	0.60	0.04
633004	MC	9	4179	97384	0.66	0.05	0.12	0.01	0.37	-0.28
632358	MC	13	3671	97384	-0.47	0.05	-0.84	0.01	-0.59	-0.15
605245	MC	13	3709	97384	0.22	0.05	-0.01	0.01	0.24	0.03
605246	MC	12	3664	97384	-0.86	0.06	-0.86	0.01	-0.62	0.21
632536	CR	-1	1975	97384	-0.09	0.02	-0.01	0.00	0.24	-0.11
608731	CR	10	1941	97384	1.16	0.03	0.34	0.00	0.59	-0.04

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
633311	CR	11	1931	97384	-0.34	0.02	-0.27	0.00	-0.02	0.10
607147	CR	-1	1938	97384	-0.23	0.03	-0.33	0.00	-0.09	0.11
633313	CR	10	1929	97384	0.58	0.03	0.72	0.00	0.97	0.09
613668	CR	11	1931	97384	0.95	0.02	-0.08	0.00	0.17	-0.35

Table L–2. Evaluation of Biology Item Difficulty Stability: Winter

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
611394	MC	-20	1598	62415	-1.99	0.08	-2.51	0.01	-2.56	-0.63
607115	MC	-14	1592	62415	-0.44	0.06	-0.33	0.01	-0.38	0.07
609821	MC	-10	1753	62415	-0.28	0.05	-0.70	0.01	-0.75	-0.48
610881	MC	-10	1602	62415	-0.47	0.06	-0.60	0.01	-0.65	-0.18
635600	MC	-17	1598	62415	-0.56	0.06	-0.84	0.01	-0.89	-0.34
611167	MC	-15	1753	62415	0.62	0.05	0.37	0.01	0.32	-0.27
610906	MC	-14	1734	62415	-0.47	0.05	-0.76	0.01	-0.81	-0.35
607102	MC	-8	1753	62415	0.19	0.05	0.21	0.01	0.16	-0.01
607735	MC	-6	1611	62415	0.37	0.05	0.30	0.01	0.25	-0.10
611014	MC	-4	1713	62415	0.15	0.05	0.44	0.01	0.39	0.25
635759	MC	-4	1632	62415	0.21	0.05	0.12	0.01	0.07	-0.12
607571	MC	-9	1619	62415	0.96	0.06	0.94	0.01	0.89	-0.04
608264	MC	4	1632	62415	-0.49	0.06	-0.34	0.01	-0.39	0.10
608265	MC	4	1632	62415	0.08	0.05	-0.02	0.01	-0.07	-0.14
635798	MC	12	1616	62415	-0.20	0.05	-0.84	0.01	-0.89	-0.70
607700	MC	5	1761	62415	-0.81	0.05	-0.49	0.01	-0.54	0.27
635764	MC	11	1717	62415	-0.04	0.05	0.32	0.01	0.27	0.34
635744	MC	15	1747	62415	-0.65	0.05	-0.35	0.01	-0.40	0.25
608319	MC	8	1744	62415	-0.56	0.05	-0.35	0.01	-0.40	0.17
607107	MC	15	1624	62415	-0.08	0.05	-0.04	0.01	-0.09	0.00
635770	MC	16	1747	62415	-1.09	0.06	-0.86	0.01	-0.91	0.17
635794	MC	11	1597	62415	0.82	0.06	0.71	0.01	0.66	-0.14
607701	MC	19	1624	62415	0.20	0.05	0.68	0.01	0.63	0.45
607777	MC	21	1613	62415	-0.24	0.05	0.13	0.01	0.08	0.34
608379	MC	-18	1726	62415	-0.45	0.05	-0.44	0.01	-0.49	-0.04
607755	MC	-14	1624	62415	0.19	0.05	0.15	0.01	0.10	-0.07
608092	MC	-10	1713	62415	-0.09	0.05	-0.20	0.01	-0.25	-0.16
612599	MC	-12	1598	62415	-0.52	0.06	-0.66	0.01	-0.71	-0.20
611396	MC	-10	1757	62415	0.44	0.05	0.99	0.01	0.94	0.53
612591	MC	-10	1592	62415	0.17	0.05	0.25	0.01	0.20	0.05
611066	MC	-15	1713	62415	-0.21	0.05	-0.07	0.01	-0.12	0.10
610891	MC	-6	1761	62415	1.01	0.06	1.15	0.01	1.10	0.12
607750	MC	-11	1611	62415	0.67	0.06	0.57	0.01	0.52	-0.13
608357	MC	-5	1717	62415	-0.03	0.05	-0.30	0.01	-0.35	-0.32
611465	MC	-2	1624	62415	0.92	0.06	0.79	0.01	0.74	-0.15

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
611476	MC	-1	1595	62415	0.00	0.05	0.01	0.01	-0.04	-0.03
609394	MC	3	1747	62415	0.08	0.05	0.23	0.01	0.18	0.11
609393	MC	5	1747	62415	-0.48	0.05	-0.39	0.01	-0.44	0.04
608381	MC	11	1753	62415	0.41	0.05	0.38	0.01	0.33	-0.06
612586	MC	4	1609	62415	0.78	0.06	0.70	0.01	0.65	-0.11
612666	MC	8	1761	62415	-0.58	0.05	-0.58	0.01	-0.63	-0.05
610918	MC	7	1595	62415	0.10	0.05	0.13	0.01	0.08	-0.01
608349	MC	10	1737	62415	1.22	0.06	1.17	0.01	1.12	-0.07
608277	MC	17	1602	62415	0.06	0.05	0.34	0.01	0.29	0.25
608245	MC	15	1616	62415	-0.76	0.06	-0.49	0.01	-0.54	0.22
608279	MC	16	1619	62415	-0.09	0.05	0.25	0.01	0.20	0.30
611463	MC	11	1747	62415	0.51	0.05	0.73	0.01	0.68	0.20
608358	MC	21	1632	62415	0.14	0.05	0.10	0.01	0.05	-0.08
607788	CR	-1	1597	62415	0.57	0.04	0.74	0.01	0.69	0.11
612577	CR	0	1717	62415	0.07	0.03	-0.13	0.01	-0.18	-0.16
607773	CR	17	1609	62415	1.43	0.04	1.64	0.01	1.59	0.17
608334	CR	-1	1608	62415	-0.19	0.03	-0.06	0.01	-0.11	0.16
608338	CR	0	1612	62415	-0.75	0.03	-0.85	0.00	-0.90	-0.31
611077	CR	17	1598	62415	0.16	0.03	0.54	0.01	0.49	0.32

Table L–3. Evaluation of Literature Item Difficulty Stability: Winter

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
610362	MC	-12	1881	49572	-0.23	0.06	-0.72	0.01	-0.51	-0.31
610359	MC	-10	1860	49572	-0.34	0.06	-0.65	0.01	-0.44	-0.12
610356	MC	-7	1860	49572	2.15	0.06	1.79	0.01	2.00	-0.06
610357	MC	-6	1881	49572	0.20	0.05	-0.12	0.01	0.10	-0.10
610364	MC	-9	1860	49572	0.24	0.05	-0.26	0.01	-0.05	-0.29
610366	MC	-9	1881	49572	0.60	0.05	-0.03	0.01	0.19	-0.40
610363	MC	-6	1860	49572	0.58	0.05	-0.22	0.01	0.00	-0.58
610361	MC	-6	1881	49572	-0.11	0.05	-0.24	0.01	-0.03	0.08
610365	MC	-6	1860	49572	0.22	0.05	-0.34	0.01	-0.13	-0.36
616676	MC	8	1696	49572	-0.51	0.06	-0.60	0.01	-0.39	0.11
616683	MC	9	1721	49572	-0.87	0.06	-0.79	0.01	-0.57	0.28
616677	MC	6	1721	49572	0.22	0.05	-0.02	0.01	0.19	-0.02
616671	MC	10	1696	49572	0.60	0.05	0.26	0.01	0.48	-0.10
616678	MC	7	1721	49572	-0.71	0.06	-0.10	0.01	0.11	0.83
616675	MC	11	1721	49572	-0.22	0.06	-0.29	0.01	-0.08	0.14
616670	MC	11	1696	49572	-0.44	0.06	0.43	0.01	0.65	1.12
616681	MC	10	1696	49572	0.58	0.05	0.22	0.01	0.44	-0.13
614553	MC	-11	1671	49572	-0.17	0.06	-0.31	0.01	-0.09	0.07
614556	MC	-12	1671	49572	1.37	0.06	0.91	0.01	1.12	-0.20

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
614560	MC	-10	1671	49572	0.90	0.05	0.57	0.01	0.79	-0.08
614557	MC	-9	1699	49572	-0.63	0.06	-0.91	0.01	-0.70	-0.10
614562	MC	-9	1699	49572	1.00	0.05	0.76	0.01	0.98	0.03
614554	MC	-6	1699	49572	1.05	0.05	0.70	0.01	0.92	-0.09
614563	MC	-8	1699	49572	0.43	0.05	0.13	0.01	0.34	-0.07
614559	MC	-8	1671	49572	-0.26	0.06	-0.41	0.01	-0.20	0.06
614543	MC	2	1871	49572	-0.47	0.06	-0.77	0.01	-0.56	-0.12
614547	MC	5	1871	49572	-1.02	0.06	-0.73	0.01	-0.51	0.49
614541	MC	7	1867	49572	-0.18	0.06	-0.30	0.01	-0.09	0.09
614542	MC	7	1867	49572	0.61	0.05	0.65	0.01	0.87	0.30
614544	MC	7	1867	49572	-0.53	0.06	-0.73	0.01	-0.51	-0.01
614545	MC	5	1867	49572	2.14	0.06	2.16	0.01	2.37	0.33
614550	MC	9	1871	49572	0.14	0.05	-0.23	0.01	-0.02	-0.16
614546	MC	8	1871	49572	0.40	0.05	0.08	0.01	0.29	-0.09
614539	MC	8	1871	49572	0.33	0.05	0.11	0.01	0.32	0.01
613661	CR	-6	1860	49572	0.23	0.03	-0.65	0.01	-0.43	-0.50
616673	CR	10	1720	49572	-0.35	0.03	-0.78	0.01	-0.56	-0.10
616672	CR	11	1696	49572	-0.38	0.03	-0.16	0.01	0.06	0.58
614566	CR	-9	1670	49572	-0.15	0.03	-1.00	0.01	-0.79	-0.13
614551	CR	8	1865	49572	-0.41	0.03	-1.13	0.01	-0.91	-0.24
614552	CR	9	1868	49572	-0.79	0.03	-0.54	0.01	-0.32	0.30

Table L–4. Evaluation of Algebra I Item Difficulty Stability: Spring

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
605307	MC	-9	4179	201526	-1.18	0.06	-1.16	0.01	-1.17	-0.04
640584	MC	-8	6488	201526	0.21	0.05	0.28	0.01	0.27	0.07
640632	MC	-9	6471	201526	1.01	0.05	1.09	0.01	1.08	0.11
605053	MC	1	94697	201526	0.36	0.01	0.25	0.01	0.24	-0.11
605219	MC	-15	94697	201526	1.07	0.01	0.81	0.01	0.80	-0.23
640604	MC	-8	9169	201526	-0.96	0.06	-1.03	0.01	-1.04	-0.13
605092	MC	-5	4207	201526	0.78	0.05	0.84	0.01	0.83	0.08
640530	MC	-4	10082	201526	-0.89	0.06	-0.90	0.01	-0.90	-0.05
605169	MC	-4	4349	201526	-0.40	0.05	-0.57	0.01	-0.58	-0.21
605161	MC	-4	94697	201526	-0.30	0.01	-0.36	0.01	-0.37	-0.08
640619	MC	8	9194	201526	1.19	0.05	1.14	0.01	1.13	-0.01
605308	MC	8	6471	201526	0.06	0.05	0.12	0.01	0.11	0.06
640548	MC	9	9194	201526	-1.06	0.06	-0.90	0.01	-0.91	0.12
640600	MC	11	6438	201526	0.29	0.05	0.56	0.01	0.56	0.29
605077	MC	3	94697	201526	0.28	0.01	0.27	0.01	0.26	-0.01
640593	MC	11	6540	201526	0.66	0.05	0.57	0.01	0.56	-0.08
640625	MC	10	10082	201526	0.80	0.05	1.00	0.01	0.99	0.22

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
605136	MC	8	94697	201526	-0.67	0.01	-0.41	0.01	-0.42	0.24
641461	MC	-11	9199	201526	-0.87	0.06	-0.86	0.01	-0.87	-0.03
641502	MC	-8	9226	201526	0.66	0.05	0.51	0.01	0.50	-0.13
641532	MC	-11	9137	201526	-1.19	0.06	-1.07	0.01	-1.08	0.08
641474	MC	-8	6540	201526	-0.01	0.05	-0.33	0.01	-0.34	-0.35
641437	MC	-9	6540	201526	0.00	0.05	-0.29	0.01	-0.29	-0.30
641515	MC	-7	9271	201526	0.74	0.05	0.64	0.01	0.63	-0.09
605272	MC	0	94697	201526	-0.33	0.01	0.02	0.01	0.01	0.34
641538	MC	-4	9271	201526	0.44	0.05	0.51	0.01	0.50	0.08
605129	MC	-11	94697	201526	-0.12	0.01	-0.40	0.01	-0.41	-0.30
605260	MC	3	4176	201526	-0.51	0.05	-0.32	0.01	-0.33	0.18
605296	MC	16	94697	201526	0.48	0.01	0.47	0.01	0.46	0.00
605142	MC	16	94697	201526	-0.88	0.01	-0.62	0.01	-0.63	0.23
605221	MC	16	94697	201526	1.01	0.01	1.00	0.01	0.99	0.02
605126	MC	16	94697	201526	-1.44	0.01	-1.20	0.01	-1.20	0.20
641449	MC	9	6438	201526	0.35	0.05	0.05	0.01	0.05	-0.29
605282	MC	13	6472	201526	0.18	0.05	0.20	0.01	0.19	0.02
641468	MC	14	6510	201526	0.82	0.05	0.84	0.01	0.83	0.04
605061	MC	14	4176	201526	-1.15	0.06	-0.73	0.01	-0.74	0.39
608732	CR	-1	1899	201526	1.69	0.03	1.81	0.00	1.80	0.09
644452	CR	10	2005	201526	1.29	0.03	1.32	0.00	1.31	0.06
640128	CR	11	1979	201526	0.60	0.03	0.81	0.00	0.80	0.19
609334	CR	-12	94697	201526	0.67	0.00	0.45	0.00	0.44	-0.20
640899	CR	10	1994	201526	2.06	0.03	1.88	0.00	1.87	-0.25
644797	CR	11	2023	201526	1.32	0.03	1.36	0.00	1.35	0.02

Table L–5. Evaluation of Biology Item Difficulty Stability: Spring

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
611003	MC	-2	46979	164172	-1.71	0.01	-1.53	0.01	-1.63	0.06
643379	MC	-20	8058	164172	-1.33	0.06	-1.43	0.01	-1.53	-0.23
642332	MC	-16	8901	164172	0.72	0.05	0.63	0.01	0.53	-0.18
643382	MC	-18	5360	164172	-0.24	0.05	-0.02	0.01	-0.12	0.13
642848	MC	-16	5347	164172	-0.34	0.05	-0.43	0.01	-0.53	-0.20
635780	MC	-10	8060	164172	-0.37	0.05	-0.09	0.01	-0.19	0.19
607713	MC	-24	46979	164172	0.53	0.01	0.53	0.01	0.43	-0.09
642319	MC	-12	8149	164172	-0.62	0.05	-0.65	0.01	-0.75	-0.13
607723	MC	-12	1726	164172	-0.51	0.05	-0.40	0.01	-0.50	0.01
611016	MC	-4	1726	164172	0.81	0.05	0.61	0.01	0.51	-0.28
607120	MC	-14	46979	164172	0.75	0.01	0.93	0.01	0.83	0.09
641185	MC	-8	5347	164172	0.50	0.05	0.69	0.01	0.58	0.09
644771	MC	10	8115	164172	0.03	0.05	0.01	0.01	-0.09	-0.11
644772	MC	11	8901	164172	-0.60	0.05	-0.43	0.01	-0.54	0.07

Item ID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
607719	MC	5	1821	164172	-0.18	0.05	-0.15	0.01	-0.25	-0.07
641259	MC	10	5217	164172	-0.24	0.05	-0.09	0.01	-0.19	0.05
642342	MC	6	5364	164172	0.24	0.05	0.25	0.01	0.15	-0.08
642314	MC	6	5364	164172	-0.34	0.05	-0.12	0.01	-0.22	0.12
642336	MC	10	5217	164172	0.47	0.05	0.74	0.01	0.64	0.18
640662	MC	15	5360	164172	0.79	0.05	0.95	0.01	0.84	0.07
642325	MC	12	8065	164172	0.57	0.05	0.55	0.01	0.45	-0.12
607693	MC	12	1726	164172	-0.33	0.05	0.02	0.01	-0.08	0.26
610485	MC	14	1726	164172	-0.09	0.05	-0.25	0.01	-0.35	-0.26
642316	MC	18	8109	164172	-0.44	0.05	-0.42	0.01	-0.52	-0.09
641281	MC	-14	5360	164172	-0.43	0.05	-0.41	0.01	-0.51	-0.08
608301	MC	-2	46979	164172	-1.08	0.01	-0.92	0.01	-1.03	0.05
608099	MC	-12	1726	164172	-1.07	0.06	-1.02	0.01	-1.12	-0.07
610915	MC	-12	1726	164172	-0.85	0.06	-0.90	0.01	-1.00	-0.16
641205	MC	-11	5217	164172	-1.28	0.06	-1.38	0.01	-1.48	-0.24
644021	MC	-16	8115	164172	-0.49	0.05	-0.29	0.01	-0.40	0.10
641275	MC	-12	8149	164172	0.09	0.05	0.28	0.01	0.18	0.10
644026	MC	-14	8072	164172	0.12	0.05	0.27	0.01	0.17	0.05
642857	MC	-10	5378	164172	0.94	0.05	0.87	0.01	0.77	-0.16
642873	MC	-10	5191	164172	-0.19	0.05	-0.30	0.01	-0.40	-0.21
643397	MC	-11	8060	164172	0.41	0.05	0.44	0.01	0.34	-0.06
611474	MC	-4	1735	164172	0.12	0.05	0.06	0.01	-0.04	-0.15
643350	MC	10	5356	164172	-0.09	0.05	0.23	0.01	0.12	0.22
612595	MC	10	5217	164172	-0.43	0.05	-0.40	0.01	-0.50	-0.07
610876	MC	6	1821	164172	-0.53	0.05	-0.15	0.01	-0.25	0.29
642860	MC	6	8065	164172	0.08	0.05	0.19	0.01	0.08	0.01
611620	MC	5	1735	164172	0.27	0.05	-0.07	0.01	-0.18	-0.45
644023	MC	7	5368	164172	1.06	0.05	0.98	0.01	0.87	-0.17
644022	MC	7	8129	164172	0.10	0.05	0.34	0.01	0.24	0.15
611058	MC	24	46979	164172	0.28	0.01	0.36	0.01	0.26	-0.01
643787	MC	9	8109	164172	0.99	0.05	1.04	0.01	0.94	-0.03
608280	MC	0	46979	164172	-0.48	0.01	-0.38	0.01	-0.49	-0.01
611397	MC	17	8129	164172	0.94	0.05	1.06	0.01	0.96	0.03
643398	MC	14	5341	164172	0.10	0.05	0.21	0.01	0.11	0.02
641295	CR	3	1944	164172	0.52	0.03	0.76	0.00	0.65	0.03
611041	CR	-1	46979	164172	0.87	0.01	1.09	0.00	0.99	0.05
641308	CR	18	1874	164172	1.50	0.03	1.82	0.00	1.72	0.14
608246	CR	-14	46979	164172	0.10	0.01	0.09	0.00	-0.01	-0.03
609831	CR	18	46979	164172	0.34	0.01	0.66	0.00	0.56	0.23
641226	CR	18	1948	164172	1.04	0.03	1.07	0.00	0.97	-0.06

Table L–6. Evaluation of Literature Item Difficulty Stability: Spring

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
612481	MC	0	42808	143421	-1.15	0.01	-0.83	0.01	-0.70	0.41
612472	MC	0	42808	143421	-0.94	0.01	-0.69	0.01	-0.55	0.36
612448	MC	0	42808	143421	0.44	0.01	0.40	0.01	0.53	0.12
612454	MC	0	42808	143421	0.58	0.01	0.51	0.01	0.65	0.09
612452	MC	0	42808	143421	-1.05	0.01	-1.04	0.01	-0.90	0.09
612455	MC	0	42808	143421	-0.63	0.01	-0.53	0.01	-0.39	0.21
612447	MC	0	42808	143421	0.72	0.01	0.61	0.01	0.75	0.07
612450	MC	0	42808	143421	-0.66	0.01	-0.78	0.01	-0.64	-0.02
643272	MC	6	7019	143421	-0.63	0.06	-0.43	0.01	-0.29	0.32
643277	MC	6	6992	143421	-0.27	0.06	-0.44	0.01	-0.30	-0.05
643271	MC	7	7019	143421	0.80	0.05	0.69	0.01	0.83	0.07
643274	MC	7	6992	143421	1.42	0.05	1.11	0.01	1.25	-0.11
643268	MC	7	7019	143421	-1.09	0.07	-0.76	0.01	-0.63	0.43
643269	MC	7	6992	143421	0.47	0.05	0.19	0.01	0.32	-0.14
643243	MC	8	7019	143421	1.60	0.05	0.87	0.01	1.00	-0.53
643275	MC	8	7019	143421	1.48	0.05	1.29	0.01	1.43	0.01
643242	MC	9	6992	143421	0.72	0.05	0.56	0.01	0.70	0.01
614704	MC	0	42808	143421	0.08	0.01	-0.31	0.01	-0.17	-0.26
614710	MC	0	42808	143421	0.39	0.01	0.36	0.01	0.50	0.13
614708	MC	0	42808	143421	-0.82	0.01	-1.14	0.01	-1.00	-0.26
614707	MC	0	42808	143421	-1.24	0.01	-1.20	0.01	-1.06	0.11
614711	MC	0	42808	143421	0.09	0.01	-0.15	0.01	-0.02	-0.12
614709	MC	0	42808	143421	0.65	0.01	0.42	0.01	0.56	-0.07
614703	MC	0	42808	143421	-0.74	0.01	-1.21	0.01	-1.08	-0.42
614712	MC	0	42808	143421	-0.62	0.01	-0.65	0.01	-0.51	0.07
614705	MC	0	42808	143421	-0.12	0.01	-0.27	0.01	-0.14	-0.03
643253	MC	7	4714	143421	-0.18	0.06	-0.39	0.01	-0.25	-0.09
643251	MC	7	4714	143421	0.84	0.05	0.75	0.01	0.89	0.09
643252	MC	7	4714	143421	0.83	0.05	0.60	0.01	0.74	-0.06
643254	MC	7	4714	143421	1.65	0.05	1.21	0.01	1.35	-0.23
643249	MC	10	4744	143421	-0.45	0.06	-0.52	0.01	-0.38	0.04
643247	MC	10	4744	143421	0.82	0.05	0.75	0.01	0.88	0.10
643255	MC	10	4744	143421	0.18	0.05	0.33	0.01	0.46	0.30
643250	MC	10	4744	143421	0.86	0.05	0.71	0.01	0.85	0.02
613852	CR	0	42808	143421	0.63	0.01	0.53	0.00	0.67	0.07
644720	CR	9	1843	143421	1.03	0.03	0.86	0.00	1.00	-0.09
644721	CR	10	1821	143421	0.65	0.03	0.54	0.00	0.68	0.03
614714	CR	0	42808	143421	0.52	0.01	0.04	0.00	0.18	-0.29
644058	CR	10	1842	143421	0.94	0.03	0.85	0.00	0.99	0.05
644056	CR	11	1855	143421	0.76	0.03	0.66	0.00	0.79	0.04

Table L–7. Evaluation of Algebra I Item Difficulty Stability: Summer

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
640540	MC	-10	6493	1712	0.19	0.05	-0.21	0.05	-0.13	-0.34
605089	MC	-5	94697	1712	0.19	0.01	-0.14	0.05	-0.06	-0.27
605171	MC	-9	4176	1712	-0.05	0.05	-0.42	0.05	-0.34	-0.31
605249	MC	-9	4187	1712	-1.01	0.06	-1.01	0.06	-0.93	0.04
640536	MC	-7	9293	1712	0.91	0.05	0.47	0.05	0.55	-0.35
640561	MC	-5	9211	1712	-0.32	0.05	-0.37	0.05	-0.29	0.00
640573	MC	-5	6472	1712	1.28	0.05	0.92	0.06	1.00	-0.26
640553	MC	-2	6510	1712	0.38	0.05	0.39	0.05	0.47	0.09
640528	MC	-4	6438	1712	0.55	0.05	0.49	0.05	0.57	0.03
640577	MC	5	6488	1712	-0.10	0.05	-0.18	0.05	-0.10	-0.02
605228	MC	9	94697	1712	1.18	0.01	0.59	0.05	0.67	-0.49
605076	MC	8	4187	1712	-0.39	0.05	-0.49	0.05	-0.41	-0.04
640541	MC	10	9226	1712	1.28	0.05	0.83	0.05	0.91	-0.35
640569	MC	9	6493	1712	0.04	0.05	-0.07	0.05	0.01	-0.03
605090	MC	11	4349	1712	0.47	0.05	0.49	0.05	0.57	0.10
640617	MC	10	9293	1712	0.57	0.05	0.01	0.05	0.09	-0.48
640546	MC	11	9271	1712	-0.53	0.05	-0.41	0.05	-0.33	0.17
605116	MC	11	4349	1712	-0.03	0.05	0.12	0.05	0.20	0.22
641489	MC	-13	9271	1712	1.48	0.05	1.14	0.06	1.22	-0.23
641446	MC	-10	6510	1712	-1.14	0.06	-1.33	0.06	-1.25	-0.16
641477	MC	-8	9194	1712	0.67	0.05	0.47	0.05	0.55	-0.11
605152	MC	3	94697	1712	-1.23	0.01	-1.09	0.06	-1.01	0.17
641522	MC	-5	6471	1712	-0.73	0.06	-1.06	0.06	-0.97	-0.29
641480	MC	-7	6494	1712	0.90	0.05	0.80	0.05	0.88	-0.01
605102	MC	-7	6472	1712	0.20	0.05	0.07	0.05	0.15	-0.06
641534	MC	-2	9293	1712	0.76	0.05	0.38	0.05	0.46	-0.29
605127	MC	-1	4349	1712	-0.36	0.05	-0.09	0.05	-0.01	0.34
605259	MC	7	4187	1712	0.36	0.05	0.17	0.05	0.25	-0.11
641496	MC	4	6399	1712	0.15	0.05	0.18	0.05	0.27	0.11
605064	MC	0	94697	1712	0.94	0.01	0.35	0.05	0.43	-0.50
605266	MC	9	4349	1712	-0.83	0.05	-0.38	0.05	-0.30	0.51
641518	MC	10	9226	1712	-0.27	0.05	-0.18	0.05	-0.10	0.15
605080	MC	10	4179	1712	0.39	0.05	0.48	0.05	0.56	0.17
641481	MC	13	9271	1712	-0.59	0.05	-0.34	0.05	-0.26	0.30
641457	MC	14	6399	1712	0.16	0.05	0.52	0.05	0.60	0.45
605227	MC	8	94697	1712	-1.28	0.01	-1.09	0.06	-1.01	0.23
616434	CR	0	94697	1712	0.90	0.00	0.83	0.03	0.91	0.00
644449	CR	10	1993	1712	1.69	0.03	1.48	0.03	1.56	-0.09
616748	CR	11	1939	1712	0.93	0.02	0.88	0.03	0.96	0.03
616749	CR	0	94697	1712	1.17	0.00	1.26	0.03	1.34	0.23
644984	CR	10	2003	1712	2.16	0.03	2.09	0.04	2.17	0.01
631622	CR	11	2005	1712	0.96	0.02	1.10	0.03	1.18	0.17

Table L–8. Evaluation of Biology Item Difficulty Stability: Summer

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
610878	MC	-14	1821	859	-2.10	0.07	-2.85	0.14	-2.95	-0.93
641184	MC	-14	8149	859	-0.32	0.05	-0.53	0.08	-0.62	-0.31
643366	MC	-18	8065	859	-0.28	0.05	-0.08	0.07	-0.17	0.11
635795	MC	-12	1598	859	0.27	0.05	0.64	0.08	0.55	0.28
641180	MC	-10	5368	859	-0.01	0.05	0.14	0.07	0.05	0.06
641270	MC	-9	5347	859	-0.23	0.05	-0.17	0.07	-0.26	-0.03
642861	MC	-12	5341	859	-0.09	0.05	-0.22	0.07	-0.32	-0.23
611163	MC	-8	1821	859	-0.51	0.05	-0.31	0.07	-0.40	0.10
643372	MC	-11	5353	859	0.44	0.05	0.51	0.07	0.42	-0.02
641263	MC	-6	8072	859	-0.11	0.05	-0.31	0.07	-0.40	-0.29
642318	MC	-4	8060	859	0.90	0.05	1.12	0.08	1.03	0.14
611155	MC	-10	1735	859	-0.32	0.05	-0.67	0.08	-0.76	-0.45
644946	MC	0	5347	859	0.47	0.05	0.57	0.08	0.48	0.01
644757	MC	0	5347	859	-0.19	0.05	0.15	0.07	0.06	0.25
611161	MC	-4	46979	859	-0.47	0.01	-0.55	0.08	-0.64	-0.18
641182	MC	10	8129	859	-0.27	0.05	-0.17	0.07	-0.26	0.01
611158	MC	12	1726	859	0.23	0.05	0.50	0.07	0.41	0.18
611410	MC	2	46979	859	0.80	0.01	0.88	0.08	0.79	0.00
642333	MC	9	8115	859	0.28	0.05	0.06	0.07	-0.03	-0.31
607721	MC	17	1737	859	0.48	0.05	0.31	0.07	0.22	-0.26
642867	MC	9	5356	859	0.57	0.05	0.71	0.08	0.62	0.05
641177	MC	17	8129	859	-0.11	0.05	-0.06	0.07	-0.16	-0.04
641271	MC	13	5356	859	-0.01	0.05	0.17	0.07	0.08	0.09
643378	MC	13	5360	859	0.82	0.05	1.18	0.08	1.09	0.28
644030	MC	-21	8065	859	-1.99	0.07	-2.43	0.12	-2.52	-0.59
641212	MC	-17	8072	859	0.37	0.05	0.37	0.07	0.28	-0.08
642352	MC	-13	5356	859	0.72	0.05	1.10	0.08	1.01	0.29
610864	MC	-15	1757	859	-0.03	0.05	-0.12	0.07	-0.21	-0.19
642904	MC	-17	5364	859	0.44	0.05	0.32	0.07	0.23	-0.20
607162	MC	-18	46979	859	0.08	0.01	0.06	0.07	-0.03	-0.11
612598	MC	-9	8062	859	-0.01	0.05	0.11	0.07	0.01	0.02
641265	MC	-8	8149	859	-0.09	0.05	-0.19	0.07	-0.28	-0.19
643404	MC	-12	5347	859	0.45	0.05	0.65	0.08	0.56	0.12
607761	MC	2	46979	859	-0.01	0.01	0.18	0.07	0.09	0.10
608247	MC	-3	1735	859	-0.26	0.05	-0.28	0.07	-0.37	-0.11
611067	MC	-8	1821	859	-0.18	0.05	-0.08	0.07	-0.17	0.01
643342	MC	0	8115	859	-0.89	0.06	-0.18	0.07	-0.27	0.62
643343	MC	0	8149	859	-1.16	0.06	-1.03	0.08	-1.12	0.02
608020	MC	12	1726	859	-0.14	0.05	-0.44	0.08	-0.53	-0.40
644027	MC	4	5341	859	0.20	0.05	0.30	0.07	0.21	0.02
642874	MC	6	5378	859	0.13	0.05	0.40	0.07	0.31	0.18

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
643402	MC	7	8129	859	0.58	0.05	0.68	0.08	0.59	0.01
643399	MC	7	5353	859	-0.98	0.06	-0.97	0.08	-1.06	-0.10
607581	MC	15	5341	859	0.77	0.05	0.78	0.08	0.69	-0.08
607827	MC	11	1726	859	-0.47	0.05	0.09	0.07	0.00	0.47
641190	MC	16	8072	859	1.03	0.05	0.68	0.08	0.59	-0.43
608311	MC	2	46979	859	-1.27	0.01	-1.48	0.09	-1.57	-0.33
642382	MC	13	8072	859	0.00	0.05	0.44	0.07	0.35	0.36
641219	CR	5	1946	859	1.35	0.03	1.63	0.05	1.54	0.20
629467	CR	17	1821	859	0.95	0.03	1.10	0.05	1.00	-0.07
609398	CR	19	46979	859	1.18	0.01	1.47	0.05	1.38	0.21
607815	CR	5	1970	859	0.48	0.03	0.49	0.04	0.40	-0.08
610912	CR	17	1725	859	0.48	0.03	0.65	0.04	0.56	0.06
611079	CR	18	1899	859	0.74	0.03	1.04	0.05	0.95	0.13

Table L–9. Evaluation of Literature Item Difficulty Stability: Summer

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
614624	MC	-10	1884	644	-1.07	0.06	-1.71	0.11	-1.52	-0.53
614623	MC	-8	1881	644	-0.30	0.06	-0.81	0.09	-0.62	-0.35
614625	MC	-8	1881	644	0.47	0.05	0.07	0.09	0.26	-0.19
614618	MC	-10	1884	644	-0.24	0.06	-0.62	0.09	-0.43	-0.20
614621	MC	-8	1881	644	0.04	0.05	-0.06	0.09	0.13	0.10
614619	MC	-8	1881	644	1.68	0.06	1.09	0.09	1.28	-0.33
614622	MC	-6	1884	644	-0.33	0.06	-0.56	0.09	-0.37	-0.06
614627	MC	-7	1881	644	0.86	0.05	0.64	0.09	0.83	0.01
642676	MC	6	7124	644	0.46	0.05	0.37	0.09	0.56	0.13
642714	MC	6	7067	644	1.32	0.05	1.09	0.09	1.28	0.02
642717	MC	7	7124	644	0.50	0.05	-0.06	0.09	0.13	-0.35
642674	MC	7	7067	644	-1.84	0.09	-1.56	0.11	-1.37	0.41
642675	MC	8	7124	644	-0.08	0.06	-0.11	0.09	0.08	0.17
642666	MC	8	7067	644	1.52	0.05	1.24	0.09	1.43	-0.03
642661	MC	9	7124	644	0.55	0.05	0.20	0.09	0.39	-0.13
642718	MC	9	7124	644	0.58	0.05	0.30	0.09	0.48	-0.06
642665	MC	9	7067	644	0.55	0.05	0.32	0.09	0.51	-0.01
641557	MC	-9	4730	644	0.50	0.05	0.38	0.09	0.57	0.10
641558	MC	-8	4768	644	0.26	0.05	0.18	0.09	0.36	0.12
641550	MC	-8	4730	644	-0.02	0.06	-0.30	0.09	-0.11	-0.09
641551	MC	-8	4730	644	1.05	0.05	0.67	0.09	0.86	-0.15
641605	MC	-6	4768	644	0.29	0.05	-0.18	0.09	0.01	-0.28
641554	MC	-8	4730	644	-0.28	0.06	-0.32	0.09	-0.13	0.15
641559	MC	-6	4768	644	0.84	0.05	0.20	0.09	0.39	-0.41
641552	MC	-6	4768	644	0.34	0.05	-0.08	0.09	0.11	-0.22
641556	MC	-6	4730	644	-0.10	0.06	-0.05	0.09	0.14	0.25

ItemID	Item Type	Sequence Change	Old *N*	New *N*	Old Logit	Old SEM	New Logit	New SEM	Equated Logit	Displacement
612457	MC	1	1884	644	-0.38	0.06	-0.41	0.09	-0.22	0.16
612463	MC	6	1881	644	0.00	0.05	0.18	0.09	0.36	0.39
612461	MC	8	1884	644	0.31	0.05	0.13	0.09	0.32	0.03
612459	MC	5	1881	644	-0.09	0.05	0.00	0.09	0.19	0.29
612464	MC	7	1884	644	0.34	0.05	0.29	0.09	0.48	0.16
616845	MC	9	1881	644	-0.51	0.06	-0.62	0.09	-0.43	0.06
612466	MC	9	1881	644	-0.11	0.05	-0.10	0.09	0.09	0.21
612456	MC	8	1881	644	0.51	0.05	0.20	0.09	0.39	-0.10
614631	CR	-7	1880	644	0.59	0.03	0.20	0.06	0.39	-0.17
644128	CR	9	1884	644	1.20	0.03	1.05	0.06	1.24	-0.11
644127	CR	10	1867	644	1.09	0.03	1.49	0.06	1.68	0.41
643690	CR	-6	1821	644	1.24	0.03	0.95	0.06	1.14	0.01
613847	CR	8	1880	644	0.40	0.03	0.09	0.05	0.28	-0.09
613848	CR	9	1878	644	0.86	0.03	0.85	0.05	1.04	0.19

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Table L–10. Raw-to-Scaled Score Comparison for Algebra I: Winter

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
0	1215	92	1218	92
1	1277	51	1279	51
2	1314	37	1316	37
3	1336	31	1338	30
4	1352	27	1355	27
5	1365	24	1368	24
6	1376	23	1378	22
7	1386	21	1388	21
8	1394	20	1396	20
9	1402	19	1404	19
10	1409	18	1411	18
11	1415	18	1417	17
12	1421	17	1423	17
13	1427	17	1428	16
14	1432	16	1434	16
15	1438	16	1438	16
16	1442	15	1443	15
17	1447	15	1448	15
18	1452	15	1452	15
19	1456	15	1456	14
20	1460	14	1460	14
21	1464	14	1464	14
22	1468	14	1468	14
23	1472	14	1472	14

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
24	1476	14	1476	14
25	1480	14	1479	13
26	1484	14	1483	13
27	1488	14	1486	13
28	1491	14	1490	13
29	1495	13	1493	13
30	1499	13	1497	13
31	1502	13	1500	13
32	1506	13	1504	13
33	1509	13	1507	13
34	1513	13	1511	13
35	1516	13	1514	13
36	1520	13	1518	13
37	1523	13	1521	13
38	1527	13	1525	13
39	1530	13	1528	13
40	1534	13	1532	14
41	1538	14	1535	14
42	1541	14	1539	14
43	1545	14	1543	14
44	1549	14	1547	14
45	1553	14	1551	15
46	1557	15	1556	15
47	1561	15	1560	15
48	1566	15	1565	16
49	1571	16	1570	16
50	1576	16	1575	17
51	1581	17	1581	17
52	1587	18	1588	18
53	1594	19	1595	19
54	1602	20	1603	21
55	1611	22	1612	23
56	1622	25	1624	25
57	1636	29	1638	29
58	1657	35	1659	36
59	1691	50	1694	50
60	1751	91	1755	91

Table L–11. Raw-to-Scaled Score Comparison for Biology: Winter

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
0	1210	92	1205	92	1205	92
1	1271	51	1267	51	1266	51
2	1307	36	1304	37	1303	37
3	1329	30	1326	30	1325	30
4	1345	26	1342	27	1341	27
5	1357	24	1355	24	1354	24
6	1368	22	1365	22	1365	22
7	1377	21	1375	21	1374	21
8	1385	19	1383	20	1382	20
9	1392	19	1390	19	1390	19
10	1399	18	1397	18	1396	18
11	1405	17	1403	17	1402	17
12	1411	17	1409	17	1408	17
13	1416	16	1414	16	1414	16
14	1421	16	1419	16	1419	16
15	1426	15	1424	15	1424	15
16	1431	15	1429	15	1428	15
17	1435	15	1434	15	1433	15
18	1439	15	1438	15	1437	15
19	1443	14	1442	14	1441	14
20	1448	14	1446	14	1446	14
21	1451	14	1450	14	1450	14
22	1455	14	1454	14	1453	14
23	1459	14	1458	14	1457	14
24	1463	13	1461	14	1461	14
25	1466	13	1465	13	1465	13
26	1470	13	1469	13	1468	13
27	1473	13	1472	13	1472	13
28	1477	13	1476	13	1475	13
29	1480	13	1479	13	1479	13
30	1484	13	1483	13	1482	13
31	1487	13	1486	13	1486	13
32	1490	13	1490	13	1489	13
33	1494	13	1493	13	1493	13
34	1497	13	1497	13	1496	13
35	1500	13	1500	13	1500	13
36	1504	13	1504	13	1503	13
37	1507	13	1507	13	1507	13
38	1511	13	1511	13	1510	13
39	1514	13	1514	13	1514	13

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
40	1517	13	1518	13	1517	13
41	1521	13	1522	14	1521	14
42	1525	13	1525	14	1525	14
43	1528	14	1529	14	1529	14
44	1532	14	1533	14	1532	14
45	1536	14	1537	14	1536	14
46	1540	14	1541	14	1540	14
47	1544	14	1545	14	1545	14
48	1548	14	1549	15	1549	15
49	1552	15	1554	15	1553	15
50	1556	15	1558	15	1558	15
51	1561	15	1563	15	1562	15
52	1566	16	1568	16	1567	16
53	1571	16	1573	16	1572	16
54	1576	16	1578	17	1578	17
55	1581	17	1584	17	1583	17
56	1587	18	1590	18	1589	18
57	1594	18	1596	18	1596	18
58	1601	19	1603	19	1603	19
59	1608	20	1611	20	1611	20
60	1617	21	1620	22	1619	22
61	1627	23	1630	23	1630	23
62	1639	26	1642	26	1642	26
63	1654	29	1658	30	1657	30
64	1675	36	1679	36	1678	36
65	1710	50	1714	50	1713	50
66	1770	91	1774	91	1774	91

Table L–12. Raw-to-Scaled Score Comparison for Literature: Winter

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
0	1213	92	1213	92	1215	92
1	1274	51	1274	51	1276	51
2	1310	36	1310	36	1312	36
3	1332	30	1332	30	1334	30
4	1348	27	1348	26	1350	26
5	1361	24	1360	24	1362	24
6	1372	22	1371	22	1373	22
7	1381	21	1380	21	1382	21
8	1389	20	1388	20	1390	20
9	1397	19	1396	19	1398	19
10	1404	18	1403	18	1405	18
11	1410	18	1409	18	1411	18
12	1416	17	1415	17	1417	17
13	1422	17	1421	17	1423	17
14	1428	16	1427	16	1428	16
15	1433	16	1432	16	1434	16
16	1438	16	1437	16	1439	16
17	1443	16	1442	16	1444	16
18	1448	16	1447	16	1449	16
19	1453	15	1452	15	1453	15
20	1457	15	1456	15	1458	15
21	1462	15	1461	15	1463	15
22	1467	15	1465	15	1467	15
23	1471	15	1470	15	1472	15
24	1476	15	1475	15	1476	15
25	1480	15	1479	15	1481	15
26	1485	15	1484	15	1486	15
27	1489	15	1488	15	1490	15
28	1494	15	1493	15	1495	15
29	1498	15	1498	15	1499	15
30	1503	15	1502	15	1504	15
31	1508	15	1507	16	1509	16
32	1512	16	1512	16	1514	16
33	1517	16	1517	16	1519	16
34	1522	16	1522	16	1524	16
35	1528	16	1528	16	1530	16
36	1533	16	1533	17	1535	17
37	1538	17	1539	17	1541	17
38	1544	17	1545	17	1547	17
39	1550	18	1551	18	1553	18

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
40	1556	18	1557	18	1559	18
41	1563	19	1564	19	1566	19
42	1570	19	1572	19	1574	19
43	1578	20	1579	20	1581	20
44	1586	21	1588	21	1590	21
45	1595	22	1597	22	1599	22
46	1605	23	1607	23	1609	23
47	1617	25	1619	25	1621	25
48	1631	27	1633	27	1635	27
49	1647	31	1650	31	1652	31
50	1670	37	1673	37	1675	37
51	1707	51	1710	51	1712	51
52	1769	92	1772	92	1774	92

Table L–13. Raw-to-Scaled Score Comparison for Algebra I: Spring

	Preequating		Post-equating	
RS	SS	SEM	SS	SEM
0	1202	92	1203	92
1	1263	51	1265	51
2	1300	37	1301	37
3	1322	30	1323	30
4	1338	27	1339	27
5	1351	24	1352	24
6	1362	23	1363	22
7	1371	21	1372	21
8	1380	20	1381	20
9	1388	19	1389	19
10	1395	19	1396	18
11	1402	18	1402	18
12	1408	17	1409	17
13	1414	17	1414	17
14	1419	17	1420	17
15	1425	16	1425	16
16	1430	16	1431	16
17	1435	16	1436	16
18	1440	16	1440	15
19	1445	15	1445	15
20	1450	15	1450	15
21	1454	15	1454	15
22	1459	15	1459	15
23	1463	15	1463	15
24	1467	15	1467	14
25	1472	15	1471	14
26	1476	14	1475	14
27	1480	14	1479	14
28	1484	14	1483	14
29	1488	14	1487	14
30	1492	14	1491	14
31	1496	14	1495	14
32	1500	14	1499	14
33	1504	14	1503	14
34	1508	14	1507	14
35	1512	14	1511	14
36	1516	14	1515	14
37	1520	14	1519	14
38	1524	14	1523	14
39	1528	14	1527	14
40	1533	15	1531	15

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
41	1537	15	1536	15
42	1541	15	1540	15
43	1546	15	1544	15
44	1550	15	1549	15
45	1555	15	1554	16
46	1560	16	1559	16
47	1565	16	1564	16
48	1570	17	1570	17
49	1576	17	1575	17
50	1582	18	1582	18
51	1588	18	1588	19
52	1595	19	1595	19
53	1603	20	1603	21
54	1612	22	1612	22
55	1622	23	1623	24
56	1634	26	1635	26
57	1649	30	1651	30
58	1671	36	1672	36
59	1706	51	1708	51
60	1767	92	1769	92

Table L–14. Raw-to-Scaled Score Comparison for Biology: Spring

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
0	1205	92	1202	92
1	1266	51	1263	51
2	1302	36	1299	36
3	1324	30	1321	30
4	1340	26	1337	26
5	1352	24	1350	24
6	1363	22	1360	22
7	1372	21	1369	21
8	1380	19	1377	20
9	1387	19	1385	19
10	1394	18	1391	18
11	1400	17	1398	17
12	1405	17	1404	17
13	1411	16	1409	16
14	1416	16	1414	16
15	1421	15	1419	16
16	1425	15	1424	15
17	1430	15	1428	15
18	1434	15	1433	15
19	1438	14	1437	14
20	1442	14	1441	14
21	1446	14	1445	14
22	1450	14	1449	14
23	1454	14	1453	14
24	1457	13	1456	14
25	1461	13	1460	13
26	1465	13	1464	13
27	1468	13	1467	13
28	1472	13	1471	13
29	1475	13	1474	13
30	1478	13	1478	13
31	1482	13	1481	13
32	1485	13	1485	13
33	1488	13	1488	13
34	1492	13	1491	13
35	1495	13	1495	13
36	1498	13	1498	13
37	1502	13	1501	13
38	1505	13	1505	13
39	1508	13	1508	13
40	1512	13	1512	13

	Preequating		Post-equating	
RS	SS	SEM	SS	SEM
41	1515	13	1515	13
42	1518	13	1519	13
43	1522	13	1522	13
44	1525	13	1526	14
45	1529	13	1529	14
46	1533	14	1533	14
47	1536	14	1537	14
48	1540	14	1541	14
49	1544	14	1545	14
50	1548	15	1549	15
51	1553	15	1554	15
52	1557	15	1559	15
53	1562	16	1564	16
54	1567	16	1569	16
55	1572	17	1574	17
56	1578	17	1580	18
57	1584	18	1587	18
58	1591	19	1594	19
59	1599	20	1602	21
60	1608	22	1611	22
61	1618	23	1622	24
62	1630	26	1634	26
63	1646	30	1650	30
64	1667	36	1672	36
65	1703	51	1708	51
66	1764	92	1770	92

Table L–15. Raw-to-Scaled Score Comparison for Literature: Spring

	Preequating		Post-equating			
			All Items		Outlier Removed	
RS	SS	SEM	SS	SEM	SS	SEM
0	1201	92	1202	92	1202	92
1	1262	51	1264	51	1263	51
2	1298	36	1300	36	1299	36
3	1320	30	1321	30	1321	30
4	1336	27	1337	26	1337	26
5	1349	24	1350	24	1349	24
6	1360	22	1361	22	1360	22
7	1369	21	1370	21	1369	21
8	1378	20	1378	20	1378	20
9	1385	19	1386	19	1385	19
10	1392	18	1393	18	1392	18
11	1399	18	1399	18	1399	18
12	1405	17	1405	17	1405	17
13	1411	17	1411	17	1411	17
14	1417	17	1417	17	1416	17
15	1422	16	1422	16	1422	16
16	1427	16	1427	16	1427	16
17	1432	16	1433	16	1432	16
18	1437	16	1437	16	1437	16
19	1442	16	1442	16	1442	16
20	1447	15	1447	15	1446	15
21	1452	15	1452	15	1451	15
22	1457	15	1456	15	1456	15
23	1461	15	1461	15	1461	15
24	1466	15	1466	15	1465	15
25	1471	15	1470	15	1470	15
26	1475	15	1475	15	1474	15
27	1480	15	1480	15	1479	15
28	1485	15	1484	15	1484	15
29	1490	15	1489	15	1488	15
30	1494	16	1494	16	1493	16
31	1499	16	1499	16	1498	16
32	1504	16	1504	16	1503	16
33	1509	16	1509	16	1508	16
34	1515	16	1514	16	1513	16
35	1520	17	1519	16	1519	16
36	1526	17	1525	17	1524	17
37	1531	17	1531	17	1530	17
38	1537	17	1537	17	1536	17
39	1544	18	1543	18	1542	18

	Preequating		Post-equating			
			All Items		Outlier Removed	
RS	SS	SEM	SS	SEM	SS	SEM
40	1550	18	1549	18	1549	18
41	1557	19	1556	19	1556	19
42	1564	20	1564	20	1563	20
43	1572	20	1572	20	1571	20
44	1581	21	1580	21	1580	21
45	1590	22	1590	22	1589	22
46	1601	24	1600	24	1600	24
47	1613	25	1612	25	1612	25
48	1626	28	1627	28	1626	28
49	1644	31	1644	31	1643	31
50	1667	37	1667	38	1667	38
51	1704	51	1705	52	1705	52
52	1767	92	1768	92	1767	92

Table L–16. Raw-to-Scaled Score Comparison for Algebra I: Summer

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
0	1211	92	1213	92	1213	92
1	1272	51	1274	51	1274	51
2	1308	37	1311	36	1311	36
3	1330	30	1332	30	1332	30
4	1346	27	1348	27	1348	27
5	1359	24	1361	24	1361	24
6	1370	22	1372	22	1372	22
7	1379	21	1381	21	1381	21
8	1388	20	1389	20	1389	20
9	1395	19	1397	19	1397	19
10	1402	18	1404	18	1404	18
11	1408	18	1410	17	1410	17
12	1414	17	1416	17	1416	17
13	1420	17	1421	16	1421	16
14	1425	16	1427	16	1427	16
15	1431	16	1432	16	1432	16
16	1435	16	1437	15	1437	15
17	1440	15	1441	15	1441	15
18	1445	15	1446	15	1446	15
19	1449	15	1450	15	1450	15
20	1454	15	1454	14	1454	14
21	1458	14	1458	14	1458	14
22	1462	14	1462	14	1462	14
23	1466	14	1466	14	1466	14
24	1470	14	1470	14	1470	14
25	1474	14	1474	14	1474	14
26	1478	14	1478	14	1478	14
27	1481	14	1481	14	1481	14
28	1485	14	1485	13	1485	13
29	1489	14	1489	13	1489	13
30	1493	14	1492	13	1492	13
31	1496	14	1496	13	1496	13
32	1500	14	1499	13	1499	13
33	1504	14	1503	13	1503	13
34	1507	14	1507	13	1507	13
35	1511	14	1510	13	1510	13
36	1515	14	1514	14	1514	14
37	1518	14	1518	14	1518	14
38	1522	14	1521	14	1521	14
39	1526	14	1525	14	1525	14

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
40	1530	14	1529	14	1529	14
41	1534	14	1533	14	1533	14
42	1538	15	1537	14	1537	14
43	1542	15	1541	15	1541	15
44	1547	15	1546	15	1546	15
45	1552	15	1550	15	1550	15
46	1556	16	1555	16	1555	16
47	1562	16	1560	16	1560	16
48	1567	17	1566	17	1566	17
49	1573	18	1572	18	1572	18
50	1580	19	1579	19	1579	19
51	1587	20	1586	20	1586	20
52	1595	21	1594	21	1595	21
53	1605	22	1604	23	1604	23
54	1615	25	1615	25	1616	25
55	1629	27	1629	28	1631	29
56	1646	31	1646	31	1650	34
57	1669	37	1669	37	1678	42
58	1703	45	1701	44	1726	58
59	1755	59	1751	57	1800	97
60	1800	96	1800	95	1800	97

Table L–17. Raw-to-Scaled Score Comparison for Biology: Summer

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
0	1204	92	1200	92	1200	92
1	1266	51	1256	52	1256	52
2	1302	37	1294	37	1294	37
3	1324	30	1317	31	1317	31
4	1340	27	1334	27	1334	27
5	1353	24	1348	25	1347	25
6	1364	22	1359	23	1358	23
7	1373	21	1369	21	1368	21
8	1381	20	1377	20	1377	20
9	1388	19	1385	19	1385	19
10	1395	18	1392	18	1392	18
11	1401	17	1399	18	1398	18
12	1407	17	1405	17	1404	17
13	1413	16	1411	17	1410	17
14	1418	16	1416	16	1415	16
15	1423	16	1421	16	1420	16
16	1428	15	1426	15	1425	15
17	1432	15	1430	15	1430	15
18	1436	15	1435	15	1434	15
19	1441	14	1439	15	1439	15
20	1445	14	1443	14	1443	14
21	1449	14	1448	14	1447	14
22	1453	14	1452	14	1451	14
23	1456	14	1455	14	1455	14
24	1460	14	1459	14	1459	14
25	1464	13	1463	14	1462	14
26	1467	13	1467	14	1466	14
27	1471	13	1470	13	1470	13
28	1474	13	1474	13	1473	13
29	1478	13	1477	13	1477	13
30	1481	13	1481	13	1480	13
31	1485	13	1484	13	1484	13
32	1488	13	1488	13	1487	13
33	1491	13	1491	13	1491	13
34	1495	13	1495	13	1494	13
35	1498	13	1498	13	1498	13
36	1501	13	1502	13	1501	13
37	1505	13	1505	13	1505	13
38	1508	13	1509	13	1508	13
39	1511	13	1512	13	1512	13

	Preequating		Post-equating			
			All Items		Outliers Removed	
RS	SS	SEM	SS	SEM	SS	SEM
40	1515	13	1516	13	1515	13
41	1518	13	1519	13	1519	13
42	1522	13	1523	14	1522	14
43	1525	13	1527	14	1526	14
44	1529	13	1530	14	1530	14
45	1532	14	1534	14	1534	14
46	1536	14	1538	14	1538	14
47	1540	14	1542	14	1542	14
48	1544	14	1546	14	1546	14
49	1548	14	1550	15	1550	15
50	1552	15	1555	15	1554	15
51	1556	15	1559	15	1559	15
52	1561	15	1564	16	1563	16
53	1566	16	1569	16	1568	16
54	1571	16	1574	16	1574	16
55	1576	17	1580	17	1579	17
56	1582	17	1585	17	1585	17
57	1588	18	1592	18	1591	18
58	1595	19	1599	19	1598	19
59	1602	20	1606	20	1606	20
60	1611	21	1615	22	1615	22
61	1621	23	1625	23	1625	23
62	1633	26	1637	26	1637	26
63	1648	29	1652	30	1652	30
64	1669	36	1674	36	1673	36
65	1704	50	1709	50	1708	50
66	1765	91	1770	92	1769	92

Table L–18. Raw-to-Scaled Score Comparison for Literature: Summer

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
0	1210	92	1209	92
1	1271	51	1270	51
2	1308	37	1307	37
3	1330	30	1328	30
4	1346	27	1345	27
5	1359	24	1357	24
6	1370	22	1368	22
7	1379	21	1378	21
8	1388	20	1386	20
9	1395	19	1393	19
10	1402	18	1400	18
11	1409	18	1407	18
12	1415	17	1413	17
13	1421	17	1419	17
14	1426	16	1424	16
15	1431	16	1430	16
16	1436	16	1435	16
17	1441	16	1440	16
18	1446	15	1445	15
19	1451	15	1449	15
20	1455	15	1454	15
21	1460	15	1459	15
22	1464	15	1463	15
23	1469	15	1468	15
24	1473	15	1472	15
25	1478	15	1477	15
26	1482	15	1481	15
27	1486	15	1486	15
28	1491	15	1490	15
29	1495	15	1495	15
30	1500	15	1499	15
31	1505	15	1504	15
32	1509	15	1509	16
33	1514	16	1513	16
34	1519	16	1518	16
35	1524	16	1524	16
36	1529	16	1529	16
37	1535	17	1535	17
38	1540	17	1540	17
39	1546	17	1546	18
40	1552	18	1553	18

RS	Preequating		Post-equating	
	SS	SEM	SS	SEM
41	1559	18	1560	19
42	1566	19	1567	20
43	1574	20	1575	20
44	1582	21	1584	21
45	1591	22	1593	23
46	1601	23	1604	24
47	1613	25	1616	26
48	1627	28	1631	28
49	1644	31	1649	32
50	1667	37	1674	38
51	1704	51	1713	52
52	1766	92	1776	93

APPENDIX M: RELIABILITIES

Table M–1. Reliabilities

Column Heading	Definition
Level	Total test or module level
Group	Student group: all students or subgroup
Pts.	Max points possible
Len.	Test length
N	Number of students
Mean	Mean of raw score
SD	Standard deviation of raw score
r	Reliability coefficient: Cronbach's alpha
SEM	Standard error of measurement

Note: "DNR" in the tables below represents "Do Not Report". This happened only when the *N* count was small.

Table M–2. Winter: Algebra I Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	60	42	97386	23.57	10.51	0.87	3.77
	Module 1	All	30	21	97386	12.27	5.73	0.77	2.74
	Module 2	All	30	21	97386	11.31	5.45	0.78	2.59
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	60	42	47845	23.73	10.24	0.86	3.79
		Male	60	42	49403	23.43	10.76	0.88	3.73
	Module 1	Female	30	21	47845	12.47	5.60	0.76	2.74
		Male	30	21	49403	12.07	5.84	0.78	2.72
	Module 2	Female	30	21	47845	11.26	5.34	0.76	2.61
		Male	30	21	49403	11.36	5.56	0.79	2.56
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	60	42	18140	18.49	8.45	0.83	3.52
		American Indian	60	42	134	21.69	8.68	0.83	3.58
		Asian	60	42	2573	29.24	14.62	0.92	4.06
		Hispanic	60	42	9564	19.85	9.27	0.85	3.62
		Multi-racial	60	42	1739	22.48	9.88	0.86	3.72
		Native Hawaiian/ Pacific Islander	60	42	68	27.62	13.34	0.91	3.98
		White	60	42	65021	25.35	10.37	0.87	3.79
	Module 1	African American	30	21	18140	9.48	4.67	0.70	2.56
		American Indian	30	21	134	11.18	4.96	0.71	2.65
		Asian	30	21	2573	14.72	7.64	0.86	2.84
		Hispanic	30	21	9564	10.14	5.09	0.73	2.63
		Multi-racial	30	21	1739	11.70	5.45	0.75	2.71
		Native Hawaiian/ Pacific Islander	30	21	68	14.79	6.91	0.83	2.81
		White	30	21	65021	13.28	5.64	0.76	2.74
	Module 2	African American	30	21	18140	9.01	4.52	0.71	2.42
		American Indian	30	21	134	10.51	4.58	0.73	2.39
		Asian	30	21	2573	14.52	7.49	0.85	2.90
		Hispanic	30	21	9564	9.72	4.89	0.74	2.49
		Multi-racial	30	21	1739	10.78	5.12	0.75	2.55
		Native Hawaiian/ Pacific Islander	30	21	68	12.82	6.96	0.84	2.82
		White	30	21	65021	12.07	5.42	0.77	2.62
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	2951	15.70	8.26	0.83	3.36
	Module 1	All	30	21	2951	7.78	4.45	0.70	2.43
	Module 2	All	30	21	2951	7.92	4.48	0.73	2.32
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	17313	16.95	8.07	0.82	3.40
	Module 1	All	30	21	17313	8.73	4.51	0.69	2.51
	Module 2	All	30	21	17313	8.22	4.27	0.71	2.29
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	44245	20.35	9.12	0.84	3.61
	Module 1	All	30	21	44245	10.54	5.07	0.73	2.65
	Module 2	All	30	21	44245	9.81	4.77	0.74	2.46

Table M–3. Winter: Biology Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	66	54	62415	27.86	11.07	0.89	3.67
	Module 1	All	33	27	62415	14.10	5.71	0.81	2.47
	Module 2	All	33	27	62415	13.77	6.03	0.80	2.71
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	66	54	31265	28.18	10.74	0.88	3.68
		Male	66	54	31060	27.56	11.37	0.90	3.66
	Module 1	Female	33	27	31265	14.40	5.54	0.80	2.47
		Male	33	27	31060	13.80	5.86	0.82	2.46
	Module 2	Female	33	27	31265	13.78	5.89	0.79	2.72
		Male	33	27	31060	13.76	6.17	0.81	2.70
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	66	54	10864	22.18	8.74	0.84	3.54
		American Indian	66	54	76	26.54	9.72	0.86	3.69
		Asian	66	54	1824	30.97	14.12	0.93	3.72
		Hispanic	66	54	5542	23.50	9.37	0.85	3.59
		Multi-racial	66	54	1066	26.62	10.06	0.87	3.65
		Native Hawaiian/ Pacific Islander	66	54	31	27.90	11.58	0.90	3.69
		White	66	54	42914	29.78	11.01	0.89	3.69
	Module 1	African American	33	27	10864	11.51	4.68	0.74	2.40
		American Indian	33	27	76	13.72	5.19	0.77	2.47
		Asian	33	27	1824	15.85	7.24	0.88	2.51
		Hispanic	33	27	5542	12.06	4.97	0.76	2.42
		Multi-racial	33	27	1066	13.57	5.35	0.79	2.45
		Native Hawaiian/ Pacific Islander	33	27	31	13.77	5.93	0.83	2.47
		White	33	27	42914	14.96	5.70	0.81	2.48
	Module 2	African American	33	27	10864	10.68	4.86	0.71	2.60
		American Indian	33	27	76	12.82	5.35	0.74	2.73
		Asian	33	27	1824	15.11	7.39	0.86	2.74
		Hispanic	33	27	5542	11.44	5.17	0.74	2.64
		Multi-racial	33	27	1066	13.04	5.46	0.76	2.70
		Native Hawaiian/ Pacific Islander	33	27	31	14.13	6.54	0.83	2.71
		White	33	27	42914	14.82	5.99	0.80	2.72
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	1675	17.77	6.89	0.76	3.37
	Module 1	All	33	27	1675	9.26	3.92	0.65	2.32
	Module 2	All	33	27	1675	8.52	3.81	0.59	2.43
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	11089	21.02	8.31	0.82	3.53
	Module 1	All	33	27	11089	10.76	4.38	0.70	2.38
	Module 2	All	33	27	11089	10.26	4.76	0.70	2.60
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	27144	24.22	9.42	0.85	3.61
	Module 1	All	33	27	27144	12.37	4.93	0.76	2.43
	Module 2	All	33	27	27144	11.85	5.27	0.74	2.67

Table M–4. Winter: Literature Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	52	40	49712	25.53	9.83	0.89	3.21
	Module 1	All	26	20	49712	12.89	5.17	0.81	2.29
	Module 2	All	26	20	49712	12.64	5.23	0.82	2.25
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	52	40	21937	26.94	9.88	0.89	3.23
		Male	52	40	27561	24.41	9.64	0.89	3.17
	Module 1	Female	26	20	21937	13.74	5.20	0.80	2.31
		Male	26	20	27561	12.21	5.05	0.80	2.25
	Module 2	Female	26	20	21937	13.20	5.23	0.82	2.24
		Male	26	20	27561	12.20	5.18	0.81	2.26
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	52	40	9557	21.28	8.35	0.85	3.24
		American Indian	52	40	58	23.28	7.89	0.84	3.14
		Asian	52	40	1345	26.57	11.07	0.92	3.23
		Hispanic	52	40	5598	22.17	8.89	0.87	3.23
		Multi-racial	52	40	809	24.97	9.38	0.89	3.18
		Native Hawaiian/ Pacific Islander	52	40	30	26.60	9.22	0.89	3.10
		White	52	40	32091	27.36	9.80	0.90	3.18
	Module 1	African American	26	20	9557	11.03	4.59	0.75	2.29
		American Indian	26	20	58	12.24	4.33	0.74	2.22
		Asian	26	20	1345	13.47	5.78	0.84	2.31
		Hispanic	26	20	5598	11.44	4.83	0.77	2.30
		Multi-racial	26	20	809	12.74	5.02	0.80	2.26
		Native Hawaiian/ Pacific Islander	26	20	30	12.80	4.80	0.78	2.26
		White	26	20	32091	13.68	5.17	0.81	2.27
	Module 2	African American	26	20	9557	10.25	4.46	0.74	2.29
		American Indian	26	20	58	11.03	4.14	0.71	2.22
		Asian	26	20	1345	13.10	5.74	0.85	2.26
		Hispanic	26	20	5598	10.73	4.72	0.77	2.26
		Multi-racial	26	20	809	12.24	5.02	0.80	2.23
		Native Hawaiian/ Pacific Islander	26	20	30	13.80	4.94	0.82	2.12
		White	26	20	32091	13.68	5.18	0.82	2.22
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	1775	16.05	6.06	0.74	3.11
	Module 1	All	26	20	1775	8.21	3.47	0.59	2.21
	Module 2	All	26	20	1775	7.84	3.37	0.58	2.18
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	11559	19.14	7.67	0.83	3.14
	Module 1	All	26	20	11559	9.71	4.25	0.73	2.22
	Module 2	All	26	20	11559	9.43	4.13	0.71	2.21
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	23564	22.49	8.69	0.86	3.22
	Module 1	All	26	20	23564	11.49	4.72	0.77	2.28
	Module 2	All	26	20	23564	11.00	4.64	0.76	2.26

Table M–5. Spring: Algebra Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	60	42	201526	28.26	12.23	0.91	3.61
	Module 1	All	30	21	201526	13.76	6.33	0.84	2.55
	Module 2	All	30	21	201526	14.5	6.39	0.84	2.57
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	60	42	99391	28.86	11.98	0.91	3.61
		Male	60	42	101859	27.68	12.45	0.92	3.61
	Module 1	Female	30	21	99391	14.08	6.22	0.83	2.54
		Male	30	21	101859	13.46	6.42	0.84	2.55
	Module 2	Female	30	21	99391	14.79	6.27	0.83	2.58
		Male	30	21	101859	14.23	6.51	0.85	2.55
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	60	42	34046	21.34	10.06	0.89	3.40
		American Indian	60	42	279	26.48	11.99	0.91	3.56
		Asian	60	42	6187	34.94	14.3	0.93	3.70
		Hispanic	60	42	19594	22.62	10.82	0.90	3.46
		Multi-racial	60	42	3690	26.54	11.51	0.90	3.57
		Native Hawaiian/ Pacific Islander	60	42	164	29.77	12.23	0.91	3.67
		White	60	42	137262	30.54	11.86	0.91	3.62
	Module 1	African American	30	21	34046	10.3	5.2	0.79	2.39
		American Indian	30	21	279	12.87	6.24	0.84	2.50
		Asian	30	21	6187	17.3	7.4	0.88	2.62
		Hispanic	30	21	19594	10.92	5.64	0.81	2.43
		Multi-racial	30	21	3690	12.91	5.94	0.82	2.51
		Native Hawaiian/ Pacific Islander	30	21	164	14.83	6.19	0.84	2.51
		White	30	21	137262	14.89	6.17	0.83	2.55
	Module 2	African American	30	21	34046	11.04	5.44	0.80	2.42
		American Indian	30	21	279	13.61	6.24	0.84	2.53
		Asian	30	21	6187	17.65	7.28	0.87	2.64
		Hispanic	30	21	19594	11.71	5.72	0.82	2.45
		Multi-racial	30	21	3690	13.63	6.1	0.83	2.52
		Native Hawaiian/ Pacific Islander	30	21	164	14.95	6.59	0.84	2.67
		White	30	21	137262	15.64	6.21	0.83	2.58
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	6135	17.01	9.17	0.88	3.24
	Module 1	All	30	21	6135	8.25	4.97	0.79	2.28
	Module 2	All	30	21	6135	8.76	4.79	0.77	2.29
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	32644	18.69	9.49	0.88	3.30
	Module 1	All	30	21	32644	8.98	4.95	0.78	2.34
	Module 2	All	30	21	32644	9.71	5.1	0.79	2.33
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	89140	23.62	10.75	0.90	3.48
	Module 1	All	30	21	89140	11.43	5.58	0.81	2.45
	Module 2	All	30	21	89140	12.19	5.72	0.81	2.47

Table M–6. Spring: Biology Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	66	54	164172	33.56	14.91	0.94	3.68
	Module 1	All	33	27	164172	16.39	7.61	0.89	2.56
	Module 2	All	33	27	164172	17.17	7.77	0.88	2.65
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	66	54	81315	33.72	14.51	0.94	3.71
		Male	66	54	82746	33.41	15.29	0.94	3.66
	Module 1	Female	33	27	81315	16.42	7.43	0.88	2.54
		Male	33	27	82746	16.36	7.79	0.89	2.55
	Module 2	Female	33	27	81315	17.31	7.57	0.88	2.67
		Male	33	27	82746	17.04	7.97	0.89	2.64
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	66	54	26356	24.37	11.76	0.91	3.61
		American Indian	66	54	229	32.35	14.16	0.93	3.64
		Asian	66	54	5269	39.54	16.97	0.95	3.79
		Hispanic	66	54	14318	26.1	12.56	0.92	3.64
		Multi-racial	66	54	2862	31.33	13.97	0.93	3.70
		Native Hawaiian/ Pacific Islander	66	54	104	34.79	15.01	0.94	3.71
		White	66	54	114906	36.39	14.53	0.94	3.68
	Module 1	African American	33	27	26356	11.93	6.09	0.83	2.53
		American Indian	33	27	229	15.94	7.28	0.88	2.54
		Asian	33	27	5269	19.57	8.64	0.92	2.49
		Hispanic	33	27	14318	12.64	6.46	0.85	2.54
		Multi-racial	33	27	2862	15.28	7.15	0.87	2.57
		Native Hawaiian/ Pacific Islander	33	27	104	17.08	7.82	0.89	2.56
		White	33	27	114906	17.77	7.45	0.88	2.55
	Module 2	African American	33	27	26356	12.44	6.26	0.83	2.57
		American Indian	33	27	229	16.41	7.35	0.87	2.61
		Asian	33	27	5269	19.97	8.71	0.91	2.60
		Hispanic	33	27	14318	13.46	6.67	0.85	2.61
		Multi-racial	33	27	2862	16.04	7.36	0.87	2.66
		Native Hawaiian/ Pacific Islander	33	27	104	17.71	7.62	0.88	2.67
		White	33	27	114906	18.62	7.58	0.88	2.65
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	4304	19.31	9.1	0.86	3.47
	Module 1	All	33	27	4304	9.5	4.97	0.76	2.42
	Module 2	All	33	27	4304	9.81	4.83	0.74	2.46
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	26280	22.8	11.03	0.90	3.57
	Module 1	All	33	27	26280	11.11	5.71	0.81	2.50
	Module 2	All	33	27	26280	11.68	5.94	0.82	2.54
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	69836	24.43	12.88	0.92	3.67
	Module 1	All	33	27	69836	13.37	6.63	0.85	2.56
	Module 2	All	33	27	69836	14.07	6.81	0.85	2.63

Table M–7. Spring: Literature Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	52	40	143421	30.38	10	0.91	3.10
	Module 1	All	26	20	143421	14.95	5.2	0.82	2.23
	Module 2	All	26	20	143421	15.42	5.5	0.85	2.16
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	52	40	68498	32.19	9.72	0.90	3.06
		Male	52	40	74806	28.73	10.42	0.91	3.11
	Module 1	Female	26	20	68498	15.85	5.01	0.81	2.19
		Male	26	20	74806	14.13	5.25	0.82	2.23
	Module 2	Female	26	20	68498	16.34	5.2	0.83	2.13
		Male	26	20	74806	14.6	5.65	0.85	2.17
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	52	40	23339	25.18	9.64	0.89	3.23
		American Indian	52	40	205	29.27	10.45	0.91	3.14
		Asian	52	40	4699	33.73	10.85	0.92	3.02
		Hispanic	52	40	12940	25.04	9.96	0.90	3.21
		Multi-racial	52	40	2379	29.44	9.95	0.90	3.13
		Native Hawaiian/ Pacific Islander	52	40	96	30.07	9.81	0.90	3.13
		White	52	40	99628	32.16	9.7	0.90	3.04
	Module 1	African American	26	20	23339	12.35	4.95	0.78	2.30
		American Indian	26	20	205	14.41	5.47	0.83	2.23
		Asian	26	20	4699	16.36	5.57	0.85	2.18
		Hispanic	26	20	12940	12.3	5.08	0.80	2.29
		Multi-racial	26	20	2379	14.56	5.09	0.81	2.24
		Native Hawaiian/ Pacific Islander	26	20	96	14.78	4.81	0.78	2.24
		White	26	20	99628	15.85	4.93	0.80	2.18
	Module 2	African American	26	20	23339	12.83	5.27	0.82	2.26
		American Indian	26	20	205	14.85	5.48	0.84	2.21
		Asian	26	20	4699	17.38	5.68	0.87	2.09
		Hispanic	26	20	12940	12.74	5.4	0.83	2.25
		Multi-racial	26	20	2379	14.88	5.36	0.83	2.19
		Native Hawaiian/ Pacific Islander	26	20	96	15.29	5.49	0.84	2.18
		White	26	20	99628	16.31	5.24	0.84	2.12
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	3734	17.78	7.44	0.81	3.21
	Module 1	All	26	20	3734	8.59	3.83	0.65	2.26
	Module 2	All	26	20	3734	9.18	4.26	0.71	2.28
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	25937	21.04	8.77	0.87	3.17
	Module 1	All	26	20	25397	10.44	4.51	0.75	2.25
	Module 2	All	26	20	25397	10.59	4.88	0.79	2.23
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	60675	26.26	9.81	0.89	3.19
	Module 1	All	26	20	60675	12.91	5.01	0.80	2.27
	Module 2	All	26	20	60675	13.35	5.34	0.83	2.23

Table M–8. Summer: Algebra Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	60	42	1712	24.25	9.58	0.85	3.65
	Module 1	All	30	21	1712	11.57	5.24	0.74	2.68
	Module 2	All	30	21	1712	12.68	5.03	0.76	2.48
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	60	42	820	24.80	9.29	0.84	3.69
		Male	60	42	864	23.59	9.73	0.86	3.59
	Module 1	Female	30	21	820	11.82	5.17	0.72	2.72
		Male	30	21	864	11.22	5.23	0.75	2.62
	Module 2	Female	30	21	820	12.99	4.85	0.74	2.49
		Male	30	21	864	12.37	5.15	0.77	2.46
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	60	42	327	21.93	9.62	0.86	3.61
		American Indian	60	42	1	21.00	DNR	DNR	DNR
		Asian	60	42	38	29.79	9.97	0.86	3.76
		Hispanic	60	42	197	19.03	9.74	0.88	3.41
		Multi-racial	60	42	38	26.55	10.24	0.86	3.86
		Native Hawaiian/ Pacific Islander	60	42	1	44.00	DNR	DNR	DNR
		White	60	42	1072	25.48	8.92	0.83	3.65
	Module 1	African American	30	21	327	10.31	5.17	0.75	2.59
		American Indian	30	21	1	8.00	DNR	DNR	0.00
		Asian	30	21	38	14.21	5.53	0.73	2.86
		Hispanic	30	21	197	8.98	4.91	0.75	2.48
		Multi-racial	30	21	38	12.68	5.99	0.78	2.83
		Native Hawaiian/ Pacific Islander	30	21	1	20.00	DNR	DNR	DNR
		White	30	21	1072	12.18	5.00	0.71	2.70
	Module 2	African American	30	21	327	11.62	5.09	0.76	2.51
		American Indian	30	21	1	13.00	DNR	DNR	DNR
		Asian	30	21	38	15.58	5.07	0.77	2.45
		Hispanic	30	21	197	10.05	5.30	0.81	2.34
		Multi-racial	30	21	38	13.87	5.19	0.75	2.59
		Native Hawaiian/ Pacific Islander	30	21	1	24.00	DNR	DNR	DNR
		White	30	21	1072	13.30	4.69	0.72	2.46
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	47	13.70	7.84	0.85	3.08
	Module 1	All	30	21	47	6.40	3.36	0.59	2.15
	Module 2	All	30	21	47	7.30	4.89	0.80	2.21
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	268	19.07	8.56	0.84	3.44
	Module 1	All	30	21	268	9.00	4.44	0.70	2.45
	Module 2	All	30	21	268	10.07	4.80	0.75	2.42
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	60	42	637	21.97	9.67	0.86	3.61
	Module 1	All	30	21	637	10.38	5.16	0.75	2.61
	Module 2	All	30	21	637	11.59	5.14	0.76	2.50

Table M–9. Summer: Biology Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	66	54	859	30.49	11.26	0.89	3.70
	Module 1	All	33	27	859	14.40	5.99	0.82	2.57
	Module 2	All	33	27	859	16.10	5.97	0.80	2.65
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	66	54	427	31.76	10.67	0.88	3.70
		Male	66	54	423	29.13	11.65	0.90	3.69
	Module 1	Female	33	27	427	15.00	5.75	0.80	2.58
		Male	33	27	423	13.73	6.14	0.83	2.57
	Module 2	Female	33	27	427	16.76	5.67	0.78	2.65
		Male	33	27	423	15.41	6.18	0.82	2.65
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	66	54	163	26.80	9.05	0.83	3.68
		American Indian	66	54	1	39.00	DNR	DNR	DNR
		Asian	66	54	39	44.23	13.13	0.93	3.44
		Hispanic	66	54	99	26.18	10.71	0.88	3.71
		Multi-racial	66	54	14	34.79	11.60	0.89	3.88
		Native Hawaiian/ Pacific Islander	66	54	DNR	DNR	DNR	DNR	DNR
		White	66	54	533	31.25	10.81	0.88	3.70
	Module 1	African American	33	27	163	12.25	4.91	0.73	2.54
		American Indian	33	27	1	22.00	DNR	DNR	0.00
		Asian	33	27	39	21.69	6.63	0.85	2.54
		Hispanic	33	27	99	12.47	5.73	0.81	2.53
		Multi-racial	33	27	14	16.50	6.32	0.82	2.69
		Native Hawaiian/ Pacific Islander	33	27	DNR	DNR	DNR	DNR	DNR
		White	33	27	533	14.77	5.75	0.80	2.58
	Module 2	African American	33	27	163	14.55	5.06	0.72	2.66
		American Indian	33	27	1	17.00			0.00
		Asian	33	27	39	22.54	6.82	0.88	2.34
		Hispanic	33	27	99	13.71	5.74	0.78	2.70
		Multi-racial	33	27	14	18.29	6.60	0.83	2.73
		Native Hawaiian/ Pacific Islander	33	27	DNR	DNR	DNR	DNR	DNR
		White	33	27	533	16.48	5.77	0.79	2.65
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	13	19.38	10.01	0.88	3.48
	Module 1	All	33	27	13	9.38	4.96	0.79	2.26
	Module 2	All	33	27	13	10.00	5.72	0.79	2.64
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	145	24.79	9.16	0.85	3.60
	Module 1	All	33	27	145	11.96	4.87	0.74	2.50
	Module 2	All	33	27	145	12.83	4.94	0.72	2.60
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	66	54	286	26.33	9.15	0.84	3.68
	Module 1	All	33	27	286	12.14	4.95	0.75	2.50
	Module 2	All	33	27	286	14.19	5.06	0.72	2.69

Table M–10. Summer: Literature Reliabilities

	Level	Group	Pts.	Len.	*N*	Mean	SD	r	*SEM*
Overall	Total	All	52	40	644	26.29	9.45	0.88	3.23
	Module 1	All	26	20	644	12.99	4.62	0.76	2.26
	Module 2	All	26	20	644	13.31	5.40	0.82	2.30
Gender	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	Female	52	40	272	28.75	9.39	0.88	3.19
		Male	52	40	370	24.50	9.08	0.87	3.22
	Module 1	Female	26	20	272	14.19	4.59	0.77	2.23
		Male	26	20	370	12.10	4.45	0.75	2.26
	Module 2	Female	26	20	272	14.56	5.33	0.82	2.29
		Male	26	20	370	12.40	5.26	0.81	2.29
Ethnicity	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	African American	52	40	184	24.15	9.75	0.89	3.25
		American Indian	52	40	2	29.50	2.12	-1.37	3.26
		Asian	52	40	15	31.00	6.35	0.73	3.30
		Hispanic	52	40	60	19.67	9.13	0.87	3.24
		Multi-racial	52	40	24	31.79	8.12	0.86	3.09
		Native Hawaiian/ Pacific Islander	52	40	DNR	DNR	DNR	DNR	DNR
		White	52	40	356	27.92	8.75	0.87	3.20
	Module 1	African American	26	20	184	12.01	4.62	0.76	2.28
		American Indian	26	20	2	15.50	4.95	0.82	2.12
		Asian	26	20	15	15.07	3.86	0.64	2.32
		Hispanic	26	20	60	9.67	4.24	0.72	2.26
		Multi-racial	26	20	24	15.54	4.48	0.79	2.07
		Native Hawaiian/ Pacific Islander	26	20	DNR	DNR	DNR	DNR	DNR
		White	26	20	356	13.77	4.36	0.74	2.24
	Module 2	African American	26	20	184	12.14	5.63	0.83	2.31
		American Indian	26	20	2	14.00	2.83	0.40	2.20
		Asian	26	20	15	15.93	3.51	0.56	2.32
		Hispanic	26	20	60	10.00	5.46	0.82	2.32
		Multi-racial	26	20	24	16.25	4.58	0.76	2.25
		Native Hawaiian/ Pacific Islander	26	20	DNR	DNR	DNR	DNR	DNR
		White	26	20	480	13.62	4.89	0.80	2.21
ELL	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	8	21.63	9.46	0.85	3.66
	Module 1	All	26	20	8	11.00	4.99	0.74	2.54
	Module 2	All	26	20	8	10.63	5.34	0.76	2.63
IEP	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	119	21.39	8.31	0.85	3.18
	Module 1	All	26	20	119	10.77	4.33	0.74	2.21
	Module 2	All	26	20	119	10.62	4.54	0.75	2.29
ED	**Level**	**Group**	**Pts.**	**Len.**	***N***	**Mean**	**SD**	**r**	***SEM***
	Total	All	52	40	286	25.21	10.02	0.89	3.26
	Module 1	All	26	20	286	12.49	4.97	0.79	2.28
	Module 2	All	26	20	286	12.72	5.55	0.82	2.33

TECHNICAL REPORT

for the
2013–2014 Classroom Diagnostic Tools

Provided by
Data Recognition Corporation

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GLOSSARY OF COMMON TERMS

The following table contains some terms used in this technical report and their meanings. Some of these terms are used universally in the assessment community, and some of these terms are used commonly by psychometric professionals.

Term	Common Definition
Ability	In Rasch scaling, *ability* is a generic term indicating the level of an individual on the construct measured by an exam. As an example for the CDT, a student's reading ability is measured by how the student performed on the CDT Reading/Literature test.
Alternative Forms	*Alternative forms* are two or more versions of a test that are considered exchangeable; for example, they measure the same constructs in the same ways, are intended for the same purposes, and are administered using the same directions. More specific terminology applies depending on the degree of statistical similarity between the test forms (e.g., parallel forms, equivalent forms, comparable forms), where parallel forms refers to the situation in which the test forms have the highest degree of similarity to each other.
Average	*Average* is a measure of central tendency in a score distribution that usually refers to the arithmetic mean of a set of scores. In this case, it is determined by adding all the scores in a distribution and then dividing the obtained value by the total number of scores. Sometimes people use the word average to refer to other measures of central tendency such as the median (the score in the middle of a distribution) or mode (the score value with the greatest frequency).
Benchmark Activity	Also referred to as benchmarking, *benchmark activity* is a procedure used in the determination of the cut score(s) for a given assessment. It is used to measure students' progress towards certain performance standards. Methods vary (e.g., modified Angoff, Bookmark Method), but most use a panel of educators and expert judgments to operationalize the level of achievement students must demonstrate in order to be categorized within each performance level.
Benchmark Cut	A *benchmark cut* marks a specified point on a score scale where scores at or above that point are interpreted differently from scores below that point (e.g., a score designated as the minimum level of performance needed to pass a competency test). A test can be divided into multiple proficiency levels by setting one or more cut scores. Methods for establishing cut scores vary. For the CDT, one benchmark cut was set that separates students into two categories: solidly ready for the next grade or course and not solidly ready for the next grade or course.
Bias	In a statistical context, *bias* refers to any source of systematic error in the measurement of a test score. In discussing test fairness, bias may refer to construct-irrelevant components of test scores that differentially affect the performance of different groups of test takers (e.g., gender, ethnicity). Attempts are made to reduce bias by conducting item fairness reviews and various differential item functioning (DIF) analyses, detecting potential areas of concern, and either removing or revising the flagged test items prior to including them in the final operational pools (see also *Differential Item Functioning*).
Computer Adaptive Test (CAT)	A *computer adaptive test* (*CAT*) is a computer-based test with an item selection routine that adjusts (adapts) to a student's performance during the test. For this reason, it has also been called a tailored test. Rather than all students taking the same set of items (fixed form), each student's test is individually tailored with items selected from a large item pool based on the student's performance.

Glossary of Common Terms

Term	Common Definition
Constructed-Response Item	A *constructed-response item*—referred to by some as an open-ended response item—is an item format that requires examinees to create their own responses, which can be expressed in various forms. This format is in contrast to multiple-choice items, which require students to make a choice from a supplied set of answer options. There are no constructed-response items on the CDT.
Content Validity Evidence	*Content validity evidence* shows the extent to which an exam provides an appropriate sampling of a content domain of interest (e.g., assessable portions of a state's grade 6 mathematics curriculum in terms of the knowledge, skills, objectives, and processes sampled).
Criterion-Referenced Interpretation	The *criterion-referenced interpretation* is a measure of a student's performance against an expected level of mastery, educational objective, or standard. The types of resulting score interpretations provide information about what a student knows or can do in a given content area.
Decision Consistency	*Decision consistency* is the extent to which classifications based on test scores would match the decisions on students' proficiency levels based on scores from a second parallel form of the same test. It is often expressed as the proportion of examinees who are classified the same way from the two test administrations.
Diagnostic Category	A *diagnostic category* is a grouping used for reporting results on the CDT. Each CDT test has four or five diagnostic categories which are based on the Pennsylvania Academic Standards (Mathematics, Reading, and Writing) or the Pennsylvania Academic Standards (Science).
Differential Item Functioning (DIF)	*Differential item functioning* (*DIF*) is a statistical property of a test item in which different groups of test takers (who have the same total test score) have different average item scores. In other words, students with the same ability level but different group memberships do not have the same probability of answering the item correctly (see also *Bias*).
Distractor	A *distractor* is an incorrect option in a multiple-choice item (also called a foil).
Equating	*Equating* is the strongest of several linking methods used to establish comparability between scores from multiple tests. Equated test scores should be considered exchangeable. Consequently, the criteria needed to refer to a linkage as equating are strong and somewhat complex (equal construct and precision, equity, and invariance). In practical terms, it is often stated that it should be a "matter of indifference" to a student if he/she takes any of the equated tests (see also *Linking*).
Field-Test item	A *field-test item* is a newly developed item that is ready to be tried out to determine its statistical properties (e.g., see *p*-value and Point-Biserial Correlation). Items are field tested prior to operational administration. Items with acceptable statistical properties in field-test form the pool of CDT operational items.
Frequency	*Frequency* is the number of times that a certain value or range of values (score interval) occurs in a distribution of scores.
Frequency Distribution	*Frequency distribution* is a tabulation of scores from low to high or high to low with the number and/or percent of individuals who obtain each score or who fall within each score interval.

Glossary of Common Terms

Term	Common Definition
Infit/Outfit	*Infit* and *outfit* are statistical indicators of the agreement of the data and the measurement model. Infit and outfit are highly correlated, and they both are highly correlated with the point-biserial correlation. Underfit can be caused when low-ability students correctly answer difficult items (perhaps by guessing or atypical experience) or high-ability students incorrectly answer easy items (perhaps because of carelessness or gaps in instruction). Any model expects some level of variability, so overfit can occur when nearly all low-ability students miss an item while nearly all high-ability students get the item correct.
Item Difficulty	For the Rasch model, the dichotomous *item difficulty* represents the point along the latent trait continuum where an examinee has a 0.50 probability of making a correct response.
Key	The *key* is the correct response option or answer to a test item.
Learning Progression	A *learning progression* shows the developmental sequences or building blocks of content/skills students need to master as they progress toward career and college readiness and is tied directly to the Assessment Anchors and Eligible Content as well as the Voluntary Model Curriculum Units and Lesson Plans.
Linking	*Linking* is a generic term referring to one of a number of processes by which scores from one or more tests are made comparable to some degree. Linking includes several classes of transformations (equating, scale alignment, prediction, etc.). Equating is associated with the strongest degree of comparability (exchangeable scores). Other linkages may be very strong but fail to meet one or more of the strict criteria required of equating (see also *Equating*).
Logit	In Rasch scaling, *logits* are units used to express both examinee ability and item difficulty. When expressing examinee ability, if two students take the same set of items, a student who answers more items correctly has a higher logit than a student who answers fewer items correctly. Logits are transformed into scale scores through a linear transformation. When expressing item difficulty, logits are transformed *p*-value (see also *P-value*). The logit difficulty scale is inversely related to *p*-values. A higher logit value would represent a relatively harder item, while a lower logit value would represent a relatively easier item.
Mean	*Mean* is also referred to as the arithmetic mean of a set of scores. It is found by adding all the score values in a distribution and dividing by the total number of scores. For example, the mean of the set {66, 76, 85, and 97} is 81. The value of a mean can be influenced by extreme values in a score distribution.
Measure	In Rasch scaling, *measure* generally refers to a specific estimate of an examinee's ability (often expressed as logits) or an item's difficulty (again, often expressed as logits). As an example for the CDT, a student's literature measure might be equal to 0.525 logit. Or, a CDT literature test item might have a logit equal to -0.905.
Median	The *median* is the middle point or score in a set of rank-ordered observations that divides the distribution into two equal parts; each part contains 50 percent of the total data set. More simply put, half of the scores are below the median value and half of the scores are above the median value. As an example, the median for the following ranked set of scores {2, 3, 6, 8, 9} is 6.
Multiple-Choice Item	A *multiple-choice item* is a type of item format that requires the test taker to select a response from a group of possible choices, one of which is the correct answer (or key) to the question posed. All items on the CDT are multiple-choice items.

Glossary of Common Terms

Term	Common Definition
N-count	Sometimes designated as *N* or *n*, it is the number of observations (usually individuals or students) in a particular group. Some examples include the number of students tested, the number of students tested from a specific subpopulation (e.g., females), and the number of students who attained a specific score. In the following set {23, 32, 56, 65, 78, 87}, *n* = 6.
Operational Item	After initial item tryout (field test), all items with acceptable statistical properties form the pool of CDT *operational items*. Students' tests are selected from this pool.
Percent Correct	When referring to an individual item, the *percent correct* is the item's *p*-value from the field test administration expressed as a percent (instead of a proportion). Under a computer adaptive administration, percent correct scores are not appropriate for individual items or students.
Percentile	*Percentile* is the score or point in a score distribution at or below which a given percentage of scores fall. It should be emphasized that it is a value on the score scale, not the associated percentage (although sometimes in casual usage this misinterpretation is made). For example, if 72 percent of the students score at or below a scale score of 1500 on a given test, then the scale score of 1500 would be considered the 72nd percentile. As another example, the median is the 50th percentile.
Percentile Rank	The *percentile rank* is the percentage of scores in a specified distribution that fall at/below a certain point on a score distribution. Percentile ranks range in value from 1 to 99. They indicate the status or relative standing of an individual within a specified group by indicating the percent of individuals in that group who obtained equal or lower scores. An individual's percentile rank can vary depending on which group is used to determine the ranking. As suggested above, percentiles and percentile ranks are sometimes used interchangeably; however, strictly speaking, a percentile is a value on the score scale.
Point-Biserial Correlation	In classical test theory, *point-biserial correlation* is an item discrimination index. It is the correlation between a dichotomously scored item and a continuous criterion, usually represented by the total test score (or the corrected total test score with the reference item removed). It reflects the extent to which an item differentiates between high-scoring and low-scoring examinees. This discrimination index ranges from –1.00 to +1.00. The higher the discrimination index (the closer to +1.00), the better the item is considered to be performing. For multiple-choice items scored as 0 or 1, it is rare for the value of this index to exceed 0.5.
P-value	A *p-value* is an index indicating an item's difficulty for some specified group (perhaps grade). It is calculated as the proportion (sometimes percent) of students in the group who answer an item correctly. *P*-values range from 0.0 to 1.0 on the proportion scale. Lower values correspond to more difficult items and higher values correspond to easier items. *P*-values are usually provided for multiple-choice items or other items worth one point. For open-ended items or items worth more than one point, difficulty on a *p*-value-like scale can be estimated by dividing the item mean score by the maximum number of points possible for the item (see also *Logit*).
Raw Score	*Raw score* is an unadjusted score usually determined by tallying the number of questions answered correctly or by the sum of item scores (i.e., points). Raw scores typically have little or no meaning by themselves and require additional information like the number of items on the test and the difficulty of the test items. Under a computer adaptive administration, where each student takes a unique set of items, raw scores are not comparable across students.

Glossary of Common Terms

Term	Common Definition
Reliability	*Reliability* is the expected degree to which test scores for a group of examinees are consistent over exchangeable replications of an assessment procedure and, therefore, considered dependable and repeatable for an individual examinee. A test that produces highly consistent, stable results (i.e., relatively free from random error) is said to be highly reliable. The reliability of a test is typically expressed as a reliability coefficient or by the standard error of measurement derived by that coefficient.
Reliability Coefficient	*Reliability coefficient* is a statistical index that reflects the degree to which scores are free from random measurement error. Theoretically, it expresses the consistency of test scores as the ratio of true score variance to total score variance (true score variance plus error variance). This statistic is often expressed as a correlation coefficient (e.g., correlation between two forms of a test) or with an index that resembles a correlation coefficient (e.g., calculation of a test's internal consistency using coefficient alpha). Expressed this way, the reliability coefficient is a "unitless" index. The higher the value of the index (closer to 1.0), the greater the reliability of the test (see also *Standard Error of Measurement*).
Scale Score	*Scale score* is a mathematical transformation of a Rasch ability estimate developed through a process called scaling. Scale scores are most useful when comparing test results over time. Several different methods of scaling exist, but each is intended to provide a continuous and meaningful score scale across different forms of a test.
Standard Deviation	*Standard deviation* is a statistic that measures the degree of spread or dispersion of a set of scores. The value of this statistic is always greater than or equal to zero. If all of the scores in a distribution are identical, the standard deviation is equal to zero. The further the scores are away from one another in value, the greater the standard deviation. This statistic is calculated using the information about the deviations (distances) between each score and the distribution's mean. It is equivalent to the square root of the variance statistic. The standard deviation is a commonly used method of examining a distribution's variability since the standard deviation is expressed in the same units as the data.
Standard Error of Measurement (SEM)	*Standard error of measurement* (*SEM*) is the amount an observed score is expected to fluctuate around the true score. As an example, across replications of a measurement procedure, the true score will not differ by more than plus or minus one standard error from the observed score about 68 percent of the time (assuming normally distributed errors). The SEM is frequently used to obtain an idea of the consistency of a person's score in actual score units, or to set a confidence band around a score in terms of the error of measurement. Often a single SEM value is calculated for all test scores. On other occasions, however, the value of the SEM can vary along a score scale. Conditional standard error of measurement (CSEM) also indicates the degree of measurement error in scale score units but varies as a function of a student's unique set of items and actual scale score.
Technical Advisory Committee (TAC)	The *technical advisory committee* (*TAC*) is a group of individuals (most often professionals in the field of testing) that are either appointed or selected to make recommendations for and to guide the technical development of a given testing program.
Validity	*Validity* is the degree to which accumulated evidence and theory support specific interpretations of test scores entailed by the purpose of a test. There are various ways of gathering validity evidence.

Glossary of Common Terms

PREFACE: AN OVERVIEW OF THE CDT

CLASSROOM DIAGNOSTIC TOOLS (CDT) OVERVIEW

The Pennsylvania Classroom Diagnostic Tools (CDT) is a set of online assessments, divided by content area, designed to provide diagnostic information in order to guide instruction and remediation. The CDT reporting system is fully integrated in Pennsylvania's Standards Aligned System (SAS). It assists educators in identifying student academic strengths and areas in need of improvement by providing links to classroom resources. The diagnostic reports feature easy-to-follow links to targeted curricular resources and materials, including units and lesson plans found within the SAS system. Previously, the CDT was only offered to students in grades 6 through high school, but in May of 2014 DRC introduced grades 3–5. Students at all Pennsylvania schools may take the CDT up to five times throughout the school year at no cost.

The purpose of the CDT is to provide information that will help guide instruction by providing support to students and teachers. The CDT reports are designed to provide a picture or snapshot of how students are performing in relation to the Pennsylvania Assessment Anchors and Eligible Content and Keystone Assessment Anchors and Eligible Content. The CDT goes beyond focusing only on **What** students should know and be able to do at a particular grade and/or course. It also provides a snapshot of **How** and **Why** students may still be struggling or extending beyond the grade and/or course Eligible Content. This valuable information is typically not identified through other types of assessments. Teachers, through the use of the CDT reports, may access additional information through the Learning Progression Map. The Learning Progression Map allows teachers to pinpoint where students are struggling or where they are extending beyond the learning continuum. The CDT helps identify and provides suggestions for next steps in student academic development.

The CDT consists of only multiple-choice questions. The questions were developed to specifically align to the Pennsylvania Assessment Anchors and Eligible Content at kindergarten through high school and the Keystone Assessment Anchors and Eligible Content for end-of-course. The CDT is based on content assessed by the Pennsylvania System of School Assessments (PSSA) and the Keystone Exams. It includes interactive and dynamic reporting for various diagnostic reporting categories.

CDT Activities for the 2013–2014 School Year

Description	Date
Test Setup System Available	August 19, 2013
PA Online Assessment Software Available for Download	August 26, 2013
First Day of Testing	August 26, 2013
Grades 3–5 Field Test	October 1, 2013–November 27, 2013
Inclusion of Grades 3–5	May 5, 2014

Preface: An Overview of the CDT

CHAPTER ONE: BACKGROUND OF THE CLASSROOM DIAGNOSTIC TOOLS

This brief overview of the Pennsylvania Classroom Diagnostic Tools summarizes the program's intent and purpose, as well as key dates in the development process.

THE CLASSROOM DIAGNOSTIC TOOLS

The Classroom Diagnostic Tools (CDT) is a set of online assessments, divided by content area, designed to provide diagnostic information in order to a guide instruction and enrichment. The CDT reporting system is fully integrated in the Standards Aligned System (SAS). It assists educators in identifying student academic strengths and areas in need of improvement by providing links to classroom resources. The diagnostic reports feature easy-to-follow links to targeted curricular resources and materials, including units and lesson plans found within SAS. The CDT is available to districts at no cost.

The CDT is:

- Offered to students in grades 3 through high school (with the addition of grades 3 through 5 in spring 2014)
- Available for use in the classroom throughout the school year on a voluntary basis
- Based on content assessed by the Keystone Exams and the Pennsylvania System of School Assessment (PSSA)
- Comprised of multiple-choice items
- Delivered as an online computer adaptive test (CAT), ensuring valid and reliable measures of a student's skills while minimizing testing time
- Designed to provide real-time results for students and teachers with links to Materials and Resources in SAS
- Available for Mathematics Lower Grades[1], Mathematics, Algebra I, Geometry, Algebra II, Reading Lower Grades, Reading/Literature, Science Lower Grades, Science, Biology, Chemistry, Writing Lower Grades, and Writing/English Composition

KEY DATES

The items for each course of the CDT were field tested online using fixed-form computer-based tests prior to their use in operational computer adaptive tests. Additional items were field tested as items embedded within the operational CDT to increase the pool of items aligned to the Pennsylvania Core Standards and to allow the extension of the CDT to students in grades 3 through 5. The timeline for implementation of the field tests and operational availability is shown in the following table.

[1] CDT with the "Lower Grades" designation is for students in grades 3 through 5.

Course	Field Test Dates	Operational Rollout Dates
Mathematics, Algebra I, Geometry, Algebra II	Spring 2010	Fall 2010
Reading/Literature	Fall 2010	Spring 2011
Science, Biology, Chemistry	Fall 2010	Spring 2011
Writing/English Composition	Spring 2011	Fall 2011
Mathematics, Reading/Literature, and Writing/English Composition aligned to the Pennsylvania Core Standards[2]	Spring 2013	Fall 2013
Mathematics Lower Grades, Reading Lower Grades, Science Lower Grades, and Writing Lower Grades	Fall 2013	Spring 2014

For more details on field-test events, see Chapter Six.

[2] The alignment of Mathematics, Reading/Literature, and Writing/English Composition to the Pennsylvania Core Standards did not include field-test items for Writing/English Composition, as the Writing/English Composition pool did not require additional items to be fully aligned to the Pennsylvania Core Standards.

CHAPTER TWO: TEST DEVELOPMENT OVERVIEW OF THE PENNSYLVANIA CDT FRAMEWORK

The Pennsylvania Classroom Diagnostic Tools (CDT) is available for Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Reading Lower Grades, Reading/Literature, Science Lower Grades, Science, Biology, Chemistry, Writing Lower Grades, and Writing/English Composition for students in grades 3 through high school. The assessments are administered online in a computer adaptive test (CAT) format.

The Pennsylvania CDT consists of multiple-choice questions that align to the Pennsylvania Assessment Anchors and Eligible Content at grades 3 through high school for mathematics, reading, writing, and science and the Keystone Assessment Anchors and Eligible Content for end-of-course for Algebra I, Algebra II, Geometry, Literature, English Composition, Biology, and Chemistry. With the exception of grades 3, 5, 6, and 7 for Science, these Pennsylvania Assessment Anchors and Eligible Content were developed previously for the PSSA and Keystone Exams as described in the following sections. In addition, Learning Progressions were developed to show the pathways along which students travel as they progress towards mastery of the skills in each content area.

BACKGROUND FOR THE PSSA ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

The PSSA Assessment Anchors and Eligible Content in Mathematics, Reading, and Writing are based on the Pennsylvania Core Standards. The PSSA Assessment Anchors and Eligible Content in Science are based on the Pennsylvania Academic Standards. Although the Pennsylvania Core Standards and the Pennsylvania Academic Standards indicate what students should know and be able to do, educator concerns regarding the number and breadth of Academic Standards led to an initiative by the Pennsylvania Department of Education (PDE) to develop Assessment Anchors to indicate which parts of the Academic Standards (Instructional Standards) would be assessed on the PSSA. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected across each grade span and focus the content of the standards into what is assessable on a large-scale test. The Assessment Anchor documents also serve to communicate Eligible Content, also called assessment limits, or the range of knowledge and skills from which the PSSA would be designed.

The Assessment Anchor's coding is read like an outline. The coding includes the content, grade level, Reporting Category, Assessment Anchor, descriptor (Sub-Assessment Anchor), and Eligible Content. Thus, S.4.A.1.3.1 would be Science, Grade 4, Reporting Category A, Assessment Anchor 1, descriptor (Sub-Assessment Anchor) 3, and Eligible Content 1.

Each of the Assessment Anchors has one or more descriptors (Sub-Assessment Anchors), and Eligible Content varies to reflect grade-level appropriateness. The Assessment Anchors form the basis of the test design for the grades undergoing new test development. In turn, this hierarchy is the basis for organizing the total content scores (based on the core [common] sections).

With Pennsylvania's decision to adopt the Pennsylvania Core Standards, based on the Common Core State Standards, committees of Pennsylvania educators met in October 2011 to write, review, and approve the Assessment Anchors and Eligible Content statements. To provide initial focus, each content and grade span committee was presented with materials specific to the content and grade span in question, including a basic blueprint structure, the Pennsylvania Academic Standards, the Pennsylvania Assessment Anchors and Eligible Content aligned to the Pennsylvania Academic Standards, the Common Core State Standards, and draft Eligible Content statements. Committees then completed an iterative process of reviewing and revising the draft Eligible Content statements followed by discussions across grade-span committees to ensure vertical articulation across the grades. The results from the committee work were evaluated by national, state, and local subject matter experts, and, following revisions, they were ultimately validated by another committee of Pennsylvania educators. Following committee approval, the Pennsylvania Core Standards-aligned Assessment Anchors and Eligible Content for English Language Arts and Mathematics were approved by the State Board of Education in September 2013.

The complete set of Assessment Anchors and Eligible Content can be referenced at PDE's website: www.education.state.pa.us. Click on the green checkmark labeled "State Assessment System," then select "Pennsylvania System of School Assessment (PSSA)," and then "Assessment Anchors."

For Science, Assessment Anchors and Eligible Content had only been previously developed at grades 4, 8, and 11 for the PSSA and for the Biology and Chemistry Keystone Exams. Therefore, to provide a vertical articulation of science content from grade to grade, a group of Pennsylvania educators were brought together to develop Assessment Anchors and Eligible Content for the off grades (those that do not assess Science on the PSSA). These educators, in collaboration with DRC Science Test Development staff, used the Assessment Anchors and Eligible Content for grades 4, 8, and 11 as the foundation to develop Assessment Anchors and Eligible Content for grades 3, 5, 6, and 7.

With the extension of the CDT to allow students in grades 3 through 5 to participate in the assessments, it was necessary to include items appropriate to assess skills and understandings that students should learn in kindergarten through grade 2. For Mathematics, Reading, and Writing, test questions were developed to align to the Pennsylvania Core Standards for grades K through 2. For Science, a group of Pennsylvania educators was brought together in March 2013 to develop the Science Grades K–2 Assessment Anchors and Eligible Content, which are organized as a single grade band and contain foundational science concepts in order to promote flexibility in classroom instruction for these early grade levels.

BACKGROUND FOR THE KEYSTONE ASSESSMENT ANCHORS AND ELIGIBLE CONTENT

The Keystone Test Blueprints—known as the Keystone Assessment Anchors and Eligible Content—are based on Pennsylvania Keystone Course Standards and the Common Core State Standards. Prior to the development of the Assessment Anchors, multiple groups of Pennsylvania educators convened to create a set of standards for each of the Keystone Exams. Derived from a review of existing standards, these Enhanced Standards (Course Standards) focus on what students need to know and be able to do in order to be college and career ready.

Although the Keystone Course Standards indicate what students should know and be able to do, Assessment Anchors are designed to indicate which parts of the Keystone Course Standards (Instructional Standards) will be assessed on the Keystone Exams. Based on recommendations from Pennsylvania educators, the Assessment Anchors were designed as a tool to improve the articulation of curricular, instructional, and assessment practices. The Assessment Anchors clarify what is expected and focus the content of the standards into what is

assessable on a large-scale exam. The Assessment Anchor documents also serve to communicate Eligible Content, or the range of knowledge and skills from which the Keystone Exams are designed.

The Keystone Assessment Anchors and Eligible Content have been designed to hold together or *anchor* the state assessment system and curriculum/instructional practices in schools following these design parameters:

- **Clear:** The Assessment Anchors are easy to read and user-friendly; they clearly detail which standards are assessed on the Keystone Exams.
- **Focused:** The Assessment Anchors identify a core set of standards that could be reasonably assessed on a large-scale assessment, which will keep educators from having to guess which standards are critical.
- **Rigorous:** The Assessment Anchors support the rigor of the state standards by assessing higher-order and reasoning skills.
- **Manageable:** The Assessment Anchors define the standards in a way that can be easily incorporated into a course to prepare students for success.

The Assessment Anchors and Eligible Content are organized into cohesive blueprints, each structured with a common labeling system. This framework is organized first by Module (Reporting Category), then by Assessment Anchor, followed by Anchor Descriptor, and then finally, at the greatest level of detail, by an Eligible Content statement. The common format of this outline is followed across the Keystone Exams.

Here is a description of each level in the labeling system for the Keystone Exams:

- **Module:** The Assessment Anchors are organized into two thematic modules for each of the Keystone Exams, and these modules serve as the Reporting Categories for the Keystone Exams. The module title appears at the top of each page in the Assessment Anchor document. The module level is also important because the Keystone Exams are built using a module format, with each of the Keystone Exams divided into two equally sized test modules. Each module is made up of two or more Assessment Anchors.
- **Assessment Anchor:** The Assessment Anchor appears in the shaded bar across the top of each Assessment Anchor table in the Assessment Anchor document. The Assessment Anchors represent categories of subject matter that anchor the content of the Keystone Exams. Each Assessment Anchor is part of a module and has one or more Anchor Descriptors unified under it.
- **Anchor Descriptor:** Below each Assessment Anchor in the Assessment Anchor document is a specific Anchor Descriptor. The Anchor Descriptor level provides further details that delineate the scope of content covered by the Assessment Anchor. Each Anchor Descriptor is part of an Assessment Anchor and has one or more Eligible Content statements unified under it.
- **Eligible Content:** The column to the right of the Anchor Descriptor in the Assessment Anchor document contains the Eligible Content statements. The Eligible Content is the most specific description of the content that is assessed on the Keystone Exams. This level is considered the assessment limit and helps educators identify the range of content covered on the Keystone Exams.
- **Notes:** There are three types of notes included in the Assessment Anchor document:
  "e.g." ("for example")—sample approach, but not a limit to the Eligible Content
  "i.e." ("that is")—specific limit to the Eligible Content
  "Note"—content exclusions or definable range of the Eligible Content

The Assessment Anchor's coding is read like an outline. The coding includes the Subject (Exam), Reporting Category (Module), Assessment Anchor, Anchor Descriptor, and Eligible Content. Each exam has two modules. Each module has two or more Assessment Anchors. Each of the Assessment Anchors has one or more Anchor Descriptors, and each Anchor Descriptor has at least one Eligible Content statement (generally more than one). The Assessment Anchors form the basis of the test design for the exams undergoing test development. In turn, this hierarchy is the basis for organizing the total module and exam scores.

Table 2–1. Sample Keystone Assessment Anchor Coding

Sample Code	Subject (Exam)	Reporting Category (Module)	Assessment Anchor (AA)	Anchor Descriptor (AD)	Eligible Content (EC)
A1.1.1.2.1	**A1** Algebra I	**1** Operations and Linear Equations & Inequalities	**1** Linear Equations	**2** Write, solve, and/or graph linear equations using various methods.	**1** Write, solve, and/or apply a linear equation (including problem situations).
BIO.A.2.1.1	**BIO** Biology	**A** Cells and Cell Processes	**2** The Chemical Basis for Life	**1** Describe how the unique properties of water support life on Earth.	**1** Describe the unique properties of water and how these properties support life on Earth (e.g., freezing point, high specific heat, cohesion).
L.F.2.4.1	**L** Literature	**F** Fiction	**2** Analyzing and Interpreting Literature—Fiction	**4** Use appropriate strategies to interpret and analyze the universal significance of literary fiction.	**1** Interpret and analyze works from a variety of genres for literary, historical, and/or cultural significance.

The complete set of Assessment Anchors and Eligible Content can be referenced at PDE's Standards Aligned System (SAS) website: http://www.pdesas.org/Standard/KeystoneDownloads.

DIAGNOSTIC CATEGORIES FOR THE CLASSROOM DIAGNOSTIC TOOLS

The CDT provides information for teachers, students, and other stakeholders regarding student performance at the Overall Score level and also for each diagnostic category within the selected assessment. These diagnostic categories provide more detailed information about student strengths and areas of need for a related group of Eligible Content. A description of the diagnostic categories for each assessment follows.

MATHEMATICS LOWER GRADES AND MATHEMATICS

There are four diagnostic categories for the mathematics assessments. These are *Numbers & Operations*, *Algebraic Concepts*, *Geometry*, and *Measurement, Data, and Probability*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the table below.

Table 2–2. Number of Eligible Content per Diagnostic Category by Grade for Mathematics Lower Grades and Mathematics

	Number of Eligible Content per Grade									
Diagnostic Category	**Kindergarten***	**Grade 1***	**Grade 2***	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**HS**
Numbers & Operations	1	3	3	9	20	13	15	9	5	6
Algebraic Concepts	1	2	3	14	8	4	11	5	17	46
Geometry	2	2	2	3	3	3	6	8	8	29
Measurement, Data, and Probability	2	3	5	15	9	5	4	7	4	12

* Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Mathematics CDT.

ALGEBRA I

The Keystone Algebra I Assessment Anchors and Eligible Content has two reporting categories: Module 1, Operations and Linear Equations & Inequalities, and Module 2, Linear Functions and Data Organizations. These modules are each divided into two diagnostic categories. Module 1 is divided into *Operations with Real Numbers and Expressions* and *Linear Equations & Inequalities*. Module 2 is divided into *Functions & Coordinate Geometry* and *Data Analysis*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–3. Number of Eligible Content per Diagnostic Category by Grade for Algebra I

		Number of Eligible Content per Grade						
Diagnostic Category		Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1	Operations with Real Numbers and Expressions	13	11	5	17	10	7	18
	Linear Equations & Inequalities	0	0	0	3	3	8	16
Module 2	Functions & Coordinate Geometry	0	3	1	4	1	10	21
	Data Analysis	3	0	1	4	7	4	11

GEOMETRY

The Keystone Geometry Assessment Anchors and Eligible Content has two reporting categories: Module 1, Geometric Properties & Reasoning, and Module 2, Coordinate Geometry & Measurement. These modules are each divided into two diagnostic categories. Module 1 is divided into *Geometric Properties* and *Congruence, Similarity, & Proofs*. Module 2 is divided into *Coordinate Geometry & Right Triangles* and *Measurement*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–4. Number of Eligible Content per Diagnostic Category by Grade for Geometry

		Number of Eligible Content per Grade						
Diagnostic Category		Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1	Geometric Properties	2	2	1	1	5	1	18
	Congruence, Similarity, & Proofs	0	1	0	0	0	2	3
Module 2	Coordinate Geometry & Right Triangles	0	0	1	3	1	7	5
	Measurement	6	4	2	4	3	0	13

ALGEBRA II

The Keystone Algebra II Assessment Anchors and Eligible Content has two reporting categories: Module 1, Number Systems and Non-Linear Expressions & Equations, and Module 2, Functions and Data Analysis. These modules are each divided into two diagnostic categories. Module 1 is divided into *Operations with Complex Numbers* and *Non-Linear Expressions & Equations*. Module 2 is divided into *Functions* and *Data Analysis*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–5. Number of Eligible Content per Diagnostic Category by Grade for Algebra II

		Number of Eligible Content per Grade						
Diagnostic Category		**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**HS**
Module 1	Operations with Complex Numbers	0	0	0	0	0	0	4
	Non-Linear Expressions & Equations	0	1	1	16	9	8	30
Module 2	Functions	0	3	0	1	0	5	20
	Data Analysis	3	0	1	4	7	3	11

SCIENCE LOWER GRADES AND SCIENCE

There are four diagnostic categories for the science assessments. These are *The Nature of Science*, *Biological Sciences*, *Physical Sciences*, and *Earth/Space Sciences*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the table below.

Table 2–6. Number of Eligible Content per Diagnostic Category by Grade for Science Lower Grades and Science

	Number of Eligible Content per Grade							
Diagnostic Category	**K–2**	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**HS**
The Nature of Science	7	9	20	8	10	19	31	27
Biological Sciences	7	14	18	11	7	21	21	38
Physical Sciences	1	10	9	12	12	12	12	46
Earth/Space Sciences	8	13	16	8	7	11	13	14

BIOLOGY

The Keystone Biology Exam has two reporting categories: Module 1[A], Cells and Cell Processes, and Module 2[B], Continuity and Unity of Life. These modules are each divided into two diagnostic categories. Module 1 is divided into *Basic Biological Principles/Chemical Basis for Life* and *Bioenergetics/Homeostasis & Transport*. Module 2 is divided into *Cell Growth & Reproduction/Genetics* and *Theory of Evolution/Ecology*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–7. Number of Eligible Content per Diagnostic Category by Grade for Biology

		Number of Eligible Content per Grade						
Diagnostic Category		Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1	Basic Biological Principles/ Chemical Basis for Life	5	5	3	3	5	5	9
	Bioenergetics/Homeostasis & Transport	0	0	0	0	0	0	7
Module 2	Cell Growth & Reproduction/Genetics	2	1	1	0	5	4	10
	Theory of Evolution/Ecology	8	13	5	3	18	18	12

CHEMISTRY

The Keystone Chemistry Assessment Anchors and Eligible Content has two reporting categories: Module 1[A], Structure and Properties of Matter, and Module 2[B], The Mole Concept and Chemical Interactions. These modules are each divided into two diagnostic categories. Module 1 is divided into *Properties & Classification of Matter* and *Atomic Structure & the Periodic Table*. Module 2 is divided into *The Mole & Chemical Bonding* and *Chemical Relationships & Reactions*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–8. Number of Eligible Content per Diagnostic Category by Grade for Chemistry

		Number of Eligible Content per Grade						
Diagnostic Category		Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	HS
Module 1	Properties & Classification of Matter	7	4	7	7	3	3	10
	Atomic Structure & The Periodic Table	0	0	0	0	1	0	8
Module 2	The Mole & Chemical Bonding	0	0	0	0	1	1	9
	Chemical Relationships & Reactions	0	0	1	0	1	1	7

READING/LITERATURE

The Reading Lower Grades and Reading/Literature Assessments use the same diagnostic categories across grades 3 through 8 and the high school Literature course. These diagnostic categories are not divided across the two Keystone Literature Modules (reporting categories) of Fiction and Non-fiction. The diagnostic categories for Reading Lower Grades and Reading/Literature are *Key Ideas and Details—Literature Text; Key Ideas and Details—Informational Text; Craft and Structure/Integration of Knowledge and Ideas—Literature Text; Craft and Structure/Integration of Knowledge and Ideas—Informational Text;* and *Vocabulary*

Acquisition and Use. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–9. Number of Eligible Content per Diagnostic Category by Grade for Reading Lower Grades and Reading/Literature

	Number of Eligible Content per Grade									
Diagnostic Category	**Kindergarten***	**Grade 1***	**Grade 2***	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**HS**
Key Ideas and Details—Literature Text	3	3	3	3	3	3	3	3	3	8
Key Ideas and Details—Informational Text	3	3	3	3	3	3	3	3	3	12
Craft and Structure/Integration of Knowledge and Ideas—Literature Text	2	2	2	2	2	2	4	4	4	14
Craft and Structure/Integration of Knowledge and Ideas—Informational Text	4	4	4	5	5	5	5	5	5	18
Vocabulary Acquisition and Use	2	2	2	4	4	4	4	4	4	6

* Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Reading/Literature CDT.

WRITING/ENGLISH COMPOSITION

The Writing Lower Grades and Writing/English Composition Assessments use the same diagnostic categories across grades 3 through 8 and the high school English Composition course. The diagnostic categories for Writing Lower Grades and Writing/English Composition are *Quality of Writing: Focus and Organization*, *Quality of Writing: Content and Style*, *Quality of Writing: Editing*, *Conventions: Punctuation, Capitalization, and Spelling*, and *Conventions: Grammar and Sentence Formation*. The number of Eligible Content from each grade that map to these diagnostic categories is shown in the following table.

Table 2–10. Number of Eligible Content per Diagnostic Category by Grade for Writing Lower Grades and Writing/English Composition

	Number of Eligible Content per Grade									
Diagnostic Category	**Kindergarten***	**Grade 1***	**Grade 2***	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**HS**
Quality of Writing: Focus and Organization	3	6	6	6	6	6	6	6	6	4
Quality of Writing: Content and Style	2	3	3	3	3	5	5	5	5	4
Quality of Writing: Editing	0	3	3	4	10	12	11	10	6	13
Conventions: Punctuation, Capitalization, and Spelling	1	3	2	6	4	5	3	3	3	5
Conventions: Grammar and Sentence Formation	2	3	2	10	9	9	9	7	5	2

* Eligible Content for Kindergarten, Grade 1, and Grade 2 are not included in the Writing/English Composition CDT.

CHAPTER THREE: GENERAL CLASSROOM DIAGNOSTIC TOOLS TEST DEVELOPMENT PROCESSES

The operational item pool for each Classroom Diagnostic Tools (CDT) subject is made up of multiple-choice items that were field tested in a stand-alone field test administration in addition to a smaller number of items embedded later in operational assessments. Due to the large number of items needed for each CDT computer adaptive test (CAT) to provide reliable information about student strengths and areas of need, it was decided to stagger the content areas for both development and field testing. Appendix A shows a graphic representation of the basic process flow and overlap of the development cycles.

Mathematics (comprising Mathematics, Algebra I, Algebra II, and Geometry) was developed first. After initial development and internal reviews by DRC, the items were taken to be reviewed by Pennsylvania educators. Upon completion of the educator reviews, edits were incorporated and items were placed into fixed-form, online field-test forms for a stand-alone, voluntary field test. For more information regarding the field test, see Chapter Six. After the field test, item statistics were reviewed, and those items that had questionable data were taken to an item data review with Pennsylvania educators. See Chapter Six for more information about this meeting. Following the item data review, all items administered during the field test were reviewed by a committee of Pennsylvania educators for alignment to the Learning Progression Maps. More information about this meeting is found later in this chapter. After the alignment review, committees of Pennsylvania educators participated in a benchmarking activity to determine the points on the scale at which students in each of grades 5 through high school could be considered solidly ready for the next course. For more information about the benchmarking process, see Chapter Ten. Following this set of meetings, the statuses of items were updated, and accepted items were included in the item pool for the operational administrations.

This same process was then repeated for Literature (comprising Reading and Literature) and for Science (comprising Science, Biology, and Chemistry), and then finally for Writing (comprising Writing and English Composition). See Appendix A for more information about the basic development cycles for these three subjects.

Additional items in Mathematics and Reading/Literature were developed for an embedded field test in spring 2013. The purpose of this development was to supplement the pool with additional items aligned to the Pennsylvania Core Standards in preparation for the transition to align all Mathematics and Literacy (Reading/Literature and Writing/English Composition) assessments with the Pennsylvania Core Standards. Following the field test, the items that had questionable data were taken to an item data review with Pennsylvania educators. (More information about this meeting can be found in Chapter Six.) Following the item data review, all items administered during the field test were reviewed by a committee of Pennsylvania educators for alignment to the Learning Progression Maps using the same procedure that was used for the initial development of each pool of items.

In fall 2013, a voluntary stand-alone field test was conducted for items aligned to the Mathematics and English Language Arts (Reading and Writing) Pennsylvania Core Standards in kindergarten through grade 2, the K–2 Science Assessment Anchors and Eligible Content, and the Mathematics, English Language Arts, and Science Assessment Anchors and Eligible Content for grades 3 and 4. These were administered to students in grades 3 through 5, as described in Chapter Six. At the same time, items developed to align to the Mathematics, English Language Arts, and Science Assessment Anchors and Eligible Content for grade 5 were administered as part of an embedded field test to students in grade 6 that completed an operational CDT administration. The purpose of these two field test administrations was to provide enough items to allow students in grades 3 through 5 to be included in the CDT assessments. The Mathematics Lower Grades, Reading Lower Grades, Science Lower Grades, and Writing Lower Grades assessments became available in spring 2014.

ITEM DEVELOPMENT CONSIDERATIONS

Alignment to the PSSA and Keystone Assessment Anchors and Eligible Content, grade- or course-level appropriateness (as specified by PDE), depth of knowledge (DOK), item/task level of complexity, estimated difficulty level, relevancy of context, rationale for distractors, style, accuracy, and correct terminology were major considerations in the item development process. The *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999) and the *Principles of Universal Design* (Thompson, Johnstone, & Thurlow, 2002) guided the development process. In addition, DRC's *Bias, Fairness, and Sensitivity Guidelines* were used for developing items. All items were reviewed for fairness by bias and sensitivity committees and for content by Pennsylvania educators and field specialists.

BIAS, FAIRNESS, AND SENSITIVITY OVERVIEW

At every stage of the item and test development process, DRC employs procedures that are designed to ensure that items and tests meet Standard 7.4 of the *Standards for Educational and Psychological Testing* (AERA, APA, NCME, 1999).

> *Standard 7.4: Test developers should strive to identify and eliminate language, symbols, words, phrases, and content that are generally regarded as offensive by members of racial, ethnic, gender, or other groups, except when judged to be necessary for adequate representation of the domain.*

To meet Standard 7.4, DRC employs a series of internal quality steps. DRC provides specific training for test developers, item writers, and reviewers on how to write, review, revise, and edit items for issues of bias, fairness, and sensitivity (as well as for technical quality). Training also includes an awareness of and sensitivity to issues of cultural diversity. In addition to providing *internal* training in reviewing items in order to eliminate potential bias, DRC also provides *external* training to the review panels of minority experts, teachers, and other stakeholders.

DRC's guidelines for bias, fairness, and sensitivity include instruction concerning how to eliminate language, symbols, words, phrases, and content that might be considered offensive by members of racial, ethnic, gender, or other groups. Areas of bias that are specifically targeted include, but are not limited to, stereotyping, gender, regional/geographic, ethnic/cultural, socioeconomic/class, religious, experiential, and biases against a particular age group (ageism) or persons with disabilities. DRC catalogues topics that should be avoided and maintains balance in gender and ethnic emphasis within the pool of available items and passages.

UNIVERSAL DESIGN OVERVIEW

The Principles of Universal Design were incorporated throughout the item development process to allow participation of the widest possible range of students in the Classroom Diagnostic Tools. The following checklist was used as a guideline:

- Items measure what they are intended to measure.
- Items respect the diversity of the assessment population.
- Items have a clear format for text.
- Stimuli and items have clear pictures and graphics.

- Items have concise and readable text.
- The arrangement of the items on the test has an overall appearance that is clean and well organized.

A more extensive description of the application of the Principles of Universal Design is found in Chapter Four.

DEPTH OF KNOWLEDGE (DOK) OVERVIEW

An important element in statewide assessments is the alignment between the overall assessment system and the state's standards. A methodology developed by Norman Webb (1999, 2006) offers a comprehensive model that can be applied to a wide variety of contexts. With regard to the alignment between standards statements and the assessment instruments, Webb's criteria include five categories, one of which deals with content. Within the content category is a useful set of levels for evaluating depth of knowledge (DOK). According to Webb (1999), "depth-of-knowledge consistency between standards and assessments indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards" (p. 7–8). The four levels of cognitive complexity (i.e., depths of knowledge) are as follows:

- Level 1: Recall
- Level 2: Application of Skill/Concept
- Level 3: Strategic Thinking
- Level 4: Extended Thinking

Depth-of-knowledge levels were incorporated in the item writing and review process, and items were coded with respect to the level each represented.

PASSAGE READABILITY OVERVIEW

Evaluating the readability of a passage is essentially a judgmental process by individuals familiar with the classroom context and what is linguistically appropriate. Although various readability indices were computed and reviewed, it is recognized that such methods measure different aspects of readability and are often fraught with particular interpretive liabilities. Thus, the commonly available readability formulas were not used in a rigid way, but more informally to provide several snapshots of a passage that senior test development staff considered along with experience-based judgments in guiding the passage selection process. In addition, passages were reviewed by committees of Pennsylvania educators who evaluated each passage for readability and grade-level appropriateness.

TEST ITEM READABILITY OVERVIEW

Careful attention was given to the readability of the items to make certain that the assessment focus of the item did not shift based on the difficulty of reading the item. Subject/course areas such as Mathematics, Algebra I, Science, or Biology contain many content-specific vocabulary terms. As a result, readability formulas were not used. However, wherever it was practicable and reasonable, every effort was made to keep the vocabulary at or one level below the grade or course level for non-Reading/Literature items. There was a conscious consideration made to ensure that each question was evaluating a student's ability to build

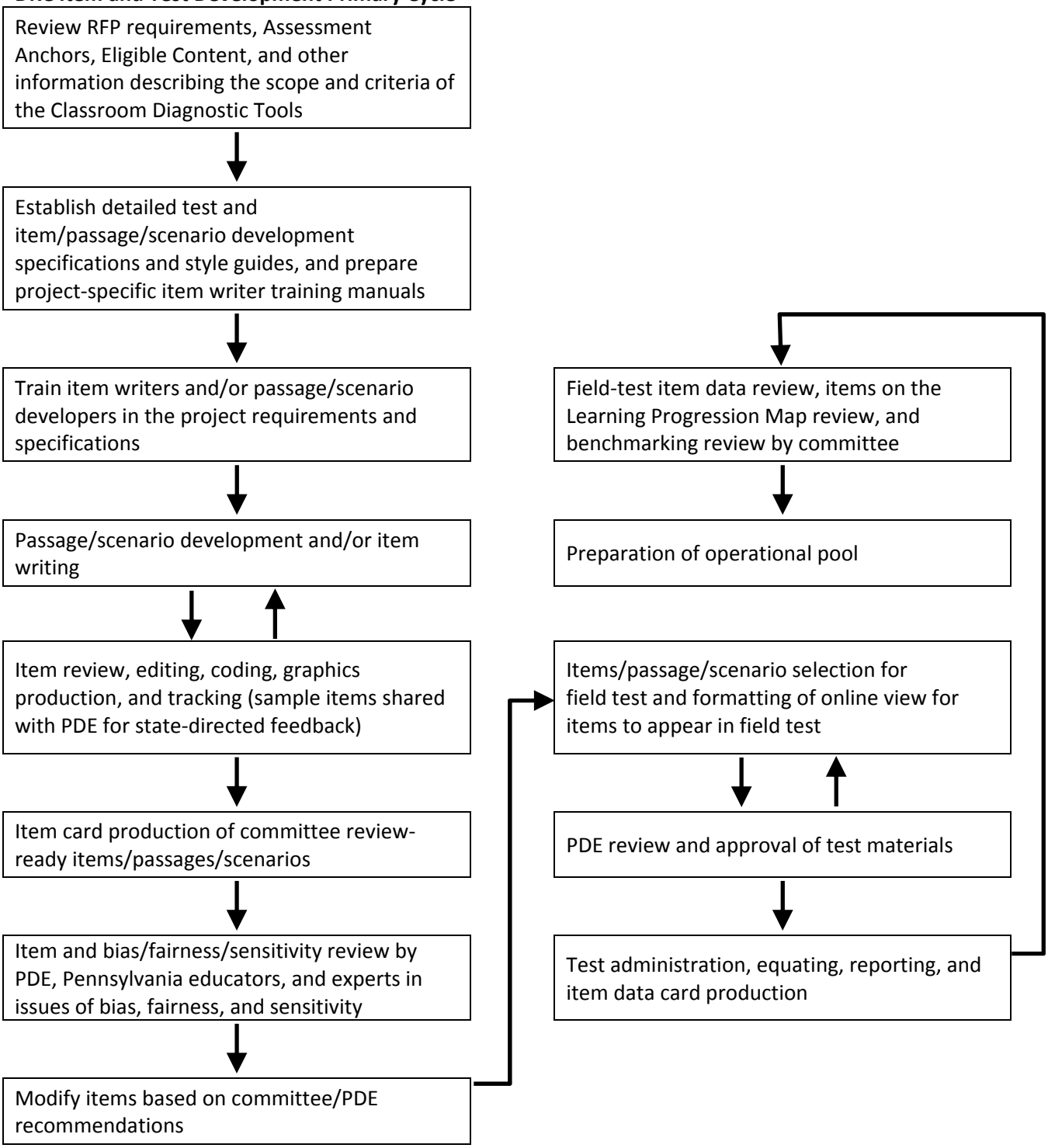
toward mastery of the course standards versus the student's reading ability. Resources used to verify the vocabulary level were the *EDL Core Vocabularies* and the *Children's Writer's Word Book*.

In addition, every test question is brought before committees comprised of Pennsylvania educators who are course-level/grade-level experts in the content field in question. They review each question from the perspective of the students they teach, and they determine the validity of the vocabulary used and work to minimize the level of reading required.

ITEM AND TEST DEVELOPMENT CYCLE

The item development process followed a logical cycle and timeline, which is outlined in the figure on the following page. On the front end of the schedule, tasks were generally completed with the goal of presenting field-test candidate items to committees of Pennsylvania educators. On the back end of the schedule, all tasks lead to the field-test data review and operational test construction. This presentation represents a typical life cycle for a field-test event.

DRC Item and Test Development Primary Cycle



GENERAL ITEM AND TEST DEVELOPMENT PROCESS

The following describes the processes which lead up to an operational assessment. These processes were used to develop the entire pool of items that appeared within the field test administrations for potential inclusion in the operational item pool.

ITEM DEVELOPMENT PLANNING MEETING

Prior to the start of any item development work, DRC's test development staff meets with PDE's assessment office to discuss the test development plans, including the test blueprint, the field-test plan (including development counts), procedures, timelines, etc.

ITEM WRITER TRAINING

Item writers were selected and trained for the subject areas of Mathematics, Algebra I, Algebra II, Geometry, Science, Biology, Chemistry, Reading, Literature, Writing, and English Composition. Qualified writers were college graduates with teaching experience and a demonstrated base of knowledge in the content area. Many of these writers were content assessment specialists and curriculum specialists. The writers were trained individually and had previous experience in writing multiple-choice items. Prior to developing items for the Classroom Diagnostic Tools, the cadre of item writers was trained with regard to the following:

- PSSA and Keystone Assessment Anchors and Eligible Content
- Webb's Levels of Cognitive Complexity, Depth of Knowledge
- Bias, Fairness, and Sensitivity Guidelines
- Principles of Universal Design
- Item Quality Technical Style Guidelines
- Reference Information
- Sample Items

LITERATURE PASSAGE DEVELOPMENT

The task of developing passages was conducted by DRC professionals with classroom experience in reading/English language arts. These professionals also underwent specialized training (provided by DRC) in the characteristics of acceptable passages. Guidelines for passage development included appropriate length, text structure, density, and vocabulary. A judgment was also made about whether the reading level required by a particular passage was at the independent level—that is, where the average student should be able to read 90 percent of words in the text independently. Passage writers were given the task of writing a specified number of passages for each genre. Passages were commissioned by experienced authors.

Passages underwent an internal review by several test development content editors to judge their merit with regard to the following criteria:

- Passages have interest value for students.
- Passages are appropriate in terms of vocabulary and language characteristics.
- Passages are free of bias, fairness, and sensitivity issues.
- Passages represent different cultures.
- Passages are able to stand the test of time.
- Passages are sufficiently rich to generate a variety of multiple-choice items.
- Passages avoid dated subject matter unless a relevant historical context is provided.
- Passages do not require students to have extensive background knowledge in a certain discipline or area to understand a text.

Once through the internal review process, those passages deemed potentially acceptable were reviewed by the Reading Content Committee and Bias, Fairness, and Sensitivity Committee for final approval.

ITEM AUTHORING AND TRACKING

Initially, items are generated with software-prepared Classroom Diagnostic Tools Item Cards, which allows for preliminary sorting and reviewing. A column against the right margin includes codes to identify the subject area, grade, content categories, passage information (in the case of Reading), item type, depth of knowledge (cognitive complexity), estimated difficulty, answer key, and calculator use (for Mathematics items).

All items undergoing field testing were entered into the DRC Item Development and Educational Assessment System (IDEAS), which is a comprehensive, secure, online item banking system. It accommodates item writing, item viewing and reviewing, and item tracking and versioning. IDEAS manages the transition of an item from its developmental stage to its approval for use within a test form. The system supports item history records that include item usage within a form, item-level notes, content categories and subcategories, item statistics from both classical and Rasch item analyses, and classifications derived from analyses of differential item functioning (DIF).

INTERNAL REVIEWS

To ensure that the items produced were sufficient in number and adequately distributed across subcategories and levels of difficulty, item writers were informed of the required quantities of items. As items were written, an item authoring card was completed. It contained information about the item, such as subject, content category, and subcategories. Based on the item writer's classroom teaching experience, knowledge of the content-area curriculum, and cognitive demands required by the item, estimates were recorded for level of cognitive complexity and difficulty level. Items were written to provide for a range of difficulties and cognitive complexities.

As part of the item construction process, each item was reviewed by content specialists and editors at DRC. Content specialists and editors evaluated each item to make sure that it measured the intended Eligible Content and Assessment Anchor. They also assessed each item to make certain that it was appropriate for the intended grade and that it provided only one correct answer. In addition, the difficulty level, depth of knowledge, graphics, language demand, and distractors were also evaluated. Other elements considered in this process include, but are not limited to, Universal Design, bias, source of challenge, grammar/punctuation, and Pennsylvania style. Following these reviews, the items were prepared for the content review meetings conducted with Pennsylvania educators.

ITEM CONTENT REVIEWS

Prior to the 2010, 2011, and 2013 field testing, all newly developed test items were submitted to content committees for review. The content committees consisted of Pennsylvania educators from school districts throughout the Commonwealth of Pennsylvania, some with postsecondary university affiliations. The primary responsibility of the content committee was to evaluate items with regard to quality and content classification, including grade-level or course appropriateness, estimated difficulty, depth of knowledge, and source of challenge. With source of challenge, items are identified where the cognitive demand is focused on an unintended content, concept, or skill (Webb, 2002). In addition, source of challenge may be attributed if the reason that an answer could be given results from a cultural bias, an inappropriate reading level, or a flawed graphic in an item, or if an item requires specialized, non-content-related knowledge to answer. Source of challenge could result in a student who has mastered the intended content or skill answering the item incorrectly or a student who has not mastered the intended content or skill answering the item correctly. Committee members were asked to note any items with a source of challenge and to suggest revisions to remove the source of challenge. They also suggested revisions and made recommendations for reclassification of items. The committee members also reviewed the items for adherence to the Principles of Universal Design, including language demand and issues of bias, fairness, and sensitivity.

The content review meetings were held in January 2010 for Mathematics, Algebra I, Algebra II, and Geometry; in May/June 2010 for Reading/Literature, Science, Biology, and Chemistry; and in January 2011 for Writing/English Composition. Additional content review meetings were held in November 2012 (for the additional items aligned to the Pennsylvania Core Standards) and in July 2013 (for the items to allow students in grades 3 through 5 to participate in the CDT). Committee members were approved by PDE, and PDE-approved invitations were sent to them by DRC. PDE also selected internal staff members for attendance. The meeting commenced with a welcome by PDE and DRC. This was followed by an overview of the test development process by DRC. PDE, along with DRC, also provided training on the procedures and forms to be used for item content review.

DRC content assessment specialists facilitated the reviews and were assisted by representatives of PDE. Committee members, grouped by content area, received training by working through and reviewing a group of items for quality and content, as well as for the following categories:

- Assessment Anchor Alignment
- Content Limits
- Grade-Level (Course-Level) Appropriateness
- Difficulty Level
- Depth of Knowledge

- Appropriate Source of Challenge
- Correct Answer
- Quality of Distractors
- Graphics in Regards to Appropriateness
- Appropriate Language Demand
- Freedom from Bias

The members then received a binder containing items to independently review and provided their recommendation for the status of each item: Approved, Accepted with Revision, or Rejected. All comments were reviewed and addressed by DRC content staff, and, when necessary, PDE staff was consulted.

Security was addressed by adhering to a strict set of procedures. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials were stored in a locked room any time they were not in use. Secure materials that did not need to be retained after the meetings were deposited in secure barrels, the contents of which were shredded.

BIAS, FAIRNESS, AND SENSITIVITY REVIEWS

Prior to the 2010, 2011, and 2013 field testing, all newly developed test items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. These reviews took place prior to the Item Content Review for each content area. The committee's primary responsibility was to evaluate items with regard to bias, fairness, and sensitivity issues. They also made recommendations for changes to or deletion of items in order to remove the potential for issues of bias, fairness, and/or sensitivity. Included in the review were proposed reading passages. An expert, multi-ethnic committee composed of men and women was trained by a DRC test development lead to review items for bias, fairness, and sensitivity issues. Training materials included a manual developed by DRC (DRC, 2003–2013). Members of the committee also had expertise with special-needs students and English Language Learners. All items were read by a cross-section of committee members. Each member noted bias, fairness, and/or sensitivity comments on tracking sheets and on the item, if needed, for clarification. Committee members individually categorized any concerns as related to ageism, disability, ethnicity/culture, gender, region, religion, socioeconomics, or stereotypes. These categories were the framework through which recommendations for modification or rejection of items occurred during the subsequent committee consensus process. The committee discussed each of the issues as a group and came to a consensus as to which issues should represent the view of the committee. All consensus comments were then compiled, and the suggested actions on these items were recorded and submitted to DRC content staff. This review followed the same security procedures as outlined above.

ITEMS ALIGNED TO LEARNING PROGRESSION MAPS

Following the field test of items, all items were brought before a committee of Pennsylvania educators for review of each item's alignment to the Learning Progression Map. DRC and PDE provided a general overview of the item and test development process for the Classroom Diagnostic Tools and provided information about the Learning Progression Maps and the purpose of the Classroom Diagnostic Tools. Then the committee reviewed the Learning Progression Map, which shows the vertical articulation of the Assessment Anchors and Eligible Content across grades within a given subject area. Once it was determined that the Learning Progression Map containing the Assessment Anchors and Eligible Content was an accurate representation of how the content progressed across grades, teachers worked in grade-span committees to

review items for their alignment with the Assessment Anchor and Eligible Content. When reviewing the alignment to the Assessment Anchor and Eligible Content, educators considered whether the test item measured the content that it purported to measure, as well as the appropriateness of the difficulty and cognitive complexity of the item in relation to the Assessment Anchor and Eligible Content to which the item was aligned. Committees came to a consensus regarding the status of each item: Accepted, Accepted with Revised Alignment, or Rejected.

Security was addressed by adhering to a strict set of procedures. All attendees, with the exception of PDE staff, were required to sign a confidentiality agreement. All materials were stored in a locked room any time they were not in use. Secure materials that did not need to be retained after the meetings were deposited in secure barrels, the contents of which were shredded.

CHAPTER FOUR: UNIVERSAL DESIGN PROCEDURES APPLIED TO THE CLASSROOM DIAGNOSTIC TOOLS TEST DEVELOPMENT PROCESS

UNIVERSAL DESIGN

Universally designed assessments allow participation of the widest possible range of students and contribute to valid inferences about participating students. Principles of Universal Design are based on the premise that each child in school is a part of the population to be tested and that testing results should not be affected by disability, gender, race, or English language ability (Thompson, Johnstone, & Thurlow, 2002). At every stage of the item and test development process, procedures were employed to ensure that items and subsequent tests were designed and developed using the elements of universally designed assessments developed by the National Center for Educational Outcomes (NCEO).

Federal legislation addresses the need for universally designed assessments. The No Child Left Behind Act (Elementary and Secondary Education Act) requires that each state must "provide for the participation in [statewide] assessments of all students" [Section 1111(b)(3)(C)(ix)(I)]. Both Title I and IDEA regulations call for universally designed assessments that are accessible and valid for all students, including students with disabilities and English Language Learners. The benefits of universally designed assessments apply not only to these groups of students but to all individuals with wide-ranging characteristics. Therefore, it is important that the development of all assessments, including voluntary assessments such as the Classroom Diagnostic Tools, be guided by the Principles of Universal Design.

DRC's test development team was trained in the elements of Universal Design as it relates to developing large-scale statewide assessments. Team leaders were trained directly by NCEO, and other team members were subsequently trained by team leaders. Committees involved in content review included some members who were familiar with the unique needs of students with disabilities and English Language Learners. Likewise, some members of the Bias, Fairness, and Sensitivity Committee were conversant with these issues. What follows are the Universal Design guidelines followed during all stages of the item development process for the Classroom Diagnostic Tools.

ELEMENTS OF UNIVERSALLY DESIGNED ASSESSMENTS

After a review of research relevant to the assessment development process and the Principles of Universal Design (Center for Universal Design, 1997), NCEO has produced seven elements of Universal Design as it applies to assessments (Thompson, Johnstone & Thurlow, 2002). These elements served to guide item development for the Classroom Diagnostic Tools.

- **Inclusive Assessment Population**

  The target population includes students attending Commonwealth schools in grades 3 through 12 who will be participating in either the Pennsylvania System of School Assessment or the Keystone exams.

- **Precisely Defined Constructs**

  An important function of well-designed assessments is that they actually measure what they are intended to measure. The Assessment Anchors and Eligible Content for both PSSA and the Keystone Exams, as well as the Pennsylvania Academic Standards for Writing, provided clear descriptions of the constructs to be measured by the Classroom Diagnostic Tools assessments. Universally designed assessments must remove all non-construct-oriented cognitive, sensory, emotional, and physical barriers.

- **Accessible, Non-biased Items**

  DRC conducted both internal and external reviews of items and test specifications to ensure that they did not create barriers because of lack of sensitivity to disability, culture, or other subgroups. Items and test specifications were developed by a team of individuals who understand the varied characteristics of items that might create difficulties for any group of students. Accessibility is incorporated as a primary dimension of test specifications, so accessibility was woven into the fabric of the test rather than being added after the fact.

- **Amenable to Accommodations**

  Even though items on universally designed assessments are accessible for most students, there are some students who continue to need accommodations. This essential element of a universally designed assessment requires that the exam is compatible with accommodations and a variety of widely used adaptive equipment and assistive technology.

- **Simple, Clear, and Intuitive Instructions and Procedures**

  Assessment instructions should be easy to understand, regardless of a student's experience, knowledge, language skills, or current concentration level. Questions that are posed using complex language can invalidate the test if students cannot understand how they are expected to respond to a question. To meet this guideline, directions and questions were prepared in simple, clear, and understandable language that underwent multiple reviews.

- **Maximum Readability and Comprehensibility**

  A variety of guidelines exist to ensure the maximum readability and comprehensibility of a test. These features go beyond what is measured by readability formulas. Readability and comprehensibility are affected by many factors, including student background, sentence difficulty, text organization, and others. All of these features were considered as item text was developed.

  Plain language is a concept now being highlighted in research on assessments. Plain language has been defined as language that is straightforward and concise. The following strategies for editing text to produce plain language were used during the editing process of the Classroom Diagnostic Tools items:

  - Reduction of excessive length
  - Use of common words
  - Avoidance of ambiguous words
  - Avoidance of irregularly spelled words
  - Avoidance of proper names
  - Avoidance of inconsistent naming and graphic conventions
  - Avoidance of unclear signals about how to direct attention

- **Maximum Legibility**

  Legibility is the physical appearance of text, the way that the shapes of letters and numbers enable people to read text easily. Bias can result when tests contain physical features that interfere with a student's focus on or understanding of the constructs that test items are intended to assess. A style guide was developed and was utilized which included dimensions of style consistent with Universal Design.

GUIDELINES FOR UNIVERSALLY DESIGNED ITEMS

All test items written and reviewed adhered closely to the following guidelines for Universal Design. Item writers and reviewers used a checklist during the item development process to ensure that each aspect was attended to.

1. **Items measure what they are intended to measure.** Item writing training included ensuring that writers and reviewers had a clear understanding of Pennsylvania's Core Standards, Pennsylvania's Academic Standards, and the PSSA and Keystone Assessment Anchors and Eligible Content. During all phases of test development, items were presented with content-standard information to ensure that each item reflected the intended Academic Standard (Mathematics, Reading, and Writing items aligned to Kindergarten, grade 1, or grade 2) or Eligible Content (all other grades and content areas). Careful consideration of the content standards was important in determining which skills involved in responding to an item were extraneous and which were relevant to what was being tested. In certain types of items an additional skill is necessary, such as the Algebra I test, which requires the student to read.
2. **Items respect the diversity of the assessment population.** To develop items that avoid content that might unfairly advantage or disadvantage any student subgroup, item writers, test developers, and reviewers were trained to write and review items to avoid issues of bias, fairness, and sensitivity. Training also included an awareness of, and sensitivity to, issues of cultural and regional diversity.
3. **Items have a clear format for text.** Decisions about how items are presented to students must allow for maximum readability for all students. Appropriate fonts and point sizes were employed with minimal use of italics, which is far less legible and is read considerably more slowly than standard typeface. Captions, keys, and legends were at least a 12-point size, while footnotes and sentence numbers use a 10-point font.[3] Legibility was enhanced by sufficient spacing between letters, words, and lines. Blank space around paragraphs and between columns and staggered right margins were used.
4. **Stimuli and items have clear pictures and graphics.** When pictures and graphics were used, they were designed to provide essential information in a clear and uncluttered manner. Illustrations were placed directly next to the information to which they referred, and labels were used where possible. Sufficient contrast between background and text, with minimal use of shading, increased readability for students with visual impairments. Color was not used to convey important information.

[3] While font size follows specific requirements during online setup of an exam, the screen resolution used at the local level can impact the effective font size visible to the student.

5. **Items have concise and readable text.** Linguistic demands of stimuli and items can interfere with a student's ability to demonstrate knowledge of the construct being assessed. During item writing and review, the following guidelines were used:
    - Simple, clear, commonly used words were used whenever possible.
    - Extraneous text was omitted.
    - Vocabulary and sentence complexity were appropriate for the grade level being assessed.
    - Technical terms and abbreviations were used only if they were related to the content being measured.
    - Definitions and examples were clear and understandable.
    - Idioms were avoided unless idiomatic speech was being assessed.
    - The questions to be answered were clearly identifiable.
6. **Items allow changes to format without changing meaning or difficulty.** An audio accommodation is available in Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Science Lower Grades, Science, Biology, and Chemistry for any student with Individualized Education Program (IEP) requirements related to receiving audio assistance during testing. Additionally, a Magnifier tool that can be used to enlarge an area of the screen is available to all students. This tool can be used at the same time as other tools, such as the Highlighter or Line Guide.
7. **The test has an overall appearance that is clean and organized.** Images, pictures, and text that may not be necessary (e.g., sidebars, overlays, callout boxes, shading, visual crowding caused by excess information) and that could be potentially distracting to students were avoided. Also avoided were purely decorative features that did not serve a purpose. Information was organized in a left-right, top-bottom format.

ITEM DEVELOPMENT

DRC works closely with the Pennsylvania Department of Education to help ensure that the CDT complies with nationally recognized Principles of Universal Design. In addition to the Principles of Universal Design as described in the Classroom Diagnostic Tools Technical Report, DRC applies to each exam the standards for test accessibility as described in *Tests Access: Making Tests Accessible for Students with Visual Impairments—A Guide for Test Publishers, Test Developers, and State Assessment Personnel* (Allman, 2004).

To this end, DRC ensures that committee members at item and bias reviews are made aware of the Principles of Universal Design and of issues that may adversely affect students with disabilities with the goal of ensuring that Classroom Diagnostic Tools assessments are bias-free for all students.

ITEM FORMAT

For all Classroom Diagnostic Tools assessments, DRC formats the items to maximize accessibility for all students by using text that is in a size and font style that is easily readable. DRC limits shading, graphics, and charts. DRC ensures that graphics, pictures, diagrams, charts, and tables are positioned on the page with the associated test items. DRC uses high contrast for text and background where possible to convey pertinent information.

DRC ensures consistency across Classroom Diagnostic Tools assessments by following these Principles of Universal Design:

- High contrast and clarity is used to convey detailed information.
- Typically, shading is avoided; when necessary for content purposes, 10-percent screens are used as the standard.
- Overlaid print on diagrams, charts, and graphs is avoided.
- Charts, graphs, diagrams, and tables are clearly labeled with titles and with short descriptions where applicable.
- Only relevant information is included in diagrams, pictures, and graphics.
- Symbols used in keys and legends are meaningful and provide reasonable representations of the topics they depict.

ASSESSMENT ACCOMMODATIONS

While universally designed assessments provide for participation of the widest range of students, many students require accommodations in order to participate in the regular assessment. Clearly, the intent of providing accommodations for students is to ensure that students are not unfairly disadvantaged during testing and that the accommodations used during instruction, if appropriate, are made available as students take the test. The literature related to assessment accommodations is still evolving and often focuses on state policies regulating accommodations rather than on providing empirical data that supports the reliability and validity of the use of accommodations. On a yearly basis, the Pennsylvania Department of Education examines accommodations policies and current research to ensure that valid, acceptable accommodations are available for students. At this time, an audio accommodation is available in Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Science Lower Grades, Science, Biology, and Chemistry for any student with Individualized Education Program (IEP) requirements related to receiving audio assistance during testing. A separate audio accommodation is available for all CDT assessments for students with visual impairments. Additionally, a color choices accommodation allows students who would benefit from a background other than white to select a background color from five available choices (in addition to the white background). A contrasting color allows students who would benefit from different text and background color combinations to select from seven options (in addition to black text on a white background).

Chapter Four: Universal Design Procedures Applied to the Classroom Diagnostic Tools Test Development Process

CHAPTER FIVE: TEST ADMINISTRATION PROCEDURES

TEST SETUP

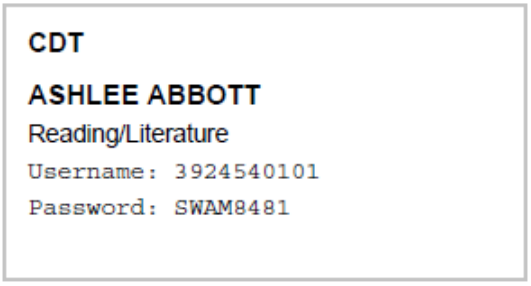
The process to set up students to take the Classroom Diagnostic Tools (CDT) is accomplished through an online interface located on the eDIRECT site (https://pa.drcedirect.com). The eDIRECT site is a permission-based site that enables districts to assign users different roles and permissions depending on their role in the setup process. Each district can set up users with as much or as little permission as deemed necessary. A user's role and permission may be modified at any time.

The student and teacher information is imported via the Pennsylvania Information Management System (PIMS) each month or by user upload at any time. Once the data is imported, users organize students into student groups and test sessions. Student groups and test sessions can be created by class, grade, school, or any other variation.

Each student group is assigned to a specific teacher. Students may belong to multiple student groups and multiple teachers can be assigned to the same student group. This allows districts/schools the ability to allow multiple users to view the data by class, grade, or even school. Student groups may be created and modified at any time during the administration window.

Test sessions are generated to create test tickets that will be distributed to students prior to testing. A test ticket contains the student's full name, user name, password, and the assessment he/she will be taking. The test session, like the student group, may also be created by class, grade, and school. Each time an assessment is administered, a new test session must be created. Test sessions can be copied to simplify administering the CDT to the same students multiple times each year.

SAMPLE TEST SESSION TICKET



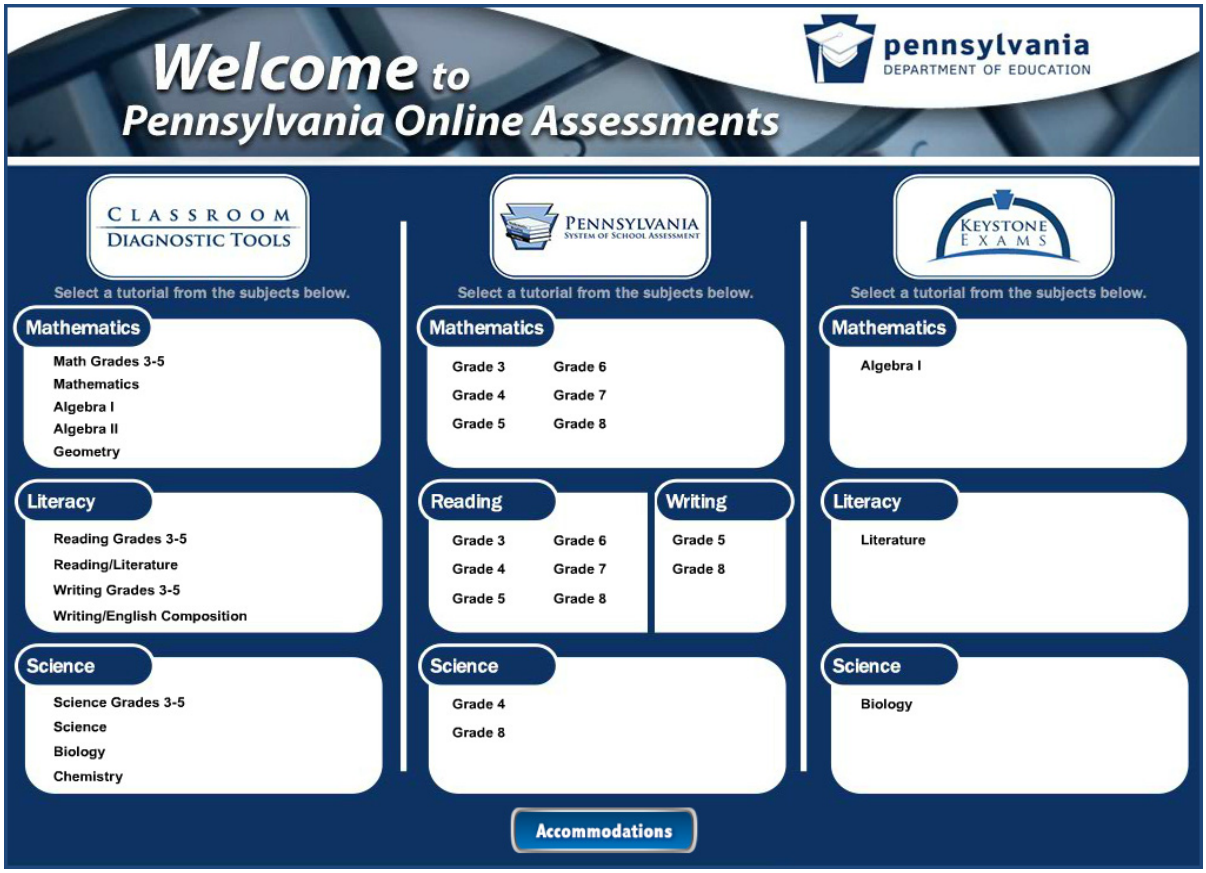
Each CDT should take the typical student 50 to 90 minutes to complete; however, the test is untimed. Each CDT is between 48 and 60 items in length. The CDT may be administered in one sitting, but it is possible to administer the CDT over multiple days and recommended for the assessments in grades 3–5.

It is recommended that a student take one of the available CDT assessments three times in a given school year. There should be enough time between CDT administrations to allow for instructional impact to be reflected in the student's results. Though there are no restrictions on the time between each CDT, there is a restriction in the Test Setup system that only allows a student to be associated with a single CDT a maximum of five (5) times within a given school year.

PA ONLINE ASSESSMENTS SOFTWARE

Prior to testing, each student computer needs to have the PA Online Assessments software installed. The testing software downloads are located on the eDIRECT site. The installer is an MSI file that can be pushed out across a server to expedite the installation process. Once the software is installed, users also have access to the PA Assessment Online Student Tutorials and the PA Assessment Online Tools Training (OTT). Users are encouraged to run the Online Tools Training prior to testing as it does interact with DRC servers exactly like an actual CDT assessment. Completion of the OTT will provide a good indication that the software installed correctly and everything is configured properly on the network.

The web-based PA Online Assessment Student Tutorials are available for each operational assessment and are designed to be used by students at all grade levels. They use pictures, motion, and sound to present visual and verbal descriptions of the features and functionality of the PA Online Assessment system. It is recommended to allow a minimum of 20 minutes to view the tutorials. Tutorials may be reviewed as often as needed.



The PA Assessment Online Tools Training (OTT) is designed to provide an introductory experience using the online assessment software in preparation for taking the CDT. The purpose of the OTT is for students to observe and experiment with the features of the online assessment software prior to the actual assessment. The OTT is NOT designed to demonstrate complete coverage of the tested content, and it is NOT scored. Rather, sample items have been chosen to demonstrate online assessment features and uses.

TRAINING AND CUSTOMER SERVICE SUPPORT

Prior to testing, training was provided to District Technology Coordinators and District Assessment Coordinators. All training is administered via web conference and lasts approximately 1½ hours. Test Coordinator Training goes over tasks that need to be completed prior to testing. A large portion of the training is dedicated to the setup of users and the creation of student groups and test sessions.

Technology Coordinator Training focuses on all technical aspects required for the setup of the CDT. Detailed installation instructions for the PA Online Assessments Software and Testing Site Manager (TSM) are provided. The TSM runs on a server within the local network and helps mitigate Internet traffic by allowing student machines to retrieve items from the TSM rather than from DRC servers. The CDT requires an Internet connection at all times.

Student Interface System Requirements

Windows / Linux Installer System Requirements

- 512 MB of RAM or greater
- Updated graphics drivers with a screen resolution of 1024 x 768 or greater*
- Mouse; Keyboard
- 100 MB of available hard disk space or greater
- 1 GHz or faster processor

Note: Tablet devices currently not supported

Supported Operating Systems

- Windows XP with Service Pack 3 or greater
- Windows Vista **
- Windows 7
- Windows 8 (including 8.1)
- Windows Server 2003
- Windows Server 2008
- Ubuntu 12.04 and 12.04.1 32-bit and 64-bit with Gnome 3.4

Macintosh Installer System Requirements

- 512 MB of RAM or greater
- Updated graphics drivers with a screen resolution of 1024 x 768 or greater*
- Mouse; Keyboard
- 100 MB of available hard disk space or greater
- 1 GHz or faster processor

Note: *Tablet devices currently not supported*

Supported Operating Systems*

- Apple® Mac OS X® 10.6.8**
- Apple® Mac OS X® 10.7**
- Apple® Mac OS X® 10.8**
- Apple® Mac OS X® 10.9**

*Workstations with ATI integrated onboard graphics must have ATI Catalyst drivers version 9.3 or newer installed
**Text-to-Speech not supported

Users are encouraged to call or email with any questions or error messages that cannot be resolved. If the problem cannot be resolved via a customer service representative, the issue is escalated to DRC developers. Ninety percent of the time, a solution is provided within twenty-four hours. If the issue requires more research, DRC will contact the caller daily to provide an update.

CHAPTER SIX: FIELD TEST

FIELD TEST OVERVIEW

All items appearing in the 2013–2014 Classroom Diagnostic Tools (CDT) operational item pools were field tested prior to their use on the operational CDT. The purpose of administering field-test items is to obtain statistics for them so they can be reviewed and approved before becoming operational. Based on this statistical review, many of the field-test items were selected for use in the 2013–2014 CDT operational item pools.

There were six separate CDT field-test events to build the 2013–2014 operational item pools—four stand-alone field-test events and two embedded field-test events. Separate field-test events were needed because the operational CDT was rolled out in phases by content area and available grades.

There were three stand-alone field-test events to build the item pools for students in grade 6 and above. Items in mathematics were field tested in spring 2010. Items in reading and science were field tested in fall 2010. Items in writing were field tested in spring 2011. During these three field-test events, CDT items were field tested on stand-alone fixed forms. The forms were administered in computer-based format only. No paper/pencil versions were available. Field test administration mode was limited to computer-based to mirror the operational CDT, which is an adaptive test requiring computer administration. CDT stand-alone field tests were designed to build vertical scales across all grades and courses within a content area. In order to accomplish this, some field-test forms had items from one grade above or below in addition to on-grade level items. For example, some grade 7 mathematics forms contained items from grade 6 in addition to items from grade 7. Other grade 7 mathematics forms contained items from both grade 7 and grade 8. See Chapter Nine for more details.

There was one stand-alone field-test event to build the item pools for students in grades 3 through 5. Items in mathematics, reading, science, and writing were field tested in fall 2013. Again, CDT items were field tested on stand-alone fixed forms. The forms were administered in computer-based format only. No paper/pencil versions were available. In order to link to the existing operational scales, some operational grade-level items were included in the field-test forms. See Chapter Twelve for more details.

In addition to the four stand-alone field-test events, there were two field-test events in which a small number of field-test items were included (embedded) within the operational CDT. In spring 2013, field-test items were included in Mathematics and Reading/Literature. The purpose of this embedded field test was to add items to the operational item pools that align to the Pennsylvania Core Standards. In fall 2013, field-test items were included in Mathematics, Reading/Literature, Science, and Writing/English Composition. The purpose of this embedded field test was to field test additional items in grade 5 that could be used in the item pools for students in grades 3 through 5. Embedded field-test items are included within an operational administration and students do not know which items are field-test items (items that do not count toward a student's score). Therefore, the embedded field-test items can be linked to the existing operational scales. See Chapter Twelve for details.

CDT STAND-ALONE FIELD TESTS

SPRING 2010 – MATHEMATICS

The stand-alone field test administered in spring 2010 was designed to yield enough items to populate the item pool for CDT Mathematics. Items covering the Eligible Content in grades 3 through 8 and courses Algebra I, Geometry, and Algebra II were field tested. Items covering grade 11 Eligible Content that were NOT covered in Algebra I, Geometry, or Algebra II were also field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and Algebra I, Geometry, and Algebra II courses had 35 items. There were not separate grade 11 forms. Instead, grade 11 items were included on grade 8, Algebra I, Geometry, and Algebra II forms.

Since testing occurred in spring, students had nearly a full year of instruction. Therefore, grade-level forms were assigned to students in the corresponding grade (i.e., students in grade 7 took grade 7 forms). Course-level forms were assigned to students currently taking the course (i.e., students in a Geometry course took Geometry forms).

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6–1. Spring 2010 Mathematics Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	86	8	4
Grade 4	86	10	8
Grade 5	85	10	8
Grade 6	259	16	8
Grade 7	258	16	8
Grade 8	257	18	12
Grade 11*	149	0	0
Algebra I	256	18	8
Geometry	257	16	4
Algebra II	256	16	4
* Grade 11 items were tested on grade 8, Algebra I, Geometry, and Algebra II forms.			

FALL 2010 – READING/LITERATURE AND SCIENCE

The stand-alone field tests administered in fall 2010 were designed to yield enough items to populate the item pools for CDT Reading/Literature and CDT Science. Reading items covering the Eligible Content in grades 3 through 8 and Literature were field tested. Science items covering the Eligible Content in grades 3

through 8 and Biology and Chemistry courses were field tested. Items covering grade 11 science Eligible Content that were NOT covered in Biology or Chemistry were also field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate. Schools were allowed to field test in both content areas.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and Literature, Biology, and Chemistry courses had 35 items. There were not separate grade 11 science forms. Instead, grade 11 science items were included on grade 8 science forms.

Since testing occurred in fall, students did NOT have a full year of instruction at their current grade level. Grade-level forms were therefore assigned one grade lower (i.e., students in grade 7 took grade 6 forms). Course-level forms were assigned to students who had completed the course during the prior school year.

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6–2. Fall 2010 Reading/Literature Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	86	7	2
Grade 4	87	8	4
Grade 5	86	8	4
Grade 6	210	10	4
Grade 7	192	9	4
Grade 8	192	9	4
Literature	348	15	2

Table 6–3. Fall 2010 Science Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	91	7	2
Grade 4	123	11	4
Grade 5	102	9	4
Grade 6	178	9	4
Grade 7	327	15	4
Grade 8	377	22	6
Grade 11*	115	0	0
Biology	390	16	2
Chemistry	335	14	2
* Grade 11 items were tested on grade 8 forms.			

SPRING 2011 – WRITING

The stand-alone field test administered in spring 2011 was designed to yield enough items to populate the item pool for CDT Writing/English Composition. Items covering the Pennsylvania Academic Standards for Writing in grades 3 through 8 and the Eligible Content for English Composition were field tested.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate.

In order to encourage participation, field-test forms were limited in length. Forms for grades 3, 4, and 5 had 25 items. Forms for grades 6, 7, and 8 and English Composition had 35 items.

Since testing occurred in spring, students had nearly a full year of instruction. Therefore, grade-level forms were assigned to students in the corresponding grade (i.e., students in grade 7 took grade 7 forms).

Each student was randomly assigned one of the appropriate grade- or course-level forms at the time of testing.

Table 6–4. Spring 2011 Writing/English Composition Field-Test Form Details

Grade/Course	Number of Items	Number of Forms	Number of Vertical Linking Forms
Grade 3	140	10	2
Grade 4	149	12	4
Grade 5	165	13	4
Grade 6	193	9	4
Grade 7	176	9	4
Grade 8	195	9	4
English Composition	365	15	2

FALL 2013 – MATHEMATICS, READING, SCIENCE, AND WRITING

The stand-alone field tests administered in fall 2013 were designed to yield enough items to populate the item pools for each CDT for students in grades 3 through 5 in mathematics, reading, science, and writing. Items covering the Eligible Content in kindergarten through grade 4 were field tested[4]. In order to link to the existing operational scales, some operational grade-level items were included in the field-test forms.

Participation in the field test was voluntary. All schools that wanted to participate were allowed to field test. All students in volunteer schools were encouraged, but not required, to participate. Schools were allowed to field test in all content areas. In order to encourage participation, field-test forms were limited in length. All field-test forms had 25 items.

[4] Items in grade 5 were part of the fall 2013 embedded field test.

Since testing occurred in fall, students did NOT have a full year of instruction at their current grade level. Grade-level forms were therefore assigned one grade lower (i.e., students in grade 4 took forms containing grade 3 items). Each student was randomly assigned one of the appropriate grade-level forms at the time of testing.

Table 6–5. Fall 2013 Mathematics Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	60, 90, 130	14
	3	Link to Op Scale	15	
Grade 4	3	Field Test	235	12
	3	Link to Op Scale	15	
Grade 5	4	Field Test	248	13
	4	Link to Op Scale	15	

Table 6–6. Fall 2013 Reading Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	84, 98, 98	14
	3	Link to Op Scale	15	
Grade 4	3	Field Test	178	9
	3	Link to Op Scale	15	
Grade 5	4	Field Test	189	10
	4	Link to Op Scale	15	

Table 6–7. Fall 2013 Science Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K–2 grade span	Field Test	280	14
	3	Link to Op Scale	15	
Grade 4	3	Field Test	155	8
	3	Link to Op Scale	15	
Grade 5	4	Field Test	213	11
	4	Link to Op Scale	15	

Table 6–8. Fall 2013 Writing Field-Test Form Details

Student Grade	Item Grade(s)	Item Type	Number of Items	Number of Forms
Grade 3	K, 1, 2	Field Test	44, 118, 117	14
	3	Link to Op Scale	15	
Grade 4	3	Field Test	60	3
	3	Link to Op Scale	15	
Grade 5	4	Field Test	60	3
	4	Link to Op Scale	15	

CDT EMBEDDED FIELD TESTS

SPRING 2013 – MATHEMATICS AND READING/LITERATURE

The embedded field test administered in spring 2013 was designed to augment the existing mathematics and reading/literature item pools. Items were aligned to the Pennsylvania Core Standards. Starting on February 14, 2013, all students testing CDT Mathematics took 5 field-test items. All students testing CDT Reading/Literature took 5–7 field-test items, depending on passage length. Students did not know which items were operational and which were field test. Field-test items did not count in calculation of total or diagnostic category scores. Since testing occurred in spring, students had received nearly a full year of instruction. Therefore, grade-level items were assigned to students in the corresponding grade wherever possible.

Table 6–9. Spring 2013 Embedded Field Test Details

Grade/Course		Number of Items
Mathematics	Grade 3*	56
	Grade 4*	67
	Grade 5*	41
	Grade 6	156
	Grade 7	73
	Grade 8	157
Reading	Grade 3*	58
	Grade 4*	71
	Grade 5*	60
	Grade 6	56
	Grade 7	58
	Grade 8	57

*Items in grades 3 through 5 were initially field tested with students in grade 6 because CDT is available to students in grade 6 and above. However, this plan was revised after a few weeks of testing in favor of stand-alone field tests in fall 2013 with students in grades 3 through 5.

FALL 2013 – MATHEMATICS, READING/LITERATURE, SCIENCE, AND WRITING/ENGLISH COMPOSITION

The embedded field test administered in fall 2013 was designed to field test the grade 5 items needed to populate the item pools for each CDT for students in grades 3 through 5 in mathematics, reading, science, and writing. Starting on August 26, 2013, students in grade 6 testing CDT Mathematics, CDT Science, or CDT Writing/English Composition took 5 field-test items. Students in grade 6 testing CDT Reading/Literature took 5–7 field-test items, depending on passage length. Students did not know which items were operational and which were field test. Field-test items did not count in calculation of total or diagnostic category scores. Since testing occurred in fall, students had not received a full year of instruction. Therefore, grade 5 items were assigned to grade 6 students.

Table 6–10. Fall 2013 Embedded Field Test Details

CDT	Grade	Number of Items
Mathematics	Grade 5	221
Reading/Literature	Grade 5	134
Science	Grade 5	152
Writing/English Composition	Grade 5	71

STATISTICAL ANALYSIS OF ITEM DATA

All field-tested items were analyzed statistically following conventional item analysis methods for multiple-choice (MC) items. Traditional, or classical, item statistics included the point-biserial correlation (Pt. Bis.) for the correct and incorrect responses (distractors), percent correct (*p*-value), and the percent selecting each incorrect response.

In general, more capable students are expected to respond correctly to easy items and less capable students are expected to respond incorrectly to difficult items. If either of these situations does not occur, the item will be reviewed by DRC test development staff and committees of Pennsylvania educators to determine the nature of the potential problem and the characteristics of the students affected. The primary way of detecting such conditions is through the point-biserial correlation coefficient. This statistic will be positive if the total-test mean score is higher for the students who respond correctly to MC items and negative when the reverse is true.

Item statistics are used as a means of detecting items that deserve closer scrutiny rather than as a mechanism for automatic retention or rejection. Toward this end, a set of criteria was used as a screening tool to identify items needing a closer review by committees of Pennsylvania educators.

For an item to be flagged, the criteria included any of the following:

- Point-biserial correlation for the correct response of less than 0.10
- Point-biserial correlation for any incorrect response greater than the point-biserial correlation for the correct response
- Differential item functioning (DIF) code of either C- or C+[5]

These criteria differ slightly from the criteria used for end-of-year/course summative tests such as the Pennsylvania System of School Assessment (PSSA) or the Keystone Exams. For example, CDT items are not flagged for low and high *p*-values. While very easy and very difficult items may not be appropriate for summative tests, they are needed in diagnostic item pools so the computer adaptive item selection routine can find appropriate items for students at various levels.

Item analysis results for field-test items are presented in Appendix B.

[5] Items classified as C+ or C- have strong evidence of DIF. The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white). For more details, see the section in this chapter on Differential Item Functioning.

REVIEW OF ITEMS WITH DATA

In the preceding section on Statistical Analysis of Item Data, it was stated that content-area test development specialists used certain statistics from item and DIF analyses of the field tests to identify items for further review. Specific flagging criteria for this purpose were specified in the previous section. Items not identified for this review were those that had good statistical characteristics and, consequently, were regarded as statistically acceptable, or had extremely poor statistical quality and, consequently were regarded as unacceptable, were removed from the CDT item pools, and needed no further review. However, there were some items that DRC content-area test development specialists and DRC psychometric specialists regarded as needing further review by committees of Pennsylvania educators.

There were separate meetings to review items with data for each field-test event and content area. CDT mathematics items from the spring 2010 stand-alone field test were reviewed by fourteen Pennsylvania educators on August 9, 2010. CDT reading and science items from the fall 2010 stand-alone field test were reviewed by sixteen and fourteen Pennsylvania educators respectively on January 24, 2011. CDT writing items from the spring 2011 stand-alone field test were reviewed by fourteen Pennsylvania educators on August 1, 2011. CDT mathematics and reading items from the spring 2013 embedded field test were reviewed by twenty-two educators respectively on July 16–18, 2013. CDT mathematics, reading, science, and writing items from both the stand-alone and embedded field tests of fall 2013 were reviewed by seven, seven, seven, and eight Pennsylvania educators respectively on January 21–23, 2014.

At each of the item data review meetings committee members were first trained with regard to the statistical indices used in item evaluation. This was followed by a discussion with examples concerning reasons that an item might be retained regardless of the statistics. The committee review process involved a brief exploration of possible reasons for the statistical profile of an item (e.g., possible sensitivity/bias, grade appropriateness, instructional issues) and a decision regarding acceptance. DRC content-area test development specialists facilitated the review of the items. Each committee reviewed the pool of field-test items and made recommendations (i.e., accept or reject) for each item.

Table 6–11. CDT Data Review Results

Grade/Course		Number of Items Field Tested	Flagged and Examined at Data Review Committee		Rejected by Data Review Committee		Removed from CDT Item Pools (all sources)*	
			Number	Percent	Number	Percent	Number	Percent
Mathematics Aug 2010	3	86	4	4.7%	0	0.0%	0	0.0%
	4	86	7	8.1%	0	0.0%	0	0.0%
	5	85	0	0.0%	0	0.0%	0	0.0%
	6	259	6	2.3%	0	0.0%	0	0.0%
	7	258	19	7.4%	1	0.4%	1	0.4%
	8	257	20	7.8%	1	0.4%	1	0.4%
	11	149	13	8.7%	0	0.0%	0	0.0%
	Algebra I	256	19	7.4%	6	2.3%	6	2.3%
	Geometry	257	12	4.7%	3	1.2%	19	7.4%
	Algebra II	256	15	5.9%	1	0.4%	2	0.8%

Table 6–11 (continued). CDT Data Review Results

Grade/Course		Number of Items Field Tested	Flagged and Examined at Data Review Committee		Rejected by Data Review Committee		Removed from CDT Item Pools (all sources)*	
			Number	Percent	Number	Percent	Number	Percent
Reading Jan 2011	3	86	0	0.0%	0	0.0%	0	0.0%
	4	87	2	2.3%	0	0.0%	0	0.0%
	5	86	3	3.5%	0	0.0%	0	0.0%
	6	210	13	6.2%	1	0.5%	4	1.9%
	7	192	8	4.2%	1	0.5%	2	1.0%
	8	192	3	1.6%	0	0.0%	2	1.0%
	Literature	348	16	4.6%	1	0.3%	8	2.3%
Science Jan 2011	3	91	4	4.4%	1	1.1%	5	5.5%
	4	123	6	4.9%	6	4.9%	9	7.3%
	5	102	8	7.8%	3	2.9%	4	3.9%
	6	178	13	7.3%	4	2.2%	10	5.6%
	7	327	34	10.4%	28	8.6%	64	19.6%
	8	377	43	11.4%	33	8.8%	56	14.9%
	11	115	26	22.6%	9	7.8%	29	25.2%
	Biology	390	43	11.0%	4	1.0%	61	15.6%
	Chemistry	335	33	9.9%	8	2.4%	13	3.9%
Writing Aug 2011	3	140	4	2.9%	1	0.7%	1	0.7%
	4	149	10	6.7%	1	0.7%	1	0.7%
	5	165	11	6.7%	4	2.4%	4	2.4%
	6	193	13	6.7%	5	2.6%	5	2.6%
	7	176	16	9.1%	5	2.8%	5	2.8%
	8	195	21	10.8%	2	1.0%	2	1.0%
	English Composition	365	28	7.7%	10	2.7%	10	2.7%
Math July 2013	6	156	27	17.3%	7	4.5%	7	4.5%
	7	73	15	20.5%	2	2.7%	2	2.7%
	8	157	39	24.8%	4	2.5%	4	2.5%
Reading July 2013	6	56	1	1.8%	1	1.8%	2	3.6%
	7	58	4	6.9%	3	5.2%	4	6.9%
	8	57	2	3.5%	1	1.8%	1	1.8%
Mathematics Jan 2014	K	60	14	23.3%	0	0.0%	1	1.7%
	1	90	15	16.7%	0	0.0%	0	0.0%
	2	130	11	8.5%	4	3.1%	5	3.8%
	3	235	31	13.2%	3	1.3%	6	2.6%
	4	248	20	8.1%	4	1.6%	11	4.4%
	5	221	21	9.5%	4	1.8%	10	4.5%

Table 6–11 (continued). CDT Data Review Results

Grade/Course		Number of Items Field Tested	Flagged and Examined at Data Review Committee		Rejected by Data Review Committee		Removed from CDT Item Pools (all sources)*	
			Number	Percent	Number	Percent	Number	Percent
Reading Jan 2014	K	84	11	13.1%	0	0.0%	0	0.0%
	1	98	8	8.2%	3	3.1%	3	3.1%
	2	98	1	1.0%	0	0.0%	0	0.0%
	3	178	17	9.6%	2	1.1%	2	1.1%
	4	189	11	5.8%	2	1.1%	2	1.1%
	5	134	15	11.2%	0	0.0%	0	0.0%
Science Jan 2014	K–2	280	31	11.1%	5	1.8%	9	3.2%
	3	155	9	5.8%	1	0.6%	4	2.6%
	4	213	23	10.8%	4	1.9%	13	6.1%
	5	152	44	28.9%	7	4.6%	10	6.6%
Writing Jan 2014	K	44	13	29.5%	2	4.5%	2	4.5%
	1	118	18	15.3%	6	5.1%	6	5.1%
	2	117	7	6.0%	3	2.6%	4	3.4%
	3	60	4	6.7%	2	3.3%	2	3.3%
	4	60	10	16.7%	3	5.0%	3	5.0%
	5	71	15	21.1%	6	8.5%	6	8.5%

*Data Review Committee, PDE, and DRC

DIFFERENTIAL ITEM FUNCTIONING

Differential item functioning occurs when examinees with the same ability level but different group memberships do not have the same probability of answering an item correctly. This pattern of results may suggest the presence of item bias. As a statistical concept, however, DIF can be differentiated from item sensitivity/bias, which is a content issue that can arise when an item presents negative group stereotypes, uses language that is more familiar to one subpopulation than to another, or is presented in a format that disadvantages certain learning styles. While the source of item sensitivity/bias is often easily recognized by trained judges, DIF may have no clear cause. However, studying how DIF arises and how it presents itself can help to detect and correct for it.

LIMITATIONS OF STATISTICAL DETECTION

No statistical procedure should be used as a substitute for rigorous, hands-on reviews by content and bias specialists. The statistical results can help organize the review so the effort is concentrated on the most problematic cases. Further, no items should be automatically rejected simply because a statistical method flagged them or accepted because they were not flagged.

Statistical detection of DIF is an inexact science. There have been a variety of methods proposed for detecting DIF, but no one statistic can be considered either necessary or sufficient. Different methods are more or less successful depending on the situation. No analysis can guarantee that a test is free of bias, but almost any thoughtful analysis will uncover the most flagrant problems.

A fundamental shortcoming of all statistical methods used in DIF evaluation is that all are intrinsic to the test being evaluated. If a test is unbiased overall but contains one or two DIF items, any method will locate the problems. If, however, all items on the test show consistent DIF to the disadvantage of a given subpopulation, a statistical analysis of the items will not be able to separate DIF effects from true differences in achievement.

MANTEL-HAENSZEL PROCEDURE OF DIFFERENTIAL ITEM FUNCTIONING

For MC items, the Mantel-Haenszel (MH) procedure (Mantel & Haenszel, 1959) for detecting differential item functioning is a commonly used technique in educational testing. It does not depend on the application or the fit of any specific measurement model. However, it does have significant philosophical overlap with the Rasch model since it uses a test's total score to organize the analysis.

The procedure as implemented by DRC contrasts a focal group with a reference group. While it makes no practical difference in the analysis which group is defined as the focal group, the group most apt to be disadvantaged by a biased measurement is typically defined as the focal group. In these analyses, the focal group was female for gender-based DIF and black for ethnicity-based DIF; reference groups were male and white respectively. The MH statistic for each item is computed from a contingency table. It has two groups (focal and reference) and two outcomes (right or wrong). The ability groups are defined by the test's score distribution for the total examinee population.

The basic MH statistic is a single degree of freedom chi-square that compares the observed number in each cell to the expected number. The expected counts are computed to ensure that the analysis is not confounded with differences in the achievement level of the two groups.

To assist the review committees in interpreting the analyses, the items are assigned a severity code based on the magnitude of the MH statistic. Items classified as A+ or A- have little or no statistical indication of DIF. Items classified as B+ or B- have some indication of DIF but may be judged to be acceptable for future use. Items classified as C+ or C- have strong evidence of DIF and should be reviewed and possibly rejected from the eligible item pool. The plus sign indicates that the item favors the focal group and a minus sign indicates that the item favors the reference group.

RESULTS AND OBSERVATIONS

Counts of the number of items field tested from each content area and grade/course that were assigned to each severity code are shown in Table 6–12. Some field-test items are classified as N/A (not applicable) because the number of students in either the reference or focal groups who took the item was insufficient for analysis. Where there are sufficient data to run DIF analyses, relatively few items had B or C DIF for the Male/Female or White/Black reference and focal groups.

Table 6–12. DIF Summary

Grade/Course		Number of Field-test items	Male/Female							White/Black						
			A+	A-	B+	B-	C+	C-	N/A*	A+	A-	B+	B-	C+	C-	N/A*
Mathematics Aug 2010	3	86	49	22	12	1	1	1	0	25	44	3	12	0	2	0
	4	86	40	31	7	5	0	3	0	31	33	3	10	0	3	6
	5	85	42	36	5	2	0	0	0	19	54	2	10	0	0	0
	6	259	121	112	14	8	3	1	0	79	143	8	27	0	2	0
	7	258	109	112	18	9	4	6	0	88	124	13	20	0	2	11
	8	257	101	104	31	15	5	1	0	62	65	7	14	0	0	109
	11	149	53	75	4	11	0	6	0	20	41	1	8	0	1	78
	Algebra I	256	122	120	7	6	1	0	0	107	110	9	11	1	3	15
	Geometry	257	115	123	7	8	1	3	0	93	109	6	15	1	2	31
	Algebra II	256	124	115	6	9	0	2	0	58	89	4	14	2	4	85
Reading Jan 2011	3	86	41	34	5	6	0	0	0	26	31	2	6	0	0	21
	4	87	47	37	1	1	0	1	0	21	45	1	7	1	0	12
	5	86	47	27	9	2	1	0	0	28	45	4	7	1	1	0
	6	210	103	87	7	10	0	3	0	72	100	7	25	1	5	0
	7	192	90	78	9	11	2	2	0	69	68	4	11	1	2	37
	8	192	109	67	10	6	0	0	0	22	34	2	6	0	1	127
	Literature	348	147	146	21	25	3	6	0	5	5	0	0	0	0	338

N/A* Items with insufficient counts for DIF analysis

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6–12 (continued). DIF Summary

Grade/Course		Number of Field-test items	Male/Female							White/Black						
			A+	A-	B+	B-	C+	C-	N/A*	A+	A-	B+	B-	C+	C-	N/A*
Science Jan 2011	3	91	47	41	1	2	0	0	0	20	29	2	4	0	3	33
	4	123	55	53	6	5	3	1	0	15	22	1	5	0	1	79
	5	102	48	45	4	2	2	1	0	25	36	3	4	0	0	34
	6	178	80	84	4	7	1	2	0	10	11	1	1	0	0	155
	7	327	123	143	28	27	2	4	0	58	56	2	15	0	0	196
	8	377	155	154	28	32	3	5	0	5	6	0	0	0	1	365
	11	115	47	49	4	12	1	2	0	0	0	0	0	0	0	115
	Biology	390	154	183	22	23	2	6	0	4	6	0	0	0	0	380
	Chemistry	335	143	148	17	21	2	4	0	6	4	2	0	0	0	323
Writing Aug 2011	3	140	71	59	4	4	1	1	0	24	44	3	4	0	0	65
	4	149	69	67	7	5	1	0	0	15	26	3	2	0	0	103
	5	165	78	62	15	7	3	0	0	12	14	1	2	0	1	135
	6	193	94	82	8	7	1	1	0	53	67	4	12	0	4	53
	7	176	73	81	16	3	3	0	0	11	20	1	3	0	0	141
	8	195	95	81	10	3	3	3	0	4	3	0	2	0	1	185
	English Composition	365	157	155	29	18	4	2	0	3	5	1	0	0	1	355

N/A* Items with insufficient counts for DIF analysis

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6–12 (continued). DIF Summary

Grade/Course		Number of Field-test items	Male/Female							White/Black						
			A+	A-	B+	B-	C+	C-	N/A*	A+	A-	B+	B-	C+	C-	N/A*
Mathematics July 2013	3	56	0	0	0	0	0	0	56	0	0	0	0	0	0	56
	4	67	0	0	0	0	0	0	67	0	0	0	0	0	0	67
	5	41	0	0	0	0	0	0	41	0	0	0	0	0	0	41
	6	156	67	65	9	14	1	0	0	2	1	0	2	0	0	151
	7	73	37	32	2	1	0	1	0	13	16	1	4	0	0	39
	8	157	72	63	8	12	2	0	0	2	5	0	1	0	0	149
Reading July 2013	3	58	0	0	0	0	0	0	58	0	0	0	0	0	0	58
	4	71	0	0	0	0	0	0	71	0	0	0	0	0	0	71
	5	60	0	0	0	0	0	0	60	0	0	0	0	0	0	60
	6	56	29	21	4	2	0	0	0	4	6	0	2	0	0	44
	7	58	29	21	4	3	1	0	0	11	34	1	3	0	0	9
	8	57	34	20	2	1	0	0	0	13	38	0	5	0	1	0
Mathematics Jan 2014	K	60	31	19	6	3	1	0	0	6	14	1	5	0	2	32
	1	90	40	38	8	4	0	0	0	18	25	0	5	0	0	42
	2	130	47	56	7	16	1	3	0	24	32	3	4	0	1	66
	3	235	101	101	11	15	4	3	0	28	41	2	5	1	1	157
	4	248	105	110	16	14	2	1	0	37	44	7	11	0	2	147
	5	221	108	84	13	12	2	2	0	31	41	3	8	0	1	137

N/A* Items with insufficient counts for DIF analysis or those that were re-field tested in fall 2013.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Table 6–12 (continued). DIF Summary

Grade/Course		Number of Field-test items	Male/Female							White/Black						
			A+	A-	B+	B-	C+	C-	N/A*	A+	A-	B+	B-	C+	C-	N/A*
Reading Jan 2014	K	84	50	21	9	2	2	0	0	9	10	0	3	0	0	62
	1	98	57	31	6	3	1	0	0	7	11	0	0	0	0	80
	2	98	47	43	3	4	0	1	0	5	13	0	2	0	0	78
	3	178	81	75	8	10	3	1	0	54	69	5	11	0	1	38
	4	189	93	78	12	6	0	0	0	40	54	2	7	0	2	84
	5	134	75	49	6	2	0	2	0	23	53	1	6	0	2	49
Science Jan 2014	K–2	280	130	108	8	13	1	0	20	0	0	0	0	0	0	280
	3	155	69	70	9	4	2	1	0	3	2	0	0	0	0	150
	4	213	94	93	12	12	1	1	0	0	0	0	0	0	0	213
	5	152	58	61	6	8	0	0	19	1	0	0	0	0	0	151
Writing Jan 2014	K	44	20	22	2	0	0	0	0	0	0	0	0	0	0	44
	1	118	71	42	2	3	0	0	0	0	0	0	0	0	0	118
	2	117	56	49	6	5	1	0	0	0	0	0	0	0	0	117
	3	60	33	22	3	1	0	1	0	12	17	4	7	0	0	20
	4	60	24	29	4	1	2	0	0	20	14	0	6	0	0	20
	5	71	40	22	5	3	1	0	0	0	0	0	0	0	0	71

N/A* Items with insufficient counts for DIF analysis.

The plus sign indicates that the item favors the focal group (female or black) and a minus sign indicates that the item favors the reference group (male or white).

Chapter Six: Field Test

CHAPTER SEVEN: CLASSICAL ITEM STATISTICS

This chapter provides an overview of the two most familiar item-level statistics obtained from classical (traditional) item analysis: item difficulty and item discrimination. The following results pertain to all items field tested in the stand-alone and embedded field-test events. Other statistics such as Rasch item statistics are discussed in Chapter Eight.

ITEM-LEVEL STATISTICS

Appendix B provides classical item statistics for all items in mathematics, reading, science, and writing. Results are organized by content area and field-test event. These statistics represent the item characteristics most often used to determine whether an item functioned properly and/or how a group of students performed on a particular item. The item statistics in Appendix B include: *N*, the number of students taking the item; *p*-values (denoted as PVal); proportions of students who chose each response option (denoted as P(A), P(B), P(C), P(D)); proportions of students who didn't respond to an item (denoted as P(-)); point-biserial correlations (denoted as PtBis); and item-total correlations for each response option (denoted as PT(A), PT(B), PT(C), and PT(D)).

ITEM DIFFICULTY

At the most general level, an item's difficulty is indicated by its mean score in some specified group (e.g., grade level).

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

In the mean score formula above, the individual item scores (x_i) are summed and then divided by the total number of students (n). For MC items, student scores are represented by 0s and 1s (0 = wrong, 1 = right). With 0/1 scoring, the equation above also represents the number of students correctly answering the item divided by the total number of students. So, this is also the *proportion correct* for the item, or as it is better known, the *p*-value. In theory, *p*-values can range from 0.00[6] to 1.00 on the proportion-correct scale. For example, if an item has a *p*-value of 0.89, it means 89 percent of the students answered the item correctly. Additionally, this value might also suggest that the item is relatively easy and/or the students who attempted the item are relatively high achievers. In other words, item difficulty and student ability are somewhat confounded.

The minimum and maximum extremes of the difficulty scale are virtually never seen in applied practice. However, understanding what those values are helps illustrate that relatively lower values correspond to more difficult items and that relatively higher values correspond to easier items. (Because of this, some assert that this index would be better referred to as the item's *easiness*.)

[6] For multiple-choice (MC) items with four response options, pure random guessing would lead to an expected *p*-value of 0.25.

Item difficulty is an important consideration for the Classroom Diagnostic Tools (CDT) because it is a computer adaptive test. The item selection routine selects items based on student performance during the test. While very easy or very difficult items may not be appropriate for many students, they are needed in the CDT item pools to ensure that the item selection routine can find appropriate items for students at various levels.

Utilizing the proportion of students who chose each option can be helpful for verifying keys. For example, if a large proportion of students chose a distractor instead of the key answer, it may, but not always, indicate the key is not correct.

ITEM DISCRIMINATION

At the most general level, item discrimination[7] indicates an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the CDT overall) would be more likely to answer any given CDT item correctly, while students with low ability (i.e., those who perform poorly on the CDT overall) would be more likely to answer the same item incorrectly. For the CDT, Pearson's product-moment correlation coefficient between item scores and test scores is used to indicate discrimination. The correlation coefficient can range from -1.0 to +1.0. If the aforementioned expectation is met (high-scoring students tend to get the item right while low-scoring students do not), the correlation between the item score and the total test score will be both positive and noticeably large in its magnitude (i.e., well above zero), meaning the item is a good discriminator between high- and low-ability students.

Item total correlation for each option is another indicator of an item's ability to differentiate between high and low achievers. It is expected that students with high ability (i.e., those who perform well on the CDT overall) would be less likely to choose any distractors, while students with low ability (i.e., those who perform poorly on the CDT overall) would be more likely to choose a distractor. In other words, the item total correlations for the distractors are expected to be negative.

In summary, the correlation will be positive in value when the mean test score of the students answering the item correctly is higher than the mean test score of the students answering the item incorrectly.[8] In other words, this indicates that students who did well on the total test tended to do well on the item, as well. However, an interaction can exist between item discrimination and item difficulty. Items answered correctly (or incorrectly) by a large proportion of examinees (i.e., they have extreme *p*-values) can have reduced power to discriminate, and, thus, can have lower correlations.

Discrimination is an important consideration for the operational CDT because the use of more discriminating items on a test is associated with more precise score estimates (i.e., there will be smaller confidence intervals around the scores).

[7] As noted earlier, the discrimination index for dichotomous MC items is typically referred to as the *point-biserial correlation coefficient*.

[8] It is legitimate to view the point-biserial correlation as a standardized mean. A positive value indicates students who chose that response had a higher mean score than the average student; a negative value indicates students who chose that response had a lower-than-average mean score.

OBSERVATIONS AND INTERPRETATIONS

Table 7–1 provides the mean *p*-values and point-biserial correlations for the CDT item pools in each content area. The mean *p*-value ranged from about 0.35 to 0.82. The mean point-biserial correlations ranged from 0.20 to 0.44.

It is difficult to make global conclusions about overall quality from these item statistics alone. With that caveat in mind, the results presented in this chapter indicate that the CDT item pools contain items within expected and acceptable ranges of item difficulty and discrimination.

Table 7–1. Mean *P*-value and Point-Biserial

Grade/Course		Number of Items Field Tested	Mean *P*-value	Mean Point-Biserial
Mathematics Aug 2010	3	86	0.824	0.415
	4	86	0.737	0.414
	5	85	0.717	0.439
	6	259	0.684	0.413
	7	258	0.575	0.432
	8	257	0.497	0.361
	11	149	0.521	0.339
	Algebra I	256	0.411	0.317
	Geometry	257	0.439	0.349
	Algebra II	256	0.419	0.369
Reading Jan 2011	3	86	0.595	0.437
	4	87	0.665	0.440
	5	86	0.666	0.433
	6	210	0.607	0.423
	7	192	0.679	0.395
	8	192	0.623	0.404
	Literature	348	0.568	0.408
Science Jan 2011	3	91	0.637	0.371
	4	123	0.602	0.348
	5	102	0.482	0.335
	6	178	0.503	0.322
	7	327	0.486	0.322
	8	377	0.504	0.335
	11	115	0.381	0.238
	Biology	390	0.420	0.294
	Chemistry	335	0.355	0.255

Table 7–1 (continued). Mean *P*-value and Point-Biserial

Grade/Course		Number of Items Field Tested	Mean *P*-value	Mean Point-Biserial
Writing Aug 2011	3	140	0.584	0.392
	4	149	0.566	0.372
	5	165	0.566	0.380
	6	193	0.556	0.369
	7	176	0.550	0.346
	8	195	0.538	0.332
	English Composition	365	0.514	0.357
Math July 2013	6	156	0.448	0.290
	7	73	0.431	0.257
	8	157	0.354	0.204
Reading July 2013	6	56	0.585	0.351
	7	58	0.545	0.339
	8	57	0.577	0.358
Mathematics Jan 2014	K	60	0.798	0.408
	1	90	0.801	0.426
	2	130	0.695	0.437
	3	235	0.596	0.413
	4	248	0.595	0.413
	5	221	0.508	0.326
Reading Jan 2014	K	84	0.734	0.426
	1	98	0.575	0.415
	2	98	0.506	0.441
	3	178	0.546	0.398
	4	189	0.577	0.413
	5	134	0.566	0.364
Science Jan 2014	K–2	280	0.619	0.404
	3	155	0.641	0.391
	4	213	0.570	0.362
	5	152	0.424	0.240
Writing Jan 2014	K	44	0.823	0.462
	1	118	0.729	0.444
	2	117	0.642	0.444
	3	60	0.626	0.415
	4	60	0.642	0.398
	5	71	0.550	0.326

CHAPTER EIGHT: RASCH ITEM CALIBRATION

The particular item response theory (IRT) model used for the Classroom Diagnostic Tools (CDT) is based on the work of Georg Rasch. Rasch models have had a long-standing presence in applied testing programs and have been the methodology used to calibrate the Pennsylvania System of School Assessment (PSSA) items and Keystone Exam items. Consequently, this model was chosen to be used for the CDT. IRT has several advantages over classical test theory, so it has become the standard procedure for analyzing item response data in large-scale assessments. However, IRT models make a number of strong assumptions related to dimensionality, local independence, and model-data fit. Resulting inferences derived from any application of IRT rest strongly on the degree to which the underlying assumptions are met.

This chapter outlines the procedures used for calibrating the CDT items. Generally, item calibration is the process of assigning a difficulty-parameter estimate to each item so that they are placed onto a common scale. This chapter briefly introduces the Rasch model and reports the results from evaluations of the adequacy of the Rasch assumptions. See Chapter Nine for a description of the common scale across grades and courses within a content area and for summaries of the Rasch item statistics for the CDT item pools.

DESCRIPTION OF THE RASCH MODEL

The Rasch model (Rasch, 1960) for dichotomous (0, 1) items was used to calibrate CDT items because all item pools contain only multiple-choice (MC) items. The Rasch model predicts the probability of person *n* getting item *i* correct as follows:

$$\Phi_{ni}\,(X = 1 \mid \beta_n) = [\exp(\beta_n - \delta_i)]/[1 + \exp(\beta_n - \delta_i)]$$

where β_n represents a student's proficiency (ability) level, and δ_i is the difficulty of item *i*.

The Rasch model places both student ability and item difficulty (estimated in terms of log-odds or logits) on the same continuum. When the model assumptions are met, it also provides person ability estimates that are independent of the items employed in the assessment, and, conversely, estimates item difficulty independently of the sample of examinees.

SOFTWARE AND ESTIMATION ALGORITHM

Item calibration was implemented via the WINSTEPS 3.69 computer program (Linacre, 2009). The unconditional, joint maximum likelihood (UCON) estimation procedure estimates the person parameters (i.e., ability) simultaneously with the item parameters (i.e., difficulty).

CHECKING RASCH ASSUMPTIONS

Because the Rasch model was the basis of all calibration, scoring, and scaling analyses associated with the CDT, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met and how well the model fits the test data. Therefore, it is important to check these assumptions. This section evaluates the dimensionality of the data, local item independence, and model-data fit at the item level. Though a variety of methods are available for assessing these issues, the Rasch analyses and criteria available from WINSTEPS were used here.

UNIDIMENSIONALITY

Rasch models assume that one dominant dimension determines the difference in students' performances. WINSTEPS provides results from a principal components analysis (PCA) that can be used to assess the unidimensionality assumption. Different from standard applications of PCA, WINSTEPS conducts its PCA on the response residuals, not the original observations. That is, the primary dimension from the Rasch model is removed first and then the residual variance is analyzed. The purpose of the analysis is to verify whether any other dominant components exist among the residuals (i.e., they account for a practically significant amount of residual variance). If any other dimensions are found, the unidimensionality assumption would be violated.

WINSTEPS provides three PCA residuals: raw, standardized, and logit. All three should yield similar results. The mixed residual setting was used for the PCA because previous research has demonstrated that raw residuals (PRCOMP=R) give a more realistic estimate of explained variance than do standardized residuals (PRCOMP=S), and standardized residuals are better for decomposing the unexplained variance into contrasts (Linacre, 2009).

Table 8–1 presents the PCA results for the CDT Mathematics item pool. The results include the total variance, variance explained by the model, unexplained total variance, and unexplained variance explained by the first factor (both eigenvalue units and percentage values are shown in the table). In addition, the modeled column provides variance components that would be explained if the data complied with the Rasch definition of unidimensionality.

As can been seen from Table 8–1, the primary dimension in the Rasch model explained between 31 and 63 percent of the total variances across the grades and courses. The empirical and model-based percentages were close, suggesting that the estimation of a primary Rasch dimension was successful. The unexplained variances were between 38 and 69 percent. This includes the Rasch-predicted randomness and any departures in the data from the Rasch model (e.g., departure from unidimensionality).

The most important variance for evaluating dimensionality is in the row named "unexplained variance explained by 1st factor." The eigenvalue of unexplained total variance equals the total number of items, since PCA was conducted with residuals. The eigenvalues of the first factor in the residual (again, this is the second dimension beyond the first Rasch model dimension in WINSTEPS PCA) were between 0.3 and 0.9 percent. Overall, WINSTEPS PCA suggests that there is one clearly dominant dimension for CDT Mathematics.

Table 8–1. Results from PCA of Residuals in WINSTEPS for Mathematics

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 3 Aug 2010	Total variance in observations	208.5	100.0%	100.0%
	Variance explained by model	122.5	58.7%	58.5%
	Unexplained variance (total)	86	41.3%	41.5%
	Unexplained variance explained by 1st factor	1.6	0.8%	
Grade 4 Aug 2010	Total variance in observations	167.8	100.0%	100.0%
	Variance explained by model	81.8	48.7%	48.1%
	Unexplained variance (total)	86	51.3%	51.9%
	Unexplained variance explained by 1st factor	1.5	0.9%	
Grade 5 Aug 2010	Total variance in observations	177.3	100.0%	100.0%
	Variance explained by model	92.3	52.1%	52.9%
	Unexplained variance (total)	85	47.9%	47.1%
	Unexplained variance explained by 1st factor	1.5	0.9%	
Grade 6 Aug 2010	Total variance in observations	606.2	100.0%	100.0%
	Variance explained by model	347.2	57.3%	58.0%
	Unexplained variance (total)	259	42.7%	42.0%
	Unexplained variance explained by 1st factor	2.0	0.3%	
Grade 7 Aug 2010	Total variance in observations	529.8	100.0%	100.0%
	Variance explained by model	271.8	51.3%	52.3%
	Unexplained variance (total)	258	48.7%	47.7%
	Unexplained variance explained by 1st factor	2.2	0.4%	
Grade 8 Aug 2010	Total variance in observations	476.9	100.0%	100.0%
	Variance explained by model	219.9	46.1%	47.3%
	Unexplained variance (total)	257	53.9%	52.7%
	Unexplained variance explained by 1st factor	2.1	0.4%	
Algebra I* Aug 2010	Total variance in observations	365.4	100.0%	100.0%
	Variance explained by model	109.4	29.9%	30.6%
	Unexplained variance (total)	256	70.1%	69.4%
	Unexplained variance explained by 1st factor	1.9	0.5%	
Geometry* Aug 2010	Total variance in observations	408.9	100.0%	100.0%
	Variance explained by model	151.9	37.2%	38.3%
	Unexplained variance (total)	257	62.8%	61.7%
	Unexplained variance explained by 1st factor	1.9	0.5%	
Algebra II* Aug 2010	Total variance in observations	464.8	100.0%	100.0%
	Variance explained by model	208.8	44.9%	46.1%
	Unexplained variance (total)	256	55.1%	53.9%
	Unexplained variance explained by 1st factor	2.0	0.4%	

*Grade 11 items were tested on grade 8, Algebra I, Geometry, and Algebra II forms.

Table 8–1 (continued). Results from PCA of Residuals in WINSTEPS for Mathematics

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 6 July 2013	Total variance in observations	323.3	100.0%	100.0%
	Variance explained by model	167.3	51.7%	48.4%
	Unexplained variance (total)	156	48.3%	51.6%
	Unexplained variance explained by 1st factor	1.3	0.4%	
Grade 7 July 2013	Total variance in observations	148.3	100.0%	100.0%
	Variance explained by model	75.3	50.8%	48.7%
	Unexplained variance (total)	73	49.2%	51.3%
	Unexplained variance explained by 1st factor	1.1	0.8%	
Grade 8 July 2013	Total variance in observations	243.3	100.0%	100.0%
	Variance explained by model	86.3	35.5%	33.0%
	Unexplained variance (total)	157	64.5%	67.0%
	Unexplained variance explained by 1st factor	1.3	0.6%	
Grades K–2** Jan 2014	Total variance in observations	728.0	100.0%	100.0%
	Variance explained by model	448.0	61.5%	60.5%
	Unexplained variance (total)	280	38.5%	39.5%
	Unexplained variance explained by 1st factor	1.8	0.3%	
Grade 3 Jan 2014	Total variance in observations	564.0	100.0%	100.0%
	Variance explained by model	329.0	58.3%	59.4%
	Unexplained variance (total)	235	41.7%	40.6%
	Unexplained variance explained by 1st factor	1.9	0.3%	
Grade 4 Jan 2014	Total variance in observations	646.9	100.0%	100.0%
	Variance explained by model	398.9	61.7%	62.5%
	Unexplained variance (total)	248	38.3%	37.5%
	Unexplained variance explained by 1st factor	1.9	0.3%	
Grade 5 Jan 2014	Total variance in observations	417.9	100.0%	100.0%
	Variance explained by model	196.9	47.1%	43.1%
	Unexplained variance (total)	221	52.9%	56.9%
	Unexplained variance explained by 1st factor	1.2	0.3%	

**Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–2 presents the PCA results for the CDT reading item pool. The primary dimension in the Rasch model explained between 42 and 58 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 1.4 percent of the total variance in observations. These results suggest that the CDT reading item pool essentially measures a single dominant dimension.

Table 8–2. Results from PCA of Residuals in WINSTEPS for Reading

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 3 Jan 2011	Total variance in observations	179.8	100.0%	100.0%
	Variance explained by model	93.8	52.2%	51.9%
	Unexplained variance (total)	86	47.8%	48.1%
	Unexplained variance explained by 1st factor	1.7	0.9%	
Grade 4 Jan 2011	Total variance in observations	157.4	100.0%	100.0%
	Variance explained by model	70.4	44.7%	43.9%
	Unexplained variance (total)	87	55.3%	56.1%
	Unexplained variance explained by 1st factor	1.6	1.0%	
Grade 5 Jan 2011	Total variance in observations	171.5	100.0%	100.0%
	Variance explained by model	85.5	49.8%	50.5%
	Unexplained variance (total)	86	50.2%	49.5%
	Unexplained variance explained by 1st factor	1.7	1.0%	
Grade 6 Jan 2011	Total variance in observations	442.8	100.0%	100.0%
	Variance explained by model	232.8	52.6%	53.5%
	Unexplained variance (total)	210	47.4%	46.5%
	Unexplained variance explained by 1st factor	2.3	0.5%	
Grade 7 Jan 2011	Total variance in observations	364.4	100.0%	100.0%
	Variance explained by model	172.4	47.3%	46.8%
	Unexplained variance (total)	192	52.7%	53.2%
	Unexplained variance explained by 1st factor	2.1	0.6%	
Grade 8 Jan 2011	Total variance in observations	345.5	100.0%	100.0%
	Variance explained by model	153.5	44.4%	44.5%
	Unexplained variance (total)	192	55.6%	55.5%
	Unexplained variance explained by 1st factor	2.0	0.6%	
Literature Jan 2011	Total variance in observations	699.1	100.0%	100.0%
	Variance explained by model	351.1	50.2%	50.2%
	Unexplained variance (total)	348	49.8%	49.8%
	Unexplained variance explained by 1st factor	2.2	0.3%	
Grade 6 July 2013	Total variance in observations	111.7	100.0%	100.0%
	Variance explained by model	55.7	49.8%	47.3%
	Unexplained variance (total)	56	50.2%	52.7%
	Unexplained variance explained by 1st factor	1.5	1.3%	

Table 8–2 (continued). Results from PCA of Residuals in WINSTEPS for Reading

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 7 July 2013	Total variance in observations	103.4	100.0%	100.0%
	Variance explained by model	45.4	43.9%	42.2%
	Unexplained variance (total)	58	56.1%	57.8%
	Unexplained variance explained by 1st factor	1.4	1.4%	
Grade 8 July 2013	Total variance in observations	105.4	100.0%	100.0%
	Variance explained by model	48.4	45.9%	44.8%
	Unexplained variance (total)	57	54.1%	55.2%
	Unexplained variance explained by 1st factor	1.4	1.3%	
Grades K–2* Jan 2014	Total variance in observations	656.5	100.0%	100.0%
	Variance explained by model	376.5	57.4%	57.6%
	Unexplained variance (total)	280	42.6%	42.4%
	Unexplained variance explained by 1st factor	1.9	0.3%	
Grade 3 Jan 2014	Total variance in observations	391.5	100.0%	100.0%
	Variance explained by model	213.5	54.5%	55.6%
	Unexplained variance (total)	178	45.5%	44.4%
	Unexplained variance explained by 1st factor	1.9	0.5%	
Grade 4 Jan 2014	Total variance in observations	434.7	100.0%	100.0%
	Variance explained by model	245.7	56.5%	57.1%
	Unexplained variance (total)	189	43.5%	42.9%
	Unexplained variance explained by 1st factor	1.7	0.4%	
Grade 5 Jan 2014	Total variance in observations	241.4	100.0%	100.0%
	Variance explained by model	107.4	44.5%	42.6%
	Unexplained variance (total)	134	55.5%	57.4%
	Unexplained variance explained by 1st factor	1.3	0.6%	

*Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–3 presents the PCA results for the CDT science item pool. The primary dimension in the Rasch model explained between 20 and 68 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 0.9 percent of the total variance in observations. These results suggest that the CDT science item pool essentially measures a single dominant dimension.

Table 8–3. Results from PCA of Residuals in WINSTEPS for Science

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 3 Jan 2011	Total variance in observations	229.1	100.0%	100.0%
	Variance explained by model	138.1	60.3%	60.3%
	Unexplained variance (total)	91	39.7%	39.7%
	Unexplained variance explained by 1st factor	1.7	0.7%	
Grade 4 Jan 2011	Total variance in observations	285.9	100.0%	100.0%
	Variance explained by model	162.9	57.0%	56.9%
	Unexplained variance (total)	123	43.0%	43.1%
	Unexplained variance explained by 1st factor	1.5	0.5%	
Grade 5 Jan 2011	Total variance in observations	161.9	100.0%	100.0%
	Variance explained by model	59.9	37.0%	37.4%
	Unexplained variance (total)	102	63.0%	62.6%
	Unexplained variance explained by 1st factor	1.5	0.9%	
Grade 6 Jan 2011	Total variance in observations	290.8	100.0%	100.0%
	Variance explained by model	112.8	38.8%	39.3%
	Unexplained variance (total)	178	61.2%	60.7%
	Unexplained variance explained by 1st factor	2.1	0.7%	
Grade 7 Jan 2011	Total variance in observations	487.1	100.0%	100.0%
	Variance explained by model	160.1	32.9%	33.3%
	Unexplained variance (total)	327	67.1%	66.7%
	Unexplained variance explained by 1st factor	2.2	0.4%	
Grade 8* Jan 2011	Total variance in observations	658.8	100.0%	100.0%
	Variance explained by model	281.8	42.8%	43.9%
	Unexplained variance (total)	377	57.2%	56.1%
	Unexplained variance explained by 1st factor	1.9	0.3%	
Biology Jan 2011	Total variance in observations	545.2	100.0%	100.0%
	Variance explained by model	155.2	28.5%	29.7%
	Unexplained variance (total)	390	71.5%	70.3%
	Unexplained variance explained by 1st factor	2.0	0.4%	
Chemistry Jan 2011	Total variance in observations	418.1	100.0%	100.0%
	Variance explained by model	83.1	19.9%	20.1%
	Unexplained variance (total)	335	80.1%	79.9%
	Unexplained variance explained by 1st factor	2.0	0.5%	

*Grade 11 items were tested on Grade 8 forms.

Table 8–3 (continued). Results from PCA of Residuals in WINSTEPS for Science

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grades K–2 Jan 2014	Total variance in observations	652.2	100.0%	100.0%
	Variance explained by model	372.2	57.1%	57.4%
	Unexplained variance (total)	280	42.9%	42.6%
	Unexplained variance explained by 1st factor	2.6	0.4%	
Grade 3 Jan 2014	Total variance in observations	369.9	100.0%	100.0%
	Variance explained by model	214.9	58.1%	57.8%
	Unexplained variance (total)	155	41.9%	42.2%
	Unexplained variance explained by 1st factor	2.0	0.5%	
Grade 4 Jan 2014	Total variance in observations	668.3	100.0%	100.0%
	Variance explained by model	455.3	68.1%	68.0%
	Unexplained variance (total)	213	31.9%	32.0%
	Unexplained variance explained by 1st factor	2.0	0.3%	
Grade 5 Jan 2014	Total variance in observations	235.5	100.0%	100.0%
	Variance explained by model	83.5	35.5%	34.5%
	Unexplained variance (total)	152	64.5%	65.5%
	Unexplained variance explained by 1st factor	1.3	0.6%	

Table 8–4 presents the PCA results for the CDT writing item pool. The primary dimension in the Rasch model explained between 42 and 55 percent of the total variances across the grades and courses. The second dimension (the row named "unexplained variance explained by 1st factor") accounted for between 0.3 and 1.4 percent of the total variance in observations. These results suggest that the CDT writing item pool essentially measures a single dominant dimension.

Table 8–4. Results from PCA of Residuals in WINSTEPS for Writing

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 3 Aug 2011	Total variance in observations	297.7	100.0%	100.0%
	Variance explained by model	157.7	53.0%	55.0%
	Unexplained variance (total)	140	47.0%	45.0%
	Unexplained variance explained by 1st factor	1.7	0.6%	
Grade 4 Aug 2011	Total variance in observations	283.6	100.0%	100.0%
	Variance explained by model	134.6	47.5%	49.0%
	Unexplained variance (total)	149	52.5%	51.0%
	Unexplained variance explained by 1st factor	1.8	0.6%	
Grade 5 Aug 2011	Total variance in observations	280.7	100.0%	100.0%
	Variance explained by model	115.7	41.2%	42.2%
	Unexplained variance (total)	165	58.8%	57.8%
	Unexplained variance explained by 1st factor	1.8	0.6%	
Grade 6 Aug 2011	Total variance in observations	340.5	100.0%	100.0%
	Variance explained by model	147.5	43.3%	44.2%
	Unexplained variance (total)	193	56.7%	55.8%
	Unexplained variance explained by 1st factor	2.0	0.6%	
Grade 7 Aug 2011	Total variance in observations	317.9	100.0%	100.0%
	Variance explained by model	141.9	44.6%	45.5%
	Unexplained variance (total)	176	55.4%	54.5%
	Unexplained variance explained by 1st factor	2.1	0.6%	
Grade 8 Aug 2011	Total variance in observations	336.0	100.0%	100.0%
	Variance explained by model	141.0	42.0%	42.4%
	Unexplained variance (total)	195	58.0%	57.6%
	Unexplained variance explained by 1st factor	2.3	0.7%	
English Composition Aug 2011	Total variance in observations	763.2	100.0%	100.0%
	Variance explained by model	398.2	52.2%	53.4%
	Unexplained variance (total)	365	47.8%	46.6%
	Unexplained variance explained by 1st factor	2.3	0.3%	
Grades K–2* Jan 2014	Total variance in observations	93.2	100.0%	100.0%
	Variance explained by model	49.2	52.8%	39.9%
	Unexplained variance (total)	44	47.2%	60.1%
	Unexplained variance explained by 1st factor	2.0	2.2%	

*Items in kindergarten through grade 2 were co-mingled on forms taken by students in grade 3.

Table 8–4 (continued). Results from PCA of Residuals in WINSTEPS for Writing

Grade/Course	Statistic	Eigenvalue	Empirical	Modeled
Grade 3 Jan 2014	Total variance in observations	132.5	100.0%	100.0%
	Variance explained by model	72.5	54.7%	54.6%
	Unexplained variance (total)	60	45.3%	45.4%
	Unexplained variance explained by 1st factor	1.8	1.4%	
Grade 4 Jan 2014	Total variance in observations	132.4	100.0%	100.0%
	Variance explained by model	72.4	54.7%	55.4%
	Unexplained variance (total)	60	45.3%	44.6%
	Unexplained variance explained by 1st factor	1.7	1.3%	
Grade 5 Jan 2014	Total variance in observations	146.5	100.0%	100.0%
	Variance explained by model	75.5	51.5%	47.7%
	Unexplained variance (total)	71	48.5%	52.3%
	Unexplained variance explained by 1st factor	1.3	0.9%	

LOCAL INDEPENDENCE

Local independence (LI) is a fundamental assumption of IRT. No relationship should exist between examinees' responses to different items after accounting for the abilities measured by a test. In formal statistical terms, a test X that is comprised of items X_1, X_2,…X_n is locally independent with respect to the latent variable θ if, for all x = (x_1, x_2,…x_n) and θ ,

$$P(\mathbf{X} = \mathbf{x} \mid \theta) = \prod_{i=1}^{I} P(X_i = x_i \mid \theta)$$

This formula essentially states that the probability of any pattern of responses across all items (*x*), after conditioning on the abilities (θ) measured by the test, should be equal to the product of the conditional probabilities across each item (cf. the multiplication rule for independent events where the joint probabilities are equal to the product of the associated marginal probabilities).

The equation above shows the condition after satisfying the "strong form" of local independence. A "weak form" of local independence (WLI) was proposed by McDonald (1979). The distinction is important, as many indicators of local dependency are actually framed by WLI. The requirement here would be for the conditional covariances of all pairs of item responses, conditioned on the abilities, to be equal to zero. When this assumption is met, the joint probability of responses to an item pair, conditioned on abilities, is the product of the probabilities of responses to these two items, as show below. (This is a "weaker" form because higher-order dependencies among items are allowed.) Based on the WLI, the following expression can be derived:

$$P(X_i = x_i, X_j = x_j \mid \theta) = P(X_i = x_i \mid \theta) P(X_j = x_j \mid \theta)$$

Marais and Andrich (2008) pointed out that local item dependence in the Rasch model can occur in two ways that some may not distinguish. The first way occurs when the assumption of unidimensionality is violated. Here, other nuisance dimensions besides a dominant dimension also determine students' performance (this can be called "trait dependence"). The second violation occurs when responses to an item depend on responses to another. This is a violation of statistical independence and can be called "response dependence." Many people treat the assumptions of "unidimensionality" and "local independence" as one phenomenon and believe that once unidimensionality holds, that local independence also holds. By distinguishing the two sources of local dependence, one can see that while local independence can be related to unidimensionality, the two are different assumptions, and, therefore, require different tests.

Residual item correlations provided in WINSTEPS for each item pair were used to assess the local dependence among the CDT items. In general, these residuals are computed as follows. First, expected item performance based on the Rasch model is determined using ability and item parameter estimates. Next, deviation (residual) between the examinees' expected and observed performance is determined for each item. Finally, for each item pair, a correlation between the respective deviations is computed.

As previously mentioned, three types of residual correlations are available in WINSTEPS: raw, standardized, and logit. Since the three residual correlations are very similar, the default "standardized residual correlation" in WINSTEPS was used for these analyses. Tables 8–5 through 8–8 show the summary statistics—mean, standard deviation (SD), minimum (Min), maximum (Max), and several percentiles (P_{10}, P_{25}, P_{50}, P_{75}, P_{90})—for all the residual correlations for each content area and grade/course. The total number of item pairs (*N*) and the number of pairs with the residual correlations greater than 0.20 are also reported in the tables.

Table 8–5. Summary of Item Residual Correlations for Mathematics

		N	Mean	SD	Min	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max	< -.20	>.20
August 2010	Grade 3	1,372	-0.03	0.03	-0.15	-0.06	-0.04	-0.03	-0.01	0.01	0.32	0	2
	Grade 4	1,122	-0.03	0.04	-0.18	-0.08	-0.06	-0.03	-0.01	0.01	0.28	0	2
	Grade 5	1,132	-0.03	0.04	-0.17	-0.07	-0.05	-0.03	-0.01	0.01	0.38	0	1
	Grade 6	5,410	-0.02	0.04	-0.15	-0.06	-0.04	-0.02	0.00	0.02	0.34	0	12
	Grade 7	5,409	-0.02	0.04	-0.24	-0.07	-0.05	-0.02	0.00	0.03	0.35	3	4
	Grade 8	4,935	-0.02	0.06	-0.36	-0.10	-0.06	-0.02	0.01	0.05	0.27	18	3
	Algebra I	5,024	-0.02	0.04	-0.19	-0.07	-0.05	-0.02	0.00	0.02	0.26	0	2
	Geometry	5,470	-0.02	0.04	-0.20	-0.07	-0.04	-0.02	0.00	0.02	0.27	0	1
	Algebra II	5,457	-0.02	0.04	-0.18	-0.07	-0.05	-0.02	0.00	0.02	0.22	0	2
July 2013	Grade 6	12,090	-0.01	0.01	-0.12	-0.02	-0.01	0.00	0.00	0.00	0.06	0	0
	Grade 7	2,628	-0.01	0.01	-0.05	-0.03	-0.02	-0.01	-0.01	0.00	0.01	0	0
	Grade 8	12,246	-0.01	0.01	-0.09	-0.02	-0.01	0.00	0.00	0.01	0.06	0	0
January 2014	Grades K–2	2,660	-0.04	0.06	-0.23	-0.11	-0.08	-0.05	-0.01	0.02	0.35	4	4
	Grade 3	2,278	-0.05	0.06	-0.24	-0.12	-0.09	-0.05	-0.01	0.02	0.27	12	2
	Grade 4	2,462	-0.05	0.05	-0.24	-0.11	-0.08	-0.05	-0.01	0.02	0.46	2	2
	Grade 5	24,310	0.00	0.01	-0.05	-0.01	-0.01	0.00	0.00	0.00	0.02	0	0

Table 8–6. Summary of Item Residual Correlations for Reading/Literature

		N	Mean	SD	Min	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max	< -.20	>.20
January 2011	Grade 3	1,334	-0.02	0.04	-0.17	-0.07	-0.04	-0.02	-0.01	0.01	0.14	0	0
	Grade 4	1,272	-0.02	0.03	-0.18	-0.07	-0.04	-0.02	-0.01	0.01	0.27	0	2
	Grade 5	1,262	-0.02	0.03	-0.17	-0.06	-0.04	-0.02	-0.01	0.01	0.18	0	0
	Grade 6	4,245	-0.02	0.05	-0.24	-0.07	-0.04	-0.02	0.00	0.02	0.35	2	13
	Grade 7	3,782	-0.02	0.04	-0.23	-0.07	-0.04	-0.02	0.00	0.02	0.22	2	1
	Grade 8	3,782	-0.02	0.04	-0.26	-0.07	-0.04	-0.02	0.00	0.03	0.34	2	5
	Literature	7,517	-0.02	0.05	-0.28	-0.09	-0.04	-0.01	0.01	0.04	0.40	25	10
July 2013	Grade 6	1,540	-0.02	0.05	-0.43	-0.03	-0.01	0.00	0.00	0.00	0.05	42	0
	Grade 7	1,653	-0.02	0.05	-0.33	-0.04	-0.01	0.00	0.00	0.00	0.01	38	0
	Grade 8	1,596	-0.02	0.05	-0.32	-0.04	-0.01	0.00	0.00	0.00	0.02	39	0
January 2014	Grades K–2	2,660	-0.05	0.06	-0.26	-0.12	-0.09	-0.05	-0.01	0.02	0.29	7	5
	Grade 3	1,709	-0.05	0.05	-0.23	-0.11	-0.08	-0.05	-0.02	0.02	0.20	2	0
	Grade 4	1,888	-0.05	0.05	-0.23	-0.10	-0.08	-0.05	-0.02	0.01	0.20	1	0
	Grade 5	8,911	-0.01	0.02	-0.26	-0.01	-0.01	0.00	0.00	0.00	0.03	33	0

Table 8–7. Summary of Item Residual Correlations for Science

		N	Mean	SD	Min	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max	< -.20	>.20
January 2011	Grade 3	1,400	-0.03	0.03	-0.16	-0.07	-0.04	-0.02	-0.01	0.01	0.09	0	0
	Grade 4	1,950	-0.02	0.03	-0.19	-0.07	-0.04	-0.02	0.00	0.01	0.09	0	0
	Grade 5	1,530	-0.03	0.03	-0.17	-0.07	-0.04	-0.02	-0.01	0.01	0.08	0	0
	Grade 6	3,642	-0.02	0.04	-0.18	-0.07	-0.04	-0.02	0.00	0.02	0.19	0	0
	Grade 7	6,934	-0.02	0.04	-0.22	-0.08	-0.04	-0.01	0.00	0.03	0.24	7	2
	Grade 8	6,881	-0.02	0.05	-0.27	-0.09	-0.04	-0.01	0.00	0.02	0.24	30	2
	Biology	8,255	-0.02	0.05	-0.24	-0.09	-0.04	-0.01	0.00	0.03	0.26	17	1
	Chemistry	7,105	-0.02	0.05	-0.22	-0.08	-0.04	-0.01	0.01	0.03	0.24	8	2
January 2014	Grades K–2	2,660	-0.05	0.10	-0.43	-0.17	-0.11	-0.05	0.01	0.08	0.68	152	28
	Grade 3	1,510	-0.05	0.06	-0.33	-0.12	-0.09	-0.05	-0.01	0.03	0.25	5	3
	Grade 4	2,069	-0.05	0.09	-0.31	-0.16	-0.11	-0.05	0.01	0.07	0.32	83	13
	Grade 5	11,476	-0.01	0.01	-0.08	-0.02	-0.01	-0.01	0.00	0.01	0.06	0	0

Table 8–8. Summary of Item Residual Correlations for Writing/English Composition

		N	Mean	SD	Min	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max	< -.20	>.20
August 2011	Grade 3	2,205	-0.02	0.05	-0.26	-0.08	-0.04	-0.02	0.00	0.02	0.19	6	0
	Grade 4	2,315	-0.02	0.05	-0.24	-0.09	-0.04	-0.02	0.00	0.02	0.28	9	2
	Grade 5	2,580	-0.02	0.05	-0.25	-0.09	-0.04	-0.02	0.00	0.02	0.19	11	0
	Grade 6	3,795	-0.02	0.05	-0.25	-0.08	-0.04	-0.02	0.01	0.03	0.27	4	5
	Grade 7	3,544	-0.02	0.05	-0.24	-0.08	-0.04	-0.02	0.00	0.03	0.24	10	2
	Grade 8	3,815	-0.02	0.07	-0.29	-0.11	-0.05	-0.02	0.01	0.06	0.29	58	13
	Eng. Comp	7,705	-0.02	0.06	-0.30	-0.10	-0.04	-0.01	0.01	0.05	0.33	72	18
January 2014	Grades K–2	2,641	-0.05	0.09	-0.39	-0.15	-0.11	-0.05	0.01	0.06	0.35	84	19
	Grade 3	570	-0.05	0.06	-0.20	-0.12	-0.08	-0.05	-0.02	0.02	0.23	1	1
	Grade 4	570	-0.05	0.04	-0.18	-0.10	-0.08	-0.05	-0.02	0.01	0.21	0	1
	Grade 5	2,485	-0.01	0.02	-0.13	-0.04	-0.02	-0.01	0.00	0.01	0.05	0	0

Across the content areas and grades/courses, the mean residual correlations were slightly negative and the values were close to zero. The vast majority of the correlations were very small, suggesting local item independence generally holds for the CDT mathematics, reading, science, and writing item pools.

ITEM FIT

WINSTEPS provides two item-fit statistics (infit and outfit) for evaluating the degree to which the Rasch model predicts the observed item responses. Each fit statistic can be expressed as a mean square (MnSq) statistic or on a standardized metric (Zstd with mean = 0 and variance = 1). MnSq values are more oriented toward practical significance, while Zstd values are more oriented toward statistical significance. MnSq values are presented in this chapter.

Both infit and outfit MnSq are the average of standardized residual variance (the difference between the observed score and the Rasch estimated score divided by the square root of the Rasch model variance). The difference is that the outfit statistic gives all examinees equal weight in computing the fit and tends to be affected more by unexpected responses far from the person, item, or rating scale category measure (i.e., it is more sensitive to outlying, off-target, low information responses). The infit statistic is weighted by the examinee locations relative to item difficulty and tends to be affected more by unexpected responses close to the person, item, or rating scale category measure (i.e., informative, on-target responses). Some feel that extreme infit values are a greater threat to the measurement process than extreme outfit values since most tests intend to measure the on-target population rather than extreme outliers.

The expected MnSq value is 1.0, and it can range from 0 to infinity. Deviation in excess of the expected value can be interpreted as noise or lack of fit between the items and the model. Values lower than the expected value can be interpreted as item redundancy or overfitting items (too predictable, too much redundancy), and values greater than the expected value indicate underfitting items (too unpredictable, too much noise). Rules of thumb regarding practically significant MnSq values vary. More conservative users might prefer items with MnSq values that range from 0.8 to 1.2. Others believe reasonable test results can be achieved with values from 0.5 to 1.5. In the following results, values outside of 0.7 to 1.3 are given practical importance.

Table 8–9 presents the summary statistics of infit and outfit mean square statistics for the CDT item pools, including the mean, standard deviation, minimum, and maximum values. The number of items within the range of (0.7, 1.3) is also reported in Table 8–9. As can been seen, the mean values for both fit statistics were close to 1.00 for all grades/courses. Nearly all items had infit values falling in the range of (0.7, 1.3). These results indicate that the Rasch model fits the CDT data well.

Table 8–9. Summary of Infit and Outfit Mean Square Statistics

Grade/Course		Number of Items	Infit					Outfit				
			Mean	SD	Min	Max	[0.7,1.3]	Mean	SD	Min	Max	[0.7,1.3]
Mathematics Aug 2010	3	86	0.99	0.08	0.78	1.17	86/86	0.99	0.24	0.21	1.56	71/86
	4	86	0.99	0.08	0.81	1.20	86/86	0.98	0.18	0.50	1.65	78/86
	5	85	0.99	0.12	0.80	1.32	84/85	1.00	0.24	0.46	1.56	69/85
	6	259	0.99	0.11	0.80	1.38	256/259	1.00	0.31	0.40	3.92	217/259
	7	258	1.00	0.12	0.80	1.49	253/258	1.01	0.25	0.56	2.24	213/258
	8	257	1.00	0.11	0.75	1.37	254/257	1.03	0.22	0.48	2.40	226/257
	11	149	0.99	0.10	0.80	1.27	149/149	0.99	0.18	0.67	1.67	141/149
	Algebra I	256	1.00	0.09	0.79	1.28	256/256	1.02	0.14	0.65	1.61	249/256
	Geometry	257	1.00	0.10	0.81	1.31	256/257	1.02	0.17	0.66	1.78	239/257
	Algebra II	256	1.00	0.10	0.78	1.41	254/256	1.03	0.20	0.66	1.99	233/256
Reading Jan 2011	3	86	0.99	0.12	0.74	1.30	86/86	0.97	0.24	0.40	1.53	66/86
	4	87	0.99	0.10	0.79	1.28	87/87	0.95	0.22	0.32	1.58	74/87
	5	86	0.96	0.09	0.78	1.22	86/86	0.91	0.20	0.44	1.64	72/86
	6	210	1.01	0.13	0.70	1.30	210/210	1.02	0.31	0.37	2.65	151/210
	7	192	1.00	0.10	0.76	1.30	192/192	0.96	0.23	0.21	2.00	162/192
	8	192	0.98	0.11	0.75	1.33	191/192	0.96	0.22	0.41	1.84	158/192
	Literature	348	1.01	0.13	0.75	1.31	347/348	1.01	0.25	0.38	2.00	282/348
Science Jan 2011	3	91	1.01	0.09	0.83	1.20	91/91	1.00	0.21	0.45	1.48	80/91
	4	123	1.01	0.08	0.85	1.23	123/123	1.00	0.18	0.52	1.81	112/123
	5	102	1.00	0.08	0.84	1.21	102/102	1.02	0.16	0.74	1.85	98/102
	6	178	1.00	0.09	0.80	1.22	178/178	1.02	0.17	0.61	1.82	165/178
	7	327	0.99	0.09	0.78	1.22	327/327	1.01	0.17	0.54	1.83	300/327
	8	377	1.02	0.12	0.77	1.37	372/377	1.06	0.24	0.57	2.12	307/377
	11	115	1.08	0.10	0.81	1.30	115/115	1.19	0.26	0.73	2.19	82/115
	Biology	390	1.00	0.08	0.84	1.28	390/390	1.03	0.14	0.73	1.63	372/390
	Chemistry	335	1.00	0.06	0.85	1.26	335/335	1.02	0.09	0.79	1.48	333/335

Table 8–9 (continued). Summary of Infit and Outfit Mean Square Statistics

Grade/Course		Number of Items	Infit					Outfit				
			Mean	SD	Min	Max	[0.7,1.3]	Mean	SD	Min	Max	[0.7,1.3]
Writing Aug 2011	3	140	0.99	0.11	0.80	1.43	139/140	1.00	0.24	0.42	1.95	115/140
	4	149	0.99	0.10	0.79	1.26	149/149	1.00	0.24	0.52	1.74	123/149
	5	165	0.98	0.09	0.80	1.24	165/165	0.97	0.19	0.62	1.92	151/165
	6	193	0.99	0.10	0.78	1.23	193/193	0.98	0.20	0.53	1.76	170/193
	7	176	1.00	0.11	0.75	1.36	175/176	1.02	0.23	0.56	1.92	147/176
	8	195	0.99	0.11	0.77	1.31	194/195	0.99	0.21	0.45	1.68	166/195
	English Composition	365	1.00	0.12	0.77	1.38	362/365	1.03	0.25	0.38	2.16	304/365
Math July 2013	6	156	1.07	0.14	0.78	1.50	144/156	1.35	0.62	0.51	4.77	96/156
	7	73	1.11	0.13	0.82	1.40	69/73	1.52	0.68	0.76	4.74	33/73
	8	157	1.14	0.13	0.87	1.45	138/157	1.61	0.58	0.85	3.46	62/157
Reading Jan 2013	6	56	1.03	0.13	0.78	1.31	55/56	1.13	0.37	0.58	2.48	35/56
	7	58	1.05	0.14	0.82	1.42	55/58	1.17	0.38	0.65	2.91	41/58
	8	57	1.03	0.13	0.78	1.32	56/57	1.11	0.29	0.48	2.03	42/57
Mathematics Jan 2014	K	60	0.98	0.12	0.77	1.34	58/60	0.90	0.30	0.40	1.53	37/60
	1	91	0.97	0.12	0.76	1.33	89/91	0.92	0.30	0.23	2.00	61/91
	2	130	0.99	0.10	0.77	1.29	130/130	0.98	0.27	0.36	1.95	99/130
	3	235	0.99	0.12	0.77	1.44	231/235	1.02	0.31	0.47	3.11	191/235
	4	248	1.00	0.12	0.75	1.31	247/248	1.03	0.27	0.45	2.21	199/248
	5	221	1.02	0.11	0.79	1.37	218/221	1.07	0.25	0.58	2.22	182/221
Reading Jan 2014	K	84	0.97	0.11	0.77	1.36	83/84	0.91	0.24	0.39	1.51	61/84
	1	98	0.99	0.12	0.77	1.35	96/98	1.02	0.35	0.36	2.75	73/98
	2	98	0.98	0.11	0.76	1.24	98/98	1.02	0.25	0.44	1.80	77/98
	3	178	1.00	0.12	0.77	1.29	178/178	1.04	0.31	0.43	2.44	127/178
	4	189	1.00	0.11	0.78	1.35	188/189	1.01	0.28	0.40	2.70	149/189
	5	134	1.01	0.11	0.77	1.28	134/134	1.04	0.24	0.44	1.91	112/134

Table 8–9 (continued). Summary of Infit and Outfit Mean Square Statistics

Grade/Course		Number of Items	Infit					Outfit				
			Mean	SD	Min	Max	[0.7,1.3]	Mean	SD	Min	Max	[0.7,1.3]
Science Jan 2014	K–2	280	0.99	0.13	0.73	1.43	273/280	1.01	0.34	0.23	2.79	199/280
	3	155	0.99	0.11	0.72	1.29	155/155	0.98	0.28	0.23	1.99	114/155
	4	213	1.00	0.11	0.70	1.27	213/213	1.01	0.24	0.37	1.88	179/213
	5	152	1.07	0.15	0.70	1.59	141/152	1.16	0.29	0.50	2.39	111/152
Writing Jan 2014	K	44	0.90	0.11	0.73	1.20	44/44	0.72	0.26	0.33	1.38	20/44
	1	118	0.96	0.15	0.70	1.42	117/118	0.89	0.32	0.27	1.76	74/118
	2	117	0.98	0.13	0.70	1.46	115/117	0.99	0.26	0.32	1.65	93/117
	3	60	0.98	0.12	0.78	1.22	60/60	0.98	0.27	0.35	1.97	48/60
	4	60	1.00	0.11	0.83	1.34	59/60	1.02	0.29	0.60	2.41	51/60
	5	71	1.03	0.13	0.71	1.37	70/71	1.13	0.40	0.61	2.59	48/71

Chapter Eight: Rasch Item Calibration

RASCH ITEM STATISTICS

As noted earlier, the Rasch model expresses item difficulty (and student ability) in units referred to as *logits*, rather than on the percent-correct metric. In the simplest case, a logit is a transformed *p*-value with the average *p*-value becoming a logit of zero. In this form, logits resemble *z*-scores or standard normal deviates; a very difficult item might have a logit of +4.0 and a very easy item might have a logit of –4.0. However, they have no formal relationship to the normal distribution.

The logit metric has several mathematical advantages over *p*-values. Logits have an interval scale, meaning that two items with logits of 0.0 and +1.0, respectively, are the same distance apart as two items with logits of +3.0 and +4.0. Logits are not dependent on the ability level of the students. For example, a test form can have a mean logit of zero, whether the average item *p*-value for the student sample is 0.8 or 0.3.

The standard Rasch calibration procedure arbitrarily sets the mean difficulty of the items in any calibration at zero. For each CDT stand-alone field-test event and content area, all grades and courses were calibrated separately with the exception of grade 11 items in Mathematics and Science. As a result, items in each grade or course were centered at zero. See Chapter Nine for a description of how item parameters within a content area were re-scaled across grades and courses to build a single (vertical) scale.

For each CDT embedded field-test event and content area, field-test items were calibrated anchoring on operational items' parameters. As a result, the embedded field-test items were placed on operational vertical scale.

Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

Chapter Eight: Rasch Item Calibration

CHAPTER NINE: VERTICAL LINKING

The Classroom Diagnostic Tools (CDT) is designed to enable educators to identify students' academic strengths and areas of need. As such, it is necessary for some students to take items out of grade or course level. In order to do this, all items within a content area must be on a common (vertical) scale.

As previously mentioned in Chapter Eight, items from the first stand-alone field-test event for each CDT content area and grade or course were calibrated separately and centered at zero. This chapter outlines the procedures used for vertically linking CDT items across grades and courses within a content area. The end results are four separate vertical scales—one for each content area.

Also mentioned in Chapter Eight, for each content area, the items from all embedded field-test events and the second stand-alone field-test event were calibrated anchoring on operational items' parameters. As a result, all field-test items after the first stand-alone field-test events were placed on the operational vertical scale.

VERTICAL LINKING DESIGN

The first CDT stand-alone field tests were designed to build vertical scales across all grades and courses within a content area. In order to accomplish this, some field-test forms had items from one grade above or below in addition to on-grade or course-level items.

Stand-alone field tests in each content area had two types of forms:

1. Vertical linking form
2. On-grade-only form

Students who received vertical linking forms took a set of on-grade items and a set of items either one grade above or one grade below. Students who received on-grade-only forms took just on-grade items.

All items in the pool were field tested on one or more forms. In Mathematics, on-grade items were chained across adjacent forms to provide a horizontal link across forms within a grade. There were eight to ten horizontal links across adjacent forms. In all other content areas, 10 on-grade items appeared on each form within a grade or course. These common items provide a horizontal link across forms within a grade.[9]

Items used in vertical linking were administered to students one grade above or one grade below in order to link the forms across grades. DRC test development specialists selected items to be administered off-grade level with the following guidelines:

- There are two types of linking sets.
  - Items administered one grade below (e.g., grade 7 items administered to grade 6 students).
  - Items administered one grade above (e.g., grade 7 items administered to grade 8 students).

[9] The change in horizontal linking design after the Mathematics field test was in response to lower-than-expected participation. Using the same horizontal links on all forms within a grade results in higher *n*-counts.

- Linking sets span the diagnostic categories.
- Linking sets span the estimated difficulty range (item developers estimate easy, medium, or hard).
- Students have a reasonable chance of correctly answering a linking item based on the instruction received.
    - For items administered in the grade above, students should have received instruction the previous year.
    - For items administered in the grade below, they should be extensions of concepts the students have already covered, not something completely new.

In Mathematics, each set of linking items appeared on two forms, once located at the beginning and once located at the end to counterbalance possible position effect. In all other content areas, vertical linking items were co-mingled throughout the form with on-grade items.[10]

See Tables 6–1 through 6–4 in Chapter Six for details on the stand-alone field tests including number of items, number of forms, and number of vertical linking forms.

VERTICAL LINKING — MATHEMATICS

Links were made between adjacent grades, grade 8 to Algebra I, Algebra I to Algebra II, and grade 8 to Geometry. Table 9–1 below shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 30 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The 30 grade 5 items were in two sets of 15, while the 20 grade 6 items were in two sets of 10. The number of linking items differs across grades because forms in grades 3, 4, and 5 had 25 items total while all of the others had 35. There was no overlap of linking items among the sets.

Table 9–1. Mathematics Linking Item Detail

Link	Number of Linking Items		
	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	30	20	50
Grade 6 to Grade 7	30	30	60
Grade 8 to Grade 7	30	30	60
Algebra I to Grade 8	30	30	60
Algebra II to Algebra I	30	30	60
Geometry to Grade 8	30	30	60

[10] The change in vertical linking design after the Mathematics field test was in response to lower-than-expected participation.

A visual representation of the vertical linking design is provided in Table 9–2. Rows are item level and columns are forms. For example, looking at the second row, you can see grade 4 items were on grades 3, 4, and 5 forms. Grade 4 items on grade 4 forms were on-grade items. Grade 4 items on grade 3 and grade 5 forms were vertical linking items. These items also appeared on grade 4 forms and were used to calculate the vertical linking shift parameter.

In linking grades 4 and 5, look at the four cells in Table 9–2 where grade 4 and grade 5 rows and columns cross. There were 86 grade 4 items, and of those 86 items, 20 items were also given to grade 5 as linking items. Similarly, there were 85 grade 5 items, and 20 out of the 85 items were given to grade 4 students as linking items.

Items used to link to a lower grade were different from items used to link to an upper grade. For example, the 30 grade 7 items administered on grade 6 forms were not the same as the 30 grade 7 items administered on grade 8 forms.

Table 9–2. Mathematics Vertical Linking Design

		Forms								
		Gr. 3	**Gr. 4**	**Gr. 5**	**Gr. 6**	**Gr. 7**	**Gr. 8**	**Alg I**	**Geo**	**Alg II**
Items	**Gr. 3**	Gr. 3 Items (86)	Gr. 3 Items (20)							
	Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (86)	Gr. 4 Items (20)						
	Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (85)	Gr. 5 Items (30)					
	Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (259)	Gr. 6 Items (30)				
	Gr. 7				Gr. 7 Items (30)	Gr. 7 Items (258)	Gr. 7 Items (30)			
	Gr. 8					Gr. 8 Items (30)	Gr. 8 Items (257)	Gr. 8 Items (30)	Gr. 8 Items (30)	
	Gr. 11						Gr. 11 Items (30)	Gr. 11 Items (50)	Gr. 11 Items (50)	Gr. 11 Items (50)
	Alg I						Alg I Items (15)	Alg I Items (256)		Alg I Items (30)
	Geo						Geo Items (15)		Geo Items (257)	
	Alg II							Alg II Items (30)		Alg II Items (256)

See Appendix C for details related to vertical linking items such as *n*-counts, Eligible Content, and diagnostic categories.

VERTICAL LINKING — READING/LITERATURE

Links were made between adjacent grades and grade 8 to Literature. Table 9–3 shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9–3. Reading/Literature Linking Item Detail

Link	Number of Linking Items		
	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
Literature to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9–4.

Table 9–4. Reading/Literature Vertical Linking Design

		Forms						
		Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Lit
Items	Gr. 3	Gr. 3 Items (86)	Gr. 3 Items (20)					
	Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (87)	Gr. 4 Items (20)				
	Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (86)	Gr. 5 Items (20)			
	Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (210)	Gr. 6 Items (20)		
	Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (192)	Gr. 7 Items (20)	
	Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (192)	Gr. 8 Items (20)
	Lit						Lit Items (20)	Lit Items (348)

See Appendix C for details related to vertical linking items such as *n*-counts, Eligible Content, and diagnostic categories.

VERTICAL LINKING — SCIENCE

Links were made between adjacent grades, grade 8 to Biology, and grade 8 to Chemistry. Table 9–5 below shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9–5. Science Linking Item Detail

Link	Number of Linking Items		
	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
Biology to Grade 8	20	20	40
Chemistry to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9–6.

Table 9–6. Science Vertical Linking Design

		Forms							
		Gr. 3	**Gr. 4**	**Gr. 5**	**Gr. 6**	**Gr. 7**	**Gr. 8**	**Bio**	**Chem**
Items	**Gr. 3**	Gr. 3 Items (91)	Gr. 3 Items (20)						
	Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (123)	Gr. 4 Items (20)					
	Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (102)	Gr. 5 Items (20)				
	Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (178)	Gr. 6 Items (20)			
	Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (327)	Gr. 7 Items (20)		
	Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (377)	Gr. 8 Items (20)	Gr. 8 Items (20)
	Gr. 11						Gr. 11 Items (115)		
	Bio						Bio Items (20)	Bio Items (390)	
	Chem						Chem Items (20)		Chem Items (335)

See Appendix C for details related to vertical linking items such as *n*-counts, Eligible Content, and diagnostic categories.

VERTICAL LINKING — WRITING/ENGLISH COMPOSITION

Links were made between adjacent grades and grade 8 to English Composition. Table 9–7 shows the number of linking items from the lower grade and the upper grade for each link. There were two sets of linking items for each link and direction. For example, in linking grade 5 to grade 6, there were 20 grade 5 items (lower grade) and 20 grade 6 items (upper grade). The number of linking items was the same across grades.

Table 9–7. Writing/English Composition Linking Item Detail

Link	Number of Linking Items		
	Lower Grade	Upper Grade	Total
Grade 3 to Grade 4	20	20	40
Grade 4 to Grade 5	20	20	40
Grade 5 to Grade 6	20	20	40
Grade 6 to Grade 7	20	20	40
Grade 8 to Grade 7	20	20	40
English Composition to Grade 8	20	20	40

A visual representation of the vertical linking design is provided in Table 9–8.

Table 9–8. Writing/English Composition Vertical Linking Design

		Forms						
		Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Eng
Items	Gr. 3	Gr. 3 Items (140)	Gr. 3 Items (20)					
	Gr. 4	Gr. 4 Items (20)	Gr. 4 Items (149)	Gr. 4 Items (20)				
	Gr. 5		Gr. 5 Items (20)	Gr. 5 Items (165)	Gr. 5 Items (20)			
	Gr. 6			Gr. 6 Items (20)	Gr. 6 Items (193)	Gr. 6 Items (20)		
	Gr. 7				Gr. 7 Items (20)	Gr. 7 Items (176)	Gr. 7 Items (20)	
	Gr. 8					Gr. 8 Items (20)	Gr. 8 Items (195)	Gr. 8 Items (20)
	Eng						Eng Items (20)	Eng Items (365)

See Appendix C for details related to vertical linking items such as *n*-counts, Eligible Content, and diagnostic categories.

THE VERTICAL LINKING PROCEDURE

Each of the CDT content area vertical scales was centered at grade 7. Adjacent-grade shift parameters were calculated and applied such that all items were vertically linked to grade 7. For example, grade 4 science items were placed on the science vertical scale by applying three shift parameters:

- shift between grades 4 and 5 science
- shift between grades 5 and 6 science
- shift between grades 6 and 7 science

The steps used to calculate adjacent-grade shift parameters are described below. All item calibrations were done with WINSTEPS software version 3.69 (Linacre, 2009). The grade 4 to grade 5 link is provided as an example for the steps.

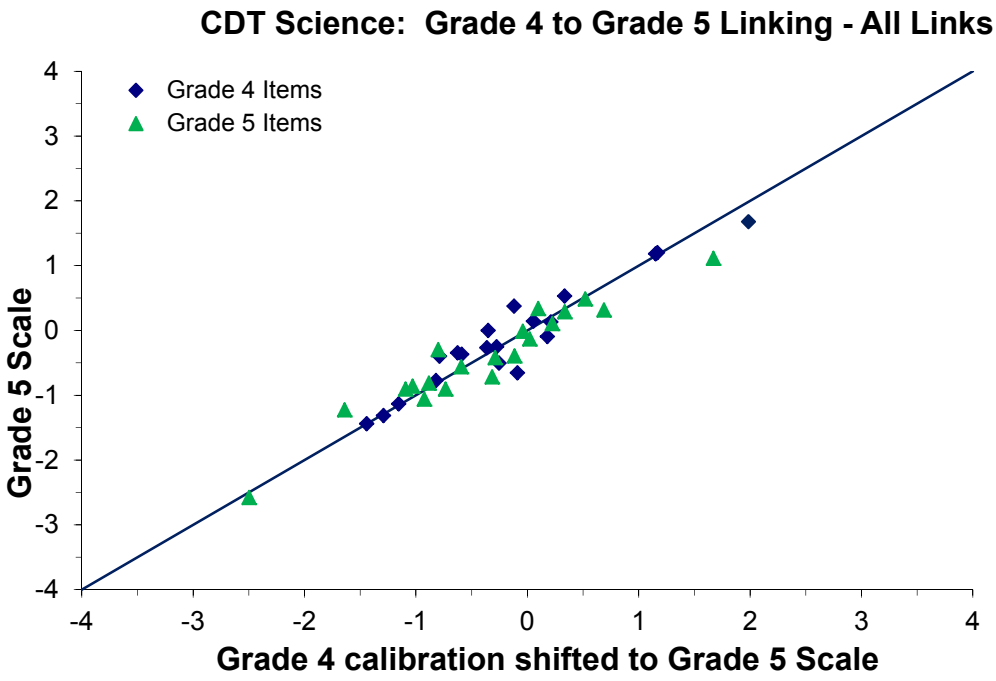
1. Calibrate all on-grade items.
    - Calibrate grade 4 items on grade 4 forms.
    - Calibrate grade 5 items on grade 5 forms.
2. Calibrate off-grade items anchoring on the on-grade items. Anchor values come from step 1.
    - Calibrate grade 5 items on grade 4 forms anchoring on item parameters determined in grade 4 calibration in step 1.
    - Calibrate grade 4 items on grade 5 forms anchoring on item parameters determined in grade 5 calibration in step 1.

      Note: For the linking between grades 4 and 5, the calibration of off-grade items on grade 4 forms includes only grade 5 items. It does not include grade 3 items that appeared on grade 4 forms. That is, grade 3 and grade 5 items that appeared on grade 4 forms are not calibrated together.

    For each of the linking items, there are two estimates of item difficulty—one from each of the two calibrations. Correlation between these should be high. If not, vertical linking will be problematic.
3. Calculate the difference between the two estimates of item difficulty from step 2 for each linking item. The average of these differences is the adjacent grade shift parameter.
    - If grade is less than 7, determine the shift parameter needed to place items on upper grade scale.
    - If grade is greater than 7, determine the shift parameter needed to place items on lower grade scale.
    - Calculate the difference in item difficulty estimates between step 2, bullet 1 (grade 4 scale) and step 2, bullet 2 (grade 5 scale). An example of an Excel table used for calculations can be found in Appendix C.

4. Apply the adjacent grade shift parameter and plot the linking items along with a 45° line. Figure 9–1 below is an example. The 45° line is for visual reference only. Outliers are NOT identified by comparing to the line. See step 5 for details.

Figure 9–1. Sample of Linking Items Plot



Plots for all adjacent grade links can be found in Appendix C.

5. Determine if any items should be removed from the vertical linking process. Identify potential outliers using a combination of correlation, ratio of standard deviation, and robust Z. Discuss these items with test development specialists to determine if they should be removed. An item may be removed from the linking process and still remain in the item pool. In this case, the item is not removed from the on-grade calibrations. That is, do not re-run calibrations in step 1. Repeat steps 2 through 4.
6. Calculate the final shift parameter to the base grade (center of scale) by chaining together adjacent grade shift parameters
    - Grade 7 is the base grade. The final shift parameter for grade 4 items is the shift parameter between grades 4 and 5 plus the shift parameter between grades 5 and 6 plus the shift parameter between grades 6 and 7.
7. Apply the final shift parameters in step 6 to the item parameters calibrated in step 1.

VERTICAL LINKING RESULTS

Table 9–9 shows the number of links, correlation, and shift parameter for the both the initial and final vertical linking for each content area. Initial vertical linking includes all items. Final values were determined after some links were dropped after consultation with test development specialists.

Table 9–9. Vertical Linking Summary

Link		Number of Links		Correlation		Shift Parameter	
		Initial	Final	Initial	Final	Initial	Final
Mathematics	Grade 3 to Grade 4	40	39	0.960	0.964	-1.245	-1.212
	Grade 4 to Grade 5	40	40	0.892	0.892	-0.622	-0.622
	Grade 5 to Grade 6	50	49	0.914	0.910	-0.416	-0.395
	Grade 6 to Grade 7	60	60	0.935	0.935	-0.782	-0.782
	Grade 8 to Grade 7	60	60	0.887	0.887	0.301	0.301
	Algebra I to Grade 8	60	58	0.933	0.941	0.766	0.808
	Algebra II to Algebra I	60	59	0.880	0.905	0.516	0.544
	Geometry to Grade 8	60	60	0.907	0.907	1.022	1.022
Reading	Grade 3 to Grade 4	40	40	0.956	0.956	-0.257	-0.257
	Grade 4 to Grade 5	40	38	0.940	0.954	-0.410	-0.348
	Grade 5 to Grade 6	40	39	0.948	0.965	-0.419	-0.389
	Grade 6 to Grade 7	40	37	0.914	0.945	-0.066	-0.092
	Grade 8 to Grade 7	40	40	0.934	0.934	0.352	0.352
	Literature to Grade 8	40	40	0.929	0.929	0.383	0.383
Science	Grade 3 to Grade 4	40	40	0.952	0.952	-0.570	-0.570
	Grade 4 to Grade 5	40	40	0.956	0.956	-0.773	-0.773
	Grade 5 to Grade 6	40	40	0.968	0.968	-0.211	-0.211
	Grade 6 to Grade 7	40	39	0.938	0.945	-0.135	-0.111
	Grade 8 to Grade 7	40	40	0.973	0.973	0.140	0.140
	Biology to Grade 8	40	38	0.858	0.904	0.815	0.821
	Chemistry to Grade 8	40	37	0.882	0.932	1.172	1.136
Writing	Grade 3 to Grade 4	40	40	0.957	0.957	-0.597	-0.597
	Grade 4 to Grade 5	40	40	0.954	0.954	-0.221	-0.221
	Grade 5 to Grade 6	40	40	0.967	0.967	-0.305	-0.305
	Grade 6 to Grade 7	40	40	0.950	0.950	-0.237	-0.237
	Grade 8 to Grade 7	40	40	0.967	0.967	0.221	0.221
	English Composition to Grade 8	40	40	0.961	0.961	0.176	0.176

Recall that for each content area the vertical scale is centered at grade 7. If the item's grade is less than 7, the shift parameter is the value that is added to place the item on the upper grade scale. For example, -1.212 is added to each grade 3 mathematics item's difficulty to place them on the grade 4 scale. The negative sign indicates that grade 3 items are less difficult than grade 4 items. If the item's grade is greater than 7, the shift parameter is the value added to place the item on the lower grade scale. For example, 0.301 is added to each

grade 8 mathematics item's difficulty to place them on the grade 7 scale. The positive sign indicates that grade 8 items are more difficult than grade 7 items.

Items dropped from vertical linking are shown in Table 9–10. Linking plots in Appendix C show all linking items with dropped items in red.

Table 9–10. Items Dropped from Vertical Linking

	Link	Linking Items Removed
Mathematics	Grade 3 to Grade 4	603609 (gr. 4 item)
	Grade 4 to Grade 5	None
	Grade 5 to Grade 6	602104 (gr. 6 item)
	Grade 6 to Grade 7	None
	Grade 8 to Grade 7	None
	Algebra I to Grade 8	601126 (gr. 8 item) and 602644 (gr. 11 item*)
	Algebra II to Algebra I	603086 (Alg II item)
	Geometry to Grade 8	None
Reading	Grade 3 to Grade 4	None
	Grade 4 to Grade 5	611272 (gr. 5 item) and 611274 (gr. 5 item)
	Grade 5 to Grade 6	610309 (gr. 6 item)
	Grade 6 to Grade 7	610135 (gr. 6 item), 609022 (gr. 6 item), and 609023 (gr. 6 item)
	Grade 8 to Grade 7	None
	Literature to Grade 8	None
Science	Grade 3 to Grade 4	None
	Grade 4 to Grade 5	None
	Grade 5 to Grade 6	None
	Grade 6 to Grade 7	615238 (gr. 7 item)
	Grade 8 to Grade 7	None
	Biology to Grade 8	617395 (Bio item) and 617880 (Bio item)
	Chemistry to Grade 8	618699 (Chem item), 616511 (Chem item), and 616365 (Chem item)
Writing	Grade 3 to Grade 4	None
	Grade 4 to Grade 5	None
	Grade 5 to Grade 6	None
	Grade 6 to Grade 7	None
	Grade 8 to Grade 7	None
	English Composition to Grade 8	None
*The grade 11 item was embedded on an Algebra I form		

The final shift parameters were calculated by summing adjacent grade shift parameters. For example, grade 4 items were placed on the vertical scale by applying the grade 4 to grade 5 shift, the grade 5 to grade 6 shift, and the grade 6 to grade 7 shift. Similarly, Algebra I items were placed on the vertical scale by applying the Algebra I to grade 8 shift and the grade 8 to grade 7 shift. Table 9–11 shows the final shift parameters for each content area.

Table 9–11. Final Vertical Linking Shift Parameters

	Grade/Course	Shift
Mathematics	Grade 3	-3.011
	Grade 4	-1.799
	Grade 5	-1.177
	Grade 6	-0.782
	Grade 7	0.000
	Grade 8	0.301
	Algebra I	1.109
	Geometry	1.323
	Algebra II	1.653
Reading	Grade 3	-1.086
	Grade 4	-0.829
	Grade 5	-0.481
	Grade 6	-0.092
	Grade 7	0.000
	Grade 8	0.352
	Literature	0.735
Science	Grade 3	-1.665
	Grade 4	-1.095
	Grade 5	-0.322
	Grade 6	-0.111
	Grade 7	0.000
	Grade 8	0.140
	Biology	0.961
	Chemistry	1.276
Writing	Grade 3	-1.360
	Grade 4	-0.763
	Grade 5	-0.542
	Grade 6	-0.237
	Grade 7	0.000
	Grade 8	0.221
	English Composition	0.397

The final vertical linking shift parameters for grade 7 in each content area is zero because it is the base grade. The final vertical linking parameter applied to grade 11 items in mathematics and science is based on the grade or course where the items were field tested. For example, the Algebra I vertical linking constant is applied to grade 11 mathematics items which appeared on Algebra I forms.

BANKED ITEM PARAMETERS FROM STAND-ALONE FIELD TESTS

Table 9–12 provides summary information based on the first stand-alone field-test events which were used to establish the content area vertical scales. The table shows the mean, standard deviation, minimum, and maximum of the item parameter estimates for each grade or course level on the content area vertical scales.

Table 9–12. Summary Statistics for Vertically Scaled Item Parameters from Stand-Alone Field Test

	Grade/Course	Mean	SD	Min	Max
Mathematics	Grade 3	-3.011	1.222	-6.641	0.052
	Grade 4	-1.799	1.008	-4.388	0.781
	Grade 5	-1.177	1.031	-4.367	1.172
	Grade 6	-0.782	1.122	-3.821	2.748
	Grade 7	0.000	0.979	-2.385	2.800
	Grade 8	0.301	0.939	-2.743	2.985
	Grade 11	0.939	1.014	-1.175	3.713
	Algebra I	1.109	0.763	-0.888	3.099
	Geometry	1.323	0.865	-1.125	3.482
	Algebra II	1.653	0.955	-1.377	4.181
Reading	Grade 3	-1.086	1.045	-3.761	1.855
	Grade 4	-0.829	0.944	-3.242	2.177
	Grade 5	-0.481	1.039	-3.201	1.964
	Grade 6	-0.092	1.060	-2.653	3.580
	Grade 7	0.000	1.077	-3.744	3.259
	Grade 8	0.352	1.039	-3.127	3.093
	Literature	0.735	0.929	-2.115	3.313
Science	Grade 3	-1.665	1.302	-5.319	0.813
	Grade 4	-1.095	1.145	-4.453	1.663
	Grade 5	-0.322	0.948	-2.899	1.683
	Grade 6	-0.111	0.971	-2.347	2.546
	Grade 7	0.000	0.910	-2.531	2.532
	Grade 8	0.140	1.035	-2.654	3.309
	Grade 11	0.773	0.892	-2.216	2.377
	Biology	0.961	0.867	-1.331	3.731
	Chemistry	1.276	0.688	-1.101	3.064
Writing	Grade 3	-1.360	1.196	-4.536	2.958
	Grade 4	-0.763	1.140	-3.608	1.899
	Grade 5	-0.542	1.073	-3.780	2.462
	Grade 6	-0.237	1.052	-2.724	4.390
	Grade 7	0.000	1.132	-2.866	3.593
	Grade 8	0.221	1.120	-3.234	2.883
	English Composition	0.397	1.087	-2.531	3.617

Figures 9–2 through 9–5 show the banked item parameter estimates following the first stand-alone field-test events for each grade or course on the content area vertical scales.

Figure 9–2. Mathematics Item Parameters Estimates from Stand-Alone Field Test

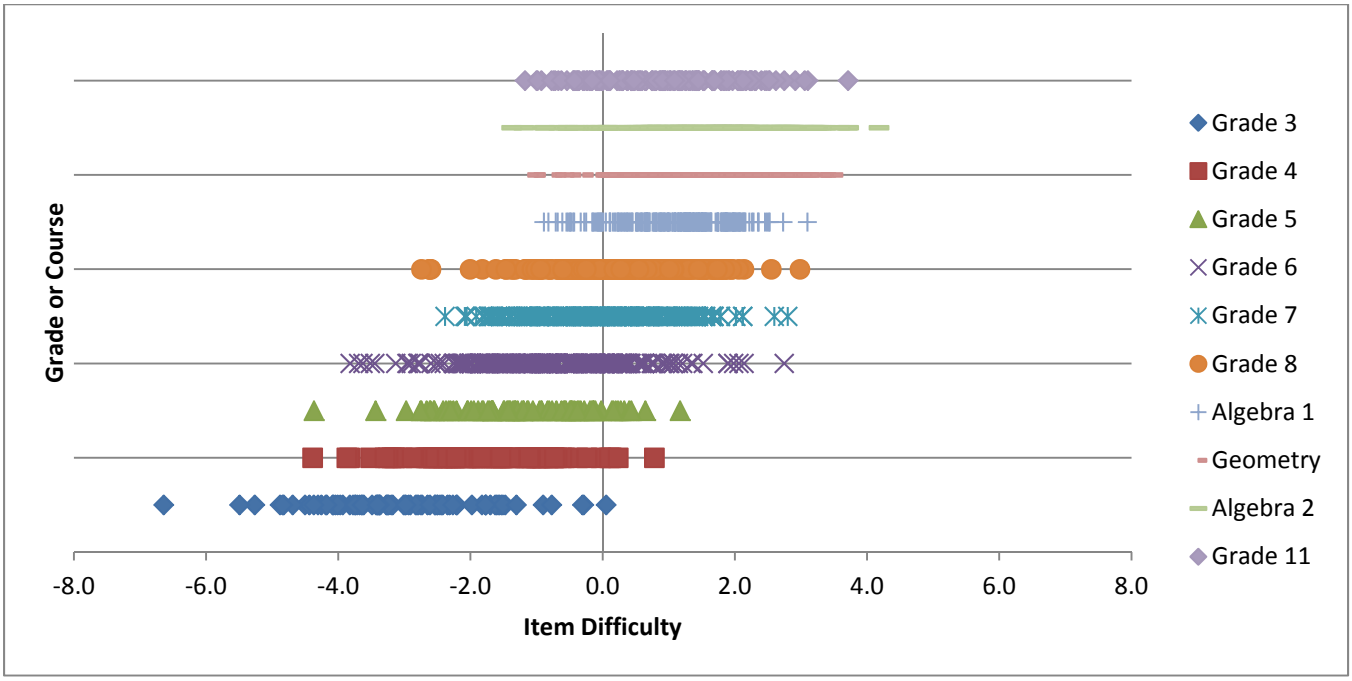


Figure 9–3. Reading/Literature Item Parameters Estimates from Stand-Alone Field Test

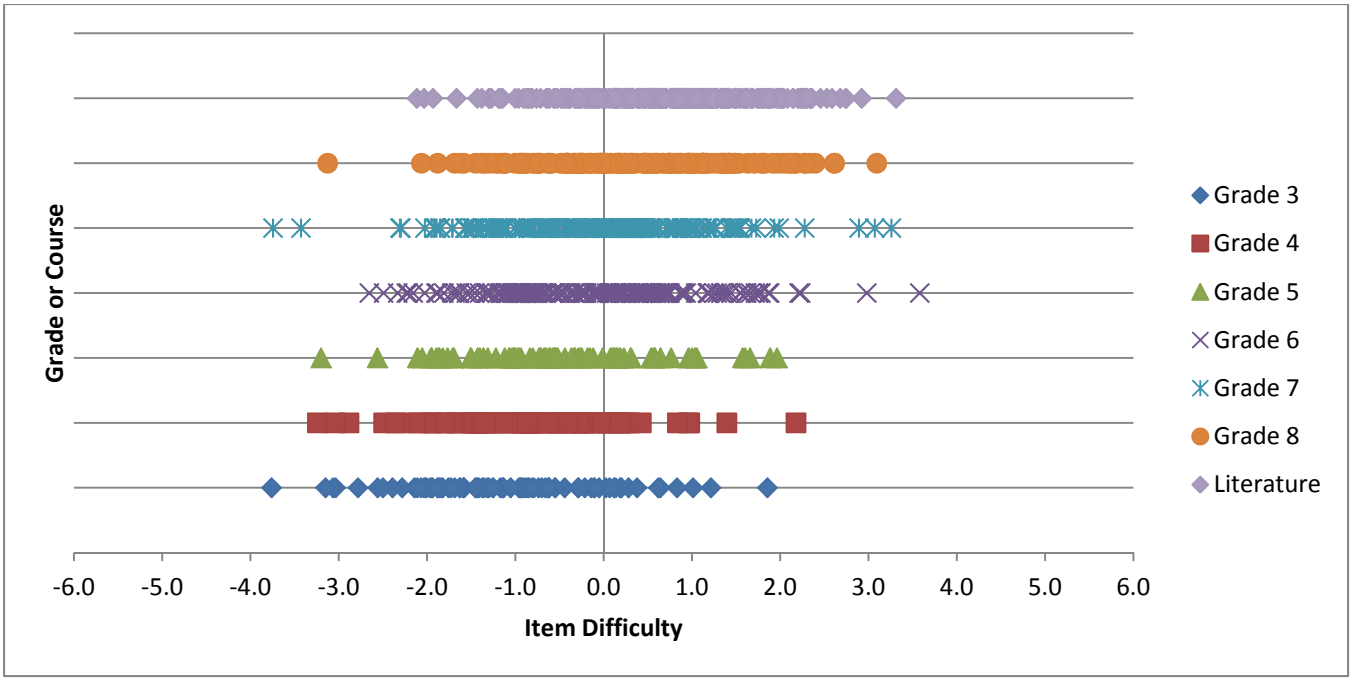


Figure 9–4. Science Item Parameters Estimates from Stand-Alone Field Test

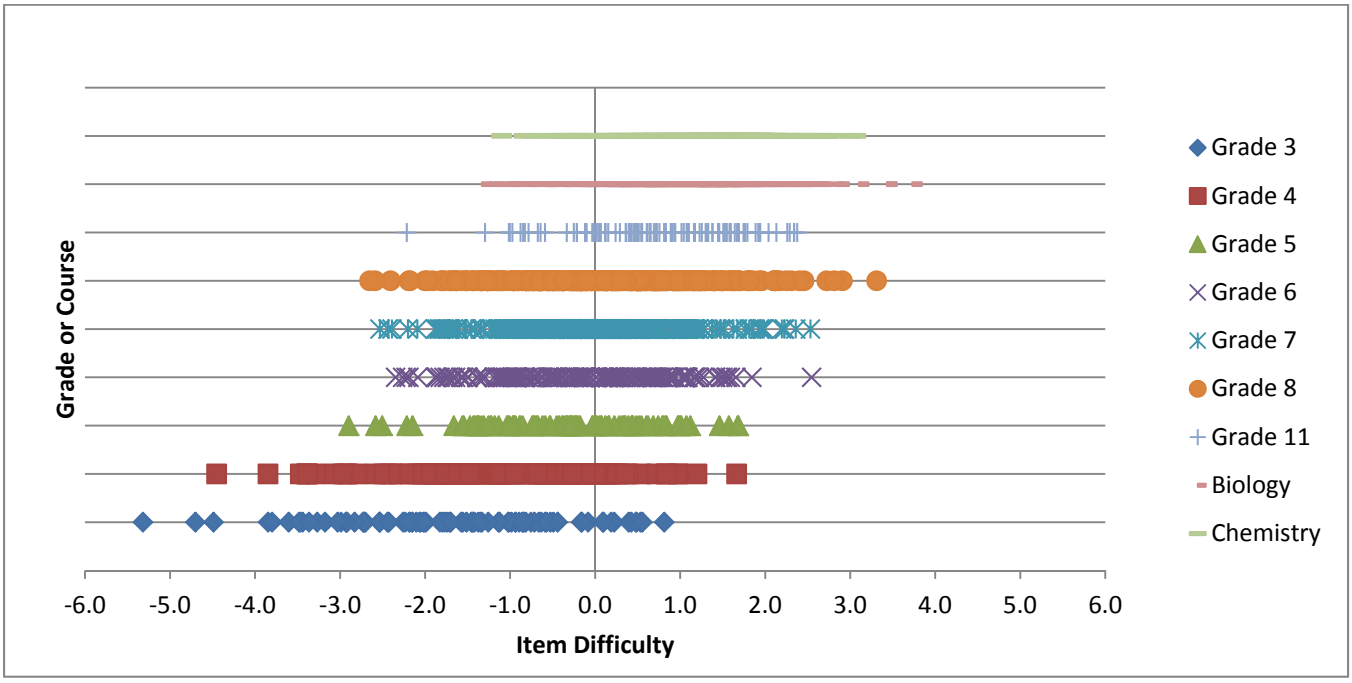
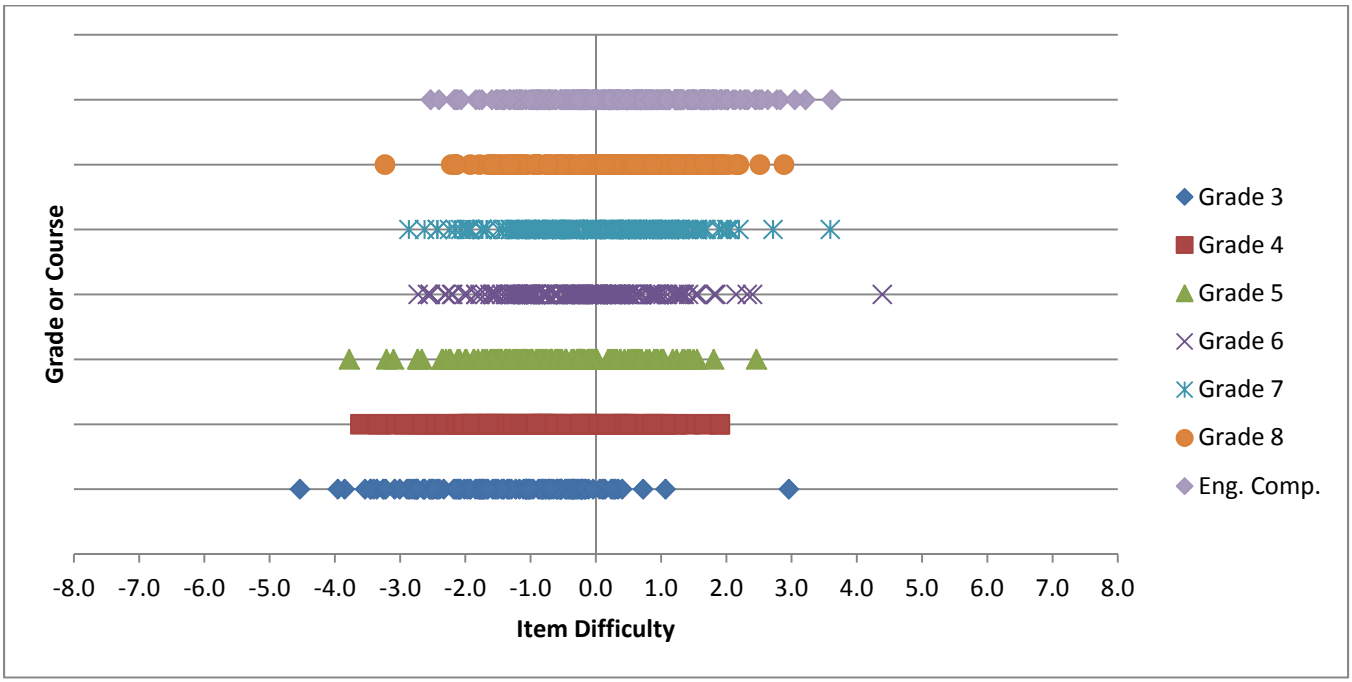


Figure 9–5. Writing/English Composition Item Parameters Estimates from Stand-Alone Field Test



Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

BANKED ITEM PARAMETERS FOR THE 2013–2014 OPERATIONAL ITEM POOLS

A number of changes to the CDT item pools have occurred since the initial stand-alone field-test events and creation of the content area vertical scales. Before the 2013–2014 school year all CDT items were re-aligned to the new Pennsylvania Core Standards. Additionally, there were stand-alone and embedded field-test events to introduce items in kindergarten, grade 1, and grade 2 as well as augment the item pools for grades 3 and above. See Chapter Six for details on the various field-test events. Table 9–13 provides summary information based on the operational item pools for the 2013–2014 school year. The table shows the mean, standard deviation, minimum, and maximum of the item parameter estimates for each grade or course level on the content area vertical scales.

Table 9–13. Summary Statistics for Vertically Scaled Item Parameters for 2013–2014 School Year

	Grade/Course	Mean	SD	Min	Max
Mathematics	Kindergarten	-3.832	1.336	-6.360	-0.611
	Grade 1	-3.697	1.083	-5.955	-0.610
	Grade 2	-2.929	1.364	-5.987	0.402
	Grade 3	-1.590	1.243	-5.492	2.158
	Grade 4	-1.154	1.274	-6.641	2.748
	Grade 5	-0.606	1.026	-2.990	2.139
	Grade 6	-0.123	1.182	-3.821	3.389
	Grade 7	0.370	0.960	-2.882	2.893
	Grade 8	0.546	0.847	-1.662	3.651
	Algebra I	1.101	0.755	-0.888	2.731
	Geometry	1.173	0.928	-2.058	3.482
	Algebra II	1.622	0.935	-1.377	4.181
Reading	Kindergarten	-2.586	0.942	-4.352	-0.009
	Grade 1	-1.716	1.041	-4.780	0.831
	Grade 2	-1.226	0.853	-3.869	0.533
	Grade 3	-0.909	1.107	-4.500	1.855
	Grade 4	-0.421	1.123	-3.608	2.464
	Grade 5	-0.175	0.974	-3.201	1.964
	Grade 6	-0.150	0.990	-2.653	2.232
	Grade 7	0.071	1.010	-3.744	3.259
	Grade 8	0.368	1.014	-3.127	2.615
	Literature	0.694	0.896	-2.115	2.743

Table 9–13 (continued). Summary Statistics for Vertically Scaled Item Parameters for 2013–2014 School Year

	Grade/Course	Mean	SD	Min	Max
Science	Grades K–2 span	-2.285	1.151	-5.446	1.864
	Grade 3	-1.775	1.269	-5.319	0.806
	Grade 4	-1.107	1.192	-7.111	1.689
	Grade 5	-0.497	0.829	-2.899	1.721
	Grade 6	-0.172	0.937	-2.347	1.655
	Grade 7	-0.094	0.876	-2.531	2.532
	Grade 8	0.032	0.993	-2.654	3.309
	Grade 11	0.672	0.944	-2.216	2.391
	Biology	0.954	0.877	-1.331	3.731
	Chemistry	1.266	0.685	-1.101	3.064
Writing	Kindergarten	-3.190	1.026	-5.685	0.047
	Grade 1	-2.514	1.025	-5.107	0.693
	Grade 2	-1.885	0.891	-4.436	-0.064
	Grade 3	-1.037	1.300	-4.536	2.958
	Grade 4	-0.609	1.145	-3.683	2.137
	Grade 5	-0.579	1.069	-3.780	1.929
	Grade 6	-0.289	1.012	-2.580	2.162
	Grade 7	-0.039	0.995	-2.625	2.194
	Grade 8	-0.035	1.113	-3.234	2.192
	English Composition	0.341	1.042	-2.531	3.214

Figures 9–6 through 9–9 show the banked item parameter estimates for the operational item pools for the 2013–2014 school year for each grade or course on the content area vertical scales.

Figure 9–6. Mathematics Item Parameters Estimates for 2013–2014 School Year

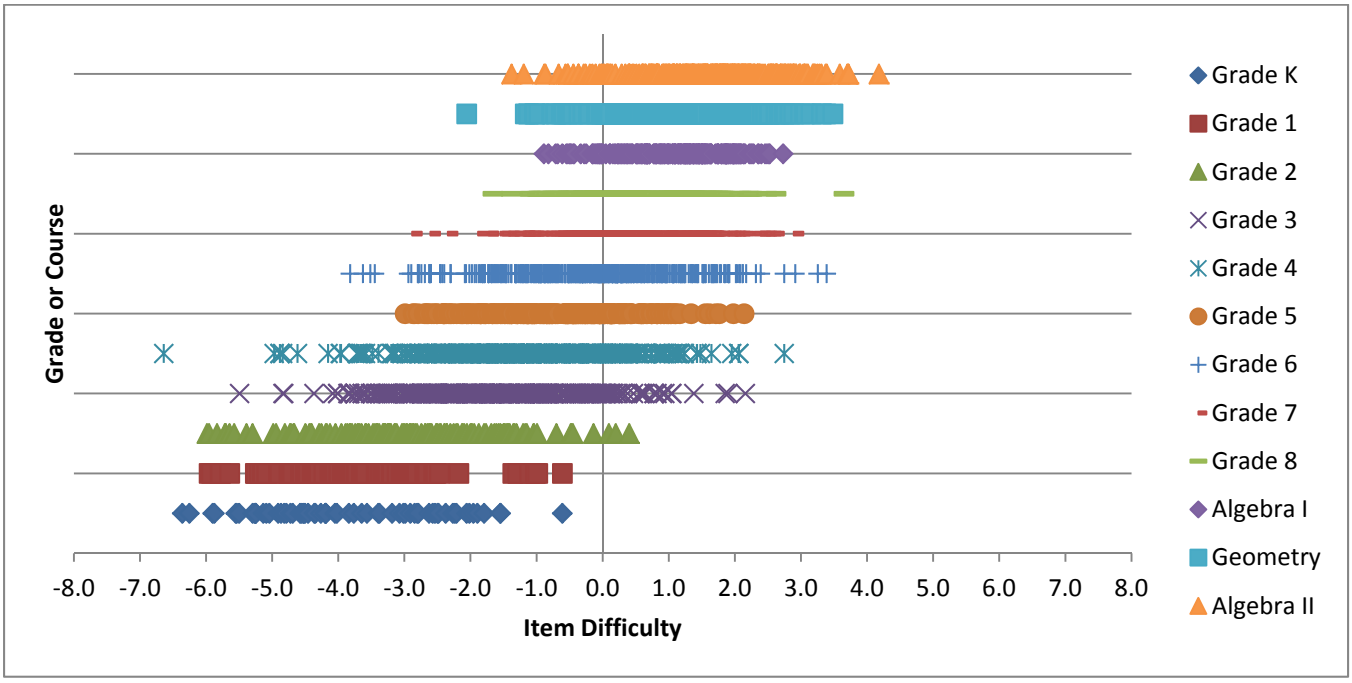


Figure 9–7. Reading/Literature Item Parameters Estimates for 2013–2014 School Year

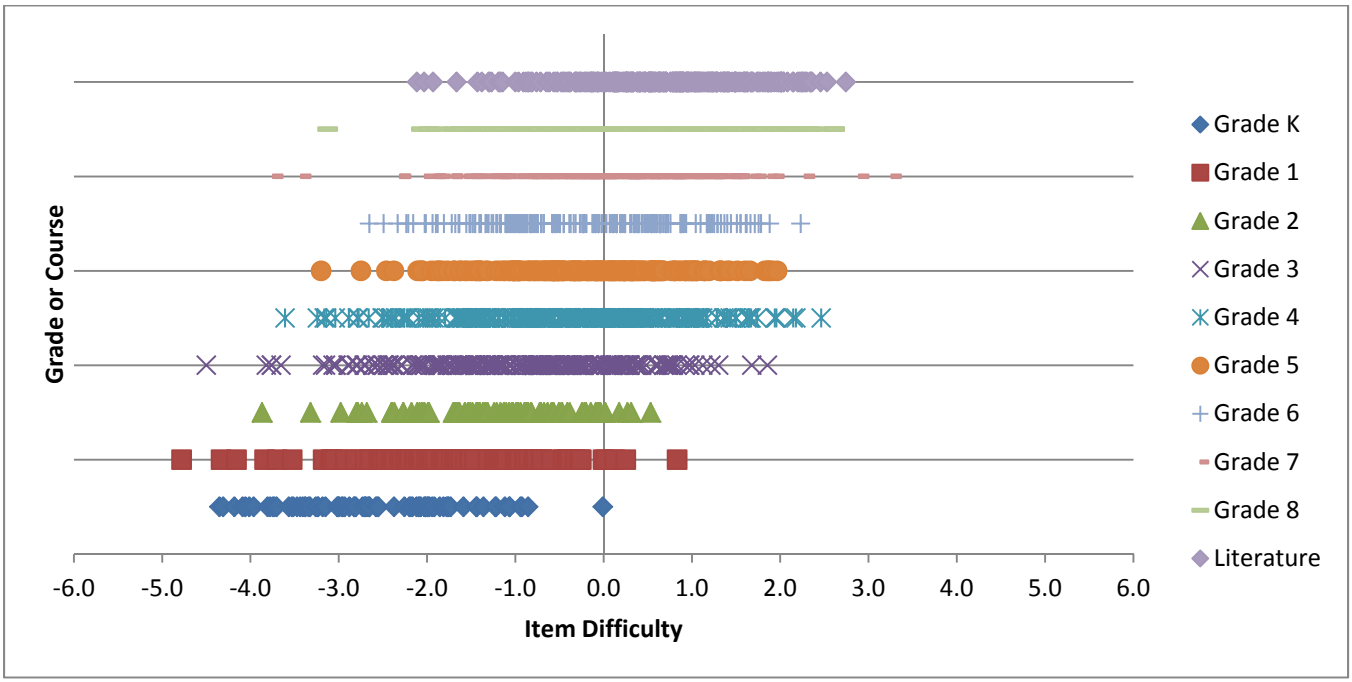


Figure 9–8. Science Item Parameters Estimates for 2013–2014 School Year

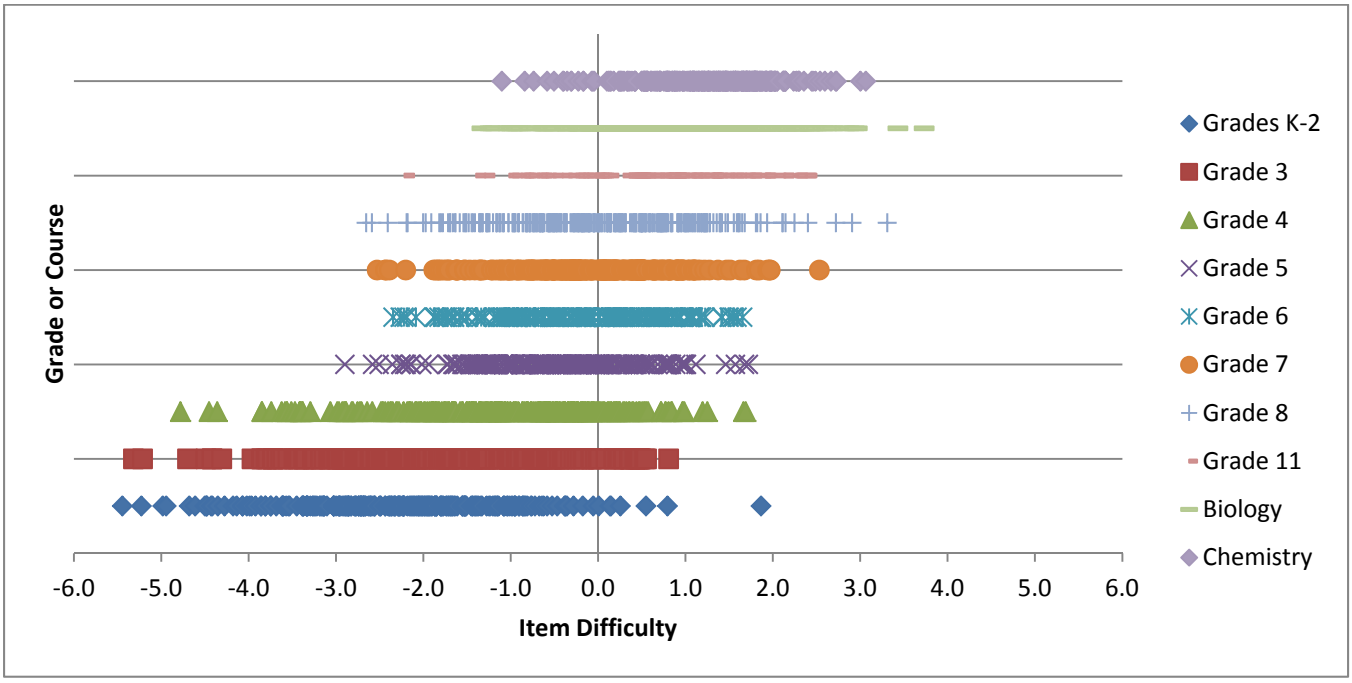
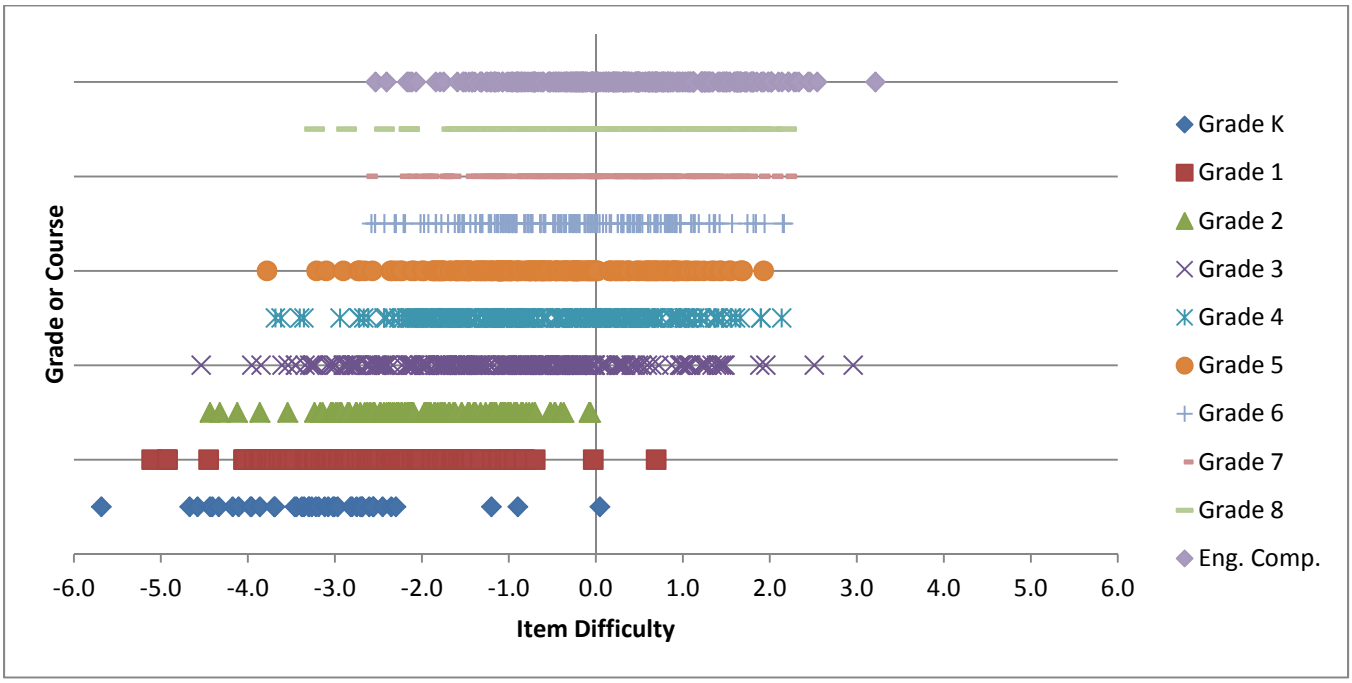


Figure 9–9. Writing/English Composition Item Parameters Estimates for 2013–2014 School Year



Rasch item difficulty measure on the vertical scale and associated standard error for each item are presented in Appendix B.

CHAPTER TEN: BENCHMARKING

As described in Chapter Fourteen, CDT scores are placed along a continuum from "Areas of Need" to "Strengths to Build On." These are represented in the dynamic reporting suite with colors red, green, and blue. "Areas of Need" are depicted in the red range, while "Strengths to Build On" are depicted in the green and blue ranges. The center of the green range is the point that separates students into two categories: solidly ready for the next grade or course and not solidly ready for the next grade or course. In each content area, the center of the green range for grades 5 and above was established by panels of Pennsylvania educators during benchmarking activities[11].

BENCHMARKING ACTIVITIES

Table 10–1 below presents general information about the preliminary benchmarking activities for mathematics, reading, science, and writing. The cut points established are considered preliminary because they were set prior to the first operational administration of the CDT. This was necessary so teachers and students would have access to immediate scores and reports following operational administration. As operational data become available, preliminary cut points are reevaluated and possibly revised (see Chapter Nineteen).

Table 10–1. General Information About CDT Benchmarking Activities

Category	Information
Event Dates	Mathematics: August 12–13, 2010
	Reading: January 27–28, 2011
	Science: January 27–28, 2011
	Writing: August 4–5, 2011
Grades/Courses	Mathematics: Grades 5–8, High School, Algebra I, Geometry, Algebra II
	Reading: Grades 5–8, Literature
	Science: Grades 5–8, High School, Biology, Chemistry
	Writing: Grades 5–8, English Composition
Methodology	Randomly Ordered Item Booklet (ROIB) Angoff (Yes/No) Method
Categories	Not solidly ready for the next grade or course
	Solidly ready for the next grade or course
Number of Panelists	Mathematics: 28
	Reading: 23
	Science: 20
	Writing: 46
Rounds	Two

There were three separate CDT benchmarking events because the operational CDT was rolled out in phases by content area. Each benchmarking event followed the initial stand-alone field-test event for that content area.

[11] The center of the green range for grades 2 through 4 was extrapolated from grades 5 and above prior to the launch of each CDT for students in grades 3 through 5 in spring of 2014. See Chapter Nineteen for details.

Chapter Ten: Benchmarking

When initially launched, the CDT was available to students in grades 6 and above. However, cut points were established for grades 5 and above. This is because CDT is available throughout the school year. Early in the school year it may be more appropriate to evaluate a student's scores based on the prior grade cut. For example, in October, a teacher may choose to evaluate a grade 6 student's scores relative to the grade 5 cut.

The Randomly Ordered Item Booklet (ROIB) Angoff (Yes/No) method was used to set CDT benchmark cut points. Panels of educators worked in grade/course groups to establish cut points for grades 5 through 8, high school, and content area courses Algebra I, Geometry, Algebra II, Literature, Biology, Chemistry, and English Composition. After a training session describing the process and definition of roles, a discussion was held in which panelists were asked to describe what "solidly ready for the next grade or course" means. Thereafter, panelists were asked to review approximately 40 test questions and make individual yes/no judgments as to whether a "solidly ready" student would be successful in answering each question. The judgments were made over two iterations or rounds with a sequence of Round 1 judgments, show and verification of Round 1 results, group discussion, and Round 2 judgments.

After cut points were set for each grade and course within a content area, the vertical articulation of cut points across grades and courses was reviewed. Given that each content area is vertically scaled, it was expected that cut points would increase as grade increased. For example, the grade 8 cut point would not be lower than the grade 7 cut point on the vertical scale. In some cases, post-smoothing was required to ensure increasing cut points across grades/courses and smooth transitions.

Complete descriptions of each benchmarking activity including post-smoothing are available in TAC documents:

- *Classroom Diagnostic Tools – Results for Preliminary Benchmarking Activity – Mathematics*
- *Classroom Diagnostic Tools – Results for Preliminary Benchmarking Activity – Reading and Science*
- *Classroom Diagnostic Tools – Results for Preliminary Benchmarking Activity – Writing*

BENCHMARKING RESULTS

Preliminary cut points in the logit metric for each content area are shown in Figures 10–1 through 10–4. In general, the difference between cut points is greater in the lower grades and then levels off.

Figure 10–1. Preliminary Benchmark Cut Points for Mathematics

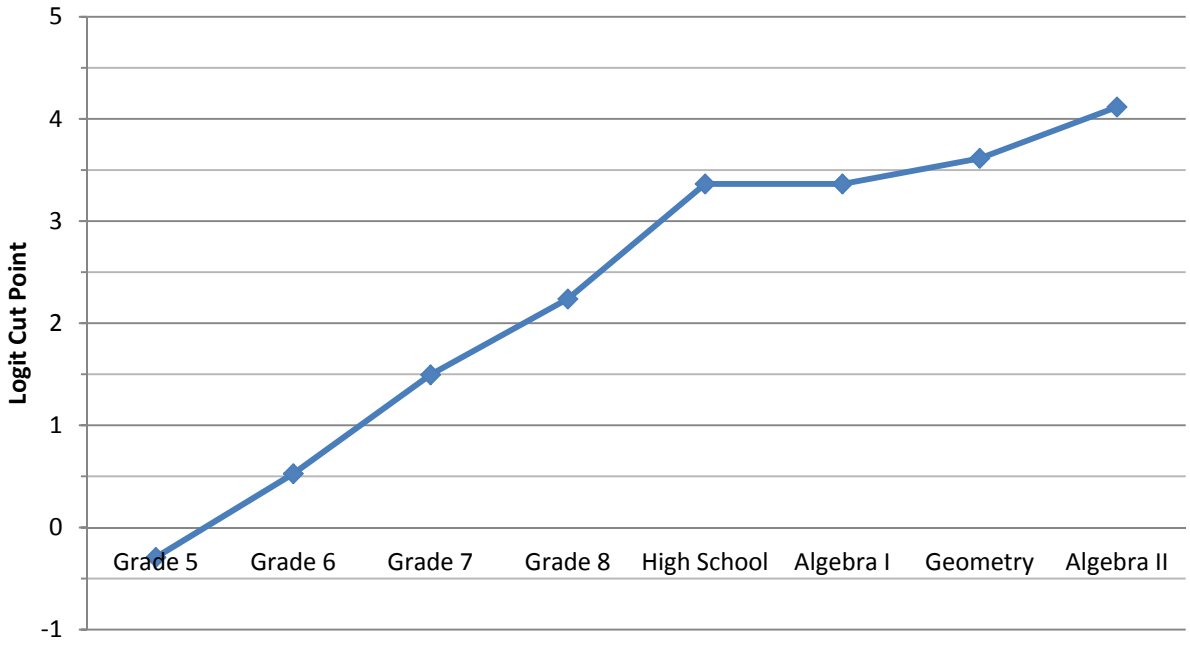


Figure 10–2. Preliminary Benchmark Cut Points for Reading

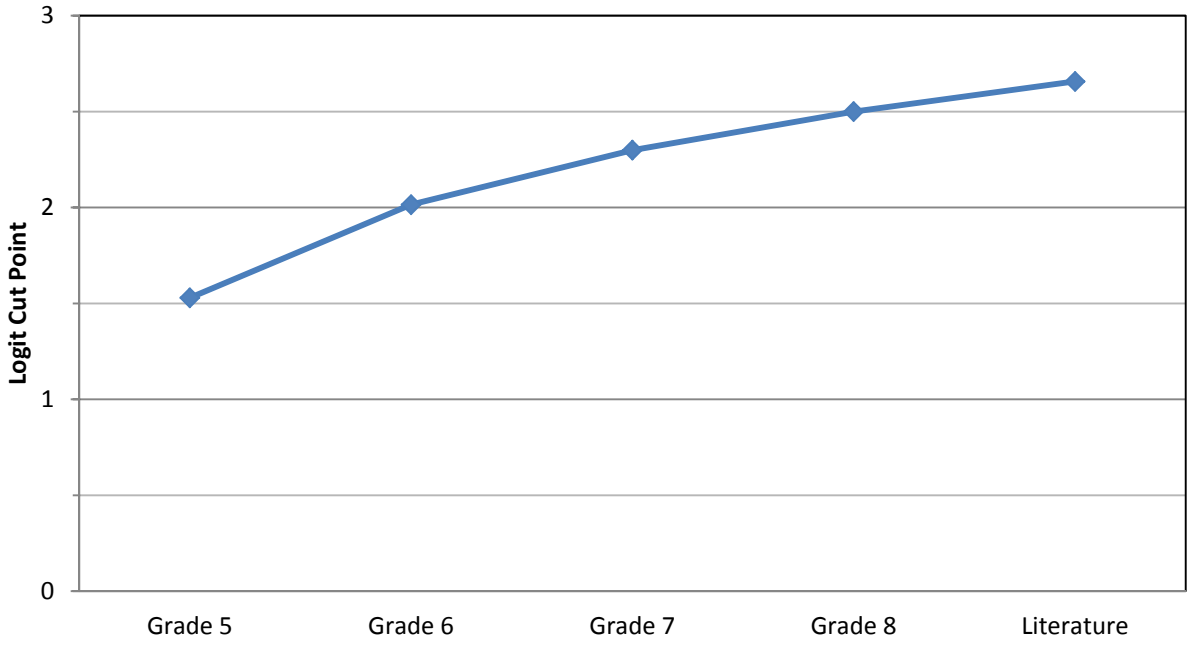


Figure 10–3. Preliminary Benchmark Cut Points for Science

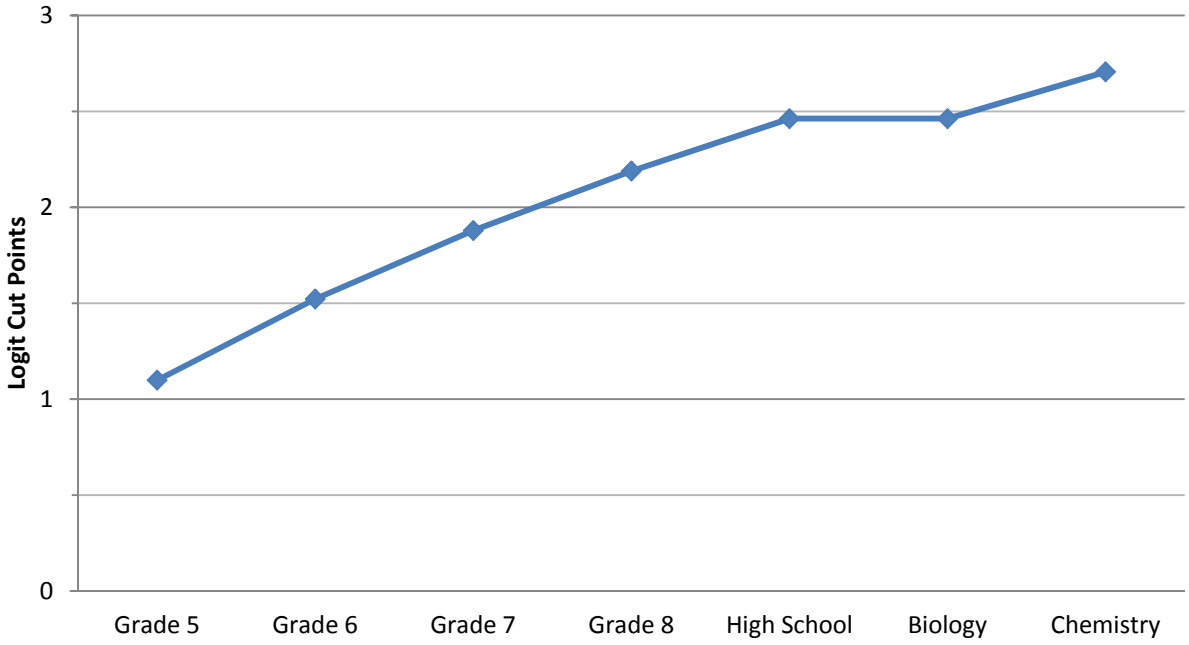


Figure 10–4. Preliminary Benchmark Cut Points for Writing

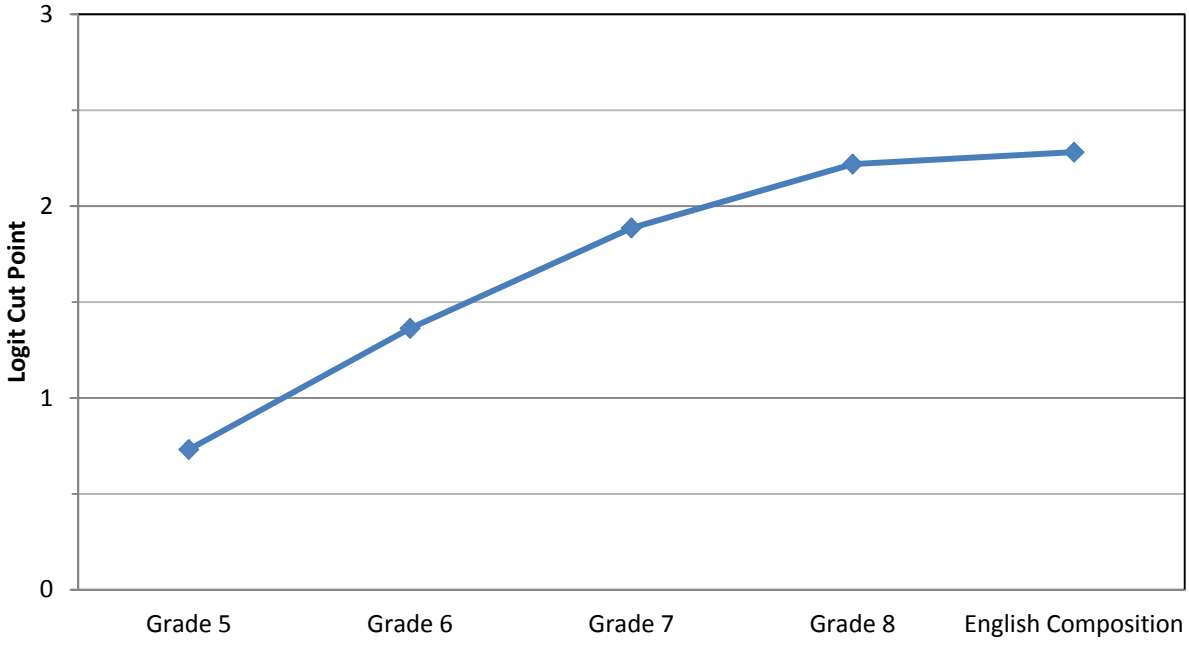


Table 10–2 shows the preliminary benchmark cuts in the logit metric for each content area. Also presented are the scale score ranges for each color on the CDT reports.

Table 10–2. Preliminary Benchmark Cuts and Scale Score Ranges

Grade or Course		Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Mathematics	Grade 5	-0.292	400 - 895	896 - 1058	1059 - 2000
	Grade 6	0.526	400 - 997	998 - 1160	1161 - 2000
	Grade 7	1.495	400 - 1118	1119 - 1281	1282 - 2000
	Grade 8	2.238	400 - 1211	1212 - 1374	1375 - 2000
	High School	3.363	400 - 1351	1352 - 1514	1515 - 2000
	Algebra I	3.363	400 - 1351	1352 - 1514	1515 - 2000
	Geometry	3.614	400 - 1383	1384 - 1546	1547 - 2000
	Algebra II	4.117	400 - 1446	1447 - 1609	1610 - 2000
Reading	Grade 5	1.529	400 - 982	983 - 1197	1198 - 2000
	Grade 6	2.015	400 - 1051	1052 - 1266	1267 - 2000
	Grade 7	2.299	400 - 1092	1093 - 1307	1308 - 2000
	Grade 8	2.500	400 - 1121	1122 - 1336	1337 - 2000
	Literature	2.657	400 - 1143	1144 - 1358	1359 - 2000
Science	Grade 5	1.099	400 - 1009	1010 - 1182	1183 - 2000
	Grade 6	1.522	400 - 1066	1067 - 1239	1240 - 2000
	Grade 7	1.879	400 - 1113	1114 - 1286	1287 - 2000
	Grade 8	2.189	400 - 1154	1155 - 1327	1328 - 2000
	High School	2.462	400 - 1190	1191 - 1363	1364 - 2000
	Biology	2.462	400 - 1190	1191 - 1363	1364 - 2000
	Chemistry	2.706	400 - 1223	1224 - 1396	1397 - 2000
Writing	Grade 5	0.731	400 - 959	960 - 1132	1133 - 2000
	Grade 6	1.363	400 - 1043	1044 - 1216	1217 - 2000
	Grade 7	1.886	400 - 1113	1114 - 1286	1287 - 2000
	Grade 8	2.219	400 - 1157	1158 - 1330	1331 - 2000
	English Composition	2.281	400 - 1166	1167 - 1339	1340 - 2000

Chapter Ten: Benchmarking

CHAPTER ELEVEN: SCALING

Scaling is used to transform test score values onto a scale that can be interpreted by users easily and correctly. Raw scores cannot be used to compare students' achievement on the CDT because they depend on the difficulty of the test items administered. Given the adaptive nature of the CDT, each student receives test items targeted at his or her level of achievement. Therefore, two students may have taken very different sets of items in terms of difficulty but have the same raw score. This makes use of raw scores for comparison across students, across administrations, or to a specific standard (cut point) meaningless. Rasch ability estimates in the logit metric do take into consideration the difficulty of the items administered. Therefore, they may be used to make comparisons. However, scale scores are introduced to report CDT results since scale scores may be easier to understand and interpret than logits.

Essentially, CDT scale scores are derived through a two-step process. First, there is a nonlinear transformation that converts an individual raw score on a unique set of items to Rasch ability (in logits). Second, a linear transformation is used to convert logits to scale scores. These and some additional considerations (e.g., rounding rules) are discussed in more detail below.

RAW SCORES TO RASCH ABILITY ESTIMATES

For each CDT test, the calibrated item difficulties associated with the unique set of items administered were used to obtain Rasch person ability estimates and asymptotic standard errors of measurement for the overall test, as well as each diagnostic category. Calibrated item difficulties were based on the field tests and vertical linking (further discussed in Chapter Eight and Chapter Nine).

Raw scores (total and diagnostic category) on the unique set of items that makes up an individual CDT test were mapped to Rasch ability estimates using unconditional, joint-maximum likelihood estimation. In the case of zero or perfect raw scores, a fractional raw score (a value less than one) was added to zero scores and subtracted from perfect scores to determine the corresponding logit values for these extreme scores. The Rasch ability estimates were then transformed to scale scores as discussed in the next section.

RASCH ABILITY ESTIMATES TO SCALE SCORES

Generally, scale scores are preferred over Rasch ability estimates for reporting purposes. One issue is that Rasch ability estimates are on a scale that includes negative and decimal values. By transforming the Rasch ability estimates to scale scores, all reported values can become positive integers, which makes more sense to teachers, parents, and students. Since Rasch ability estimates are comparative, the transformed scale scores have a common scale across administrations.

Scale scores are usually obtained through some linear transformation of Rasch ability estimates. Before the linear equation was established for each content area, a few points were considered for the CDT:

- Avoid scales that might be confused with scores for other types of assessment; for example:
  - Scale scores ranging from 0 to 100 (because this might be confused with percent correct scores or percentile ranks)
  - Scale scores ranging from 200 to 800 (because this might be confused with SAT scores)
  - Scale scores with similar ranges as the ones for the Pennsylvania System of School Assessment (PSSA) or Keystone Exams
- Avoid scales similar to raw scores.
- Avoid scales that might suggest the scores are more precise than they actually are (in other words, suggesting more precision than can be supported by the test scores).
- Avoid scales with negative numbers and decimals.

In terms of industry standard practice, a common perspective is that scale scores should facilitate score interpretation while at the same time minimize misinterpretation and unwarranted inferences. Often this is done by incorporating some kind of meaning to the scores[12] (Peterson, Kolen, and Hoover, 1989). The incorporation of content meaning is one way to facilitate score interpretation. This might be done in several different ways. For example, the current PSSA scaled scores, like those of many other state assessments, try to input some content meaning by having the PSSA performance level cut scores have known values on the scaled score metric. Such an approach appears to make good sense given the purposes of the criterion-reference test like the PSSA.

For CDT, the scale must be sufficiently large to cover the entire vertical scale. As a result, an initial scale score range of 400 to 2000 was established for each content area. When CDT was expanded in spring of 2014 and made available to students in grades 3 through 5, the scale score range was expanded to 200 to 2000 for those students. Initially, the grade 7 benchmark logit cut point was mapped to a scale score of 1200 for all content areas. It is worth noting that, although careful consideration was given to the selection of these values, they are completely arbitrary. For example, the label of 1200 could have been called 100 or any other value or letter without affecting any of the relationships among schools, administrations, students, or items. In other words, changing the scale would simply be changing the labels on the axis of a graph without moving any of the points.

LINEAR TRANSFORMATION FORMULAS

The scale scores for the CDT for each content area are obtained through a linear transformation of the Rasch ability estimates ($\hat{\beta}$) . Specifically,

$$SS = m\hat{\beta} + b,$$

where *m* is the slope and *b* is the intercept. The linear transformation for each CDT content area was derived by anchoring the grade 7 benchmark cut (i.e., Rasch ability estimate) to the scale score 1200 and a Rasch

[12] Not everyone agrees with this sentiment. Some have argued the opposite point—that is, any attempt to add meaning to test scores actually predisposes the scores to be misinterpreted (see Angoff, 1984).

ability estimate of 7.9 to the scale score of 2000. The slopes of the scaling equations influence the variability of the scale scores. It is important that the slopes are sufficiently large to cover the full range of the vertical scale. The CDT scaling equations produce scale score distributions with standard deviations of approximately 150 scale score points and cover logit ranges of approximately -6.5 to 7.9. The final slopes and intercepts for deriving scale scores for the CDT are provided in Table 11–1.

Table 11–1. Scaling Constants by Content Area

Content Area	Scaling Constants	
	Slope	Intercept
Mathematics	124.90	1013.30
Reading	142.83	871.63
Science	132.87	950.34
Writing	133.02	949.12

ROUNDING

The linearly transformed scale scores are rounded to the nearest integer value for reporting purposes. Values greater than or equal to 0.50 are rounded up. Values less than 0.50 are rounded down.

LOWEST OBTAINABLE SCALE SCORES

Each CDT for students in grades 3 through 5 has a lowest obtainable scale score (LOSS) of 200. Each CDT for students in grades 6 and above has a lowest obtainable scale score (LOSS) of 400. Any derived scale score less than LOSS is truncated to this minimum value. The selection of a LOSS is mainly based on two considerations:

1. Extremely low scale scores may have an impact on the average of the scale scores if CDT data is summarized at school, district, or state level.
2. Score truncation makes sense from a score precision perspective given measurement errors at the extremes are large.

HIGHEST OBTAINABLE SCALE SCORES

A highest obtainable scale score (HOSS), 2000, is set for the CDT for the same reasons as described for the LOSS value.

Chapter Eleven: Scaling

CHAPTER TWELVE: EQUATING

Equating is a statistical process that is used to adjust scores on test forms so that scores on the forms can be used interchangeably (Kolen & Brennan, 2004), even though the test forms consist of different items. In the case of the CDT, the adaptive nature of the test means that each student takes a unique test form with items targeted at his or her level of achievement.

To make meaningful comparisons of test scores across administrations, various equating models and procedures have been developed in the literature. For example, in terms of design, there are randomly equivalent groups design and common-item non-equivalent groups design. In terms of testing model, the model can be classified as either classical test theory based equating model or modern test theory (e.g., Rasch model or item response theory) based equating model. In terms of when the equating is conducted in the assessment cycle, the model can be classified as pre-equating or post-equating.

Given the requirements of adaptive testing and immediate score reporting, CDT is pre-equated. Also, it was based on the Rasch model. The following sections will focus on the discussion of pre-equating and the equating design for the CDT.

PRE-EQUATING VERSUS POST-EQUATING

Like other Pennsylvania assessment programs, the CDT uses the Rasch model to guide test design, calibration, scaling, and equating. The key element of equating test forms using the Rasch model is to place the item parameters on the same scale. Once this is done, raw scores can be converted to Rasch ability estimates and then to scale scores as described in Chapter Eleven. As a result, the scale scores can be compared across forms and administrations with different items.

A common practice in many K–12 large-scale assessment programs is to have all the items field tested before they are administered in an operational setting. Once the field-test items' difficulties are placed on the base scale or common metric, in theory, one should not expect the Rasch item difficulties for these items to change, except within a reasonable range of measurement error, after they are administered in an operational test, providing the Rasch model fits the data. Based on this theoretical advantage of using Rasch models, equating can be conducted using the item parameters calibrated from field-test data. This statistical procedure is referred to as pre-equating. In contrast, post-equating involves the use of Rasch item difficulties calibrated from the data of the operational test to be equated.

Although, in theory, the two equating procedures should provide identical results when the model fits the data, each of them has its own advantages and disadvantages. The use of pre-equating can facilitate the operational process in terms of adaptive item selection, rapid or immediate score reporting, and more flexibility in the assessment. However, a variety of issues need to be considered when using pre-equating in practice. For example, students may not be motivated to take the field tests, especially stand-alone field tests, which may make the items appear harder in the field test than in the operational test (Eignor, 1985; Eignor and Stocking, 1986; Stocking and Eignor, 1986; Kolen and Harris, 1990). Other concerns for the field-test items include item context, item position, and sample size. In contrast, the use of post-equating, when applicable, does not have the same motivational concerns because students cannot distinguish between operational and field-test items. Also, post-equating is sometimes considered to yield more accurate analysis results given the large number of students who take the operational tests. On the other hand, post-equating does not allow for adaptive item selection or immediate score reporting as required of the CDT.

Chapter Twelve: Equating

EQUATING DESIGN FOR THE CDT

The CDT is an adaptive test, meaning that the test items selected are tailored to each student's achievement as the test progresses. This requires that all items in the pool be on the same scale and known at the time of testing. For CDT, this is accomplished by vertical linking the entire item pool within a content area based on the field-test events. See Chapter Eight and Chapter Nine for details. The known (pre-equated) item parameters are used in selecting items targeted for the student and to provide immediate scores to teachers and students.

In implementing the pre-equating model for the CDT, efforts were made to enhance the accuracy of pre-equating results. To address the concerns on students' motivation to take field tests, records were excluded from item calibrations if the student did not answer at least 5 questions. Also, records with high person outfit mean-squares values were excluded following the WINSTEPS suggestion that these may be the result of a few random responses by low performers. To address concerns of sample sizes, windows for field testing were scheduled so they did not overlap other testing in an attempt to increase volunteer participation. Also, field-test windows were extended in cases where schools were unable to complete testing in the allotted time. A small study of mathematics vertical linking items revealed no position effects. However, it should be noted that with adaptive tests students do not take the same items. Even if two students do take the same item, it will likely not be in the same test position.

EVALUATION OF ITEM PARAMETER STABILITY

After each school year, item parameter stability studies are conducted for each content area. If the differences between the newly estimated Rasch item difficulties and the estimates based on the field-test events are not statistically significant, the pre-equating results should be valid. See Chapter Eighteen for results of item parameter stability studies based on operational data from the 2013–2014 school year.

EQUATING ADDITIONAL FIELD-TEST ITEMS

Over time, additional items have been, and will continue to be, needed to replenish the CDT item pools. Plans to field test additional items must include an equating plan. Equating is needed to place the new items onto the existing vertical scale. In the case of stand-alone field-test events, common-item equating was used. That is, field-test forms included items from the current CDT item pool. In the case of embedded field-test events, field-test items were included within an operational administration such that students did not know which items were field test. With both stand-alone and embedded field test, equating was accomplished by running the calibration of field-test items with item parameters of operational items fixed/anchored to the bank values using WINSTEPS. For each content area, the entire item pool, including field-test items, was calibrated using WINSTEPS with operational items anchored on the banked values.

CHAPTER THIRTEEN: OPERATIONAL TEST DESIGN AND CAT CONFIGURATIONS

The Pennsylvania Classroom Diagnostic Tools (CDT) was initially developed to support teachers and students in grades 6 through 12. In spring 2014, CDT was made available to students in grades 3 through 5 as well. The tools are fully integrated and aligned in the Standards Aligned System (SAS) and enable educators to identify students' academic strengths and areas of need as well as provide links to classroom resources. The assessment is voluntary and administered completely online using a computer adaptive test (CAT) model.

The CDT features a number of tests. Tests in Mathematics, Algebra I, Geometry, and Algebra II have been available since October 2010 for students in grades 6 and above. Tests in Reading/Literature, Science, Biology, and Chemistry have been available since April 2011 for students in grades 6 and above. Tests in Writing /English Composition have been available since October 2011 for students in grades 6 and above. Tests in Mathematics, Reading, Science, and Writing have been available since April 2014 for students in grades 3 through 5.

This chapter details the operational CDT test design and configuration of the CAT algorithm. Test design elements include the number of diagnostic categories, the number of operational items to administer per diagnostic category, and the number of embedded field-test items. CAT algorithm elements include entry point, item selection criteria, test navigation, and termination.

OPERATIONAL TEST DESIGN

NUMBER OF DIAGNOSTIC CATEGORIES

The CDT tests include multiple-choice items only. All items in the content areas of mathematics, reading, and writing are aligned to the Pennsylvania Core Standards. All items in the content area of science are aligned to the Pennsylvania Academic Standards. Each CDT is broken into four or five diagnostic categories and the items in the pool are grouped by these diagnostic categories based on the Assessment Anchors and Eligible Content. The diagnostic categories for each of the CDT tests are listed below.

Mathematics Lower Grades and Mathematics

- Numbers & Operations
- Algebraic Concepts
- Geometry
- Measurement, Data, and Probability

Algebra I

- Operations with Real Numbers and Expressions
- Linear Equations & Inequalities
- Functions & Coordinate Geometry
- Data Analysis

Geometry

- Geometric Properties
- Congruence, Similarity, & Proofs
- Coordinate Geometry & Right Triangles
- Measurement

Algebra II

- Operations with Complex Numbers
- Non-Linear Expressions & Equations
- Functions
- Data Analysis

Reading Lower Grades and Reading/Literature

- Key Ideas and Details—Literature Text
- Key Ideas and Details—Informational Text
- Craft and Structure/Integration of Knowledge and Ideas—Literature Text
- Craft and Structure/Integration of Knowledge and Ideas—Informational Text
- Vocabulary Acquisition and Use

Science Lower Grades and Science

- The Nature of Science
- Biological Sciences
- Physical Sciences
- Earth/Space Sciences

Biology

- Basic Biological Principles/Chemical Basis for Life
- Bioenergetics/Homeostasis & Transport
- Cell Growth & Reproduction/Genetics
- Theory of Evolution/Ecology

Chemistry

- Properties & Classification of Matter
- Atomic Structure & The Periodic Table
- The Mole & Chemical Bonding
- Chemical Relationships & Reactions

Writing Lower Grades and Writing/English Composition

- Quality of Writing: Focus and Organization
- Quality of Writing: Content and Style
- Quality of Writing: Editing
- Conventions: Punctuation, Capitalization, and Spelling
- Conventions: Grammar and Sentence Formation

NUMBER OF ITEMS PER DIAGNOSTIC CATEGORY

There were various factors considered when determining the number of operational items to administer per diagnostic category. The goal of the CDT is to provide diagnostic information. Therefore, the test must include a sufficient number of items to provide meaningful scores with low standard errors. However, testing time is limited and the item pools are finite. A very long test may produce lower standard errors, but if it is considered to be "too long" will teachers use it? Also, the longer the test, the more the items are exposed.

Prior to the launch of the first operational CDT in fall of 2010, simulations were run of various test lengths. Table 13–1 shows the average person standard error (SE) for total test and each diagnostic category[13] (DC) for five test lengths in simulations of CDT Mathematics. Also included is the theoretical minimum standard error that is possible for each test length. This is the standard error if the ability is known and there are sufficient items to administer where the item's difficulty is equal to the known ability and the test constraints are met.

Table 13–1. Average Standard Errors for Various Test Lengths — Mathematics

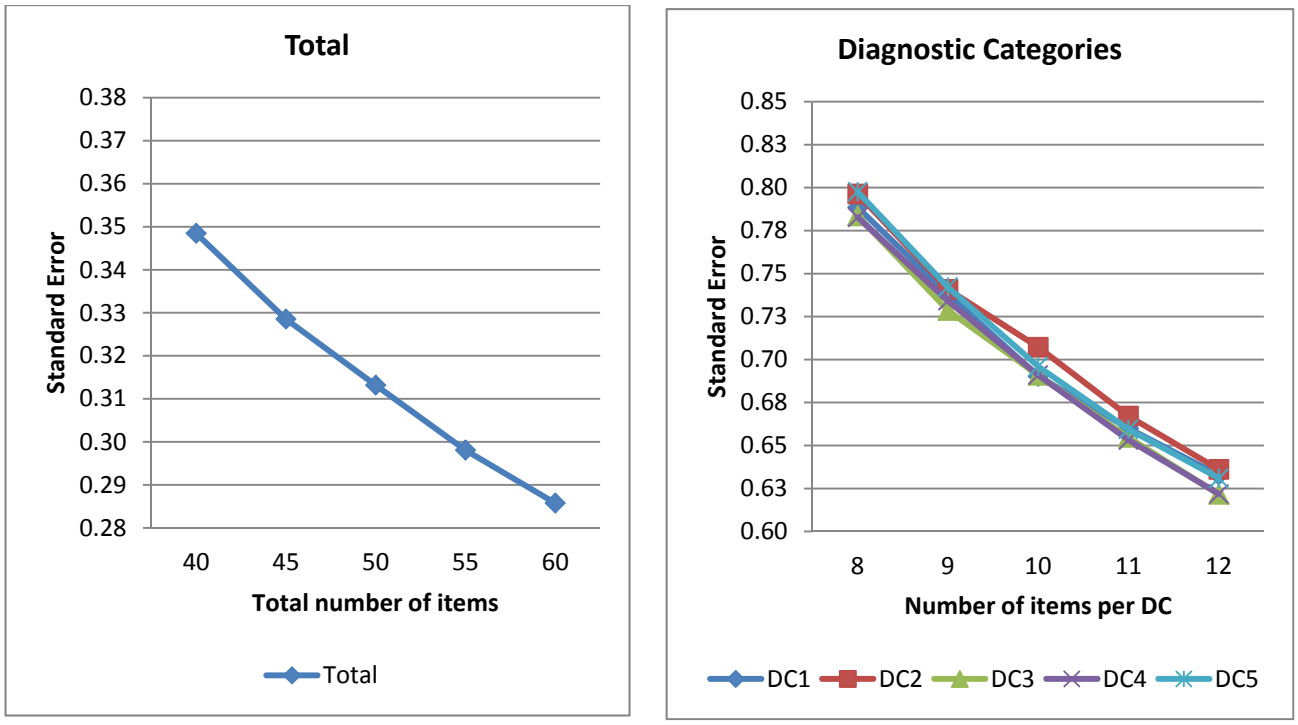
Total			Diagnostic Categories						
Number of Points	Min Error	Avg Error	Number of Points	Min Error	DC1 Avg Error	DC2 Avg Error	DC3 Avg Error	DC4 Avg Error	DC5 Avg Error
40	0.316	0.348	8	0.707	0.789	0.796	0.784	0.783	0.798
45	0.298	0.329	9	0.667	0.738	0.741	0.729	0.734	0.742
50	0.283	0.313	10	0.632	0.690	0.707	0.691	0.691	0.696
55	0.270	0.298	11	0.603	0.660	0.667	0.655	0.653	0.659
60	0.258	0.286	12	0.577	0.633	0.636	0.622	0.622	0.631

[13] At that time, there were five diagnostic categories in CDT Mathematics.

As expected, increasing the number of items decreases the standard error. Differences in standard errors at the diagnostic category level for the same number of items are a reflection of differences in the diagnostic category item pools.

Figure 13–1 shows average standard errors as a function of test length.

Figure 13–1. Average Standard Errors for Various Test Lengths – Mathematics



Considering test time factors and simulation results for various test lengths, it was determined that CDT tests with four diagnostic categories would have 12–15 items per category (48–60 items total) and CDT tests with five diagnostic categories would have 10–12 items per category (50–60 items total).

NUMBER OF EMBEDDED FIELD-TEST ITEMS

Over time, additional items will be needed to replenish the CDT item pools. Embedding field-test items within an operational CDT test is advantageous for two reasons. First, sufficient item level data can be gathered without the time and expense of a separate stand-alone administration. Second, it allows the new items to be placed on the existing operational scale. See Chapter Twelve for details.

As detailed in Chapter Six, there have been two embedded field-test events. Starting on February 14, 2013, field-test items were embedded within CDT Mathematics and Reading/Literature tests. Starting on August 26, 2013, items were embedded within CDT Mathematics, Reading/Literature, Science, and Writing/English Composition tests for students in grade 6. The factors considered when determining the number of field-test items to embed within each operational test were the number of items to be field tested, the expected number of students testing, and the desired *n*-count per item for field-test analyses.

Five field-test items were embedded in CDT Mathematics, Science, and Writing/English Composition. Field-test items were randomly assigned to fixed positions within the operational test. The positions of field-test items were unknown to students and spread throughout the operational test. Field-test items were not clustered at the end in an effort to avoid any fatigue effect when placing the items on the operational scale.

Five to seven field-test items were embedded in CDT Reading/Literature. The number of items is variable because Reading items are passage-based and the number of items associated with a passage varies. If a given passage was assigned to a student, the student took all of the items associated with the passage. The positions of field-test items were unknown to students. The field-test passage was embedded near the middle of the test in an effort to avoid any fatigue effect when placing the items on the operational scale.

CAT ALGORITHM

This section covers elements of the CAT algorithm including entry point, item selection criteria, test navigation, and termination.

ENTRY POINT

All CDT tests other than Reading Lower Grades and Reading/Literature begin with a small "locator" section in which one or two items per diagnostic category are administered. The order of the diagnostic categories is random. The two CDT tests in the reading content area are slightly different because they are passage-based. Those, too, have a small "locator" section, but they may not contain one or two items for each diagnostic category because not all passages have an item for each diagnostic category.

The CAT algorithm is designed to administer items targeted for the individual student based on performance. However, student performance in the current test setting is not known at the beginning of the test. With no prior information about a student, the starting point in each diagnostic category is an item of average difficulty. For CDT tests that are not course-specific (Mathematics Lower Grades, Mathematics, Science Lower Grades, Science, Reading Lower Grades, Reading/Literature, Writing Lower Grades, and Writing/English Composition), the student's grade is considered in selecting an item of average difficulty. For example, a grade 7 student taking CDT Mathematics will start with an item near the average difficulty of grade 7 items in the pool. For CDT tests that are course-specific (Algebra I, Geometry, Algebra II, Biology, and Chemistry), an average item will be selected regardless of the student's grade. For example, a grade 7 student taking CDT Algebra I will start with an item near the average difficulty of Algebra I items in the pool.

If a student has previously taken the CDT, the prior CDT scores are used to give the CAT algorithm a "head start." In this case, the first item in each diagnostic category is selected to match the characteristics of the prior information rather than an average item. For example, if a student previously took the CDT Mathematics test and scored very high in "Measurement, Data, and Probability," then the first item selected in that diagnostic category will be more difficult than the grade level average.

The CAT algorithm includes a randomization component when selecting items to control item exposure. That is, one item is selected from among a set of items that are near the targeted item difficulty. This is especially important at the beginning of the CDT when no prior information is available. Randomization of items and diagnostic categories ensure that students will not see the same set of items in the same order even when all of the students are assigned items of average difficulty.

ITEM SELECTION CRITERIA

Once the initial set of items has been administered, the CAT algorithm is designed to administer items targeted for the individual student based on performance. In targeting items, the CAT algorithm uses Rasch ability estimates from the current test session and considers a number of factors including test blueprint, response probability, item pool refinement, and passage-related concerns. Each of these is discussed in detail on the following pages.

RASCH ABILITY ESTIMATES

As described in Chapter Eight and Chapter Nine, CDT item pools are scaled using the Rasch model (Rasch, 1960) and vertically linked across grades and courses. The CAT algorithm has access to all item parameters in the item pool. After each item response, Rasch ability estimates and standard errors are calculated via maximum likelihood estimation (MLE) for the total test and each diagnostic category. In the case of zero (all items incorrect) and perfect (all items correct) scores, a correction factor is applied before computing the relevant maximum likelihood estimates. A fractional value is added to a zero score and subtracted from a perfect score before estimation.

After the locator section of the CDT, but before a student has taken many items in each diagnostic category, the total Rasch ability estimate is used in item selection. This is because total and diagnostic category ability estimates tend to be highly correlated, and the total estimate does not change as dramatically as diagnostic category estimates given one additional item. Using the total estimate at this point prevents students from experiencing extreme fluctuations in the difficulty of items.

While use of the total Rasch ability estimate makes sense early in the test, the goal of the CDT is to be diagnostic, and some students exhibit clear strengths and areas of need in different diagnostic categories. Therefore, after four or five items have been administered in a diagnostic category, the corresponding Rasch ability estimate for that diagnostic category is used in item selection. This ensures, for example, that a student struggling in “Biological Sciences” while at the same time excelling in “Earth and Space Sciences” will be administered easier “Biological Sciences” items and more challenging “Earth and Space Sciences” items.

TEST BLUEPRINT

The CAT algorithm closely resembles a modified constrained CAT (MCCAT) design (Leung, Chang, & Hau, 2003). The general idea is that the CAT algorithm is configured with upper and lower bounds that specify the minimum and maximum numbers of items that will be administered to students for both total and diagnostic categories.

RESPONSE PROBABILITY

No matter which Rasch ability estimate is used in selecting an item, total or diagnostic category estimate, the CAT algorithm targets items where the student has response probability (RP) of answering correctly, based on the Rasch ability estimate and item’s difficulty. The most efficient way to run a CAT is to select items where RP is 0.5. That is, select items where the student has a 50% chance of getting the item correct. This response probability produces the smallest standard error for any given number of items.

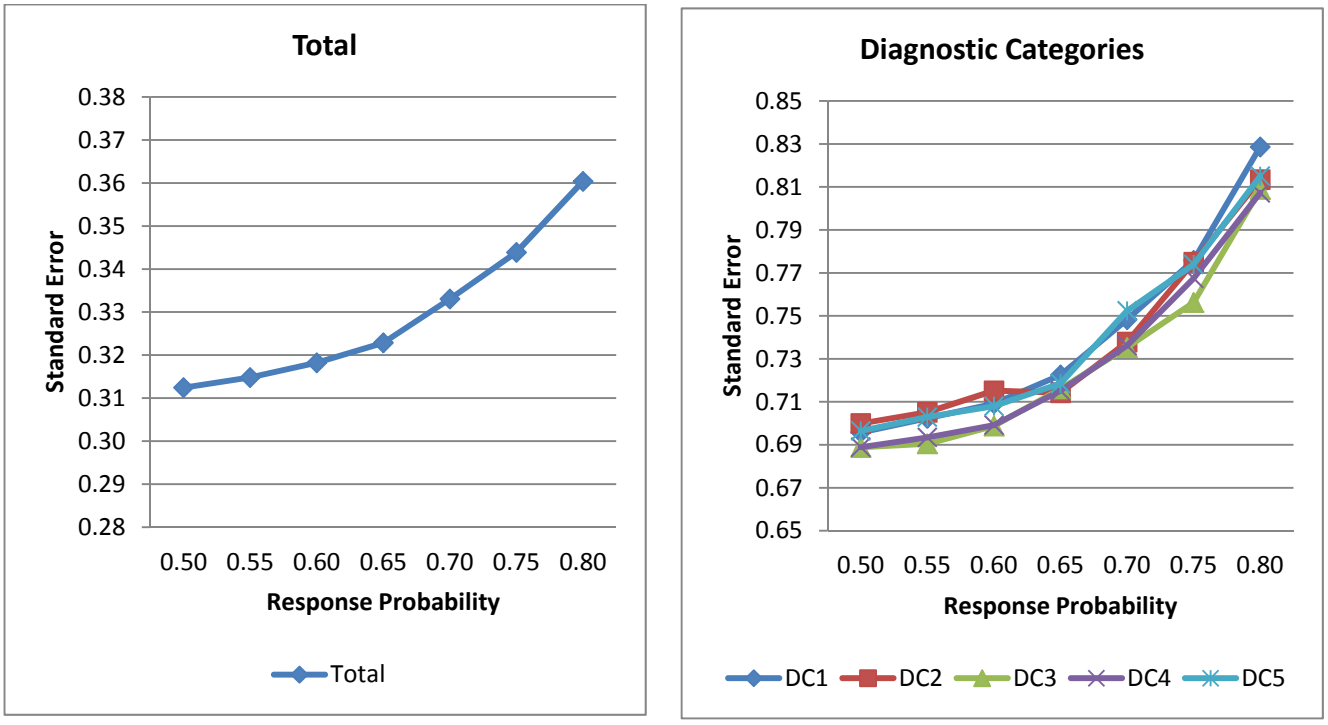
Prior to the launch of the first operational CDT in fall of 2010, simulations were run for various response probabilities. Table 13–2 shows the average person standard errors for total test and each diagnostic category[14] for seven response probabilities in simulations of CDT Mathematics with 50 items. Figure 13–2 shows average standard errors as a function of response probability.

Table 13–2. Average Standard Errors for Various Response Probabilities — Mathematics

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
50 total (10 per DC)	0.50	0.312	0.696	0.700	0.689	0.689	0.696
50 total (10 per DC)	0.55	0.315	0.702	0.705	0.690	0.693	0.703
50 total (10 per DC)	0.60	0.318	0.709	0.715	0.699	0.699	0.708
50 total (10 per DC)	0.65	0.323	0.722	0.714	0.716	0.715	0.719
50 total (10 per DC)	0.70	0.333	0.748	0.738	0.735	0.736	0.752
50 total (10 per DC)	0.75	0.344	0.776	0.775	0.756	0.767	0.774
50 total (10 per DC)	0.80	0.360	0.829	0.813	0.809	0.807	0.815

As expected, increasing the response probability increases the standard error. Differences in standard errors at the diagnostic category level for the same response probability are a reflection of differences in the diagnostic category item pools.

Figure 13–2. Average Standard Errors for Various Response Probabilities — Mathematics



[14] At that time, there were five diagnostic categories in CDT Mathematics.

As can be seen in Figure 13–2, increasing response probability incrementally from 0.50 leads to increases in standard error. The increase in standard error is gradual at first and becomes more pronounced around 0.65.

Prior to the launch of the CDT for students in grades 3 through 5, the topic of response probability was revisited for each content area. Simulations for various response probabilities were run with fixed length tests equal to average test length. Results for each content area are presented in Tables 13–3 through 13–6 and Figures 13–3 through 13–6.

Table 13–3. Average Standard Errors for Various Response Probabilities — Mathematics

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4
52 total (13 per DC)	0.50	0.300	0.602	0.592	0.601	0.606
52 total (13 per DC)	0.55	0.300	0.602	0.594	0.602	0.607
52 total (13 per DC)	0.60	0.301	0.605	0.597	0.604	0.610
52 total (13 per DC)	0.65	0.304	0.613	0.608	0.613	0.619
52 total (13 per DC)	0.70	0.310	0.626	0.622	0.625	0.631
52 total (13 per DC)	0.75	0.318	0.646	0.644	0.645	0.651

Figure 13–3. Average Standard Errors for Various Response Probabilities — Mathematics

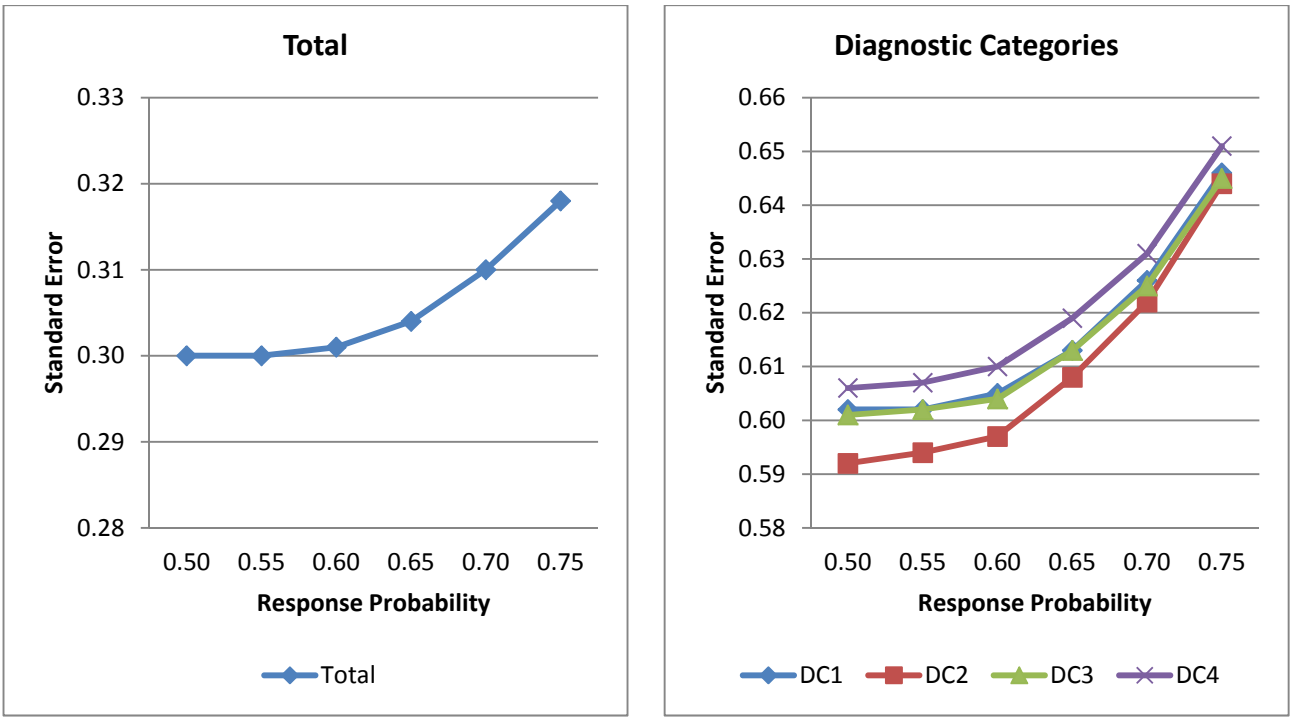


Table 13–4. Average Standard Errors for Various Response Probabilities — Reading

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
55 total (11 per DC)	0.50	0.302	0.738	0.739	0.723	0.743	0.743
55 total (11 per DC)	0.55	0.304	0.739	0.744	0.731	0.741	0.751
55 total (11 per DC)	0.60	0.307	0.742	0.744	0.733	0.756	0.771
55 total (11 per DC)	0.65	0.310	0.747	0.751	0.742	0.766	0.781
55 total (11 per DC)	0.70	0.313	0.755	0.756	0.751	0.772	0.800
55 total (11 per DC)	0.75	0.317	0.767	0.762	0.764	0.784	0.823

Figure 13–4. Average Standard Errors for Various Response Probabilities — Reading

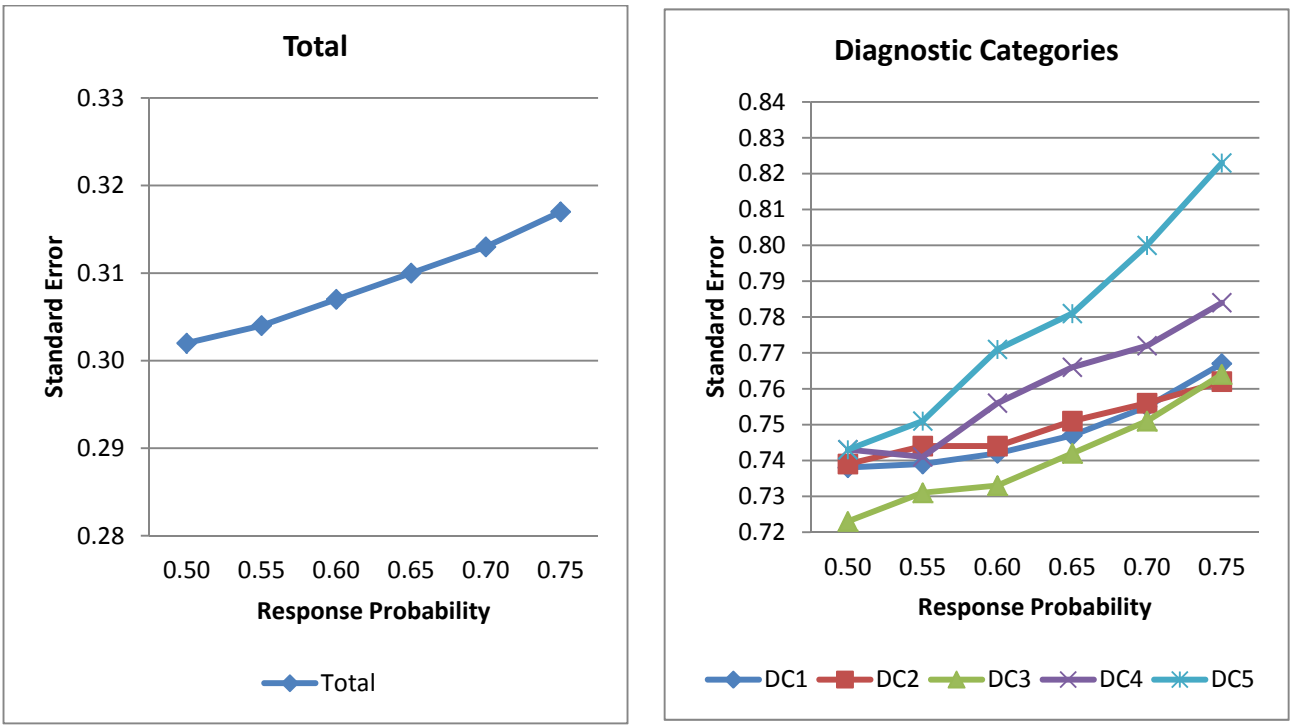


Table 13–5. Average Standard Errors for Various Response Probabilities — Science

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4
52 total (13 per DC)	0.50	0.300	0.601	0.599	0.602	0.599
52 total (13 per DC)	0.55	0.299	0.600	0.599	0.600	0.599
52 total (13 per DC)	0.60	0.300	0.602	0.601	0.603	0.604
52 total (13 per DC)	0.65	0.303	0.612	0.608	0.609	0.611
52 total (13 per DC)	0.70	0.308	0.624	0.622	0.619	0.626
52 total (13 per DC)	0.75	0.315	0.642	0.642	0.636	0.644

Figure 13–5. Average Standard Errors for Various Response Probabilities — Science

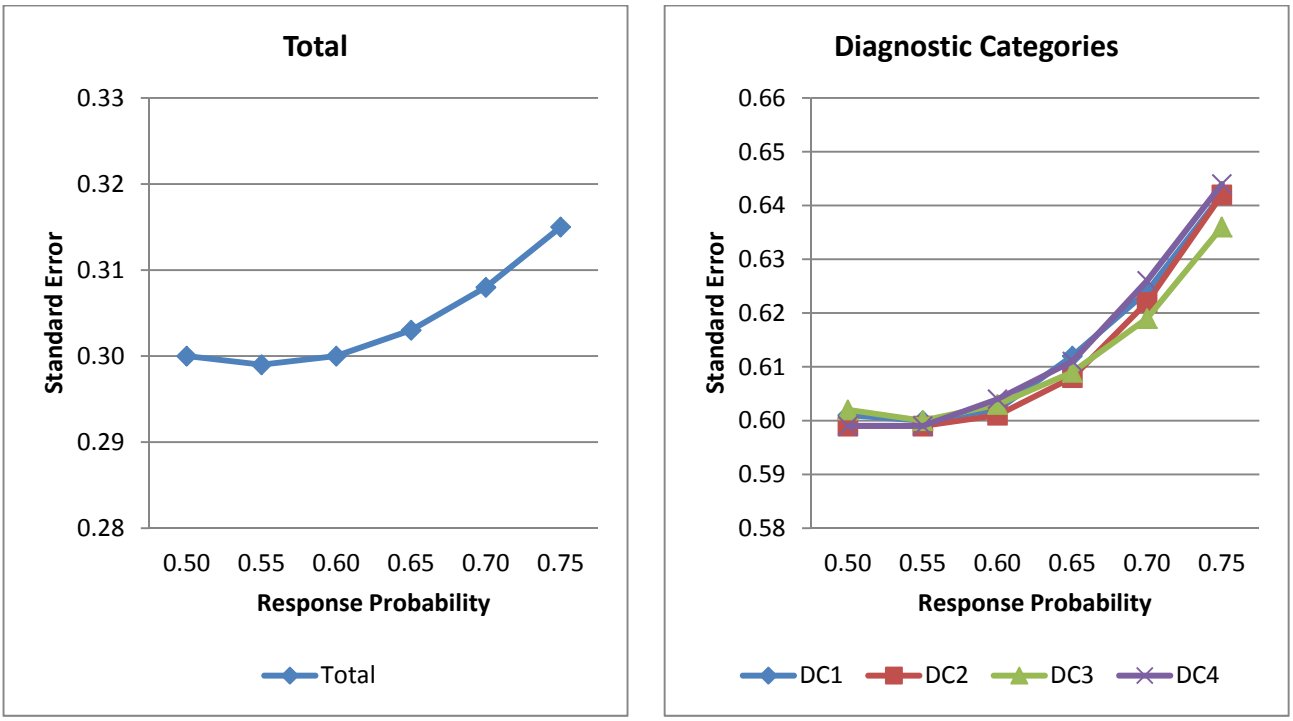
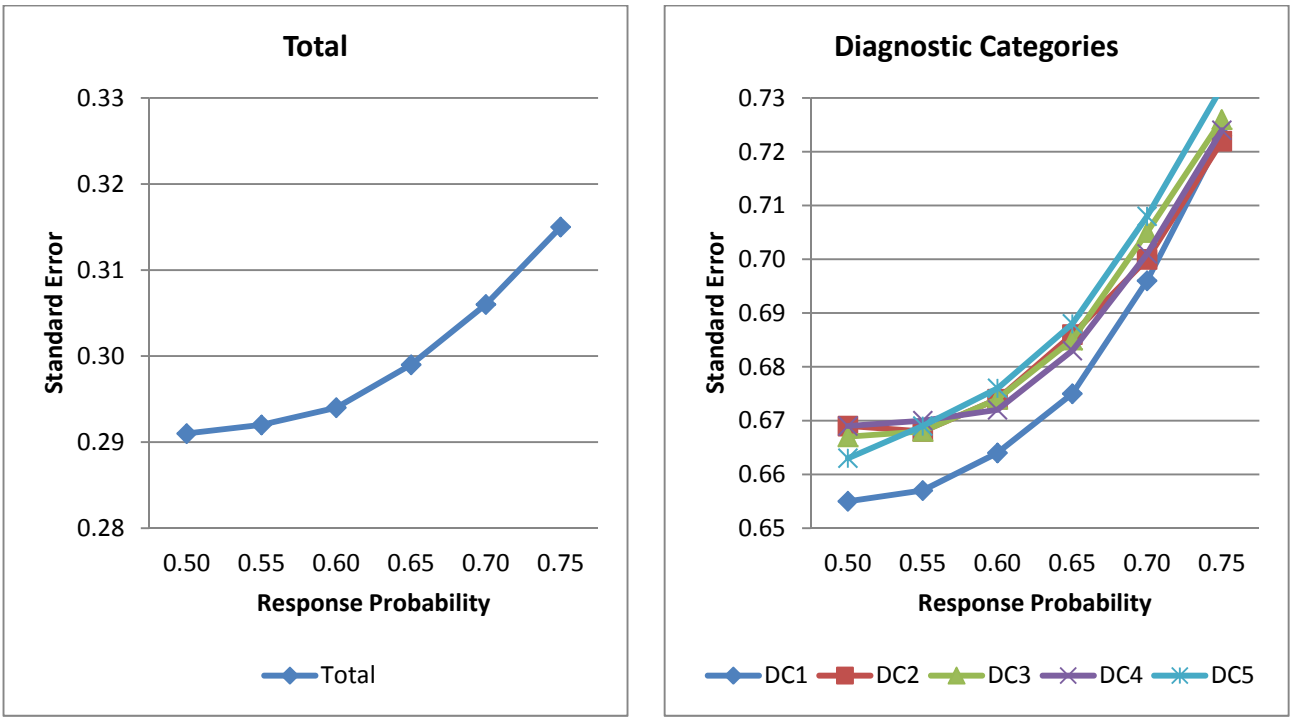


Table 13–6. Average Standard Errors for Various Response Probabilities — Writing

Number of Items	Response Probability	Total	DC 1	DC 2	DC 3	DC 4	DC 5
52 total (13 per DC)	0.50	0.291	0.655	0.669	0.667	0.669	0.663
52 total (13 per DC)	0.55	0.292	0.657	0.668	0.668	0.670	0.669
52 total (13 per DC)	0.60	0.294	0.664	0.674	0.674	0.672	0.676
52 total (13 per DC)	0.65	0.299	0.675	0.686	0.685	0.683	0.688
52 total (13 per DC)	0.70	0.306	0.696	0.700	0.705	0.701	0.708
52 total (13 per DC)	0.75	0.315	0.723	0.722	0.726	0.724	0.732

Figure 13–6. Average Standard Errors for Various Response Probabilities — Writing



Again, increasing response probability incrementally from 0.50 leads to increases in standard error. The increase in standard error is gradual at first and becomes more pronounced around 0.65.

For CDT tests designed for students in grade 6 and above, the response probability is set at 0.5. This is based on the desire for low standard errors at the diagnostic category level and the grade level of students testing. As part of the CDT training, students are told that the test is computer adaptive and designed to challenge them.

For CDT tests designed for students in grades 3 through 5, the response probability is set at 0.65. This response probability results in higher standard errors for the same number of items. However, there was concern that younger students may not have much experience with tests designed to be so challenging and could conceivably give up on a test that is perceived to be "too hard."

ITEM POOL REFINEMENT

The CAT algorithm has configurable elements that allow for refinement of the item pool used in item selection. The two configurable elements are:

- **Restrict pool**—The ability to restrict the available item pool by grade/course at various points in the test.

  For example, Chemistry items are not available for the first 20 items of a CDT Science test.

- **Favor items**—The ability to favor items that are close to the student's grade when evaluating items near a student's estimated score.

  For example, if a student is in grade 8 and the item selection routine finds appropriate items (in terms of difficulty) in grades 4, 5, 6, 7, and 8, item selection can favor items at or close to grade 8. It is possible that no items near a student's grade are appropriate in terms of difficulty. In such a case, the CAT algorithm will select items further away from the student's grade but appropriate based on item difficulty.

The difference between restricting the pool and favoring items is that when the pool is restricted, some items may NOT be selected. With favoring, all non-restricted items are eligible for administration, but they are made more or less LIKELY to be selected based on closeness to student grade.

PASSAGE RELATED CONCERNS

As previously mentioned, the CDT tests in the reading content area are passage-based. CDT passages have between one and seven associated items. The CAT algorithm does not require that all items associated with a passage be administered. Instead, it evaluates all possible combinations of items within a passage. Item sequencing within a passage is preserved when items are presented to the student. For example, if a six-item passage is selected and items 1 and 4 are NOT administered, then the items administered in order will be 2, 3, 5, and 6.

The configurable elements of passage-based CAT include:

- **Passage minimum percent**—Define the minimum percentage of the items associated with a passage to be used.

  For example, if the passage minimum percent is set at 80, then the selection routine will consider combinations such as 1 of 1 (100%), 4 of 5 (80%), 5 of 6 (83%), and 6 of 6 (100%). It will not consider combinations such as 1 of 2 (50%), 3 of 4 (75%), 3 of 5 (60%), etc. Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints such as number of items per diagnostic category.

- **Passage evaluation criteria**—Multiple factors are considered when evaluating and ranking each passage combination to determine the best combination to administer to a student. They include:
  - Percent of items associated with the passage used; the higher the percent, the higher the combination is ranked
  - Number of items associated with the passage used; the higher the number, the higher the combination is ranked

- Distance between items' difficulties and student's estimated score; the smaller the distance, the higher the combination is ranked
- Distance between the items' grade levels and the student's grade level; the smaller the distance, the higher the combination is ranked

Different weights may be assigned to each of the factors. For example, if all of the weight is put on number of items used, then the algorithm will select the passages with the most associated items and administer all of them until the maximum number of items is reached.

TEST NAVIGATION

Many versions of computer adaptive tests do not allow students to skip items in the test or back up to previously answered items and change answers due to some complicating factors.

If students are allowed to skip items, the CAT algorithm would need to select additional items without any additional information (no change to Rasch ability estimates). Taken to the extreme, a student with no prior CDT scores who skipped every item starting with the first would receive an entire test of average items. It would not be adaptive at all.

If students are allowed to back up and change answers, Rasch ability estimates are re-calculated when answered are changed. This additional information can be used to select additional items but would not change previously selected items. For example, suppose a student is on item twenty-five and goes back to change the answer to item eleven from wrong to right. The total and corresponding diagnostic category Rasch ability estimates would go up. That additional information can be used in selection of items twenty-six and beyond. However, items twelve through twenty-five are not reselected even though different items may have been selected if item eleven was initially answered correctly. When it comes to items twelve through twenty-five, "the train has left the station."

Also, if students are allowed to back up in the test, additional considerations must be put in place to ensure that the answer to one item does not cue another.

Currently all CDT tests except Reading Lower Grades and Reading/Literature do not allow skipping items or backing up and changing answers. On CDT tests in the reading content area, students are allowed to skip items within a passage. For example, when presented with a passage and five associated items, the student does not have to answer questions one through five in that order without skipping. If a student tries to navigate to the next passage without answering all of the items associated with a passage, the test engine will prompt the student to answer all items and will not move on to the next passage until all are answered.

TERMINATION

The CAT algorithm allows for both a fixed- or variable-length test.

With fixed length, the test ends when a student has taken a predefined number of items total and in each diagnostic category.

With variable length, the algorithm stops administering items from a diagnostic category when one of two conditions is satisfied:

- A student has taken at least a predefined minimum number of items in that diagnostic category and the standard error is below a predefined threshold

  OR

- A student has taken a predefined maximum number of items in that diagnostic category

The test ends when one of the two conditions above is satisfied for each of the diagnostic categories.

Note that with both fixed- and variable-length tests, there is no requirement that the predefined number of items in diagnostic categories be equal.

CAT CONFIGURATION – MATHEMATICS

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included five field-test items for students in grade 6 only. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no Algebra I items will be administered in the first 5 items,
- no Geometry items will be administered in the first 10 items, and
- no Algebra II items will be administered in the first 20 items.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.63.

CAT CONFIGURATION – ALGEBRA I

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to Algebra I. The pool restriction is that no Algebra II items will be administered in the first 16 items.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.61.

CAT CONFIGURATION – GEOMETRY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Geometry. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.62.

CAT CONFIGURATION – ALGEBRA II

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Algebra II. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.64.

CAT CONFIGURATION – MATHEMATICS LOWER GRADES

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.62, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 7 items will be administered in the first 5 items,
- no grade 8 items will be administered in the first 10 items,
- no Algebra I items will be administered in the first 20 items, and
- no Geometry or Algebra II items will be administered.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.61 to 0.63.

CAT CONFIGURATION – READING/LITERATURE

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. Tests also included five to seven field-test items for students in grade 6 only. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.75, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to run CAT with passages and favor items close to student's grade. There are no pool restrictions.

Passage minimum percent is set at 66%. That is, whenever possible, only passage combinations that use 66% or more of the associated items are used. (Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints.) Many simulations were run to arrive at this percent. On the one hand, testing time and reading load should be minimized. Therefore, students should not have to read long passages for only one or two items. On the other hand, using all items associated with a passage may not be desirable since some items are far from a student's estimated score. Given a limited number of items, those that are either too easy or too hard should not be used.

In evaluating and ranking passages, percent of items associated with the passage is not used. Simulation results indicate that if it is factored into evaluations, students take many short passages because 1 of 1 (100%) and 2 of 2 (100%) are ranked higher than 5 of 6 (83%) and 4 of 5 (80%), for example.

Simulations were run with this configuration. On average:

- a total of 55 operational items are administered—about 11 per diagnostic category,
- a total of 16 passages are administered,
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.74 to 0.78.

CAT CONFIGURATION – READING LOWER GRADES

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.77, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to run CAT with passages and favor items close to student's grade. There are no pool restrictions.

Passage minimum percent is set at 66%. That is, whenever possible, only passage combinations that use 66% or more of the associated items are used. (Near the end of a test, the passage minimum percent constraint may need to be loosened in order to meet content constraints.) Many simulations were run to arrive at this percent. On the one hand, testing time and reading load should be minimized. Therefore, students should not have to read long passages for only one or two items. On the other hand, using all items associated with a passage may not be desirable since some items are far from a student's estimated score. Given a limited number of items, those that are either too easy or too hard should not be used.

In evaluating and ranking passages, percent of items associated with the passage is not used. Simulation results indicate that if it is factored into evaluations, students take many short passages because 1 of 1 (100%) and 2 of 2 (100%) are ranked higher than 5 of 6 (83%) and 4 of 5 (80%), for example.

Simulations were run with this configuration. On average:

- a total of 55 operational items are administered—about 11 per diagnostic category,
- a total of 16 passages are administered,
- standard error for the total score is 0.31, and
- standard errors for the diagnostic categories are in the range of 0.75 to 0.80.

Note that the standard error is higher for in reading than the other content areas. This is because Reading/Literature and Reading Lower Grades are passage-based. Rather than selecting one targeted item at a time, the item selection routine evaluates and selects multiple items associated with a given passage. In general, items selected in this manner are not as close to the targeted response probability as stand-alone items selected one by one.

CAT CONFIGURATION – SCIENCE

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. Tests also included five field-test items for students in grade 6 only. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 11 items will be administered in the first 20 items UNLESS the student is in grade 11 or 12,
- no Biology items will be administered in the first 20 items, and
- no Chemistry items will be administered in the first 20 items.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.59 to 0.63.

CAT CONFIGURATION – BIOLOGY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Biology. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.62.

CAT CONFIGURATION – CHEMISTRY

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.60, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to favor items close to Chemistry. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 53 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.60 to 0.64.

CAT CONFIGURATION – SCIENCE LOWER GRADES

The test has four diagnostic categories. Each student will take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 12 operational items in that diagnostic category and the standard error is below 0.62, or
- a student has taken 15 operational items in that diagnostic category.

Functionality is used to restrict the pool and to favor items close to a student's grade. The pool restrictions are:

- no grade 11 items will be administered in the first 40 items, and
- no Biology or Chemistry items will be administered.

Simulations were run with this configuration. On average:

- a total of 52 operational items are administered—about 13 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.61 to 0.63.

CAT CONFIGURATION – WRITING/ENGLISH COMPOSITION

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. Tests also included five field-test items for students in grade 6 only. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 7 student will start with an item near the average difficulty of grade 7 items. Items are selected where the response probability is 0.5, meaning a student has a 50% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.65, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to favor items close to the student's grade. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 55 to 56 operational items are administered—about 11 per diagnostic category,
- standard error for the total score is 0.29, and
- standard errors for the diagnostic categories are in the range of 0.65 to 0.68.

CAT CONFIGURATION – WRITING LOWER GRADES

The test has five diagnostic categories. Each student will take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. With no prior information about a student, the starting point in each diagnostic category will be an item of average difficulty by grade level. For example, a grade 4 student will start with an item near the average difficulty of grade 4 items. Items are selected where the response probability is 0.65, meaning a student has a 65% chance of answering correctly. The CAT algorithm will stop administering items in a diagnostic category when one of two conditions is satisfied:

- a student has taken at least 10 operational items in that diagnostic category and the standard error is below 0.67, or
- a student has taken 12 operational items in that diagnostic category.

Functionality is used to favor items close to the student's grade. There are no pool restrictions.

Simulations were run with this configuration. On average:

- a total of 55 operational items are administered—about 11 per diagnostic category,
- standard error for the total score is 0.30, and
- standard errors for the diagnostic categories are in the range of 0.67 to 0.69.

Tables 13–7 through 13–12 summarize CAT configurations by content area.

Table 13–7. CAT Configuration Summary – Mathematics

	Lower Grades	Mathematics
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	0	5 (grade 6 students only)
Entry Point		
No Prior CDT	average item by grade	average item by grade
Prior CDT	prior diagnostic scores	prior diagnostic scores
Item selection		
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.65	0.50
Favor Items	close to student grade	close to student grade
Pool Restrictions	Items 1–5: no Grade 7 Items 1–10: no Grade 8 Items 1–20: no Algebra I No Geometry No Algebra II	Items 1–5: no Algebra I Items 1–10: no Geometry Items 1–20: no Algebra II
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.62 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–8. CAT Configuration Summary – Algebra I, Geometry, and Algebra II

	Algebra I	Geometry	Algebra II
Number of DCs	4	4	4
Number of OP Items per DC	12–15	12–15	12–15
Number of OP Items Total	48–60	48–60	48–60
Number of FT Items Total	0	0	0
Entry Point			
No Prior CDT	average item	average item	average item
Prior CDT	prior diagnostic scores	prior diagnostic scores	prior diagnostic scores
Item selection			
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.50	0.50	0.50
Favor Items	close to Algebra I	close to Geometry	close to Algebra II
Pool Restrictions	Items 1–16: no Algebra II	None	None
Navigation	no skip; no backtrack	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–9. CAT Configuration Summary – Reading

	Reading Lower Grades	Reading/Literature
Number of DCs	5	5
Number of OP Items per DC	10–12	10–12
Number of OP Items Total	50–60	50–60
Number of FT Items Total	0	5–7 (grade 6 students only)
Entry Point		
No Prior CDT	average item by grade	average item by grade
Prior CDT	prior diagnostic scores	prior diagnostic scores
Item selection		
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.65	0.50
Favor Items	close to student grade	close to student grade
Pool Restrictions	None	None
Passage Min %	66	66
Navigation	skip items within passage	skip items within passage
Termination	10 items per DC, SE < 0.77 OR 12 items per DC	10 items per DC, SE < 0.75 OR 12 items per DC

DC = Diagnostic Category

Table 13–10. CAT Configuration Summary – Science

	Science Lower Grades	Science
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	0	5 (grade 6 students only)
Entry Point		
No Prior CDT	average item by grade	average item by grade
Prior CDT	prior diagnostic scores	prior diagnostic scores
Item selection		
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.65	0.50
Favor Items	close to student grade	close to student grade
Pool Restrictions	Items 1–40: no grade 11 No Biology No Chemistry	<u>Students in grades 6–10</u> Items 1–20: no grade 11, Biology, or Chemistry <u>Students in grades 11–12</u> Items 1–20: no Biology, or Chemistry
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.62 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–11. CAT Configuration Summary – Biology and Chemistry

	Biology	Chemistry
Number of DCs	4	4
Number of OP Items per DC	12–15	12–15
Number of OP Items Total	48–60	48–60
Number of FT Items Total	0	0
Entry Point		
No Prior CDT	average item	average item
Prior CDT	prior diagnostic scores	prior diagnostic scores
Item selection		
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.50	0.50
Favor Items	close to Biology	close to Chemistry
Pool Restrictions	None	None
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	12 items per DC, SE < 0.60 OR 15 items per DC	12 items per DC, SE < 0.60 OR 15 items per DC

DC = Diagnostic Category

Table 13–12. CAT Configuration Summary – Writing

	Writing Lower Grades	Writing/English Composition
Number of DCs	5	5
Number of OP Items per DC	10–12	10–12
Number of OP Items Total	50–60	50–60
Number of FT Items Total	0	5 (grade 6 students only)
Entry Point		
No Prior CDT	average item by grade	average item by grade
Prior CDT	prior diagnostic scores	prior diagnostic scores
Item selection		
Rasch Ability Estimates	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate	After locator, use total estimate until the fifth item in a DC; then switch to DC estimate
Response Probability	0.65	0.50
Favor Items	close to student grade	close to student grade
Pool Restrictions	None	None
Navigation	no skip; no backtrack	no skip; no backtrack
Termination	10 items per DC, SE < 0.67 OR 12 items per DC	10 items per DC, SE < 0.65 OR 12 items per DC

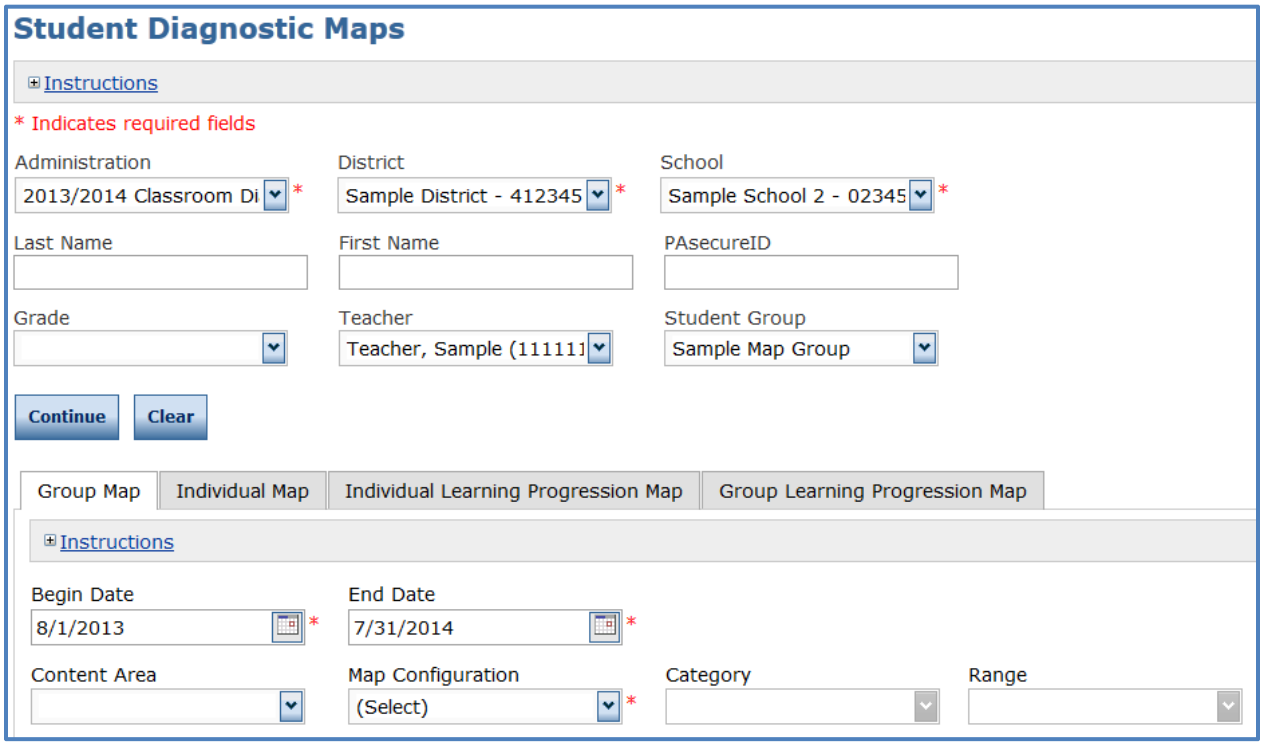
DC = Diagnostic Category

CHAPTER FOURTEEN: SCORES AND SCORE REPORTS

Teachers will receive immediate and usable data to be used for targeting instruction to meet the needs of individual students. The CDT online reports provide direct links to resources in SAS, including specific lesson plans, interventions, and other resources. The reports can also show the progress of students across test administrations. This overview summarizes the steps in accessing the interactive reports, as well as the types of information available for each type of report.

ACCESSING THE INTERACTIVE REPORTS

Any user with the role of District, School, or Teacher has the ability to view the interactive reports. Once the user is logged in, Reporting Tools is an option on the left side of the screen. Next, the user selects Interactive Reports. The appropriate administration, district, school, teacher, and student group should be selected by the user. After the Continue button is selected, the user will be prompted to select the Map Configuration.

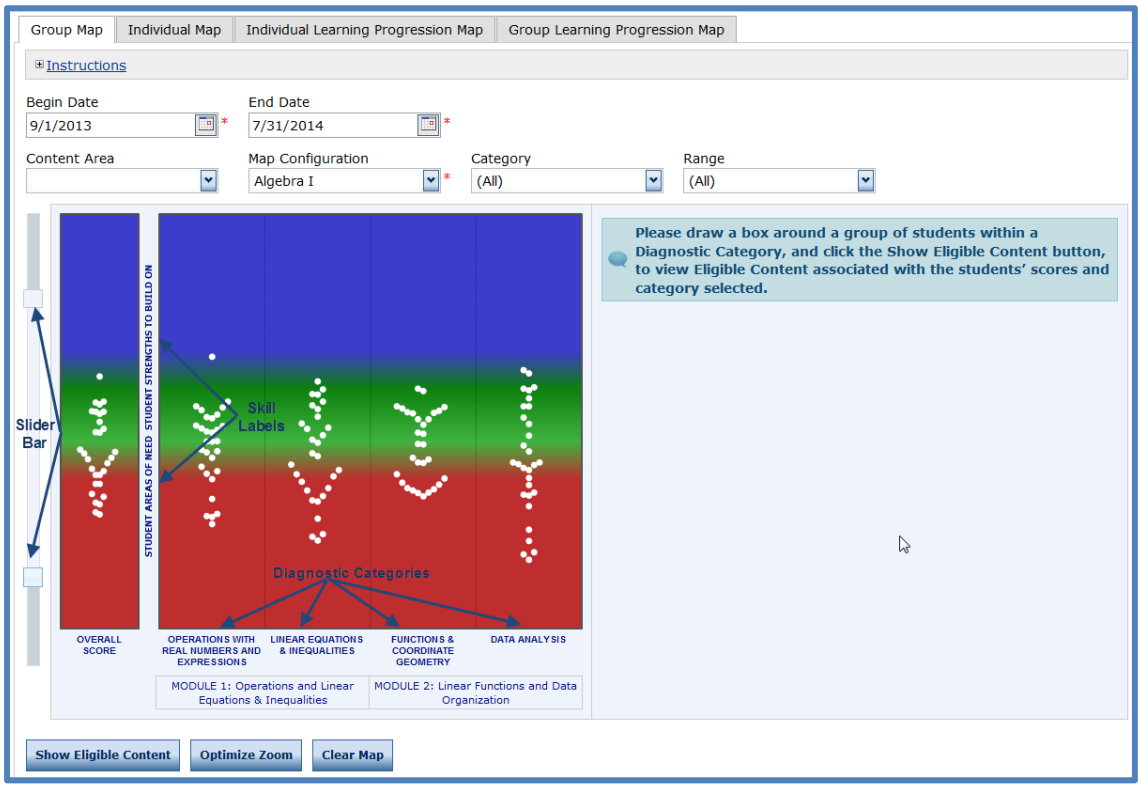


GROUP MAP

The Interactive Reports use colors to indicate relative **Strengths to Build On** and **Areas of Need.** Each descriptor correlates with a color range on the scale: Green/Blue = Strengths to Build On; Red = Areas of Need.

- Each white dot on the Group Map represents a single student score.
- Only students within the Student Group with scores will appear as white dots on the map.

- All dots represent the most recent assessment score (during the administration window selected using the Begin Date and End Date) for each student within the Student Group selected.
- The Group Map is intended to provide general assessment information based on a group of student scores within a Diagnostic Category.



Initially, the Group Map shows the entire vertical scale (representing scores from 200 to 2000 for Lower Grades Mathematics, Lower Grades Reading, Lower Grades Science, and Lower Grades Writing; representing scores from 400 to 2000 for Mathematics, Algebra I, Algebra II, Geometry, Reading/Literature, Science, Biology, Chemistry, and Writing/English Composition). The **Optimize Zoom** button provides the ability to narrow the window to show only the portion of the scale that includes the highest and lowest scores for the Student Group selected. The area in between the slider bars indicates what portion of the total scale is currently being displayed.

Slider Bar—The upper and lower sliders on the bar to the left of the map can be used to adjust the map focus. The area between the sliders is the area of the scale displayed on the map.

Skill Labels—These identify the area on the scale above which are **Student Strengths to Build On** and below which are **Student Areas of Need**.

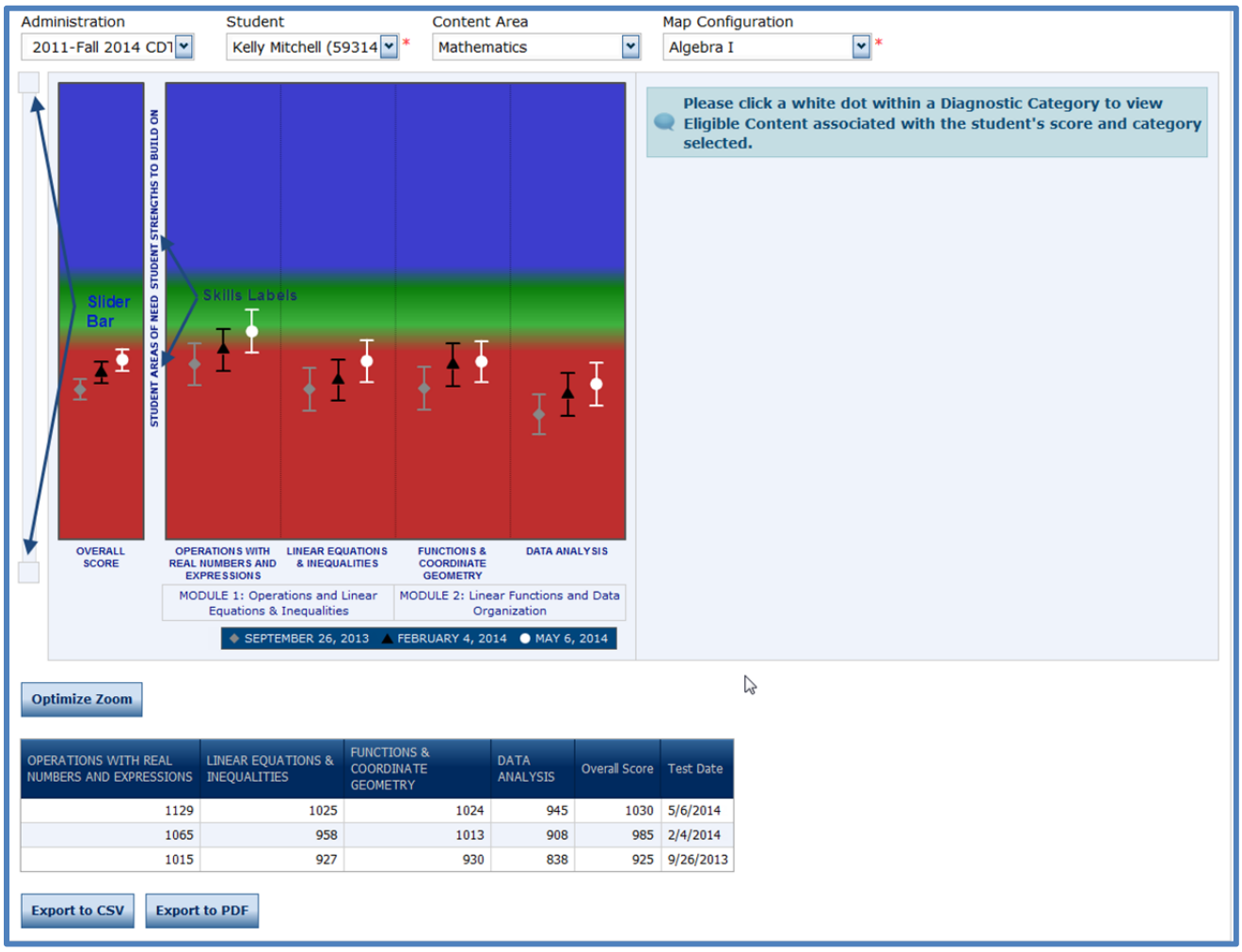
Diagnostic Categories—These appear below each of the columns at the bottom of the map.

Hover Over—A pop-up of the Name, PAsecureID, Test Date, and Score shows whenever an educator hovers over a white dot representing a student score.

Group Map Grid—This appears below the map and provides a complete list of the students within the selected Student Group as well as additional information, including the date of the most recent test event for each student and his or her diagnostic category and overall scores.

INDIVIDUAL MAP

The Individual Map has the ability to show the three most recent assessments that apply to the Map Configuration selected for an individual student. The Individual Map is intended to provide general Instructional Enrichment (a set of Eligible Content) based on a student's score within a Diagnostic Category.



Student Filter—The **Student** drop-down menu can be used to select a student to show the Individual map. When a new student is selected, the map will refresh.

Slider Bar—The upper and lower sliders on the bar to the left of the map can be used to adjust the map's focus. The area between the sliders is the area of the scale that is displayed on the map.

Skill Labels—These identify the area on the scale above which are **Student Strengths to Build On** and below which are **Student Areas of Need**.

Diagnostic Categories—These appear below each of the columns at the bottom of the map.

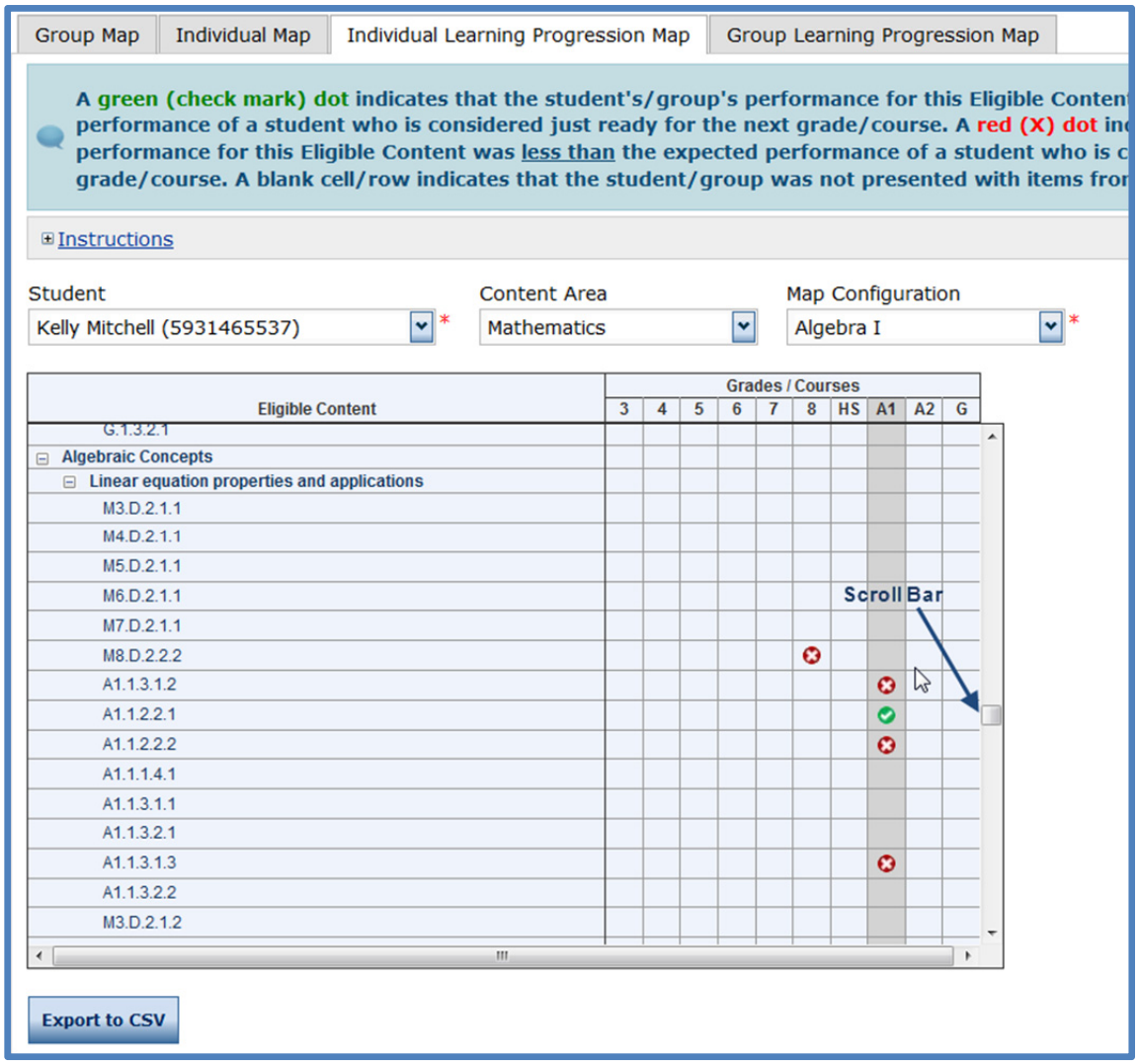
Hover Over—A pop-up of the Assessment Date and Score shows when an educator hovers over the dot in the middle of the white, gray, or black line.

Export to PDF—The **Export to PDF** button can be used to export a PDF image of the current view of the map, search criteria, and Instructional Strategies. Instructional Strategies will only appear in the PDF if the **Show Eligible Content** button has been selected. They will appear in the bar to the right of the map.

Export to CSV—The **Export to CSV** button can be used to export map data to a CSV-formatted table.

INDIVIDUAL LEARNING PROGRESSION MAP

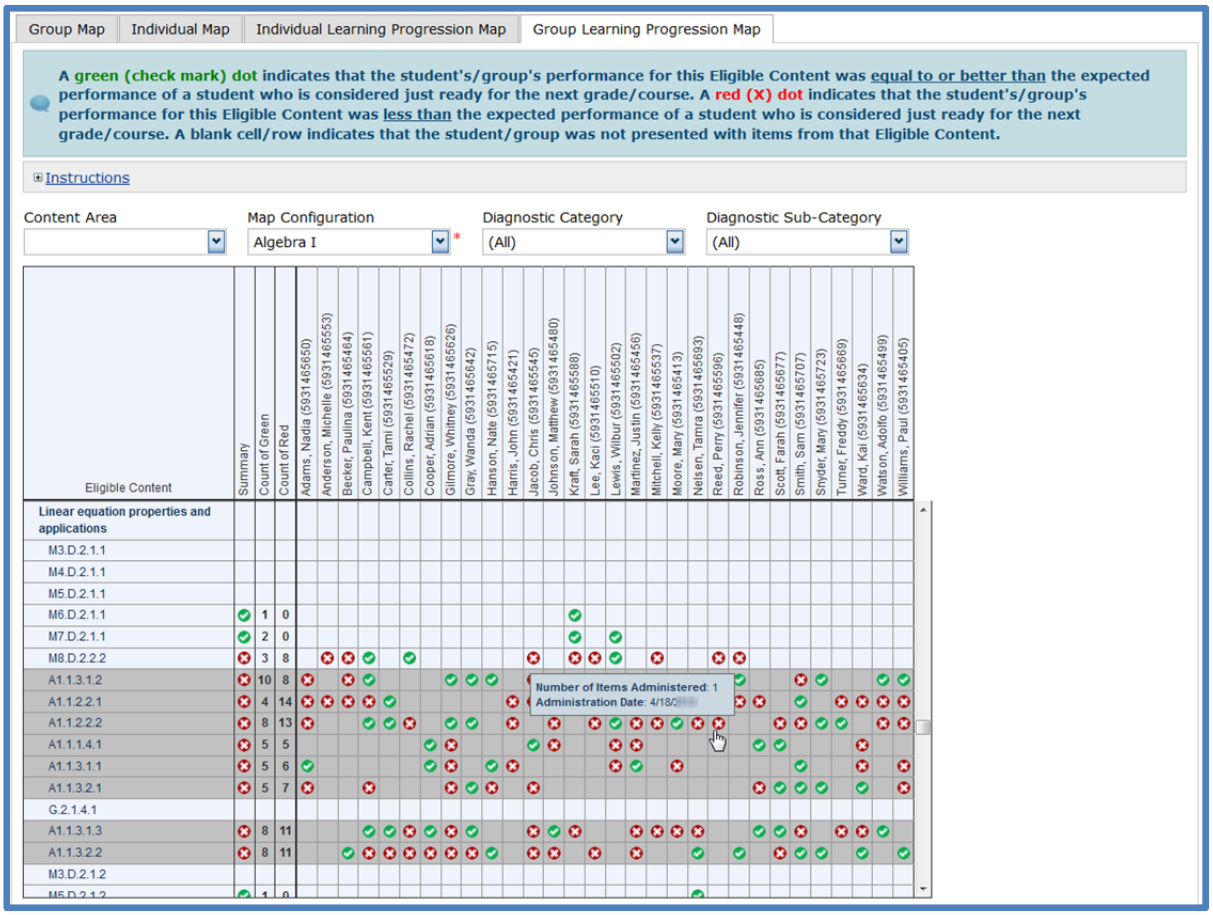
The Individual Learning Progression Map is a graphical representation of how learning may typically move toward increased understanding over time based on Eligible Content. Each row represents the Eligible Content in a subject's domain and subdomain and for a specific grade level or course. The column of the grade/course is highlighted based on the Map Configuration that has been selected.



- A ***green*** **(check mark)** dot indicates that the student was presented with at least one test item for the Eligible Content and performed as well or better than the expected performance of a student who is considered just ready for the next grade/course.
- A ***red*** **(X)** dot indicates that the student was presented with at least one test item from the Eligible Content and the student's performance was less than the expected performance of a student who is considered just ready for the next grade/course.
- An empty box represents Eligible Content that is available, but the student was not presented with any test items from that Eligible Content.
- ***Hover Over***—A pop-up showing the number of items administered and the administration date appears when an educator hovers over a dot (either a red (X) dot or a green (check mark) dot). When an educator hovers over an Eligible Content code, a pop-up showing the Eligible Content Description and links to available Materials and Resources and a sample item for that Eligible Content appears.

GROUP LEARNING PROGRESSION MAP

The Group Learning Progression Map shows information about the Learning Progression of Eligible Content for a given content area for all students in a student group. Each row represents the Eligible Content in a subject's domain and subdomain and for a specific grade level or course. Columns show a Summary dot, Count of Green, Count of Red, and one column for each student in the student group.



- The ***Summary*** dot shows the average performance of students in the group that received one or more items for that Eligible Content. When determining the color of the summary dot, all students in the group who received at least one item for that Eligible Content count equally, even though they may have taken different numbers of items for the Eligible Content. Additionally, how close each student's performance is to the expected performance of a student just ready for the next grade/course is taken into account. Therefore, a group's summary dot may not be the same as the most frequently occurring color for the group.
- ***Count of Green*** shows the number of students in the student group who were administered one or more items for a given Eligible Content and received a green dot.
- ***Count of Red*** shows the number of students in the student group who were administered one or more items for a given Eligible Content and received a red dot.
- ***Hover Over***—A pop-up showing the number of items administered and the administration date appears when an educator hovers over a dot (either a red (X) dot or a green (check mark) dot). When an educator hovers over a Summary dot, a pop-up appears showing the number of students and number of items used to determine the color of the Summary dot. When an educator hovers over an Eligible Content code, a pop-up showing the Eligible Content Description and links to available Materials and Resources and a sample item for that Eligible Content appears.

CHAPTER FIFTEEN: OPERATIONAL ADMINSTRATION 2013–2014

This chapter contains summary information about the operational administration of the Classroom Diagnostic Tools (CDT) during the 2013–2014 school year. Tests for students in grade 6 and above were available from August 26, 2013, through the end of the school year (July 31, 2014). Tests for students in grades 3 through 5 were available from May 5, 2014, through the end of the school year (July 31, 2014).

The CDT is administered completely online using a computer adaptive test (CAT) model, and participation is voluntary. CDT scores are available immediately after testing in the dynamic reporting suite. In addition to the scores, this suite includes links to instructional resources. The CDT may be administered multiple times throughout the school year.

FREQUENCIES

Tables 15–1 through 15–3 present information related to the number of students who were administered one or more CDT tests in the 2013–2014 school year. Table 15–1 shows the number of students who have taken each CDT. Some of these students have taken the same CDT test multiple times or have taken multiple CDT tests. Table 15–1 counts only the first administration of each CDT test. Data about multiple administrations of the same test and multiple CDT tests are presented in Tables 15–2 and 15–3, respectively.

Table 15–1. Number of Students Taking the First Administration of a CDT Test by Grade Level

	Student Grade										
	3	4	5	6	7	8	9	10	11	12	TOTAL
Mathematics Lower Grades	2,468	2,993	2,648								8,109
Mathematics				22,791	25,914	18,280	513	349	243	34	68,124
Algebra I				187	3,607	17,650	33,850	17,572	11,716	2,010	86,592
Geometry				2	31	762	1,843	3,614	919	191	7,362
Algebra II				0	5	196	1,319	3,211	3,370	949	9,050
Reading Lower Grades	2,597	2,508	2,043								7,148
Reading/Literature				21,791	26,439	26,912	30,036	46,774	14,597	1,905	168,454
Science Lower Grades	192	243	55								490
Science				5,788	10,674	17,188	1,238	509	197	99	35,693
Biology				1	193	1,268	23,608	33,862	8,202	1,069	68,203
Chemistry				0	0	1	72	2,137	3,690	397	6,297
Writing Lower Grades	112	104	124								340
Writing/English Composition				2,245	3,032	3,228	5,970	1,490	1,538	170	17,673

Table 15–2. Multiple Administrations of the Same CDT Test

	Students with 1 Administration	Students with 2 Administrations	Students with 3 Administrations	Students with 4 Administrations	Students with 5 Administrations
Mathematics Lower Grades	8,109	8	0	0	0
Mathematics	68,124	35,505	14,079	2,362	18
Algebra I	86,592	41,744	14,817	1,592	167
Geometry	7,362	4,306	1,447	175	3
Algebra II	9,050	4,685	1,418	33	11
Reading Lower Grades	7,148	10	6	0	0
Reading/Literature	168,454	86,407	24,698	2,413	44
Science Lower Grades	490	0	0	0	0
Science	35,693	14,096	3,393	354	0
Biology	68,203	38,232	10,194	963	56
Chemistry	6,297	3,655	1,576	249	3
Writing Lower Grades	340	0	0	0	0
Writing/English Composition	17,673	7,261	974	66	1

Table 15–3a. Number of Students in Grades 3 through 5 Taking Multiple CDT Tests

	Math Lower Grades	Reading Lower Grades	Science	Writing Lower
Mathematics Lower Grades	-	-	-	-
Reading Lower Grades	4,809	-	-	-
Science Lower Grades	169	220	-	-
Writing Lower Grades	127	109	0	-

Table 15–3b. Number of Students in Grades 6 and above Taking Multiple CDT Tests

	Math.	Algebra I	Geometry	Algebra II	Reading/ Literature	Science	Biology	Chemistry	Writing/ English Comp.
Mathematics	-	-	-	-	-	-	-	-	-
Algebra I	2,704	-	-	-	-	-	-	-	-
Geometry	129	883	-	-	-	-	-	-	-
Algebra II	97	1,090	472	-	-	-	-	-	-
Reading/Literature	55,714	49,467	5,455	5,956	-	-	-	-	-
Science	22,917	7,880	352	328	27,557	-	-	-	-
Biology	797	27,624	3,499	2,923	43,737	1,102	-	-	-
Chemistry	21	1,231	879	1,479	3,234	29	730	-	-
Writing/English Composition	6,375	6,077	811	1,031	11,976	6,478	3,184	329	-

Further demographic information about students tested with the CDT is found in the next section.

DEMOGRAPHIC CHARACTERISTICS

COMPOSITION OF SAMPLE USED IN SUBSEQUENT TABLES

To avoid double counting of students, the following demographic tables are based on students' first administration for a given CDT test. Students who took the same test multiple times are counted only once. Students who took different tests are counted for each test. For example, if a student took CDT Algebra I twice, he or she is counted only once in the Algebra I counts; if a student took Algebra I once and Biology once, he or she is counted in both Algebra I and Biology counts.

COLLECTION OF STUDENT DEMOGRAPHIC INFORMATION

Data for analyses of demographic characteristics were obtained primarily from information supplied by school district personnel through the Pennsylvania Information Management System (PIMS) and subsequently transmitted to DRC. However, teachers may assign CDT tests to students who do not have data in PIMS at the time of testing. This may result in some CDT records with incomplete demographic information.

DEMOGRAPHIC CHARACTERISTICS

Frequency data for various demographic categories are presented in Tables 15–4 through 15–16. Shown at the bottom of the appropriate table is the number of students with a total test score on which the column percentages are based. Percentages in some categories may sum to a quantity below 100 percent due to missing data.

Analyses are broken out by grade level. However, in the case of course-specific CDT tests (Algebra I, Geometry, Algebra II, Biology, and Chemistry), students across multiple grades may be enrolled in the course.

Caution should be used in interpreting CDT demographic data, since participation is voluntary and complete demographic data via PIMS is not required for testing.

Table 15–4. Demographic Characteristics of Students Taking CDT Mathematics Lower Grades

Demographic or Educational Characteristic		Gr. 3	Gr. 4	Gr. 5	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	1,220	1,440	1,300	3,960
		49.4%	48.1%	49.1%	48.8%
	Male	1,248	1,553	1,348	4,149
		50.6%	51.9%	50.9%	51.2%
Race/Ethnicity	American Indian or Alaskan Native	5	6	2	13
		0.2%	0.2%	0.1%	0.2%
	Black/African American non-Hispanic	155	181	185	521
		6.3%	6.0%	7.0%	6.4%
	Hispanic	127	147	115	389
		5.1%	4.9%	4.3%	4.8%
	White/Caucasian non-Hispanic	2,093	2,542	2,223	6,858
		84.8%	84.9%	84.0%	84.6%
	Multi-Racial non-Hispanic	54	72	59	185
		2.2%	2.4%	2.2%	2.3%
	Asian non-Hispanic	31	43	64	138
		1.3%	1.4%	2.4%	1.7%
	Native Hawaiian or Pacific Islander	3	2	0	5
		0.1%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	360	452	419	1,231
		14.6%	15.1%	15.8%	15.2%
	Title I	1,382	1,576	1,272	4,230
		56.0%	52.7%	48.0%	52.2%
	Title III served	27	23	11	61
		1.1%	0.8%	0.4%	0.8%
	Title III not served	7	3	4	14
		0.3%	0.1%	0.2%	0.2%
	Migrant student	0	2	0	2
		0.0%	0.1%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	2	1	0	3
		0.1%	0.0%	0.0%	0.0%
	ELL (enrolled before 5-3-13)	33	25	15	73
		1.3%	0.8%	0.6%	0.9%
	Exited ESL - first year of monitoring	7	9	3	19
		0.3%	0.3%	0.1%	0.2%
	Exited ESL - second year of monitoring	0	13	3	16
		0.0%	0.4%	0.1%	0.2%
	Former ELL and no longer monitored	0	3	20	23
		0.0%	0.1%	0.8%	0.3%
	Economically disadvantaged	1,184	1,337	1,152	3,673
		48.0%	44.7%	43.5%	45.3%
	Number of students	2,468	2,993	2,648	8,109

Table 15–5. Demographic Characteristics of Students Taking CDT Mathematics

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	11,165	12,685	8,830	231	150	129	15	33,205
		49.0%	49.0%	48.3%	45.0%	43.0%	53.1%	44.1%	48.7%
	Male	11,626	13,229	9,450	282	199	114	19	34,919
		51.0%	51.0%	51.7%	55.0%	57.0%	46.9%	55.9%	51.3%
Race/Ethnicity	American Indian or Alaskan Native	39	36	32	0	2	0	0	109
		0.2%	0.1%	0.2%	0.0%	0.6%	0.0%	0.0%	0.2%
	Black/African American non-Hispanic	2,683	3,257	2,654	46	32	10	2	8,684
		11.8%	12.6%	14.5%	9.0%	9.2%	4.1%	5.9%	12.7%
	Hispanic	1,431	1,812	1,472	20	32	15	3	4,785
		6.3%	7.0%	8.1%	3.9%	9.2%	6.2%	8.8%	7.0%
	White/Caucasian non-Hispanic	17,613	19,586	13,257	437	277	210	29	51,409
		77.3%	75.6%	72.5%	85.2%	79.4%	86.4%	85.3%	75.5%
	Multi-Racial non-Hispanic	523	588	480	9	5	5	0	1,610
		2.3%	2.3%	2.6%	1.8%	1.4%	2.1%	0.0%	2.4%
	Asian non-Hispanic	483	618	370	1	1	3	0	1,476
		2.1%	2.4%	2.0%	0.2%	0.3%	1.2%	0.0%	2.2%
	Native Hawaiian or Pacific Islander	19	17	15	0	0	0	0	51
		0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	3,611	3,999	3,732	203	112	55	19	11,731
		15.8%	15.4%	20.4%	39.6%	32.1%	22.6%	55.9%	17.2%
	Title I	6,515	4,996	3,980	39	40	14	3	15,587
		28.6%	19.3%	21.8%	7.6%	11.5%	5.8%	8.8%	22.9%
	Title III served	329	426	347	3	2	4	0	1,111
		1.4%	1.6%	1.9%	0.6%	0.6%	1.6%	0.0%	1.6%
	Title III not served	76	104	87	4	4	1	0	276
		0.3%	0.4%	0.5%	0.8%	1.1%	0.4%	0.0%	0.4%
	Migrant student	8	9	6	0	0	0	0	23
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	38	37	51	0	0	0	0	126
		0.2%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%
	ELL (enrolled before 5-3-13)	368	493	383	7	6	5	0	1,262
		1.6%	1.9%	2.1%	1.4%	1.7%	2.1%	0.0%	1.9%
	Exited ESL - first year of monitoring	60	83	71	1	0	0	0	215
		0.3%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%	0.3%
	Exited ESL - second year of monitoring	98	116	68	2	7	0	0	291
		0.4%	0.4%	0.4%	0.4%	2.0%	0.0%	0.0%	0.4%
	Former ELL and no longer monitored	204	372	324	1	2	2	1	906
		0.9%	1.4%	1.8%	0.2%	0.6%	0.8%	2.9%	1.3%
	Economically disadvantaged	9,746	11,161	8,558	231	152	82	14	29,944
		42.8%	43.1%	46.8%	45.0%	43.6%	33.7%	41.2%	44.0%
	Number of students	22,791	25,914	18,280	513	349	243	34	68,124

Table 15–6. Demographic Characteristics of Students Taking CDT Algebra I

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	75	1,710	8,932	16,128	8,196	5,411	838	41,290
		40.1%	47.4%	50.6%	47.6%	46.6%	46.2%	41.7%	47.7%
	Male	112	1,897	8,718	17,722	9,376	6,305	1,172	45,302
		59.9%	52.6%	49.4%	52.4%	53.4%	53.8%	58.3%	52.3%
Race/Ethnicity	American Indian or Alaskan Native	0	5	23	72	24	21	3	148
		0.0%	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%	0.2%
	Black/African American non-Hispanic	9	141	1,105	3,613	1,867	1,258	213	8,206
		4.8%	3.9%	6.3%	10.7%	10.6%	10.7%	10.6%	9.5%
	Hispanic	7	112	562	3,285	1,784	1,046	188	6,984
		3.7%	3.1%	3.2%	9.7%	10.2%	8.9%	9.4%	8.1%
	White/Caucasian non-Hispanic	140	3,084	15,133	25,527	13,257	9,018	1,540	67,699
		74.9%	85.5%	85.7%	75.4%	75.4%	77.0%	76.6%	78.2%
	Multi-Racial non-Hispanic	2	54	323	699	339	178	37	1,632
		1.1%	1.5%	1.8%	2.1%	1.9%	1.5%	1.8%	1.9%
	Asian non-Hispanic	29	208	489	627	290	187	29	1,859
		15.5%	5.8%	2.8%	1.9%	1.7%	1.6%	1.4%	2.1%
	Native Hawaiian or Pacific Islander	0	3	15	27	11	8	0	64
		0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	6	163	1,150	5,656	4,023	2,921	686	14,605
		3.2%	4.5%	6.5%	16.7%	22.9%	24.9%	34.1%	16.9%
	Title I	11	355	1,908	3,476	1,948	1,308	206	9,212
		5.9%	9.8%	10.8%	10.3%	11.1%	11.2%	10.2%	10.6%
	Title III served	1	2	49	826	537	299	63	1,777
		0.5%	0.1%	0.3%	2.4%	3.1%	2.6%	3.1%	2.1%
	Title III not served	0	4	17	172	61	44	15	313
		0.0%	0.1%	0.1%	0.5%	0.3%	0.4%	0.7%	0.4%
	Migrant student	0	0	0	34	37	11	1	83
		0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	0.0%	0.1%
	ELL (enrolled after 5-3-13)	1	2	8	105	58	29	13	216
		0.5%	0.1%	0.0%	0.3%	0.3%	0.2%	0.6%	0.2%
	ELL (enrolled before 5-3-13)	0	4	59	894	540	315	65	1,877
		0.0%	0.1%	0.3%	2.6%	3.1%	2.7%	3.2%	2.2%
	Exited ESL - first year of monitoring	0	7	33	90	71	36	5	242
		0.0%	0.2%	0.2%	0.3%	0.4%	0.3%	0.2%	0.3%
	Exited ESL - second year of monitoring	2	5	36	109	39	41	8	240
		1.1%	0.1%	0.2%	0.3%	0.2%	0.3%	0.4%	0.3%
	Former ELL and no longer monitored	1	26	190	564	258	167	28	1,234
		0.5%	0.7%	1.1%	1.7%	1.5%	1.4%	1.4%	1.4%
	Economically disadvantaged	19	656	4,959	14,237	7,893	5,162	951	33,877
		10.2%	18.2%	28.1%	42.1%	44.9%	44.1%	47.3%	39.1%
	Number of students	187	3,607	17,650	33,850	17,572	11,716	2,010	86,592

Table 15–7. Demographic Characteristics of Students Taking CDT Geometry

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	0	10	358	928	1,835	455	90	3,676
		0.0%	32.3%	47.0%	50.4%	50.8%	49.5%	47.1%	49.9%
	Male	2	21	404	915	1,779	464	101	3,686
		100.0%	67.7%	53.0%	49.6%	49.2%	50.5%	52.9%	50.1%
Race/Ethnicity	American Indian or Alaskan Native	0	0	1	5	6	1	0	13
		0.0%	0.0%	0.1%	0.3%	0.2%	0.1%	0.0%	0.2%
	Black/African American non-Hispanic	0	1	37	194	642	119	23	1,016
		0.0%	3.2%	4.9%	10.5%	17.8%	12.9%	12.0%	13.8%
	Hispanic	0	1	8	101	321	69	21	521
		0.0%	3.2%	1.0%	5.5%	8.9%	7.5%	11.0%	7.1%
	White/Caucasian non-Hispanic	2	24	642	1,439	2,466	692	136	5,401
		100.0%	77.4%	84.3%	78.1%	68.2%	75.3%	71.2%	73.4%
	Multi-Racial non-Hispanic	0	0	17	38	99	17	4	175
		0.0%	0.0%	2.2%	2.1%	2.7%	1.8%	2.1%	2.4%
	Asian non-Hispanic	0	5	56	63	80	20	7	231
		0.0%	16.1%	7.3%	3.4%	2.2%	2.2%	3.7%	3.1%
	Native Hawaiian or Pacific Islander	0	0	1	3	0	1	0	5
		0.0%	0.0%	0.1%	0.2%	0.0%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	0	2	14	93	489	175	48	821
		0.0%	6.5%	1.8%	5.0%	13.5%	19.0%	25.1%	11.2%
	Title I	0	2	60	353	858	81	24	1,378
		0.0%	6.5%	7.9%	19.2%	23.7%	8.8%	12.6%	18.7%
	Title III served	0	0	1	14	50	21	10	96
		0.0%	0.0%	0.1%	0.8%	1.4%	2.3%	5.2%	1.3%
	Title III not served	0	0	0	6	39	12	2	59
		0.0%	0.0%	0.0%	0.3%	1.1%	1.3%	1.0%	0.8%
	Migrant student	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	0	0	0	2	2	2	0	6
		0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.0%	0.1%
	ELL (enrolled before 5-3-13)	0	0	1	18	87	31	12	149
		0.0%	0.0%	0.1%	1.0%	2.4%	3.4%	6.3%	2.0%
	Exited ESL - first year of monitoring	0	0	4	11	35	2	0	52
		0.0%	0.0%	0.5%	0.6%	1.0%	0.2%	0.0%	0.7%
	Exited ESL - second year of monitoring	0	0	1	3	8	6	5	23
		0.0%	0.0%	0.1%	0.2%	0.2%	0.7%	2.6%	0.3%
	Former ELL and no longer monitored	0	0	7	22	41	16	2	88
		0.0%	0.0%	0.9%	1.2%	1.1%	1.7%	1.0%	1.2%
	Economically disadvantaged	0	0	102	625	1,631	417	97	2,872
		0.0%	0.0%	13.4%	33.9%	45.1%	45.4%	50.8%	39.0%
	Number of students	2	31	762	1,843	3,614	919	191	7,362

Table 15–8. Demographic Characteristics of Students Taking CDT Algebra II

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	0	1	92	666	1,568	1,589	498	4,414
		N/A	20.0%	46.9%	50.5%	48.8%	47.2%	52.5%	48.8%
	Male	0	4	104	653	1,643	1,781	451	4,636
		N/A	80.0%	53.1%	49.5%	51.2%	52.8%	47.5%	51.2%
Race/Ethnicity	American Indian or Alaskan Native	0	0	0	2	1	4	1	8
		N/A	0.0%	0.0%	0.2%	0.0%	0.1%	0.1%	0.1%
	Black/African American non-Hispanic	0	0	1	69	339	550	225	1,184
		N/A	0.0%	0.5%	5.2%	10.6%	16.3%	23.7%	13.1%
	Hispanic	0	0	1	78	244	314	116	753
		N/A	0.0%	0.5%	5.9%	7.6%	9.3%	12.2%	8.3%
	White/Caucasian non-Hispanic	0	4	189	1,115	2,491	2,346	548	6,693
		N/A	80.0%	96.4%	84.5%	77.6%	69.6%	57.7%	74.0%
	Multi-Racial non-Hispanic	0	0	0	16	55	64	12	147
		N/A	0.0%	0.0%	1.2%	1.7%	1.9%	1.3%	1.6%
	Asian non-Hispanic	0	1	5	39	81	92	46	264
		N/A	20.0%	2.6%	3.0%	2.5%	2.7%	4.8%	2.9%
	Native Hawaiian or Pacific Islander	0	0	0	0	0	0	1	1
		N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Educational Category and Other Demographic Groups	IEP	0	0	10	50	214	395	113	782
		N/A	0.0%	5.1%	3.8%	6.7%	11.7%	11.9%	8.6%
	Title I	0	2	33	125	391	683	361	1,595
		N/A	40.0%	16.8%	9.5%	12.2%	20.3%	38.0%	17.6%
	Title III served	0	0	1	5	23	50	42	121
		N/A	0.0%	0.5%	0.4%	0.7%	1.5%	4.4%	1.3%
	Title III not served	0	0	0	2	1	35	3	41
		N/A	0.0%	0.0%	0.2%	0.0%	1.0%	0.3%	0.5%
	Migrant student	0	0	0	0	2	0	0	2
		N/A	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	0	0	0	0	2	7	2	11
		N/A	0.0%	0.0%	0.0%	0.1%	0.2%	0.2%	0.1%
	ELL (enrolled before 5-3-13)	0	0	1	7	22	78	43	151
		N/A	0.0%	0.5%	0.5%	0.7%	2.3%	4.5%	1.7%
	Exited ESL - first year of monitoring	0	0	0	2	12	26	4	44
		N/A	0.0%	0.0%	0.2%	0.4%	0.8%	0.4%	0.5%
	Exited ESL - second year of monitoring	0	0	0	0	6	11	6	23
		N/A	0.0%	0.0%	0.0%	0.2%	0.3%	0.6%	0.3%
	Former ELL and no longer monitored	0	0	0	22	44	51	19	136
		N/A	0.0%	0.0%	1.7%	1.4%	1.5%	2.0%	1.5%
	Economically disadvantaged	0	1	38	366	1,045	1,436	484	3,370
		N/A	20.0%	19.4%	27.7%	32.5%	42.6%	51.0%	37.2%
	Number of students	0	5	196	1,319	3,211	3,370	949	9,050

Table 15–9. Demographic Characteristics of Students Taking CDT Reading Lower Grades

Demographic or Educational Characteristic		Gr. 3	Gr. 4	Gr. 5	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	1,289	1,218	1,019	3,526
		49.6%	48.6%	49.9%	49.3%
	Male	1,308	1,290	1,024	3,622
		50.4%	51.4%	50.1%	50.7%
Race/Ethnicity	American Indian or Alaskan Native	6	2	3	11
		0.2%	0.1%	0.1%	0.2%
	Black/African American non-Hispanic	224	205	156	585
		8.6%	8.2%	7.6%	8.2%
	Hispanic	161	112	81	354
		6.2%	4.5%	4.0%	5.0%
	White/Caucasian non-Hispanic	2,076	2,080	1,727	5,883
		79.9%	82.9%	84.5%	82.3%
	Multi-Racial non-Hispanic	67	66	43	176
		2.6%	2.6%	2.1%	2.5%
	Asian non-Hispanic	60	39	33	132
		2.3%	1.6%	1.6%	1.8%
	Native Hawaiian or Pacific Islander	3	4	0	7
		0.1%	0.2%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	384	398	323	1,105
		14.8%	15.9%	15.8%	15.5%
	Title I	1,314	1,309	1,171	3,794
		50.6%	52.2%	57.3%	53.1%
	Title III served	33	26	11	70
		1.3%	1.0%	0.5%	1.0%
	Title III not served	3	2	4	9
		0.1%	0.1%	0.2%	0.1%
	Migrant student	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	2	1	0	3
		0.1%	0.0%	0.0%	0.0%
	ELL (enrolled before 5-3-13)	35	27	15	77
		1.3%	1.1%	0.7%	1.1%
	Exited ESL - first year of monitoring	12	12	4	28
		0.5%	0.5%	0.2%	0.4%
	Exited ESL - second year of monitoring	1	4	1	6
		0.0%	0.2%	0.0%	0.1%
	Former ELL and no longer monitored	4	6	3	13
		0.2%	0.2%	0.1%	0.2%
	Economically disadvantaged	1,207	1,162	972	3,341
		46.5%	46.3%	47.6%	46.7%
	Number of students	2,597	2,508	2,043	7,148

Table 15–10. Demographic Characteristics of Students Taking CDT Reading/Literature

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	10,659	12,834	13,135	14,469	22,856	6,665	784	81,402
		48.9%	48.5%	48.8%	48.2%	48.9%	45.7%	41.2%	48.3%
	Male	11,132	13,605	13,777	15,567	23,918	7,932	1,121	87,052
		51.1%	51.5%	51.2%	51.8%	51.1%	54.3%	58.8%	51.7%
Race/Ethnicity	American Indian or Alaskan Native	39	50	51	59	129	26	5	359
		0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.3%	0.2%
	Black/African American non-Hispanic	2,608	3,157	3,225	3,231	4,048	1,757	212	18,238
		12.0%	11.9%	12.0%	10.8%	8.7%	12.0%	11.1%	10.8%
	Hispanic	1,370	1,834	1,705	2,831	3,331	1,224	204	12,499
		6.3%	6.9%	6.3%	9.4%	7.1%	8.4%	10.7%	7.4%
	White/Caucasian non-Hispanic	16,748	20,172	20,633	22,572	37,236	11,055	1,410	129,826
		76.9%	76.3%	76.7%	75.1%	79.6%	75.7%	74.0%	77.1%
	Multi-Racial non-Hispanic	506	599	638	619	797	260	25	3,444
		2.3%	2.3%	2.4%	2.1%	1.7%	1.8%	1.3%	2.0%
	Asian non-Hispanic	503	609	638	703	1,161	266	48	3,928
		2.3%	2.3%	2.4%	2.3%	2.5%	1.8%	2.5%	2.3%
	Native Hawaiian or Pacific Islander	17	18	22	21	72	9	1	160
		0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
Educational Category and Other Demographic Groups	IEP	3,346	3,841	3,975	4,508	6,105	2,940	548	25,263
		15.4%	14.5%	14.8%	15.0%	13.1%	20.1%	28.8%	15.0%
	Title I	6,391	4,779	4,695	3,738	4,284	2,016	398	26,301
		29.3%	18.1%	17.4%	12.4%	9.2%	13.8%	20.9%	15.6%
	Title III served	322	385	318	558	585	311	115	2,594
		1.5%	1.5%	1.2%	1.9%	1.3%	2.1%	6.0%	1.5%
	Title III not served	75	88	87	75	72	45	5	447
		0.3%	0.3%	0.3%	0.2%	0.2%	0.3%	0.3%	0.3%
	Migrant student	6	8	4	28	40	10	2	98
		0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
	ELL (enrolled after 5-3-13)	27	31	44	24	25	14	3	168
		0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%
	ELL (enrolled before 5-3-13)	370	442	362	608	632	343	117	2,874
		1.7%	1.7%	1.3%	2.0%	1.4%	2.3%	6.1%	1.7%
	Exited ESL - first year of monitoring	55	86	100	81	173	66	5	566
		0.3%	0.3%	0.4%	0.3%	0.4%	0.5%	0.3%	0.3%
	Exited ESL - second year of monitoring	87	119	73	96	110	50	7	542
		0.4%	0.5%	0.3%	0.3%	0.2%	0.3%	0.4%	0.3%
	Former ELL and no longer monitored	208	350	373	562	785	220	17	2,515
		1.0%	1.3%	1.4%	1.9%	1.7%	1.5%	0.9%	1.5%
	Economically disadvantaged	9,485	11,181	10,961	11,569	15,668	6,064	854	65,782
		43.5%	42.3%	40.7%	38.5%	33.5%	41.5%	44.8%	39.1%
	Number of students	21,791	26,439	26,912	30,036	46,774	14,597	1,905	168,454

Table 15–11. Demographic Characteristics of Students Taking CDT Science Lower Grades

Demographic or Educational Characteristic		Gr. 3	Gr. 4	Gr. 5	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	100	111	24	235
		52.1%	45.7%	43.6%	48.0%
	Male	92	132	31	255
		47.9%	54.3%	56.4%	52.0%
Race/Ethnicity	American Indian or Alaskan Native	2	1	0	3
		1.0%	0.4%	0.0%	0.6%
	Black/African American non-Hispanic	3	22	0	25
		1.6%	9.1%	0.0%	5.1%
	Hispanic	3	27	0	30
		1.6%	11.1%	0.0%	6.1%
	White/Caucasian non-Hispanic	180	186	55	421
		93.8%	76.5%	100.0%	85.9%
	Multi-Racial non-Hispanic	3	3	0	6
		1.6%	1.2%	0.0%	1.2%
	Asian non-Hispanic	1	4	0	5
		0.5%	1.6%	0.0%	1.0%
	Native Hawaiian or Pacific Islander	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
Educational Category and Other Demographic Groups	IEP	25	38	10	73
		13.0%	15.6%	18.2%	14.9%
	Title I	20	4	0	24
		10.4%	1.6%	0.0%	4.9%
	Title III served	0	1	0	1
		0.0%	0.4%	0.0%	0.2%
	Title III not served	1	0	0	1
		0.5%	0.0%	0.0%	0.2%
	Migrant student	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	1	0	0	1
		0.5%	0.0%	0.0%	0.2%
	ELL (enrolled before 5-3-13)	0	1	0	1
		0.0%	0.4%	0.0%	0.2%
	Exited ESL - first year of monitoring	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Exited ESL - second year of monitoring	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Former ELL and no longer monitored	0	1	0	1
		0.0%	0.4%	0.0%	0.2%
	Economically disadvantaged	74	108	24	206
		38.5%	44.4%	43.6%	42.0%
	Number of students	192	243	55	490

Table 15–12. Demographic Characteristics of Students Taking CDT Science

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	2,805	5,291	8,536	601	246	94	44	17,617
		48.5%	49.6%	49.7%	48.5%	48.3%	47.7%	44.4%	49.4%
	Male	2,983	5,383	8,652	637	263	103	55	18,076
		51.5%	50.4%	50.3%	51.5%	51.7%	52.3%	55.6%	50.6%
Race/Ethnicity	American Indian or Alaskan Native	12	22	24	2	1	0	0	61
		0.2%	0.2%	0.1%	0.2%	0.2%	0.0%	0.0%	0.2%
	Black/African American non-Hispanic	1,298	1,845	2,361	133	52	29	14	5,732
		22.4%	17.3%	13.7%	10.7%	10.2%	14.7%	14.1%	16.1%
	Hispanic	462	871	1,051	90	46	19	9	2,548
		8.0%	8.2%	6.1%	7.3%	9.0%	9.6%	9.1%	7.1%
	White/Caucasian non-Hispanic	3,620	7,235	12,762	972	399	136	75	25,199
		62.5%	67.8%	74.2%	78.5%	78.4%	69.0%	75.8%	70.6%
	Multi-Racial non-Hispanic	282	430	558	20	4	2	1	1,297
		4.9%	4.0%	3.2%	1.6%	0.8%	1.0%	1.0%	3.6%
	Asian non-Hispanic	104	261	402	20	7	11	0	805
		1.8%	2.4%	2.3%	1.6%	1.4%	5.6%	0.0%	2.3%
	Native Hawaiian or Pacific Islander	10	10	30	1	0	0	0	51
		0.2%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	871	1,567	2,371	232	90	37	8	5,176
		15.0%	14.7%	13.8%	18.7%	17.7%	18.8%	8.1%	14.5%
	Title I	2,061	3,218	4,482	169	55	26	19	10,030
		35.6%	30.1%	26.1%	13.7%	10.8%	13.2%	19.2%	28.1%
	Title III served	107	179	234	20	6	9	1	556
		1.8%	1.7%	1.4%	1.6%	1.2%	4.6%	1.0%	1.6%
	Title III not served	55	63	62	11	1	1	0	193
		1.0%	0.6%	0.4%	0.9%	0.2%	0.5%	0.0%	0.5%
	Migrant student	6	9	6	0	0	1	0	22
		0.1%	0.1%	0.0%	0.0%	0.0%	0.5%	0.0%	0.1%
	ELL (enrolled after 5-3-13)	17	12	28	4	0	1	0	62
		0.3%	0.1%	0.2%	0.3%	0.0%	0.5%	0.0%	0.2%
	ELL (enrolled before 5-3-13)	145	230	269	27	7	9	1	688
		2.5%	2.2%	1.6%	2.2%	1.4%	4.6%	1.0%	1.9%
	Exited ESL - first year of monitoring	35	52	70	4	0	3	1	165
		0.6%	0.5%	0.4%	0.3%	0.0%	1.5%	1.0%	0.5%
	Exited ESL - second year of monitoring	30	51	54	5	2	0	0	142
		0.5%	0.5%	0.3%	0.4%	0.4%	0.0%	0.0%	0.4%
	Former ELL and no longer monitored	36	123	218	10	7	1	0	395
		0.6%	1.2%	1.3%	0.8%	1.4%	0.5%	0.0%	1.1%
	Economically disadvantaged	3,298	5,288	7,357	574	191	78	38	16,824
		57.0%	49.5%	42.8%	46.4%	37.5%	39.6%	38.4%	47.1%
	Number of students	5,788	10,674	17,188	1,238	509	197	99	35,693

Table 15–13. Demographic Characteristics of Students Taking CDT Biology

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	1	96	626	11,676	16,186	3,919	455	32,959
		100.0%	49.7%	49.4%	49.5%	47.8%	47.8%	42.6%	48.3%
	Male	0	97	642	11,932	17,676	4,283	614	35,244
		0.0%	50.3%	50.6%	50.5%	52.2%	52.2%	57.4%	51.7%
Race/Ethnicity	American Indian or Alaskan Native	0	0	1	38	112	11	1	163
		0.0%	0.0%	0.1%	0.2%	0.3%	0.1%	0.1%	0.2%
	Black/African American non-Hispanic	0	4	65	2,114	3,150	890	139	6,362
		0.0%	2.1%	5.1%	9.0%	9.3%	10.9%	13.0%	9.3%
	Hispanic	0	4	124	1,919	2,972	708	140	5,867
		0.0%	2.1%	9.8%	8.1%	8.8%	8.6%	13.1%	8.6%
	White/Caucasian non-Hispanic	1	181	1,012	18,253	26,187	6,264	742	52,640
		100.0%	93.8%	79.8%	77.3%	77.3%	76.4%	69.4%	77.2%
	Multi-Racial non-Hispanic	0	2	42	470	588	136	12	1,250
		0.0%	1.0%	3.3%	2.0%	1.7%	1.7%	1.1%	1.8%
	Asian non-Hispanic	0	2	23	802	775	185	35	1,822
		0.0%	1.0%	1.8%	3.4%	2.3%	2.3%	3.3%	2.7%
	Native Hawaiian or Pacific Islander	0	0	1	12	78	8	0	99
		0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	0	6	191	2,721	5,188	1,534	304	9,944
		0.0%	3.1%	15.1%	11.5%	15.3%	18.7%	28.4%	14.6%
	Title I	0	1	239	2,424	3,535	681	188	7,068
		0.0%	0.5%	18.8%	10.3%	10.4%	8.3%	17.6%	10.4%
	Title III served	0	0	11	411	750	224	69	1,465
		0.0%	0.0%	0.9%	1.7%	2.2%	2.7%	6.5%	2.1%
	Title III not served	0	0	1	64	74	31	8	178
		0.0%	0.0%	0.1%	0.3%	0.2%	0.4%	0.7%	0.3%
	Migrant student	0	0	0	21	39	7	0	67
		0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%
	ELL (enrolled after 5-3-13)	0	0	1	46	54	23	12	136
		0.0%	0.0%	0.1%	0.2%	0.2%	0.3%	1.1%	0.2%
	ELL (enrolled before 5-3-13)	0	0	11	431	770	232	65	1,509
		0.0%	0.0%	0.9%	1.8%	2.3%	2.8%	6.1%	2.2%
	Exited ESL - first year of monitoring	0	0	1	60	174	27	7	269
		0.0%	0.0%	0.1%	0.3%	0.5%	0.3%	0.7%	0.4%
	Exited ESL - second year of monitoring	0	0	6	72	96	24	6	204
		0.0%	0.0%	0.5%	0.3%	0.3%	0.3%	0.6%	0.3%
	Former ELL and no longer monitored	0	2	26	430	655	112	12	1,237
		0.0%	1.0%	2.1%	1.8%	1.9%	1.4%	1.1%	1.8%
	Economically disadvantaged	0	43	460	8,192	12,394	3,295	489	24,873
		0.0%	22.3%	36.3%	34.7%	36.6%	40.2%	45.7%	36.5%
	Number of students	1	193	1,268	23,608	33,862	8,202	1,069	68,203

Table 15–14. Demographic Characteristics of Students Taking CDT Chemistry

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	0	0	0	29	1,150	1,862	208	3,249
		N/A	N/A	0.0%	40.3%	53.8%	50.5%	52.4%	51.6%
	Male	0	0	1	43	987	1,828	189	3,048
		N/A	N/A	100.0%	59.7%	46.2%	49.5%	47.6%	48.4%
Race/Ethnicity	American Indian or Alaskan Native	0	0	0	0	4	4	0	8
		N/A	N/A	0.0%	0.0%	0.2%	0.1%	0.0%	0.1%
	Black/African American non-Hispanic	0	0	0	19	210	317	68	614
		N/A	N/A	0.0%	26.4%	9.8%	8.6%	17.1%	9.8%
	Hispanic	0	0	0	4	77	210	31	322
		N/A	N/A	0.0%	5.6%	3.6%	5.7%	7.8%	5.1%
	White/Caucasian non-Hispanic	0	0	1	47	1,761	3,036	282	5,127
		N/A	N/A	100.0%	65.3%	82.4%	82.3%	71.0%	81.4%
	Multi-Racial non-Hispanic	0	0	0	0	56	55	7	118
		N/A	N/A	0.0%	0.0%	2.6%	1.5%	1.8%	1.9%
	Asian non-Hispanic	0	0	0	1	28	66	9	104
		N/A	N/A	0.0%	1.4%	1.3%	1.8%	2.3%	1.7%
	Native Hawaiian or Pacific Islander	0	0	0	1	1	2	0	4
		N/A	N/A	0.0%	1.4%	0.0%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	0	0	0	9	139	347	52	547
		N/A	N/A	0.0%	12.5%	6.5%	9.4%	13.1%	8.7%
	Title I	0	0	0	11	187	212	25	435
		N/A	N/A	0.0%	15.3%	8.8%	5.7%	6.3%	6.9%
	Title III served	0	0	0	0	7	22	7	36
		N/A	N/A	0.0%	0.0%	0.3%	0.6%	1.8%	0.6%
	Title III not served	0	0	0	0	1	12	5	18
		N/A	N/A	0.0%	0.0%	0.0%	0.3%	1.3%	0.3%
	Migrant student	0	0	0	0	1	0	0	1
		N/A	N/A	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	0	0	0	0	0	3	0	3
		N/A	N/A	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
	ELL (enrolled before 5-3-13)	0	0	0	0	8	31	12	51
		N/A	N/A	0.0%	0.0%	0.4%	0.8%	3.0%	0.8%
	Exited ESL- first year of monitoring	0	0	0	0	1	21	1	23
		N/A	N/A	0.0%	0.0%	0.0%	0.6%	0.3%	0.4%
	Exited ESL - second year of monitoring	0	0	0	0	0	11	4	15
		N/A	N/A	0.0%	0.0%	0.0%	0.3%	1.0%	0.2%
	Former ELL and no longer monitored	0	0	0	1	23	48	5	77
		N/A	N/A	0.0%	1.4%	1.1%	1.3%	1.3%	1.2%
	Economically disadvantaged	0	0	0	45	669	1,201	185	2,100
		N/A	N/A	0.0%	62.5%	31.3%	32.5%	46.6%	33.3%
	Number of students	0	0	1	72	2,137	3,690	397	6,297

Table 15–15. Demographic Characteristics of Students Taking CDT Writing Lower Grades

Demographic or Educational Characteristic		Gr. 3	Gr. 4	Gr. 5	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	58	51	63	172
		51.8%	49.0%	50.8%	50.6%
	Male	54	53	61	168
		48.2%	51.0%	49.2%	49.4%
Race/Ethnicity	American Indian or Alaskan Native	0	1	0	1
		0.0%	1.0%	0.0%	0.3%
	Black/African American non-Hispanic	2	3	2	7
		1.8%	2.9%	1.6%	2.1%
	Hispanic	4	3	5	12
		3.6%	2.9%	4.0%	3.5%
	White/Caucasian non-Hispanic	102	96	116	314
		91.1%	92.3%	93.5%	92.4%
	Multi-Racial non-Hispanic	0	1	0	1
		0.0%	1.0%	0.0%	0.3%
	Asian non-Hispanic	4	0	1	5
		3.6%	0.0%	0.8%	1.5%
	Native Hawaiian or Pacific Islander	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
Educational Category and Other Demographic Groups	IEP	9	10	9	28
		8.0%	9.6%	7.3%	8.2%
	Title I	30	24	14	68
		26.8%	23.1%	11.3%	20.0%
	Title III served	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Title III not served	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Migrant student	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	ELL (enrolled before 5-3-13)	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Exited ESL- first year of monitoring	1	0	0	1
		0.9%	0.0%	0.0%	0.3%
	Exited ESL - second year of monitoring	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Former ELL and no longer monitored	0	0	0	0
		0.0%	0.0%	0.0%	0.0%
	Economically disadvantaged	42	42	43	127
		37.5%	40.4%	34.7%	37.4%
	Number of students	112	104	124	340

Table 15–16. Demographic Characteristics of Students Taking CDT Writing/English Composition

Demographic or Educational Characteristic		Gr. 6	Gr. 7	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
		N / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct	*N* / Pct
Gender	Female	1,024	1,536	1,606	2,997	686	739	63	8,651
		45.6%	50.7%	49.8%	50.2%	46.0%	48.0%	37.1%	49.0%
	Male	1,221	1,496	1,622	2,973	804	799	107	9,022
		54.4%	49.3%	50.2%	49.8%	54.0%	52.0%	62.9%	51.0%
Race/Ethnicity	American Indian or Alaskan Native	3	5	2	7	0	1	0	18
		0.1%	0.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%
	Black/African American non-Hispanic	219	259	293	350	141	123	10	1,395
		9.8%	8.5%	9.1%	5.9%	9.5%	8.0%	5.9%	7.9%
	Hispanic	88	94	107	299	117	73	3	781
		3.9%	3.1%	3.3%	5.0%	7.9%	4.7%	1.8%	4.4%
	White/Caucasian non-Hispanic	1,860	2,585	2,725	5,025	1,172	1,287	153	14,807
		82.9%	85.3%	84.4%	84.2%	78.7%	83.7%	90.0%	83.8%
	Multi-Racial non-Hispanic	52	52	57	98	19	18	2	298
		2.3%	1.7%	1.8%	1.6%	1.3%	1.2%	1.2%	1.7%
	Asian non-Hispanic	22	34	40	186	40	35	2	359
		1.0%	1.1%	1.2%	3.1%	2.7%	2.3%	1.2%	2.0%
	Native Hawaiian or Pacific Islander	1	3	4	5	1	1	0	15
		0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
Educational Category and Other Demographic Groups	IEP	370	431	365	679	187	204	53	2,289
		16.5%	14.2%	11.3%	11.4%	12.6%	13.3%	31.2%	13.0%
	Title I	560	443	538	480	306	327	29	2,683
		24.9%	14.6%	16.7%	8.0%	20.5%	21.3%	17.1%	15.2%
	Title III served	10	3	5	24	2	6	1	51
		0.4%	0.1%	0.2%	0.4%	0.1%	0.4%	0.6%	0.3%
	Title III not served	7	6	9	20	17	6	0	65
		0.3%	0.2%	0.3%	0.3%	1.1%	0.4%	0.0%	0.4%
	Migrant student	0	0	0	1	0	0	0	1
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	ELL (enrolled after 5-3-13)	2	0	0	1	2	0	0	5
		0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
	ELL (enrolled before 5-3-13)	15	9	14	43	17	12	1	111
		0.7%	0.3%	0.4%	0.7%	1.1%	0.8%	0.6%	0.6%
	Exited ESL- first year of monitoring	3	1	4	16	13	11	0	48
		0.1%	0.0%	0.1%	0.3%	0.9%	0.7%	0.0%	0.3%
	Exited ESL - second year of monitoring	1	1	3	20	9	3	0	37
		0.0%	0.0%	0.1%	0.3%	0.6%	0.2%	0.0%	0.2%
	Former ELL and no longer monitored	8	8	4	77	7	15	0	119
		0.4%	0.3%	0.1%	1.3%	0.5%	1.0%	0.0%	0.7%
	Economically disadvantaged	1,111	1,344	1,318	1,755	496	519	71	6,614
		49.5%	44.3%	40.8%	29.4%	33.3%	33.7%	41.8%	37.4%
	Number of students	2,245	3,032	3,228	5,970	1,490	1,538	170	17,673

SUMMARY STATISTICS – TEST LENGTH

The analyses from here until the section titled "Multiple Administrations of the Same CDT Test" include all records in the CDT operational assessments. When a student took CDT Mathematics twice, for example, both records were used in the analyses.

As noted in Chapter Thirteen, CDT tests have either four or five diagnostic categories. On tests with five diagnostic categories (Reading Lower Grades, Reading/Literature, Writing Lower Grades, and Writing/English Composition), students take between 10 and 12 operational items per diagnostic category for a total test of 50 to 60 operational items. On tests with four diagnostic categories (Mathematics Lower Grades, Mathematics, Algebra I, Geometry, Algebra II, Science Lower Grades, Science, Biology, and Chemistry), students take between 12 and 15 operational items per diagnostic category for a total test of 48 to 60 operational items.

Table 15–17 shows the summary statistics for the test length for each assessment. Summary statistics are based on the number of items presented to the student and include minimum, maximum, quartiles 1 and 3, mean, and median.

Table 15–17. Summary Statistics for CDT Test Length (Number of Items Administered)

	N	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics Lower Grades	8,117	48	48	49	49.86	51	60
Mathematics	120,088	48	50	51	51.69	53	60
Algebra I	144,912	48	50	51	51.55	53	60
Geometry	13,293	48	50	52	52.11	54	60
Algebra II	15,197	48	50	52	52.36	54	60
Reading Lower Grades	7,164	50	53	55	54.80	56	60
Reading/Literature	277,536	50	54	55	55.32	57	60
Science Lower Grades	490	48	48	49	49.52	50	58
Science	53,536	48	50	51	51.62	53	60
Biology	117,648	48	50	51	52.06	54	60
Chemistry	11,780	48	50	52	52.52	55	60
Writing Lower Grades	340	50	52	53	53.17	54	59
Writing/English Comp.	25,975	50	54	55	55.34	57	60

The minimum number of items was quite similar, ranging from 48 to 50. The mean and median were higher for tests in the reading and writing content areas, which have five diagnostic categories. The maximum number of items administered was fixed at 60 for all CDT tests.

SUMMARY STATISTICS – SCALE SCORES AND CONDITIONAL STANDARD ERRORS FOR TOTAL TEST

Table 15–18 shows the summary statistics for the scale scores based on total test. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts. Tests that are course-specific are not broken down.

Table 15–18. Summary Statistics for Scale Score Based on Total Test

	N	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics – G3	2,468	319	751	841	832.59	923	1220
Mathematics – G4	3,001	470	833	917	911.08	995	1327
Mathematics – G5	2,648	474	882	970	962.47	1054	1362
Mathematics – G6	40,464	529	872	963	959.40	1052	1561
Mathematics – G7	47,665	513	919	1010	1001.62	1090	1632
Mathematics – G8	30,785	529	932	1026	1010.27	1099	1735
Mathematics – HS	1,174	579	899	1023	1017.61	1132	1504
Algebra I	144,912	528	1001	1088	1068.97	1152	1764
Geometry	13,293	580	1020	1109	1102.99	1190	1729
Algebra II	15,197	586	1064	1144	1138.30	1220	1779
Reading – G3	2,597	308	683	792	784.84	890	1219
Reading – G4	2,524	380	746	860	850.75	960	1228
Reading – G5	2,043	458	826	937	917.94	1023	1325
Reading – G6	37,520	400	825	948	929.09	1042	1437
Reading – G7	46,393	400	864	984	963.61	1075	1521
Reading – G8	44,395	447	894	1010	990.39	1100	1466
Literature	149,228	400	923	1045	1021.47	1138	1823
Science – G3	192	291	707	781	768.82	852	1038
Science – G4	243	457	815	894	874.07	944	1118
Science – G5	55	602	746	853	835.25	925	1101
Science – G6	8,695	418	758	856	845.13	935	1338
Science – G7	17,690	485	797	902	884.13	980	1274
Science – G8	24,411	485	843	939	919.49	1009	1480
Science – HS	2,740	514	816	933	912.56	1015	1345
Biology	117,648	470	906	994	983.60	1067	1609
Chemistry	11,780	511	938	1005	1000.69	1069	1746
Writing – G3	112	507	815	872	868.24	947	1067
Writing – G4	104	732	905	956	949.88	1003	1135
Writing – G5	124	572	936	996	985.66	1045	1217
Writing – G6	3,330	478	822	930	910.45	1009	1332
Writing – G7	4,854	468	866	970	946.46	1044	1320
Writing – G8	4,891	491	908	997	978.30	1070	1361
English Composition	12,900	447	958	1050	1030.67	1122	1601

Table 15–19 shows the summary statistics for the conditional standard errors of measurement (CSEMs) in the scale score metric based on total test. The final column in the table shows the theoretical minimum CSEM that is possible for a test length equal to the mean number of items. This is the standard error if the student's ability is known and there are sufficient items in the operational pool to administer where the item's difficulty is equal to the known ability and the test constraints are met.

Table 15–19. Summary Statistics for Conditional Standard Errors Based on Total Test

	N	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Mathematics – G3	2,468	36	37	38	37.96	38	51	37.03
Mathematics – G4	3,001	36	37	38	37.80	38	43	37.03
Mathematics – G5	2,648	36	37	38	37.84	38	46	37.03
Mathematics – G6	40,464	34	37	37	37.12	37	60	34.64
Mathematics – G7	47,665	34	37	37	37.09	37	67	34.64
Mathematics – G8	30,785	35	37	37	37.18	37	91	34.64
Mathematics – HS	1,174	35	37	37	37.73	38	53	34.31
Algebra I	144,912	34	37	37	37.22	37	90	34.64
Geometry	13,293	35	37	37	37.26	37	90	34.64
Algebra II	15,197	35	37	37	37.36	37	90	34.64
Reading – G3	2,597	39	42	42	43.04	44	71	40.38
Reading – G4	2,524	39	42	42	42.91	44	64	40.38
Reading – G5	2,043	39	41	42	43.01	44	68	40.38
Reading – G6	37,520	39	42	43	43.29	44	86	38.52
Reading – G7	46,393	39	41	42	43.22	44	104	38.52
Reading – G8	44,395	39	41	42	43.19	44	87	38.52
Literature	149,228	38	41	43	43.91	45	262	38.17
Science – G3	192	39	40	40	40.27	41	50	39.40
Science – G4	243	39	40	40	40.01	40	42	39.80
Science – G5	55	39	39	40	40.16	41	43	39.40
Science – G6	8,695	37	39	39	39.51	40	60	36.85
Science – G7	17,690	37	39	39	39.43	40	54	36.85
Science – G8	24,411	37	39	39	39.44	40	58	37.21
Science – HS	2,740	37	39	39	39.54	40	52	36.85
Biology	117,648	37	39	39	39.56	40	79	36.85
Chemistry	11,780	36	39	39	39.67	40	134	36.50
Writing – G3	112	38	39	39	39.11	39	42	38.31
Writing – G4	104	38	39	39	38.95	39	40	38.31
Writing – G5	124	38	39	39	38.92	39	41	38.31
Writing – G6	3,330	36	38	38	38.20	38	53	35.87
Writing – G7	4,854	36	38	38	38.13	38	55	35.87
Writing – G8	4,891	36	38	38	38.08	38	52	35.87
English Composition	12,900	36	38	38	38.26	38	96	35.87

Values in the "Minimum" column that are less than the "Theoretical Minimum" are due to students taking more than the mean number of items. Recall that calculation of "Theoretical Minimum" is based on the mean number of items.

Figures 15–1 through 15–8 show the scale score distributions for the total test for the content areas mathematics, reading, science, and writing. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts while tests that are course-specific are not broken down. The benchmark cuts in place during the 2013–2014 school year are shown in green[15]. The bottom plot in each figure represents the distribution of items in the content area pools.

[15] For details on benchmark cuts, see Chapter Ten and Chapter Nineteen.

Figure 15–1. Scale Score Distribution – Mathematics Lower Grades Total Scores

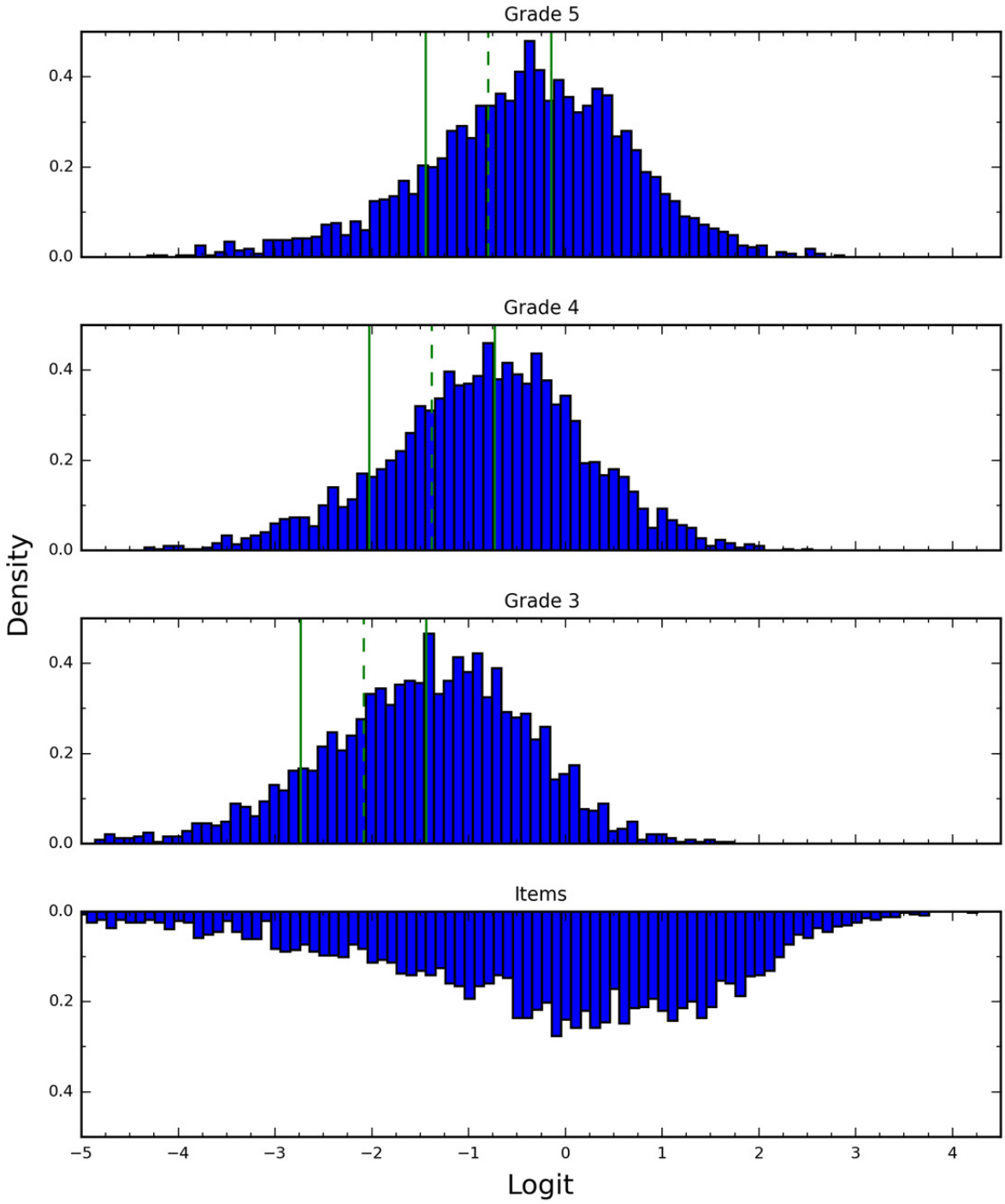


Figure 15–2. Scale Score Distribution – Mathematics Total Scores

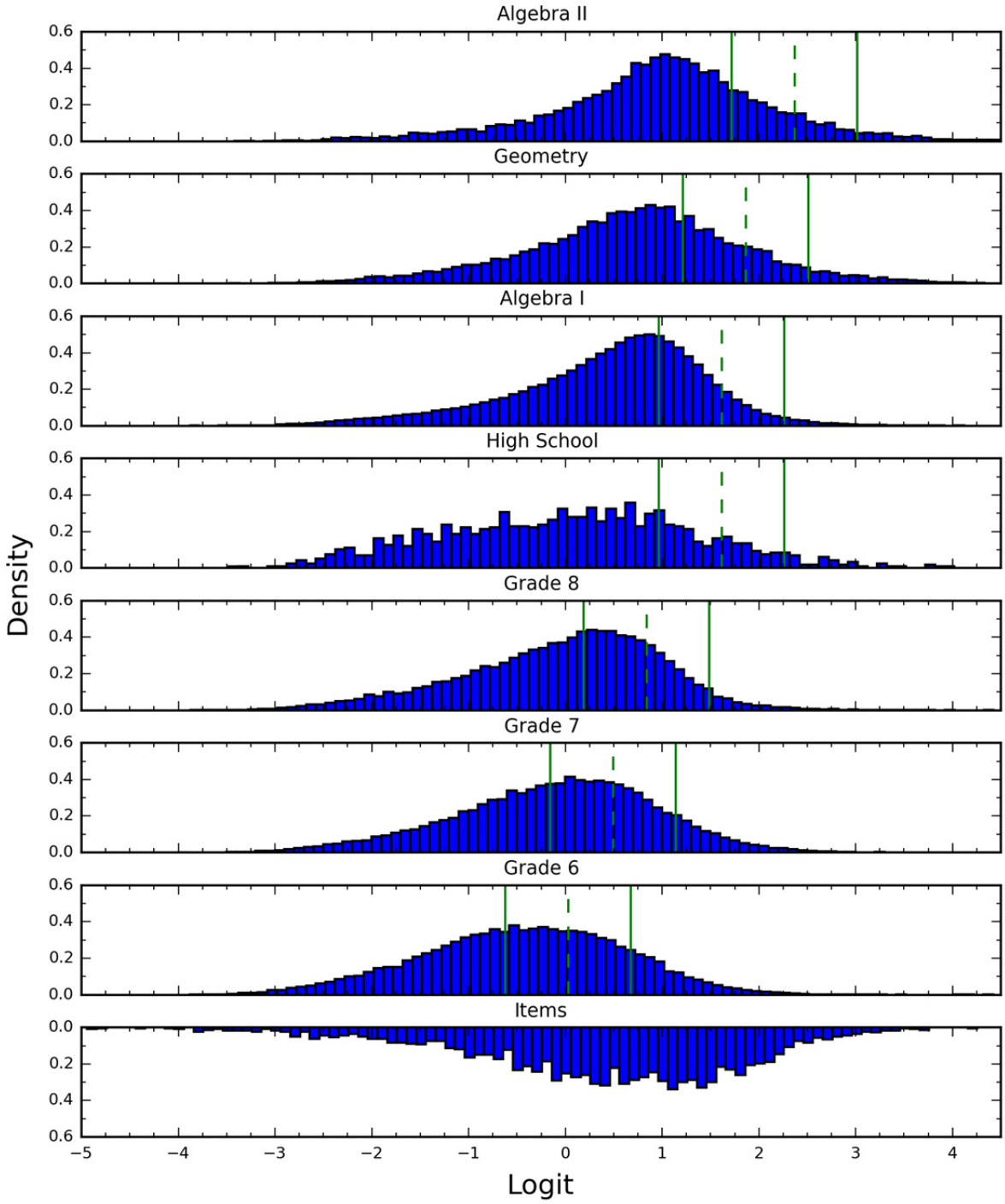


Figure 15–3. Scale Score Distribution – Reading Lower Grades Total Scores

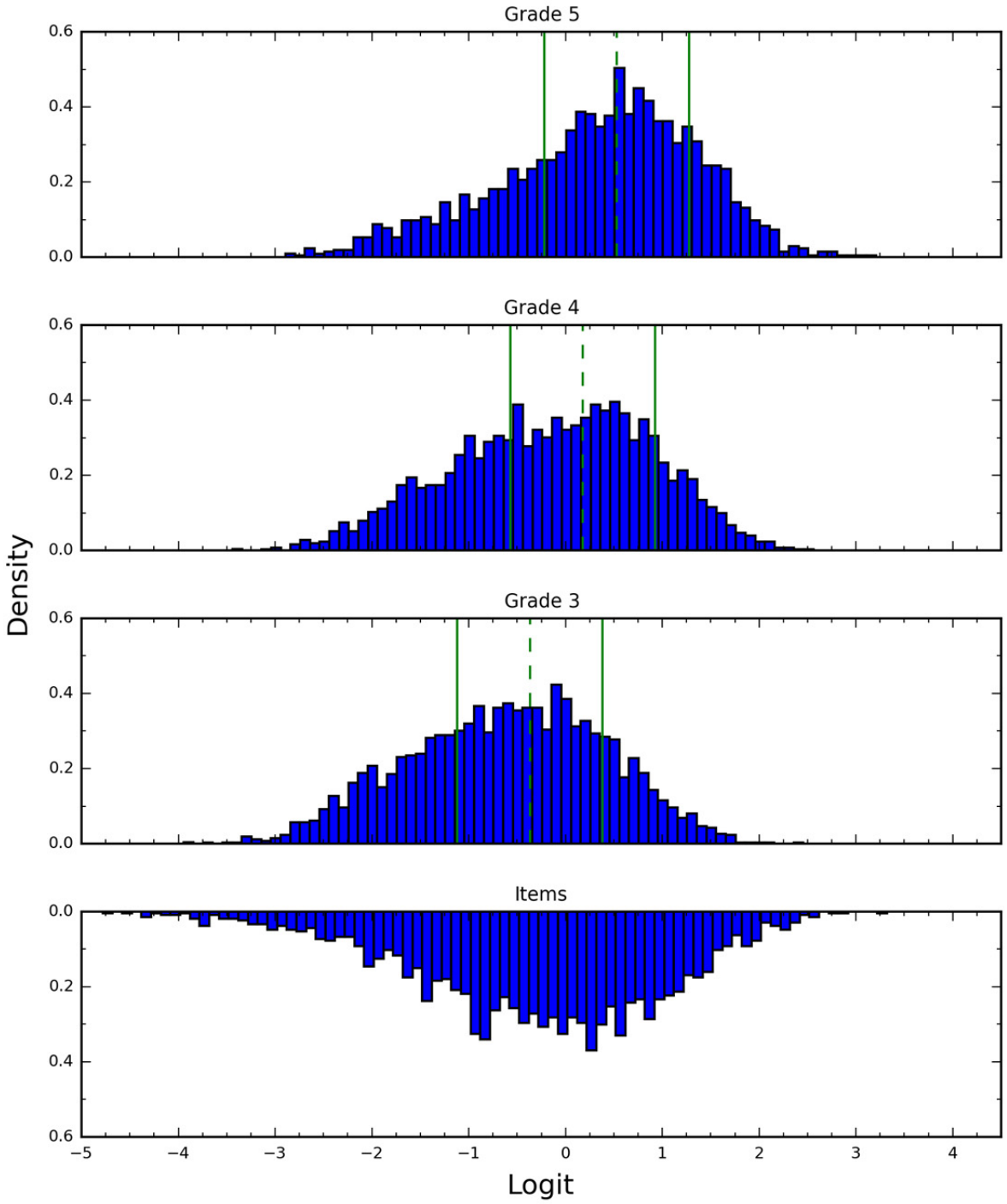


Figure 15–4. Scale Score Distribution – Reading/Literature Total Scores

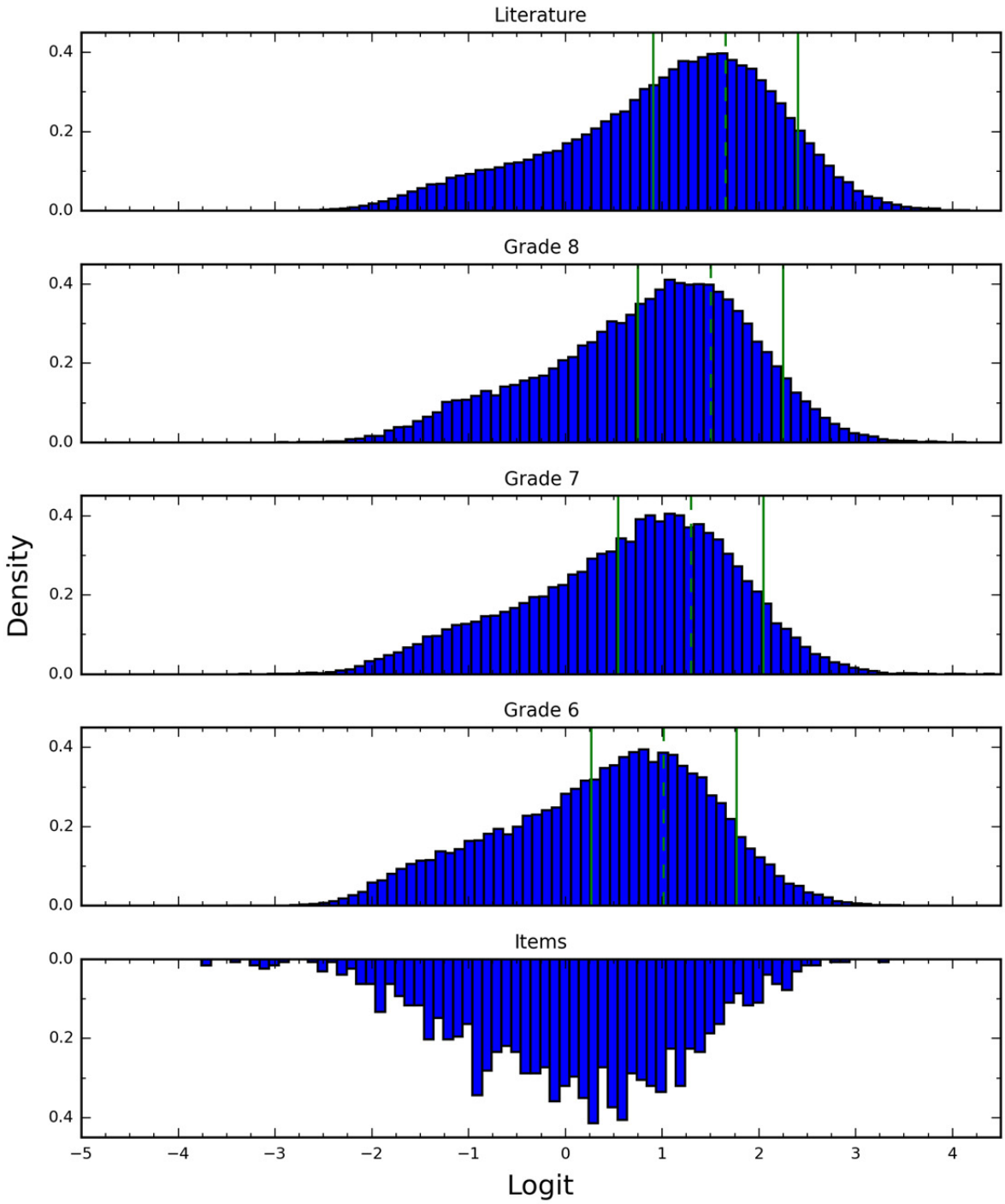


Figure 15–5. Scale Score Distribution – Science Lower Grades Total Scores

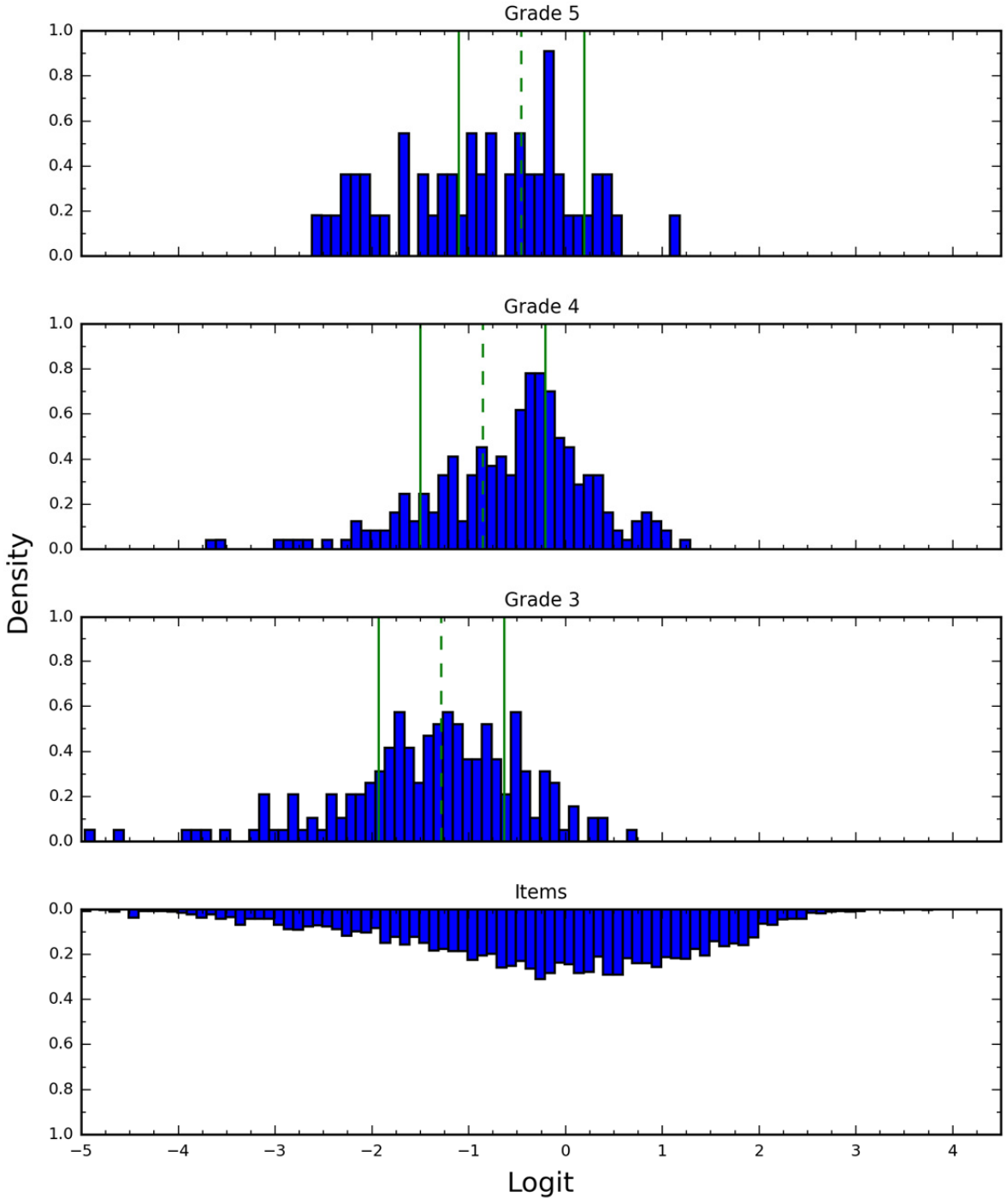


Figure 15–6. Scale Score Distribution – Science Total Scores

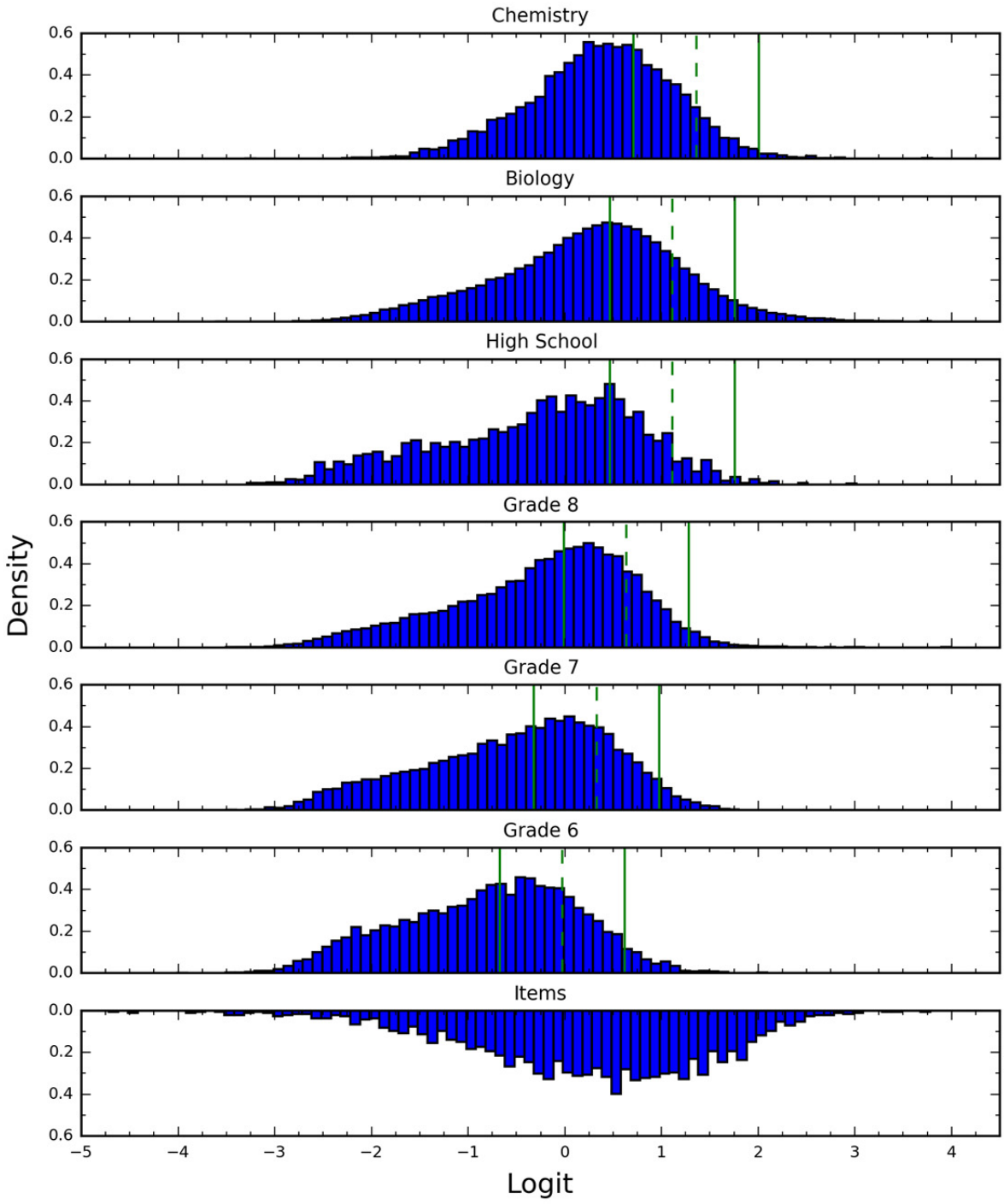


Figure 15–7. Scale Score Distribution – Writing Lower Grades Total Scores

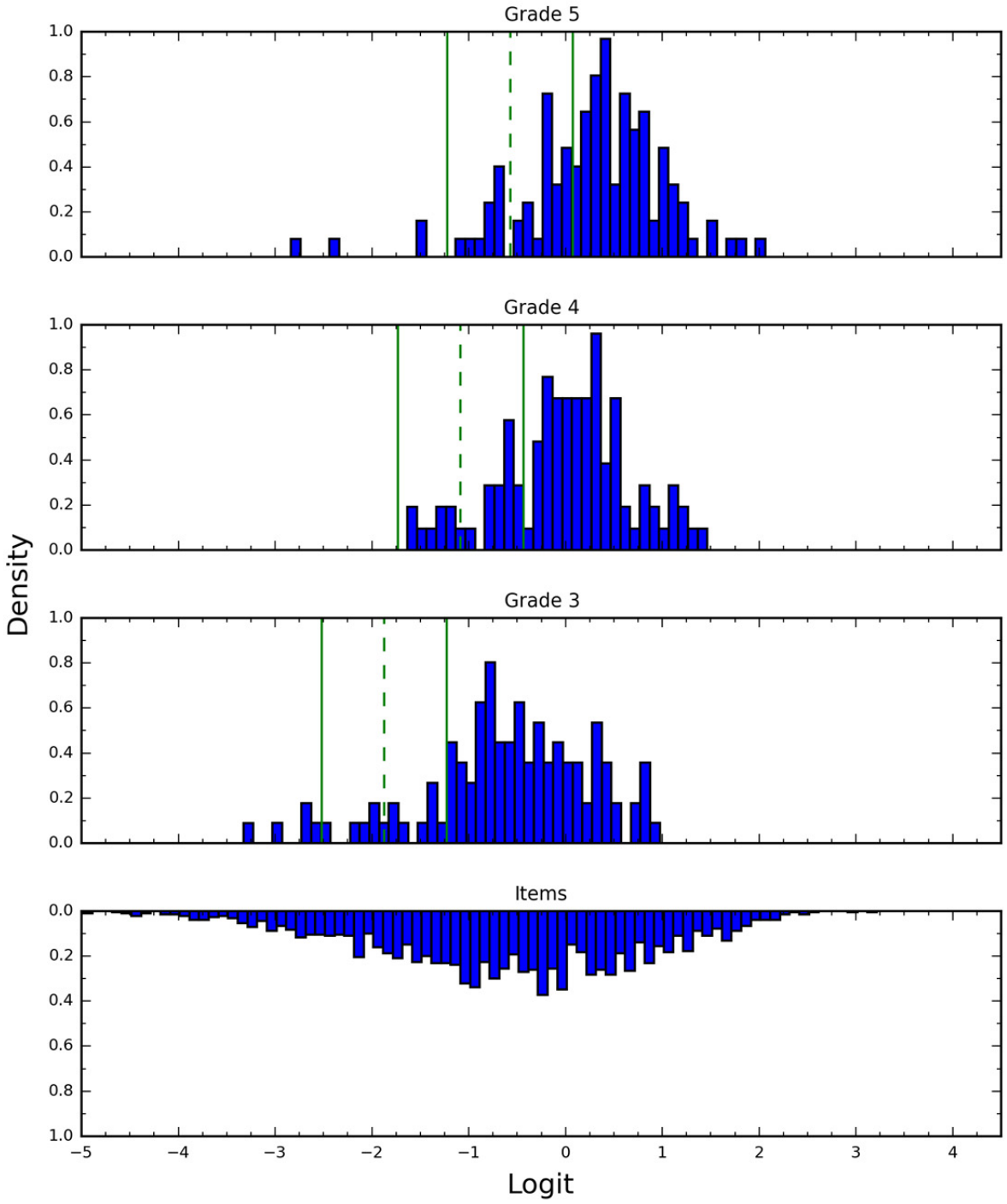
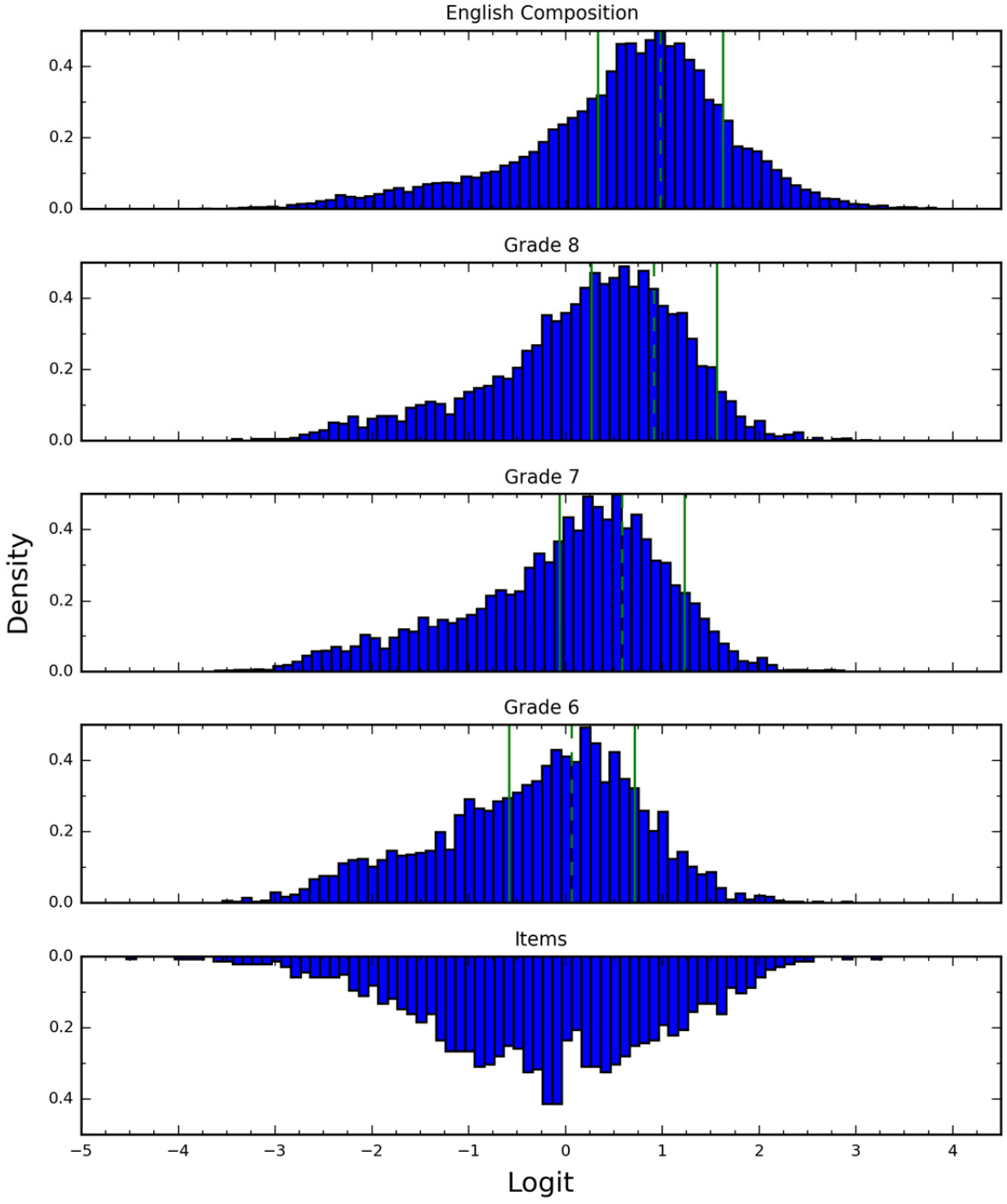


Figure 15–8. Scale Score Distribution – Writing/English Composition Total Scores



SUMMARY STATISTICS – SCALE SCORES AND CONDITIONAL STANDARD ERRORS FOR DIAGNOSTIC CATEGORIES

Table 15–20 shows the summary statistics for the scale scores based on diagnostic categories. To be consistent with Table 15–18, tests with multiple benchmark cuts are broken down to match the grade level of the cuts, while tests that are course-specific are not broken down. Full diagnostic category names can be found in Chapter Thirteen.

Table 15–20. Summary Statistics for Scale Score Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics Lower Grades	3	1	2,468	200	716	814	813.07	917	1374
	3	2	2,468	200	740	845	831.54	937	1354
	3	3	2,468	200	730	829	831.80	935	1227
	3	4	2,468	200	765	871	857.32	963	1497
	4	1	3,001	200	806	902	901.47	992	1488
	4	2	3,001	245	814	919	904.97	1007	1319
	4	3	3,001	383	825	926	917.10	1017	1393
	4	4	3,001	200	833	929	921.82	1016	1427
	5	1	2,648	330	879	985	970.55	1081	1480
	5	2	2,648	293	851	948	943.76	1048	1417
	5	3	2,648	366	883	977	964.70	1056	1480
	5	4	2,648	236	871	977	972.47	1085	1374
Mathematics	6	1	40,464	400	864	975	966.63	1080	1700
	6	2	40,464	400	847	955	948.57	1057	1763
	6	3	40,464	400	877	962	959.82	1045	1613
	6	4	40,464	400	855	971	965.52	1083	1765
	7	1	47,665	400	911	1016	1007.52	1120	1717
	7	2	47,665	400	915	1012	1000.75	1102	1691
	7	3	47,665	400	912	1003	997.52	1086	1833
	7	4	47,665	400	899	1018	1003.37	1114	1619
	8	1	30,785	400	916	1027	1009.11	1125	1776
	8	2	30,785	400	940	1031	1016.15	1107	1839
	8	3	30,785	400	920	1017	1007.31	1102	1686
	8	4	30,785	400	912	1032	1011.65	1123	1785
	HS	1	1,174	400	893	1029	1018.07	1160	1645
	HS	2	1,174	400	908	1042	1027.11	1144	1587
	HS	3	1,174	526	887	1022	1013.93	1128	1689
	HS	4	1,174	400	883	1034	1013.94	1151	1593
Algebra I	All	1	144,912	400	990	1082	1059.46	1158	1840
	All	2	144,912	407	1001	1094	1079.24	1172	1853
	All	3	144,912	400	994	1095	1076.94	1174	1827
	All	4	144,912	400	976	1084	1063.55	1168	1834

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum
Geometry	All	1	13,293	400	1016	1115	1096.32	1197	1758
	All	2	13,293	400	1023	1108	1113.53	1215	1793
	All	3	13,293	400	1003	1113	1105.96	1210	1792
	All	4	13,293	400	1002	1109	1098.60	1205	1827
Algebra II	All	1	15,197	554	1032	1127	1159.06	1255	1842
	All	2	15,197	400	1055	1146	1129.42	1225	1883
	All	3	15,197	400	1077	1163	1143.78	1236	1851
	All	4	15,197	400	1043	1145	1127.29	1223	1837
Reading Lower Grades	3	1	2,597	200	648	793	780.71	920	1481
	3	2	2,597	200	664	805	787.71	921	1325
	3	3	2,597	200	674	795	788.27	914	1389
	3	4	2,597	200	677	796	788.24	906	1346
	3	5	2,597	200	676	784	772.16	887	1406
	4	1	2,524	200	723	876	851.09	986	1486
	4	2	2,524	200	743	868	849.13	977	1468
	4	3	2,524	200	740	857	848.83	967	1540
	4	4	2,524	200	746	871	859.80	983	1529
	4	5	2,524	200	736	852	841.16	961	1467
	5	1	2,043	200	818	946	926.84	1047	1513
	5	2	2,043	200	813	933	910.39	1031	1509
	5	3	2,043	239	808	937	922.73	1044	1537
	5	4	2,043	200	826	942	923.95	1045	1535
	5	5	2,043	200	801	925	909.42	1032	1536
Reading	6	1	37,520	400	820	959	942.04	1074	1560
	6	2	37,520	400	822	950	933.66	1055	1584
	6	3	37,520	400	817	949	933.57	1057	1612
	6	4	37,520	400	806	940	918.60	1045	1631
	6	5	37,520	400	800	939	922.31	1051	1613
	7	1	46,393	400	843	986	970.72	1101	1579
	7	2	46,393	400	857	991	970.09	1095	1595
	7	3	46,393	400	849	978	963.47	1086	1638
	7	4	46,393	400	857	980	961.15	1082	1626
	7	5	46,393	400	849	981	961.32	1084	1623

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum
Reading (cont.)	8	1	44,395	400	856	999	982.38	1113	1595
	8	2	44,395	400	896	1027	1006.14	1132	1598
	8	3	44,395	400	884	1005	992.65	1111	1642
	8	4	44,395	400	896	1014	998.01	1115	1668
	8	5	44,395	400	879	1004	981.44	1102	1644
Literature	HS	1	149,228	400	881	1028	1008.99	1139	1602
	HS	2	149,228	400	928	1062	1038.58	1165	1622
	HS	3	149,228	400	910	1036	1022.87	1145	1678
	HS	4	149,228	400	929	1052	1035.24	1158	1653
	HS	5	149,228	400	914	1037	1016.96	1135	1655
Science Lower Grades	3	1	192	200	663	752	748.34	851	1091
	3	2	192	301	686	784	769.48	862	1136
	3	3	192	251	701	777	770.38	862	1071
	3	4	192	261	715	789	791.16	886	1244
	4	1	243	348	787	890	887.56	992	1215
	4	2	243	454	802	881	871.69	957	1331
	4	3	243	351	805	873	863.12	942	1109
	4	4	243	460	782	891	872.42	964	1153
	5	1	55	523	749	829	831.85	928	1118
	5	2	55	494	730	856	860.76	967	1396
	5	3	55	404	725	809	814.02	919	1113
	5	4	55	499	741	850	834.73	937	1047
Science	6	1	8,695	400	734	851	839.31	953	1394
	6	2	8,695	400	739	848	836.69	943	1482
	6	3	8,695	400	763	859	855.03	951	1344
	6	4	8,695	400	760	865	852.64	958	1336
	7	1	17,690	400	777	898	879.98	1000	1422
	7	2	17,690	400	781	896	880.27	991	1391
	7	3	17,690	400	798	902	894.33	995	1291
	7	4	17,690	400	794	898	885.25	989	1340
	8	1	24,411	400	830	943	920.26	1032	1716
	8	2	24,411	400	828	936	919.22	1027	1530
	8	3	24,411	400	841	940	929.38	1027	1749
	8	4	24,411	400	826	928	912.33	1011	1426
	HS	1	2,740	400	793	939	911.16	1043	1393
	HS	2	2,740	400	806	932	916.42	1033	1375
	HS	3	2,740	400	830	936	925.14	1024	1381
	HS	4	2,740	400	793	927	900.33	1016	1518

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum
Biology	All	1	117,648	400	892	998	986.60	1094	1779
	All	2	117,648	400	904	992	993.94	1086	1721
	All	3	117,648	400	908	995	991.14	1079	1759
	All	4	117,648	400	875	990	965.56	1076	1716
Chemistry	All	1	11,780	400	905	1015	984.69	1088	1714
	All	2	11,780	492	944	1021	1019.44	1098	1733
	All	3	11,780	448	937	1016	1009.45	1091	1753
	All	4	11,780	453	913	991	992.55	1082	1712
Writing Lower Grades	3	1	112	431	785	877	858.93	964	1171
	3	2	112	215	771	848	846.04	953	1242
	3	3	112	539	771	868	865.63	984	1233
	3	4	112	503	800	895	890.41	989	1203
	3	5	112	403	778	891	878.91	983	1173
	4	1	104	557	871	940	941.99	1015	1333
	4	2	104	662	870	943	943.46	1024	1312
	4	3	104	649	875	952	948.90	1021	1190
	4	4	104	560	881	981	960.04	1056	1211
	4	5	104	629	861	956	953.15	1048	1311
	5	1	124	509	905	994	986.63	1094	1273
	5	2	124	498	922	979	978.13	1062	1297
	5	3	124	545	910	980	982.81	1065	1435
	5	4	124	595	935	1004	1002.35	1083	1327
	5	5	124	559	899	994	975.35	1048	1250
Writing	6	1	3,330	400	789	922	893.71	1019	1385
	6	2	3,330	400	793	922	902.50	1019	1570
	6	3	3,330	400	802	920	902.08	1019	1607
	6	4	3,330	400	838	948	933.13	1038	1619
	6	5	3,330	400	831	940	919.34	1023	1601
	7	1	4,854	400	839	968	938.21	1059	1545
	7	2	4,854	400	838	959	941.48	1055	1578
	7	3	4,854	400	841	961	938.66	1059	1393
	7	4	4,854	400	878	978	967.73	1075	1700
	7	5	4,854	400	863	964	944.83	1046	1464

Table 15–20 (continued). Summary Statistics for Scale Score Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum
Writing (cont.)	8	1	4,891	400	879	998	974.59	1090	1616
	8	2	4,891	400	881	996	976.36	1091	1618
	8	3	4,891	400	887	994	970.23	1075	1483
	8	4	4,891	400	907	1001	995.01	1100	1677
	8	5	4,891	400	892	989	974.17	1074	1492
English Comp.	HS	1	12,900	400	948	1058	1035.67	1143	1620
	HS	2	12,900	400	938	1053	1034.60	1150	1608
	HS	3	12,900	400	942	1040	1017.55	1115	1675
	HS	4	12,900	400	955	1060	1048.01	1149	1712
	HS	5	12,900	400	940	1034	1020.57	1116	1667

Table 15–21 shows the summary statistics for the conditional standard errors of measurement (CSEMs) in the scale score metric based on diagnostic categories. The final column in the table shows the theoretical minimum CSEM that is possible for a test length equal to the mean number of items. Minimum values in the table that are less than the theoretical minimum are due to students taking more than the mean number of items.

Table 15–21. Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Mathematics Lower Grades	3	1	2,468	72	74	75	75.34	76	231	72.63
	3	2	2,468	72	74	75	75.18	76	136	75.59
	3	3	2,468	72	74	75	75.11	76	134	75.59
	3	4	2,468	72	74	75	75.06	76	231	75.59
	4	1	3,001	72	74	75	75.30	76	231	75.59
	4	2	3,001	72	74	75	75.08	76	134	75.59
	4	3	3,001	72	74	75	74.90	76	101	75.59
	4	4	3,001	72	74	75	74.99	76	231	75.59
	5	1	2,648	72	74	75	75.28	76	132	75.59
	5	2	2,648	72	74	75	75.08	76	134	75.59
	5	3	2,648	72	74	75	75.08	76	102	75.59
	5	4	2,648	72	74	75	74.96	76	138	75.59
Mathematics	6	1	40,464	69	73	74	74.02	74	231	69.28
	6	2	40,464	70	73	74	74.21	74	241	69.28
	6	3	40,464	70	73	74	73.80	74	232	69.28
	6	4	40,464	69	73	74	74.32	74	237	69.28
	7	1	47,665	69	73	74	73.99	74	232	69.28
	7	2	47,665	69	73	74	73.93	74	234	69.28
	7	3	47,665	69	73	74	73.81	74	233	69.28
	7	4	47,665	69	73	74	74.15	74	232	69.28
	8	1	30,785	69	73	74	74.04	74	232	69.28
	8	2	30,785	69	73	74	74.17	74	236	69.28
	8	3	30,785	69	73	74	74.13	74	233	69.28
	8	4	30,785	69	73	74	74.28	74	248	69.28
	HS	1	1,174	70	73	74	75.10	75	232	69.28
	HS	2	1,174	70	73	74	75.57	75	235	69.28
	HS	3	1,174	70	73	74	75.55	75	133	69.28
	HS	4	1,174	70	73	74	75.85	75	250	69.28
Algebra I	All	1	144,912	70	73	74	73.93	74	234	69.28
	All	2	144,912	69	73	74	74.40	74	233	69.28
	All	3	144,912	69	73	74	74.14	74	249	69.28
	All	4	144,912	69	73	74	74.25	74	233	69.28
Geometry	All	1	13,293	69	73	74	74.09	74	232	69.28
	All	2	13,293	69	73	74	75.57	75	261	69.28
	All	3	13,293	69	73	74	74.92	74	232	69.28
	All	4	13,293	69	73	74	74.33	74	234	69.28

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Algebra II	All	1	15,197	69	73	74	78.49	75	232	69.28
	All	2	15,197	69	73	74	74.18	74	231	69.28
	All	3	15,197	70	73	74	74.35	74	254	69.28
	All	4	15,197	69	73	74	74.65	74	233	69.28
Reading Lower Grades	3	1	2,597	83	93	96	99.99	101	275	90.29
	3	2	2,597	84	92	96	98.58	101	270	90.29
	3	3	2,597	83	93	97	100.80	103	270	90.29
	3	4	2,597	83	90	94	97.77	100	280	90.29
	3	5	2,597	84	94	98	100.06	102	270	90.29
	4	1	2,524	83	92	96	99.81	101	270	90.29
	4	2	2,524	84	91	95	98.38	101	273	90.29
	4	3	2,524	84	92	96	99.23	101	277	90.29
	4	4	2,524	83	89	93	97.42	100	274	90.29
	4	5	2,524	84	95	99	101.60	103	272	90.29
	5	1	2,043	83	92	96	101.04	102	271	90.29
	5	2	2,043	84	91	95	97.56	100	278	90.29
	5	3	2,043	84	92	96	99.36	101	268	90.29
	5	4	2,043	83	89	93	96.98	100	272	90.29
	5	5	2,043	85	95	100	103.52	104	274	90.29
Reading	6	1	37,520	83	93	97	102.04	102	272	86.13
	6	2	37,520	83	91	95	99.18	101	279	86.13
	6	3	37,520	83	92	96	99.26	101	276	86.13
	6	4	37,520	83	92	96	99.39	101	279	86.13
	6	5	37,520	84	95	99	104.03	104	277	86.13
	7	1	46,393	83	93	98	104.62	103	272	86.13
	7	2	46,393	83	91	95	99.52	101	284	86.13
	7	3	46,393	83	91	95	98.89	101	273	86.13
	7	4	46,393	83	91	95	98.17	100	274	86.13
	7	5	46,393	84	96	100	104.06	104	277	86.13
	8	1	44,395	83	92	98	104.23	103	271	86.13
	8	2	44,395	83	91	96	101.08	102	288	86.13
	8	3	44,395	83	91	95	98.49	100	275	86.13
	8	4	44,395	83	89	94	97.85	100	277	86.13
	8	5	44,395	85	96	100	103.18	104	273	86.13

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Literature	HS	1	149,228	83	93	99	107.32	112	273	86.13
	HS	2	149,228	83	92	97	103.46	103	290	86.13
	HS	3	149,228	83	91	95	99.93	101	276	86.13
	HS	4	149,228	83	90	94	100.05	101	282	86.13
	HS	5	149,228	84	96	100	106.06	105	276	86.13
Science Lower Grades	3	1	192	77	79	80	80.58	81	158	80.42
	3	2	192	77	78	79	79.66	81	91	80.42
	3	3	192	77	79	79	79.80	81	107	80.42
	3	4	192	77	78	79	79.79	81	105	80.42
	4	1	243	77	79	79	79.74	80	90	80.42
	4	2	243	77	79	80	79.78	81	104	80.42
	4	3	243	77	79	80	79.82	81	90	80.42
	4	4	243	77	78	79	79.38	80	82	80.42
	5	1	55	77	78	79	79.25	80	89	80.42
	5	2	55	77	78	80	80.98	81	139	77.26
	5	3	55	77	79	80	80.35	81	93	80.42
	5	4	55	77	79	79	79.45	80	82	80.42
Science	6	1	8,695	74	77	78	78.95	79	246	73.70
	6	2	8,695	74	77	78	80.37	79	255	73.70
	6	3	8,695	74	77	78	79.70	79	246	73.70
	6	4	8,695	74	77	78	79.49	79	248	73.70
	7	1	17,690	74	77	78	78.71	79	246	73.70
	7	2	17,690	74	77	78	79.33	79	246	73.70
	7	3	17,690	74	77	78	78.96	79	246	73.70
	7	4	17,690	74	77	78	79.16	79	247	73.70
	8	1	24,411	74	77	78	78.72	79	247	73.70
	8	2	24,411	74	77	78	79.02	79	246	73.70
	8	3	24,411	74	77	78	78.86	79	246	73.70
	8	4	24,411	74	77	78	79.12	79	247	73.70
	HS	1	2,740	74	77	78	79.56	79	247	73.70
	HS	2	2,740	74	77	78	79.21	79	246	73.70
	HS	3	2,740	74	77	78	79.08	79	246	73.70
	HS	4	2,740	74	78	78	79.91	79	247	73.70
Biology	All	1	117,648	74	77	78	79.12	79	252	73.70
	All	2	117,648	74	77	79	79.93	79	247	73.70
	All	3	117,648	74	77	78	79.65	79	261	73.70
	All	4	117,648	74	77	78	79.23	79	257	73.70

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
Chemistry	All	1	11,780	74	77	78	79.40	79	259	73.70
	All	2	11,780	74	77	79	81.14	79	247	73.70
	All	3	11,780	74	77	79	79.97	79	246	73.70
	All	4	11,780	74	77	79	80.65	79	246	73.70
Writing Lower Grades	3	1	112	83	86	87	87.26	88	107	84.09
	3	2	112	84	86	87	87.46	88	144	84.09
	3	3	112	84	86	87	87.05	88	96	84.09
	3	4	112	83	86	87	86.81	88	92	84.09
	3	5	112	84	86	87	87.12	88	105	84.09
	4	1	104	84	85	87	88.03	88	143	84.09
	4	2	104	83	86	87	86.97	88	107	84.09
	4	3	104	84	86	87	86.76	88	96	84.09
	4	4	104	84	85	87	86.75	88	92	88.19
	4	5	104	83	86	87	87.00	88	105	84.09
	5	1	124	84	86	87	87.64	88	106	84.09
	5	2	124	83	86	87	87.08	88	107	84.09
	5	3	124	84	86	87	87.64	88	141	84.09
	5	4	124	84	85	87	86.92	88	105	88.19
	5	5	124	84	86	87	86.90	88	92	84.09
Writing	6	1	3,330	81	83	85	86.85	86	249	80.21
	6	2	3,330	81	83	85	87.67	86	248	80.21
	6	3	3,330	81	83	85	86.36	86	248	80.21
	6	4	3,330	81	83	85	86.30	86	248	80.21
	6	5	3,330	81	83	85	85.76	86	248	80.21
	7	1	4,854	80	83	85	86.80	86	249	80.21
	7	2	4,854	81	83	85	87.10	86	248	80.21
	7	3	4,854	81	83	85	85.55	86	247	80.21
	7	4	4,854	81	83	85	85.84	86	248	80.21
	7	5	4,854	81	83	85	85.23	86	248	80.21
	8	1	4,891	81	83	85	86.90	86	249	80.21
	8	2	4,891	81	84	85	87.18	86	248	80.21
	8	3	4,891	81	83	85	85.54	86	247	80.21
	8	4	4,891	81	83	85	85.71	86	249	80.21
	8	5	4,891	81	83	85	85.17	86	248	80.21

Table 15–21 (continued). Summary Statistics for Conditional Standard Errors Based on Diagnostic Categories

	Grade	Diagnostic Category	*N*	Minimum	Q1	Median	Mean	Q3	Maximum	Theoretical Minimum
English Comp.	HS	1	12,900	81	84	85	88.63	86	250	80.21
	HS	2	12,900	81	84	85	89.15	86	248	80.21
	HS	3	12,900	81	83	85	85.81	86	252	80.21
	HS	4	12,900	81	83	85	86.57	86	250	80.21
	HS	5	12,900	81	83	85	86.10	86	249	80.21

DIAGNOSTIC CATEGORY SCORE DIFFERENCES

As described in Chapter Fourteen, the CDT reports that are available to teachers display scale scores and probable score ranges for each diagnostic category. The probable score range is the scale score ± one standard error. Probable score range differences—ranges that do not overlap—may indicate to teachers a meaningful difference between two diagnostic category scores. Tables 15–22a through 15–34a show the number of students with score range differences (non-overlapping probable score ranges) between pairs of diagnostic categories for each CDT test. For example, according to Table 15–22a, 1,947 students who took the Mathematics Lower Grades assessment had score range differences between diagnostic categories 1 and 2 while 6,170 students did not. Tables 15–22b through 15–34b show the total number of score range differences. For example, 1,545 students had two pairs of diagnostic categories with score range differences, which was 19.0% of the total students who took Mathematics Lower Grades.

Table 15–22a. Diagnostic Category Score Range Differences – Mathematics Lower Grades

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,947	6,170	24.0%	76.0%
DC1	DC3	2,098	6,019	25.8%	74.2%
DC1	DC4	1,928	6,189	23.8%	76.2%
DC2	DC3	2,058	6,059	25.4%	74.6%
DC2	DC4	1,907	6,210	23.5%	76.5%
DC3	DC4	1,947	6,170	24.0%	76.0%

Table 15–22b. Total Number of Diagnostic Category Score Range Differences – Mathematics Lower Grades

Number of Score Range Differences	Number of Students	Percent of Students
0	2,910	35.9%
1	1,463	18.0%
2	1,545	19.0%
3	1,579	19.5%
4	507	6.2%
5	111	1.4%
6	2	0.0%

Table 15–23a. Diagnostic Category Score Range Differences – Mathematics

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	26,154	93,934	21.8%	78.2%
DC1	DC3	27,568	92,520	23.0%	77.0%
DC1	DC4	25,559	94,529	21.3%	78.7%
DC2	DC3	27,371	92,717	22.8%	77.2%
DC2	DC4	27,621	92,467	23.0%	77.0%
DC3	DC4	28,171	91,917	23.5%	76.5%

Table 15–23b. Total Number of Diagnostic Category Score Range Differences – Mathematics

Number of Score Range Differences	Number of Students	Percent of Students
0	47,563	39.6%
1	21,627	18.0%
2	21,262	17.7%
3	21,569	18.0%
4	6,766	5.6%
5	1,284	1.1%
6	17	0.0%

Table 15–24a. Diagnostic Category Score Range Differences – Algebra I

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	33,651	111,261	23.2%	76.8%
DC1	DC3	34,045	110,867	23.5%	76.5%
DC1	DC4	34,664	110,248	23.9%	76.1%
DC2	DC3	29,412	115,500	20.3%	79.7%
DC2	DC4	33,692	111,220	23.2%	76.8%
DC3	DC4	32,535	112,377	22.5%	77.5%

Table 15–24b. Total Number of Diagnostic Category Score Range Differences – Algebra I

Number of Score Range Differences	Number of Students	Percent of Students
0	58,170	40.1%
1	25,155	17.4%
2	24,771	17.1%
3	25,953	17.9%
4	8,903	6.1%
5	1,929	1.3%
6	31	0.0%

Table 15–25a. Diagnostic Category Score Range Differences – Geometry

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	3,157	10,136	23.7%	76.3%
DC1	DC3	3,169	10,124	23.8%	76.2%
DC1	DC4	3,128	10,165	23.5%	76.5%
DC2	DC3	3,144	10,149	23.7%	76.3%
DC2	DC4	3,202	10,091	24.1%	75.9%
DC3	DC4	3,129	10,164	23.5%	76.5%

Table 15–25b. Total Number of Diagnostic Category Score Range Differences – Geometry

Number of Score Range Differences	Number of Students	Percent of Students
0	5,038	37.9%
1	2,320	17.5%
2	2,386	17.9%
3	2,533	19.1%
4	845	6.4%
5	168	1.3%
6	3	0.0%

Table 15–26a. Diagnostic Category Score Range Differences – Algebra II

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	5,025	10,172	33.1%	66.9%
DC1	DC3	5,317	9,880	35.0%	65.0%
DC1	DC4	5,743	9,454	37.8%	62.2%
DC2	DC3	3,204	11,993	21.1%	78.9%
DC2	DC4	3,616	11,581	23.8%	76.2%
DC3	DC4	3,660	11,537	24.1%	75.9%

Table 15–26b. Total Number of Diagnostic Category Score Range Differences – Algebra II

Number of Score Range Differences	Number of Students	Percent of Students
0	4,727	31.1%
1	2,310	15.2%
2	2,569	16.9%
3	3,725	24.5%
4	1,396	9.2%
5	462	3.0%
6	8	0.1%

Table 15–27a. Diagnostic Category Score Range Differences – Reading Lower Grades

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,514	5,650	21.1%	78.9%
DC1	DC3	1,413	5,751	19.7%	80.3%
DC1	DC4	1,528	5,636	21.3%	78.7%
DC1	DC5	1,383	5,781	19.3%	80.7%
DC2	DC3	1,449	5,715	20.2%	79.8%
DC2	DC4	1,337	5,827	18.7%	81.3%
DC2	DC5	1,344	5,820	18.8%	81.2%
DC3	DC4	1,415	5,749	19.8%	80.2%
DC3	DC5	1,377	5,787	19.2%	80.8%
DC4	DC5	1,334	5,830	18.6%	81.4%

Table 15–27b. Total Number of Diagnostic Category Score Range Differences – Reading Lower Grades

Number of Score Range Differences	Number of Students	Percent of Students
0	2,278	31.8%
1	1,047	14.6%
2	1,200	16.8%
3	932	13.0%
4	1,047	14.6%
5	350	4.9%
6	262	3.7%
7	43	0.6%
8	5	0.1%
9	0	0.0%
10	0	0.0%

Table 15–28a. Diagnostic Category Score Range Differences – Reading/Literature

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	52,443	225,093	18.9%	81.1%
DC1	DC3	52,217	225,319	18.8%	81.2%
DC1	DC4	55,498	222,038	20.0%	80.0%
DC1	DC5	53,980	223,556	19.4%	80.6%
DC2	DC3	50,974	226,562	18.4%	81.6%
DC2	DC4	48,485	229,051	17.5%	82.5%
DC2	DC5	50,552	226,984	18.2%	81.8%
DC3	DC4	52,147	225,389	18.8%	81.2%
DC3	DC5	52,107	225,429	18.8%	81.2%
DC4	DC5	51,788	225,748	18.7%	81.3%

Table 15–28b. Total Number of Diagnostic Category Score Range Differences – Reading/Literature

Number of Score Range Differences	Number of Students	Percent of Students
0	93,456	33.7%
1	42,726	15.4%
2	44,606	16.1%
3	35,052	12.6%
4	37,969	13.7%
5	12,741	4.6%
6	9,608	3.5%
7	1,157	0.4%
8	220	0.1%
9	1	0.0%
10	0	0.0%

Table 15–29a. Diagnostic Category Score Range Differences – Science Lower Grades

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	99	391	20.2%	79.8%
DC1	DC3	105	385	21.4%	78.6%
DC1	DC4	120	370	24.5%	75.5%
DC2	DC3	95	395	19.4%	80.6%
DC2	DC4	92	398	18.8%	81.2%
DC3	DC4	101	389	20.6%	79.4%

Table 15–29b. Total Number of Diagnostic Category Score Range Differences – Science Lower Grades

Number of Score Range Differences	Number of Students	Percent of Students
0	197	40.2%
1	101	20.6%
2	90	18.4%
3	79	16.1%
4	21	4.3%
5	2	0.4%
6	0	0.0%

Table 15–30a. Diagnostic Category Score Range Differences – Science

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	10,863	42,673	20.3%	79.7%
DC1	DC3	11,491	42,045	21.5%	78.5%
DC1	DC4	11,674	41,862	21.8%	78.2%
DC2	DC3	10,982	42,554	20.5%	79.5%
DC2	DC4	11,128	42,408	20.8%	79.2%
DC3	DC4	11,260	42,276	21.0%	79.0%

Table 15–30b. Total Number of Diagnostic Category Score Range Differences – Science

Number of Score Range Differences	Number of Students	Percent of Students
0	22,737	42.5%
1	9,589	17.9%
2	9,327	17.4%
3	8,827	16.5%
4	2,615	4.9%
5	432	0.8%
6	9	0.0%

Table 15–31a. Diagnostic Category Score Range Differences – Biology

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	25,027	92,621	21.3%	78.7%
DC1	DC3	25,971	91,677	22.1%	77.9%
DC1	DC4	26,628	91,020	22.6%	77.4%
DC2	DC3	24,216	93,432	20.6%	79.4%
DC2	DC4	29,989	87,659	25.5%	74.5%
DC3	DC4	27,601	90,047	23.5%	76.5%

Table 15–31b. Total Number of Diagnostic Category Score Range Differences – Biology

Number of Score Range Differences	Number of Students	Percent of Students
0	46,630	39.6%
1	21,101	17.9%
2	20,928	17.8%
3	20,756	17.6%
4	6,975	5.9%
5	1,241	1.1%
6	17	0.0%

Table 15–32a. Diagnostic Category Score Range Differences – Chemistry

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	3,102	8,678	26.3%	73.7%
DC1	DC3	2,596	9,184	22.0%	78.0%
DC1	DC4	2,874	8,906	24.4%	75.6%
DC2	DC3	2,199	9,581	18.7%	81.3%
DC2	DC4	2,587	9,193	22.0%	78.0%
DC3	DC4	2,232	9,548	18.9%	81.1%

Table 15–32b. Total Number of Diagnostic Category Score Range Differences – Chemistry

Number of Score Range Differences	Number of Students	Percent of Students
0	4,776	40.5%
1	2,025	17.2%
2	2,176	18.5%
3	2,102	17.8%
4	599	5.1%
5	101	0.9%
6	1	0.0%

Table 15–33a. Diagnostic Category Score Range Differences – Writing Lower Grades

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	53	287	15.6%	84.4%
DC1	DC3	56	284	16.5%	83.5%
DC1	DC4	87	253	25.6%	74.4%
DC1	DC5	75	265	22.1%	77.9%
DC2	DC3	69	271	20.3%	79.7%
DC2	DC4	76	264	22.4%	77.6%
DC2	DC5	63	277	18.5%	81.5%
DC3	DC4	72	268	21.2%	78.8%
DC3	DC5	69	271	20.3%	79.7%
DC4	DC5	68	272	20.0%	80.0%

Table 15–33b. Total Number of Diagnostic Category Score Range Differences – Writing Lower Grades

Number of Score Range Differences	Number of Students	Percent of Students
0	102	30.0%
1	53	15.6%
2	53	15.6%
3	45	13.2%
4	59	17.4%
5	15	4.4%
6	10	2.9%
7	1	0.3%
8	2	0.6%
9	0	0.0%
10	0	0.0%

Table 15–34a. Diagnostic Category Score Range Differences – Writing/English Composition

Comparison		Score Range Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	5,128	20,847	19.7%	80.3%
DC1	DC3	5,261	20,714	20.3%	79.7%
DC1	DC4	5,671	20,304	21.8%	78.2%
DC1	DC5	5,280	20,695	20.3%	79.7%
DC2	DC3	5,253	20,722	20.2%	79.8%
DC2	DC4	5,540	20,435	21.3%	78.7%
DC2	DC5	5,421	20,554	20.9%	79.1%
DC3	DC4	5,360	20,615	20.6%	79.4%
DC3	DC5	4,798	21,177	18.5%	81.5%
DC4	DC5	5,138	20,837	19.8%	80.2%

Table 15–34b. Total Number of Diagnostic Category Score Range Differences – Writing/English Composition

Number of Score Range Differences	Number of Students	Percent of Students
0	8,128	31.3%
1	3,866	14.9%
2	4,021	15.5%
3	3,342	12.9%
4	3,846	14.8%
5	1,398	5.4%
6	1,121	4.3%
7	208	0.8%
8	45	0.2%
9	0	0.0%
10	0	0.0%

Significant differences among diagnostic categories were tested based on *t*-test. Using the diagnostic category scale scores and the conditional standard errors for each student, the differences between pairs of diagnostic category scores were examined based on *t*-test for each student. A Bonferroni correction for multiple comparisons was performed to keep the familywise Type I error rate at 0.32. This results in the number of significant differences being smaller than the number of score range differences (non-overlapping probable score ranges) presented above. Tables 15–35a through 15–47a show the number of students who had significant differences between pairs of diagnostic categories for each assessment. Tables 15–35b through 15–47b show the total number of significant differences.

Table 15–35a. Diagnostic Category Significant Differences – Mathematics Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	184	7,933	2.3%	97.7%
DC1	DC3	247	7,870	3.0%	97.0%
DC1	DC4	229	7,888	2.8%	97.2%
DC2	DC3	258	7,859	3.2%	96.8%
DC2	DC4	220	7,897	2.7%	97.3%
DC3	DC4	228	7,889	2.8%	97.2%

Note: Z value is 1.94

Table 15–35b. Total Number of Diagnostic Category Significant Differences – Mathematics Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	7,184	88.5%
1	599	7.4%
2	246	3.0%
3	78	1.0%
4	9	0.1%
5	1	0.0%
6	0	0.0%

Table 15–36a. Diagnostic Category Significant Differences – Mathematics

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2,804	117,284	2.3%	97.7%
DC1	DC3	2,927	117,161	2.4%	97.6%
DC1	DC4	2,707	117,381	2.3%	97.7%
DC2	DC3	2,934	117,154	2.4%	97.6%
DC2	DC4	2,995	117,093	2.5%	97.5%
DC3	DC4	2,959	117,129	2.5%	97.5%

Note: Z value is 1.94

Table 15–36b. Total Number of Diagnostic Category Significant Differences – Mathematics

Number of Significant Differences	Number of Students	Percent of Students
0	108,122	90.0%
1	7,837	6.5%
2	3,006	2.5%
3	1,016	0.8%
4	106	0.1%
5	1	0.0%
6	0	0.0%

Table 15–37a. Diagnostic Category Significant Differences – Algebra I

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	4,396	140,516	3.0%	97.0%
DC1	DC3	4,481	140,431	3.1%	96.9%
DC1	DC4	4,984	139,928	3.4%	96.6%
DC2	DC3	2,798	142,114	1.9%	98.1%
DC2	DC4	3,863	141,049	2.7%	97.3%
DC3	DC4	3,733	141,179	2.6%	97.4%

Note: Z value is 1.94

Table 15–37b. Total Number of Diagnostic Category Significant Differences – Algebra I

Number of Significant Differences	Number of Students	Percent of Students
0	128,616	88.8%
1	10,207	7.0%
2	4,387	3.0%
3	1,535	1.1%
4	166	0.1%
5	1	0.0%
6	0	0.0%

Table 15–38a. Diagnostic Category Significant Differences – Geometry

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	340	12,953	2.6%	97.4%
DC1	DC3	341	12,952	2.6%	97.4%
DC1	DC4	390	12,903	2.9%	97.1%
DC2	DC3	360	12,933	2.7%	97.3%
DC2	DC4	392	12,901	2.9%	97.1%
DC3	DC4	385	12,908	2.9%	97.1%

Note: Z value is 1.94

Table 15–38b. Total Number of Diagnostic Category Significant Differences – Geometry

Number of Significant Differences	Number of Students	Percent of Students
0	11,811	88.9%
1	933	7.0%
2	390	2.9%
3	141	1.1%
4	18	0.1%
5	0	0.0%
6	0	0.0%

Table 15–39a. Diagnostic Category Significant Differences – Algebra II

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	998	14,199	6.6%	93.4%
DC1	DC3	915	14,282	6.0%	94.0%
DC1	DC4	1,372	13,825	9.0%	91.0%
DC2	DC3	433	14,764	2.8%	97.2%
DC2	DC4	533	14,664	3.5%	96.5%
DC3	DC4	529	14,668	3.5%	96.5%

Note: Z value is 1.94

Table 15–39b. Total Number of Diagnostic Category Significant Differences – Algebra II

Number of Significant Differences	Number of Students	Percent of Students
0	12,227	80.5%
1	1,666	11.0%
2	836	5.5%
3	431	2.8%
4	36	0.2%
5	1	0.0%
6	0	0.0%

Table 15–40a. Diagnostic Category Significant Differences – Reading Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	36	7,128	0.5%	99.5%
DC1	DC3	23	7,141	0.3%	99.7%
DC1	DC4	47	7,117	0.7%	99.3%
DC1	DC5	31	7,133	0.4%	99.6%
DC2	DC3	34	7,130	0.5%	99.5%
DC2	DC4	38	7,126	0.5%	99.5%
DC2	DC5	28	7,136	0.4%	99.6%
DC3	DC4	22	7,142	0.3%	99.7%
DC3	DC5	32	7,132	0.4%	99.6%
DC4	DC5	24	7,140	0.3%	99.7%

Note: Z value is 2.15

Table 15–40b. Total Number of Diagnostic Category Significant Differences – Reading Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	6,916	96.5%
1	188	2.6%
2	53	0.7%
3	7	0.1%
4	0	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15–41a. Diagnostic Category Significant Differences – Reading/Literature

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	967	276,569	0.3%	99.7%
DC1	DC3	879	276,657	0.3%	99.7%
DC1	DC4	1,289	276,247	0.5%	99.5%
DC1	DC5	1,037	276,499	0.4%	99.6%
DC2	DC3	785	276,751	0.3%	99.7%
DC2	DC4	813	276,723	0.3%	99.7%
DC2	DC5	974	276,562	0.4%	99.6%
DC3	DC4	767	276,769	0.3%	99.7%
DC3	DC5	1,239	276,297	0.4%	99.6%
DC4	DC5	1,381	276,155	0.5%	99.5%

Note: Z value is 2.15

Table 15–41b. Total Number of Diagnostic Category Significant Differences – Reading/Literature

Number of Significant Differences	Number of Students	Percent of Students
0	269,766	97.2%
1	5,846	2.1%
2	1,550	0.6%
3	315	0.1%
4	56	0.0%
5	2	0.0%
6	1	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15–42a. Diagnostic Category Significant Differences – Science Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	9	481	1.8%	98.2%
DC1	DC3	7	483	1.4%	98.6%
DC1	DC4	12	478	2.4%	97.6%
DC2	DC3	8	482	1.6%	98.4%
DC2	DC4	8	482	1.6%	98.4%
DC3	DC4	11	479	2.2%	97.8%

Note: Z value is 1.94

Table 15–42b. Total Number of Diagnostic Category Significant Differences – Science Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	452	92.2%
1	24	4.9%
2	11	2.2%
3	3	0.6%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Table 15–43a. Diagnostic Category Significant Differences – Science

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,046	52,490	2.0%	98.0%
DC1	DC3	1,109	52,427	2.1%	97.9%
DC1	DC4	1,117	52,419	2.1%	97.9%
DC2	DC3	1,093	52,443	2.0%	98.0%
DC2	DC4	1,031	52,505	1.9%	98.1%
DC3	DC4	974	52,562	1.8%	98.2%

Note: Z value is 1.94

Table 15–43b. Total Number of Diagnostic Category Significant Differences – Science

Number of Significant Differences	Number of Students	Percent of Students
0	49,086	91.7%
1	2,955	5.5%
2	1,092	2.0%
3	381	0.7%
4	22	0.0%
5	0	0.0%
6	0	0.0%

Table 15–44a. Diagnostic Category Significant Differences – Biology

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2,438	115,210	2.1%	97.9%
DC1	DC3	2,594	115,054	2.2%	97.8%
DC1	DC4	2,821	114,827	2.4%	97.6%
DC2	DC3	1,668	115,980	1.4%	98.6%
DC2	DC4	3,359	114,289	2.9%	97.1%
DC3	DC4	2,959	114,689	2.5%	97.5%

Note: Z value is 1.94

Table 15–44b. Total Number of Diagnostic Category Significant Differences – Biology

Number of Significant Differences	Number of Students	Percent of Students
0	106,244	90.3%
1	7,839	6.7%
2	2,759	2.3%
3	742	0.6%
4	64	0.1%
5	0	0.0%
6	0	0.0%

Table 15–45a. Diagnostic Category Significant Differences – Chemistry

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	472	11,308	4.0%	96.0%
DC1	DC3	322	11,458	2.7%	97.3%
DC1	DC4	339	11,441	2.9%	97.1%
DC2	DC3	95	11,685	0.8%	99.2%
DC2	DC4	149	11,631	1.3%	98.7%
DC3	DC4	132	11,648	1.1%	98.9%

Note: Z value is 1.94

Table 15–45b. Total Number of Diagnostic Category Significant Differences – Chemistry

Number of Significant Differences	Number of Students	Percent of Students
0	10,673	90.6%
1	775	6.6%
2	262	2.2%
3	70	0.6%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Table 15–46a. Diagnostic Category Significant Differences – Writing Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2	338	0.6%	99.4%
DC1	DC3	0	340	0.0%	100.0%
DC1	DC4	1	339	0.3%	99.7%
DC1	DC5	2	338	0.6%	99.4%
DC2	DC3	3	337	0.9%	99.1%
DC2	DC4	4	336	1.2%	98.8%
DC2	DC5	1	339	0.3%	99.7%
DC3	DC4	1	339	0.3%	99.7%
DC3	DC5	0	340	0.0%	100.0%
DC4	DC5	0	340	0.0%	100.0%

Note: Z value is 2.15

Table 15–46b. Total Number of Diagnostic Category Significant Differences – Writing Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	332	97.6%
1	4	1.2%
2	3	0.9%
3	0	0.0%
4	1	0.3%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table 15–47a. Diagnostic Category Significant Differences – Writing/English Composition

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	151	25,824	0.6%	99.4%
DC1	DC3	180	25,795	0.7%	99.3%
DC1	DC4	246	25,729	0.9%	99.1%
DC1	DC5	192	25,783	0.7%	99.3%
DC2	DC3	193	25,782	0.7%	99.3%
DC2	DC4	243	25,732	0.9%	99.1%
DC2	DC5	222	25,753	0.9%	99.1%
DC3	DC4	224	25,751	0.9%	99.1%
DC3	DC5	187	25,788	0.7%	99.3%
DC4	DC5	171	25,804	0.7%	99.3%

Note: Z value is 2.15

Table 15–47b. Total Number of Diagnostic Category Significant Differences – Writing/English Composition

Number of Significant Differences	Number of Students	Percent of Students
0	24,634	94.8%
1	875	3.4%
2	316	1.2%
3	102	0.4%
4	45	0.2%
5	2	0.0%
6	1	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Low numbers of significant differences across diagnostic categories, along with the high disattenuated correlations between categories and exploratory factor analyses discussed in Chapter Seventeen, suggest that some diagnostic categories might be measuring essentially the same construct. While this may be the case in general, when looking at group summary information, diagnostic category scores for individual students can provide useful information to teachers. For example, while 88.8% of students showed no significant differences between Algebra I diagnostic categories, 11.2% of students did. CDT diagnostic category scores for these students along with links to instructional resources are a valuable tool for teachers.

The tables in Appendix D show the significant differences with the familywise Type I error rate at 0.10.

DISTRIBUTION OF BENCHMARK RANGES

As described in Chapter Ten, committees of Pennsylvania educators established preliminary CDT cut scores for grade 5 and above prior to the first operational use. Following the 2010–2011 school year, the preliminary cut scores were revised for the mathematics content-area tests. See Chapter Nineteen of the 2010–2011 technical report for details. Following the 2011–2012 school year, the preliminary cut scores were revised for the reading, science, and writing content-area tests. See Chapter Nineteen of the 2011–2012 technical report for details. Cut points for grades 3 and 4 were interpolated from existing cuts in grade 5 and above prior to the first operational use of CDT tests for lower grades. See Chapter Nineteen of this report for details.

The benchmark cuts in place during the 2013–2014 school year determine the color ranges (red/green/blue) in the CDT dynamic reporting suite. The cut scores and standard errors (SE)[16] were used to define ranges as follows: The green range is defined as the scale score cut ± one SE. The red range is defined as the scale minimum (200 for lower grade CDT tests and 400 for all others) to the lower bound of the green range. The blue range is defined as the upper bound of the green range to the scale maximum (2000).

[16] The standard error was estimated based on simulations using the operational configuration of the CAT in terms of the content constraints and stopping rules.

Table 15–48 shows the number and percentage of students in each benchmark range for each CDT test. Tests with multiple benchmark cuts are broken down to match the grade level of the cuts. Tests that are course-specific are not broken down. All results are based on the cut points in place for the 2013–2014 school year.

Table 15–48. Number and Percent of Students in Each CDT Score Range

	Red Range		Green Range		Blue Range	
	N	Percent	*N*	Percent	*N*	Percent
Mathematics – G3	274	11.1%	906	36.7%	1,288	52.2%
Mathematics – G4	355	11.8%	1,194	39.8%	1,452	48.4%
Mathematics – G5	415	15.7%	1,123	42.4%	1,110	41.9%
Mathematics – G6	16,952	41.9%	17,698	43.7%	5,814	14.4%
Mathematics – G7	21,390	44.9%	21,324	44.7%	4,951	10.4%
Mathematics – G8	16,529	53.7%	13,050	42.4%	1,206	3.9%
Mathematics – HS	855	72.8%	237	20.2%	46	3.9%
Algebra I	98,270	67.8%	44,266	30.5%	2,376	1.6%
Geometry	9,051	68.1%	3,561	26.8%	681	5.1%
Algebra II	11,671	76.8%	3,024	19.9%	502	3.3%
Reading – G3	809	31.2%	1,335	51.4%	453	17.4%
Reading – G4	851	33.7%	1,292	51.2%	381	15.1%
Reading – G5	561	27.5%	1,116	54.6%	366	17.9%
Reading – G6	15,368	41.0%	19,055	50.8%	3,097	8.3%
Reading – G7	19,297	41.6%	23,714	51.1%	3,382	7.3%
Reading – G8	18,616	41.9%	22,812	51.4%	2,967	6.7%
Literature	58,665	39.3%	77,123	51.7%	13,440	9.0%
Science – G3	43	22.4%	106	55.2%	43	22.4%
Science – G4	31	12.8%	131	53.9%	81	33.3%
Science – G5	21	38.2%	27	49.1%	7	12.7%
Science – G6	4,454	51.2%	3,877	44.6%	364	4.2%
Science – G7	9,144	51.7%	7,937	44.9%	609	3.4%
Science – G8	13,004	53.3%	10,866	44.5%	541	2.2%
Science – HS	2,009	73.3%	708	25.8%	23	0.8%
Biology	66,334	56.4%	46,283	39.3%	5,031	4.3%
Chemistry	7,799	66.2%	3,859	32.8%	122	1.0%
Writing – G3	5	4.5%	15	13.4%	92	82.1%
Writing – G4	0	0.0%	25	24.0%	79	76.0%
Writing – G5	4	3.2%	37	29.8%	83	66.9%
Writing – G6	1,159	34.8%	1,665	50.0%	506	15.2%
Writing – G7	1,988	41.0%	2,466	50.8%	400	8.2%
Writing – G8	2,241	45.8%	2,412	49.3%	238	4.9%
English Composition	4,199	32.6%	6,928	53.7%	1,773	13.7%

MULTIPLE ADMINISTRATIONS OF THE SAME CDT TEST

As previously indicated, there are a number of students who took the same CDT test multiple times. This section focuses on the number of days between administrations and both changes in scale score and benchmark range across a student's first and last administrations.

Table 15–49 shows the summary statistics for the number of days from the first to last administration.

Table 15–49. Summary Statistics for Number of Days Between Administrations

	N	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics Lower Grades	8	21	28	28	27.13	28	28
Mathematics	35,502	1	112	143	163.33	229	273
Algebra I	41,743	0	104	144	147.22	191	319
Geometry	4,305	6	89	125	140.97	195	272
Algebra II	4,691	1	93	148	152.21	203	282
Reading Lower Grades	9	26	76	77	66.33	77	84
Reading/Literature	86,393	0	105	141	148.48	196	289
Science Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Science	14,096	1	106	142	158.01	214	269
Biology	38,230	0	98	140	139.27	181	273
Chemistry	3,653	21	76	140	155.09	231	276
Writing Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Writing/English Composition	7,259	1	92	142	149.07	203	275

Table 15–50 shows the summary statistics for the change in total scale score from the first to last administration.

Table 15–50. Summary Statistics for Change in Total Scale Score Between Administrations

	N	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics Lower Grades	8	-68	-2	74	52.50	97	166
Mathematics	35,502	-416	-9	41	38.11	88	412
Algebra I	41,743	-526	-20	30	25.92	79	507
Geometry	4,305	-485	6	62	59.76	117	551
Algebra II	4,691	-462	3	64	61.57	124	524
Reading Lower Grades	9	-139	-44	9	-3.67	36	139
Reading/Literature	86,393	-670	-45	11	8.20	65	651
Science Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Science	14,096	-397	-31	18	15.96	66	429
Biology	38,230	-744	-2	53	50.39	108	582
Chemistry	3,653	-322	-4	51	48.60	103	571
Writing Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Writing/English Composition	7,259	-583	-24	21	20.88	66	457

Table 15–51 shows the changes in benchmark range from the first to last administration. For example, 5,892 students who scored in the red range on the first administration of the Mathematics test scored in the green range on the last administration.

Table 15–51. Change in Benchmark Range Between First and Last Administrations

Mathematics Lower Grades		Last		
		red	green	blue
First	red	1	0	0
	green	0	3	3
	blue	0	1	0
Mathematics		**Last**		
		red	green	blue
	red	12,404	5,892	120
	green	1,397	10,386	3,160
	blue	7	384	1,750
Algebra I		**Last**		
		red	green	blue
First	red	23,453	7,733	70
	green	1,988	7,426	758
	blue	2	70	243
Geometry		**Last**		
		red	green	blue
First	red	2,307	932	53
	green	68	568	291
	blue	0	11	75
Algebra II		**Last**		
		red	green	blue
First	red	2,946	1,087	62
	green	70	331	126
	blue	1	10	58
Reading Lower Grades		**Last**		
		red	green	blue
First	red	4	3	0
	green	1	1	0
	blue	0	0	0
Reading/Literature		**Last**		
		red	green	blue
First	red	26,543	7,977	31
	green	5,780	34,946	4,607
	blue	26	2,457	4,026
Science Lower Grades		**Last**		
		red	green	blue
First	red	0	0	0
	green	0	0	0
	blue	0	0	0

Table 15–51 (continued). Change in Benchmark Range Between First and Last Administrations

Science		Last		
First		red	green	blue
	red	5,800	1,934	11
	green	921	4,695	429
	blue	0	122	184
Biology		**Last**		
First		red	green	blue
	red	15,817	9,316	182
	green	1,394	8,858	2,124
	blue	4	85	450
Chemistry		**Last**		
First		red	green	blue
	red	1,824	1,073	8
	green	144	544	52
	blue	0	2	6
Writing Lower Grades		**Last**		
First		red	green	blue
	red	0	0	0
	green	0	0	0
	blue	0	0	0
Writing/English Composition		**Last**		
First		red	green	blue
	red	1,811	809	2
	green	389	2,995	534
	blue	0	147	572

CHAPTER SIXTEEN: RELIABILITY

This chapter addresses the reliability of Classroom Diagnostic Tools (CDT) test scores. According to the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), reliability refers to

> the degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable and repeatable for an individual test taker; the degree to which scores are free of errors of measurement for a given group (p. 25).

Frisbie (2005) highlighted several elements of this definition. First, reliability is a property of test scores, not of a test itself. Many may appreciate this distinction, but in casual usage, individuals frequently make reference to a "reliable test." While reliability concerns test scores (and not the test specifically), it's important to appreciate the fact that test scores can be affected by characteristics of the instrument. For example, all other things being equal, tests with more items/points tend to be more reliable than tests with fewer items/points. Second, reliability coefficients are group specific. Reliabilities tend to be higher in populations that are more heterogeneous and lower in populations that are more homogeneous. Consequently, both test length and population heterogeneity should be considered when evaluating reliability.

There are other reliability considerations that may be less evident from the *Standards'* definition yet are still important for test users to understand. While freedom from measurement error is highlighted in the definition above, reliability is specifically concerned with random sources of error. Indeed, the degree of inconsistency due to random error sources is what determines reliability: less consistency is associated with lower reliability and more consistency is associated with higher reliability. Of course, systematic error sources also exist. These can artificially increase reliability and decrease validity. Validity is further discussed in Chapter Seventeen.

Another noteworthy issue is that multiple sources of error exist (e.g., the day of testing, the items used). However, most widely used reliability indices only reflect a single type of error. Consequently, it is important for test users to understand what specific type of error is being considered in a reliability study, and equally, if not more importantly, what types are not.

Understanding the distinction between relative error and absolute error is also important, as many reliability indices only reflect relative error. Relative error is of interest whenever the relative ordering of individuals with respect to their test performance is of interest. Understanding examinee rank-order stability is important; however, such stability might be well achieved even when the specific score values are considerably different. When specific score values are considered important (e.g., if cut cores are used), then absolute error is of interest, too. Generally, there is more error variance when considering the absolute scores of examinees, which, in turn, suggests lower reliability.

As the above discussion suggests, reliability is a complex, nonunitary notion that cannot be adequately represented by a single number. There are several reliability indices available, and these may not provide the same results (Frisbie, 2005). The remainder of this chapter covers the following:

- Reliability coefficients and their interpretation
- Unconditional and conditional standard errors of measurement (SEMs and CSEMs)
- Decision consistency

RELIABILITY INDICES

As shown below, the reliability coefficient expresses the consistency of test scores as the ratio of true score variance to total score variance. The total variance contains two components: 1) variance in true scores and 2) variance due to the imperfections in the measurement process. Put differently, total variance equals true score variance plus error variance.[17]

$$\rho_X^2 = \frac{\sigma_T^2}{\sigma_X^2} = \frac{\sigma_T^2}{\sigma_T^2 + \sigma_E^2}$$

Reliability coefficients indicate the degree to which differences in test scores reflect true differences in the attribute being tested rather than random fluctuations. Total test score variance (i.e., individual differences) is partly due to real differences in the attribute (true variance) and partly due to random error in the measurement process (error variance).

Reliability coefficients range from 0.0 to 1.0. If all test score variance were true, the index would equal 1.0. The index would be 0.0 if none of the test score variance were true. Such scores would be pure random noise (i.e., all measurement error). If the index had a value of 1.0, scores would be perfectly consistent (i.e., contain no measurement error). Although values of 1.0 are never achieved in practice, it is clear that larger coefficients are more desirable, as they indicate that test scores are less influenced by random error. "How big is big enough?" and "how small is too small?" are issues considered in a later section.

As noted in the introduction, there are several different indices that can be used to estimate this ratio. One approach is referred to as internal consistency, which is derived from analyzing the performance consistency of individuals over the items within a test. As discussed below, these internal consistency indices do not take into account other sources of error, such as day-to-day variations (student health, testing environment, etc.).

[17] A covariance term is not required, as true scores and error are assumed to be uncorrelated in classical test theory.

COEFFICIENT ALPHA

Although a number of reliability indices exist, one of the most frequently reported for achievement tests is coefficient alpha. For example, both PSSA and Keystone programs report alpha.

FORMULA FOR ALPHA

Consider the following data matrix representing the scores of persons (rows) on items (columns):

Table 16–1. Person × Item Score (*Xpi*) Infinite (Population-Universe) Matrix

Person	Item			
	1	**2**	**. . . *i***	**. . . *k***
1	*Y*11	*Y*12	. . . *Y*1*i*	. . . *X*1*k*
2	*Y*21	*Y*22	. . . *Y*2*i*	. . . *X*2*k*
. . . .				
p	*Yp*1	*Yp*2	. . . *Ypi*	. . . *Xpk*
. . . .				
N	*YN*1	*YN*2	. . . *YNi*	. . . *XNk*

Note. Adapted from Cronbach and Shavelson (2004).

Then, a general computational formula for alpha is as follows:

$$\alpha = \frac{N}{N-1}\left(1 - \frac{\sum_{i=1}^{N}\sigma_{Y_i}^2}{\sigma_X^2}\right),$$

where *N* is the number of parts (items or testlets), σ_X^2 is the variance of the observed total test scores, and σ_{Yi}^2 is the variance of part *i*.

Examination of the formula for alpha indicates why the coefficient is not appropriate for CDT. In the case of CDT, tests are adaptive. Each student takes a unique set of test items rather than the same fixed form. A person item score matrix for CDT analogous to Table 16–1 would include all items in the available item pool (over 2,000 in some cases). Each student takes only a small subset of items (48–60) from the available pool. Summing the variance of more than 2,000 item scores and dividing by the variance of test scores based on 48–60 items is not appropriate. Therefore, a measure of reliability other than alpha must be used for CDT.

SPLIT-HALF RELIABILITY

Like alpha, split-half is an internal consistency index. It can be conceptualized as the extent to which an exchangeable set of items from the same domain would result in a similar rank ordering of students. Note that relative error is reflected in this index. Variation in student performance from one sample of items to the next should be of particular concern for any test user. Consider two hypothetical vocabulary tests intended for the same group of students. Each test contains different sets of unique words that are believed to be randomly equivalent, perhaps like the ones shown below:

Table 16–2. Two Hypothetical Vocabulary Tests

Test One	Test Two
Abase	Abate
Boon	Bilk
Capricious	Circuitous
Deface	Debase
....	....
Zealous	Zenith

If a representative group of students could take both of these tests, the correlation between the scores obtained would represent the parallel forms reliability of the test scores. However, such data-collection designs are impractical in large-scale settings and experimental confounds like fatigue and practice effects are likely to affect the results. Internal-consistency reliability indices arose in part to provide reliability measures using the data from just a single test administration. So, if students only took Test One and the split-half reliability index for those test scores was high, this would suggest that Test Two would provide a very similar rank ordering of the students if they had taken it instead. If split-half reliability was low, dissimilar rank orderings would likely be observed—again, relative-error variance is reflected.

CALCULATION OF SPLIT-HALF RELIABILITY

To determine split-half reliability for a given CDT test, such as Mathematics or Biology, each administration of the test was split into two halves. Each item's difficulty was considered in the split so the halves represent approximately equivalent alternative forms. Rasch ability estimates were then calculated for each of the two halves. Then, Pearson correlation was computed between the Rasch ability estimates from the two halves. Finally, the Pearson correlation was adjusted for test length using the Spearman-Brown prediction formula as described below.

Split-Half reliability = $\frac{2r}{1+r}$ where r = Pearson correlation

Split-half reliability is related to coefficient alpha in that alpha is often interpreted as the mean of all possible split-half coefficients.

FURTHER INTERPRETATIONS

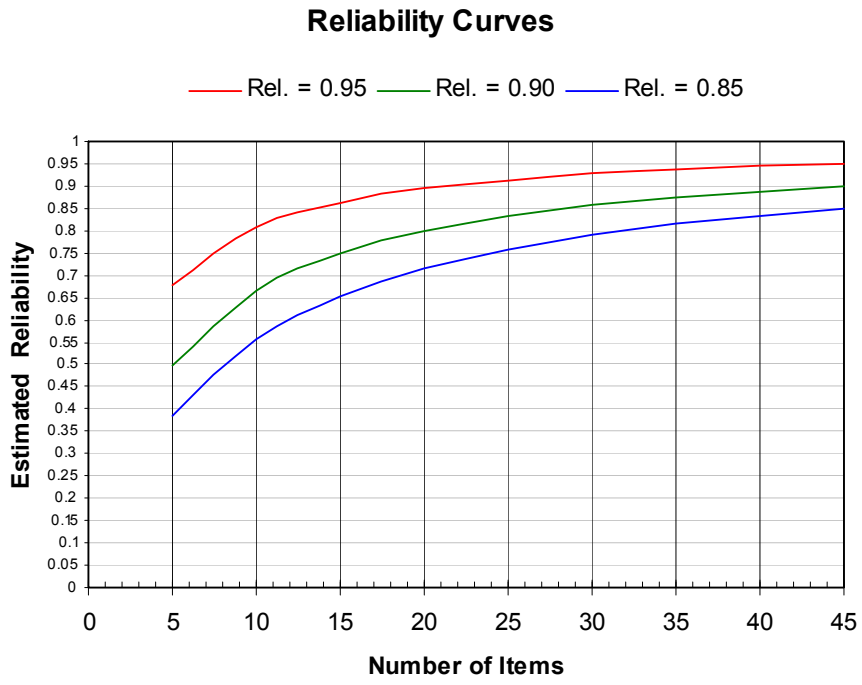
What reliability value is considered high enough? What values are considered too low? Although frequently asked for, any rules of thumb for interpreting the magnitude of reliability indices are mostly arbitrary. One approach is to research the reliabilities from similar testing instruments to see what values are commonly observed. For 2014 PSSA tests in Reading, Mathematics, and Science, reliability coefficients ranged from 0.90 to 0.95, while reliability coefficients for writing ranged from 0.80 to 0.81. For spring 2014 Keystone exams in Algebra I, Literature, and Biology, reliability coefficients were 0.91, 0.94, and 0.91, respectively. For many other state assessment programs, reliabilities in the low 0.90s are usually the highest observed, and reliabilities in the high 0.80s are very common.

The lower a given reliability coefficient, the greater the potential for over-interpretation of the associated results. As suggested earlier, there is no firm guideline regarding how low is too low. However, as an informative point of reference, a reliability coefficient of 0.50 would mean that there is as much error variance as true-score variance in the scores.

DIAGNOSTIC CATEGORY SCORE RELIABILITY

As noted in the introduction, reliabilities tend to be higher with an increase in test length and lower with a decrease in test length. Figure 16–1 illustrates this relationship for a hypothetical 45-item test with three total score reliabilities: 0.95, 0.90, and 0.85. As an example, the curve for reliability equal to 0.90 suggests that a 10-item diagnostic category score would be expected to have a score reliability of just over 0.65. The use of the Spearman-Brown prediction formula assumes all items are exchangeable, which, in practice, they may not be. While such a chart may not perfectly model actual diagnostic category reliability, the intent is to illustrate the substantial impact that limited numbers of items can have on diagnostic category score reliability.

Figure 16–1. Example of the Relationship between Test Length and Reliability



STANDARD ERROR OF MEASUREMENT

The reliability coefficient is a unit-free indicator that reflects the degree to which scores are free of measurement error. It always ranges between 0.0 and 1.0 regardless of the test's scale. Reliability coefficients best reflect the extent to which measurement inconsistencies may be present or absent in a group. However, they are not that useful for helping users interpret test scores. The standard error of measurement (SEM) is another indicator of test score precision that is better suited for determining the effect of measurement inconsistencies on the scores obtained by individual examinees. This is particularly so for conditional SEMs (CSEM) discussed further below.

TRADITIONAL STANDARD ERROR OF MEASUREMENT

A precise, theoretical interpretation of the SEM is somewhat unwieldy. A beginning point for understanding the concept is as follows. If everyone being tested had the same true score,[18] there would still be some variation in observed scores due to imperfections in the measurement process, such as random differences in attention during instruction or concentration during testing, the sampling of test items, etc. The standard error is defined as the standard deviation[19] of the distribution of observed scores for students with identical true scores. Because the SEM is an index of the random variability in test scores in actual score units, it represents very important information for test score users.

The SEM formula is provided below:

$$SEM = SD\sqrt{1 - reliability}$$

It indicates that the value of the SEM depends on both the reliability coefficient and the standard deviation of test scores. If the reliability were equal to 0.00 (the lowest possible value), the SEM would be equal to the standard deviation of the test scores. If test reliability were equal to 1.00 (the highest possible value), the SEM would be 0.0. In other words, a perfectly reliable test has no measurement error (Harvill, 1991). Additionally, the value of the SEM takes the group variation (i.e., score standard deviation) into account.

TRADITIONAL SEM CONFIDENCE INTERVALS

The SEM is an index of the random variability in test scores in actual score units, which is why it has such great utility for test score users. SEMs allow statements regarding the precision of individual tests scores. SEMs help place reasonable limits (Gulliksen, 1950) around observed scores through construction of an approximate score band. Often referred to as confidence intervals, these bands are constructed by taking the observed scores, *X*, and adding and subtracting a multiplicative factor of the SEM. As an example, students with a given true score will have observed scores that fall between ± 1 SEM about two-thirds of the time.[20] For ±2 SEM confidence intervals, the percentage increases to about 95 percent.

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[18] True score is the score the person would receive if the measurement process were perfect.

[19] The standard deviation of a distribution is a measure of the dispersion of the observations. For the normal distribution, about 16 percent of the observations are more than one standard deviation above the mean.

[20] Some prefer the following interpretation: if a student were tested an infinite number of times, the ± 1 SEM confidence intervals constructed for each score would capture the student's true score 68 percent of the time.

FURTHER INTERPRETATIONS

ONE SEM FOR ALL TEST SCORES

The SEM approach described above only provides a single numerical estimate for constructing the confidence intervals for examinees regardless of their score levels. In reality, however, such confidence intervals vary according to one's score. Consequently, care should be taken when using the SEM for students with extreme scores. An alternate approach is described in the next section that conditions the SEM on a student's score estimate.

GROUP SPECIFIC

As noted in the introduction, reliabilities are group specific. The same is true for SEMs because both score reliabilities and score standard deviations vary across groups.

SCALE SCORE METRIC

The SEM approach is calculated using scale scores, and as such, the resulting confidence interval bands are in the scale score metric.

TYPE OF ERROR REFLECTED

The interpretation of the SEM should be driven by the type of score reliability that underpins it. So, the CDT SEMs involve the same source of error relevant to internal consistency indices. As noted earlier, a precise technical explanation of the SEM (and resulting confidence intervals) can be unwieldy. Because of this, score users are often provided less complex interpretations.

One simpler description sometimes used is that a confidence interval represents the possible score range that one would observe if a student could be tested twice with the same instrument. Taking the same test on a different day implies the only source of random error being considered is related to the occasion of testing—such as a student might be sleepier one day than another, might be sick, or might not have eaten a good breakfast. There is a reliability index that captures this source of random error and it is referred to as the test-retest reliability coefficient. This is not the type of reliability computed for the CDT. When internal consistency reliability estimates are used, such an explanation blurs the fact that random error based on the occasion of testing is not considered.

When SEMs are derived from internal consistency reliability estimates, a better approach is to describe the confidence interval as providing reasonable bounds for the range of scores that a student might receive if he or she took an equivalent version of the test. That is, the student took a test that covered exactly the same content, but included a different set of items. As an example, if the Algebra I score was 1078 and the SEM band was 1038 to 1118, then a student would be likely to receive a score somewhere between 1038 and 1118 if he or she took a different version of the test without additional instruction.

RESULTS AND OBSERVATIONS

Split-half reliability coefficients and associated (traditional) SEMs for CDT tests are presented in Table 16–3. Values were derived using the operational data from the 2013–2014 school year. The results are presented for total scores and each diagnostic category score. The statistics reported include number of students tested (*N*), mean scale score, standard deviation of scale score, split-half reliability, and traditional standard error of measurement (SEM) in the scale score metric.

Table 16–3. CDT Reliabilities

	Average Number of Items	*N*	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Mathematics Lower Grades						
Total Test	49.9	8,117	903.979	139.875	0.921	39.2
Numbers and Operations	12.5	8,117	897.126	170.692	0.792	77.8
Algebraic Concepts	12.5	8,117	895.299	160.263	0.764	77.8
Geometry	12.5	8,117	906.694	149.234	0.733	77.1
Measurement, Data, and Probability	12.4	8,117	918.732	161.168	0.768	77.6
Mathematics						
Total Test	51.7	120,088	989.766	130.678	0.918	37.5
Numbers and Operations	12.9	120,088	994.252	159.409	0.773	76.0
Algebraic Concepts	12.9	120,088	987.375	150.297	0.747	75.7
Geometry	12.9	120,088	987.490	137.015	0.687	76.6
Measurement, Data, and Probability	13.0	120,088	992.841	158.979	0.766	77.0
Algebra I						
Total Test	51.5	144,912	1068.968	124.399	0.906	38.1
Operations with Real Numbers and Expressions	12.9	144,912	1059.465	151.917	0.746	76.5
Linear Equations & Inequalities	12.9	144,912	1079.237	136.584	0.677	77.6
Functions & Coordinate Geometry	12.9	144,912	1076.940	143.143	0.708	77.3
Data Analysis	12.9	144,912	1063.553	154.481	0.747	77.7
Geometry						
Total Test	52.1	13,293	1102.994	140.996	0.926	38.3
Geometric Properties	12.9	13,293	1096.324	151.469	0.736	77.9
Congruence, Similarity, & Proofs	13.1	13,293	1113.527	164.247	0.766	79.4
Coordinate Geometry and Right Triangles	13.1	13,293	1105.965	168.850	0.781	78.9
Measurement	13.0	13,293	1098.598	166.891	0.773	79.5

Table 16–3 (continued). CDT Reliabilities

	Average Number of Items	*N*	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Algebra II						
Total Test	52.4	15,197	1138.301	139.292	0.922	38.9
Operations with Complex Numbers	13.4	15,197	1159.059	189.695	0.823	79.9
Non-linear Expressions & Equations	12.9	15,197	1129.424	161.504	0.777	76.3
Functions	12.9	15,197	1143.776	153.327	0.747	77.1
Data Analysis	13.1	15,197	1127.285	168.400	0.785	78.0
Reading Lower Grades						
Total Test	54.8	7,164	846.019	155.232	0.917	44.6
Key Ideas and Details-Literature Text	10.9	7,164	847.179	201.265	0.719	106.7
Key Ideas and Details-Informational Text	11.1	7,164	844.335	188.633	0.695	104.1
Craft and Structure-Literature Text	11.0	7,164	847.952	183.252	0.667	105.7
Craft and Structure-Informational Text	11.2	7,164	852.153	183.665	0.687	102.7
Vocabulary Acquisition and Use	10.6	7,164	835.614	188.396	0.692	104.6
Reading/Literature						
Total Test	55.3	277,536	994.341	160.388	0.921	45.2
Key Ideas and Details-Literature Text	11.2	277,536	989.287	204.629	0.725	107.3
Key Ideas and Details-Informational Text	11.2	277,536	1007.758	197.050	0.719	104.4
Craft and Structure-Literature Text	11.1	277,536	996.032	181.697	0.669	104.5
Craft and Structure-Informational Text	11.2	277,536	1001.134	191.150	0.707	103.5
Vocabulary Acquisition and Use	10.6	277,536	989.180	197.785	0.713	105.9
Science Lower Grades						
Total Test	49.5	490	828.473	126.277	0.905	38.9
The Nature of Science	12.4	490	826.755	163.242	0.765	79.2
Biological Sciences	12.4	490	830.414	150.096	0.698	82.5
Physical Sciences	12.4	490	821.271	134.766	0.649	79.9
Earth and Space Sciences	12.3	490	836.347	140.704	0.600	89.0

Table 16–3 (continued). CDT Reliabilities

	Average Number of Items	*N*	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Science						
Total Test	51.6	53,536	895.377	127.689	0.900	40.3
The Nature of Science	12.9	53,536	893.338	160.825	0.747	80.8
Biological Sciences	12.9	53,536	892.800	154.677	0.723	81.5
Physical Sciences	12.9	53,536	905.504	141.127	0.664	81.8
Earth and Space Sciences	12.9	53,536	893.074	144.274	0.666	83.4
Biology						
Total Test	52.1	117,648	983.597	125.387	0.894	40.7
Basic Biological Principles/Chemical Basis for Life	13.0	117,648	986.600	159.944	0.729	83.2
Bioenergetics/Homeostasis and Transport	13.1	117,648	993.941	139.315	0.631	84.6
Cell Growth and Reproduction/Genetics	13.0	117,648	991.141	138.850	0.634	84.0
Theory of Evolution/Ecology	12.9	117,648	965.559	160.081	0.735	82.4
Chemistry						
Total Test	52.5	11,780	1000.686	100.042	0.836	40.5
Properties and Classification of Matter	13.0	11,780	984.689	153.111	0.704	83.3
Atomic Structure and the Periodic Table	13.3	11,780	1019.440	120.414	0.498	85.3
The Mole and Chemical Bonding	13.1	11,780	1009.446	117.983	0.493	84.0
Chemical Relationships and Reactions	13.2	11,780	992.545	126.683	0.543	85.6
Writing Lower Grades						
Total Test	53.2	340	936.038	112.928	0.875	39.9
Quality of Writing: Focus and Organization	10.8	340	930.909	149.089	0.677	84.8
Quality of Writing: Content and Style	10.7	340	924.015	141.605	0.558	94.2
Quality of Writing: Editing	10.6	340	933.841	143.222	0.627	87.4
Conventions: Punctuation, Capitalization, and Spelling	10.5	340	952.532	137.235	0.604	86.3
Conventions: Grammar and Sentence Formation	10.6	340	936.794	136.630	0.533	93.3

Table 16–3 (continued). CDT Reliabilities

	Average Number of Items	*N*	Scale Score Mean	Scale Score SD	Split-Half Reliability	SEM in Scale Score Metric
Writing/English Composition						
Total Test	55.3	25,975	989.660	145.305	0.928	38.9
Quality of Writing: Focus and Organization	11.2	25,975	987.757	182.461	0.748	91.5
Quality of Writing: Content and Style	11.1	25,975	989.297	181.784	0.747	91.5
Quality of Writing: Editing	11.0	25,975	979.092	166.457	0.714	89.1
Conventions: Punctuation, Capitalization, and Spelling	11.0	25,975	1008.298	168.949	0.721	89.2
Conventions: Grammar and Sentence Formation	11.0	25,975	984.702	159.299	0.684	89.6

The overall test score reliability values are high and similar to those reported for PSSA and Keystone Exams. The reliabilities at the diagnostic category level are lower due to the fact that each diagnostic category contains fewer items.

RASCH CONDITIONAL STANDARD ERRORS OF MEASUREMENT

The CSEM also indicates the degree of measurement error in scale score units, but varies as a function of a student's actual scale score. Therefore, the CSEM may be especially useful in characterizing measurement precision in the neighborhood of a score level used for decision-making—such as cut scores for identifying students who meet a performance standard.

Technically, when a Rasch model is applied, the CSEM at any given point on the ability continuum is defined as the reciprocal of the square root of the test information function derived from the Rasch scaling model:

$$CSEM(\hat{\beta}_n) = \frac{1}{\sqrt{I(\hat{\beta}_n)}},$$

where $CSEM(\hat{\beta}_n)$ is the conditional standard error of measurement and $I(\hat{\beta}_n)$ is the test information function. Test information depends on the sum of the corresponding information functions for the test items. Item information depends on each item's difficulty and conditional item score variance. The formula above utilizes the Rasch ability ($\hat{\beta}_n$) metric. The conditional standard error on the scale score (SS) metric is determined simply by multiplying the $CSEM(\hat{\beta}_n)$ by the slope (multiplicative constant, *m*) of the linear transformation equation used to convert the Rasch ability estimates to scale scores:

$CSEM(SS) = CSEM(\hat{\beta}_n) * m$

Chapter Eleven provides the linear transformation formulas for each of the CDT content areas.

RASCH CSEM CONFIDENCE INTERVALS

CSEMs also allow statements regarding the precision of individual tests scores. And like SEMs, they help place reasonable limits around observed scale scores through construction of an approximate score band. The confidence intervals are constructed by adding and subtracting a multiplicative factor of the CSEM and may be interpreted as described in the earlier section.

FURTHER INTERPRETATIONS

DIFFERENT CSEMS FOR DIFFERENT TEST SCORES

The CSEM approach provides different numerical estimates for constructing the confidence intervals for examinees depending on their specific score. On fixed form tests, the magnitude of the CSEM values is often "U" shaped, with larger CSEM values associated with lower and higher scores. With a fixed set of items, there is less information for students scoring at the extremes, and CSEM is inversely related to the information function (the more information, the lower the CSEM). Given that CDT tests are adaptive, this "U" shape tends to be less pronounced as students are presented with items targeted at their level. While there is some "U" shape at the extreme ends of the vertical scale, there is a much larger area on the scale where CSEMs are relatively flat compared to fixed form tests. The adaptive tests allow for greater information and, therefore, lower CSEMs across a wide range of the vertical scale.

GROUP SPECIFIC

Assuming reasonable model-data fit—as explored in Chapter Eight—the Rasch based CSEMs (conditioned on score level) should not vary across groups.

SCALE SCORE METRIC

The CSEM and associated confidence interval bands are in the scale score metric.

TYPE OF ERROR REFLECTED

The CSEMs reported in the dynamic reporting suite are the Rasch-based conditional standard errors of measurement described above. Score report content is considered in greater detail in Chapter Fourteen.

RESULTS AND OBSERVATIONS

Figures 16–2 through 16–14 show the average Rasch CSEMs associated with various scale score ranges based on operational data from the 2013–2014 school year. The values are fairly consistent across a large range of scores on the vertical scale. The values increase at the low and high ends of the scale score range.

Figure 16–2. Average Conditional Standard Errors for Mathematics Lower Grades

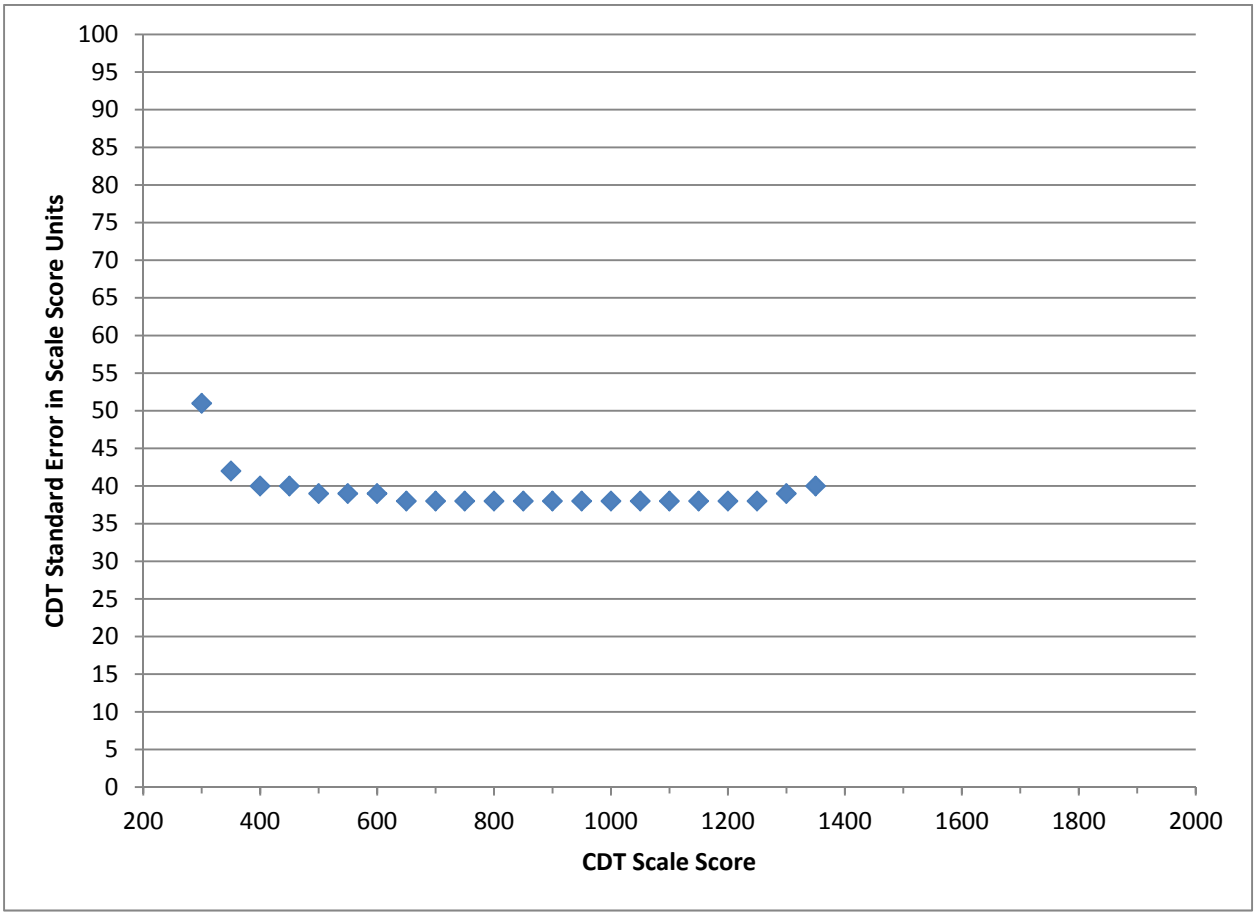


Figure 16–3. Average Conditional Standard Errors for Mathematics

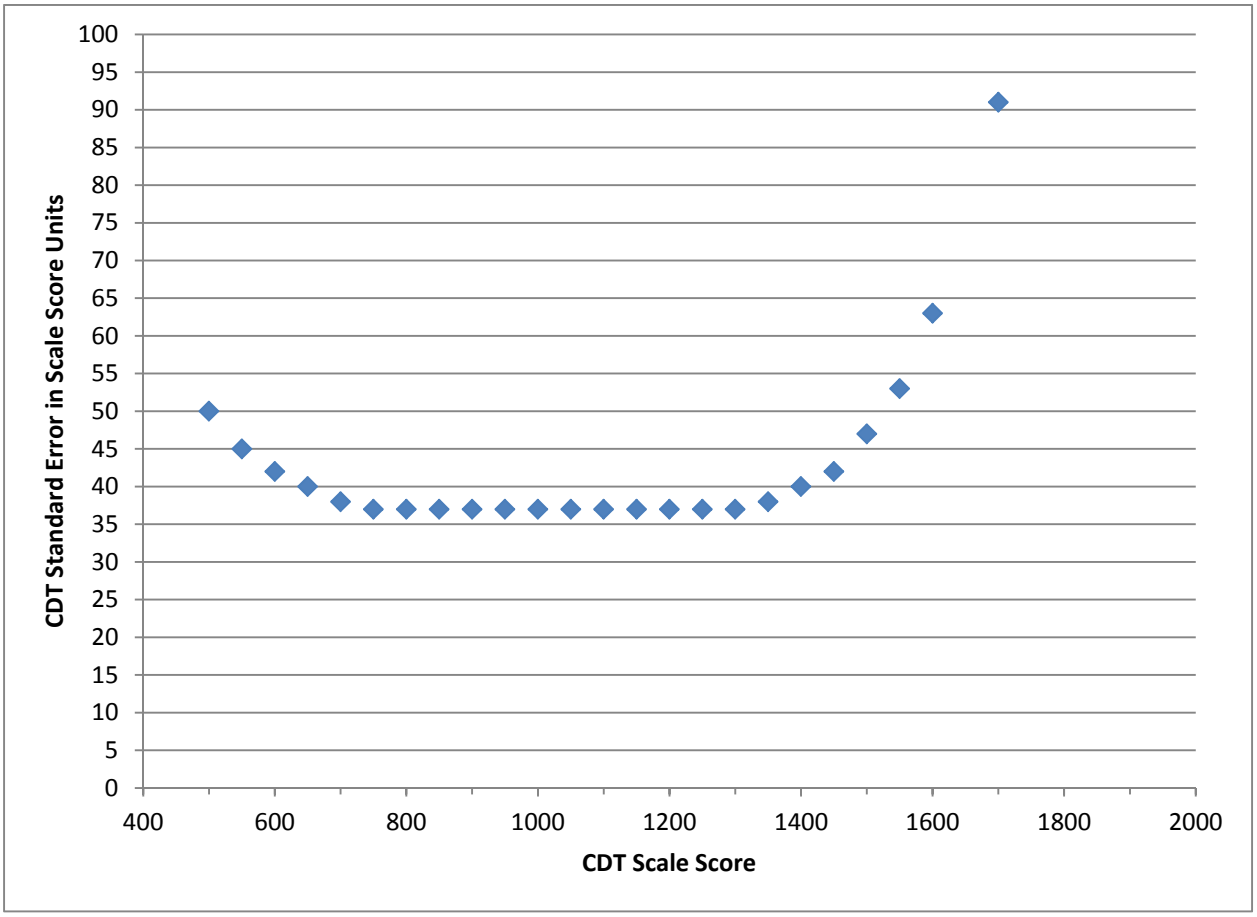


Figure 16–4. Average Conditional Standard Errors for Algebra I

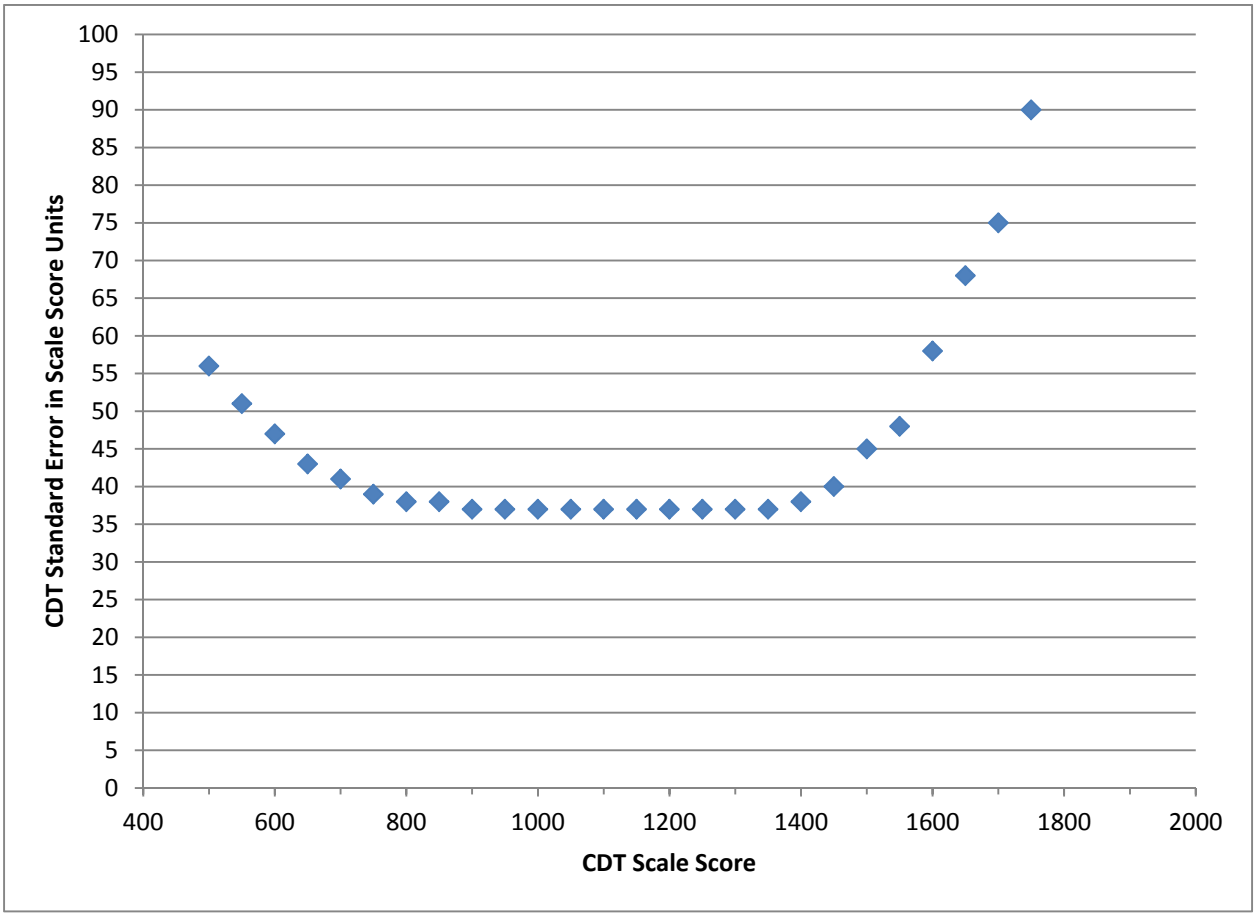


Figure 16–5. Average Conditional Standard Errors for Geometry

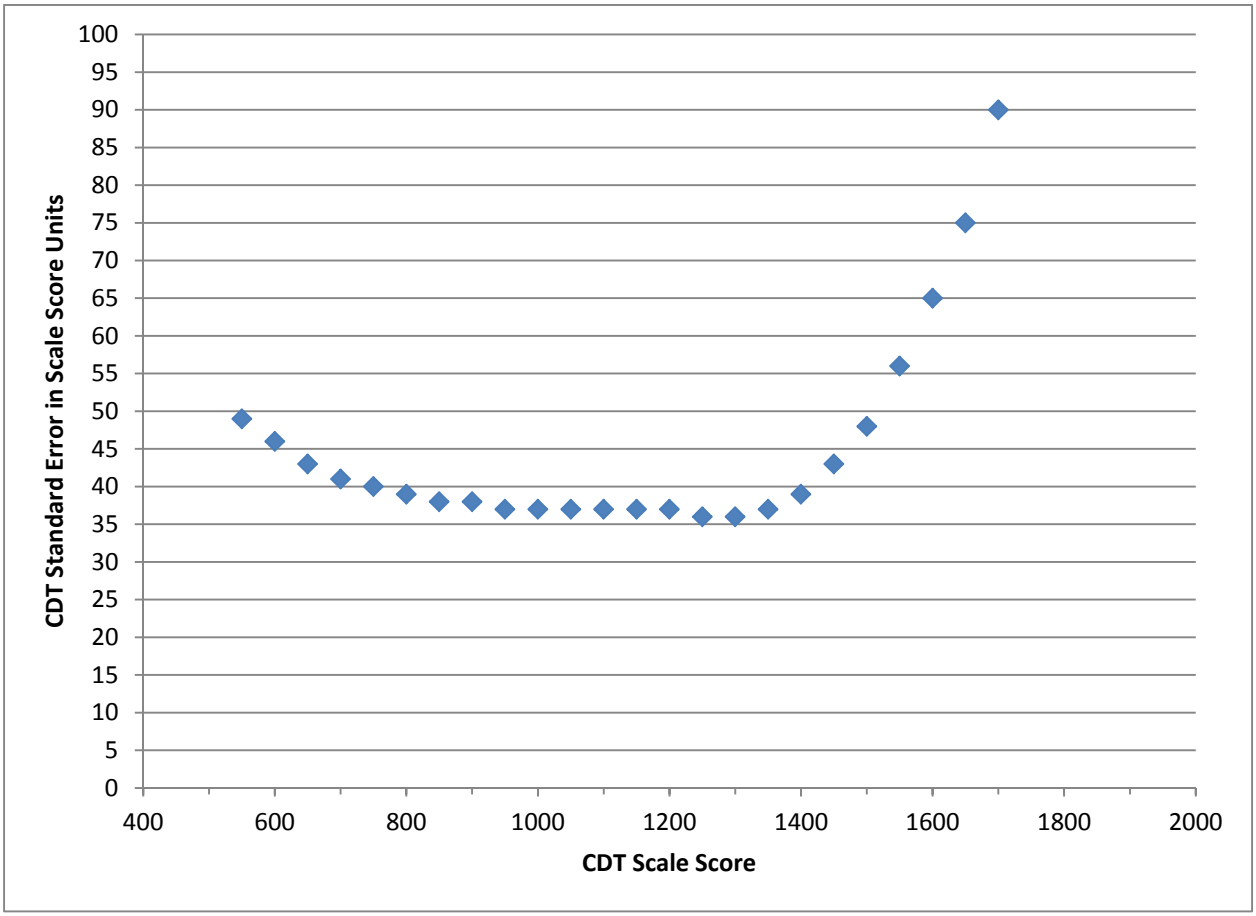


Figure 16–6. Average Conditional Standard Errors for Algebra II

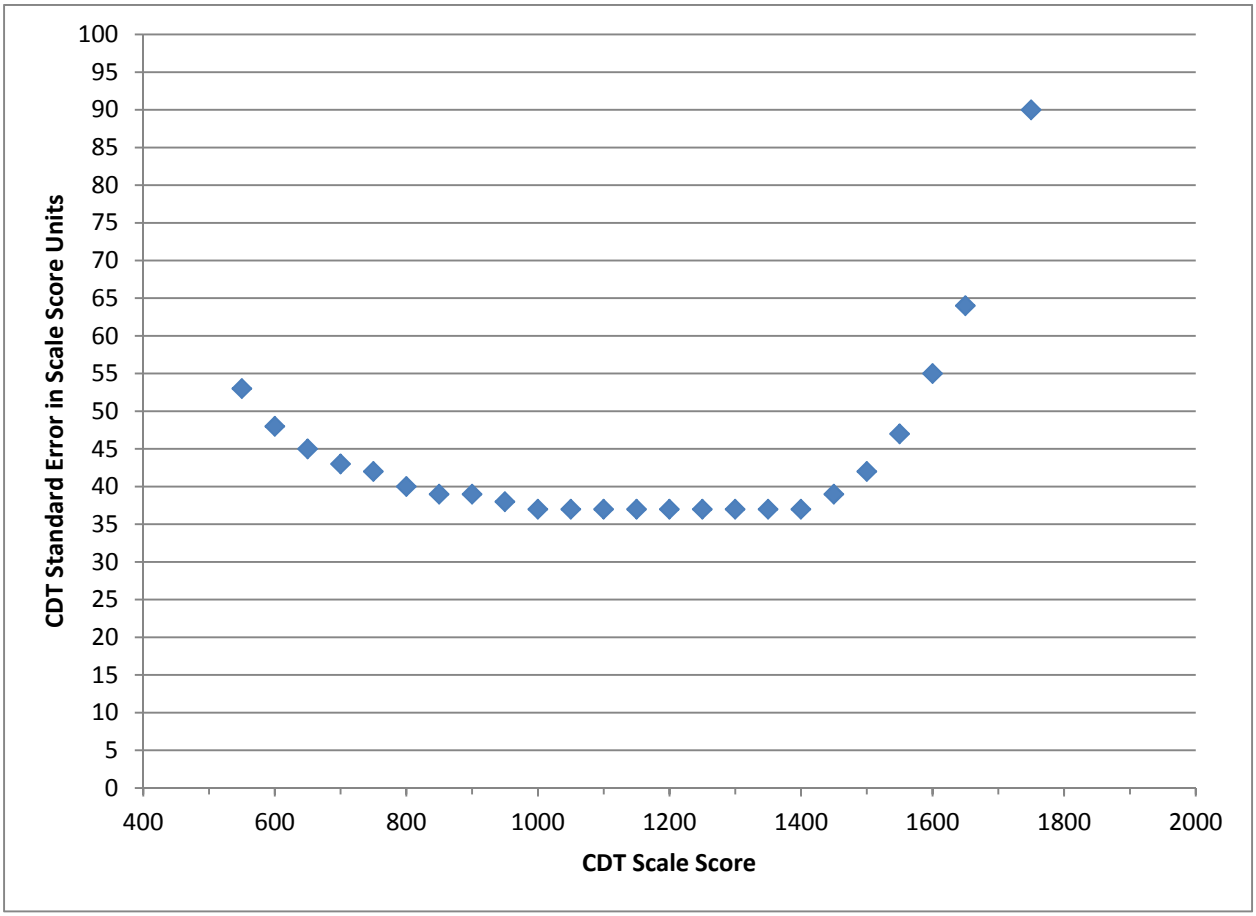


Figure 16–7. Average Conditional Standard Errors for Reading Lower Grades

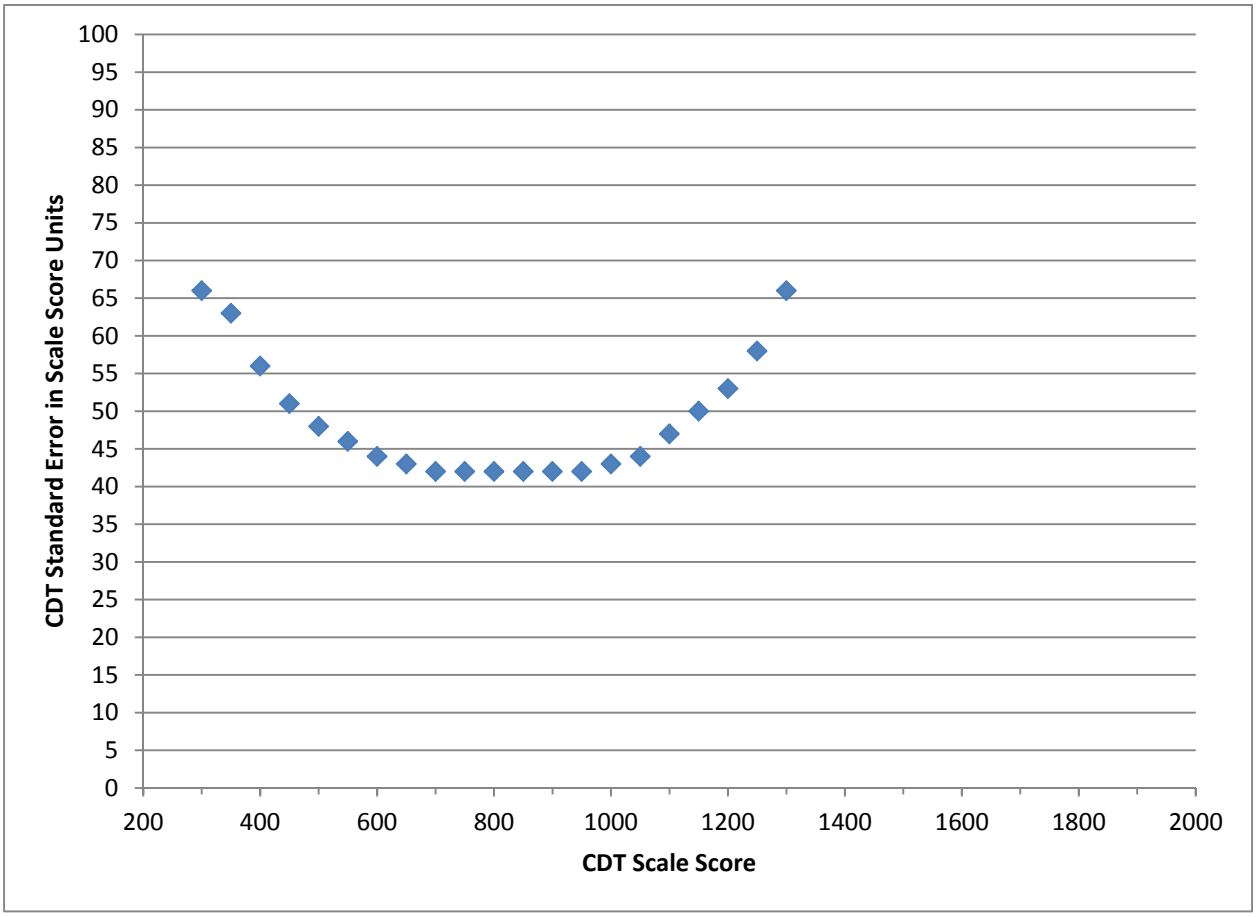
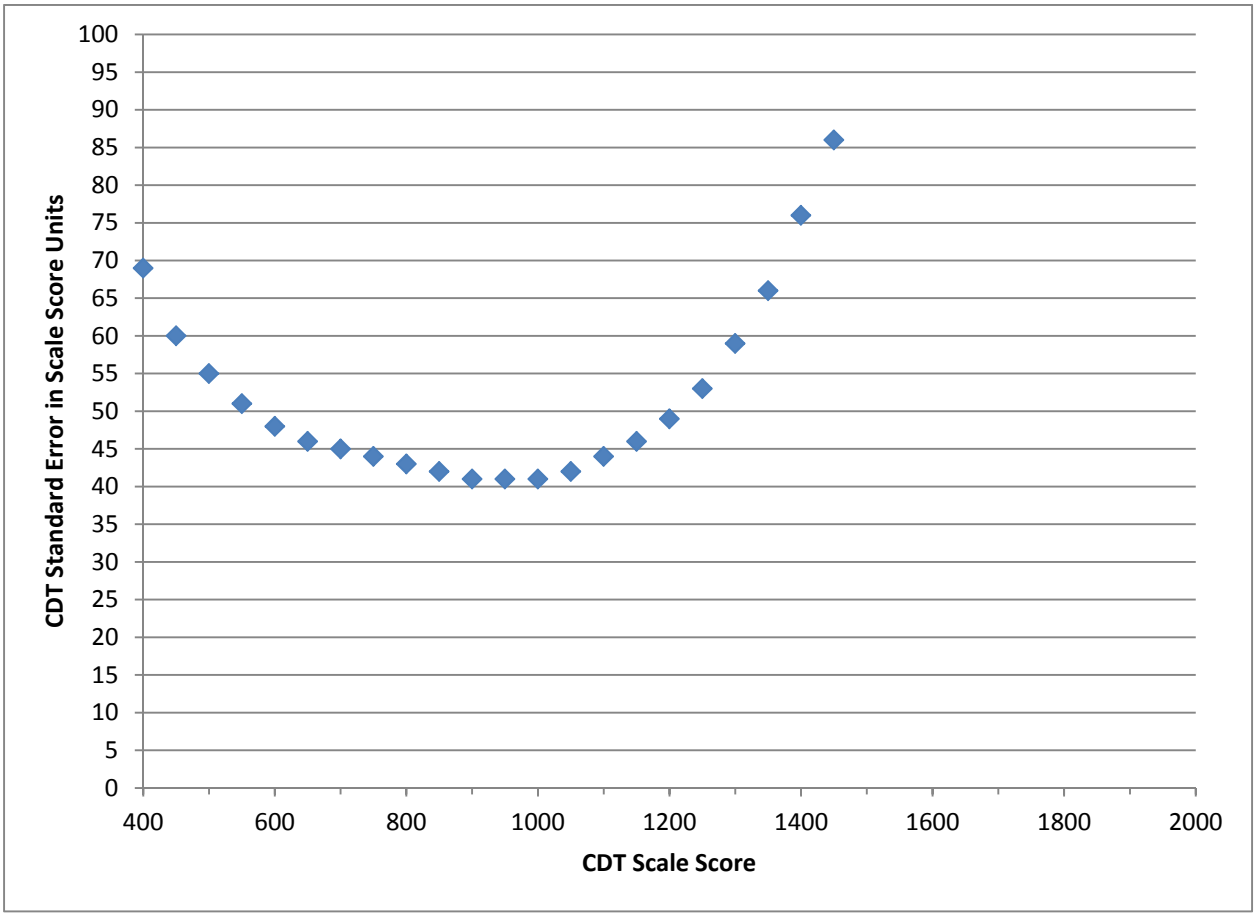


Figure 16–8. Average Conditional Standard Errors for Reading/Literature



CSEMs tend to be higher in the reading content area. This is due to the fact that CDT Reading Lower Grades and CDT Reading/Literature are passage-based. The items from a selected passage may not be as closely targeted to the student's level as when individual items are selected one at a time. For more information on adaptive selection of passages, see Chapter Thirteen.

Figure 16–9. Average Conditional Standard Errors for Science Lower Grades

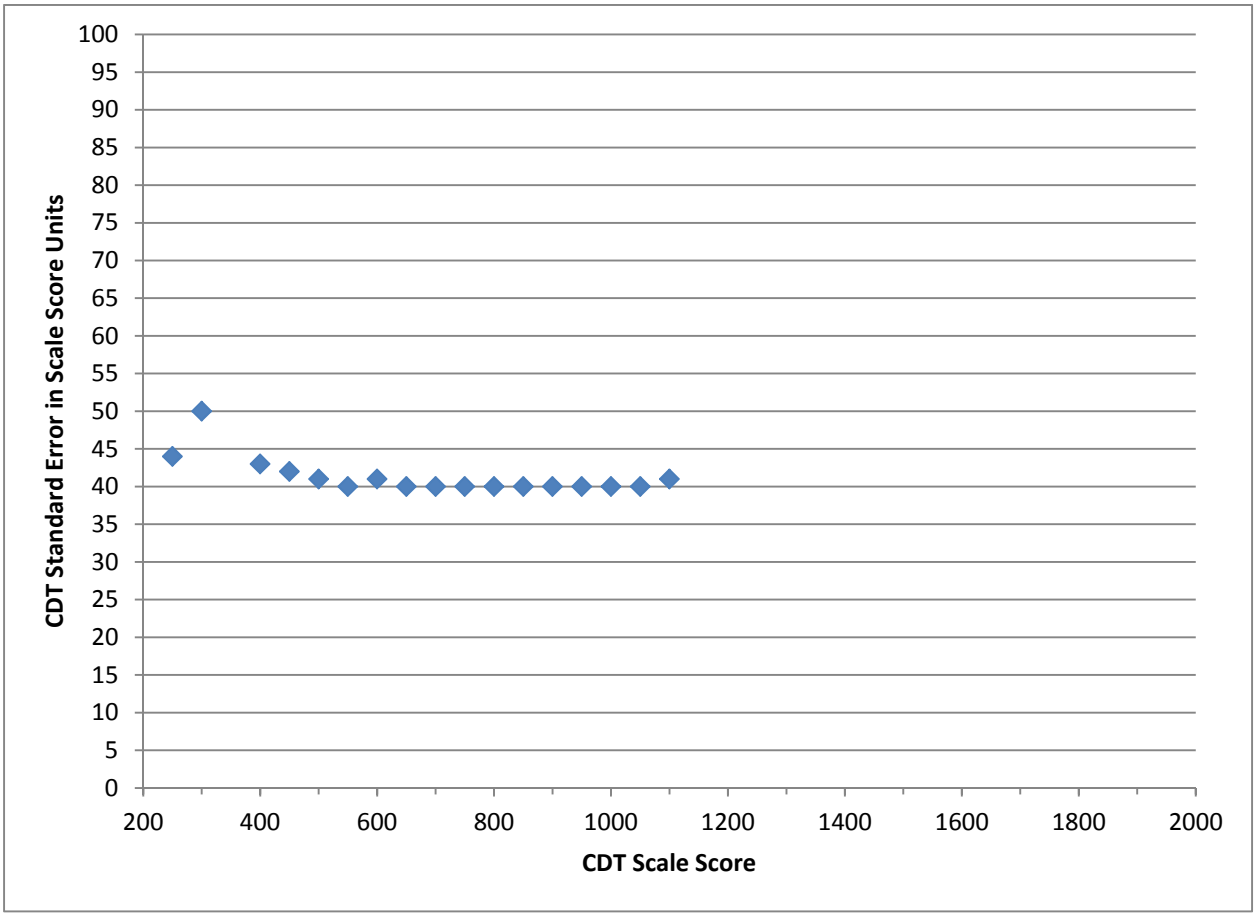


Figure 16–10. Average Conditional Standard Errors for Science

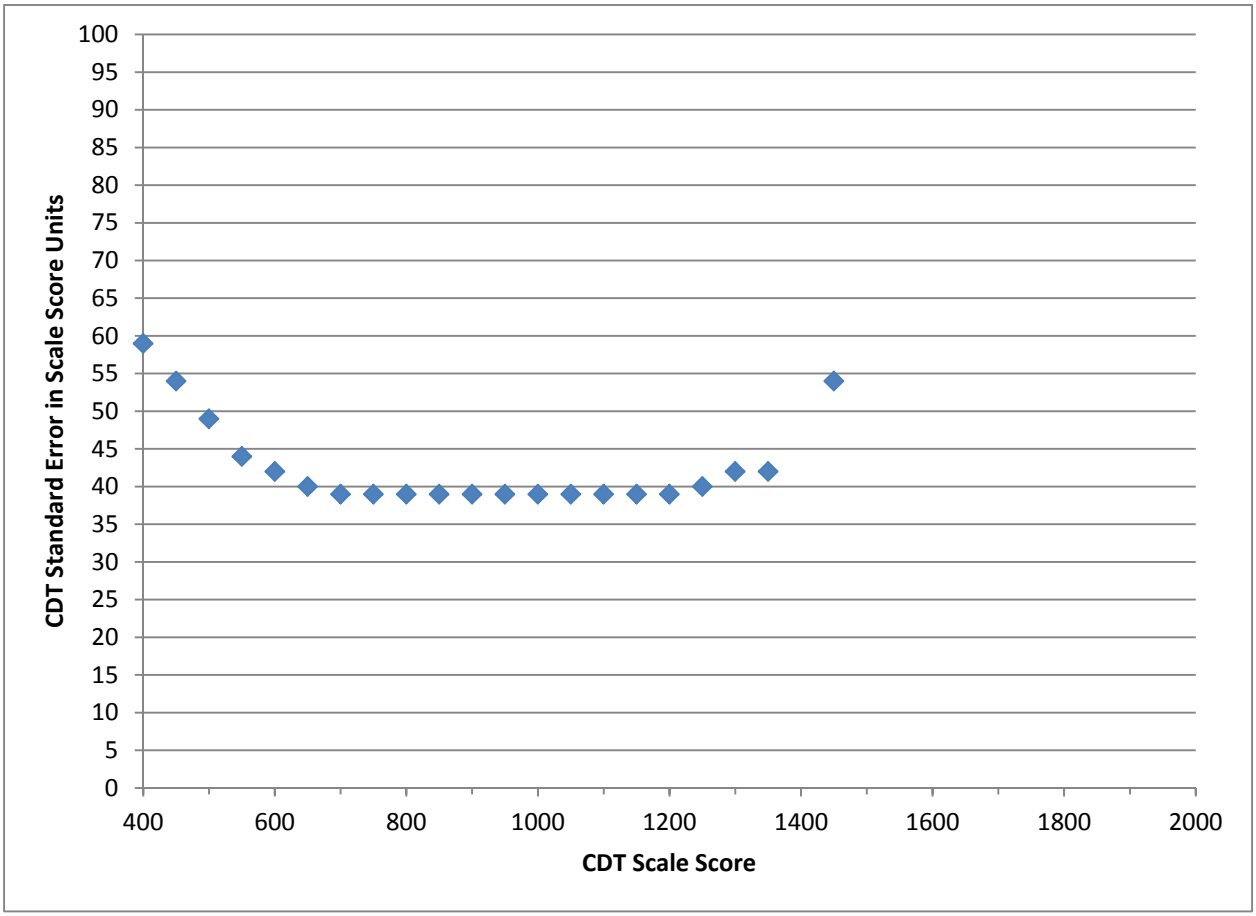


Figure 16–11. Average Conditional Standard Errors for Biology

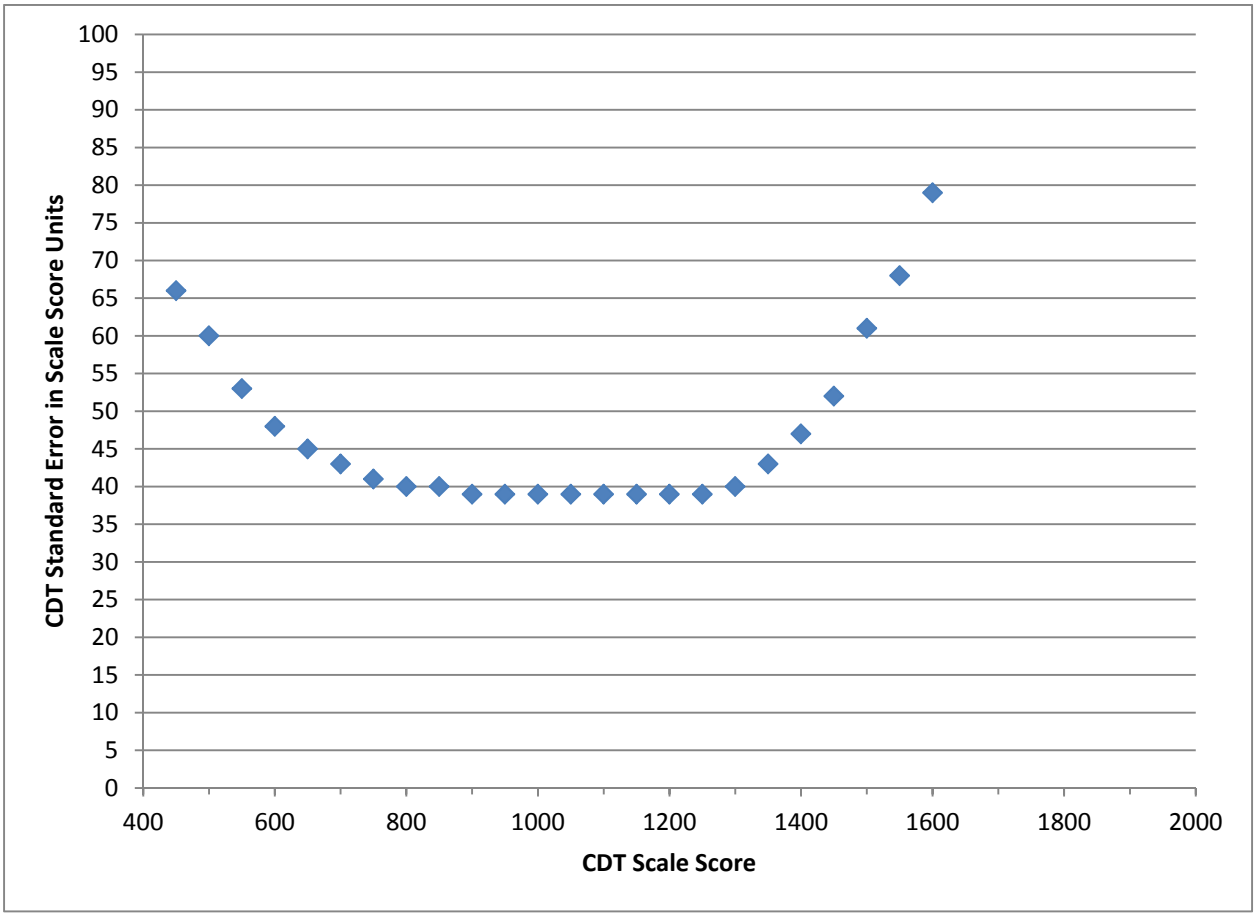


Figure 16–12. Average Conditional Standard Errors for Chemistry

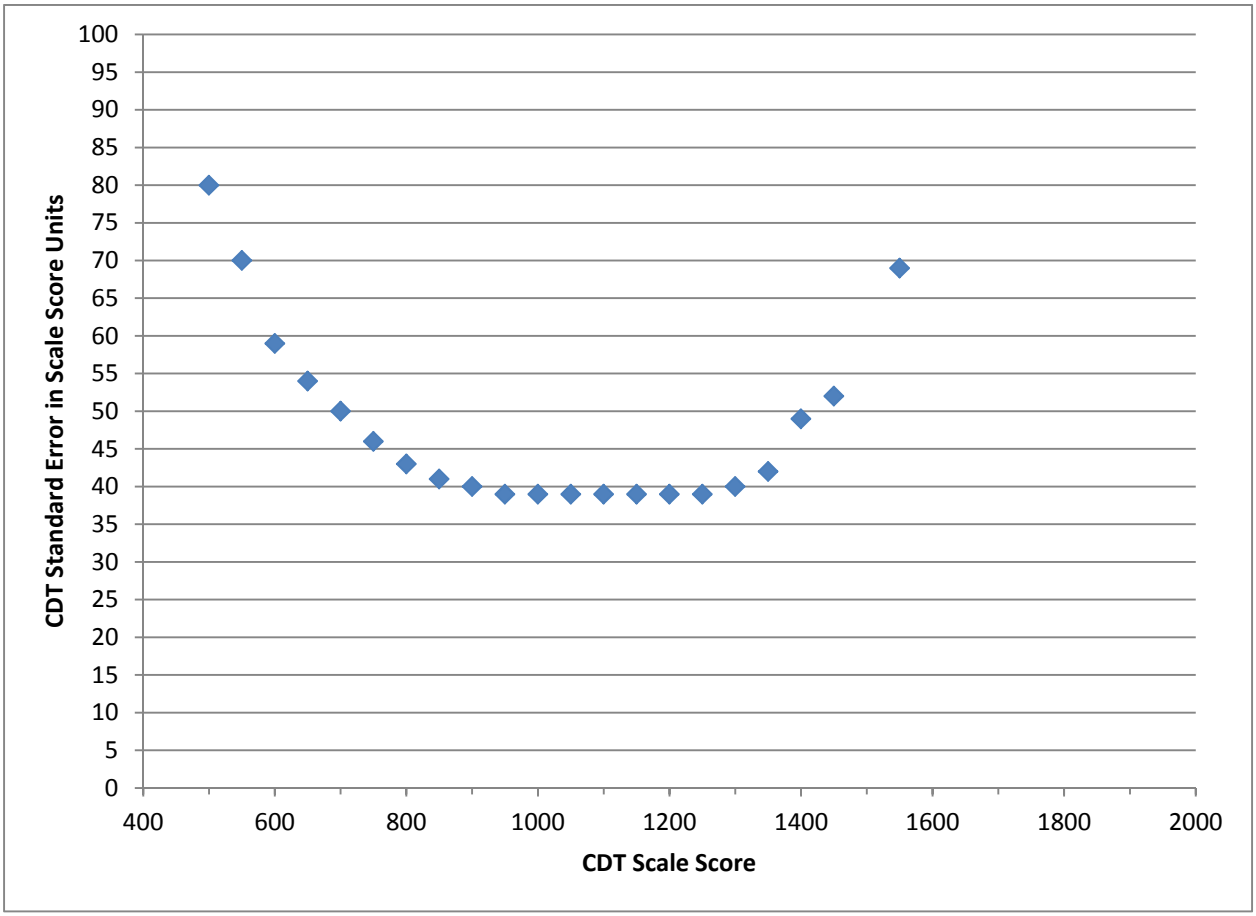


Figure 16–13. Average Conditional Standard Errors for Writing Lower Grades

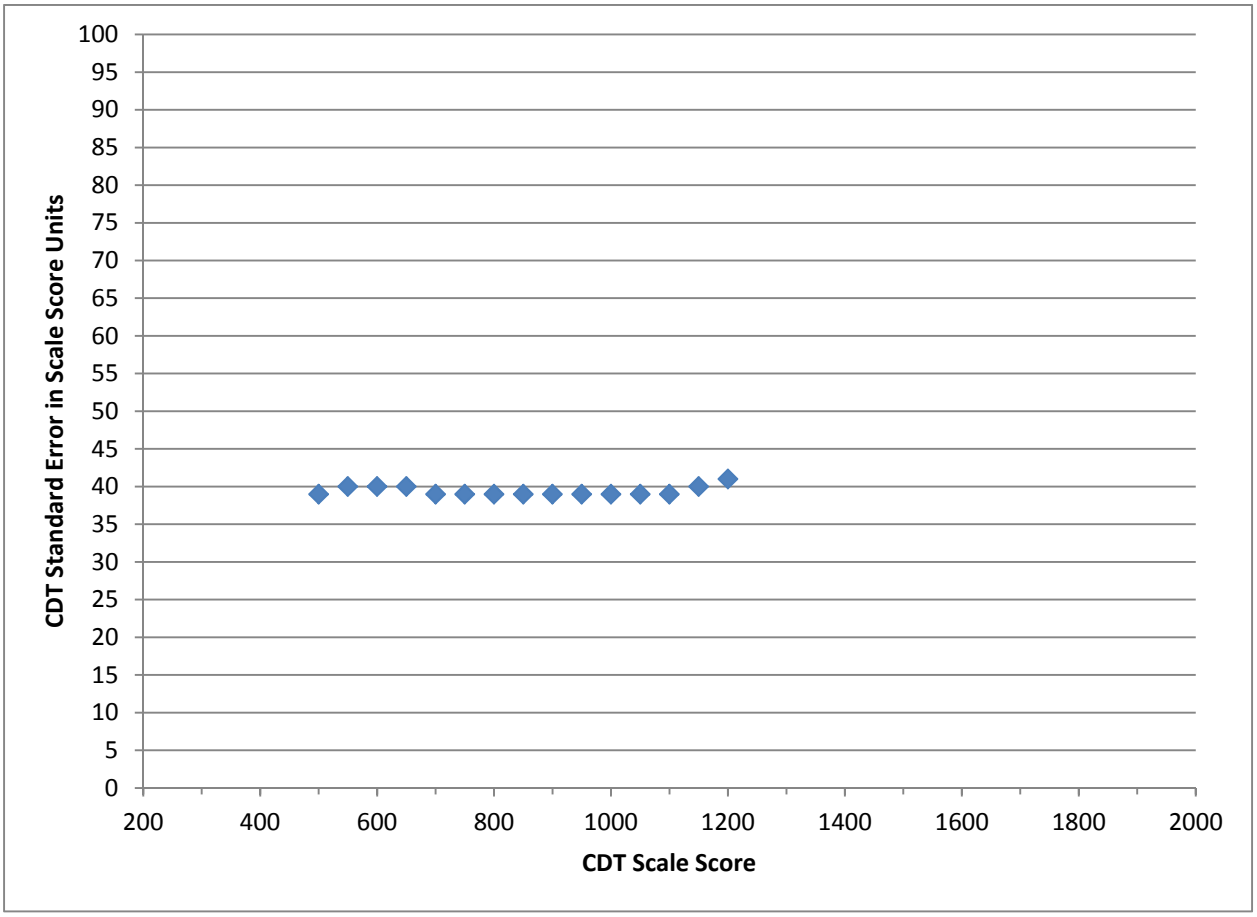
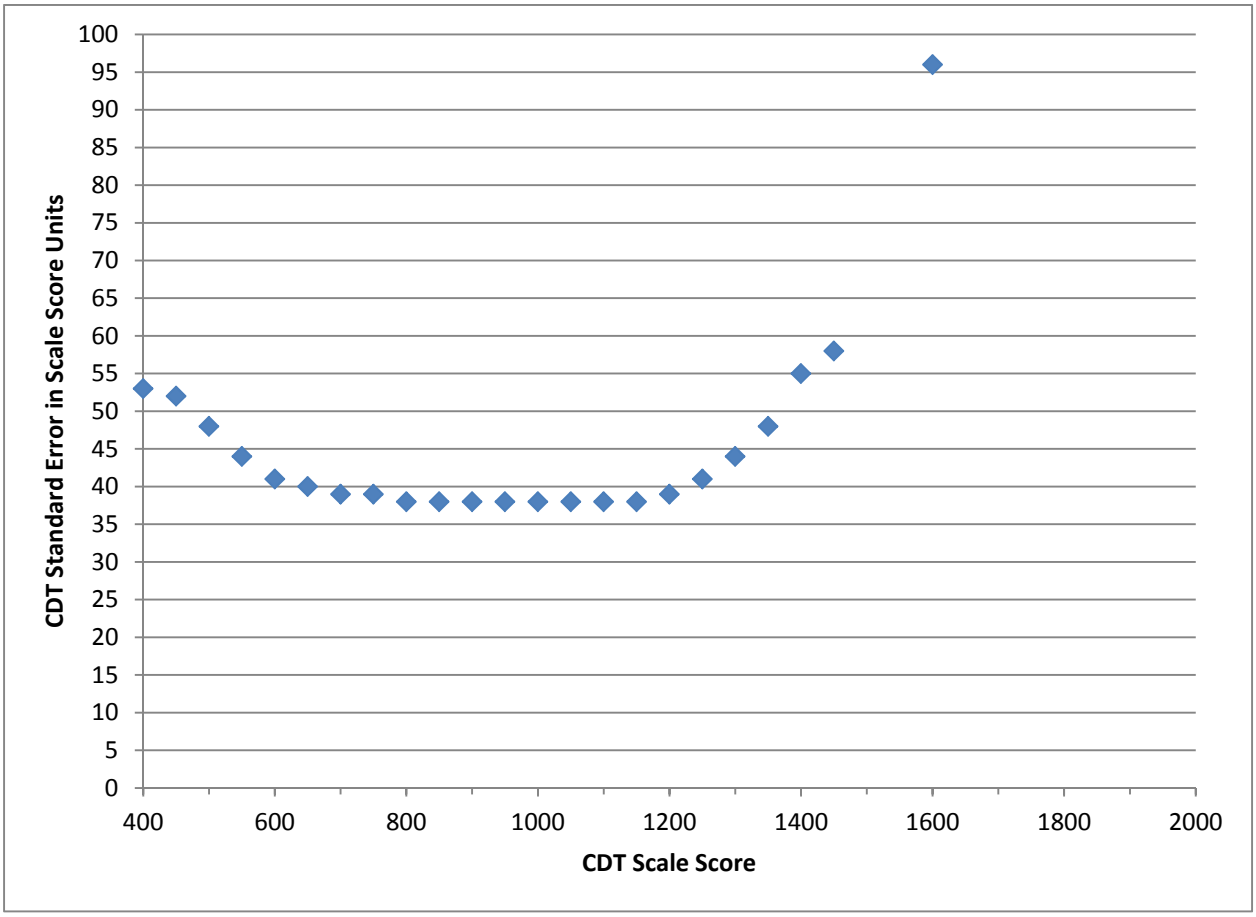


Figure 16–14. Average Conditional Standard Errors for Writing/English Composition



DECISION CONSISTENCY

Classification decision consistency refers to the degree to which the achievement level for each student can be replicated upon retesting using an equivalent form (Huynh, 1976). While CDT is designed to be administered multiple times in the school year to gauge progress following instruction, retesting in the context of decision consistency refers to retesting shortly after testing without additional instruction.

In a standards-based testing program, there should be great interest in knowing how accurately students are classified into performance categories. In contrast to reliability, which is concerned with the relative rank-ordering of students, it is the absolute values of student scores that are important in decision consistency.

Decision consistency answers the question "What is the agreement between the classifications based on two non-overlapping, equally difficult forms of the test?" If two parallel forms of the test were given to the same students (without additional instruction), the consistency of the measure would be reflected by the extent to which the classification decisions made based on the first set of test scores matched the decisions based on the second set of test scores. Consider Table 16–4:

Table 16–4. Pseudo-Decision Table for Three Hypothetical Categories

		Test One			
		Level I	**Level II**	**Level III**	**Marginal**
Test Two	Level I	φ_{11}	φ_{12}	φ_{13}	$\varphi_{1\bullet}$
	Level II	φ_{21}	φ_{22}	φ_{23}	$\varphi_{2\bullet}$
	Level III	φ_{31}	φ_{32}	φ_{33}	$\varphi_{3\bullet}$
	Marginal	$\varphi_{\bullet 1}$	$\varphi_{\bullet 2}$	$\varphi_{\bullet 3}$	1

If a student is classified as in one category based on Test One's score, how probable would it be that the student would be reclassified in the same category if he or she took Test Two (a non-overlapping, equally difficult form of the test)?

The proportions of correct decisions, φ, for three categories is computed as:

$$\varphi = \varphi 11 + \varphi 22 + \varphi 33$$

It is the sum of the diagonal entries—that is, the proportion of students classified by the two forms into exactly the same level—that would signify the overall consistency.

Since it is not feasible to repeat CDT tests one right after the other with no additional instruction in order to estimate the proportion of students who would be reclassified in the same performance levels, a statistical model needs to be imposed on the data in order to project the consistency of classifications solely using data from the available administration (Hambleton and Novick, 1973). Two well-known methods were developed by Hanson and Brennan (1990) and Livingston and Lewis (1995) utilizing specific true score models. While both measures are reported for PSSA and Keystone Exams, the statistical models imposed on the data depend upon a beta binomial distribution of raw scores. Given that the CDT is adaptive (i.e., raw scores using a response probability of 0.5 are generally equal to one-half of test length), these measures are not reported for CDT. Instead, decision consistency measures in this section are a Rasch-based index that relies on conditional standard errors (CSEMs). Also reported are results based on simulations and kappa.

The decision consistency measures reported in the section are based on the Rasch model and conditional standard errors (Stearns and Smith, 2007). Each person's scale score has an associated conditional standard error. Each of the performance levels on the test has an established benchmark cut in the scale score metric. Given these three pieces of information, the assumption of a normal distribution of measurement error allows one to calculate the probability that a student would receive the same classification on retesting. Using the statistic:

$$z = \frac{SS_n - SSBC}{SE_{SS_n}}$$

where SS_n is the scale score estimate for person n, $SSBC$ is the scale score benchmark cut, and SE_{SS_n} is the asymptotic standard error of the person scale score estimate. Using cumulative normal probabilities, the probability that a retest would produce the same performance level classification and the probability of a different performance level classification were calculated. The process was repeated for each cut score which

results in a probability of classification in each of the performance levels. The total classification rate for the entire sample is the average of the probabilities of the same classification on retesting.

Table 16–5 provides an example based on CDT Algebra I operational data from the 2013–2014 school year. Recall that in the dynamic reporting suite, scores are classified into one of three color ranges—red, green, or blue. The benchmark cut points used for the analyses are the cut points in place during the 2013–2014 school year.

Table 16–5. Retest Classification Probability – Algebra I

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.914	0.086	0.000
	green	0.163	0.810	0.026
	blue	0.000	0.204	0.796

Consider students with scores in the green range: The probability of scoring in the red range if retested is 0.163. The probability of scoring in the green range again is 0.810. The probability of scoring in the blue range is 0.026.

The total classification rate is determined by taking the weighted average of the diagonal probabilities where the weights are the number of students in the corresponding range. There are 144,912 students in the sample: 98,270 with total scores in the red range, 44,266 in the green range, and 2,376 in the blue range. The total classification rate is

[(0.914)*(98,270)+(0.810)*(44,266)+(0.796)*(2,376)]/144,912 = 0.880

In addition to the exact agreement rate, Cohen's kappa[21] was also calculated as 0.735.

In cases with multiple categories, an alternative to kappa, which treats every misclassification as equally important, is a weighted kappa that considers differences that are non-adjacent as more "off."

While relevant, given there are three categories, weighted kappa is the same as kappa in this case because both the red/blue and blue/red cells in Table 16–5 are zero.

3 X 3 retest classification probability tables for all CDT tests and benchmark cuts comparable to Table 16–5 are presented in Appendix E.

Stearns and Smith (2007) point out that one advantage of this method is that each student can understand how likely it is that he or she would be classified in the same range if the student took the test over without additional instruction. In addition, each student can learn the probability with which he or she would be reclassified in any of the ranges. A student scoring right at the cut score will have a lower rate of consistent classification than a student scoring in the middle of a performance level band. This can be seen in Table 16–6, which is based on the same Algebra I data set and cut points and shows for various scale scores the percent chance of scoring in each color range if retested.

[21] Kappa, κ, takes into account the agreement occurring by chance.

Table 16–6. Retest Classification Percent for Various Scale Score Ranges – Algebra I

Scale Score Range	Number of Students	% Chance in Category if Retested*			% Chance in Same Category if Retested*	
		Red	Green	Blue		
< 400	0					
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	8	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	28	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	99	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	290	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	735	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,408	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,445	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	3,685	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	5,805	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	9,226	>99.9%	0.0%	0.0%	>99.9%	
950 to 999	13,905	>99.9%	0.0%	0.0%	>99.9%	
1000 to 1049	20,726	99.6%	0.4%	0.0%	99.6%	
1050 to 1099	30,371	92.4%	7.6%	0.0%	92.4%	
1100 to 1149	39,166	57.8%	42.2%	0.0%	63.8%	Red/Green cut = 1134
1150 to 1199	36,159	15.5%	84.4%	0.1%	84.4%	
1200 to 1249	21,406	1.2%	95.9%	2.8%	95.9%	
1250 to 1299	9,953	0.0%	74.4%	25.6%	74.5%	Green/Blue cut = 1297
1300 to 1349	4,432	0.0%	27.0%	73.0%	73.0%	
1350 to 1399	2,164	0.0%	3.0%	97.0%	97.0%	
1400 to 1449	954	0.0%	0.1%	99.9%	99.9%	
1450 to 1499	438	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	145	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	62	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	30	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	15	0.0%	0.0%	>99.9%	>99.9%	
1700 to 1749	6	0.0%	0.0%	>99.9%	>99.9%	
1750 to 1799	5	0.0%	0.0%	>99.9%	>99.9%	
1800 to 1849	3	0.0%	0.0%	>99.9%	>99.9%	
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	203,671					
* Retest assuming no additional instruction						

Tables for all CDT tests and benchmark cuts comparable to Table 16–6 are presented in Appendix E.

As previously mentioned, it is not feasible to repeat CDT tests one right after the other with no additional instruction in order to estimate decision consistency. However, simulations were run as a validation of the results based on the Stearns and Smith method. The reported Algebra I scores from 2013–2014 were used as true scores in order to simulate retest results. Table 16–7 repeats the Algebra I results from Table 16–5, shows the simulation results, and displays the differences.

Table 16–7. Compare Stearns and Smith Results to Simulation Retest – Algebra I

Stearns and Smith		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.914	0.086	0.000
	green	0.163	0.810	0.026
	blue	0.000	0.205	0.795

Exact Agreement Rate = 0.880

Kappa = 0.735

Simulated Retest		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.912	0.088	0.000
	green	0.167	0.806	0.027
	blue	0.000	0.199	0.801

Exact Agreement Rate = 0.878

Kappa = 0.729

Difference		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.002	-0.002	0.000
	green	-0.004	0.004	0.000
	blue	0.000	0.005	-0.005

Exact Agreement Rate = 0.002

Kappa = 0.006

Based on results of the simulation validation, Stearns and Smith methodology was applied to all CDT tests and benchmark cut points using data from the 2013–2014 school year. Results are presented in Table 16–8.

Table 16–8. Decision Consistency for All CDT Tests

CDT Test	Benchmark Cut	*N*-count	Exact Agreement Rate	Kappa
Mathematics Lower Grades	Grade 3	2,468	0.872	0.780
Mathematics Lower Grades	Grade 4	3,001	0.865	0.774
Mathematics Lower Grades	Grade 5	2,648	0.861	0.776
Mathematics	Grade 6	40,464	0.860	0.773
Mathematics	Grade 7	47,665	0.865	0.772
Mathematics	Grade 8	30,785	0.875	0.767
Mathematics	High School	1,174	0.920	0.793
Algebra I	Algebra I	144,912	0.880	0.735
Geometry	Geometry	13,293	0.897	0.779
Algebra II	Algebra II	15,197	0.916	0.777
Reading Lower Grades	Grade 3	2,597	0.863	0.775
Reading Lower Grades	Grade 4	2,524	0.863	0.774
Reading Lower Grades	Grade 5	2,043	0.866	0.775
Reading/Literature	Grade 6	37,520	0.877	0.786
Reading/Literature	Grade 7	46,393	0.878	0.784
Reading/Literature	Grade 8	44,395	0.878	0.783
Reading/Literature	Literature	149,228	0.873	0.780
Science Lower Grades	Grade 3	192	0.839	0.731
Science Lower Grades	Grade 4	243	0.811	0.678
Science Lower Grades	Grade 5	55	0.855	0.756
Science	Grade 6	8,695	0.871	0.763
Science	Grade 7	17,690	0.875	0.767
Science	Grade 8	24,411	0.871	0.753
Science	High School	2,740	0.898	0.743
Biology	Biology	117,648	0.870	0.755
Chemistry	Chemistry	11,780	0.874	0.725
Writing Lower Grades	Grade 3	112	0.920	0.752
Writing Lower Grades	Grade 4	104	0.904	0.742
Writing Lower Grades	Grade 5	124	0.871	0.727
Writing/English Composition	Grade 6	3,330	0.863	0.776
Writing/English Composition	Grade 7	4,854	0.866	0.767
Writing/English Composition	Grade 8	4,891	0.866	0.756
Writing/English Composition	English Composition	12,900	0.865	0.773

See Appendix E for the 3 X 3 retest classification probability tables.

CHAPTER SEVENTEEN: VALIDITY

As defined in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999) validity refers to "the degree to which evidence and theory support the interpretation of test scores entailed by proposed uses of tests" (p. 9). The *Standards* provides a framework for describing the sources of evidence that should be considered when evaluating validity. These sources include evidence based on 1) test content, 2) response processes, 3) the internal structure of the test, 4) the relationships between test scores and other variables, and 5) the consequences of testing. In addition, when Rasch models are used to analyze assessment data, validity considerations related to those processes should also be explored.

The validity process involves the collection of a variety of evidence to support the proposed test score interpretations and uses. The entire technical report describes the technical aspects of the Classroom Diagnostic Tools (CDT) in support of its score interpretations and uses. Each of the previous chapters contributes important evidence components that pertain to score validation: test development, test administration, test scoring, item analysis, Rasch calibration, scaling, equating, score reporting, and reliability. This chapter is used to summarize and synthesize the evidence based on the framework of the *Standards*. The purposes and intended use of the CDT is reviewed first, and then each type of validity evidence is addressed in turn.

PURPOSES AND INTENDED USES OF THE CDT

The *Standards* emphasize that validity pertains to how test scores are used. To help contextualize the evidence that will be presented below, the purposes of the CDT will be reviewed first. The CDT was developed to support teachers and students in grades 3 through 12. These tools, available at no cost to districts, are fully integrated and aligned in the Standards Aligned System (SAS) and enable educators to identify students' academic strengths and areas of need, as well as provide links to classroom resources. The assessment is administered completely online using a computer adaptive test (CAT) model, and participation is voluntary. CDT scores are available immediately after testing in the dynamic reporting suite. In addition to the scores, this suite includes links to instructional resources. The CDT may be used multiple times throughout the school year.

EVIDENCE BASED ON TEST CONTENT

Test content validity evidence for the CDT rests greatly on establishing a link between each piece of the assessment (i.e., the items) and what students should know and be able to do as prescribed by the Assessment Anchors and Eligible Content. The CDT is intended to measure the knowledge and skills described in the Assessment Anchors and Eligible Content for grades 3 through 8 and high school in mathematics, reading, science, and writing, and courses Algebra I, Geometry, Algebra II, Literature, Biology, Chemistry, and English Composition.

Lane (1999) suggests taking the following steps to support the content validity of an assessment. In the case of the operational CDT, one should:

- evaluate the degree to which the test specifications represent and align with the knowledge and skills described in the corresponding Assessment Anchors and Eligible Content.
- evaluate the alignment between the CDT items and test specifications to ensure representativeness.
- evaluate the extent to which the curriculum aligns with the Assessment Anchors and Eligible Content.

- conduct content reviews of the CDT items using a panel of content experts to see whether items measure the intended construct or are the sources of construct-irrelevant variance.
- conduct fairness reviews of the items to avoid issues related to a specific subpopulation.
- evaluate procedures for administration and scoring such as the appropriateness of instructions to examinees, practice/training with online tools and tests, and time limits for the assessments.
- submit operational tests to third-party independent reviews.

Chapters Two through Five of this report present a considerable amount of evidence related to test content. As described in these chapters, all the items were developed and aligned with the Assessment Anchors and Eligible Content. After development and prior to field testing, items were reviewed for content and bias issues. After being field tested, items were reviewed with respect to their statistical properties and alignment with the learning progressions. Items selected for inclusion in the operational pools had to pass content, psychometric, and PDE reviews. Tests were administrated according to standardized procedures with allowable accommodations.

Some of the efforts made to ensure content validity are summarized below.

- DRC used Webb's (1999) Depth of Knowledge (DOK) model to ensure the CDT items aligned with the Assessment Anchors and Eligible Content and the Academic Content Standards in terms of both content and cognitive levels.
- DRC established detailed test and item/passage development specifications and ensured the items were sufficient in number and adequately distributed across content, levels of cognitive complexity, and levels of difficulty.
- DRC selected qualified item writers and provided training to help ensure they wrote high-quality items.
- All newly developed items were first reviewed by content specialists and editors at DRC to make sure they measured the intended Assessment Anchors and Eligible Content. Appropriateness for the intended students was also considered, as well as depth of knowledge, graphics, grammar/punctuation, language demand, and distractor reasonableness.
- Prior to field testing, the test items were submitted to content committees (composed of Pennsylvania educators) for review using, but not limited to, the following categories:
    - Overall quality and clarity
    - Anchor, Eligible Content, and/or standard alignment
    - Grade-level appropriateness
    - Difficulty level
    - Depth of knowledge
    - Appropriate sources of challenge (e.g., unintended content and skills)
    - Correct answer
    - Quality of distractors

- Graphics
- Appropriate language demand
- Freedom from bias

- The items were also submitted to a Bias, Fairness, and Sensitivity Committee for review. This committee reviewed items for issues related to diversity, gender, and other pertinent factors.
- Items passing all prior hurdles were tried out in a stand-alone or embedded field-test event. Several statistical analyses were conducted on the field-test data including classical item analyses, distractor analyses, and differential item functioning (DIF) analyses. Items were again carefully reviewed by DRC staff and a committee of Pennsylvania teachers with respect to their statistical characteristics. DIF was used to detect test items that might bias test scores for particular groups. Empirical investigation of DIF strengthens the validity evidence related to score interpretations for students in particular groups by eliminating potential sources of construct-irrelevant variance.
- Following field testing, the items were submitted to content committees (composed of Pennsylvania educators) for review and alignment with the learning progressions.
- The CDT was administered according to standardized procedures with allowable accommodations. Students were given ample time to complete the tests (i.e., there were no speediness issues).

EVIDENCE BASED ON RESPONSE PROCESS

Response-process evidence is used to examine the extent to which the cognitive skills and processes employed by students match those identified in the test developer's defined construct domains for all students and for each subgroup. Think-aloud procedures or "cognitive labs" can be used to collect this type of evidence.

For the operational 2013–2014 CDT, no cognitive lab studies were conducted to collect the response process evidence.

EVIDENCE BASED ON INTERNAL STRUCTURE

As described in the *Standards* (1999), internal-structure evidence refers to the degree to which the relationships among test items and test components conform to the construct on which the proposed test interpretations are based. For each CDT, one total test score as well as diagnostic category scores were reported (see Chapter Fourteen for more information about CDT scores). Several dimensionality studies were conducted in order to provide internal-structure evidence relating to the use of both types of scores.

ITEM-TEST CORRELATIONS

Item-test correlations are discussed in Chapter Seven and provided in Appendix B. All items in the final operational pools had values that were positive and of acceptable magnitude.

DIMENSIONALITY

Dimensionality analyses were conducted for the CDT using WINSTEPS's principal components analyses on response residuals for each content area. Results are shown in Chapter Eight. The principal component analysis results provided evidence that each CDT test was essentially unidimensional, supporting the validity of using the total scores to estimate a student's overall ability.

DIAGNOSTIC CATEGORY CORRELATIONS

Correlations and disattenuated correlations among diagnostic category scores for the CDT are presented below. Values were derived from the CDT operational data from the 2013–2014 school year. This data can also provide information on score dimensionality that is part of internal-structure evidence. Each CDT has either four or five diagnostic categories. Full diagnostic category names can be found in Chapter Thirteen.

Table 17–1. Correlations among Diagnostic Categories — Mathematics Lower Grades

	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-			
Alg. Con.	0.694	-		
Geo.	0.645	0.625	-	
Meas.	0.692	0.690	0.642	-

Table 17–2. Correlations among Diagnostic Categories — Mathematics

	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-			
Alg. Con.	0.675	-		
Geo.	0.641	0.611	-	
Meas.	0.695	0.658	0.632	-

Table 17–3. Correlations among Diagnostic Categories — Algebra I

	Operations.	Linear.	Functions.	Data.
Operations.	-			
Linear.	0.601	-		
Functions.	0.611	0.623	-	
Data.	0.619	0.612	0.638	-

Table 17–4. Correlations among Diagnostic Categories — Geometry

	Properties.	Congruence.	Coordinate.	Measure.
Properties.	-			
Congruence.	0.657	-		
Coordinate.	0.674	0.679	-	
Measure.	0.661	0.670	0.688	-

Table 17–5. Correlations among Diagnostic Categories — Algebra II

	Complex.	Non-Linear.	Functions.	Data.
Complex.	-			
Non-Linear.	0.551	-		
Functions.	0.518	0.674	-	
Data.	0.482	0.663	0.652	-

Table 17–6. Correlations among Diagnostic Categories — Reading Lower Grades

	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-				
Key – Info.	0.642	-			
Craft – Lit.	0.650	0.620	-		
Craft – Info.	0.624	0.638	0.613	-	
Vocab.	0.651	0.650	0.625	0.651	-

Table 17–7. Correlations among Diagnostic Categories — Reading/Literature

	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-				
Key – Info.	0.669	-			
Craft – Lit.	0.652	0.654	-		
Craft – Info.	0.646	0.678	0.641	-	
Vocab.	0.649	0.671	0.639	0.656	-

Table 17–8. Correlations among Diagnostic Categories — Science Lower Grades

	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-			
Bio.	0.665	-		
Phys.	0.632	0.629	-	
Earth/Space.	0.614	0.626	0.545	-

Table 17–9. Correlations among Diagnostic Categories — Science

	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-			
Bio.	0.665	-		
Phys.	0.631	0.619	-	
Earth/Space.	0.630	0.619	0.587	-

Table 17–10. Correlations among Diagnostic Categories — Biology

	Basic.	Bioenerg.	Cell Growth.	Evol./Ecol.
Basic.	-			
Bioenerg.	0.611	-		
Cell Growth.	0.599	0.563	-	
Evol./Ecol.	0.646	0.560	0.590	-

Table 17–11. Correlations among Diagnostic Categories — Chemistry

	Matter.	Atomic.	Mole.	Chem.
Matter.	-			
Atomic.	0.425	-		
Mole.	0.513	0.434	-	
Chem.	0.481	0.430	0.465	-

Table 17–12. Correlations among Diagnostic Categories — Writing Lower Grades

	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-				
Content.	0.592	-			
Edit.	0.626	0.552	-		
Punct.	0.494	0.499	0.524	-	
Gram.	0.519	0.519	0.518	0.514	-

Table 17–13. Correlations among Diagnostic Categories — Writing/English Composition

	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-				
Content.	0.698	-			
Edit.	0.677	0.669	-		
Punct.	0.658	0.657	0.660	-	
Gram.	0.657	0.649	0.656	0.656	-

The correlations in Tables 17–1 through 17–13 are based on the observed diagnostic category scores. These observed-score correlations are weakened by existing measurement error contained within each diagnostic category. As a result, disattenuated correlations could provide an estimate of the relationships among diagnostic categories if there were no measurement error. (An important caveat is explained further below.) The disattenuated correlation coefficients (R_{12}) can be computed by using the formula (Spearman 1904, 1910) below:

$$R_{12} = \frac{r_{12}}{\sqrt{r_{11} r_{22}}},$$

where r_{12} is the observed correlation, and r_{11} and r_{22} are the reliabilities for diagnostic categories 1 and 2. Disattenuated correlations very near 1.00 suggest that the same or very similar constructs are being measured. Values somewhat less than 1.00 suggest that different diagnostic categories are measuring slightly different aspects of the same construct. Values markedly less than 1.00 suggest the diagnostic categories reflect different constructs.

Tables 17–14 through 17–26 show the corresponding disattenuated correlations. Given that none of these diagnostic categories had perfect reliabilities (see Chapter Sixteen), the disattenuated module correlations are higher than their observed score counterparts.

Table 17–14. Disattenuated Correlations among Diagnostic Categories — Mathematics Lower Grades

	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-			
Alg. Con.	0.891	-		
Geo.	0.847	0.836	-	
Meas.	0.887	0.900	0.856	-

Table 17–15. Disattenuated Correlations among Diagnostic Categories — Mathematics

	Numbers.	Alg. Con	Geo.	Meas.
Numbers.	-			
Alg. Con.	0.889	-		
Geo.	0.879	0.853	-	
Meas.	0.904	0.870	0.871	-

Table 17–16. Disattenuated Correlations among Diagnostic Categories — Algebra I

	Operations.	Linear.	Functions.	Data.
Operations.	-			
Linear.	0.846	-		
Functions.	0.840	0.899	-	
Data.	0.829	0.861	0.877	-

Table 17–17. Disattenuated Correlations among Diagnostic Categories — Geometry

	Properties.	Congruence.	Coordinate.	Measure.
Properties.	-			
Congruence.	0.875	-		
Coordinate.	0.889	0.877	-	
Measure.	0.877	0.871	0.885	-

Table 17–18. Disattenuated Correlations among Diagnostic Categories — Algebra II

	Complex.	Non-Linear.	Functions.	Data.
Complex.	-			
Non-Linear.	0.689	-		
Functions.	0.661	0.884	-	
Data.	0.599	0.849	0.850	-

Table 17–19. Disattenuated Correlations among Diagnostic Categories — Reading Lower Grades

	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-				
Key – Info.	0.908	-			
Craft – Lit.	0.938	0.910	-		
Craft – Info.	0.887	0.923	0.906	-	
Vocab.	0.923	0.938	0.920	0.944	-

Table 17–20. Disattenuated Correlations among Diagnostic Categories — Reading/Literature

	Key – Lit.	Key – Info.	Craft – Lit.	Craft – Info.	Vocab.
Key – Lit.	-				
Key – Info.	0.926	-			
Craft – Lit.	0.936	0.943	-		
Craft – Info.	0.903	0.951	0.932	-	
Vocab.	0.902	0.936	0.925	0.923	-

Table 17–21. Disattenuated Correlations among Diagnostic Categories — Science Lower Grades

	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-			
Bio.	0.910	-		
Phys.	0.898	0.935	-	
Earth/Space.	0.907	0.968	0.874	-

Table 17–22. Disattenuated Correlations among Diagnostic Categories — Science

	Nature.	Bio.	Phys.	Earth/Space.
Nature.	-			
Bio.	0.905	-		
Phys.	0.895	0.893	-	
Earth/Space.	0.893	0.892	0.883	-

Table 17–23. Disattenuated Correlations among Diagnostic Categories — Biology

	Basic.	Bioenerg.	Cell Growth.	Evol./Ecol.
Basic.	-			
Bioenerg.	0.901	-		
Cell Growth.	0.881	0.889	-	
Evol./Ecol.	0.883	0.822	0.864	-

Table 17–24. Disattenuated Correlations among Diagnostic Categories — Chemistry

	Matter.	Atomic.	Mole.	Chem.
Matter.	-			
Atomic.	0.717	-		
Mole.	0.871	0.875	-	
Chem.	0.779	0.825	0.899	-

Table 17–25. Disattenuated Correlations among Diagnostic Categories — Writing Lower Grades

	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-				
Content.	0.964	-			
Edit.	0.960	0.933	-		
Punct.	0.772	0.860	0.851	-	
Gram.	0.863	0.952	0.895	0.906	-

Table 17–26. Disattenuated Correlations among Diagnostic Categories — Writing/English Composition

	Focus.	Content.	Edit.	Punct.	Gram.
Focus.	-				
Content.	0.933	-			
Edit.	0.926	0.917	-		
Punct.	0.896	0.895	0.920	-	
Gram.	0.919	0.909	0.939	0.934	-

In reviewing the differences between the simple correlations and the disattenuated ones, it is clear that the impact of the "less than perfect" reliabilities on the disattenuated correlations is large for most of the tests. For example, Reading/Literature found virtually no differences between any pair of disattenuated correlations. This indicates that, for the majority of students, the diagnostic category scores are merely shorter versions of what the total scores are measuring. Note that, while the theoretical maximum for observed correlations is 1.00, disattenuated correlations can exceed this value when high observed correlations are combined with low reliabilities. The other tests' disattenuated correlations are somewhat lower, generally in the range of .83 to .94. The test with the lowest disattenuated correlations is Algebra II, with Complex Numbers showing the most uniqueness.

As a practical consideration, and despite these results, diagnostic category scores for individual students may still provide useful information to the teacher. For example, a student may still have statistically significant differences between pairs of diagnostic scores ("areas of needs" versus "strengths to build on") with large observed scale score differences. The diagnostic reporting suite shows these differences in a graphic that includes the level of precision for each scale score in the form of an "error band." The error band is the scale score ± one conditional standard error. Any two pairs of scores can be interpreted as statistically different if their respective error bands do not overlap. More details about the use and interpretation of error bands may be found in Chapter Fourteen. Additionally, Chapter Fifteen provides summary information about conditional standard errors for each diagnostic category and tables that indicate the incidence of non-overlapping error bands in the 2013–2014 operational testing population.

EXPLORATORY FACTOR ANALYSIS

In order to further explore the internal structure of each CDT, an exploratory factor analysis (EFA) of the diagnostic category scores was conducted. Operational data from the 2013–2014 school year was used to create the observed correlation matrices shown in Tables 17–1 through 17–13. These, in turn, were used in the EFA. In the Statistical Package for the Social Sciences (SPSS), Principal Axis Factor extraction was utilized

with an oblique rotation (Promax) of the initial factor solution to improve interpretability. Oblique rotations allow for correlated factors.

Tables 17–27 through 17–39 present the eigenvalues and the explained variance for the extracted factors. Figures 17–1 through 17–13 are scree plot graphs of the eigenvalues against the factor number. In general, the first factor accounts for approximately 72% of the total variance for all CDT tests except Chemistry and Writing Lower Grades, while the second factor accounts for approximately 10% of the total variance. For Chemistry, the first factor accounts for 59% of the total variance, while the second factor accounts for 15%. For Writing Lower Grades, the first factor accounts for 63% of the total variance, while the second factor accounts for 11%. For each CDT, only the first factor had an eigenvalue greater than 1.0, typically suggesting a one-factor solution using the Kaiser criterion.

Table 17–27. Eigenvalues and Explained Variance for Mathematics Lower Grades Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.99	74.87
2	0.39	9.78
3	0.31	7.74
4	0.30	7.61

Figure 17–1. Scree Plot for Mathematics Lower Grades Diagnostic Categories

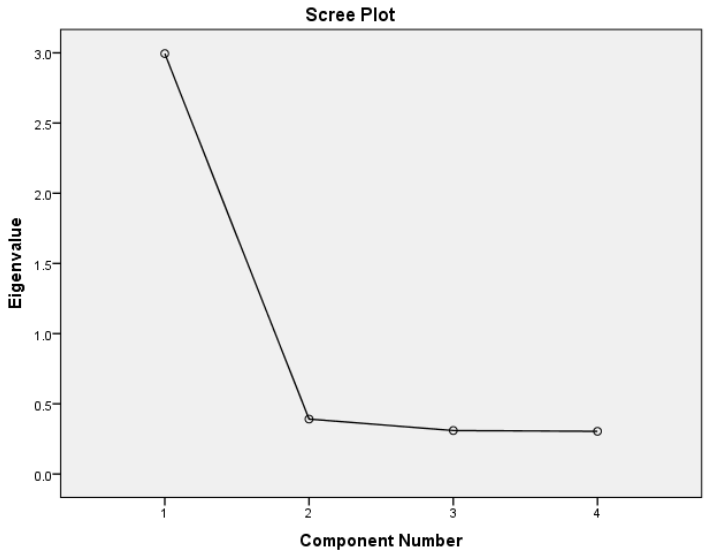


Table 17–28. Eigenvalues and Explained Variance for Mathematics Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.96	73.92
2	0.40	9.95
3	0.34	8.58
4	0.30	7.56

Figure 17–2. Scree Plot for Mathematics Diagnostic Categories

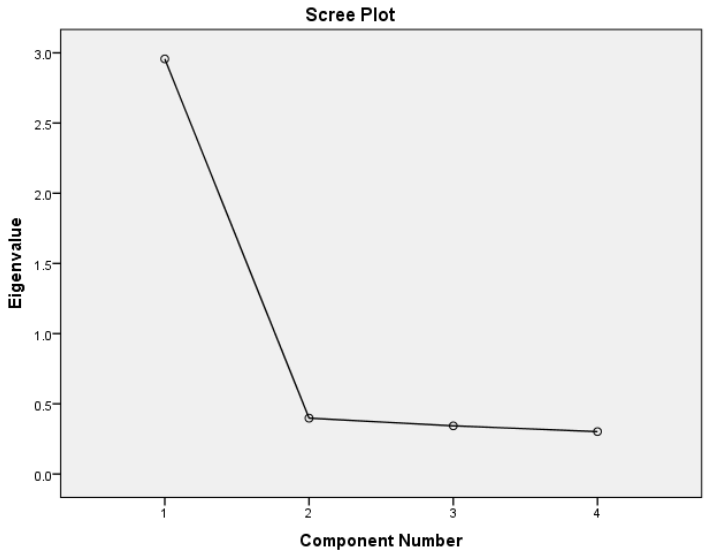


Table 17–29. Eigenvalues and Explained Variance for Algebra I Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.85	71.30
2	0.40	10.04
3	0.39	9.67
4	0.36	8.99

Figure 17–3. Scree Plot for Algebra I Diagnostic Categories

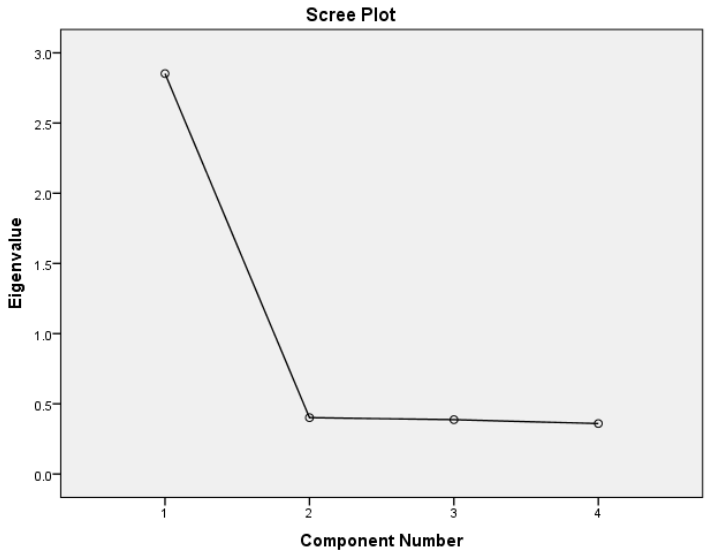


Table 17–30. Eigenvalues and Explained Variance for Geometry Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.01	75.37
2	0.35	8.63
3	0.33	8.27
4	0.31	7.73

Figure 17–4. Scree Plot for Geometry Diagnostic Categories

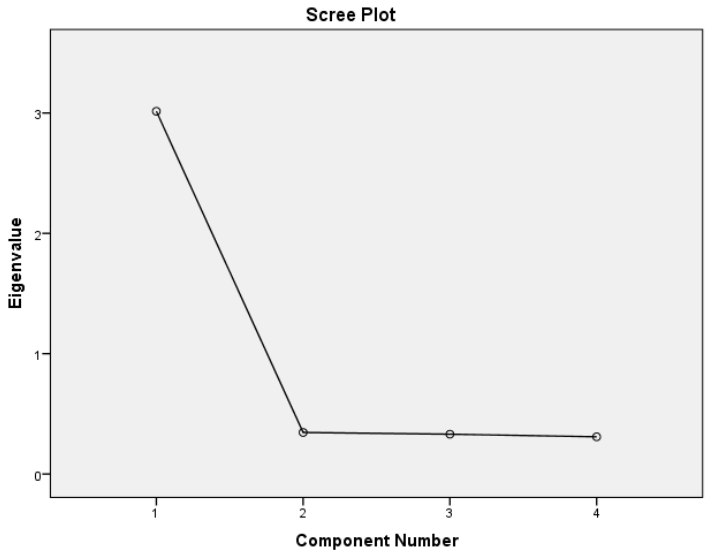


Table 17–31. Eigenvalues and Explained Variance for Algebra II Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.78	69.44
2	0.56	13.90
3	0.35	8.65
4	0.32	8.01

Figure 17–5. Scree Plot for Algebra II Diagnostic Categories

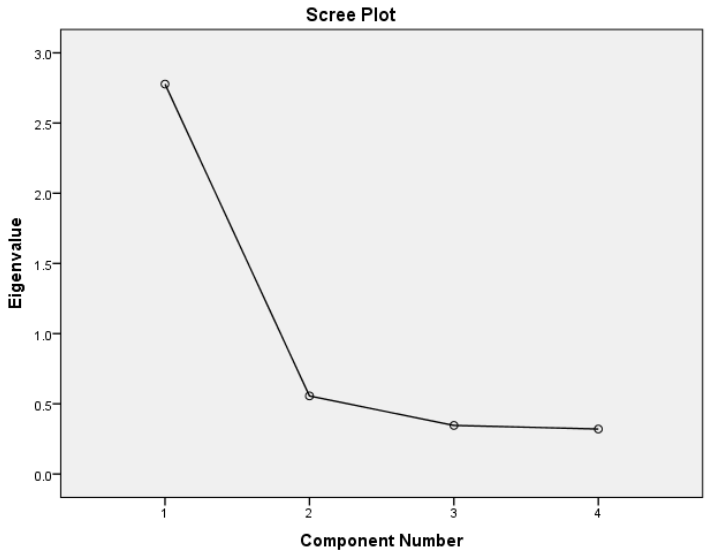


Table 17–32. Eigenvalues and Explained Variance for Reading Lower Grades Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.55	70.92
2	0.40	8.08
3	0.36	7.28
4	0.35	7.01
5	0.34	6.72

Figure 17–6. Scree Plot for Reading Lower Grades Diagnostic Categories

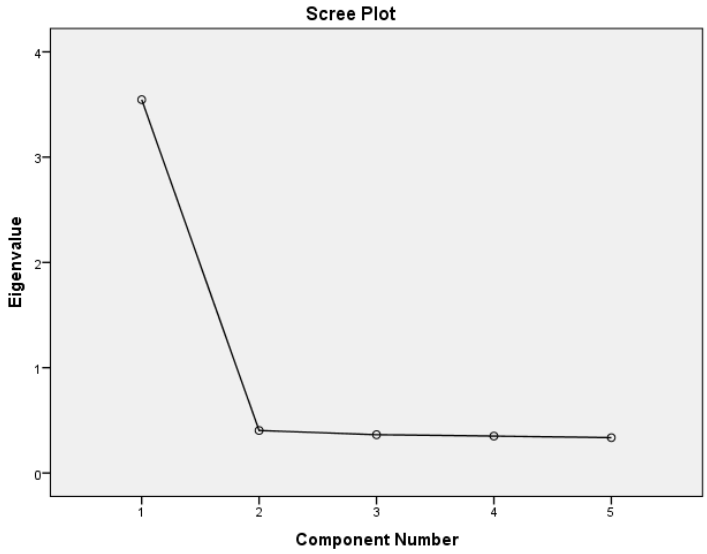


Table 17–33. Eigenvalues and Explained Variance for Reading/Literature Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.62	72.44
2	0.37	7.42
3	0.35	6.96
4	0.34	6.87
5	0.32	6.30

Figure 17–7. Scree Plot for Reading/Literature Diagnostic Categories

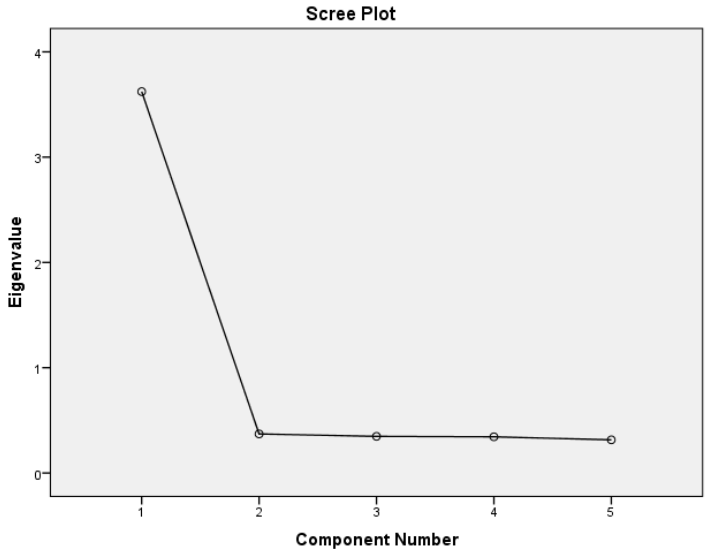


Table 17–34. Eigenvalues and Explained Variance for Science Lower Grades Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.86	71.42
2	0.46	11.40
3	0.35	8.82
4	0.33	8.35

Figure 17–8. Scree Plot for Science Lower Grades Diagnostic Categories

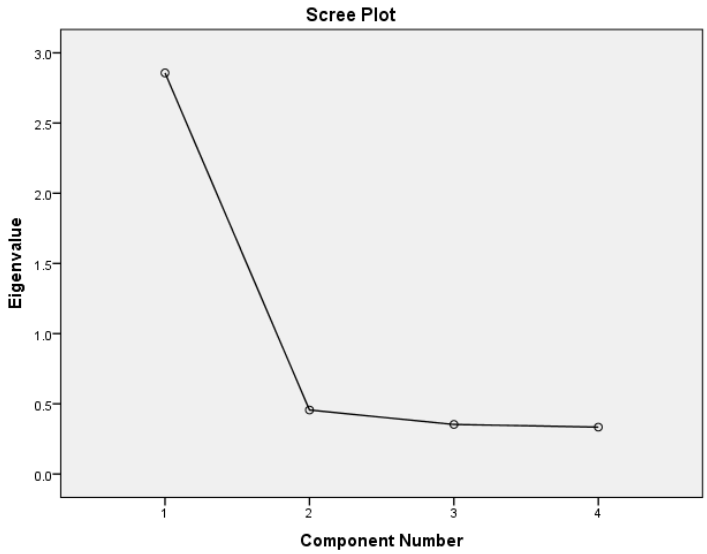


Table 17–35. Eigenvalues and Explained Variance for Science Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.88	71.90
2	0.41	10.33
3	0.38	9.44
4	0.33	8.33

Figure 17–9. Scree Plot for Science Diagnostic Categories

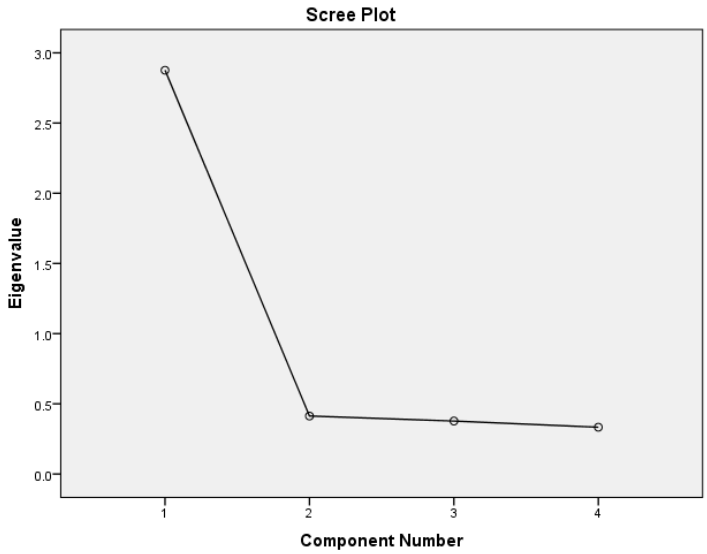


Table 17–36. Eigenvalues and Explained Variance for Biology Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.79	69.64
2	0.45	11.20
3	0.42	10.57
4	0.34	8.60

Figure 17–10. Scree Plot for Biology Diagnostic Categories

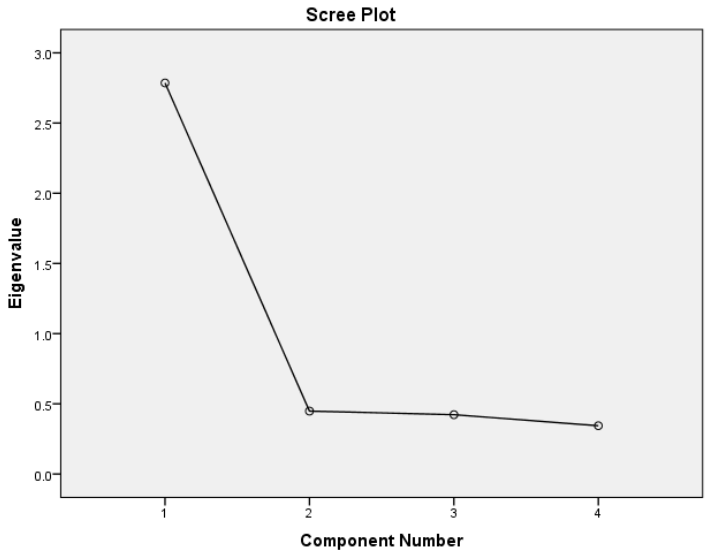


Table 17–37. Eigenvalues and Explained Variance for Chemistry Diagnostic Categories

Factor	Eigenvalue	Percent
1	2.38	59.39
2	0.60	14.98
3	0.54	13.52
4	0.48	12.11

Figure 17–11. Scree Plot for Chemistry Diagnostic Categories

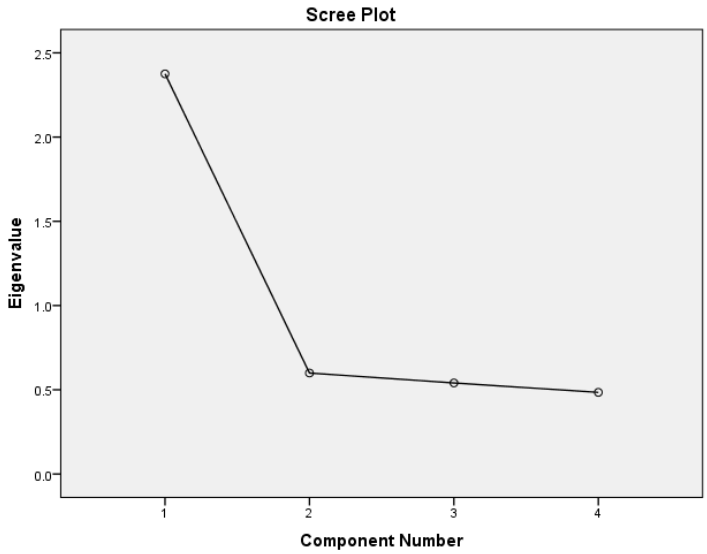


Table 17–38. Eigenvalues and Explained Variance for Writing Lower Grades Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.15	62.91
2	0.55	11.08
3	0.49	9.77
4	0.45	8.98
5	0.36	7.26

Figure 17–12. Scree Plot for Writing Lower Grades Diagnostic Categories

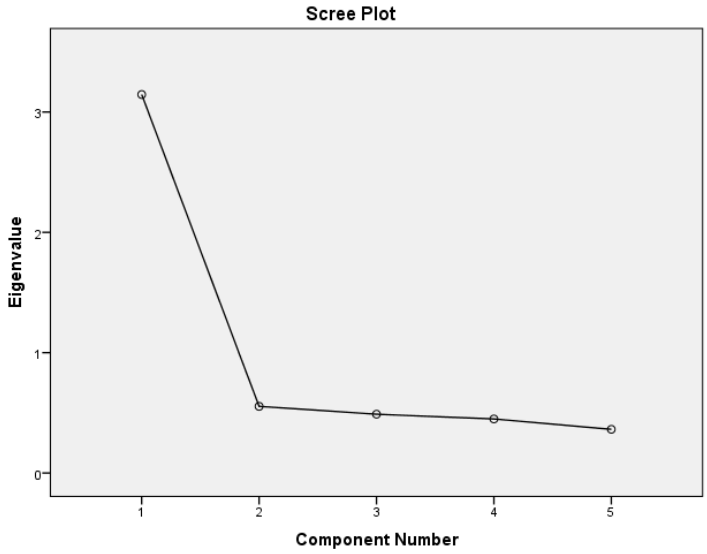
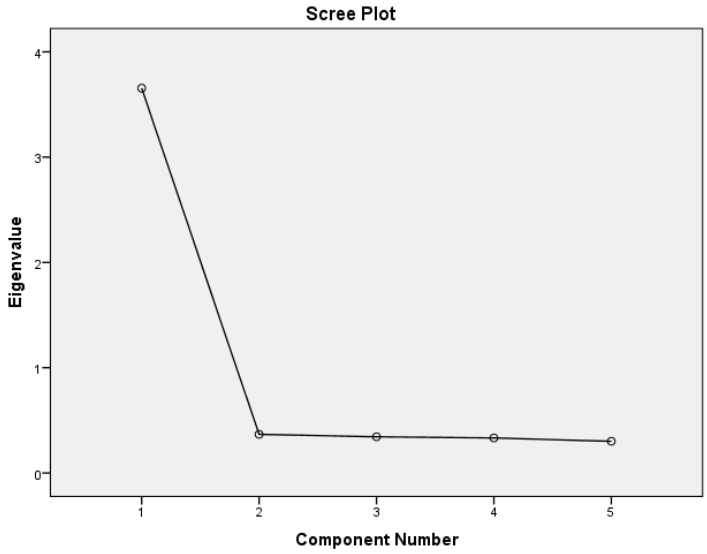


Table 17–39. Eigenvalues and Explained Variance for Writing/English Composition Diagnostic Categories

Factor	Eigenvalue	Percent
1	3.66	73.10
2	0.37	7.35
3	0.34	6.88
4	0.33	6.65
5	0.30	6.02

Figure 17–13. Scree Plot for Writing/English Composition Diagnostic Categories



Taken as a whole, the internal structure evidence presented generally indicates that related elements of each of the CDT tests are correlated in the intended manner. This further supports using a total score to report students' performances in the different content areas.

The diagnostic category scores present more of a mixed message. Since the diagnostic categories in each of the CDT tests were designed to measure distinct components, it is reasonable to expect that the diagnostic category correlations should be positive and strong but, ideally, not extremely high. However, the disattenuated correlations imply that some diagnostic categories are essentially measuring the same constructs. While there is content rationale underlying the creation of the diagnostic category scores, the empirical correlations illustrate that caution is required when using these scores when identifying an individual student's areas of need and strengths to build on.

EVIDENCE BASED ON RELATIONSHIPS WITH OTHER VARIABLES

As described in the *Standards* (AERA, APA, & NCME, 1999), ". . . Evidence based on relationships with other variables addresses questions about the degree to which relationships are consistent with the construct underlying the proposed interpretations" (p. 13). This category of evidence refers to "external structure evidence" and has been classified as three types of evidence: *convergent, discriminant*, and *criterion-related*. *Convergent evidence* is provided by relationships among students' performances on different assessments intended to measure a similar construct. *Discriminant evidence* is provided by relationships among students' performances on different tests intended to measure different constructs. *Criterion-related evidence*, either predictive or concurrent, is provided by relationships between students' test scores and their performances on a criterion measure (Cronbach, 1971; Messick, 1989).

Correlations and disattenuated correlations among students' test scores across different CDT content areas provide some discriminant validity evidence. These are provided in Tables 17–40 and 17–41.

Table 17–40a. Correlations among CDT Lower Grades Tests

	Mathematics Lower Grades	Reading Lower Grades	Science Lower Grades	Writing Lower Grades
Mathematics Lower Grades	-	-	-	-
Reading Lower Grades	0.753	-	-	-
Science Lower Grades	0.731	0.781	-	-
Writing Lower Grades	0.792	0.863	N/A	-

Table 17–40b. Correlations among CDT Tests

	Math	Algebra I	Geometry	Algebra II	Reading/ Literature	Science	Biology	Chemistry	Writing/ English Comp.
Math	-	-	-	-	-	-	-	-	-
Algebra I	0.803	-	-	-	-	-	-	-	-
Geometry	0.872	0.749	-	-	-	-	-	-	-
Algebra II	0.767	0.664	0.812	-	-	-	-	-	-
Reading	0.733	0.667	0.674	0.602	-	-	-	-	-
Science	0.721	0.652	0.658	0.648	0.773	-	-	-	-
Biology	0.614	0.610	0.661	0.634	0.707	0.722	-	-	-
Chemistry	0.371	0.536	0.634	0.590	0.579	0.744	0.650	-	-
Writing	0.708	0.642	0.704	0.671	0.814	0.741	0.739	0.475	-

Table 17–41a. Disattenuated Correlations among CDT Lower Grades Tests

	Mathematics Lower Grades	Reading Lower Grades	Science Lower Grades	Writing Lower Grades
Mathematics Lower Grades	-	-	-	-
Reading Lower Grades	0.819	-	-	-
Science Lower Grades	0.800	0.857	-	-
Writing Lower Grades	0.881	0.963	N/A	-

Table 17–41b. Disattenuated Correlations among CDT Tests

	Math	Algebra I	Geometry	Algebra II	Reading/ Literature	Science	Biology	Chemistry	Writing/ English Comp.
Math	-	-	-	-	-	-	-	-	-
Algebra I	0.881	-	-	-	-	-	-	-	-
Geometry	0.945	0.818	-	-	-	-	-	-	-
Algebra II	0.834	0.727	0.878	-	-	-	-	-	-
Reading	0.797	0.731	0.729	0.654	-	-	-	-	-
Science	0.793	0.722	0.721	0.711	0.849	-	-	-	-
Biology	0.678	0.678	0.726	0.698	0.780	0.805	-	-	-
Chemistry	0.424	0.616	0.721	0.673	0.660	0.858	0.751	-	-
Writing	0.767	0.700	0.759	0.725	0.881	0.811	0.811	0.539	-

Each CDT test measures a different construct, so the correlations among them were not expected to be extremely high. The values in the tables are consistent with this expectation. Correlations among the CDT tests ranged from 0.371 to 0.872. Correlations across tests within a content area are more highly correlated than across content areas. For example, the correlation between Mathematics and Geometry I is 0.872, whereas the correlation between Mathematics and Biology is 0.614.

External evidence for the CDT is examined by using students' scores on the 2014 Pennsylvania System of School Assessment (PSSA) and/or 2014 Keystone Exams as external criteria. For each content area, CDT results from the 2013–2014 school year were matched to spring 2014 PSSA in the corresponding content area using the PA secure ID. Similarly, CDT tests in Algebra I, Biology, and Reading/Literature were matched to corresponding 2014 Keystone Exams. The correlations between students' scores on the CDT and PSSA or Keystone are calculated as one piece of external evidence. Table 17–42 summarizes the sample sizes and correlations.

Table 17–42. Correlation between CDT and PSSA or Keystone Exams Scores

Student Grade	CDT Test	PSSA or Keystone Test	*N*	Correlation
3	Mathematics Lower Grades	PSSA Math Grade 3	2,460	0.818
4	Mathematics Lower Grades	PSSA Math Grade 4	2,974	0.833
5	Mathematics Lower Grades	PSSA Math Grade 5	2,627	0.863
6	Mathematics	PSSA Math Grade 6	22,399	0.827
7	Mathematics	PSSA Math Grade 7	25,401	0.835
8	Mathematics	PSSA Math Grade 8	17,742	0.794
3	Reading Lower Grades	PSSA Reading Grade 3	2,580	0.815
4	Reading Lower Grades	PSSA Reading Grade 4	2,492	0.808
5	Reading Lower Grades	PSSA Reading Grade 5	2,027	0.799
6	Reading/Literature	PSSA Reading Grade 6	21,361	0.820
7	Reading/Literature	PSSA Reading Grade 7	25,893	0.804
8	Reading/Literature	PSSA Reading Grade 8	26,279	0.787
4	Science Lower Grades	PSSA Science Grade 4	242	0.783
8	Science	PSSA Science Grade 8	16,766	0.803
5	Writing Lower Grades	PSSA Writing Grade 5	123	0.456
8	Writing/English Composition	PSSA Writing Grade 8	3,161	0.592
6–12	Algebra I	Keystone Algebra I	67,322	0.744
6–12	Biology	Keystone Biology	58,301	0.804
6–12	Reading/Literature	Keystone Literature	56,659	0.752

Lower correlation in the writing content area may be due to the fact that CDT Writing/English Composition is based on multiple-choice items, while PSSA Writing has extended writing prompts. These results provide external evidence in support of CDT as a valid measure of students' achievement.

The collection of external evidence related to the CDT is an ongoing process. As more CDT data become available, other criterion-related evidence will be evaluated. In addition to examining the relationship between CDT and PSSA or Keystone Exams, other criterion variables such as Scholastic Aptitude Test (SAT) scores, American College Test (ACT) scores, or student grade point average (GPA) may be considered.

EVIDENCE BASED ON CONSEQUENCES OF TESTS

According to the *Standards* (AERA, APA, & NCME, 1999), evidence of the consequences of implementing an assessment program is an additional source of validity information. Both positive and negative (intended and unintended) consequences of score-based inferences must be investigated to fully evaluate the pool of validity evidence.

Lane and Stone (2002) summarized the general *intended* consequences for state assessments and accountability programs:

- Student, teacher, and administrator motivation and effort
- Curriculum and instruction practices (including content and strategies)
- Improved learning for all students
- Content and format of classroom assessments
- Professional development support
- Use and nature of test preparation activities
- Student, teacher, administrator, and public awareness and beliefs about the assessment, criteria for judging performance, and the use of assessment results

Evidence for the improvement of student learning can be seen by looking at the changes in scale scores for students who took the same CDT test multiple times. Table 17–43 below summarizes scale score changes between the first and last administrations of the CDT.

Table 17–43. Summary of Scale Score Changes between CDT Administrations

	N	Minimum	Q1	Median	Mean	Q3	Maximum
Mathematics Lower Grades	8	-68	-2	74	52.50	97	166
Mathematics	35,502	-416	-9	41	38.11	88	412
Algebra I	41,743	-526	-20	30	25.92	79	507
Geometry	4,305	-485	6	62	59.76	117	551
Algebra II	4,691	-462	3	64	61.57	124	524
Reading Lower Grades	9	-139	-44	9	-3.67	36	139
Reading/Literature	86,393	-670	-45	11	8.20	65	651
Science Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Science	14,096	-397	-31	18	15.96	66	429
Biology	38,230	-744	-2	53	50.39	108	582
Chemistry	3,653	-322	-4	51	48.60	103	571
Writing Lower Grades	0	N/A	N/A	N/A	N/A	N/A	N/A
Writing/English Composition	7,259	-583	-24	21	20.88	66	457

Lane and Stone (2002) also summarized the possible *unintended* outcomes:

- Narrowing of curriculum and instruction to focus only on the specific standards assessed and ignoring the broader construct reflected in the specified standards
- Use of test preparation materials that are closely linked to the assessment without making changes to instruction
- Use of unethical test preparation materials or administration procedures
- Differential performance gains for subgroups of students
- Inappropriate or unfair uses of test scores, such as questionable practices in reassignment of teachers or principals
- For some students, decreased confidence and motivation to learn and to perform well on the assessment because of past experiences with assessments

As noted above, one important piece of consequential evidence pertains to the use of assessment results. As shown in Chapter Fourteen, CDT offers a dynamic suite of reports. The extent to which various groups of users (e.g., students and teachers) interpret these reports appropriately affects the validity of subsequent uses of these results. As noted in Chapter Fourteen, there are report training scenarios for each content area. The intent is that the scenarios will help users avoid unintended uses and interpretations of the CDT results.

EVIDENCE RELATED TO USE OF THE RASCH MODEL

Since the Rasch model is the basis of all calibration, scaling, and equating analyses associated with the CDT, the validity of the inferences from these results depends on the degree to which the assumptions of the model are met, as well as the fit between the model and the test data. As discussed in Chapter Eight, the underlying assumptions of Rasch models were essentially met for all the CDT data, indicating the appropriateness of using Rasch models to analyze the CDT data.

VALIDITY EVIDENCE SUMMARY

Validity evidence related to test content was reviewed earlier in this chapter. On the whole, the early chapters of this technical report show that a strong link can be established between each CDT item and its associated Eligible Content. Detailed information regarding educator reviews are presented in Chapter Six.

Diagnostic category score intercorrelations were also presented in this chapter. They provide some favorable evidence regarding the internal relationships between the tests' components.

Validity of score inferences is bolstered when test scores are consistent. Here, the reliabilities of the total test scores (presented in Chapter Sixteen) were very good, with many in the low 0.90s.

Reported in Chapter Six, differential item functioning (DIF) with respect to gender and ethnicity helps address construct-irrelevant variance, which represents an important threat to the validity of inferences made from achievement test scores. As noted in that chapter, field-test items are screened and reviewed for DIF. Only items approved by teacher committees are eligible for operational use.

CHAPTER EIGHTEEN: PARAMETER STABILITY

The Classroom Diagnostic Tools (CDT) features a number of tests. Tests in Mathematics, Algebra I, Geometry, and Algebra II have been available since October 2010 for students in grades 6 and above. Tests in Reading/Literature, Science, Biology, and Chemistry have been available since April 2011 for students in grades 6 and above. Tests in Writing /English Composition have been available since October 2011 for students in grades 6 and above. Tests in Mathematics, Reading, Science, and Writing have been available since April 2014 for students in grades 3 through 5. During the 2013–2014 school year, CAT item selection and Rasch ability estimates were based on initial item parameters estimated from the stand-alone and embedded field-test events and vertical linking (see Chapter Eight and Chapter Nine for details). The only exceptions were 113 items in the mathematics content area that had parameters re-estimated following the 2010–2011 school year and 74 items in the science content area that had parameters re-estimated following the 2011–2012 school year.

Following the 2013–2014 school year, item parameter stability was checked for all items in the banks. In order to complete this work prior to the start of the 2014–2015 school year, DCR chose August 1, 2014 as the cut-off date for the analyses described in this chapter.

METHODOLOGY

In the first two years of CDT, four separate methods were investigated to evaluate the stability of the item parameters in the CDT operational administration

1. Calibrate the entire bank within a content area in a single concurrent calibration. Do not anchor item parameters on banked values. Compare new parameter estimates to the banked values.
2. Calibrate the entire bank within a content area in a single concurrent calibration. Anchor item parameters on banked values. Examine displacements.
3. Calibrate each grade/course level item with students in that grade/course. Do not anchor item parameters on banked values. Compare new parameter estimates to the banked values.
4. Calibrate each grade/course level item with students in that grade/course. Anchor item parameters on banked values. Examine displacements.

As noted in Chapter Twelve, CDT tests are pre-equated. Immediate score reports are based on banked item parameters. Therefore, this chapter focuses on anchored calibrations and examination of displacement values to evaluate item parameter stability[22].

[22] For results of all four methods for the 2011–2012 school year, see Chapter Eighteen of the 2011–2012 technical report.

ANCHORED CONCURRENT CALIBRATION WITHIN CONTENT AREA ACROSS GRADES/COURSES

One method used to evaluate the stability of the item parameters in the operational administration was to calibrate the entire bank within a content area anchoring on the banked item parameters and examine the displacements. For each item, the displacement value is the size of the change in the parameter estimate that would be estimated if the parameter for the item was unanchored and all other parameters were anchored at their current value. Given that the banked values were developed into a single, vertical scale, all items within a content area were calibrated in a single concurrent calibration using WINSTEPS software version 3.69 (Linacre, 2009).

MATHEMATICS

Figure 18–1 shows the displacements from a concurrent anchored calibration of all mathematics items using the operational data set. Items are color-coded by grade/course.

Figure 18–1. Anchored Calibration Displacements — All Items

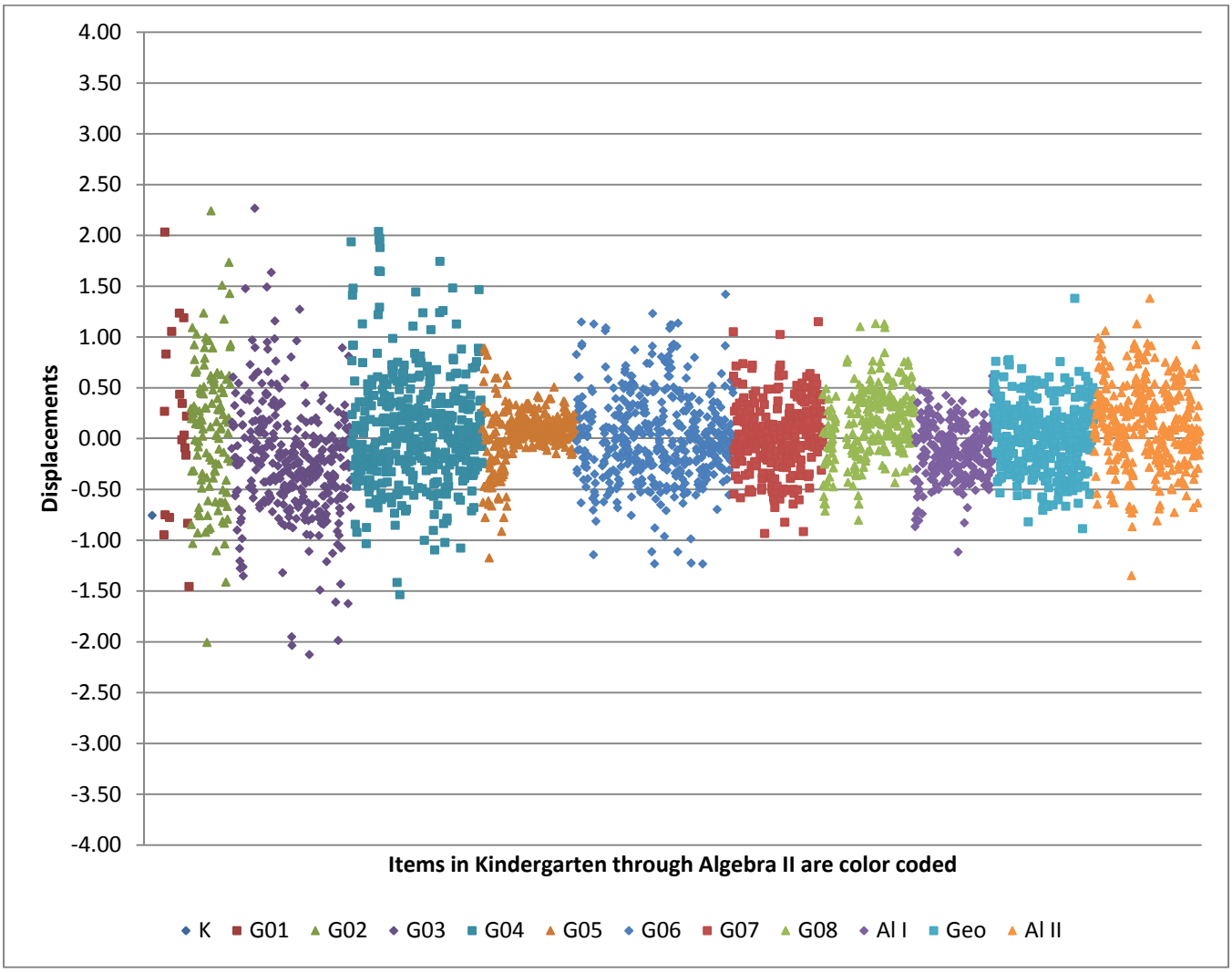


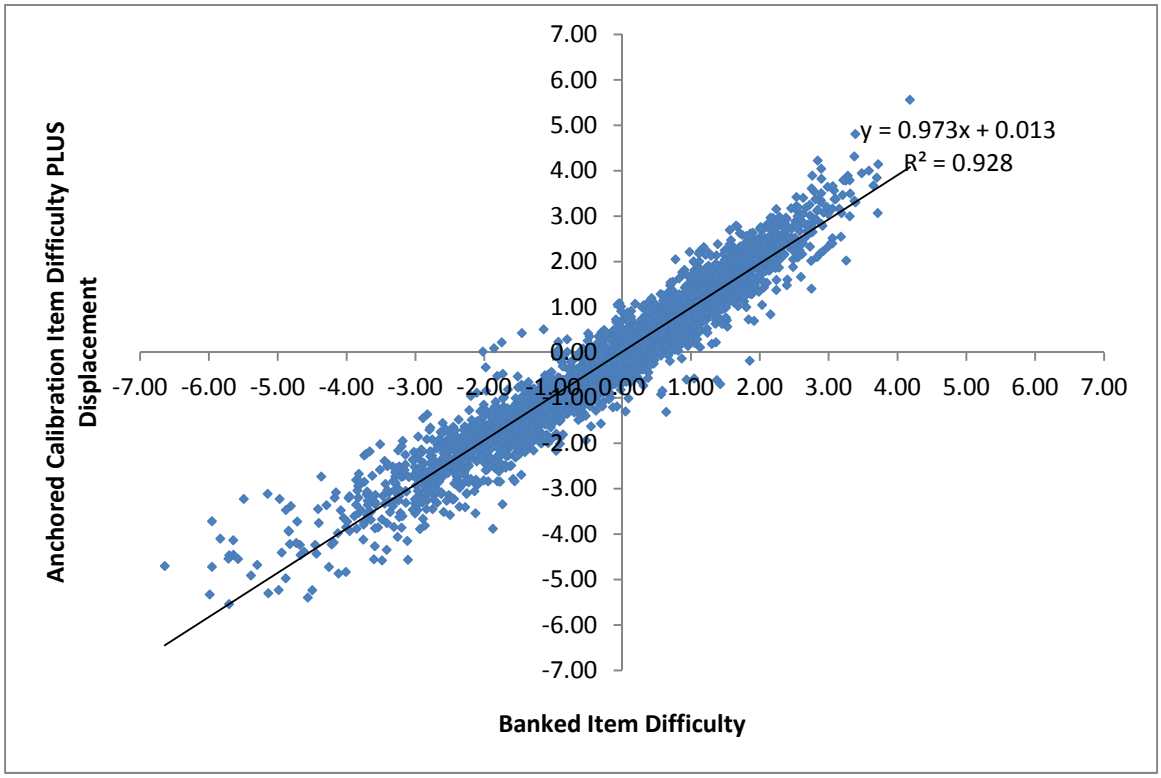
Table 18–1 summarizes the data in Figure 18–1. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-eight percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–1).

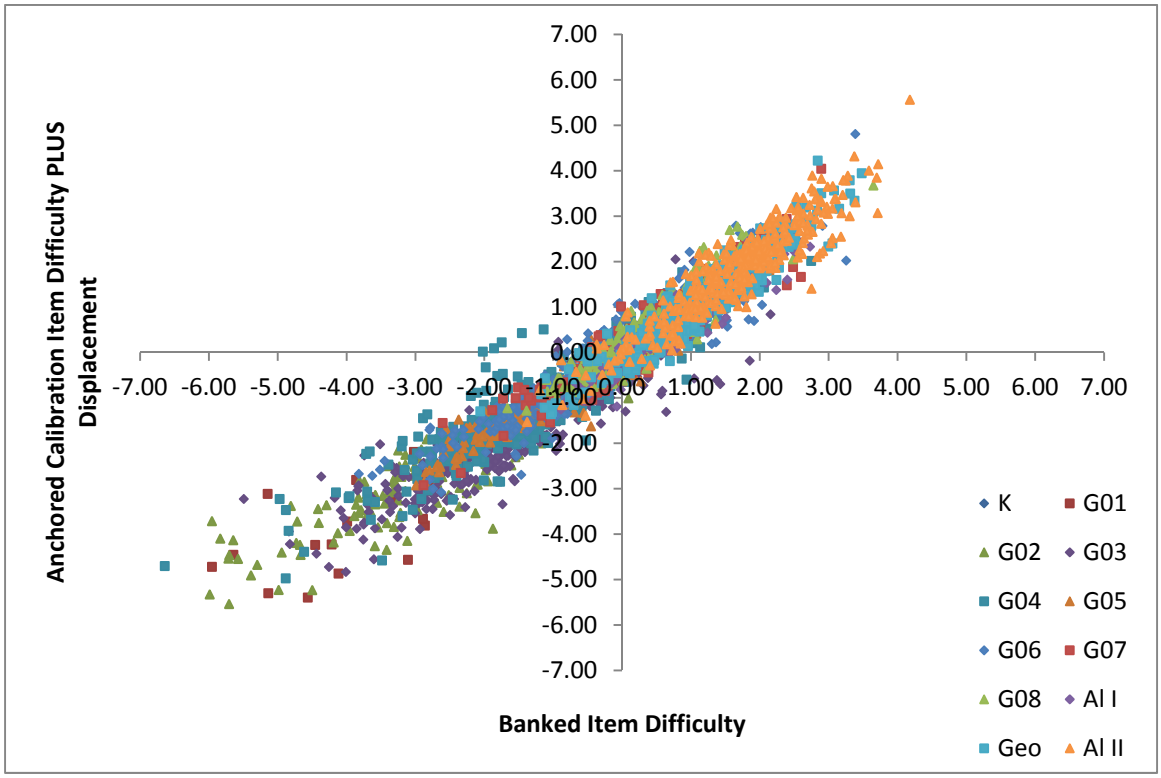
Table 18–1. Number of Mathematics Items by Grade/Course and Displacement Interval

	K	G01	G02	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	0	1	5	19	7	1	6	0	0	1	0	1	41
-1.0 < Disp. ≤ -0.9	0	1	2	7	2	1	2	2	0	0	0	0	17
-0.9 < Disp. ≤ -0.8	0	1	5	12	5	0	2	1	1	4	2	2	35
-0.8 < Disp. ≤ -0.7	1	2	5	18	5	2	3	0	1	4	1	2	44
-0.7 < Disp. ≤ -0.6	0	0	7	23	10	5	8	4	3	1	7	10	78
-0.6 < Disp. ≤ -0.5	0	0	2	21	15	3	17	17	2	10	11	5	103
-0.5 < Disp. ≤ -0.4	0	0	4	32	22	8	31	8	7	21	19	11	163
-0.4 < Disp. ≤ -0.3	0	0	7	30	27	9	28	15	8	25	29	15	193
-0.3 < Disp. ≤ -0.2	0	0	4	34	38	8	44	17	14	33	30	19	241
-0.2 < Disp. ≤ -0.1	0	1	6	31	31	14	47	30	18	41	24	26	269
-0.1 < Disp. ≤ 0.0	0	2	3	29	37	34	47	39	33	30	41	29	324
0.0 < Disp. ≤ 0.1	0	1	7	19	28	74	50	33	24	31	27	43	337
0.1 < Disp. ≤ 0.2	0	0	11	24	33	73	38	33	32	24	41	32	341
0.2 < Disp. ≤ 0.3	0	2	11	9	31	27	26	23	22	14	30	32	227
0.3 < Disp. ≤ 0.4	0	1	6	14	26	16	24	18	31	8	14	30	188
0.4 < Disp. ≤ 0.5	0	1	7	7	17	4	29	15	19	6	21	23	149
0.5 < Disp. ≤ 0.6	0	0	7	6	16	5	13	10	14	0	14	20	105
0.6 < Disp. ≤ 0.7	0	0	7	5	14	2	11	7	8	1	6	13	74
0.7 < Disp. ≤ 0.8	0	0	3	2	14	0	10	4	7	0	5	12	57
0.8 < Disp. ≤ 0.9	0	1	2	5	6	3	6	0	1	0	0	9	33
0.9 < Disp. ≤ 1.0	0	0	6	4	3	0	7	0	0	0	0	6	26
1.0 < Disp.	0	4	8	6	22	0	10	3	4	0	1	3	61
TOTAL	1	18	125	357	409	289	459	279	249	254	323	343	3106

Figure 18–2 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the mathematics item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18–2. Mathematics Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–2, one can see that there are a number of items with operational estimates that differ from their banked values. Many of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower-performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–3 and Table 18–2 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–2). Figure 18–4 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–3. Mathematics Anchored Calibration Displacements — All Items in Grade 3 and Above

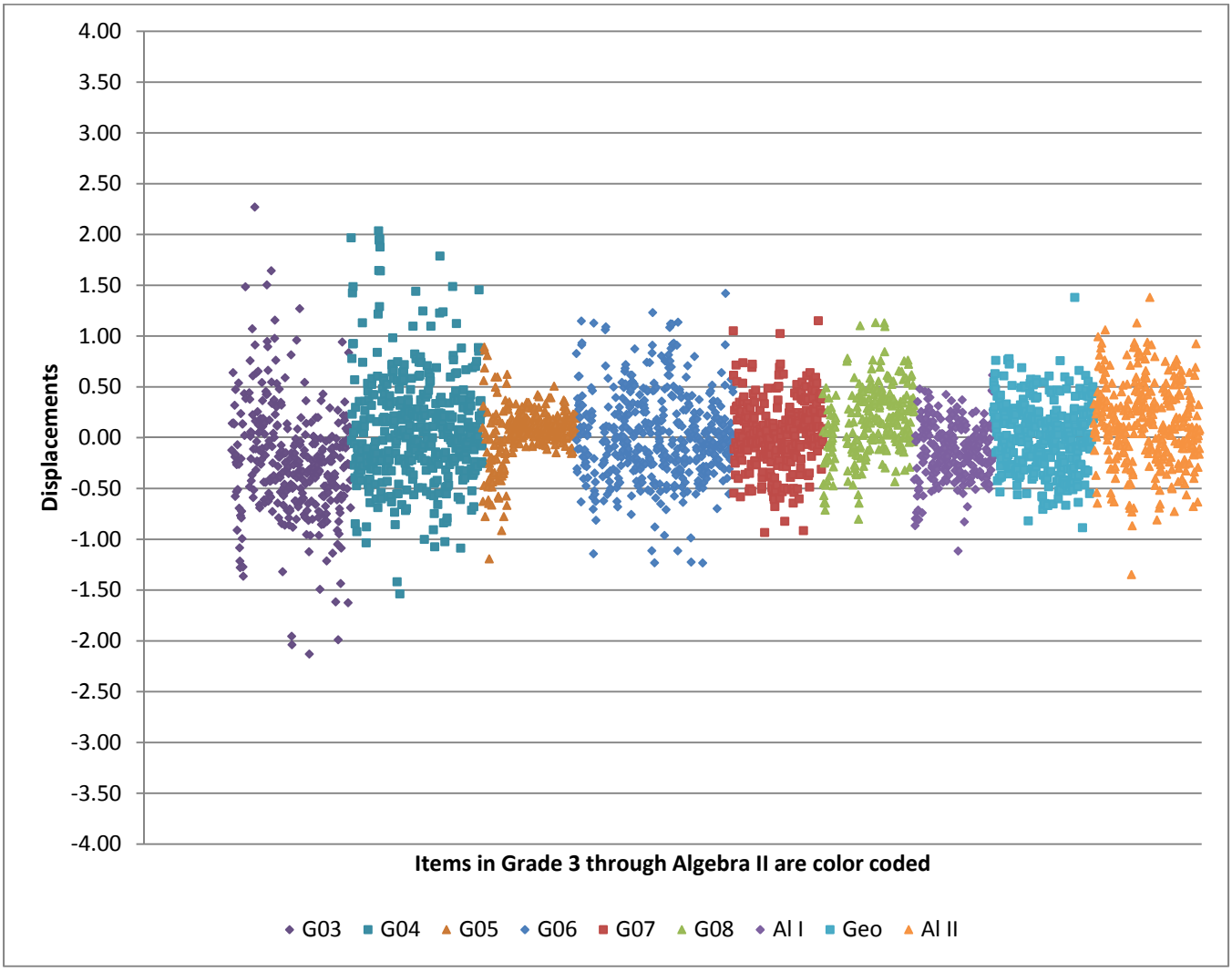
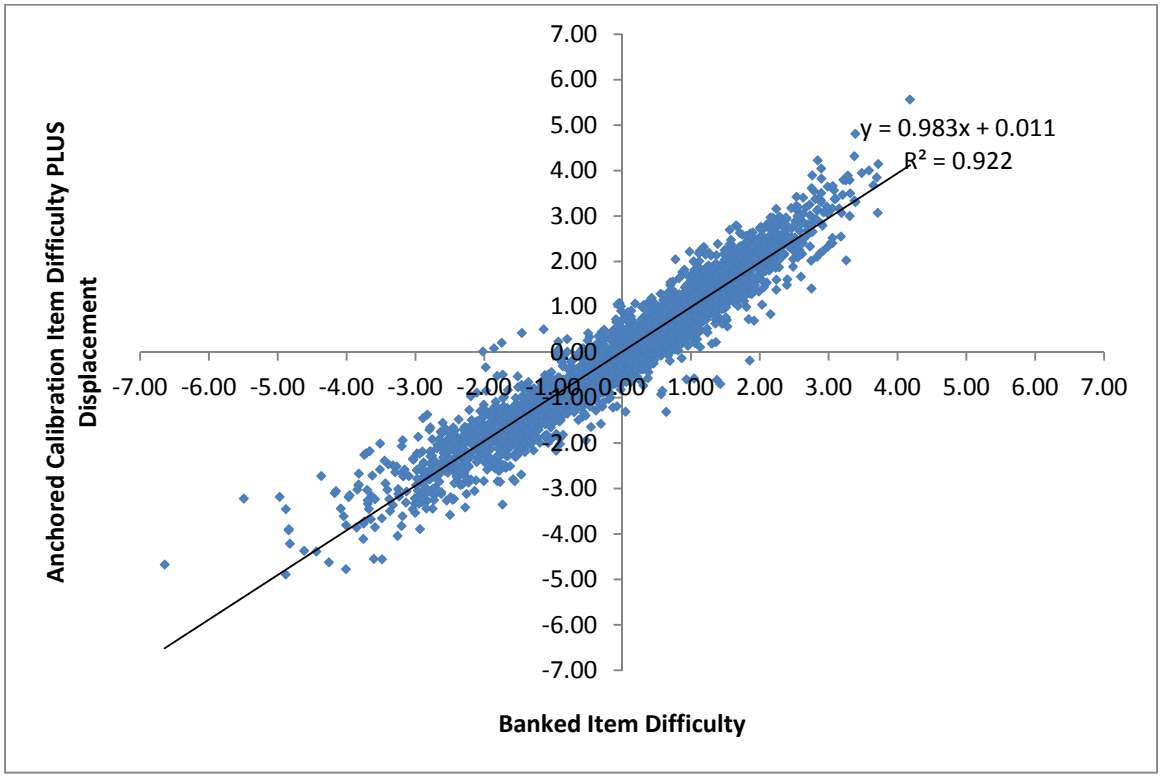
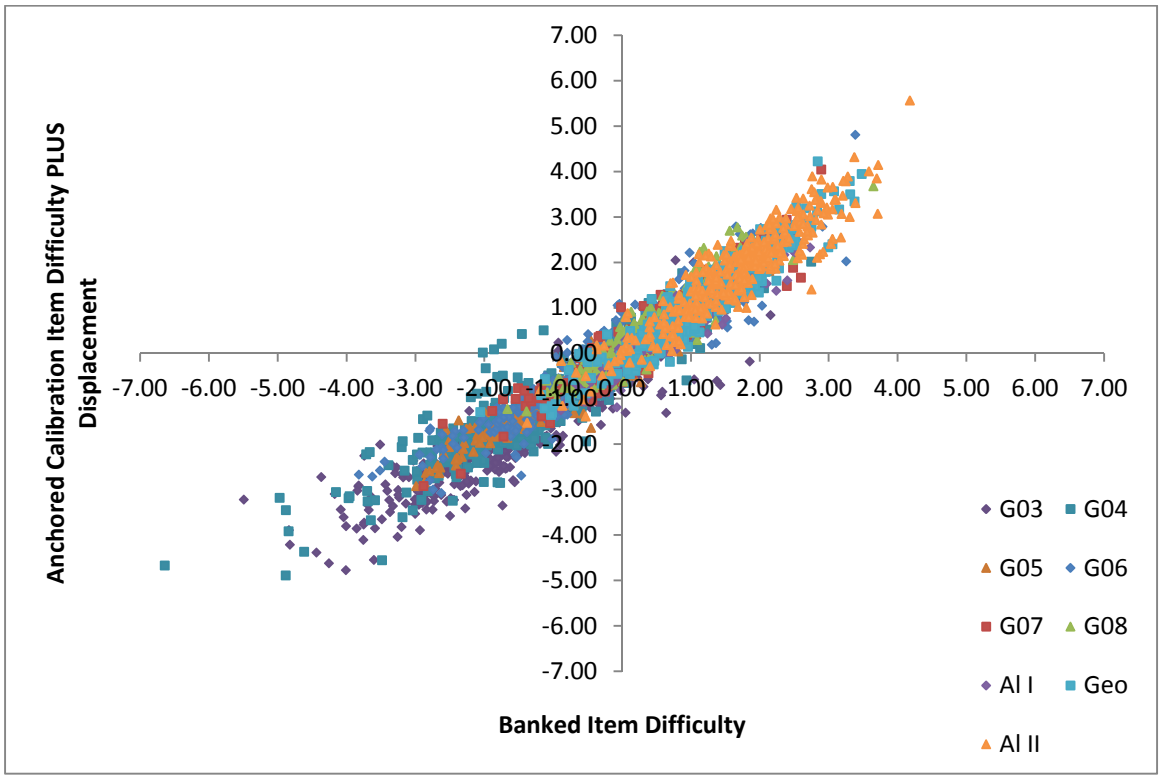


Table 18–2. Number of Mathematics Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	19	7	1	6	0	0	1	0	1	35
-1.0 < Disp. ≤ -0.9	7	2	1	2	2	0	0	0	0	14
-0.9 < Disp. ≤ -0.8	12	5	0	2	1	1	4	2	2	29
-0.8 < Disp. ≤ -0.7	20	5	2	3	0	1	4	1	2	38
-0.7 < Disp. ≤ -0.6	22	10	5	8	4	3	1	7	10	70
-0.6 < Disp. ≤ -0.5	22	16	3	17	17	2	10	11	5	103
-0.5 < Disp. ≤ -0.4	30	21	8	31	8	7	21	19	11	156
-0.4 < Disp. ≤ -0.3	32	28	9	28	15	8	25	29	15	189
-0.3 < Disp. ≤ -0.2	34	42	8	44	17	14	33	30	19	241
-0.2 < Disp. ≤ -0.1	31	29	14	47	30	18	41	24	26	260
-0.1 < Disp. ≤ 0.0	28	38	34	47	39	33	30	41	29	319
0.0 < Disp. ≤ 0.1	18	26	74	50	33	24	31	27	43	326
0.1 < Disp. ≤ 0.2	25	33	73	38	33	32	24	41	32	331
0.2 < Disp. ≤ 0.3	8	30	27	26	23	22	14	30	32	212
0.3 < Disp. ≤ 0.4	13	27	16	24	18	31	8	14	30	181
0.4 < Disp. ≤ 0.5	8	15	4	29	15	19	6	21	23	140
0.5 < Disp. ≤ 0.6	6	17	5	13	10	14	0	14	20	99
0.6 < Disp. ≤ 0.7	5	13	2	11	7	8	1	6	13	66
0.7 < Disp. ≤ 0.8	2	14	0	10	4	7	0	5	12	54
0.8 < Disp. ≤ 0.9	3	6	3	6	0	1	0	0	9	28
0.9 < Disp. ≤ 1.0	5	3	0	7	0	0	0	0	6	21
1.0 < Disp.	7	22	0	10	3	4	0	1	3	50
TOTAL	357	409	289	459	279	249	254	323	343	2962

Figure 18–4. Mathematics Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above with larger *n*-counts was run.

Figure 18–5 and Table 18–3 summarize the displacements from a concurrent anchored calibration that excludes items with 100 or fewer administrations. Eighty percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–3). Figure 18–6 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–5. Mathematics Anchored Calibration Displacements — All Items in Grade 3 and Above with *N*>100

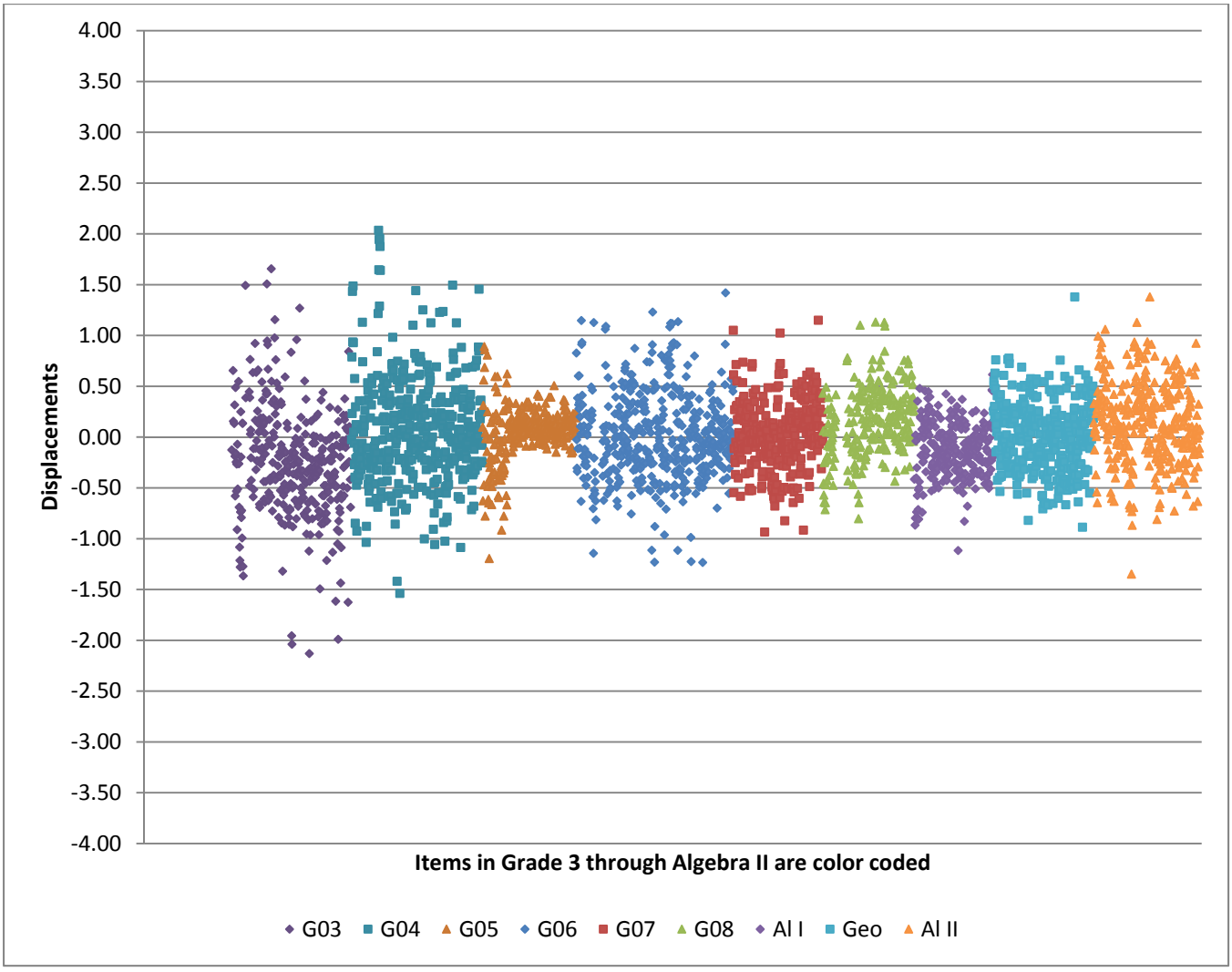
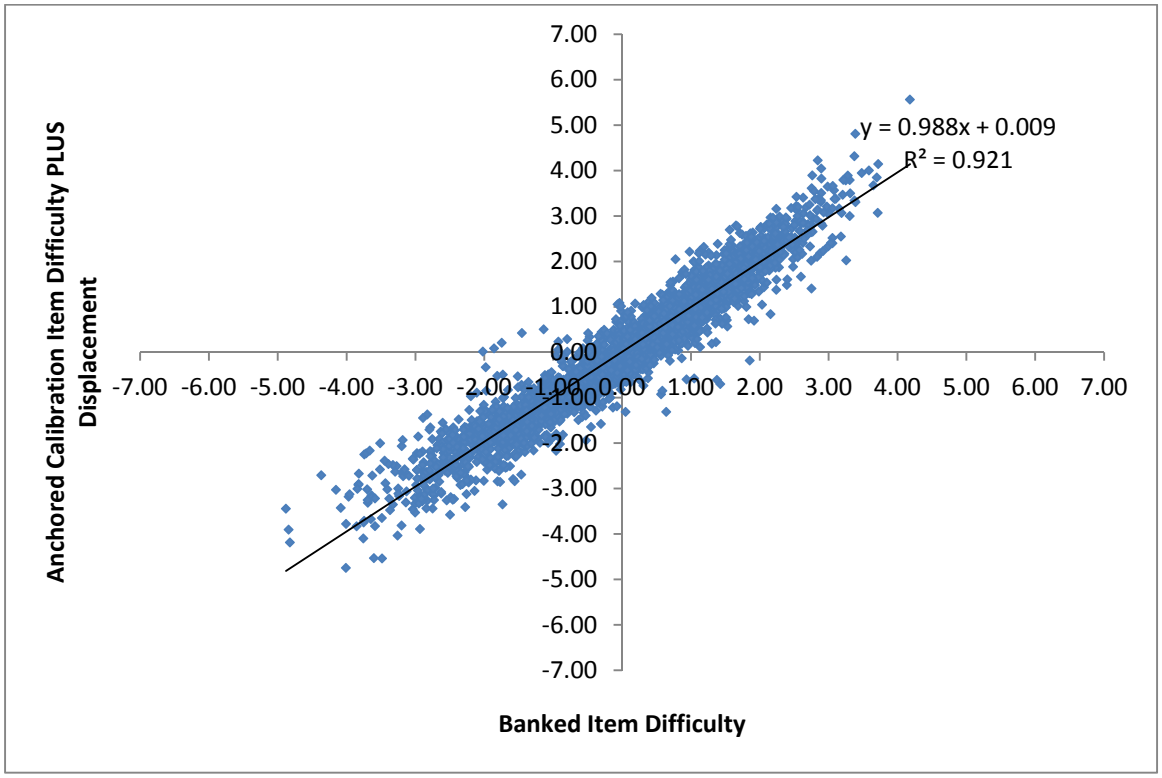
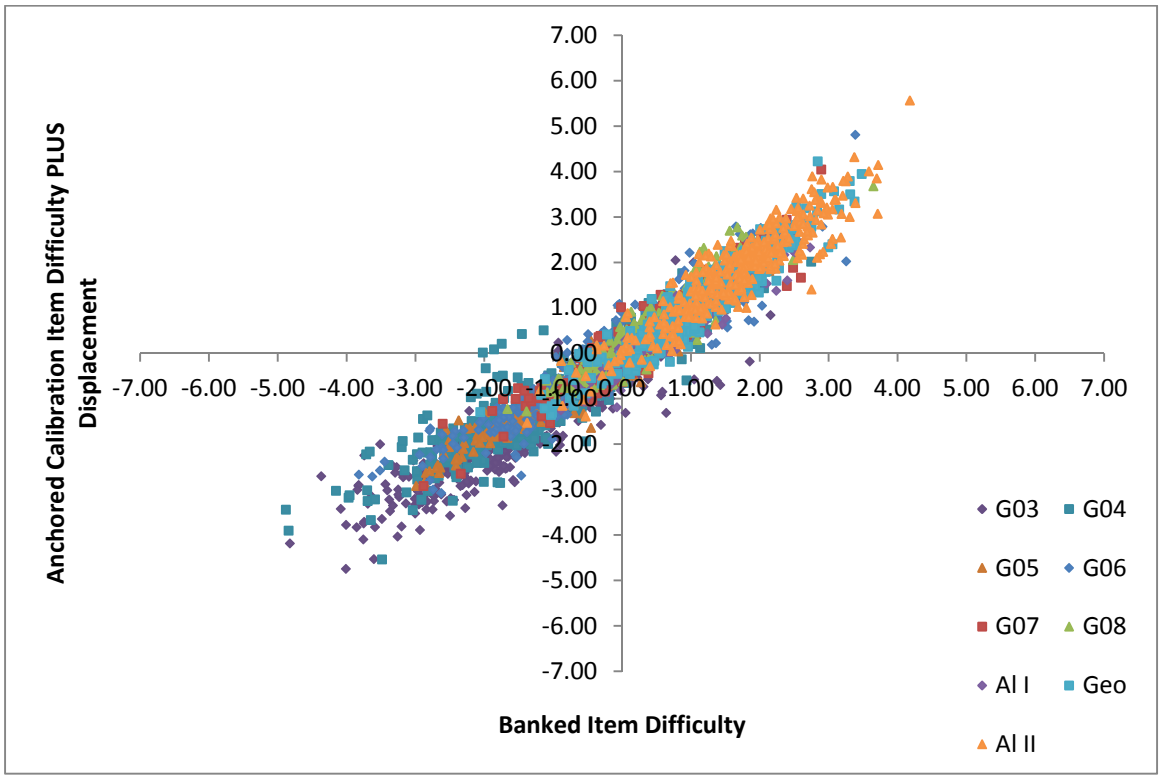


Table 18–3. Number of Mathematics Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	19	7	1	6	0	0	1	0	1	35
-1.0 < Disp. ≤ -0.9	7	2	1	2	2	0	0	0	0	14
-0.9 < Disp. ≤ -0.8	12	5	0	2	1	1	4	2	2	29
-0.8 < Disp. ≤ -0.7	20	5	2	3	0	1	4	1	2	38
-0.7 < Disp. ≤ -0.6	21	10	5	8	4	3	1	7	10	69
-0.6 < Disp. ≤ -0.5	24	16	3	17	17	2	10	11	5	105
-0.5 < Disp. ≤ -0.4	27	20	8	31	8	7	21	19	11	152
-0.4 < Disp. ≤ -0.3	32	28	9	28	15	8	25	29	15	189
-0.3 < Disp. ≤ -0.2	33	42	8	44	17	14	33	30	19	240
-0.2 < Disp. ≤ -0.1	31	29	14	47	30	18	41	24	26	260
-0.1 < Disp. ≤ 0.0	26	36	34	47	39	33	30	41	29	315
0.0 < Disp. ≤ 0.1	18	26	74	50	33	24	31	27	43	326
0.1 < Disp. ≤ 0.2	23	33	73	38	33	32	24	41	32	329
0.2 < Disp. ≤ 0.3	8	29	27	26	23	22	14	30	32	211
0.3 < Disp. ≤ 0.4	13	27	16	24	18	31	8	14	30	181
0.4 < Disp. ≤ 0.5	7	15	4	29	15	19	6	21	23	139
0.5 < Disp. ≤ 0.6	6	17	5	13	10	14	0	14	20	99
0.6 < Disp. ≤ 0.7	5	13	2	11	7	8	1	6	13	66
0.7 < Disp. ≤ 0.8	2	14	0	10	4	7	0	5	12	54
0.8 < Disp. ≤ 0.9	2	6	3	6	0	1	0	0	9	27
0.9 < Disp. ≤ 1.0	5	3	0	7	0	0	0	0	6	21
1.0 < Disp.	5	20	0	10	3	4	0	1	3	46
TOTAL	346	403	289	459	279	249	254	323	343	2945

Figure 18–6. Mathematics Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above with *N*>100





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For each of the three anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–4 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the three calibrations.

Table 18–4. Summary of Robust Z across Three Anchored Calibrations in Mathematics

Grade/ Course	Cal. 1 — All Items			Cal. 2 — Items in G3+			Cal. 3 — Items in 3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	1	1	100%	0	0	N/A	0	0	N/A
Grade 1	18	10	56%	0	0	N/A	0	0	N/A
Grade 2	125	47	38%	0	0	N/A	0	0	N/A
Grade 3	357	96	27%	357	101	28%	346	98	28%
Grade 4	409	80	20%	409	84	21%	403	83	21%
Grade 5	289	13	4%	289	14	5%	289	14	5%
Grade 6	459	59	13%	459	59	13%	459	60	13%
Grade 7	279	15	5%	279	18	6%	279	19	7%
Grade 8	249	21	8%	249	22	9%	249	22	9%
Algebra I	254	10	4%	254	10	4%	254	10	4%
Geometry	323	17	5%	323	19	6%	323	19	6%
Algebra II	343	53	15%	343	54	16%	343	54	16%
Total	3106	422	14%	2962	381	13%	2945	379	13%
	Correlation = 0.963			Correlation = 0.960			Correlation = 0.960		
	Additive Constant = 0.015			Additive Constant = 0.010			Additive Constant = 0.008		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.636 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.611 to 0.636, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.611 have absolute value of robust Z greater than 1.645.

READING/LITERATURE

Figure 18–7 shows the displacements from a concurrent anchored calibration of all reading items using the operational data set. Items are color-coded by grade/course.

Figure 18–7. Reading Anchored Calibration Displacements — All Items

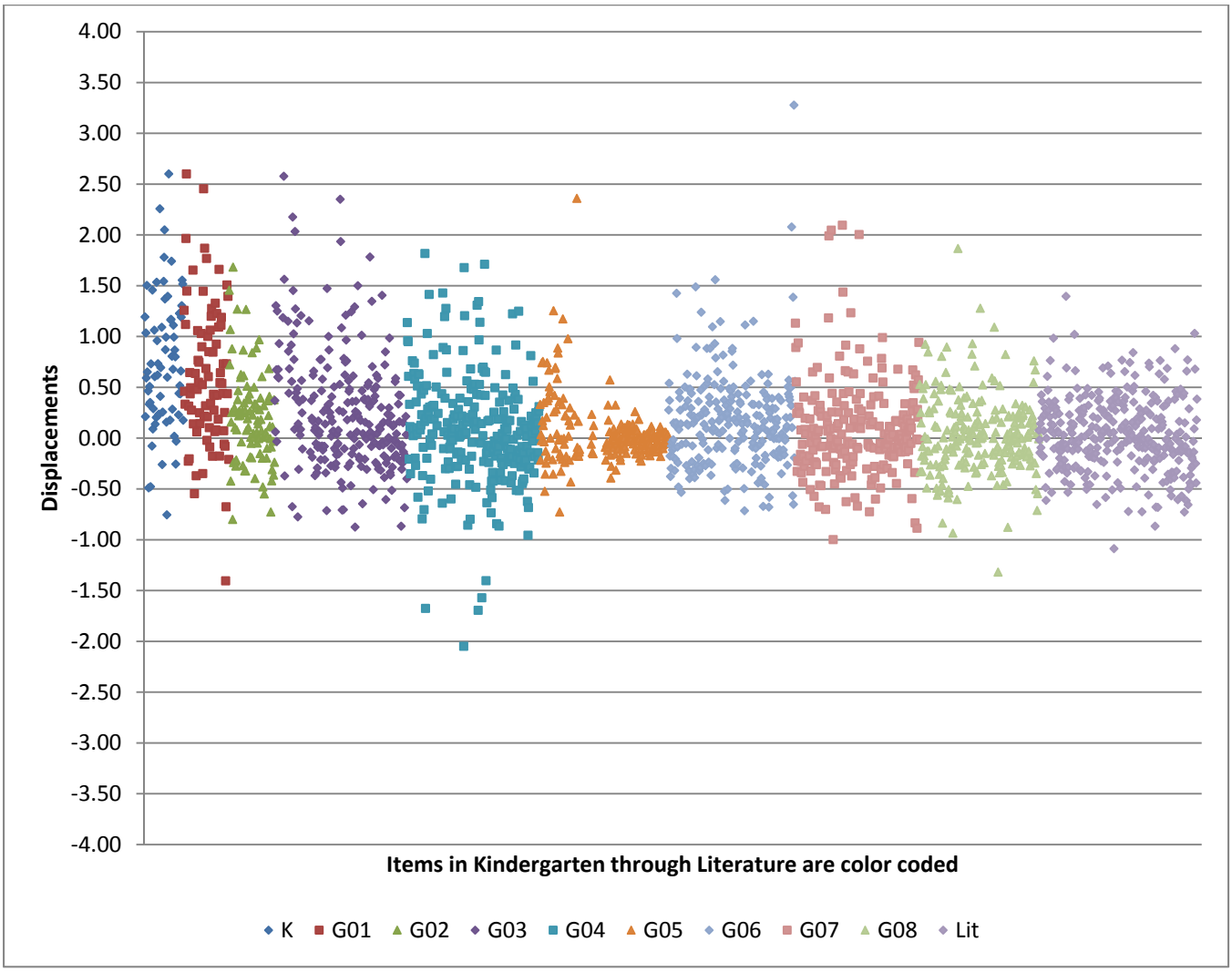


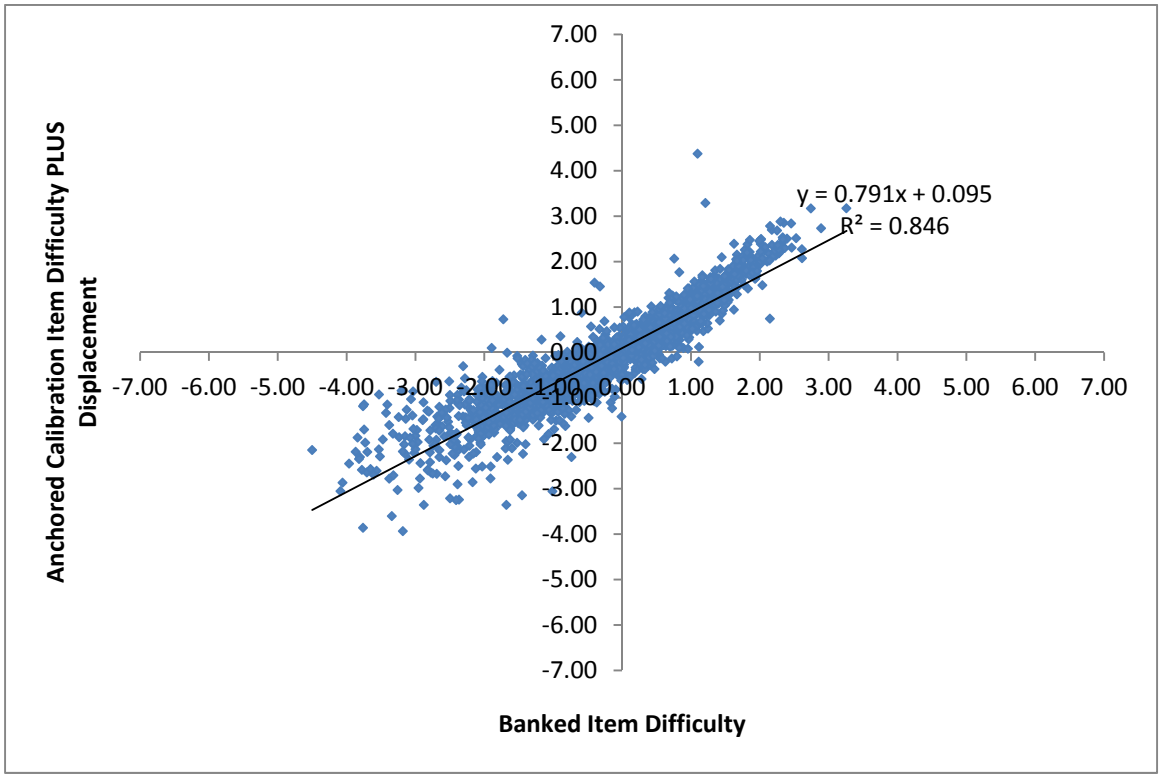
Table 18–5 summarizes the data in Figure 18–7. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-eight percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–5).

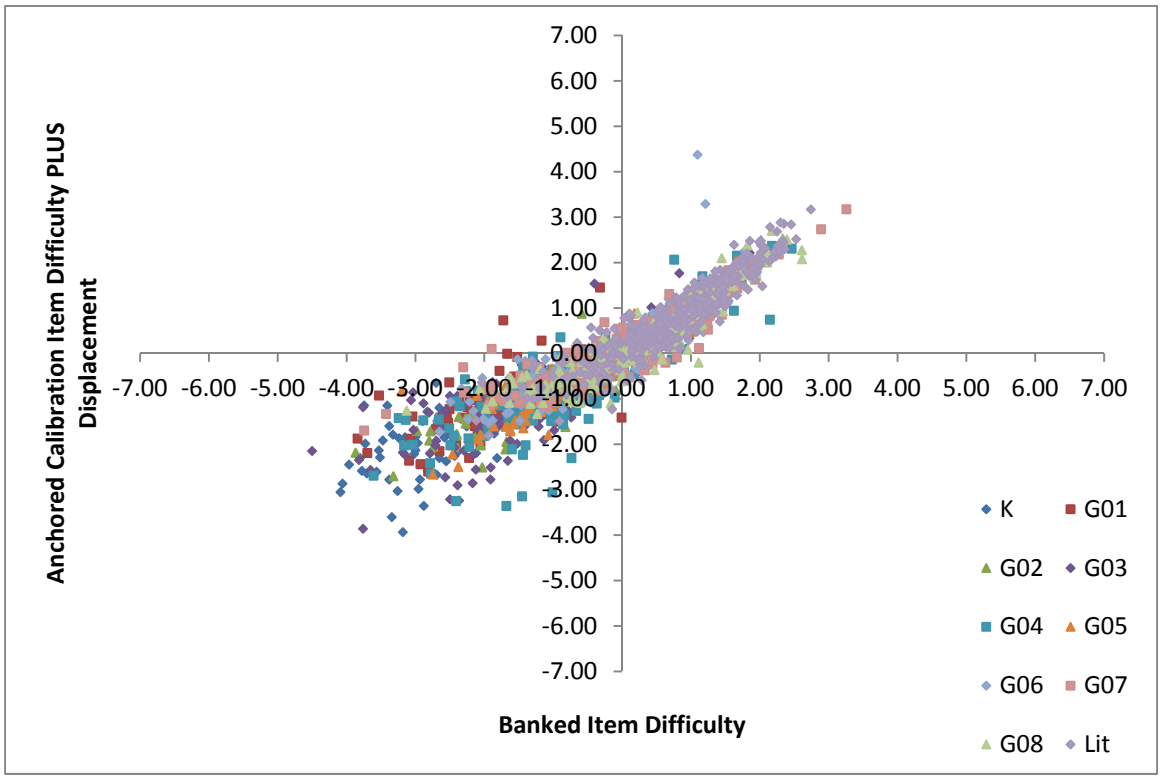
Table 18–5. Number of Reading Items by Grade/Course and Displacement Interval

	K	G01	G02	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	0	1	0	0	5	0	0	0	1	1	8
-1.0 < Disp. ≤ -0.9	0	0	0	0	1	0	0	1	1	0	3
-0.9 < Disp. ≤ -0.8	0	0	1	2	3	0	0	2	2	1	11
-0.8 < Disp. ≤ -0.7	1	0	1	4	4	1	1	2	1	3	18
-0.7 < Disp. ≤ -0.6	0	1	0	4	4	0	4	3	1	7	24
-0.6 < Disp. ≤ -0.5	0	1	1	2	7	1	5	5	9	10	41
-0.5 < Disp. ≤ -0.4	2	0	3	3	12	1	5	8	7	14	55
-0.4 < Disp. ≤ -0.3	0	2	5	13	11	5	13	14	11	21	95
-0.3 < Disp. ≤ -0.2	2	3	6	19	22	10	19	16	26	20	143
-0.2 < Disp. ≤ -0.1	0	2	6	21	25	35	21	22	29	39	200
-0.1 < Disp. ≤ 0.0	2	4	7	27	21	56	23	39	25	52	256
0.0 < Disp. ≤ 0.1	2	4	12	24	29	52	25	24	33	33	238
0.1 < Disp. ≤ 0.2	4	4	9	19	30	15	30	24	23	32	190
0.2 < Disp. ≤ 0.3	8	6	15	15	17	9	27	17	23	33	170
0.3 < Disp. ≤ 0.4	2	4	10	19	15	9	21	10	11	26	127
0.4 < Disp. ≤ 0.5	4	11	4	13	12	2	18	9	6	20	99
0.5 < Disp. ≤ 0.6	4	4	2	13	8	3	14	7	10	3	68
0.6 < Disp. ≤ 0.7	6	5	4	10	11	3	5	9	2	11	66
0.7 < Disp. ≤ 0.8	3	4	1	8	2	3	2	2	2	8	35
0.8 < Disp. ≤ 0.9	3	3	4	3	6	2	6	3	5	2	37
0.9 < Disp. ≤ 1.0	3	1	1	4	4	1	2	4	2	1	23
1.0 < Disp.	23	24	5	27	15	3	11	8	3	3	122
TOTAL	69	84	97	250	264	211	252	229	233	340	2029

Figure 18–8 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the reading item bank. A line of best fit is included in the upper plot. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18–8. Reading Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–8, one can see that there are a number of items with operational estimates that differ from their banked values. Many of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–9 and Table 18–6 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–6). Figure 18–10 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–9. Reading Anchored Calibration Displacements — All Items in Grade 3 and Above

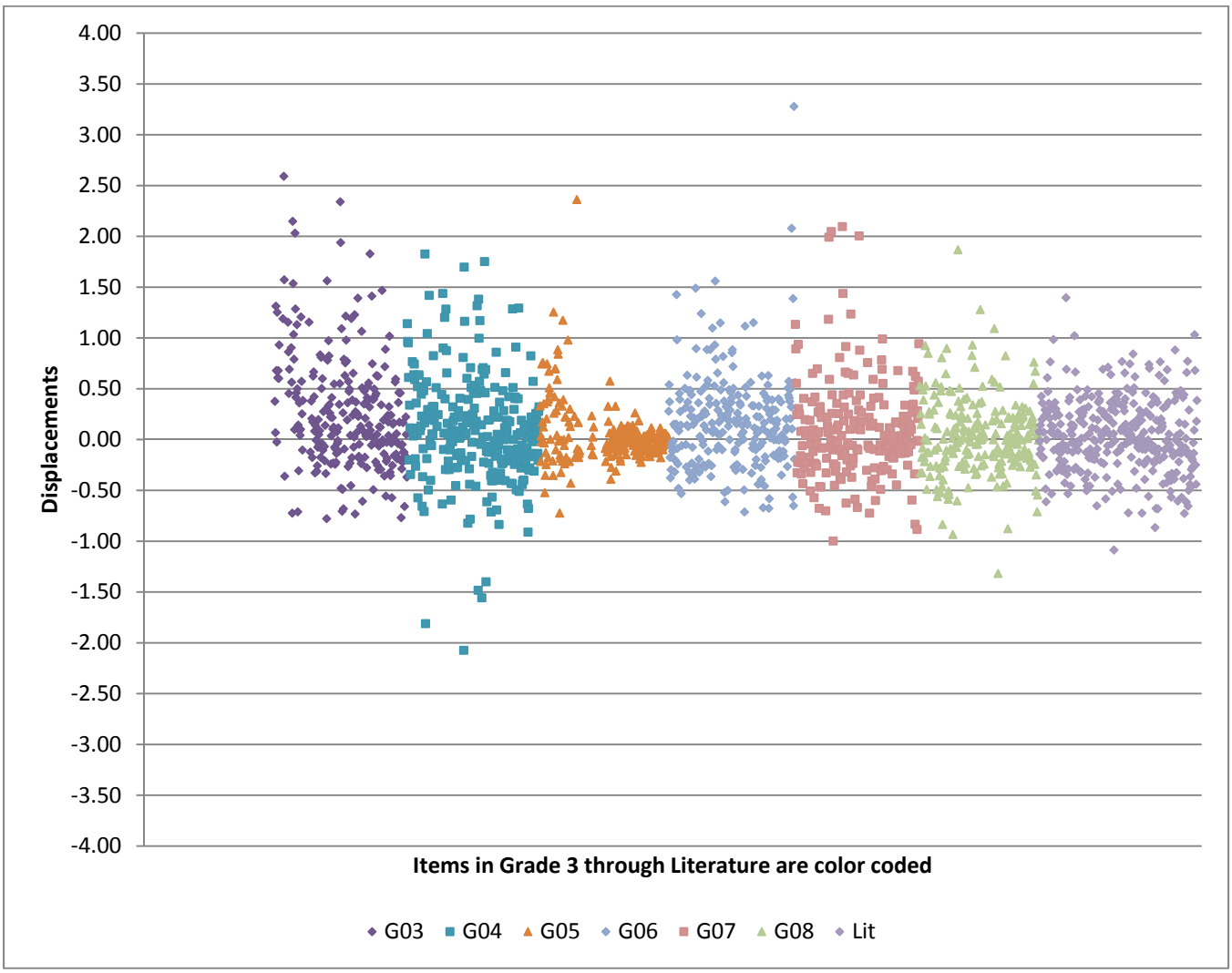
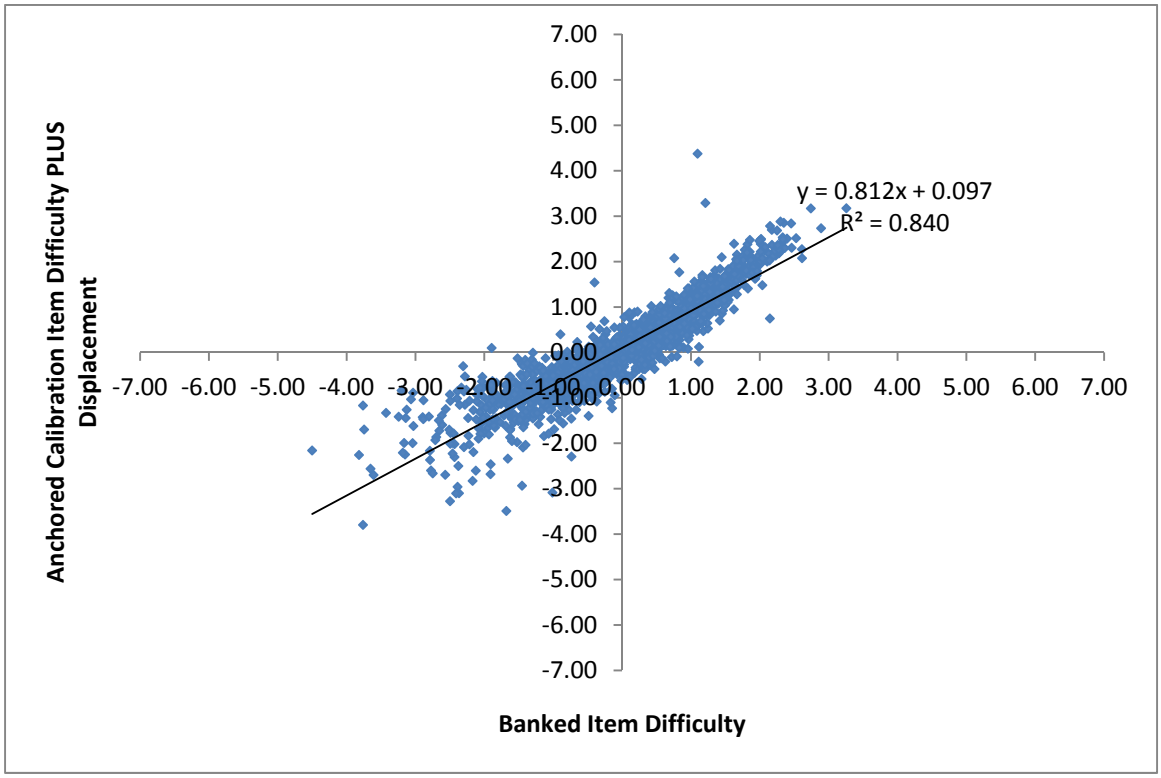
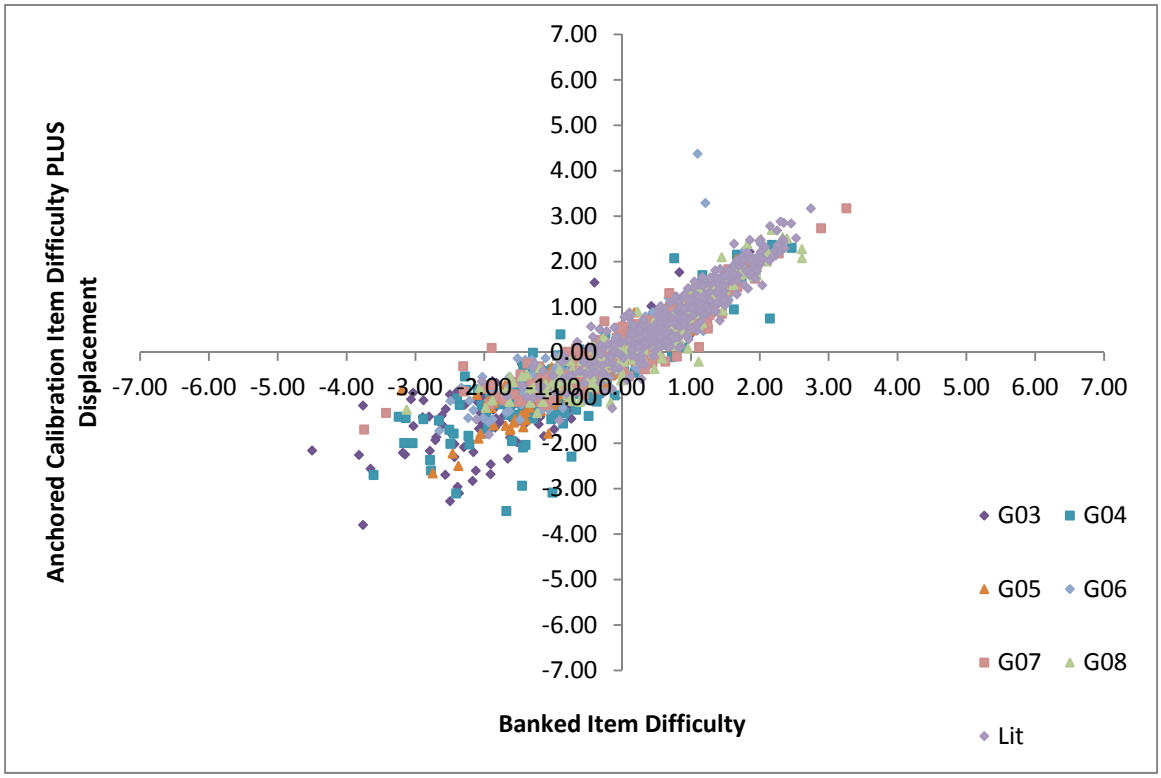


Table 18–6. Number of Reading Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	0	5	0	0	0	1	1	7
-1.0 < Disp. ≤ -0.9	0	1	0	0	1	1	0	3
-0.9 < Disp. ≤ -0.8	0	2	0	0	2	2	1	7
-0.8 < Disp. ≤ -0.7	6	3	1	1	2	1	3	17
-0.7 < Disp. ≤ -0.6	3	6	0	4	3	1	7	24
-0.6 < Disp. ≤ -0.5	2	4	1	5	5	9	10	36
-0.5 < Disp. ≤ -0.4	4	14	1	5	8	7	14	53
-0.4 < Disp. ≤ -0.3	9	9	5	13	14	11	21	82
-0.3 < Disp. ≤ -0.2	19	25	10	19	16	26	20	135
-0.2 < Disp. ≤ -0.1	21	22	35	21	22	29	39	189
-0.1 < Disp. ≤ 0.0	28	21	54	23	39	25	52	242
0.0 < Disp. ≤ 0.1	22	31	54	25	24	33	33	222
0.1 < Disp. ≤ 0.2	20	28	15	30	24	23	32	172
0.2 < Disp. ≤ 0.3	17	21	9	27	17	23	33	147
0.3 < Disp. ≤ 0.4	18	10	9	21	10	11	26	105
0.4 < Disp. ≤ 0.5	15	13	2	18	9	6	20	83
0.5 < Disp. ≤ 0.6	12	10	3	14	7	10	3	59
0.6 < Disp. ≤ 0.7	11	10	3	5	9	2	11	51
0.7 < Disp. ≤ 0.8	7	4	3	2	2	2	8	28
0.8 < Disp. ≤ 0.9	5	5	2	6	3	5	2	28
0.9 < Disp. ≤ 1.0	4	5	1	2	4	2	1	19
1.0 < Disp.	27	15	3	11	8	3	3	70
TOTAL	250	264	211	252	229	233	340	1779

Figure 18–10. Reading Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above with larger *n*-counts was run.

Figure 18–11 and Table 18–7 summarize the displacements from a concurrent anchored calibration that excludes items with 100 or fewer administrations. Eighty-three percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–7). Figure 18–12 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–11. Reading Anchored Calibration Displacements — All Items in Grade 3 and Above with *N*>100

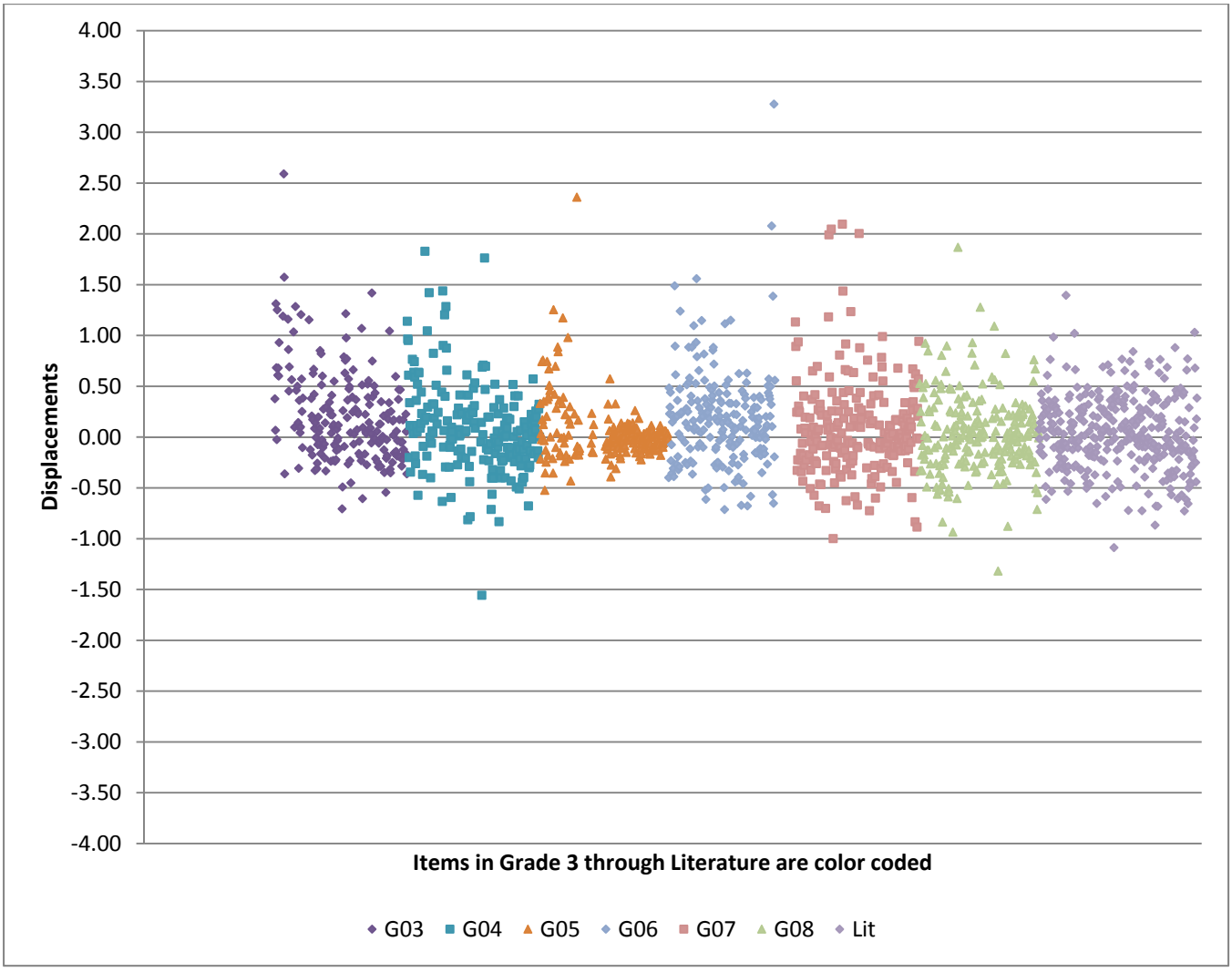
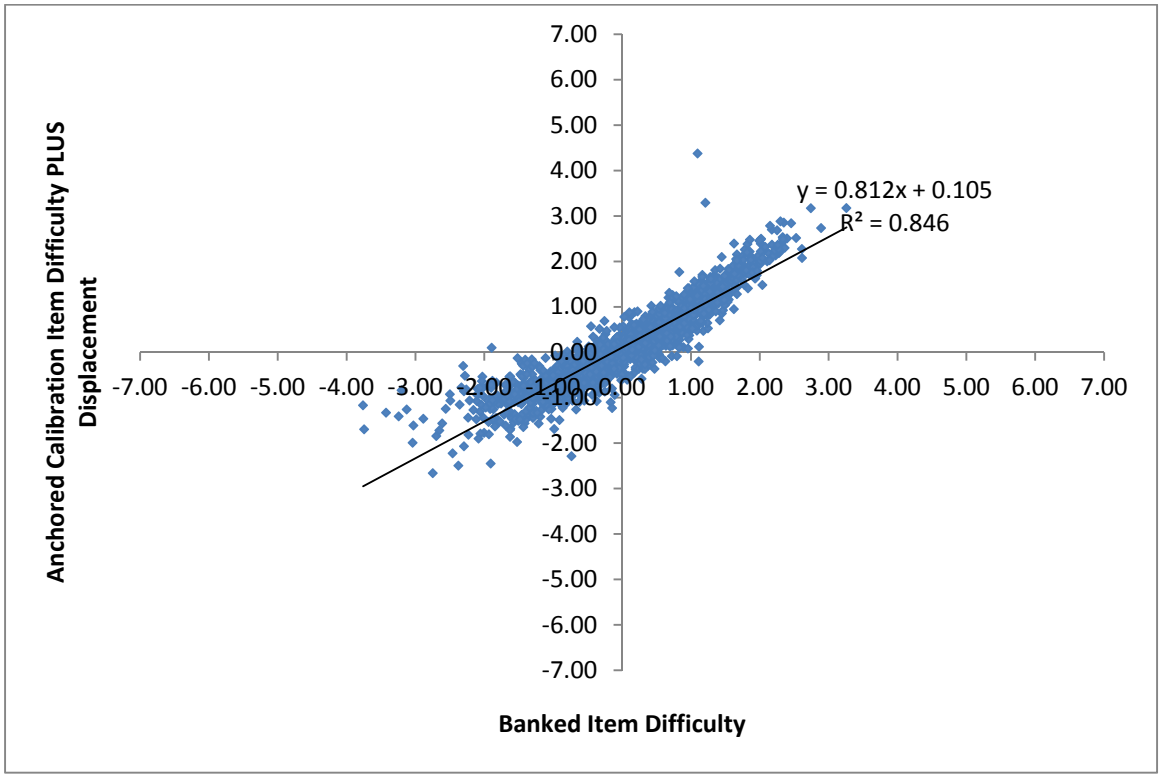
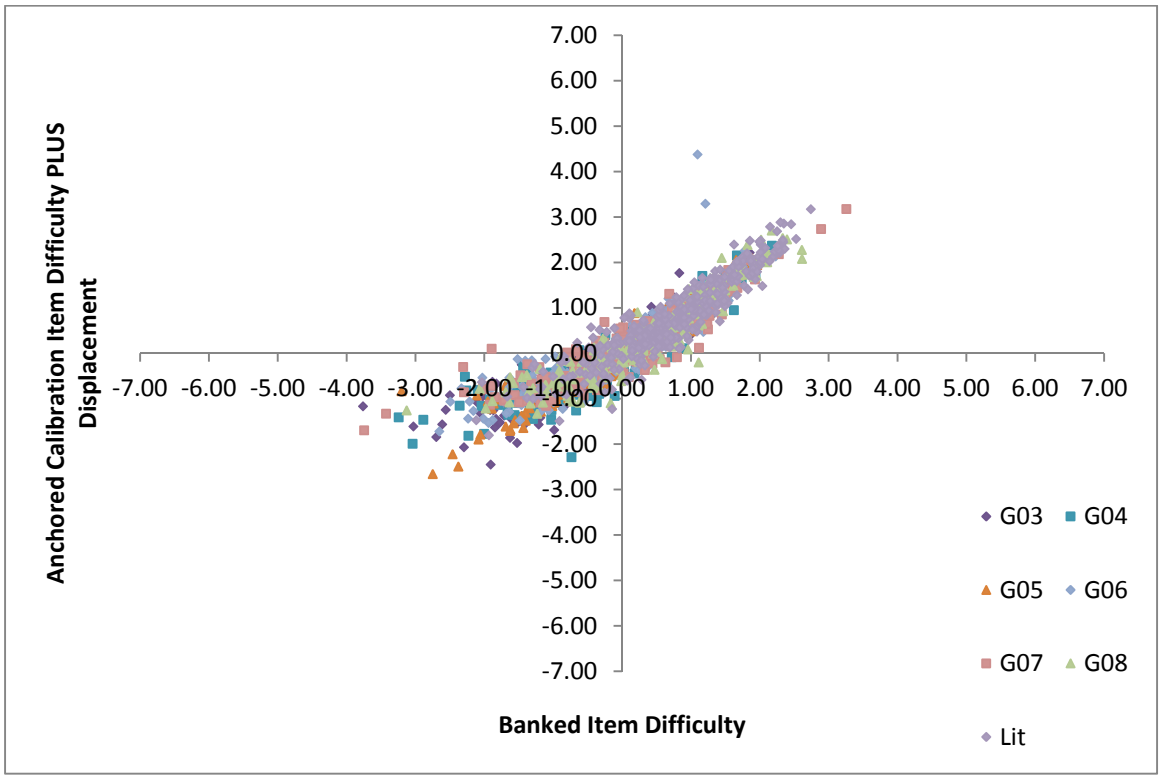


Table 18–7. Number of Reading Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	0	1	0	0	0	1	1	3
-1.0 < Disp. ≤ -0.9	0	0	0	0	1	1	0	2
-0.9 < Disp. ≤ -0.8	0	2	0	0	2	2	1	7
-0.8 < Disp. ≤ -0.7	1	2	0	1	2	1	3	10
-0.7 < Disp. ≤ -0.6	1	2	0	4	3	1	7	18
-0.6 < Disp. ≤ -0.5	1	4	1	5	5	9	10	35
-0.5 < Disp. ≤ -0.4	2	10	1	5	8	7	14	47
-0.4 < Disp. ≤ -0.3	9	7	4	13	14	11	21	79
-0.3 < Disp. ≤ -0.2	18	20	9	19	16	26	20	128
-0.2 < Disp. ≤ -0.1	19	21	35	19	22	29	39	184
-0.1 < Disp. ≤ 0.0	24	18	53	22	39	25	52	233
0.0 < Disp. ≤ 0.1	23	29	54	26	24	33	33	222
0.1 < Disp. ≤ 0.2	17	22	15	30	24	23	32	163
0.2 < Disp. ≤ 0.3	18	16	8	27	17	23	33	142
0.3 < Disp. ≤ 0.4	14	8	9	21	10	11	26	99
0.4 < Disp. ≤ 0.5	10	9	2	17	9	6	20	73
0.5 < Disp. ≤ 0.6	10	7	2	14	7	10	3	53
0.6 < Disp. ≤ 0.7	10	8	2	5	9	2	11	47
0.7 < Disp. ≤ 0.8	4	3	3	2	2	2	8	24
0.8 < Disp. ≤ 0.9	3	2	2	6	3	5	2	23
0.9 < Disp. ≤ 1.0	2	3	1	2	4	2	1	15
1.0 < Disp.	14	8	3	11	8	3	3	50
TOTAL	200	202	204	249	229	233	340	1657

Figure 18–12. Reading Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above with *N*>100





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For each of the three anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. Table 18–8 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the three calibrations.

Table 18–8. Summary of Robust Z across Three Anchored Calibrations in Reading

Grade/ Course	Cal. 1 — All Items			Cal. 2 — Items in G3+			Cal. 3 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	69	35	51%	0	0	N/A	0	0	N/A
Grade 1	84	36	43%	0	0	N/A	0	0	N/A
Grade 2	97	15	15%	0	0	N/A	0	0	N/A
Grade 3	250	56	22%	250	67	27%	200	42	21%
Grade 4	264	50	19%	264	60	23%	202	38	19%
Grade 5	211	12	6%	211	14	7%	204	13	6%
Grade 6	252	28	11%	252	36	14%	249	43	17%
Grade 7	229	33	14%	229	41	18%	229	45	20%
Grade 8	233	24	10%	233	30	13%	233	35	15%
Literature	340	34	10%	340	47	14%	340	51	15%
Total	2029	323	16%	1779	295	17%	1657	267	16%
	Correlation = 0.920			Correlation = 0.916			Correlation = 0.920		
	Additive Constant = 0.147			Additive Constant = 0.105			Additive Constant = 0.093		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.670 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.540 to 0.670, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.540 have absolute value of robust Z greater than 1.645.

SCIENCE

Figure 18–13 shows the displacements from a concurrent anchored calibration of all science items using the operational data set. Items are color-coded by grade/course.

Figure 18–13. Science Anchored Calibration Displacements — All Items

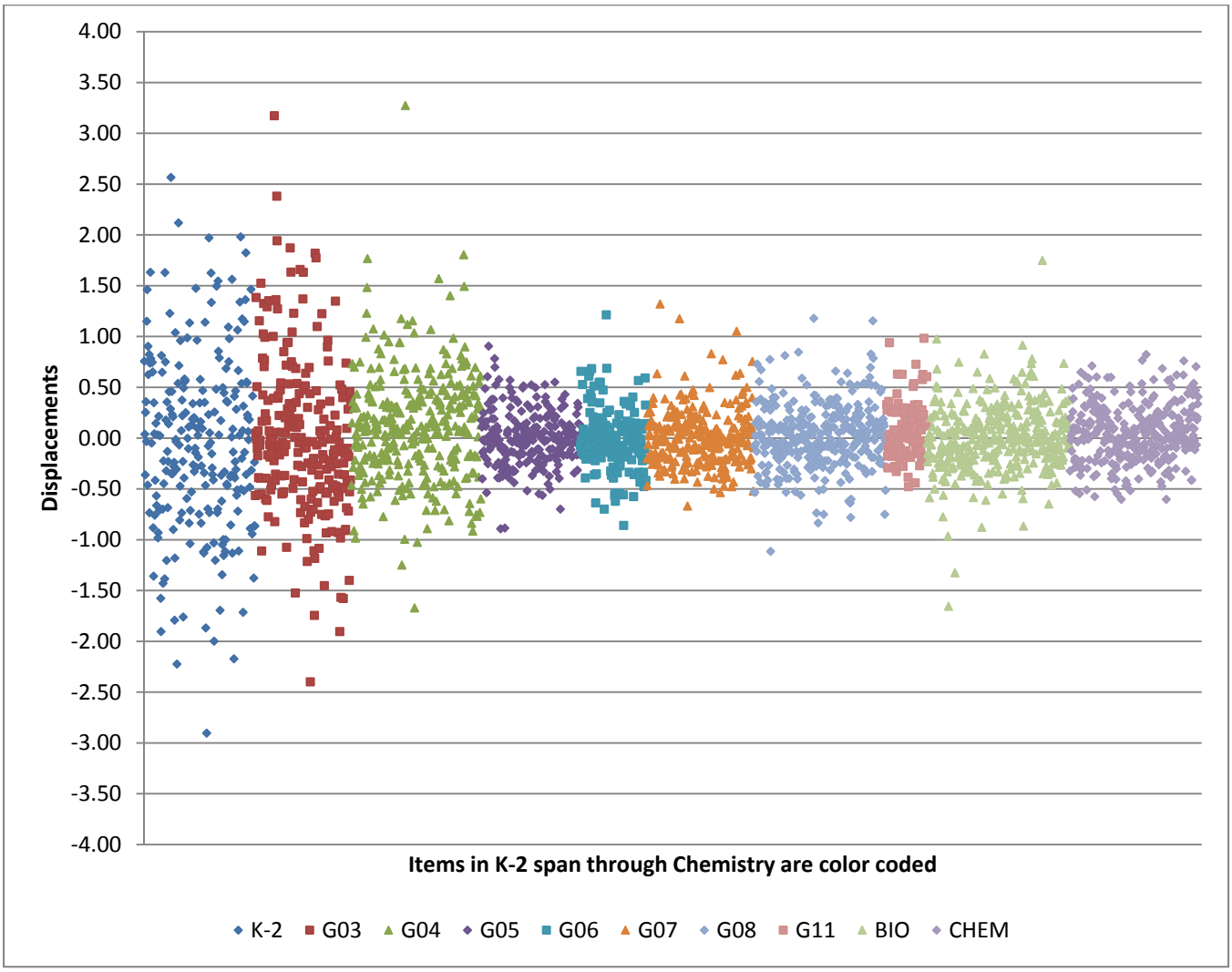


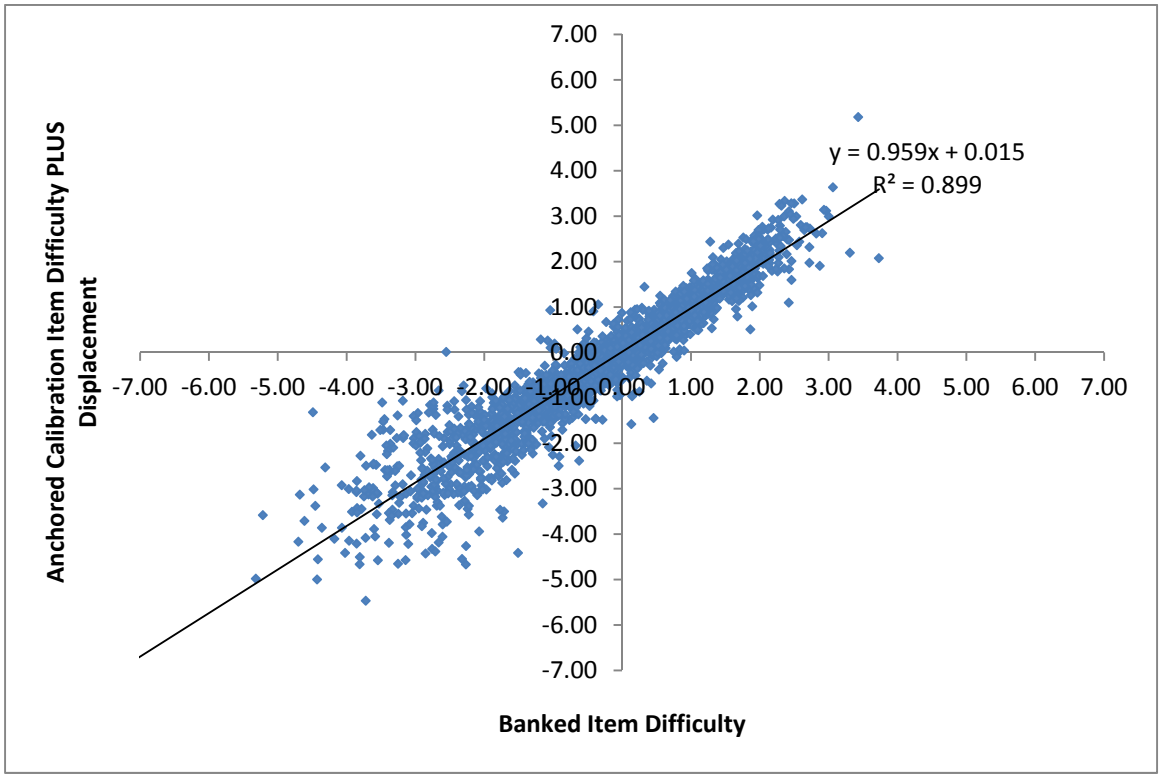
Table 18–9 summarizes the data in Figure 18–13. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-one percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–9).

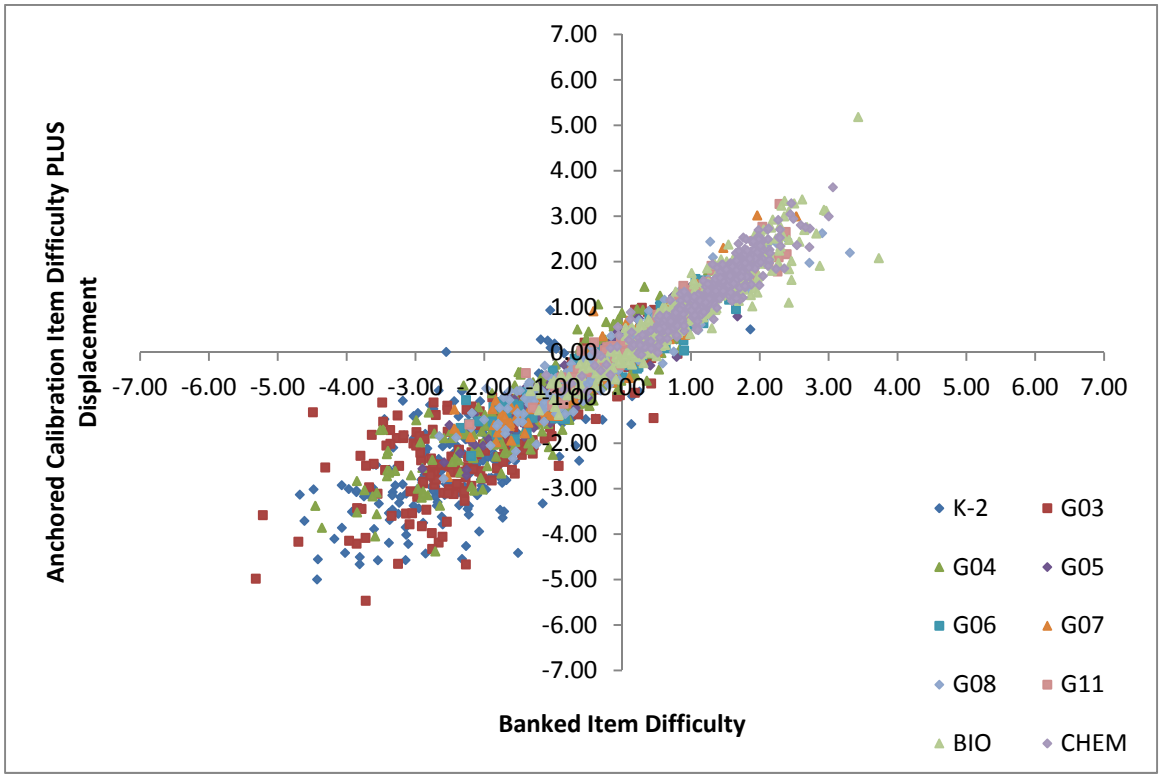
Table 18–9. Number of Science Items by Grade/Course and Displacement Interval

	K–2	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	30	14	3	0	0	0	1	0	2	0	50
-1.0 < Disp. ≤ -0.9	4	6	4	0	0	0	0	0	1	0	15
-0.9 < Disp. ≤ -0.8	9	3	3	2	1	0	1	0	2	0	21
-0.8 < Disp. ≤ -0.7	9	10	8	0	0	0	4	0	1	0	32
-0.7 < Disp. ≤ -0.6	6	7	4	1	3	1	3	0	2	2	29
-0.6 < Disp. ≤ -0.5	7	15	11	5	5	3	8	0	7	7	68
-0.5 < Disp. ≤ -0.4	9	14	16	3	3	8	10	2	11	9	85
-0.4 < Disp. ≤ -0.3	18	11	16	18	14	18	19	2	26	16	158
-0.3 < Disp. ≤ -0.2	11	13	21	19	10	37	24	7	35	29	206
-0.2 < Disp. ≤ -0.1	8	17	18	36	23	29	37	18	47	31	264
-0.1 < Disp. ≤ 0.0	10	23	19	40	32	41	53	15	56	49	338
0.0 < Disp. ≤ 0.1	15	14	30	38	24	49	44	16	48	51	329
0.1 < Disp. ≤ 0.2	12	12	32	27	23	30	53	11	36	34	270
0.2 < Disp. ≤ 0.3	12	8	19	16	7	20	21	14	29	36	182
0.3 < Disp. ≤ 0.4	10	11	30	16	8	15	26	6	27	23	172
0.4 < Disp. ≤ 0.5	10	9	19	8	3	9	8	1	11	15	93
0.5 < Disp. ≤ 0.6	8	6	12	7	6	0	11	3	5	11	69
0.6 < Disp. ≤ 0.7	5	3	15	2	5	4	4	4	7	6	55
0.7 < Disp. ≤ 0.8	8	8	8	1	0	2	3	1	4	4	39
0.8 < Disp. ≤ 0.9	3	2	6	0	0	1	3	0	1	1	17
0.9 < Disp. ≤ 1.0	5	4	5	1	0	0	0	2	2	0	19
1.0 < Disp.	26	25	15	0	1	3	2	0	1	0	73
TOTAL	235	235	314	240	168	270	335	102	361	324	2584

Figure 18–14 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the science item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18–14. Science Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–14, one can see that there are a number of items with operational estimates that differ from their banked values. Many of these are in the K–2 span. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in the K–2 span to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

Figure 18–15 and Table 18–10 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty-four percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–10). Figure 18–16 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–15. Science Anchored Calibration Displacements — All Items in Grade 3 and Above

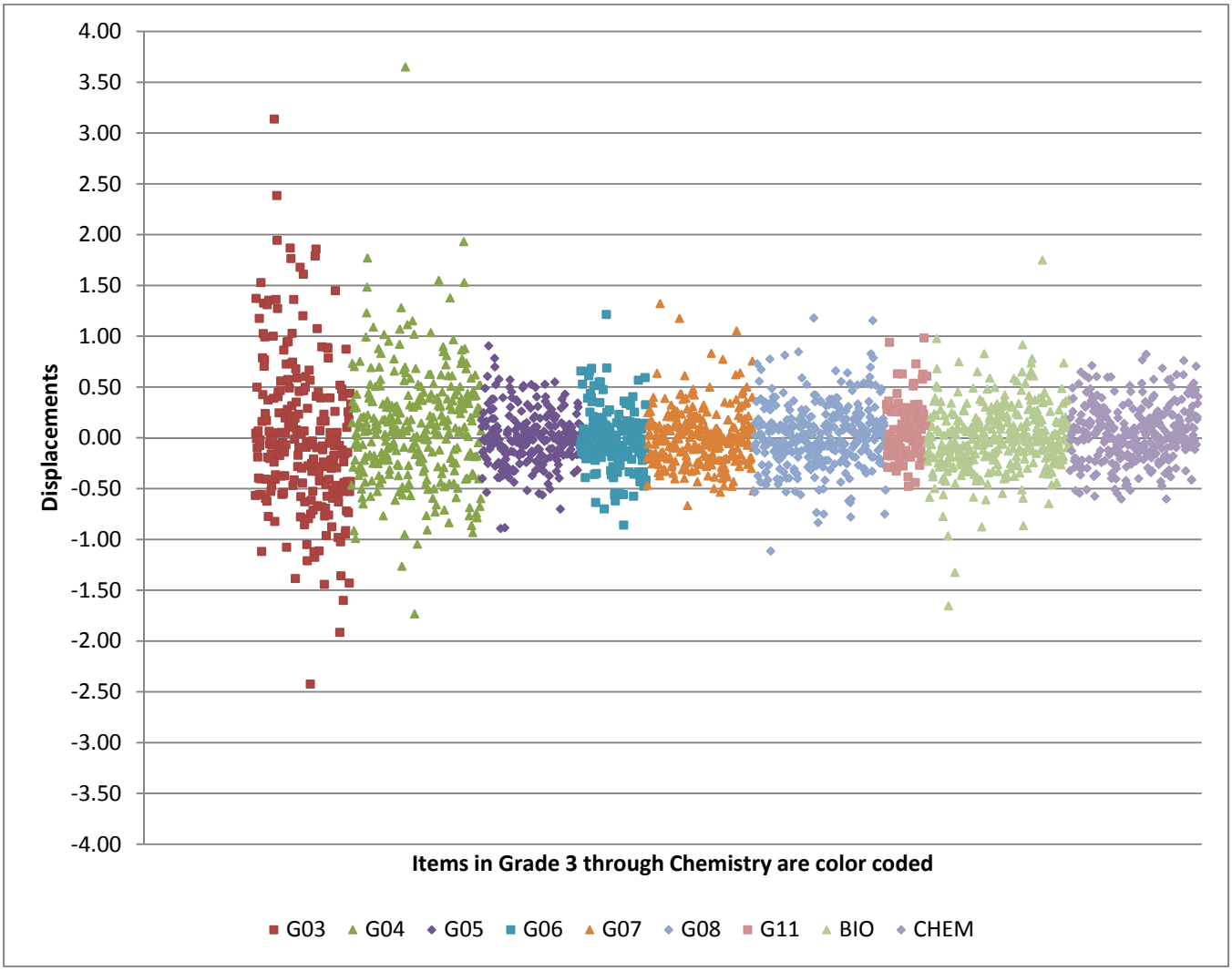
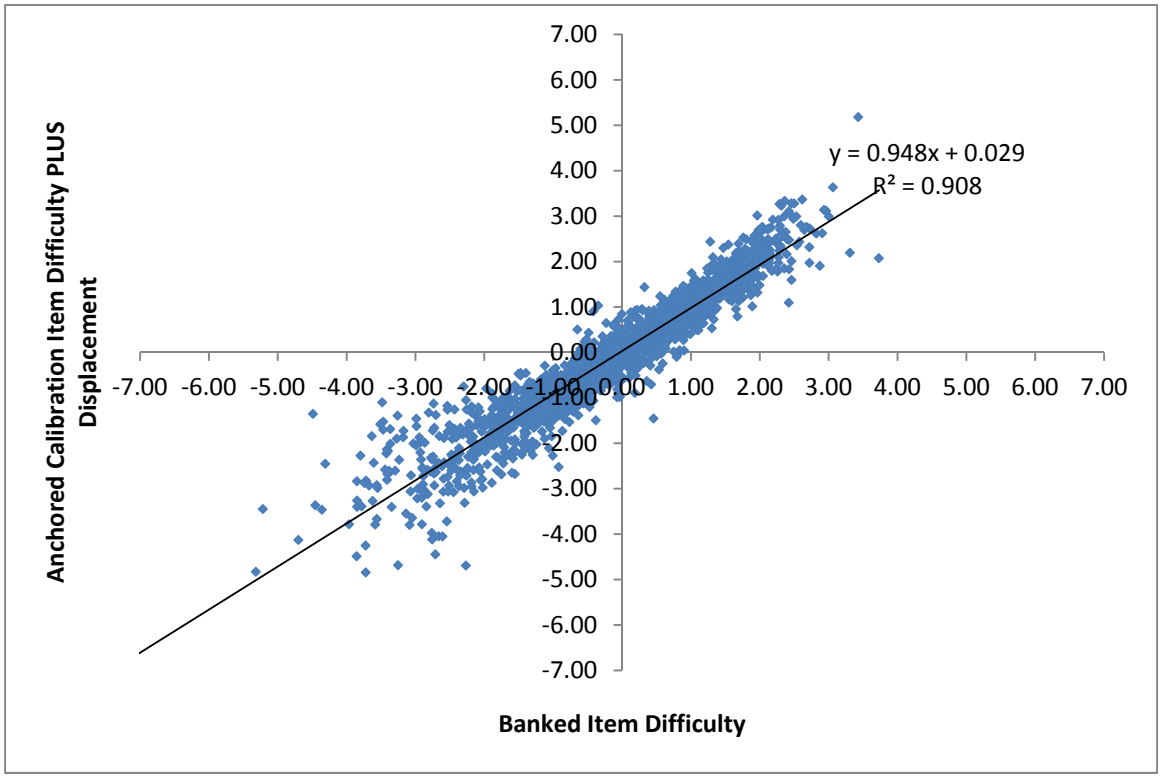
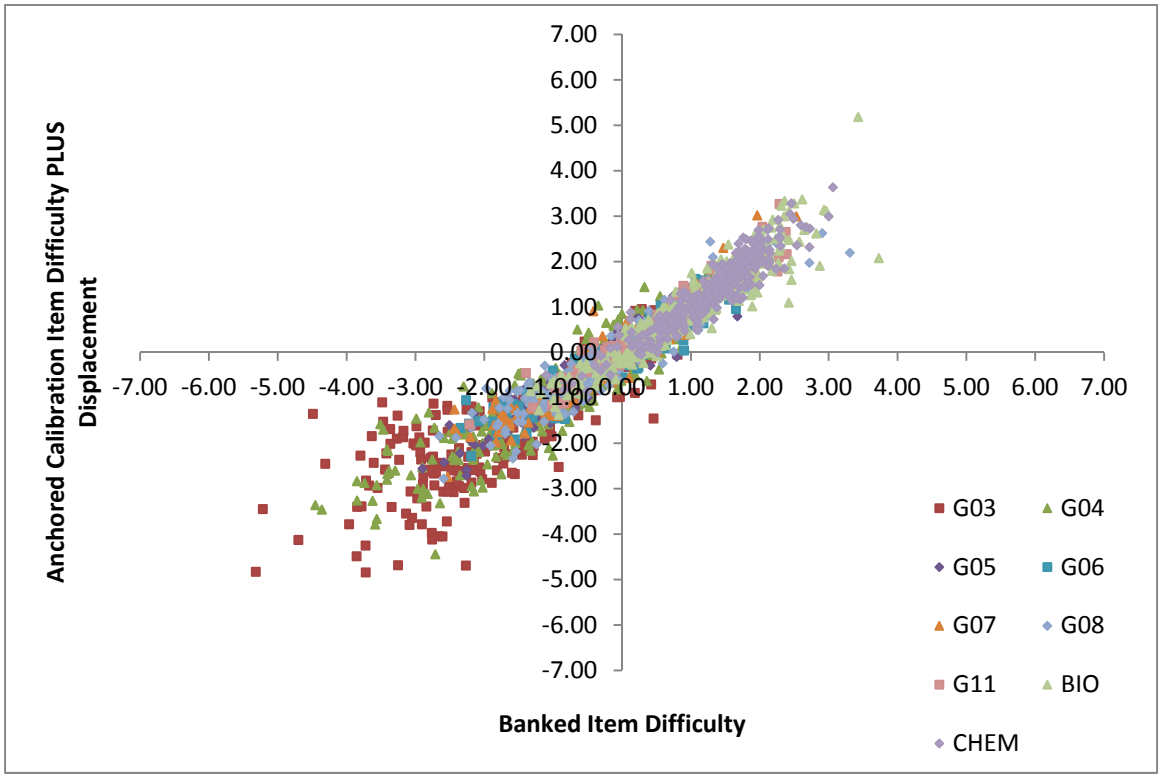


Table 18–10. Number of Science Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	16	3	0	0	0	1	0	2	0	22
-1.0 < Disp. ≤ -0.9	4	5	0	0	0	0	0	1	0	10
-0.9 < Disp. ≤ -0.8	3	2	2	1	0	1	0	2	0	11
-0.8 < Disp. ≤ -0.7	9	7	1	1	0	4	0	1	0	23
-0.7 < Disp. ≤ -0.6	7	5	0	2	1	3	0	2	2	22
-0.6 < Disp. ≤ -0.5	19	12	5	5	3	8	0	7	7	66
-0.5 < Disp. ≤ -0.4	15	17	3	3	8	10	2	11	9	78
-0.4 < Disp. ≤ -0.3	7	14	18	14	18	19	2	26	16	134
-0.3 < Disp. ≤ -0.2	14	22	19	10	37	24	7	35	29	197
-0.2 < Disp. ≤ -0.1	14	19	37	23	29	37	18	47	31	255
-0.1 < Disp. ≤ 0.0	24	19	39	32	41	53	15	56	49	328
0.0 < Disp. ≤ 0.1	14	31	38	24	49	44	16	48	51	315
0.1 < Disp. ≤ 0.2	12	30	28	23	30	53	11	36	34	257
0.2 < Disp. ≤ 0.3	9	20	15	7	20	21	14	29	36	171
0.3 < Disp. ≤ 0.4	7	32	16	8	15	26	6	27	23	160
0.4 < Disp. ≤ 0.5	14	13	8	3	9	8	1	11	15	82
0.5 < Disp. ≤ 0.6	5	14	7	6	0	11	3	5	11	62
0.6 < Disp. ≤ 0.7	3	15	2	5	4	4	4	7	6	50
0.7 < Disp. ≤ 0.8	7	7	1	0	2	3	1	4	4	29
0.8 < Disp. ≤ 0.9	5	7	0	0	1	3	0	1	1	18
0.9 < Disp. ≤ 1.0	4	4	1	0	0	0	2	2	0	13
1.0 < Disp.	23	16	0	1	3	2	0	1	0	46
TOTAL	235	314	240	168	270	335	102	361	324	2349

Figure 18–16. Science Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above with larger *n*-counts was run.

Figure 18–17 and Table 18–11 summarize the displacements from a concurrent anchored calibration that excludes items with 100 or fewer administrations. Eighty-nine percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–11). Figure 18–18 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–17. Science Anchored Calibration Displacements — All Items in Grade 3 and Above with *N*>100

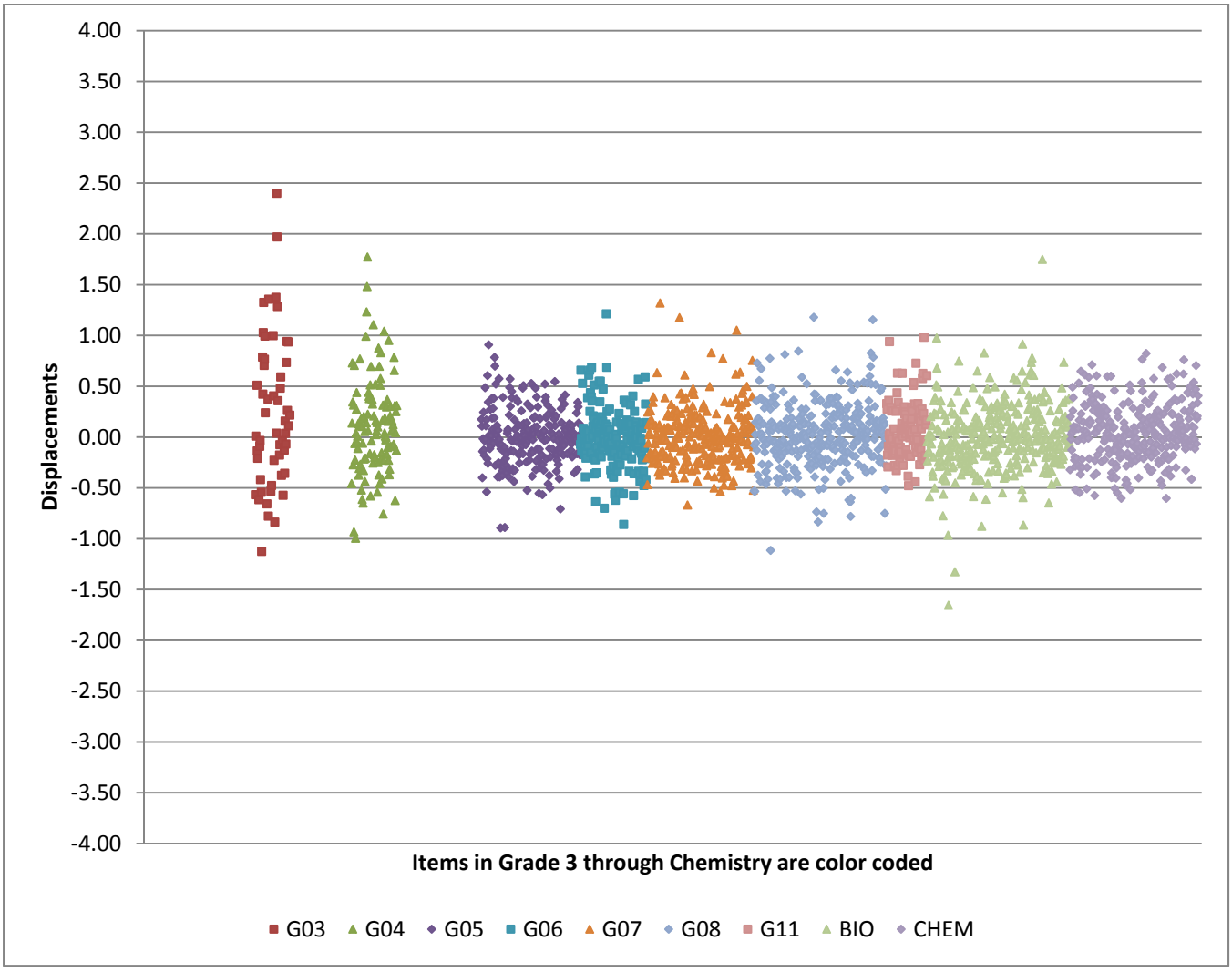
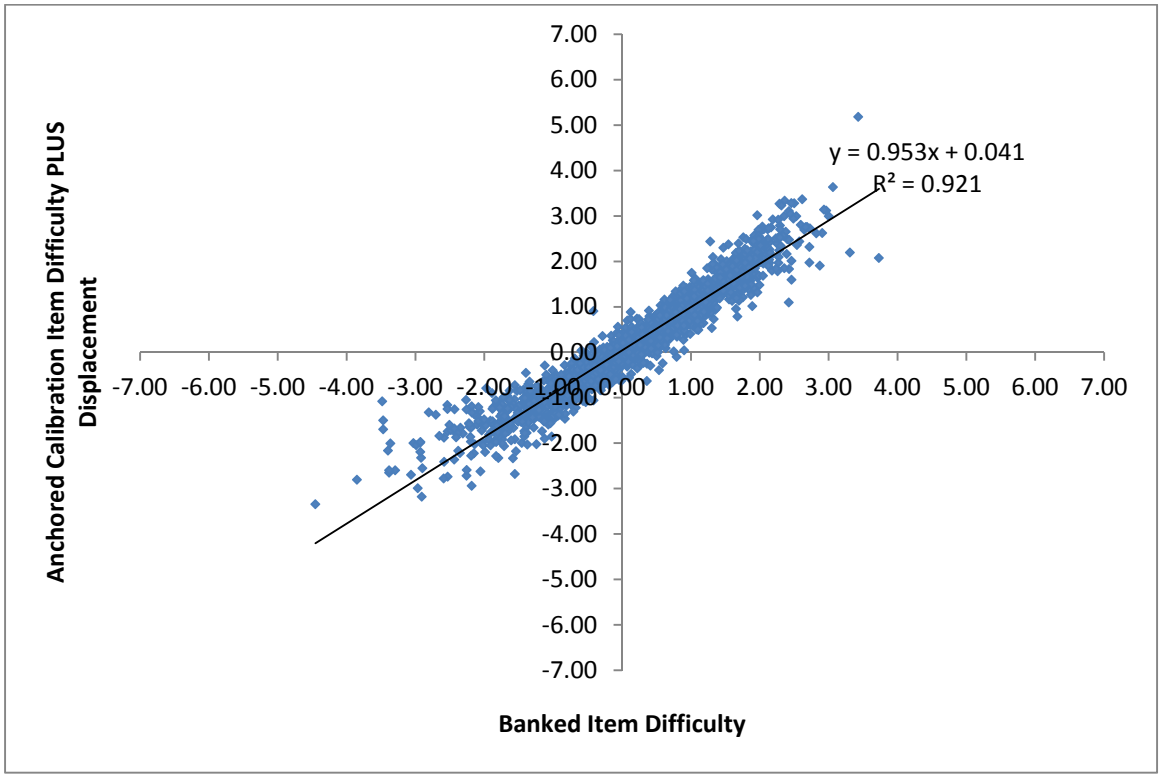
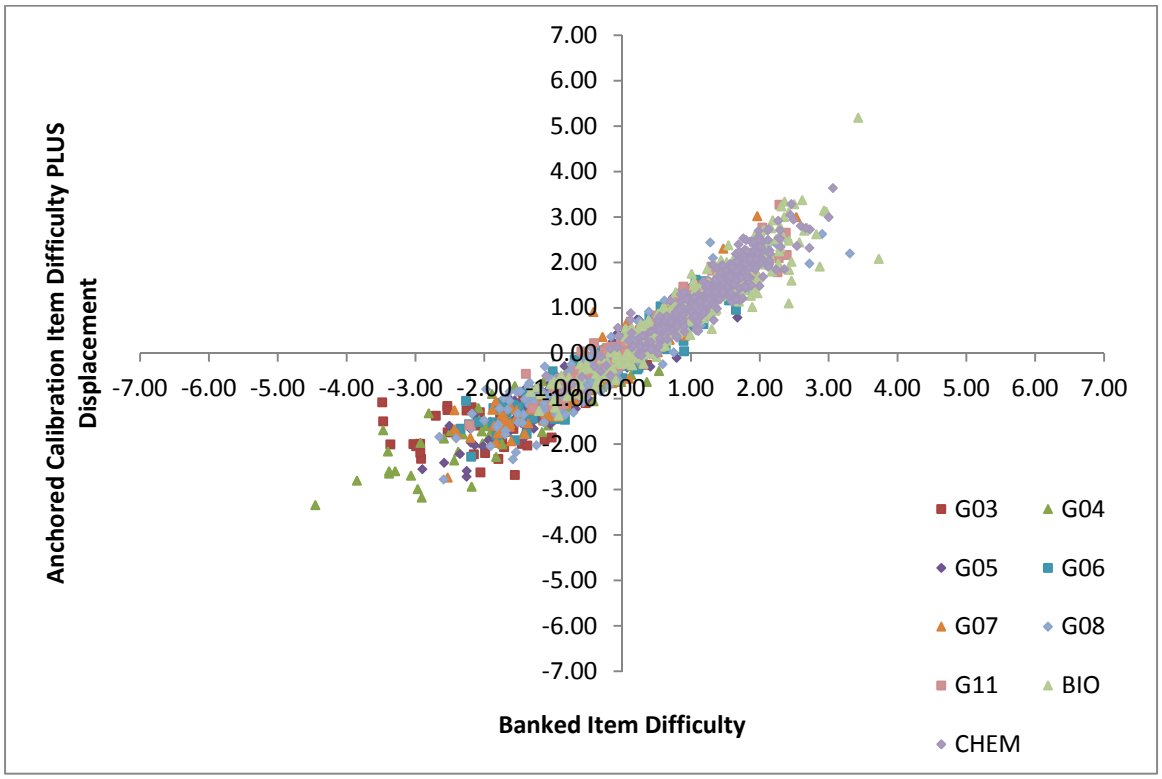


Table 18–11. Number of Science Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	1	0	0	0	0	1	0	2	0	4
-1.0 < Disp. ≤ -0.9	0	2	0	0	0	0	0	1	0	3
-0.9 < Disp. ≤ -0.8	1	0	2	1	0	1	0	2	0	7
-0.8 < Disp. ≤ -0.7	1	1	1	1	0	4	0	1	0	9
-0.7 < Disp. ≤ -0.6	2	3	0	2	1	3	0	2	2	15
-0.6 < Disp. ≤ -0.5	4	3	5	5	3	8	0	7	7	42
-0.5 < Disp. ≤ -0.4	2	4	4	3	8	10	2	11	9	53
-0.4 < Disp. ≤ -0.3	2	6	18	14	18	19	2	26	16	121
-0.3 < Disp. ≤ -0.2	2	10	18	10	37	24	7	35	29	172
-0.2 < Disp. ≤ -0.1	3	8	37	23	29	37	18	47	31	233
-0.1 < Disp. ≤ 0.0	5	8	40	32	41	53	15	56	49	299
0.0 < Disp. ≤ 0.1	3	12	39	24	49	44	16	48	51	286
0.1 < Disp. ≤ 0.2	2	14	27	23	30	53	11	36	33	229
0.2 < Disp. ≤ 0.3	3	7	16	7	20	21	14	29	37	154
0.3 < Disp. ≤ 0.4	2	10	16	8	15	26	6	27	23	133
0.4 < Disp. ≤ 0.5	3	3	6	3	9	8	1	11	15	59
0.5 < Disp. ≤ 0.6	2	4	7	6	0	11	3	5	11	49
0.6 < Disp. ≤ 0.7	0	3	2	5	4	4	4	7	6	35
0.7 < Disp. ≤ 0.8	4	4	1	0	2	3	1	4	4	23
0.8 < Disp. ≤ 0.9	0	2	0	0	1	3	0	1	1	8
0.9 < Disp. ≤ 1.0	4	2	1	0	0	0	2	2	0	11
1.0 < Disp.	7	5	0	1	3	2	0	1	0	19
TOTAL	53	111	240	168	270	335	102	361	324	1964

Figure 18–18. Science Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above with *N*>100





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For each of the three anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–12 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the three calibrations.

Table 18–12. Summary of Robust Z across Three Anchored Calibrations in Science

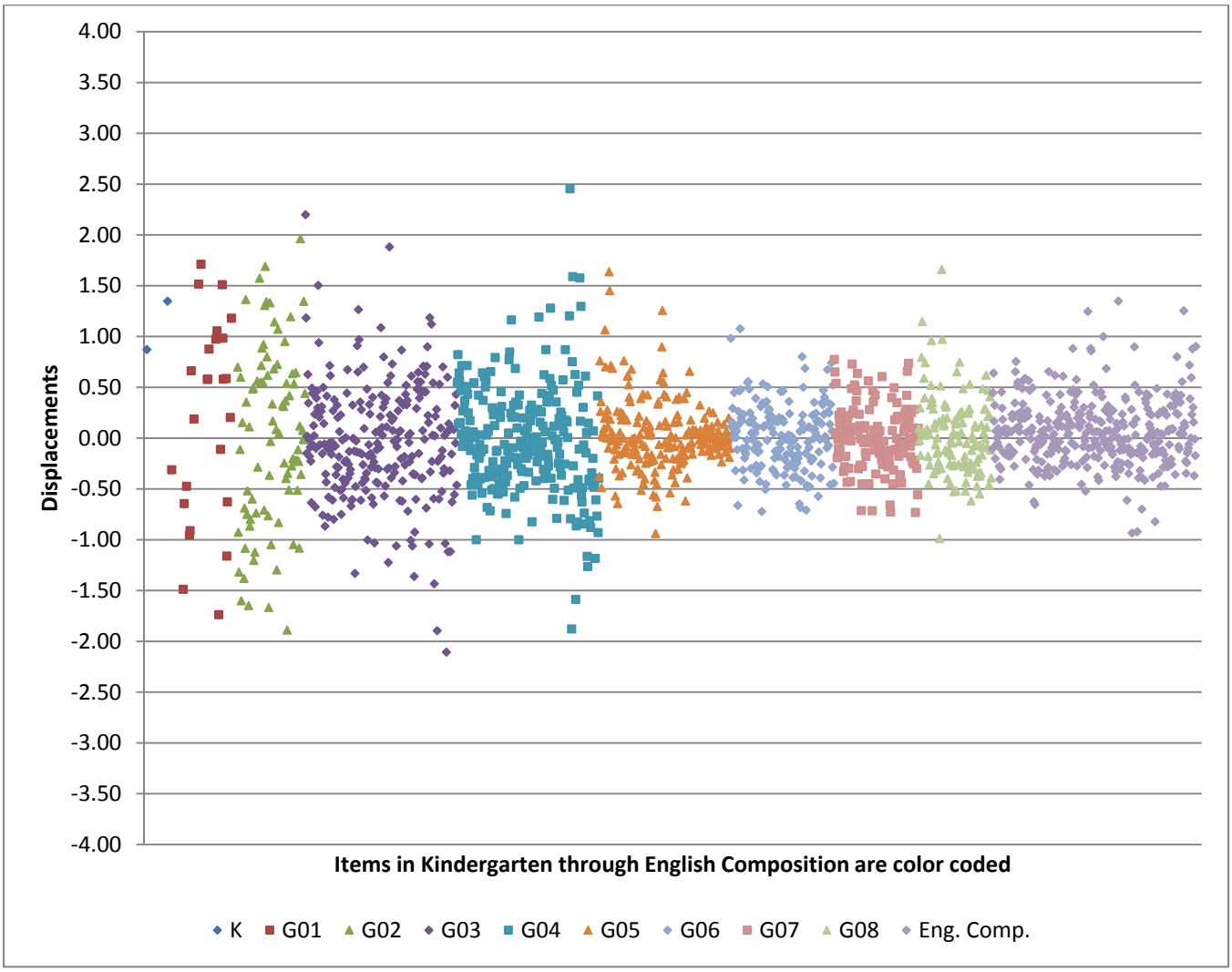
Grade/ Course	Cal. 1 — All Items			Cal. 2 — Items in G3+			Cal. 3 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
K–2 span	235	115	49%	0	0	N/A	0	0	N/A
Grade 3	235	95	40%	235	105	45%	53	28	53%
Grade 4	314	86	27%	314	94	30%	111	31	28%
Grade 5	240	13	5%	240	19	8%	240	24	10%
Grade 6	168	19	11%	168	21	13%	168	23	14%
Grade 7	270	12	4%	270	14	5%	270	20	7%
Grade 8	335	30	9%	335	40	12%	335	45	13%
Grade 11	102	8	8%	102	9	9%	102	12	12%
Biology	361	31	9%	361	35	10%	361	45	12%
Chemistry	324	22	7%	324	30	9%	324	38	12%
Total	2584	431	17%	2349	367	16%	1964	266	14%
	Correlation = 0.948			Correlation = 0.953			Correlation = 0.960		
	Additive Constant = 0.024			Additive Constant = 0.031			Additive Constant = 0.031		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.541 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.524 to 0.541, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.524 have absolute value of robust Z greater than 1.645.

WRITING/ENGLISH COMPOSITION

Figure 18–19 shows the displacements from a concurrent anchored calibration of all writing items using the operational data set. Items are color-coded by grade/course.

Figure 18–19. Writing Anchored Calibration Displacements — All Items



Note: Most kindergarten items were not estimated by WINSTEPS software due to insufficient counts.

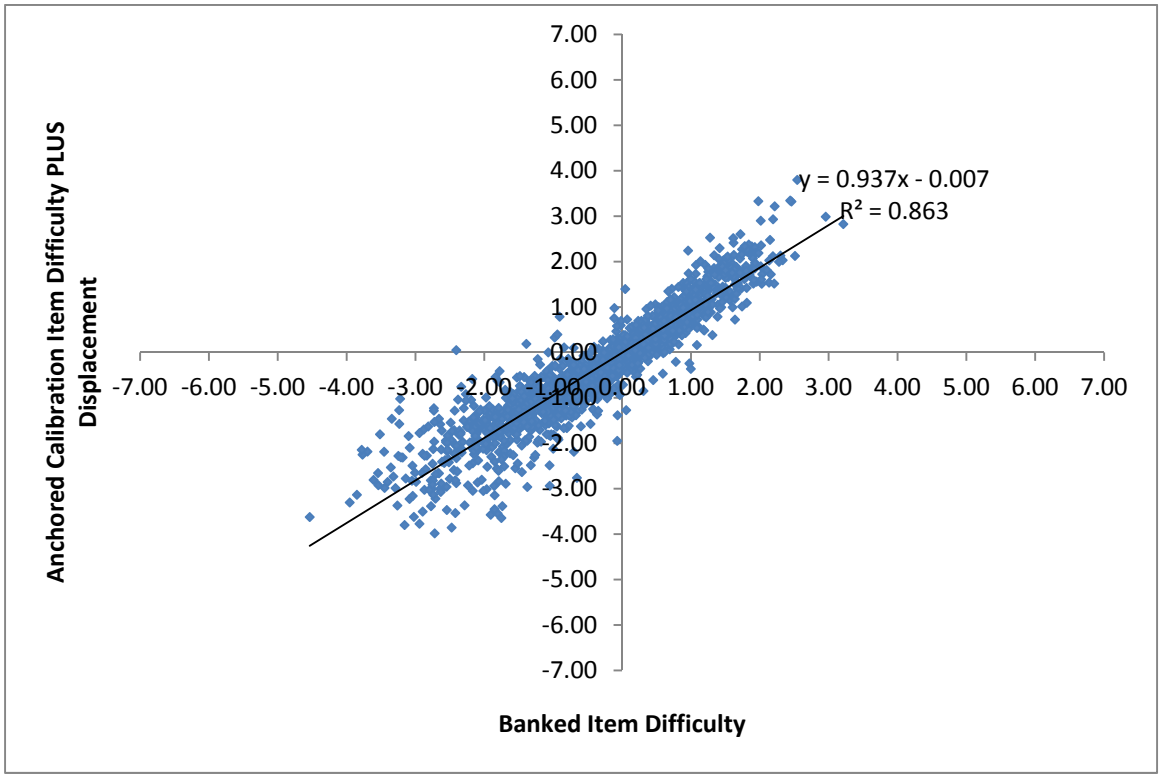
Table 18–13 summarizes the data in Figure 18–19. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-nine percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–13).

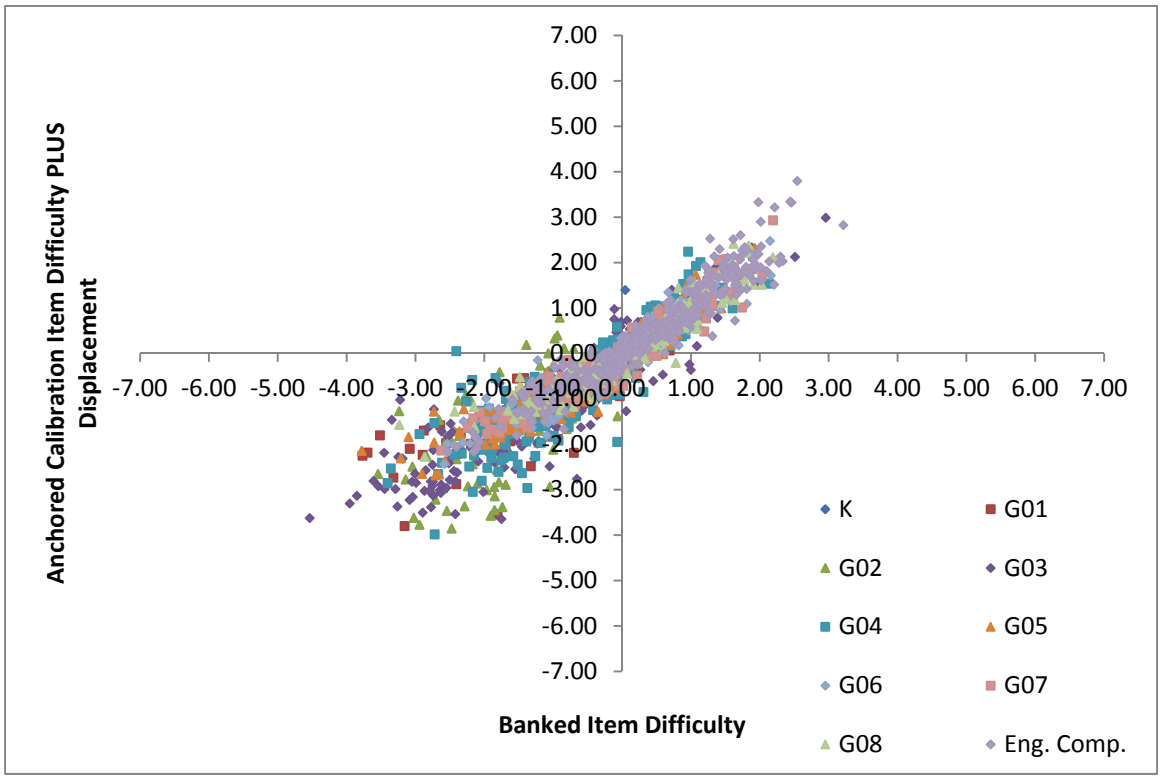
Table 18–13. Number of Writing Items by Grade/Course and Displacement Interval

	K	G01	G02	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	0	3	13	15	7	0	0	0	0	0	38
-1.0 < Disp. ≤ -0.9	0	2	1	1	1	1	0	0	1	2	9
-0.9 < Disp. ≤ -0.8	0	0	3	1	6	0	0	0	0	1	11
-0.8 < Disp. ≤ -0.7	0	0	4	5	6	0	2	4	0	0	21
-0.7 < Disp. ≤ -0.6	0	2	1	13	5	3	3	1	1	4	33
-0.6 < Disp. ≤ -0.5	0	0	4	11	9	5	2	1	4	1	37
-0.5 < Disp. ≤ -0.4	0	1	0	13	20	6	10	7	5	7	69
-0.4 < Disp. ≤ -0.3	0	1	4	20	21	12	12	7	10	22	109
-0.3 < Disp. ≤ -0.2	0	0	7	17	13	18	15	16	15	28	129
-0.2 < Disp. ≤ -0.1	0	1	2	24	22	25	22	19	13	47	175
-0.1 < Disp. ≤ 0.0	0	0	3	22	18	46	19	24	12	45	189
0.0 < Disp. ≤ 0.1	0	0	3	21	22	39	19	21	15	55	195
0.1 < Disp. ≤ 0.2	0	1	4	9	16	21	28	13	13	37	142
0.2 < Disp. ≤ 0.3	0	1	0	17	19	11	16	13	14	33	124
0.3 < Disp. ≤ 0.4	0	0	5	18	10	8	11	4	7	21	84
0.4 < Disp. ≤ 0.5	0	0	4	16	11	7	10	6	4	22	80
0.5 < Disp. ≤ 0.6	0	4	6	7	10	3	5	4	4	11	54
0.6 < Disp. ≤ 0.7	0	1	5	9	8	6	2	4	2	6	43
0.7 < Disp. ≤ 0.8	0	0	3	6	5	4	1	3	3	3	28
0.8 < Disp. ≤ 0.9	1	1	1	2	4	1	1	0	0	5	16
0.9 < Disp. ≤ 1.0	0	2	2	3	0	0	1	0	2	2	12
1.0 < Disp.	1	5	11	8	8	4	1	0	2	3	43
TOTAL	2	25	86	258	241	220	180	147	127	355	1641

Figure 18–20 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored concurrent calibration of operational data for the writing item bank. A line of best fit is included in the upper plot. If item difficulties from the operational calibration are close to the banked values, the line will approach an intercept of zero and a slope of one. The lower plot displays the same data as the upper, but color codes items by grade/course in an attempt to lend insight into the possible causes for the deviations.

Figure 18–20. Writing Banked Item Parameters vs. Anchored Calibration — All Items





Based on Figure 18–20, one can see that there are a number of items with operational estimates that differ from their banked values. Many of these are in kindergarten through grade 2. Recall that the operational CDT is available to students in grade 3 and above. While items were developed to sample content in kindergarten through grade 2 to provide better diagnostic information for lower performing students, the data from the operational administration did not include students below grade 3. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above was run.

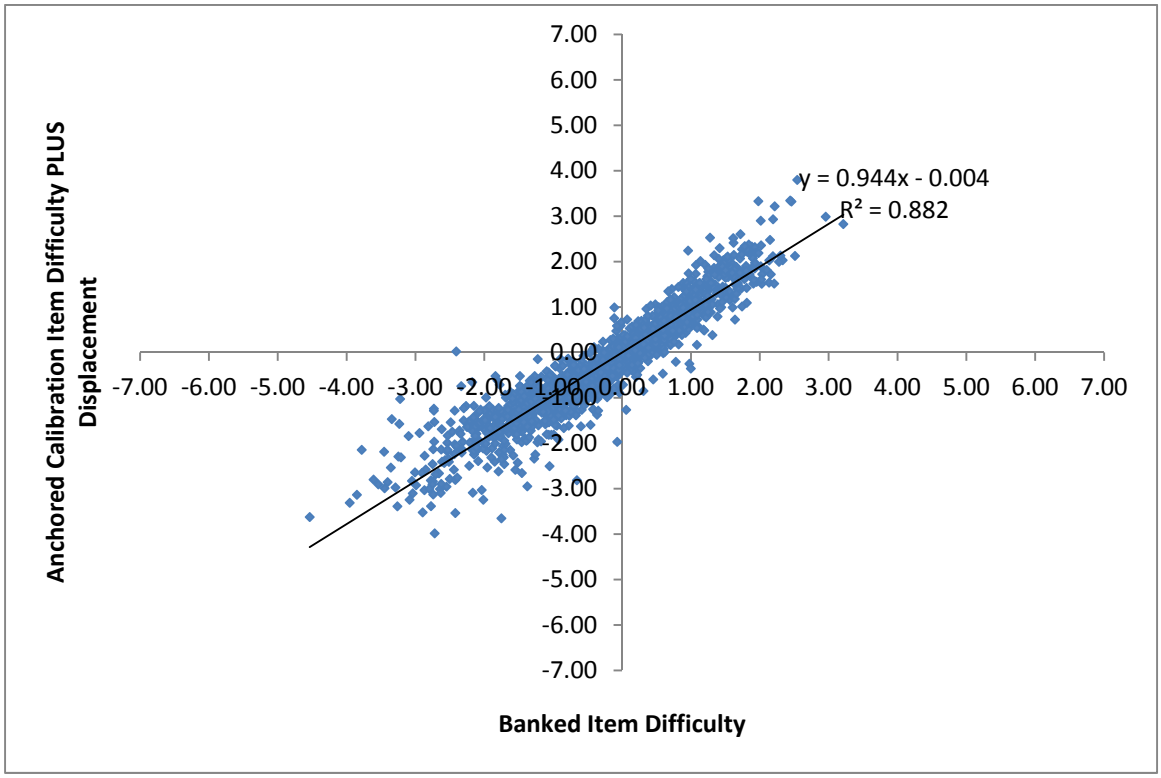
Figure 18–21 and Table 18–14 summarize the displacements from a concurrent anchored calibration of all items in grade 3 and above. Eighty-three percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–14). Figure 18–22 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

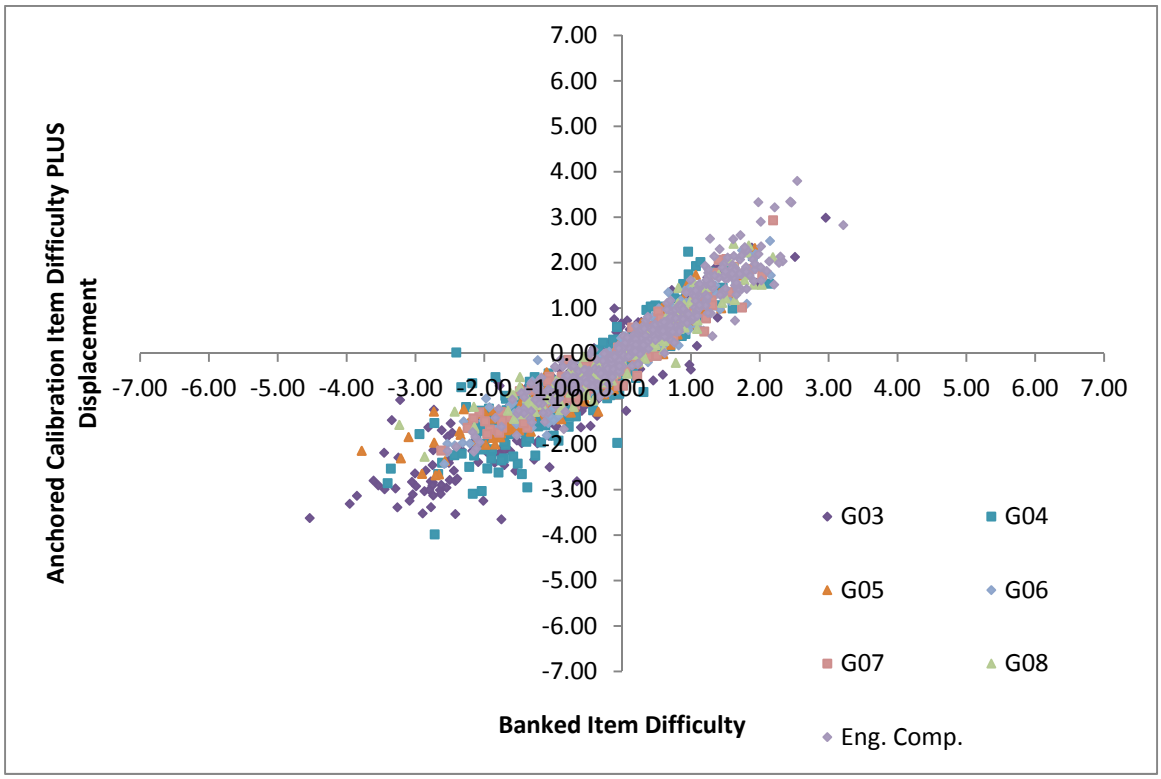
Figure 18–21. Writing Anchored Calibration Displacements — All Items in Grade 3 and Above

Table 18–14. Number of Writing Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	15	6	0	0	0	0	0	21
-1.0 < Disp. ≤ -0.9	1	4	1	0	0	1	2	9
-0.9 < Disp. ≤ -0.8	1	5	0	0	0	0	1	7
-0.8 < Disp. ≤ -0.7	5	5	0	2	4	0	0	16
-0.7 < Disp. ≤ -0.6	11	5	3	3	1	1	4	28
-0.6 < Disp. ≤ -0.5	11	9	5	2	1	4	1	33
-0.5 < Disp. ≤ -0.4	16	20	6	10	7	5	7	71
-0.4 < Disp. ≤ -0.3	21	22	12	12	7	10	22	106
-0.3 < Disp. ≤ -0.2	15	13	18	15	16	15	28	120
-0.2 < Disp. ≤ -0.1	23	20	25	22	19	13	47	169
-0.1 < Disp. ≤ 0.0	24	20	48	19	24	12	45	192
0.0 < Disp. ≤ 0.1	20	20	37	19	21	15	55	187
0.1 < Disp. ≤ 0.2	10	18	21	28	13	13	37	140
0.2 < Disp. ≤ 0.3	17	18	11	16	13	14	33	122
0.3 < Disp. ≤ 0.4	19	10	9	11	4	7	21	81
0.4 < Disp. ≤ 0.5	15	11	6	10	6	4	22	74
0.5 < Disp. ≤ 0.6	5	10	3	5	4	4	11	42
0.6 < Disp. ≤ 0.7	13	8	6	2	4	2	6	41
0.7 < Disp. ≤ 0.8	2	6	4	1	3	3	3	22
0.8 < Disp. ≤ 0.9	2	3	1	1	0	0	5	12
0.9 < Disp. ≤ 1.0	4	0	0	1	0	2	2	9
1.0 < Disp.	8	8	4	1	0	2	3	26
TOTAL	258	241	220	180	147	127	355	1528

Figure 18–22. Writing Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, a concurrent anchored calibration of all items in grade 3 and above with larger *n*-counts was run.

Figure 18–23 and Table 18–15 summarize the displacements from a concurrent anchored calibration that excludes items with 100 or fewer administrations. Eighty-eight percent of the items in the calibration have displacement less than 0.5 in magnitude (gray shaded in Table 18–15). Figure 18–14 shows banked item difficulties plotted against the item difficulties plus displacement. Again, a line of best fit is included in the upper plot.

Figure 18–23. Writing Anchored Calibration Displacements — All Items in Grade 3 and Above with *N*>100

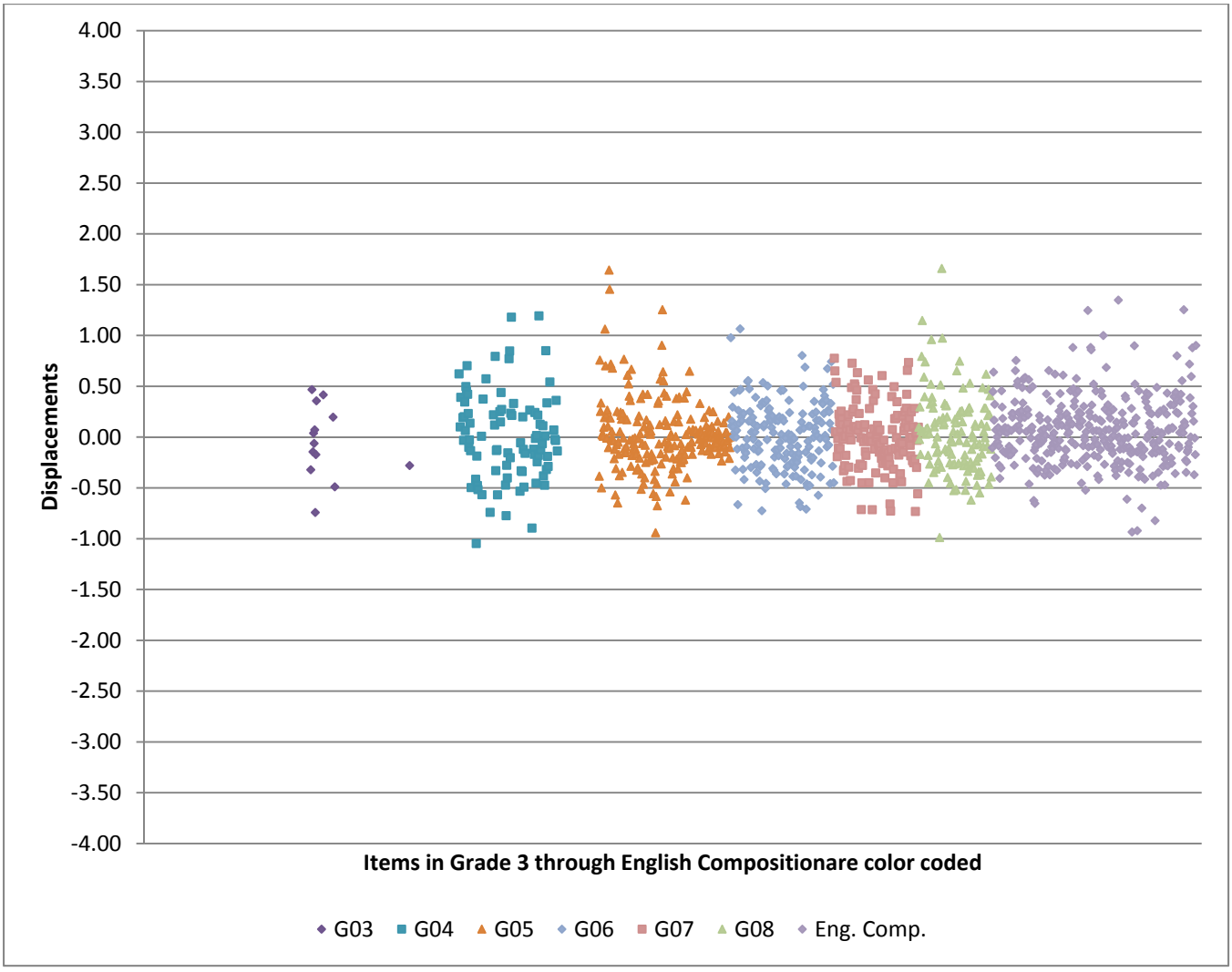
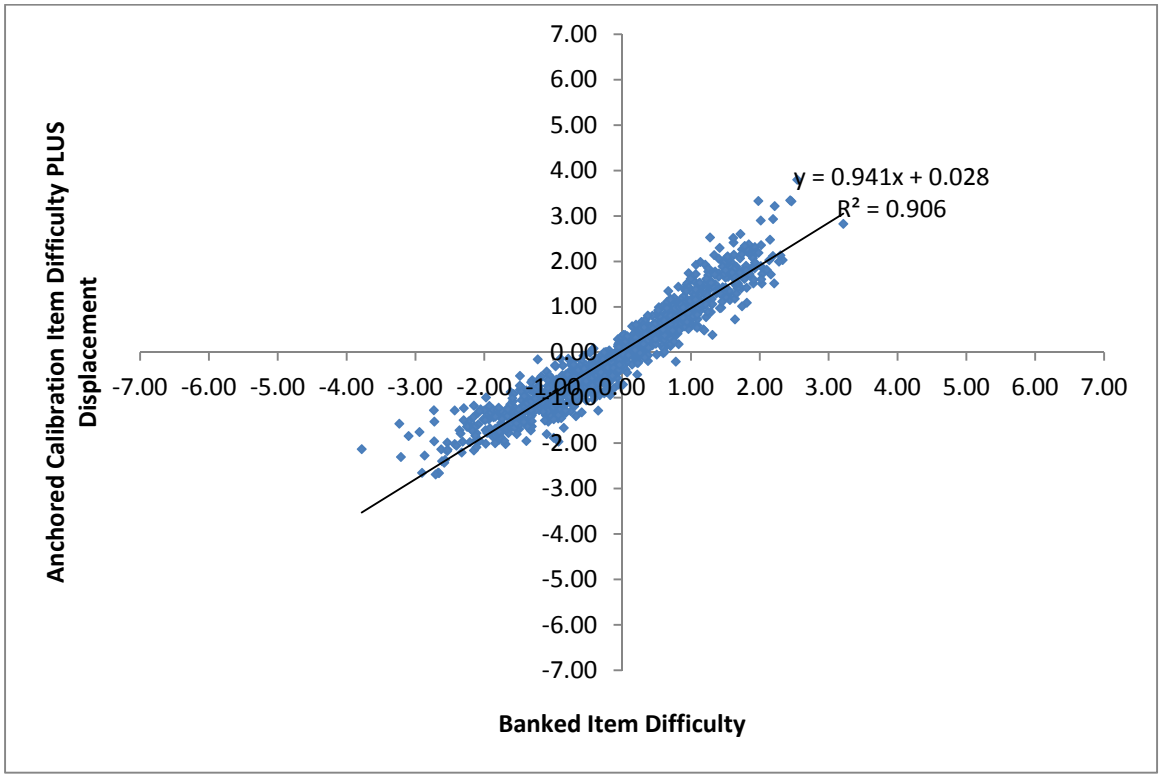
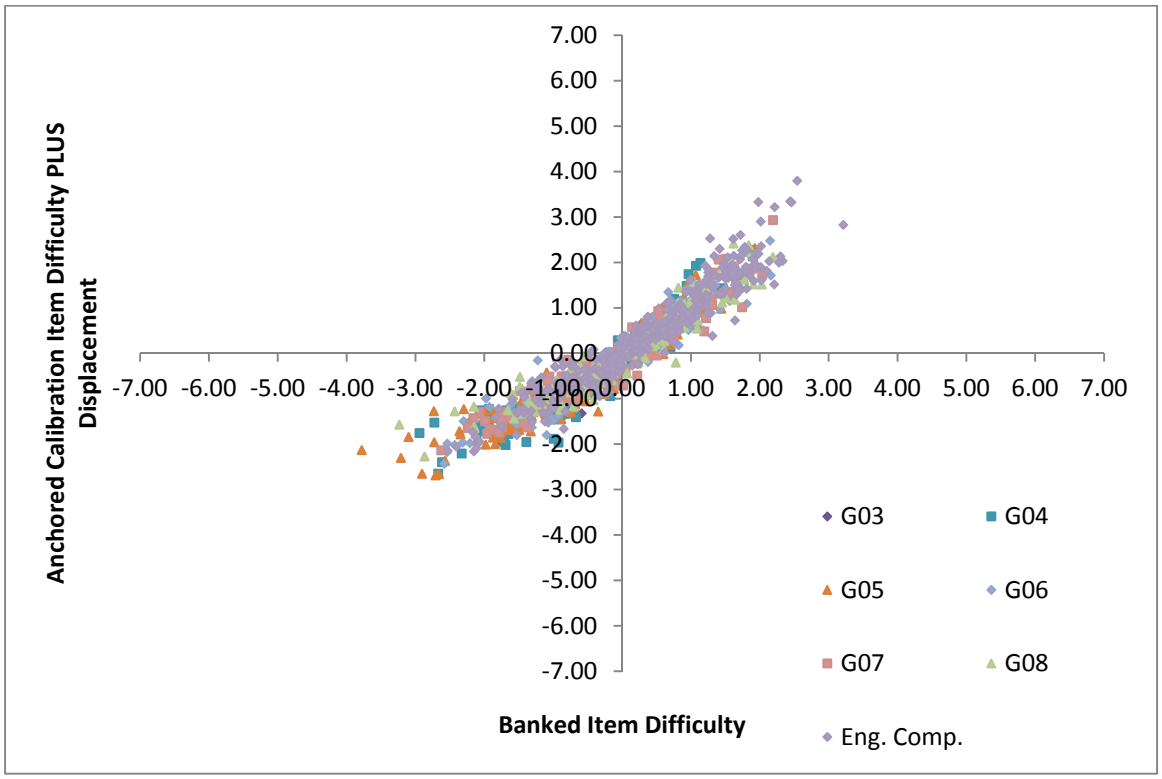


Table 18–15. Number of Writing Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	0	1	0	0	0	0	0	1
-1.0 < Disp. ≤ -0.9	0	0	1	0	0	1	2	4
-0.9 < Disp. ≤ -0.8	0	1	0	0	0	0	1	2
-0.8 < Disp. ≤ -0.7	1	2	0	2	4	0	0	9
-0.7 < Disp. ≤ -0.6	0	0	3	3	1	1	4	12
-0.6 < Disp. ≤ -0.5	0	4	5	2	1	4	1	17
-0.5 < Disp. ≤ -0.4	1	8	7	10	7	5	7	45
-0.4 < Disp. ≤ -0.3	1	5	11	12	7	10	22	68
-0.3 < Disp. ≤ -0.2	1	4	18	15	16	15	28	97
-0.2 < Disp. ≤ -0.1	2	14	30	22	19	13	47	147
-0.1 < Disp. ≤ 0.0	1	7	43	20	24	12	45	152
0.0 < Disp. ≤ 0.1	2	5	37	19	21	16	55	155
0.1 < Disp. ≤ 0.2	1	8	21	28	13	13	37	121
0.2 < Disp. ≤ 0.3	0	10	11	15	13	13	33	95
0.3 < Disp. ≤ 0.4	1	6	9	11	4	7	21	59
0.4 < Disp. ≤ 0.5	2	4	6	10	6	4	22	54
0.5 < Disp. ≤ 0.6	0	2	3	5	4	4	11	29
0.6 < Disp. ≤ 0.7	0	1	6	2	4	2	6	21
0.7 < Disp. ≤ 0.8	0	3	4	1	3	3	3	17
0.8 < Disp. ≤ 0.9	0	2	0	1	0	0	5	8
0.9 < Disp. ≤ 1.0	0	0	1	1	0	2	2	6
1.0 < Disp.	0	2	4	1	0	2	3	12
TOTAL	13	89	220	180	147	127	355	1131

Figure 18–24. Writing Banked Item Parameters vs. Anchored Calibration — All Items in Grade 3 and Above with *N*>100





It is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

For each of the three anchored calibrations described in this section, banked item parameters were compared to the banked item parameters plus the displacements by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–16 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in each of the three calibrations.

Table 18–16. Summary of Robust Z across Three Anchored Calibrations in Writing

Grade/ Course	Cal. 1 — All Items			Cal. 2 — Items in G3+			Cal. 3 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	2	2	100%	0	0	N/A	0	0	N/A
Grade 1	25	16	64%	0	0	N/A	0	0	N/A
Grade 2	86	46	53%	0	0	N/A	0	0	N/A
Grade 3	258	66	26%	258	69	27%	13	2	15%
Grade 4	241	50	21%	241	57	24%	89	24	27%
Grade 5	220	19	9%	220	22	10%	220	28	13%
Grade 6	180	11	6%	180	12	7%	180	21	12%
Grade 7	147	12	8%	147	13	9%	147	19	13%
Grade 8	127	11	9%	127	12	9%	127	21	17%
English Composition	355	27	8%	355	32	9%	355	43	12%
Total	1641	260	16%	1528	217	14%	1131	158	14%
	Correlation = 0.929			Correlation = 0.939			Correlation = 0.952		
	Additive Constant = 0.019			Additive Constant = 0.014			Additive Constant = 0.034		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.594 have an absolute value of robust Z greater than 1.645. No items with absolute displacement less than 0.594 have absolute value of robust Z greater than 1.645.

ANCHORED GRADE LEVEL CALIBRATIONS

While the CDT content area item banks are vertically scaled with items from Kindergarten through high school courses, the assessments themselves are first made available in grade 3. Also, while the items are selected adaptively, most students take a large number of items at grade level. Given these conditions, item parameters were also evaluated by running anchored grade level item calibrations—grade 3 items calibrated with grade 3 students, and so on. This is similar to how field-test items were calibrated. Table 18–17 shows the number of students in each grade level calibration.

Table 18–17. Number of Students in Grade Level Calibrations

Grade/Course		Number of Students
Mathematics	3	2,468
	4	3,001
	5	2,648
	6	40,464
	7	47,665
	8	30,785
	Algebra I	144,912
	Geometry	13,293
	Algebra II	15,197
Reading	3	2,597
	4	2,524
	5	2,043
	6	37,520
	7	46,393
	8	44,395
	Literature	149,228
Science	3	192
	4	243
	5	55
	6	8,695
	7	17,690
	8	24,411
	High School	2,740
	Biology	117,648
	Chemistry	11,780

Table 18–17 (continued). Number of Students in Grade Level Calibrations

Grade/Course		Number of Students
Writing	3	112
	4	104
	5	124
	6	3,330
	7	4,854
	8	4,891
	English Composition	12,900

The lower numbers of students for grade level calibrations in grades 3 through 5 reflect the fact that each CDT for the lower grades was not available until April 2014. Caution should be used in interpreting calibration results for grades 3 through 5 in the science and writing content areas due to very low *n*-counts.

MATHEMATICS

Figure 18–25 shows the displacements from the anchored grade level calibrations of operational data for the mathematics item bank. Items are color-coded by grade/course.

Figure 18–25. Mathematics Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

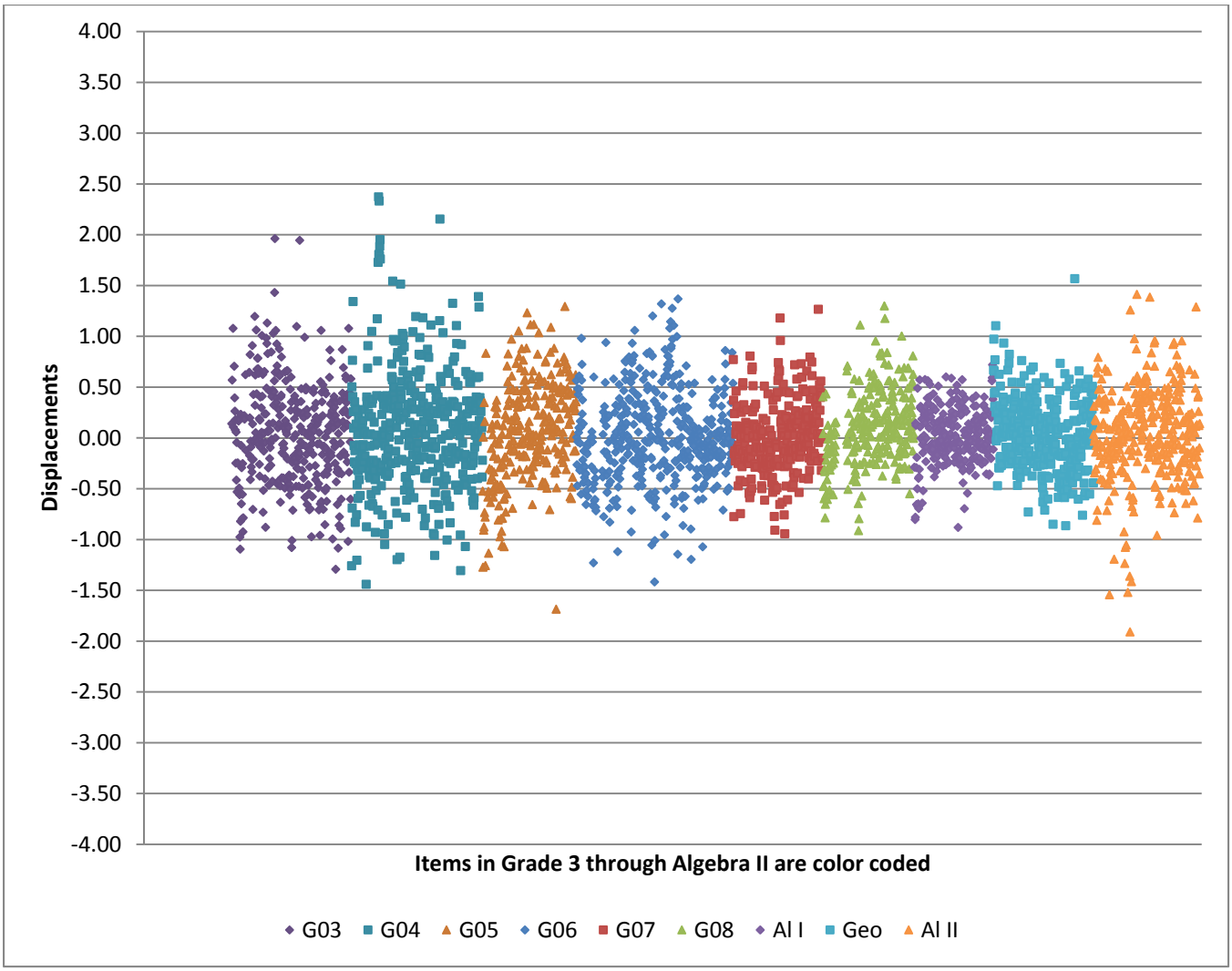


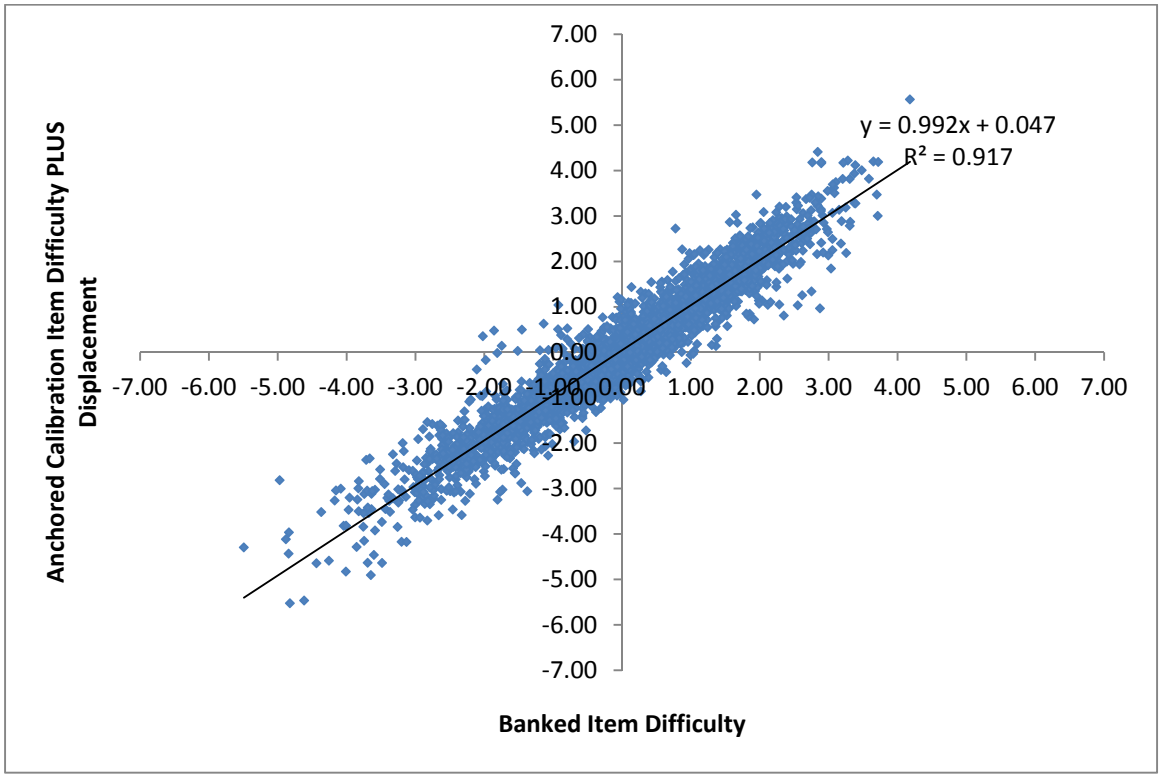
Table 18–18 summarizes the data in Figure 18–25. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-seven percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–18).

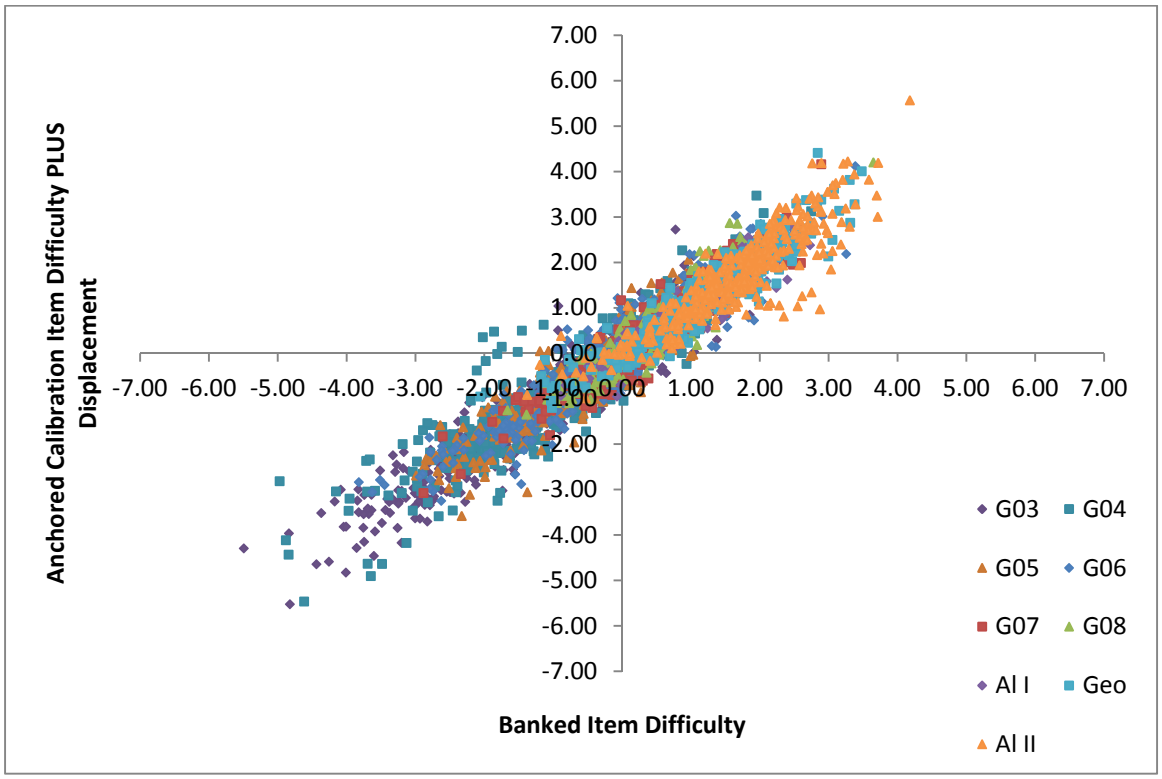
Table 18–18. Number of Mathematics Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	6	10	6	8	0	0	0	0	9	39
-1.0 < Disp. ≤ -0.9	5	5	3	2	2	1	0	0	2	20
-0.9 < Disp. ≤ -0.8	5	6	2	3	0	0	2	2	1	21
-0.8 < Disp. ≤ -0.7	9	7	6	5	4	2	1	3	5	42
-0.7 < Disp. ≤ -0.6	10	13	5	16	4	3	6	3	7	67
-0.6 < Disp. ≤ -0.5	10	13	10	17	7	8	3	10	7	85
-0.5 < Disp. ≤ -0.4	22	14	16	20	15	6	1	13	15	122
-0.4 < Disp. ≤ -0.3	20	28	15	31	11	11	12	24	21	173
-0.3 < Disp. ≤ -0.2	23	31	13	36	34	20	23	30	18	228
-0.2 < Disp. ≤ -0.1	23	20	27	46	34	21	33	32	35	271
-0.1 < Disp. ≤ 0.0	32	27	21	51	29	27	38	40	38	303
0.0 < Disp. ≤ 0.1	28	37	29	50	34	30	36	40	28	312
0.1 < Disp. ≤ 0.2	33	31	20	34	32	36	32	26	38	282
0.2 < Disp. ≤ 0.3	29	31	16	28	19	15	26	29	28	221
0.3 < Disp. ≤ 0.4	20	38	24	24	12	16	19	25	26	204
0.4 < Disp. ≤ 0.5	27	18	18	17	14	17	9	16	24	160
0.5 < Disp. ≤ 0.6	9	14	15	22	11	13	11	12	12	119
0.6 < Disp. ≤ 0.7	16	14	11	12	7	10	1	9	12	92
0.7 < Disp. ≤ 0.8	6	8	9	12	6	3	1	4	4	53
0.8 < Disp. ≤ 0.9	6	6	8	11	1	5	0	1	3	41
0.9 < Disp. ≤ 1.0	5	8	1	6	1	1	0	2	6	30
1.0 < Disp.	13	26	7	8	2	4	0	2	4	66
TOTAL	357	405	282	459	279	249	254	323	343	2951

Figure 18–26 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–26. Mathematics Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–27 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–27. Mathematics Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with *N*>100

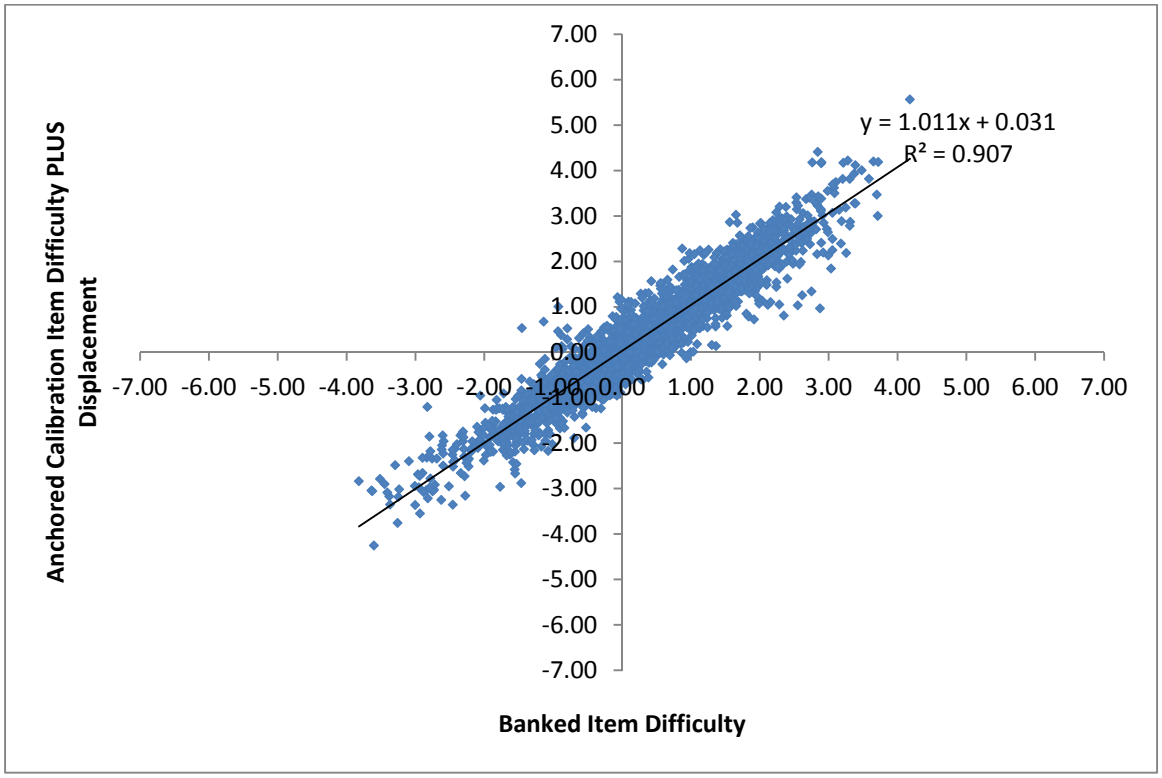
Table 18–19 summarizes the data in Figure 18–27. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-nine percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–19).

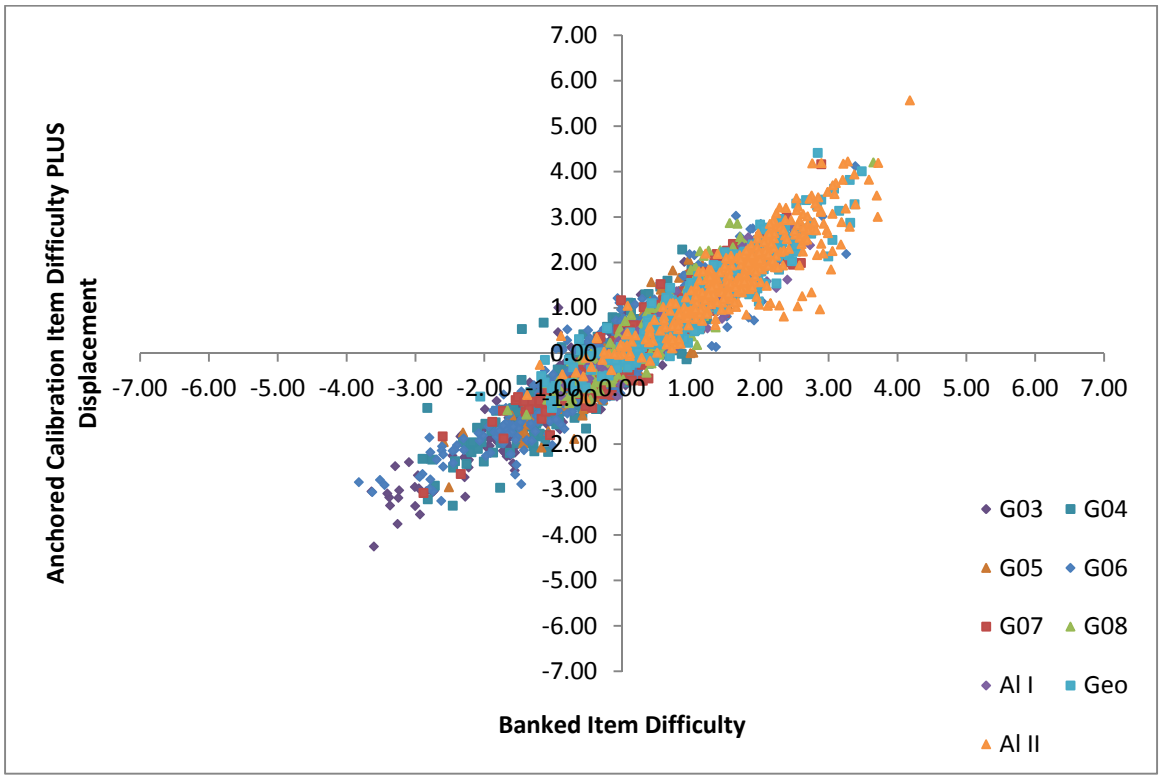
Table 18–19. Number of Mathematics Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	ALI	GEO	ALII	Total
Disp. ≤ -1.0	1	4	2	8	0	0	0	0	9	24
-1.0 < Disp. ≤ -0.9	1	0	2	2	2	1	0	0	2	10
-0.9 < Disp. ≤ -0.8	3	5	2	3	0	0	2	2	1	18
-0.8 < Disp. ≤ -0.7	3	7	1	5	4	2	1	3	5	31
-0.7 < Disp. ≤ -0.6	5	7	6	16	4	3	6	3	7	57
-0.6 < Disp. ≤ -0.5	7	9	4	17	7	8	3	10	7	72
-0.5 < Disp. ≤ -0.4	8	7	7	20	15	6	1	13	15	92
-0.4 < Disp. ≤ -0.3	12	15	7	31	11	11	12	24	21	144
-0.3 < Disp. ≤ -0.2	11	15	8	36	34	20	23	30	18	195
-0.2 < Disp. ≤ -0.1	19	19	14	46	34	21	33	32	35	253
-0.1 < Disp. ≤ 0.0	11	19	13	51	29	27	38	40	38	266
0.0 < Disp. ≤ 0.1	27	23	8	50	34	30	36	40	28	276
0.1 < Disp. ≤ 0.2	13	18	8	34	32	36	32	26	38	237
0.2 < Disp. ≤ 0.3	20	18	9	28	19	15	26	29	28	192
0.3 < Disp. ≤ 0.4	14	17	10	24	12	16	19	25	26	163
0.4 < Disp. ≤ 0.5	13	15	4	17	14	17	9	16	24	129
0.5 < Disp. ≤ 0.6	8	7	5	22	11	13	11	12	12	101
0.6 < Disp. ≤ 0.7	7	5	6	12	7	10	1	9	12	69
0.7 < Disp. ≤ 0.8	3	4	4	12	6	3	1	4	4	41
0.8 < Disp. ≤ 0.9	3	3	3	11	1	5	0	1	3	30
0.9 < Disp. ≤ 1.0	0	7	1	6	1	1	0	2	6	24
1.0 < Disp.	4	6	3	8	2	4	0	2	4	33
TOTAL	193	230	127	459	279	249	254	323	343	2457

Figure 18–28 mirrors Figure 18–26, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–28. Mathematics Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with *N*>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–20 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18–20. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Mathematics

Grade/ Course	Cal. 1 — Items in G3+			Cal. 2 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	0	0	#DIV/0!	0	0	#DIV/0!
Grade 1	0	0	#DIV/0!	0	0	#DIV/0!
Grade 2	0	0	#DIV/0!	0	0	#DIV/0!
Grade 3	357	64	18%	193	29	15%
Grade 4	405	89	22%	230	48	21%
Grade 5	282	47	17%	127	28	22%
Grade 6	459	67	15%	459	80	17%
Grade 7	279	19	7%	279	26	9%
Grade 8	249	21	8%	249	27	11%
Algebra I	254	10	4%	254	10	4%
Geometry	323	16	5%	323	26	8%
Algebra II	343	42	12%	343	51	15%
Total	2951	375	13%	2457	325	13%
	Correlation = 0.957			Correlation = 0.952		
	Additive Constant = 0.046			Additive Constant = 0.036		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.674 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.613 to 0.674, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.613 have absolute value of robust Z greater than 1.645.

READING/LITERATURE

Figure 18–29 shows the displacements from the anchored grade level calibrations of operational data for the reading item bank. Items are color-coded by grade/course.

Figure 18–29. Reading Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

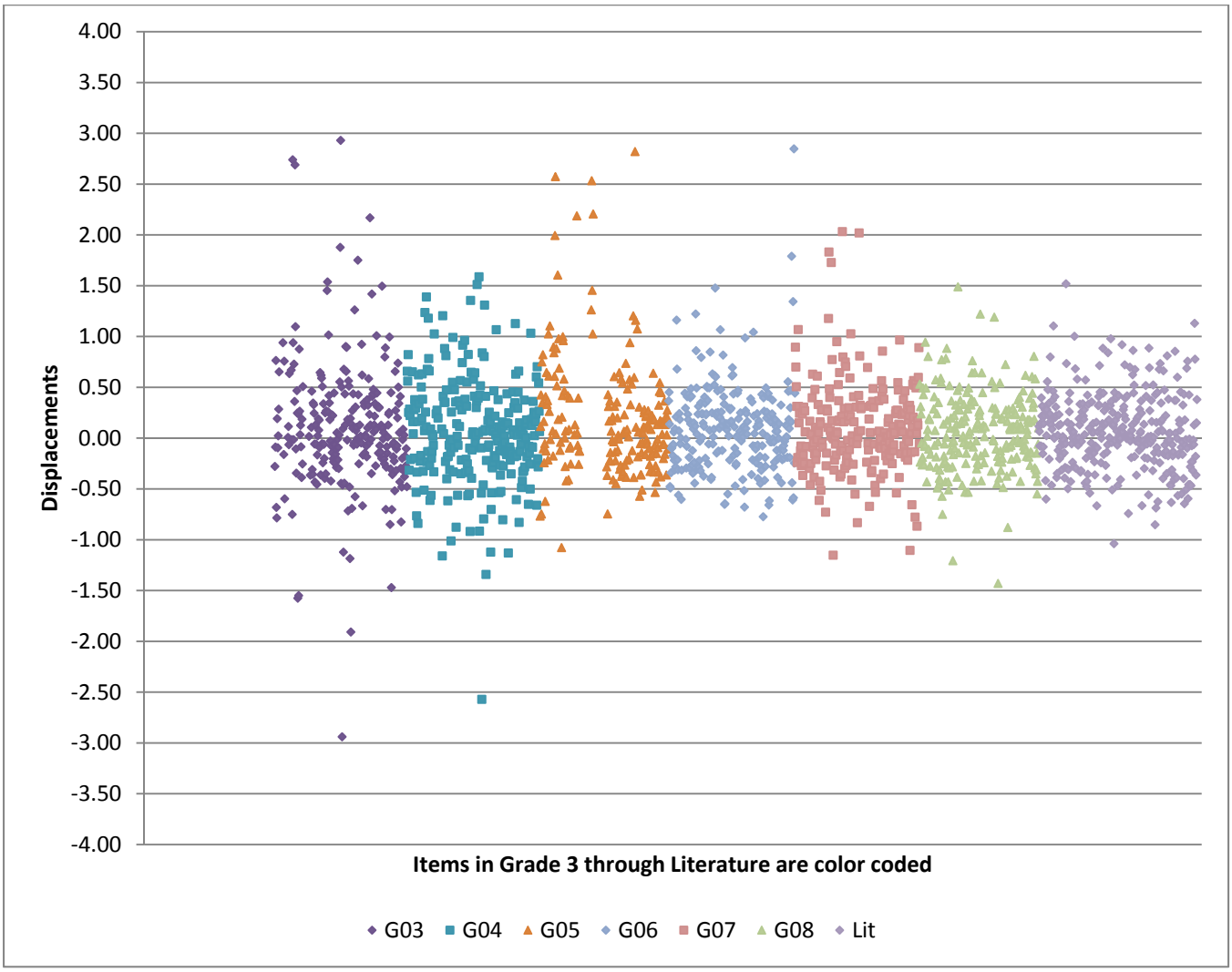


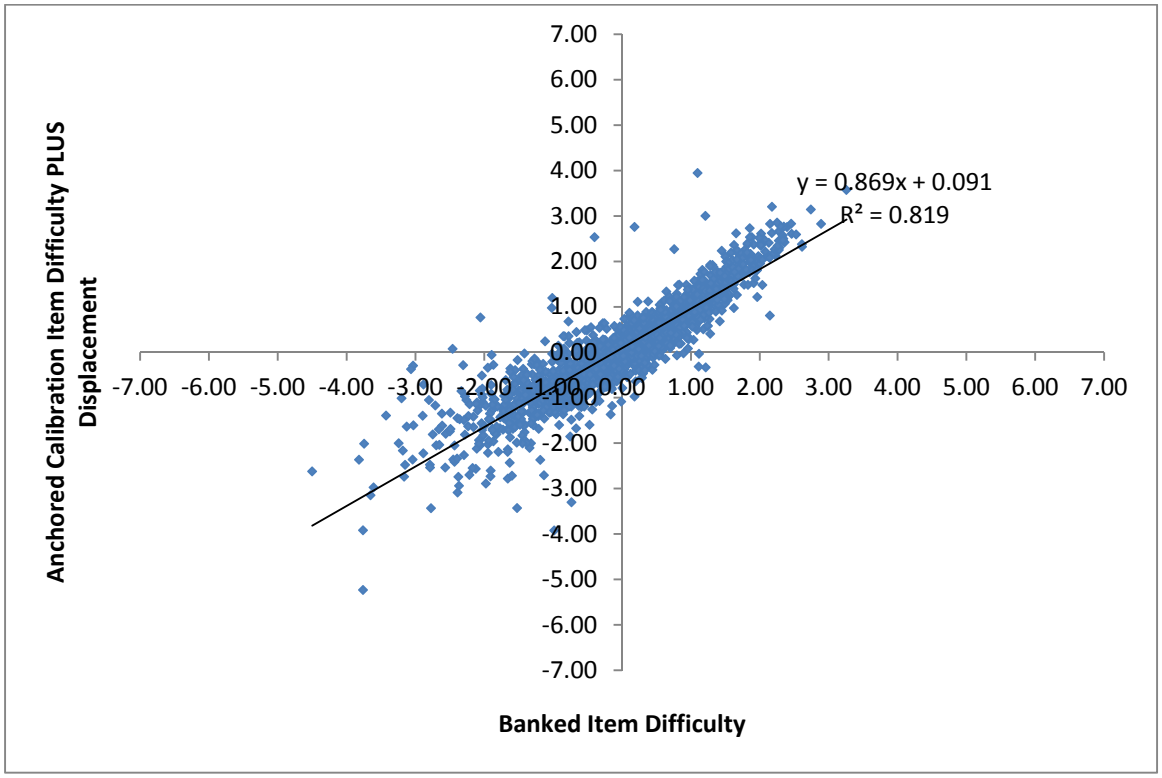
Table 18–21 summarizes the data in Figure 18–29. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–21).

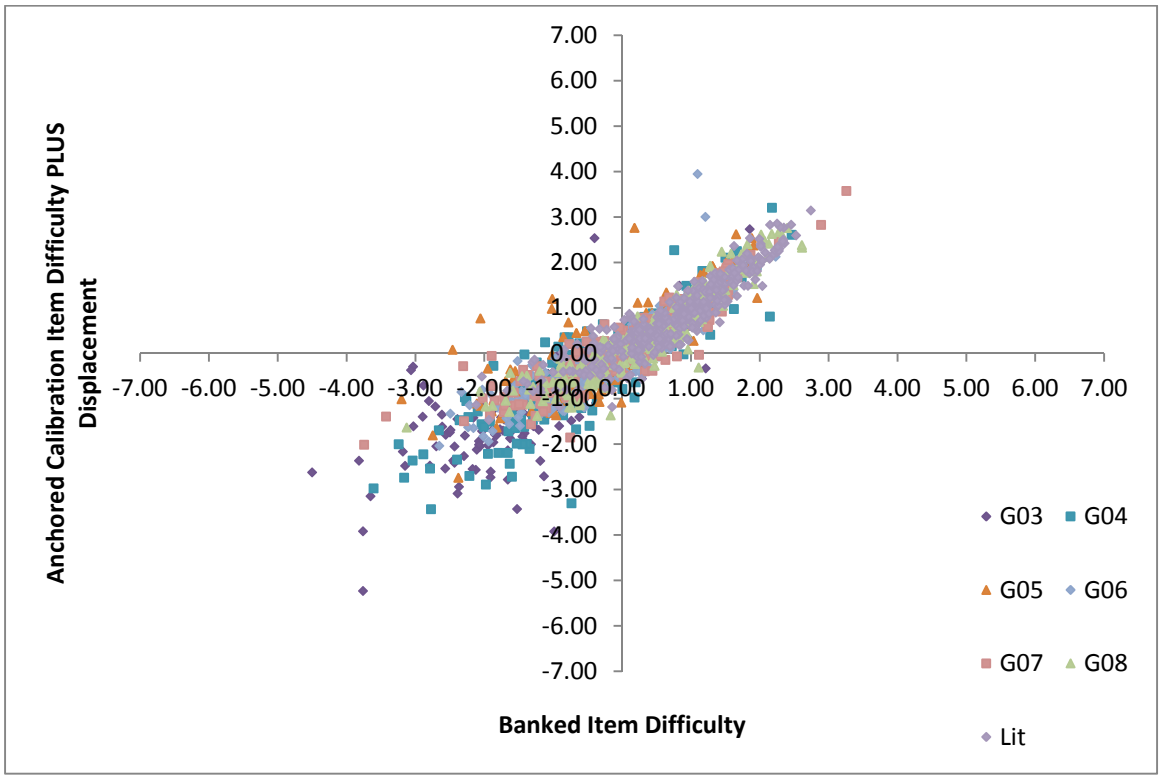
Table 18–21. Number of Reading Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	7	6	1	0	2	2	1	19
-1.0 < Disp. ≤ -0.9	0	2	0	0	0	0	0	2
-0.9 < Disp. ≤ -0.8	2	4	0	0	2	1	1	10
-0.8 < Disp. ≤ -0.7	5	3	3	1	2	1	1	16
-0.7 < Disp. ≤ -0.6	3	5	1	7	3	0	6	25
-0.6 < Disp. ≤ -0.5	3	11	3	4	4	5	8	38
-0.5 < Disp. ≤ -0.4	10	4	5	10	4	13	15	61
-0.4 < Disp. ≤ -0.3	15	14	15	13	10	11	20	98
-0.3 < Disp. ≤ -0.2	19	19	16	23	19	21	16	133
-0.2 < Disp. ≤ -0.1	18	23	19	22	27	25	30	164
-0.1 < Disp. ≤ 0.0	33	20	19	24	24	27	56	203
0.0 < Disp. ≤ 0.1	23	29	19	28	28	22	44	193
0.1 < Disp. ≤ 0.2	21	22	21	34	23	28	36	185
0.2 < Disp. ≤ 0.3	17	18	12	28	21	23	25	144
0.3 < Disp. ≤ 0.4	15	20	13	12	18	17	27	122
0.4 < Disp. ≤ 0.5	13	10	9	23	10	12	20	97
0.5 < Disp. ≤ 0.6	9	8	8	3	10	9	7	54
0.6 < Disp. ≤ 0.7	9	11	7	7	5	5	8	52
0.7 < Disp. ≤ 0.8	5	3	2	1	4	4	7	26
0.8 < Disp. ≤ 0.9	3	6	4	3	4	3	6	29
0.9 < Disp. ≤ 1.0	5	3	4	1	2	1	2	18
1.0 < Disp.	14	12	15	8	7	3	4	63
TOTAL	249	253	196	252	229	233	340	1752

Figure 18–30 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–30. Reading Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–31 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–31. Reading Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with *N*>100

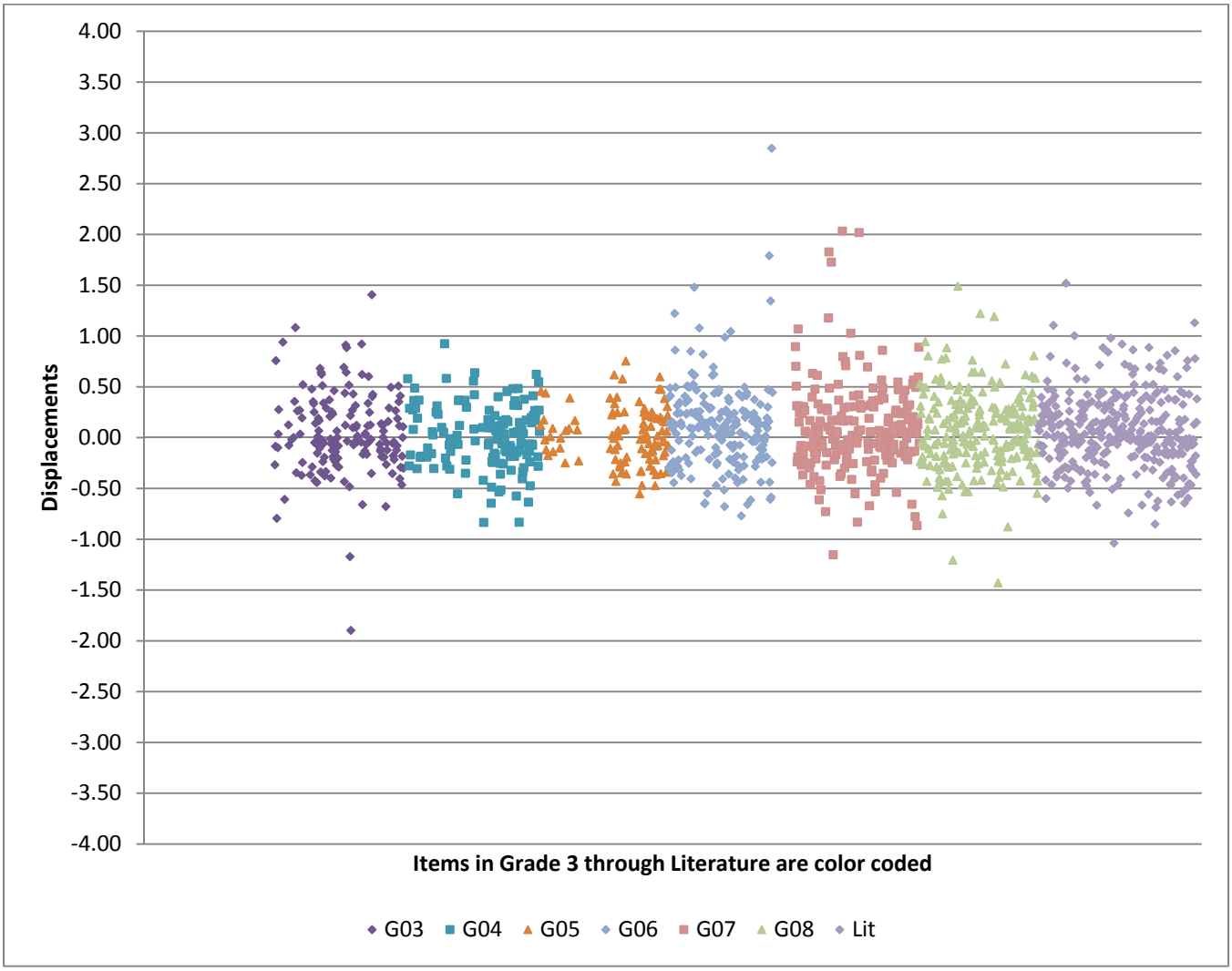


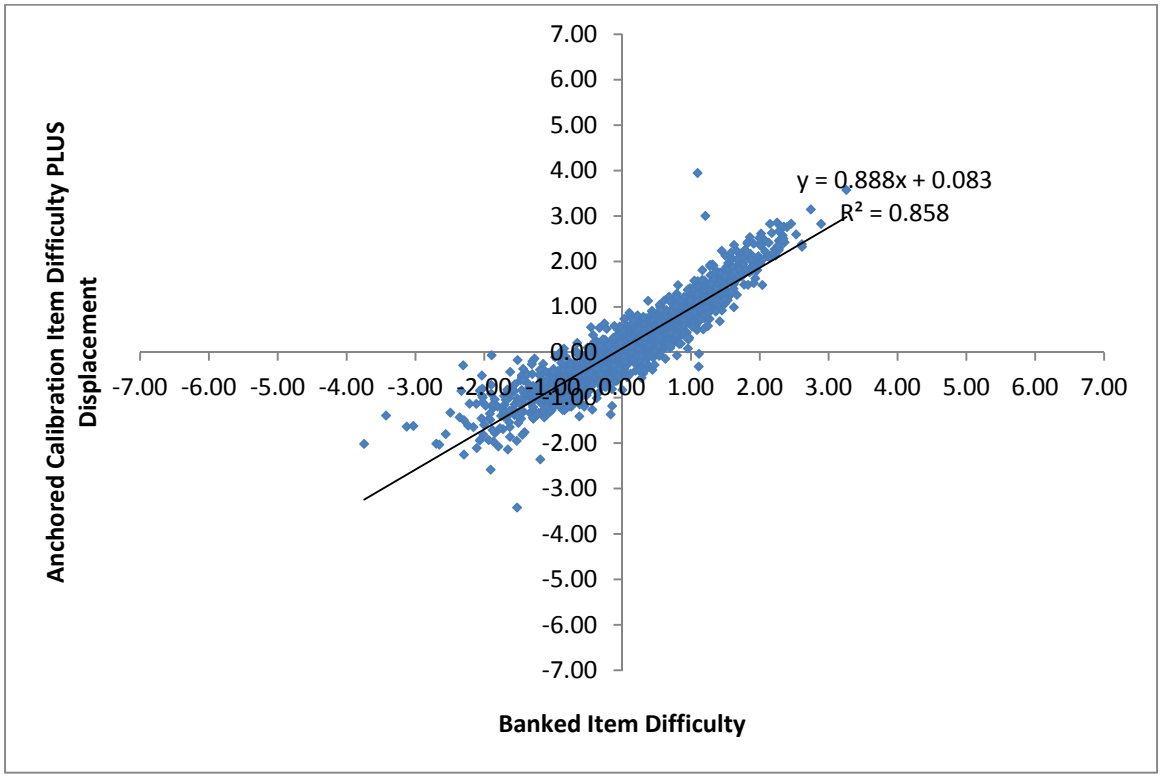
Table 18–22 summarizes the data in Figure 18–31. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–22).

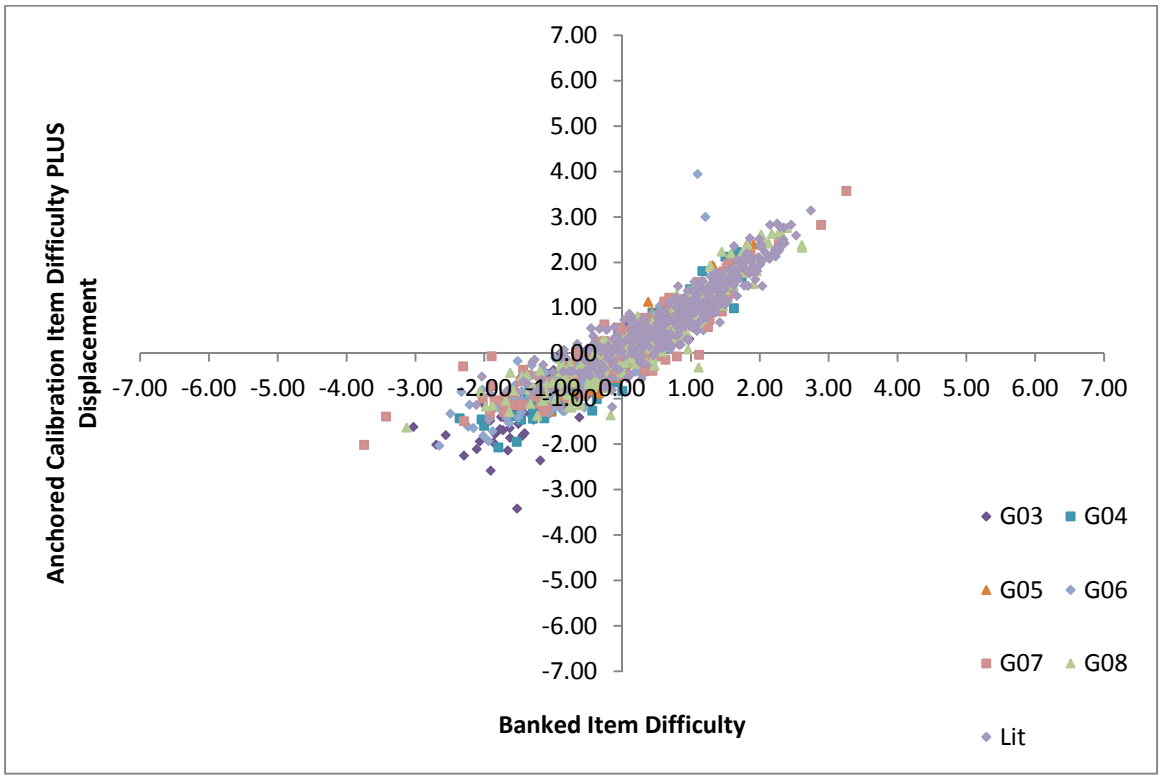
Table 18–22. Number of Reading Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	LIT	Total
Disp. ≤ -1.0	2	0	0	0	1	2	1	6
-1.0 < Disp. ≤ -0.9	0	0	0	0	0	0	0	0
-0.9 < Disp. ≤ -0.8	0	2	0	0	2	1	1	6
-0.8 < Disp. ≤ -0.7	1	0	0	1	2	1	1	6
-0.7 < Disp. ≤ -0.6	3	2	0	7	3	0	6	21
-0.6 < Disp. ≤ -0.5	0	4	1	4	4	5	8	26
-0.5 < Disp. ≤ -0.4	6	4	3	10	4	13	15	55
-0.4 < Disp. ≤ -0.3	10	7	9	11	8	11	20	76
-0.3 < Disp. ≤ -0.2	12	11	10	22	17	21	16	109
-0.2 < Disp. ≤ -0.1	17	22	13	20	26	25	30	153
-0.1 < Disp. ≤ 0.0	28	15	14	22	24	27	56	186
0.0 < Disp. ≤ 0.1	13	18	17	27	26	22	44	167
0.1 < Disp. ≤ 0.2	15	15	12	34	22	28	36	162
0.2 < Disp. ≤ 0.3	13	12	12	26	16	23	25	127
0.3 < Disp. ≤ 0.4	8	10	7	13	18	17	27	100
0.4 < Disp. ≤ 0.5	8	7	4	21	10	12	20	82
0.5 < Disp. ≤ 0.6	4	4	2	2	9	9	7	37
0.6 < Disp. ≤ 0.7	7	2	1	7	3	5	8	33
0.7 < Disp. ≤ 0.8	1	0	1	0	4	4	7	17
0.8 < Disp. ≤ 0.9	1	0	0	3	4	3	6	17
0.9 < Disp. ≤ 1.0	3	1	0	1	0	1	2	8
1.0 < Disp.	2	0	0	8	7	3	4	24
TOTAL	154	136	106	239	210	233	340	1418

Figure 18–32 mirrors Figure 18–30, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–32. Reading Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with *N*>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–23 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18–23. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Reading

Grade/ Course	Cal. 1 — Items in G3+			Cal. 2 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	0	0	N/A	0	0	N/A
Grade 1	0	0	N/A	0	0	N/A
Grade 2	0	0	N/A	0	0	N/A
Grade 3	249	50	20%	154	20	13%
Grade 4	253	53	21%	136	12	9%
Grade 5	196	32	16%	106	4	4%
Grade 6	252	26	10%	239	31	13%
Grade 7	229	29	13%	210	31	15%
Grade 8	233	17	7%	233	27	12%
Literature	340	41	12%	340	47	14%
Total	1752	248	14%	1418	172	12%
	Correlation = 0.905			Correlation = 0.926		
	Additive Constant = 0.094			Additive Constant = 0.064		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.654 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.541 to 0.654, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.541 have absolute value of robust Z greater than 1.645.

SCIENCE

Figure 18–33 shows the displacements from the anchored grade level calibrations of operational data for the science item bank. Items are color-coded by grade/course.

Figure 18–33. Science Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

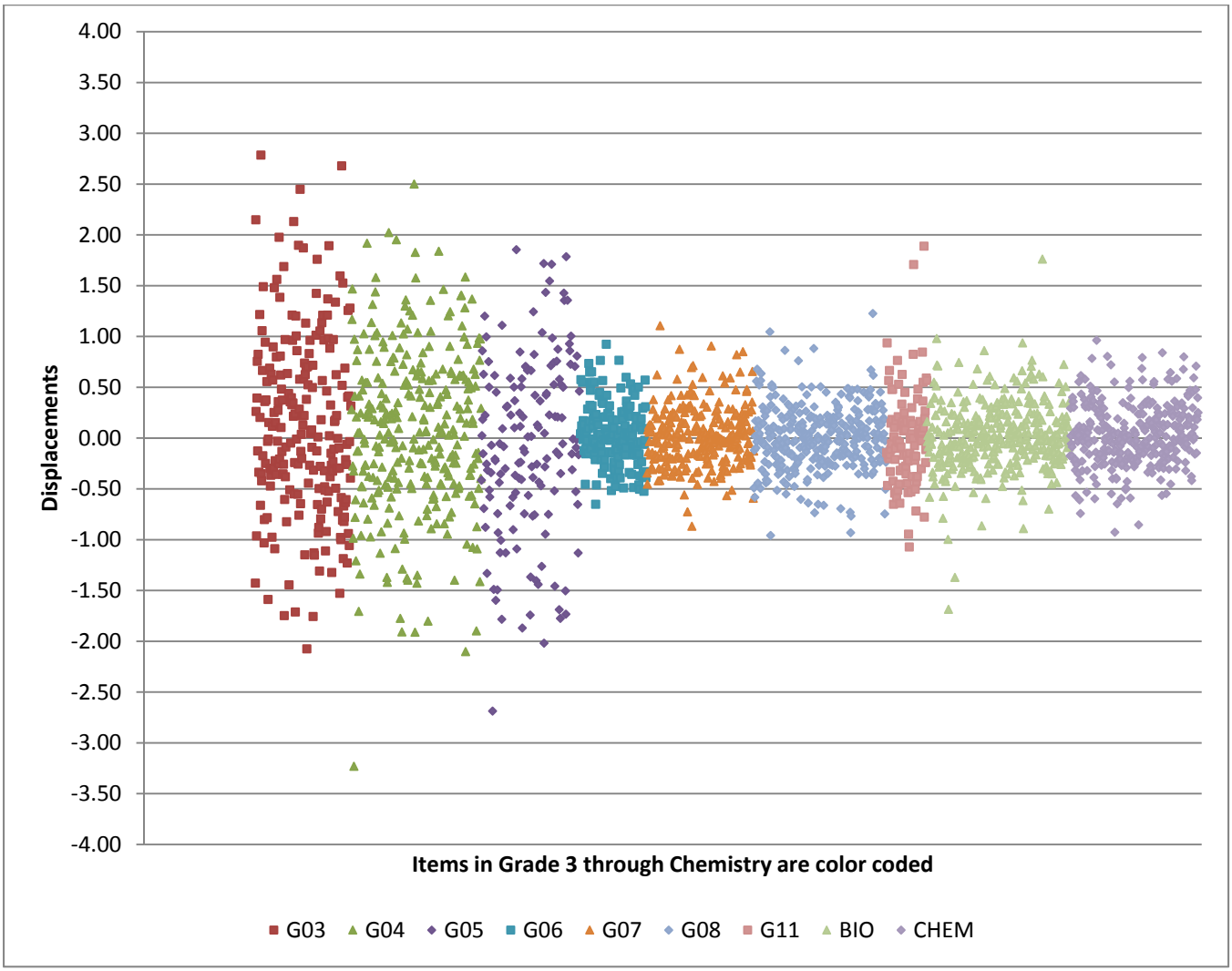


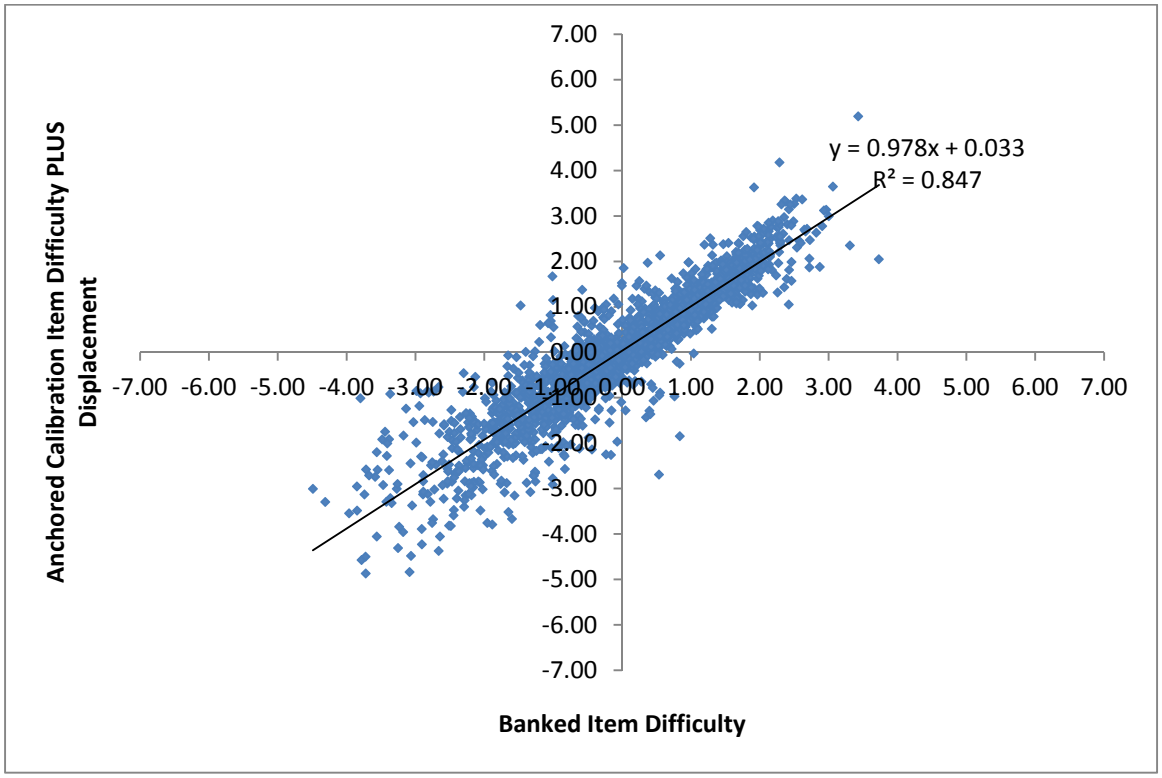
Table 18–24 summarizes the data in Figure 18–33. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–24).

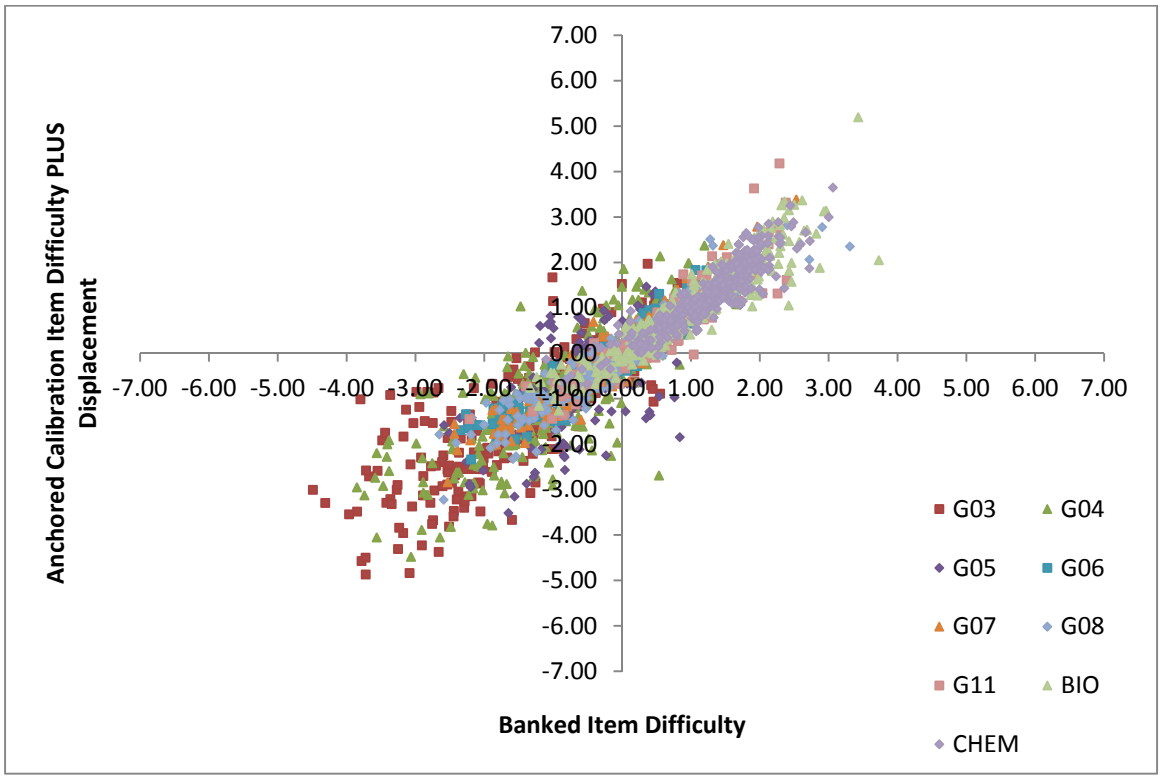
Table 18–24. Number of Science Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	20	24	23	0	0	0	1	2	0	70
-1.0 < Disp. ≤ -0.9	6	7	3	0	0	2	1	1	1	21
-0.9 < Disp. ≤ -0.8	5	6	1	0	1	0	0	2	1	16
-0.8 < Disp. ≤ -0.7	5	7	5	0	1	4	2	1	1	26
-0.7 < Disp. ≤ -0.6	9	7	3	1	0	5	2	2	2	31
-0.6 < Disp. ≤ -0.5	6	11	7	3	4	4	7	5	9	56
-0.5 < Disp. ≤ -0.4	6	16	5	6	5	11	5	9	9	72
-0.4 < Disp. ≤ -0.3	13	15	9	15	22	18	8	24	14	138
-0.3 < Disp. ≤ -0.2	18	20	9	9	24	31	8	30	32	181
-0.2 < Disp. ≤ -0.1	7	12	7	20	32	41	12	45	35	211
-0.1 < Disp. ≤ 0.0	11	15	7	24	44	45	9	56	47	258
0.0 < Disp. ≤ 0.1	6	15	5	25	46	52	10	54	45	258
0.1 < Disp. ≤ 0.2	8	13	5	17	23	44	13	37	35	195
0.2 < Disp. ≤ 0.3	10	18	8	16	31	28	4	28	28	171
0.3 < Disp. ≤ 0.4	12	11	4	9	10	16	3	28	29	122
0.4 < Disp. ≤ 0.5	6	14	5	8	11	16	4	8	12	84
0.5 < Disp. ≤ 0.6	7	15	9	9	5	9	5	12	12	83
0.6 < Disp. ≤ 0.7	9	14	4	2	5	4	2	7	4	51
0.7 < Disp. ≤ 0.8	5	9	8	3	1	1	1	6	4	38
0.8 < Disp. ≤ 0.9	6	6	6	0	3	2	2	1	3	29
0.9 < Disp. ≤ 1.0	7	9	3	1	1	0	1	2	1	25
1.0 < Disp.	33	36	14	0	1	2	2	1	0	89
TOTAL	215	300	150	168	270	335	102	361	324	2225

Figure 18–34 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

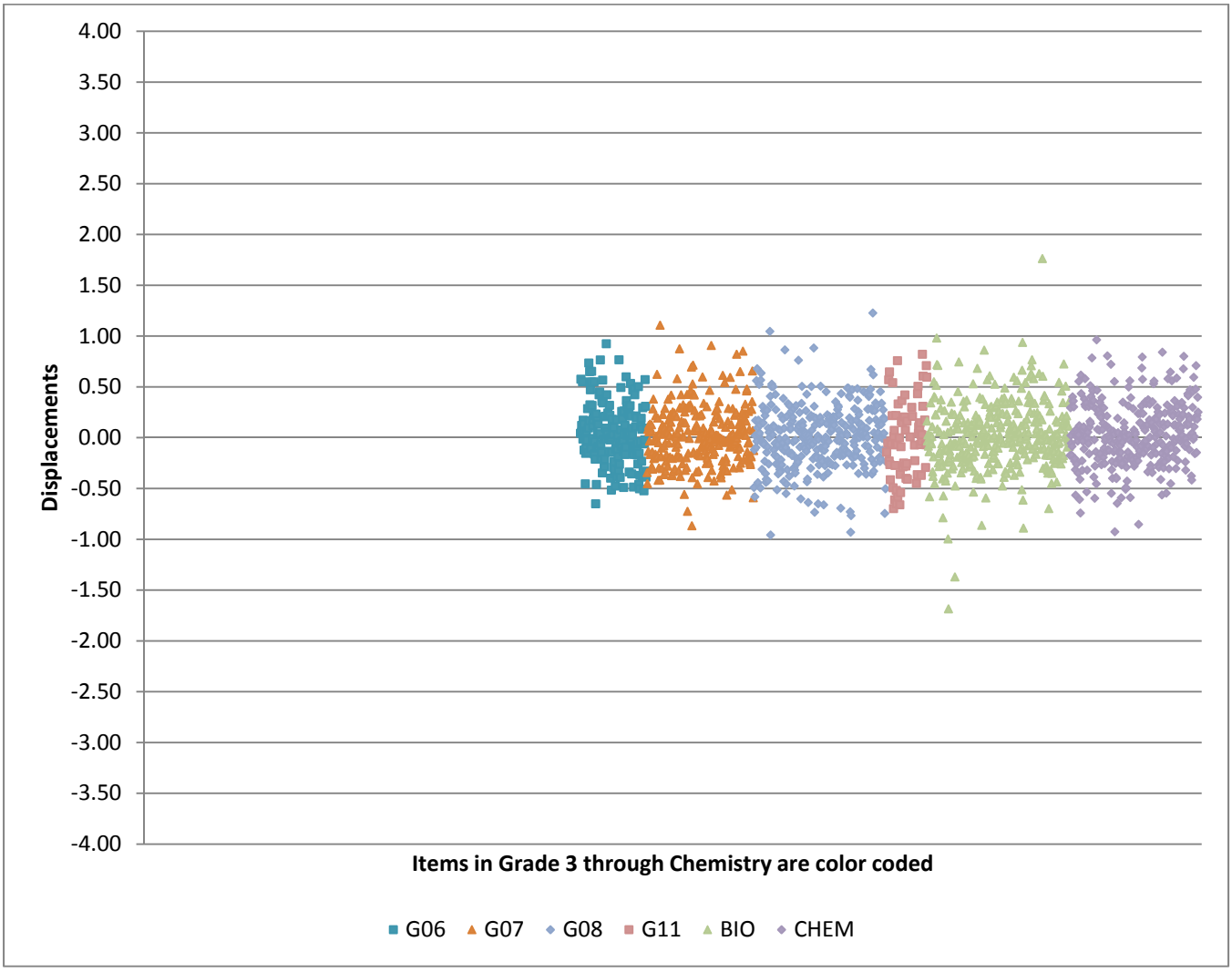
Figure 18–34. Science Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above





An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–35 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–35. Science Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with *N*>100



Note: Due to the low number of students testing CDT Science Lower Grades, no items in grade 3, 4, or 5 were administered more than 100 times on grade level.

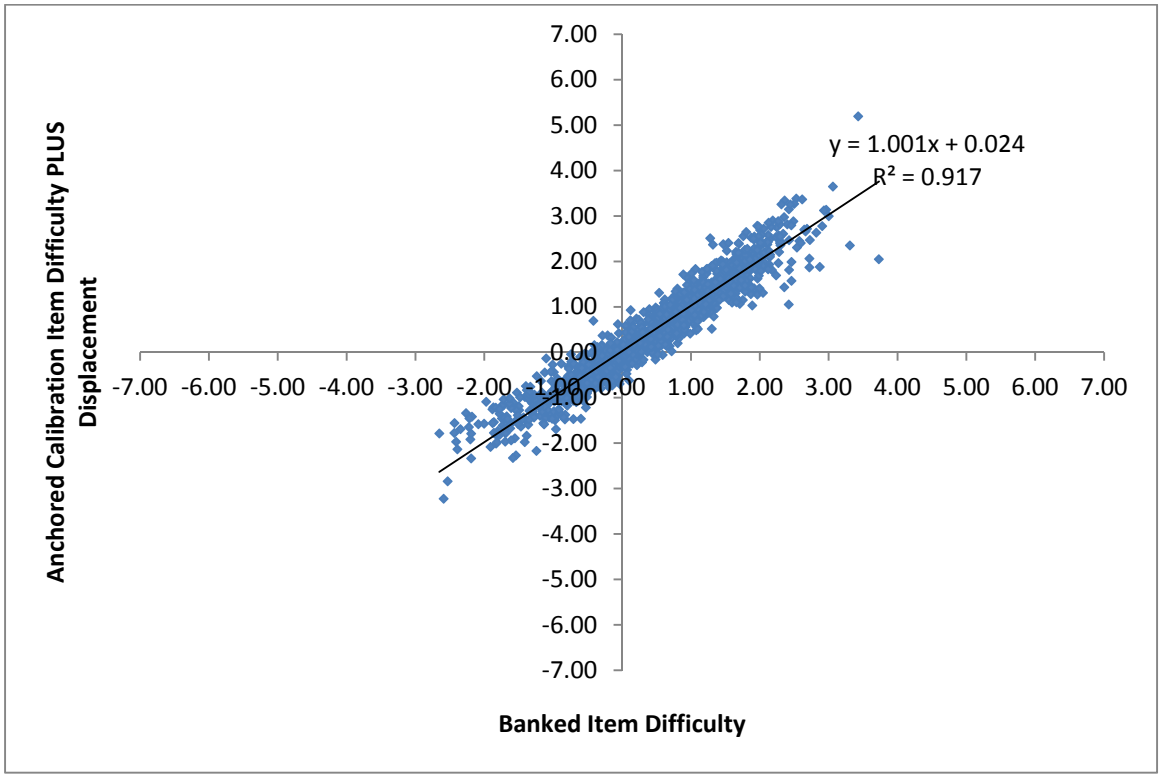
Table 18–25 summarizes the data in Figure 18–34. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-nine percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–25).

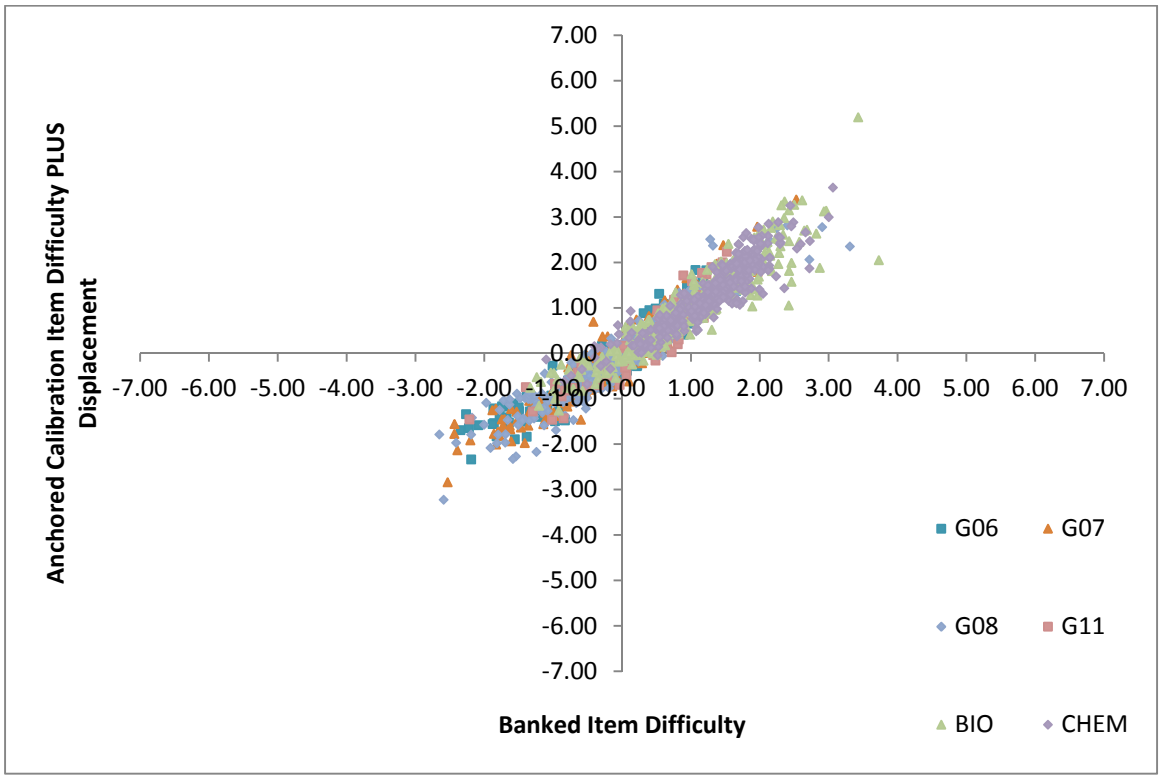
Table 18–25. Number of Science Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	G11	BIO	CHEM	Total
Disp. ≤ -1.0	0	0	0	0	0	0	0	2	0	2
-1.0 < Disp. ≤ -0.9	0	0	0	0	0	2	0	1	1	4
-0.9 < Disp. ≤ -0.8	0	0	0	0	1	0	0	2	1	4
-0.8 < Disp. ≤ -0.7	0	0	0	0	1	4	0	1	1	7
-0.7 < Disp. ≤ -0.6	0	0	0	1	0	5	4	2	2	14
-0.6 < Disp. ≤ -0.5	0	0	0	3	4	4	3	5	9	28
-0.5 < Disp. ≤ -0.4	0	0	0	6	5	11	5	9	9	45
-0.4 < Disp. ≤ -0.3	0	0	0	15	22	18	3	24	14	96
-0.3 < Disp. ≤ -0.2	0	0	0	9	24	31	9	30	32	135
-0.2 < Disp. ≤ -0.1	0	0	0	20	32	41	1	45	35	174
-0.1 < Disp. ≤ 0.0	0	0	0	24	44	45	11	56	47	227
0.0 < Disp. ≤ 0.1	0	0	0	25	46	52	8	54	45	230
0.1 < Disp. ≤ 0.2	0	0	0	17	23	44	7	37	35	163
0.2 < Disp. ≤ 0.3	0	0	0	16	31	28	5	28	28	136
0.3 < Disp. ≤ 0.4	0	0	0	9	10	16	3	28	29	95
0.4 < Disp. ≤ 0.5	0	0	0	8	11	16	2	8	12	57
0.5 < Disp. ≤ 0.6	0	0	0	9	5	9	4	12	12	51
0.6 < Disp. ≤ 0.7	0	0	0	2	5	4	2	7	4	24
0.7 < Disp. ≤ 0.8	0	0	0	3	1	1	2	6	4	17
0.8 < Disp. ≤ 0.9	0	0	0	0	3	2	1	1	3	10
0.9 < Disp. ≤ 1.0	0	0	0	1	1	0	0	2	1	5
1.0 < Disp.	0	0	0	0	1	2	0	1	0	4
TOTAL	0	0	0	168	270	335	70	361	324	1528

Figure 18–36 mirrors Figure 18–34, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–36. Science Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with *N*>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–26 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18–26. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Science

Grade/ Course	Cal. 1 — All FT Items in G3+			Cal. 2 — FT Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
K–2 span	0	0	N/A	0	0	N/A
Grade 3	215	101	47%	0	0	N/A
Grade 4	300	118	39%	0	0	N/A
Grade 5	150	68	45%	0	0	N/A
Grade 6	168	7	4%	168	25	15%
Grade 7	270	11	4%	270	22	8%
Grade 8	335	18	5%	335	38	11%
Grade 11	102	13	13%	70	17	24%
Biology	361	20	6%	361	46	13%
Chemistry	324	16	5%	324	40	12%
Total	2225	372	17%	1528	188	12%
	Correlation = 0.920			Correlation = 0.958		
	Additive Constant = 0.033			Additive Constant = 0.025		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.633 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.604 to 0.633, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.604 have absolute value of robust Z greater than 1.645.

WRITING/ENGLISH COMPOSITION

Figure 18–37 shows the displacements from the anchored grade level calibrations of operational data for the writing item bank. Items are color-coded by grade/course.

Figure 18–37. Writing Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above

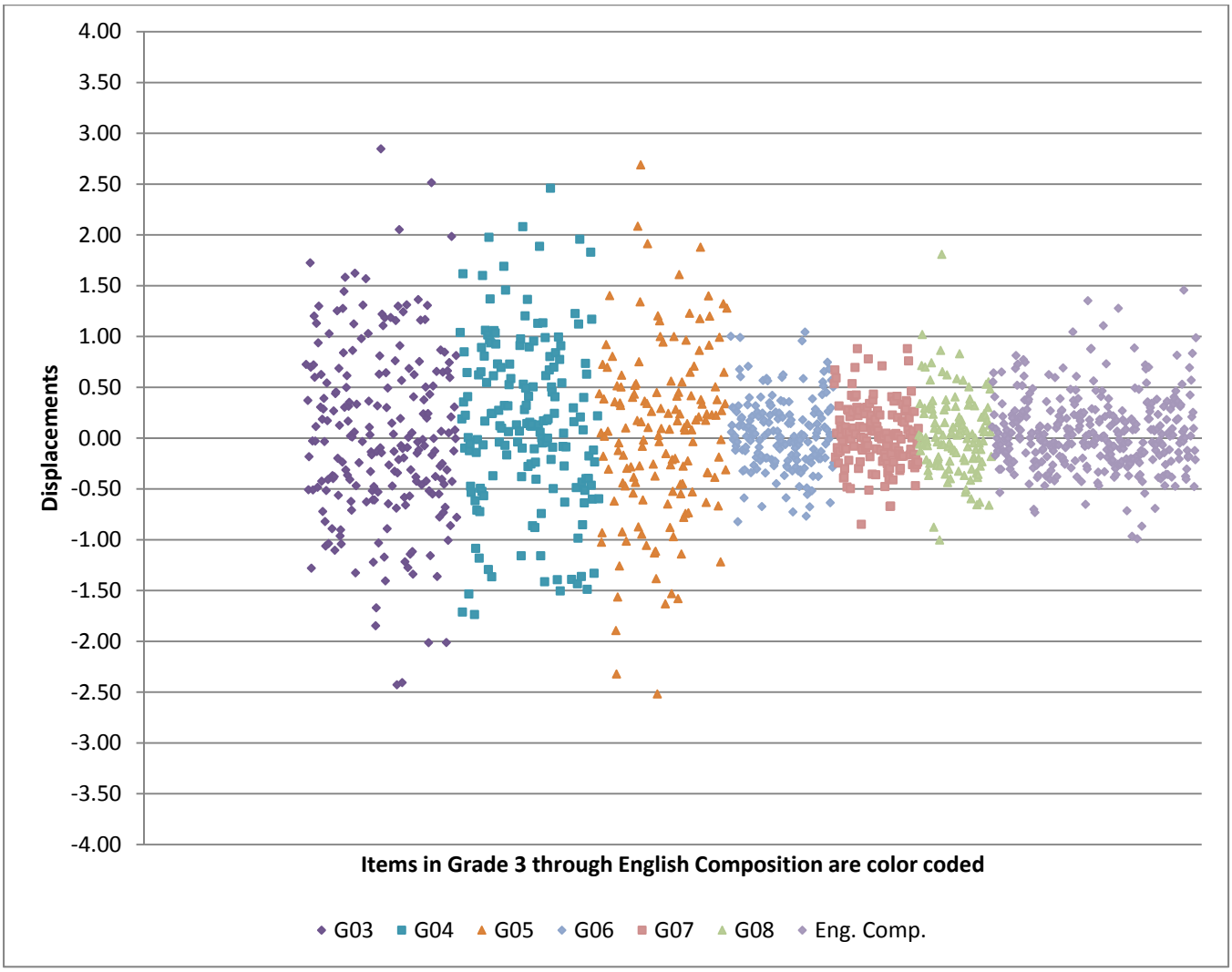


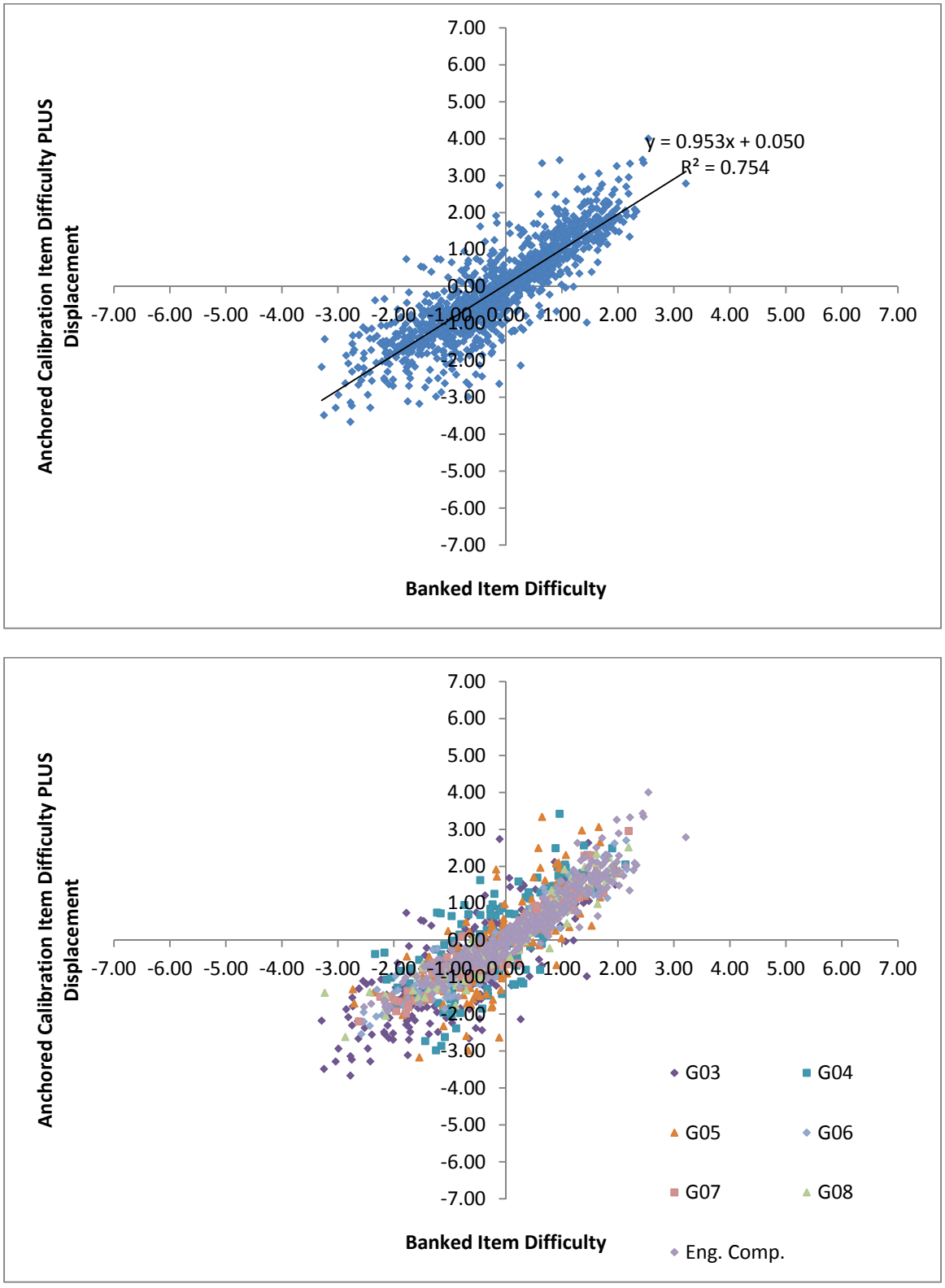
Table 18–27 summarizes the data in Figure 18–37. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Seventy-one percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–27).

Table 18–27. Number of Writing Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	24	17	16	0	0	1	0	58
-1.0 < Disp. ≤ -0.9	2	1	4	0	0	0	2	9
-0.9 < Disp. ≤ -0.8	4	3	2	1	1	1	1	13
-0.8 < Disp. ≤ -0.7	5	3	3	2	0	0	3	16
-0.7 < Disp. ≤ -0.6	8	4	5	3	2	3	2	27
-0.6 < Disp. ≤ -0.5	11	5	4	4	1	3	2	30
-0.5 < Disp. ≤ -0.4	13	7	5	3	5	2	13	48
-0.4 < Disp. ≤ -0.3	12	4	7	12	8	11	26	80
-0.3 < Disp. ≤ -0.2	6	6	8	20	15	10	35	100
-0.2 < Disp. ≤ -0.1	14	6	6	18	18	13	39	114
-0.1 < Disp. ≤ 0.0	12	14	6	21	16	15	47	131
0.0 < Disp. ≤ 0.1	10	8	9	24	26	19	50	146
0.1 < Disp. ≤ 0.2	9	14	8	19	13	11	32	106
0.2 < Disp. ≤ 0.3	5	9	10	17	16	9	32	98
0.3 < Disp. ≤ 0.4	12	5	10	12	9	12	23	83
0.4 < Disp. ≤ 0.5	6	5	7	4	7	2	13	44
0.5 < Disp. ≤ 0.6	6	7	7	9	3	6	8	46
0.6 < Disp. ≤ 0.7	11	9	4	5	2	3	10	44
0.7 < Disp. ≤ 0.8	5	4	3	2	3	2	5	24
0.8 < Disp. ≤ 0.9	6	6	2	0	2	2	6	24
0.9 < Disp. ≤ 1.0	3	9	7	2	0	0	1	22
1.0 < Disp.	30	23	15	2	0	2	5	77
TOTAL	214	169	148	180	147	127	355	1340

Figure 18–38 shows banked item difficulties plotted against the item difficulties plus displacement from the anchored grade level calibrations of all items using the operational data set. Again, a line of best fit is included in the upper plot.

Figure 18–38. Writing Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above



An examination of the items with larger differences between banked values and operational estimates revealed that a number of these have low *n*-counts in the operational calibration. To investigate whether this had an impact on the stability of the item parameter estimates, anchored grade level calibrations of all items in grade 3 and above with larger *n*-counts were run. Figure 18–39 shows the displacements from these calibrations. Items are color-coded by grade/course.

Figure 18–39. Writing Anchored Grade Level Calibrations Displacements — All Items in Grade 3 and Above with *N*>100

Note: Due to the low number of students testing CDT Writing Lower Grades, no items in grade 3, 4, or 5 were administered more than 100 times on grade level.

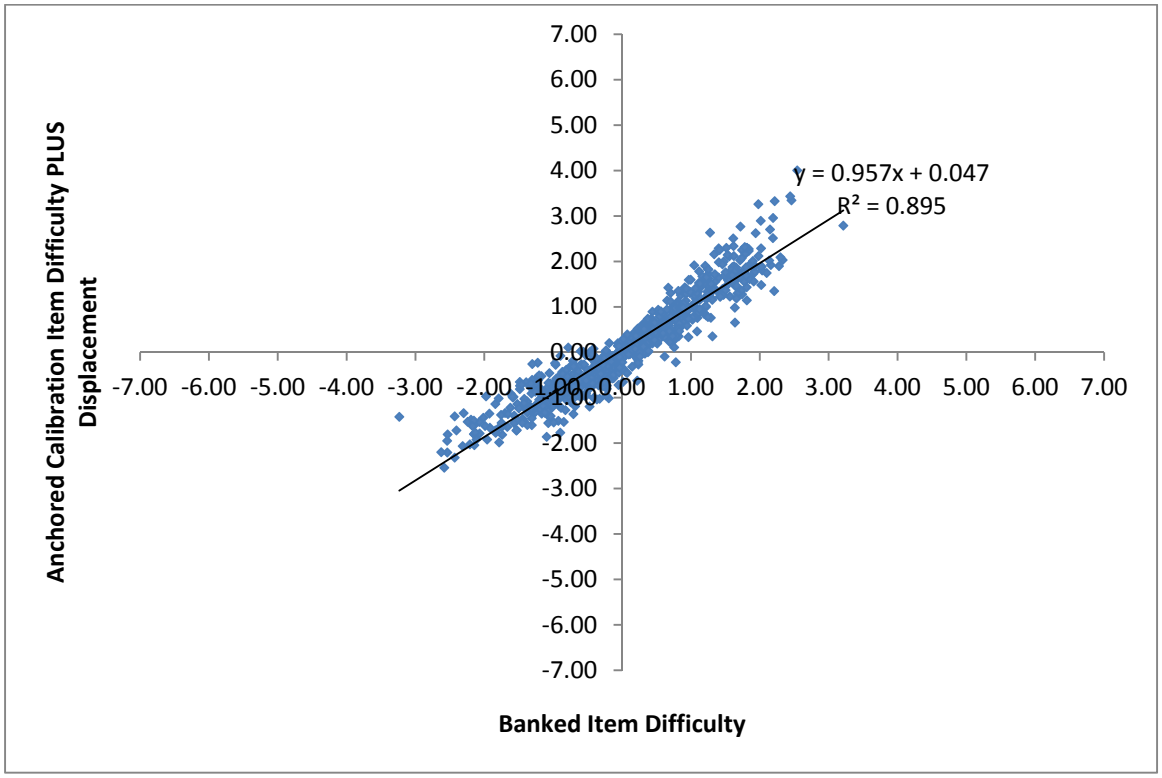
Table 18–28 summarizes the data in Figure 18–39. It contains item counts by grade/course and displacements in intervals of 0.1 logits. According to the WINSTEPS manual, in an anchored calibration, half of the displacements are expected to be negative and half positive. Displacements less than 0.5 in magnitude are considered small (unlikely to have much impact). Eighty-six percent of the items in the bank have a displacement less than 0.5 in magnitude (gray shaded in Table 18–28).

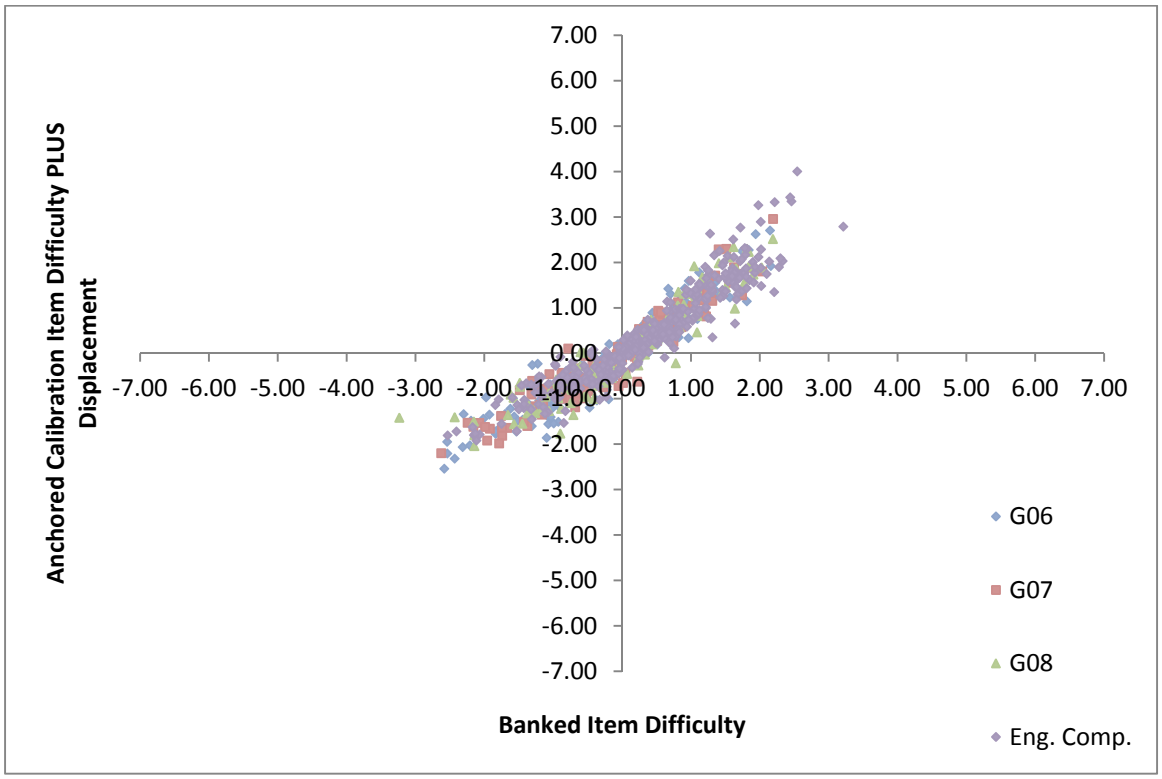
Table 18–28. Number of Writing Items by Grade/Course and Displacement Interval

	G03	G04	G05	G06	G07	G08	COMP	Total
Disp. ≤ -1.0	0	0	0	0	0	1	0	1
-1.0 < Disp. ≤ -0.9	0	0	0	0	0	0	2	2
-0.9 < Disp. ≤ -0.8	0	0	0	1	1	1	1	4
-0.8 < Disp. ≤ -0.7	0	0	0	2	0	0	3	5
-0.7 < Disp. ≤ -0.6	0	0	0	3	2	3	2	10
-0.6 < Disp. ≤ -0.5	0	0	0	4	1	3	2	10
-0.5 < Disp. ≤ -0.4	0	0	0	3	5	2	13	23
-0.4 < Disp. ≤ -0.3	0	0	0	12	8	11	26	57
-0.3 < Disp. ≤ -0.2	0	0	0	20	15	10	35	80
-0.2 < Disp. ≤ -0.1	0	0	0	18	18	13	39	88
-0.1 < Disp. ≤ 0.0	0	0	0	21	16	15	47	99
0.0 < Disp. ≤ 0.1	0	0	0	24	26	19	50	119
0.1 < Disp. ≤ 0.2	0	0	0	19	13	11	32	75
0.2 < Disp. ≤ 0.3	0	0	0	17	16	8	32	73
0.3 < Disp. ≤ 0.4	0	0	0	12	9	12	23	56
0.4 < Disp. ≤ 0.5	0	0	0	4	7	2	13	26
0.5 < Disp. ≤ 0.6	0	0	0	9	3	6	8	26
0.6 < Disp. ≤ 0.7	0	0	0	5	2	2	10	19
0.7 < Disp. ≤ 0.8	0	0	0	2	3	3	5	13
0.8 < Disp. ≤ 0.9	0	0	0	0	2	2	6	10
0.9 < Disp. ≤ 1.0	0	0	0	2	0	0	1	3
1.0 < Disp.	0	0	0	2	0	2	5	9
TOTAL	0	0	0	180	147	126	355	808

Figure 18–40 mirrors Figure 18–38, except the calibrations exclude items with fewer than 100 administrations. Again, a line of best fit is included in the upper plot.

Figure 18–40. Writing Banked Item Parameters vs. Anchored Grade Level Calibrations — All Items in Grade 3 and Above with *N*>100





For the two sets of anchored grade level calibrations described above, banked item parameters were compared to the newly calibrated values by calculating a robust Z statistic for each item pairing. If item difficulties from the operational calibration are close to the banked values, the correlation will be high and the additive constant near zero. Table 18–29 shows the number of items in each grade/course and the number and percent of items with absolute value of robust Z greater than 1.645 in the calibrations.

Table 18–29. Summary of Robust Z across Two Sets of Anchored Grade Level Calibrations in Writing

Grade/ Course	Cal. 1 — Items in G3+			Cal. 2 — Items in G3+ *N*>100		
	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645	Number of Items	Number of Items with ABS(Z) > 1.645	Percent of Items with ABS(Z) > 1.645
Kind.	0	0	N/A	0	0	N/A
Grade 1	0	0	N/A	0	0	N/A
Grade 2	0	0	N/A	0	0	N/A
Grade 3	214	81	38%	0	0	N/A
Grade 4	169	66	39%	0	0	N/A
Grade 5	148	52	35%	0	0	N/A
Grade 6	180	10	6%	180	28	16%
Grade 7	147	7	5%	147	12	8%
Grade 8	127	8	6%	126	21	17%
English Composition	355	24	7%	355	41	12%
Total	1340	248	19%	808	102	13%
	Correlation = 0.868			Correlation = 0.946		
	Additive Constant = 0.056			Additive Constant = 0.044		

For the most part, whether high absolute displacement values or robust Z was used to identify items with operational estimates that differ from banked values, the same items were identified. For example, in calibration 1, all items with absolute displacement greater than 0.720 have an absolute value of robust Z greater than 1.645. In the displacement range of 0.660 to 0.720, some items have absolute value of robust Z greater than 1.645 while others do not. No items with absolute displacement less than 0.660 have absolute value of robust Z greater than 1.645.

For each of the content areas, it is evident from this series of plots that the item parameter estimates are reasonably stable for the items in grade 3 and above.

Chapter Eighteen: Parameter Stability

CHAPTER NINETEEN: REVISION OF BENCHMARK CUTS

As described in Chapter Fourteen, CDT scores are placed along a continuum from "Areas of Need" to "Strengths to Build On." These are represented in the dynamic reporting suite with colors red, green, and blue. "Areas of Need" are depicted in the red range, while "Strengths to Build On" are depicted in the green and blue ranges. The center of the green range for grades 5 and above was established by panels of Pennsylvania educators during preliminary benchmarking activities (see Chapter Ten for details). The center of the green range for grades 2 through 4 was extrapolated from grades 5 and above prior to the launch of the CDT tests for students in grades 3 through 5 in spring of 2014.

The preliminary benchmarking activities took place prior to the first operational administration in each content area so that, once operational, immediate score reports would be available to students and teachers. Given that the preliminary benchmark cuts were set prior to the operational administration and based on field-test data, it was planned at that time to revisit the location of the cut scores after enough operational data had been collected.

This chapter summarizes changes to the preliminary benchmark cuts.

REVISED BENCHMARK CUTS FOR ALL GRADES AND COURSES

Cut points in the mathematics content area were analyzed and revised following the 2010–2011 school year. See Chapter Nineteen of the 2010–2011 technical report for details.

Cut points in the reading, science, and writing content areas were analyzed and revised following the 2011–2012 school year. See Chapter Nineteen of the 2011–2012 technical report for details.

Table 19–1 provides a summary of the changes to the CDT benchmark cuts in grades 5 and above.

Table 19–1. Summary of CDT Benchmark Cuts Revision

	Preliminary Cuts		Revised Cuts		Difference	
	Logit	Scale Score Green Range	Logit	Scale Score Green Range	Logit	Scale Score
Mathematics Grade 5	-0.292	896 - 1058	-0.792	833 - 995	-0.500	-63
Mathematics Grade 6	0.526	998 - 1160	0.026	936 - 1098	-0.500	-62
Mathematics Grade 7	1.495	1119 - 1281	0.495	994 - 1156	-1.000	-125
Mathematics Grade 8	2.238	1212 - 1374	0.838	1037 - 1199	-1.400	-175
Algebra I	3.363	1352 - 1514	1.613	1134 - 1296	-1.750	-218
Geometry	3.614	1384 - 1546	1.864	1165 - 1327	-1.750	-219
Algebra II	4.117	1447 - 1609	2.367	1228 - 1390	-1.750	-219
Reading Grade 5	1.529	983 - 1197	0.529	840 - 1054	-1.000	-143
Reading Grade 6	2.015	1052 - 1266	1.015	910 - 1124	-1.000	-142
Reading Grade 7	2.299	1093 - 1307	1.299	950 - 1164	-1.000	-143
Reading Grade 8	2.500	1122 - 1336	1.500	979 - 1193	-1.000	-143
Literature	2.657	1144 - 1358	1.657	1001 - 1215	-1.000	-143
Science Grade 5	1.099	1010 - 1182	-0.451	804 - 976	-1.550	-206
Science Grade 6	1.522	1067 - 1239	-0.028	861 - 1033	-1.550	-206
Science Grade 7	1.879	1114 - 1286	0.329	908 - 1080	-1.550	-206
Science Grade 8	2.189	1155 - 1327	0.639	949 - 1121	-1.550	-206
Biology	2.462	1191 - 1363	1.112	1012 - 1184	-1.350	-179
Chemistry	2.706	1224 - 1396	1.356	1045 - 1217	-1.350	-179
Writing Grade 5	0.731	960 - 1132	-0.569	787 - 959	-1.300	-173
Writing Grade 6	1.363	1044 - 1216	0.063	872 - 1044	-1.300	-172
Writing Grade 7	1.886	1114 - 1286	0.586	941 - 1113	-1.300	-173
Writing Grade 8	2.219	1158 - 1330	0.919	985 - 1157	-1.300	-173
English Composition	2.281	1167 - 1339	0.981	994 - 1166	-1.300	-173

EXTRAPOLATION OF BENCHMARK CUTS FOR GRADES 2 THROUGH 4

The introduction of CDT tests for students in grades 3 through 5 required benchmark cuts for grades 2 through 4[23]. For each content area, the benchmark cuts in place for the 2013–2014 school year in grades 5 and above were used to extrapolate cuts in grades 2 through 4 using both logarithmic and polynomial trend lines. Results are presented in Figures 19–1 through 19–4.

[23] It is not expected that students in grade 2 will use the CDT. However, teachers may want to use a grade 2 benchmark when looking at reports for students in grade 3, especially early in the school year.

Figure 19–1a. Mathematics Extrapolation – Logarithmic

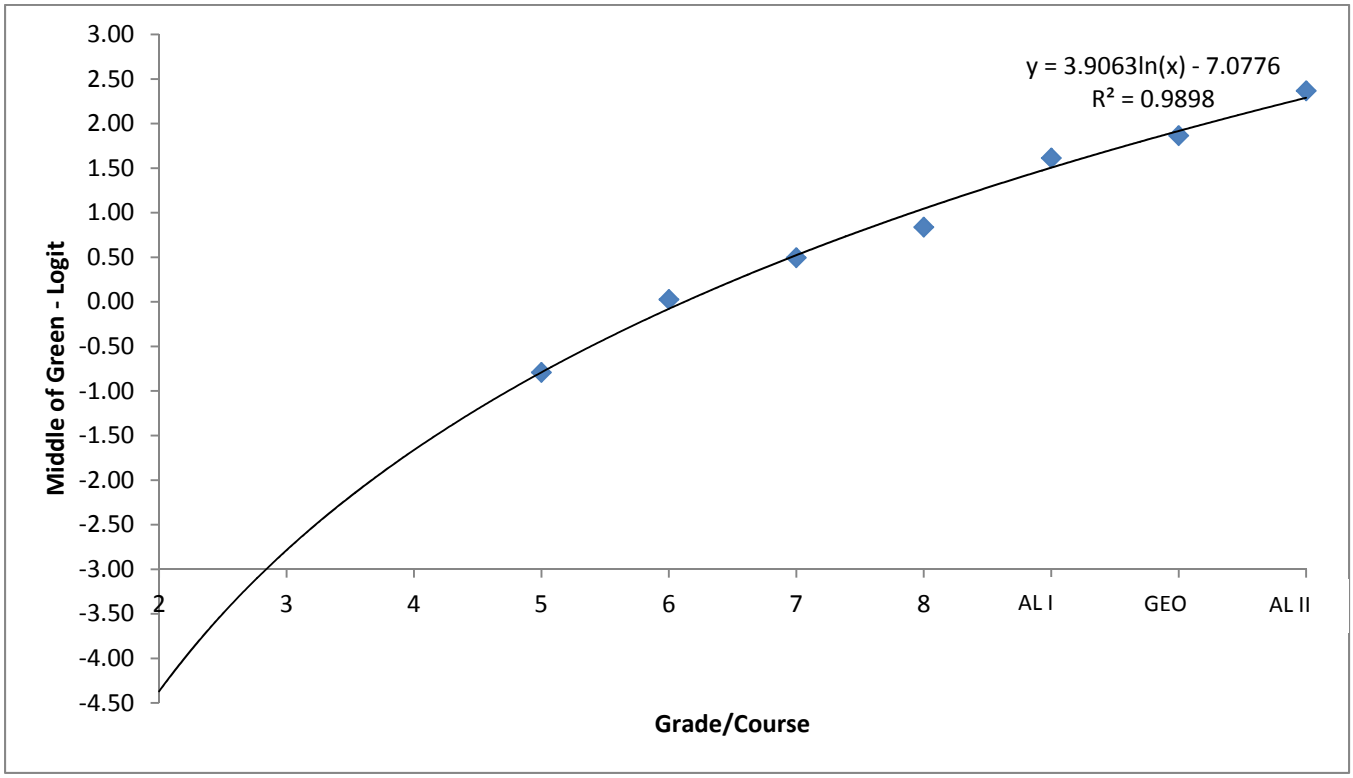


Figure 19–1b. Mathematics Extrapolation – Polynomial

Figure 19–2a. Reading Extrapolation – Logarithmic

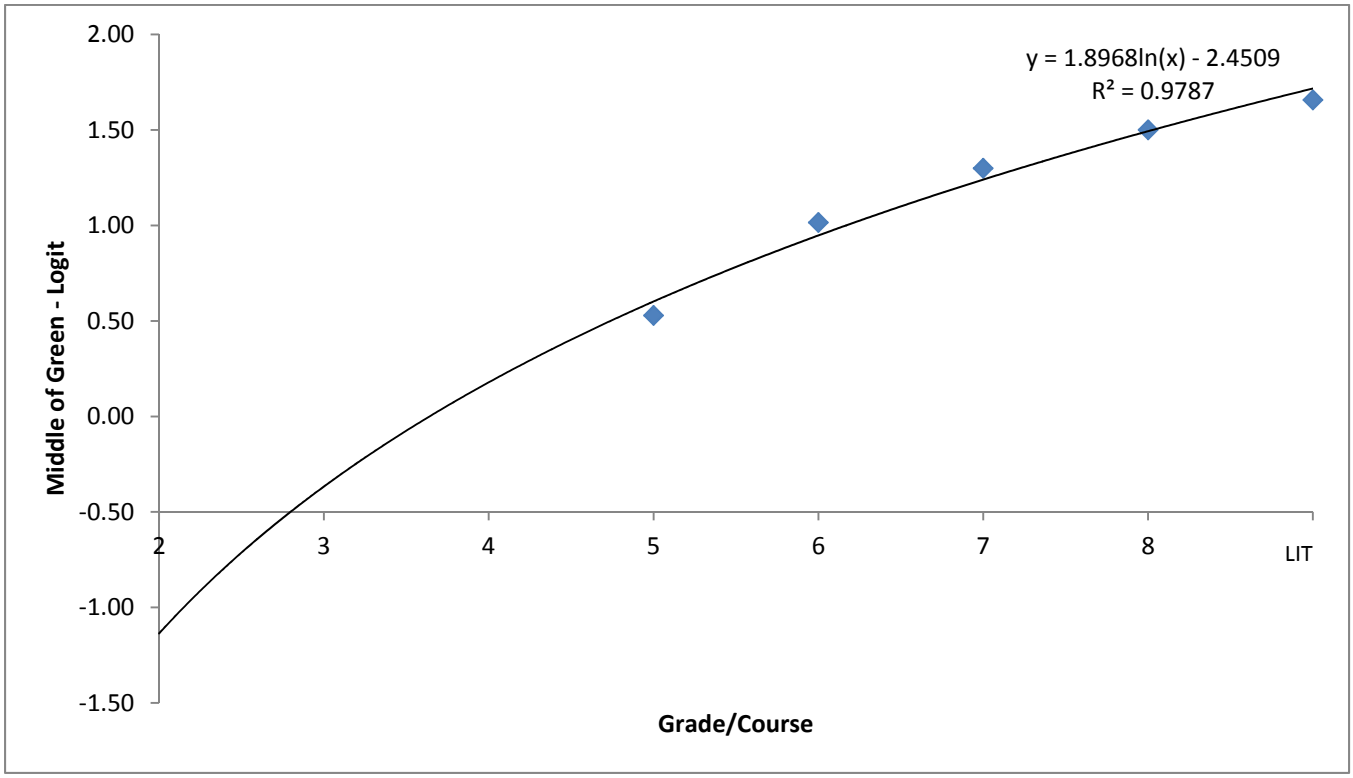


Figure 19–2b. Reading Extrapolation – Polynomial

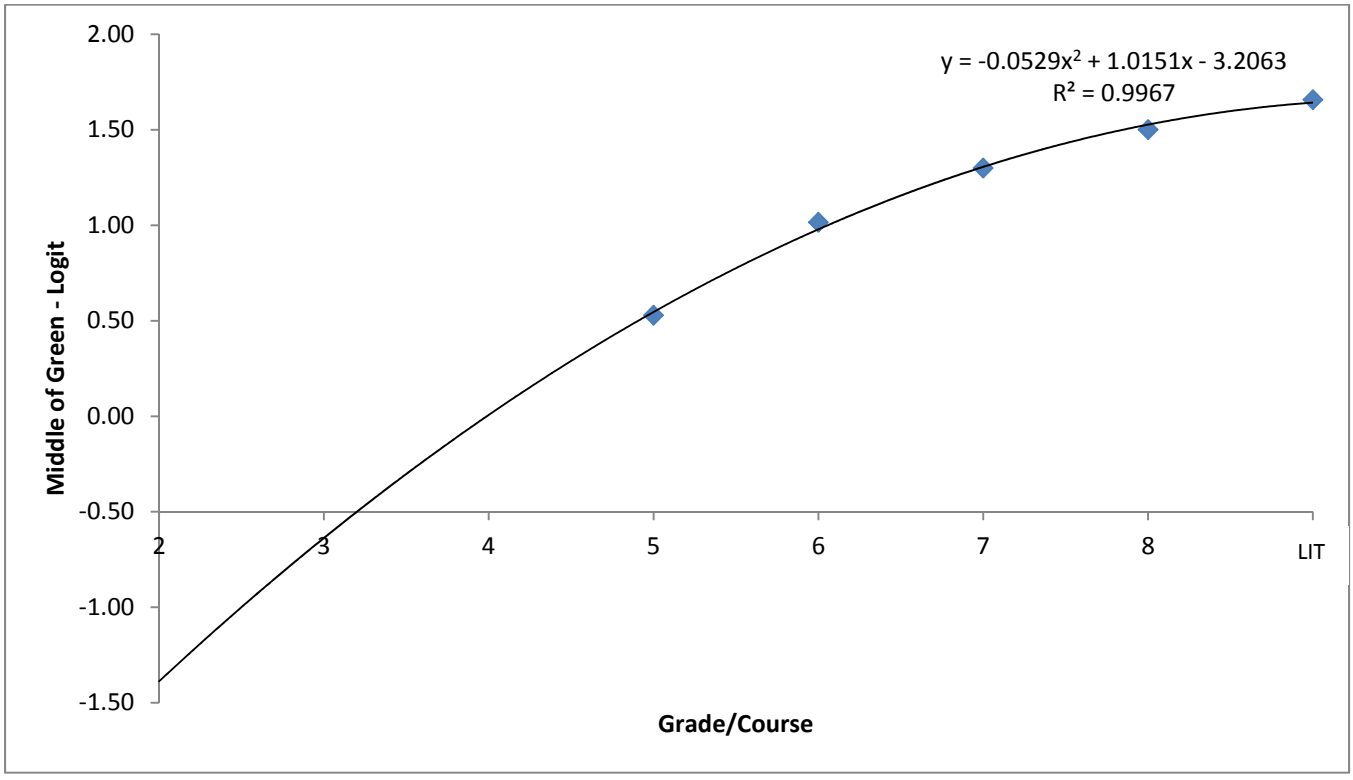


Figure 19–3a. Science Extrapolation – Logarithmic

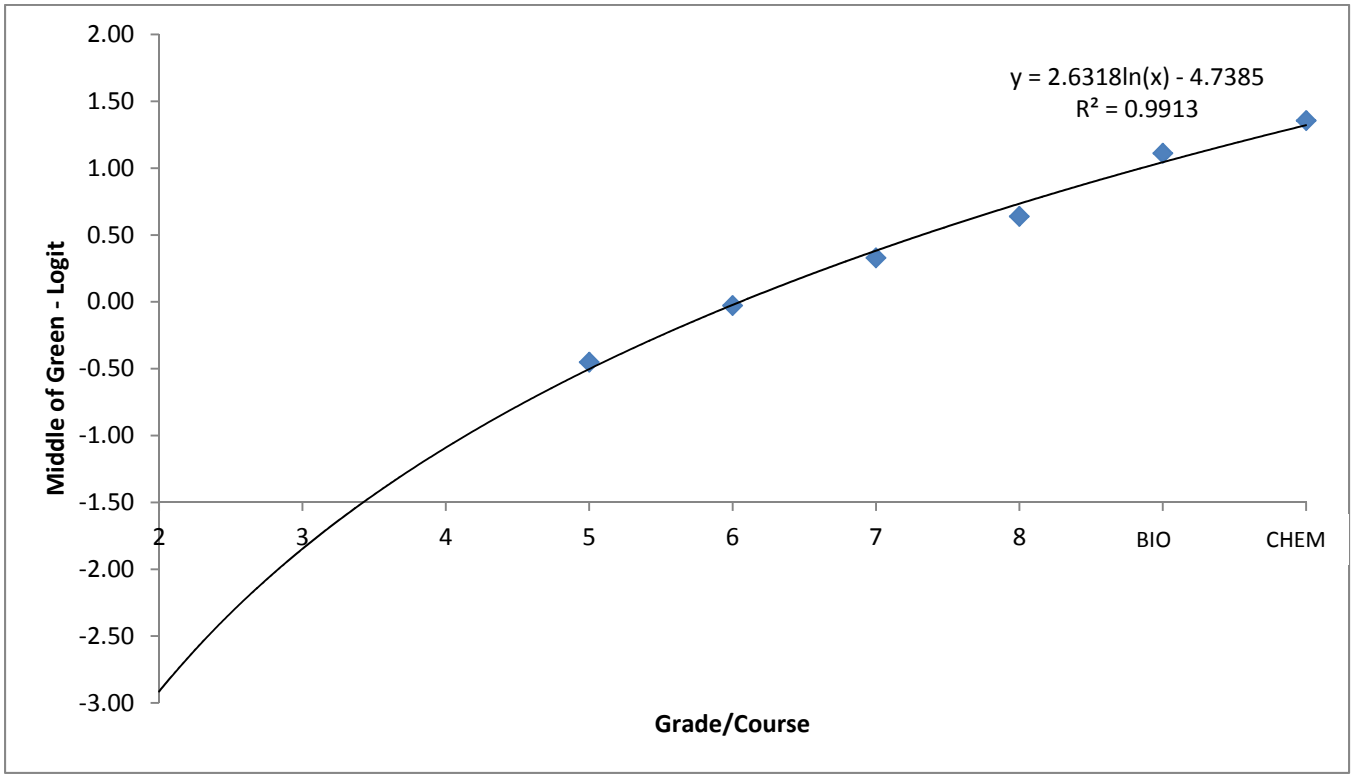


Figure 19–3b. Science Extrapolation – Polynomial

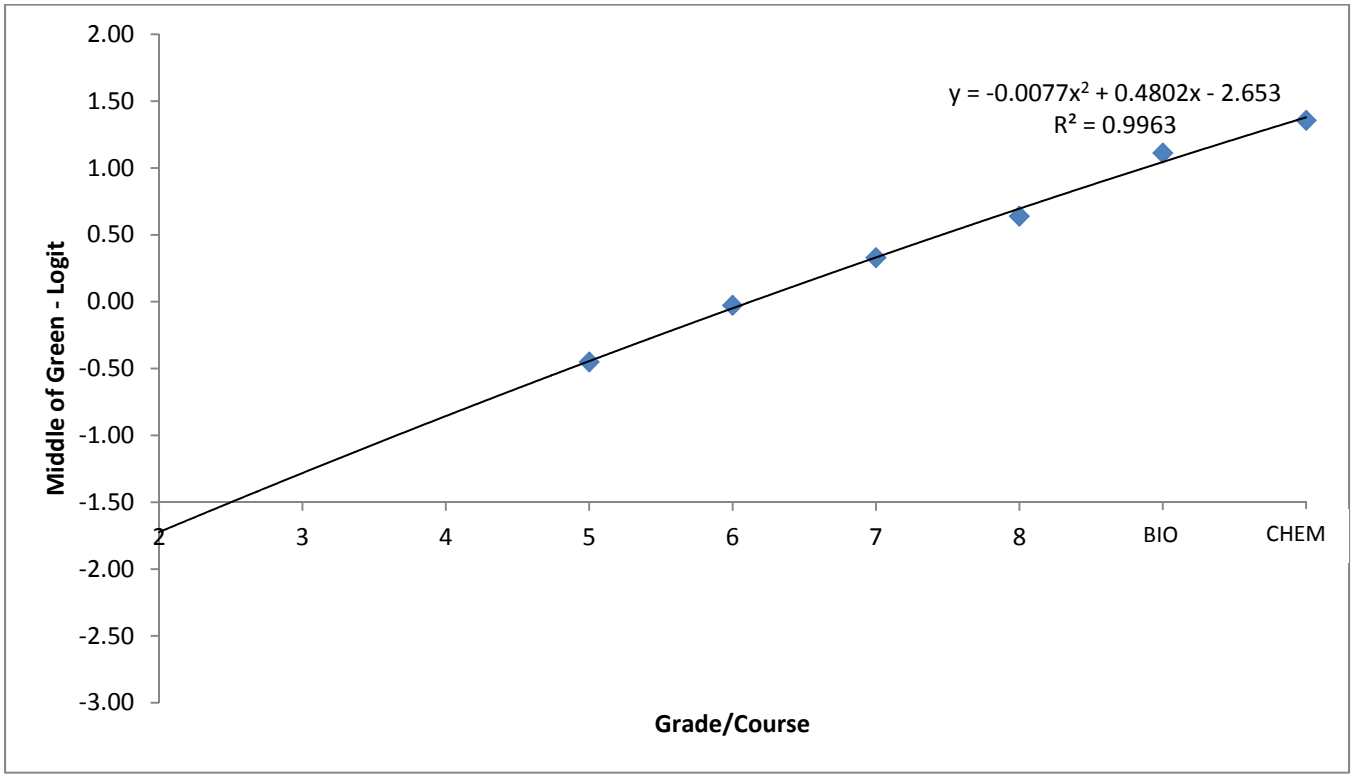


Figure 19–4a. Writing Extrapolation – Logarithmic

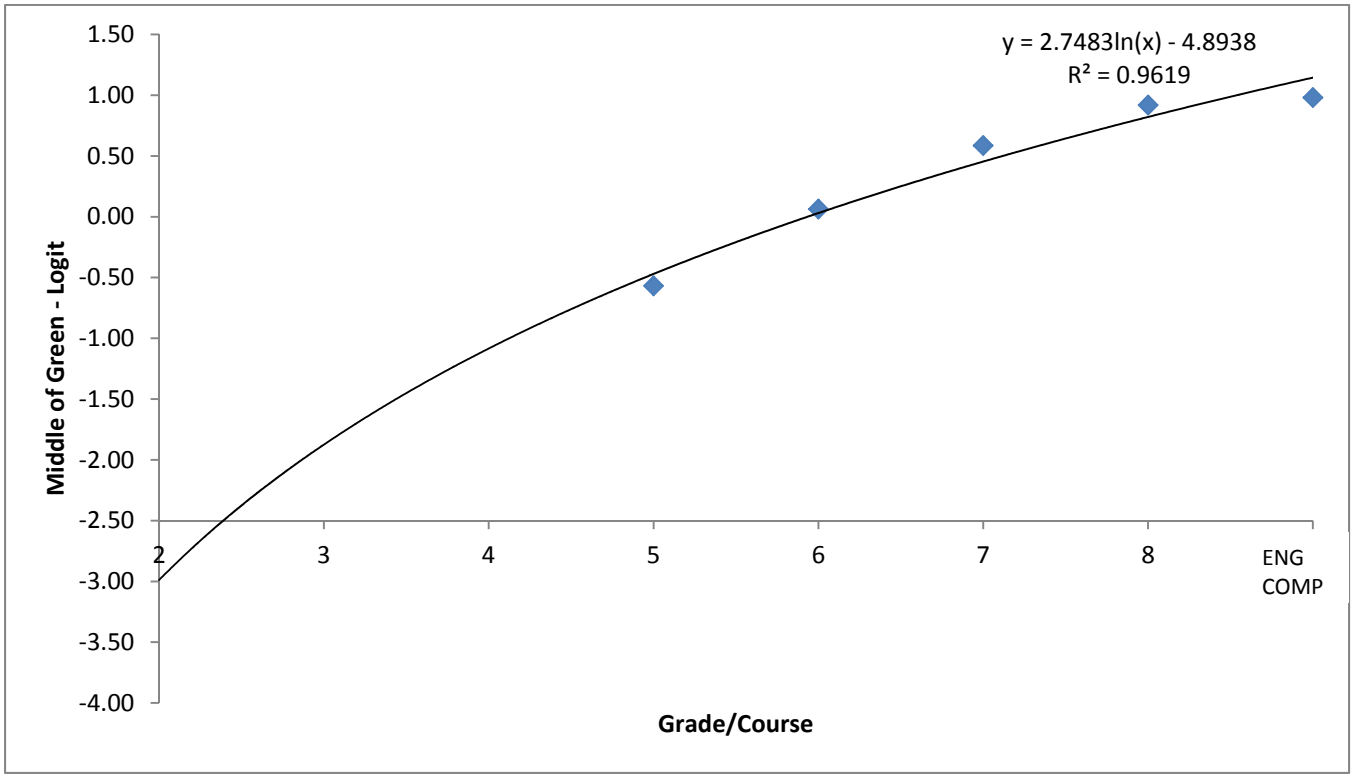
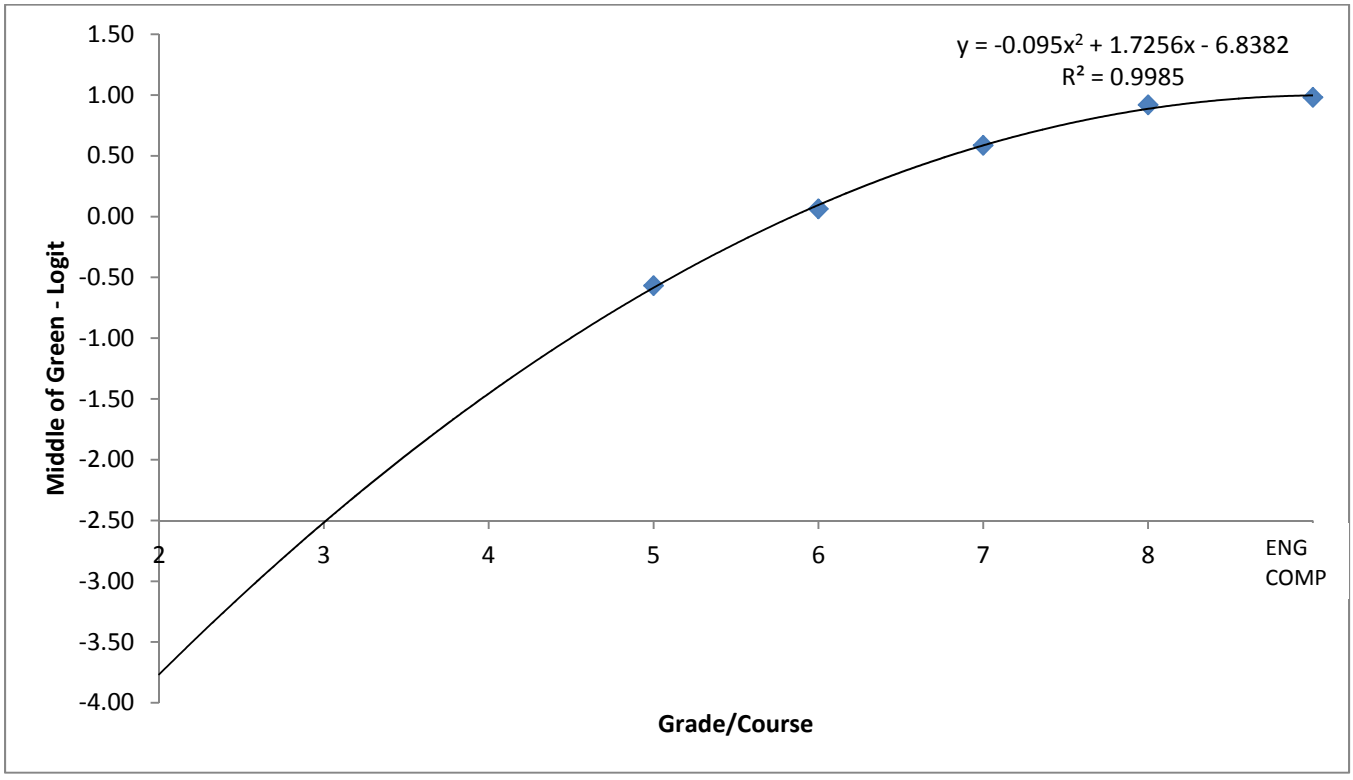


Figure 19–4b. Writing Extrapolation – Polynomial



In mathematics and science, a logarithmic trend line results in a much lower grade 2 benchmark cut than a polynomial trend line. The opposite is true for reading and writing. As with other decisions regarding benchmark cuts, careful consideration was given to over versus under identification of students with areas of needs. Consistent with previous decisions, PDE chose to err on the side of over identification by selecting the method that produced the higher benchmark cut in each content area. Therefore benchmark cuts for grades 2 through 4 in mathematics and science were based on extrapolation of existing cuts using a polynomial trend line, while benchmark cuts in reading and writing were based on a logarithmic trend line.

BENCHMARK CUTS FOR ALL GRADES AND COURSES FOR THE 2013–2014 SCHOOL YEAR

Table 19–2 shows the benchmark cuts used for student reporting during the 2013–2014 school year in the logit metric for each content area. Also presented are the scale score ranges for each color on the CDT reports.

Table 19–2. Benchmark Cuts and Scale Score Ranges for the 2013–2014 School Year

Grade or Course		Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Mathematics Lower Grades	Grade 2	-2.828	200 - 578	579 - 741	742 - 2000
	Grade 3	-2.083	200 - 671	672 - 834	835 - 2000
	Grade 4	-1.380	200 - 759	760 - 922	923 - 2000
	Grade 5	-0.792	200 - 832	833 - 995	996 - 2000
Mathematics	Grade 6	0.026	400 - 935	936 - 1098	1099 - 2000
	Grade 7	0.495	400 - 993	994 - 1156	1157 - 2000
	Grade 8	0.838	400 - 1036	1037 - 1199	1200 - 2000
	Algebra I	1.613	400 - 1133	1134 - 1296	1297 - 2000
	Geometry	1.864	400 - 1164	1165 - 1327	1328 - 2000
	Algebra II	2.367	400 - 1227	1228 - 1390	1391 - 2000
Reading Lower Grades	Grade 2	-1.136	200 - 601	602 - 816	817 - 2000
	Grade 3	-0.367	200 - 711	712 - 926	927 - 2000
	Grade 4	0.179	200 - 789	790 - 1004	1005 - 2000
	Grade 5	0.529	200 - 839	840 - 1054	1055 - 2000
Reading/ Literature	Grade 6	1.015	400 - 909	910 - 1124	1125 - 2000
	Grade 7	1.299	400 - 949	950 - 1164	1165 - 2000
	Grade 8	1.500	400 - 978	979 - 1193	1194 - 2000
	Literature	1.657	400 - 1000	1001 - 1215	1216 - 2000

Table 19–2 (continued). Benchmark Cuts and Scale Score Ranges for the 2013–2014 School Year

Grade or Course		Logit Cut Point (Center of Green)	Red Scale Score Range	Green Scale Score Range	Blue Scale Score Range
Science Lower Grades	Grade 2	-1.723	200 - 634	635 - 807	808 - 2000
	Grade 3	-1.282	200 - 693	694 - 866	867 - 2000
	Grade 4	-0.855	200 - 750	751 - 923	924 - 2000
	Grade 5	-0.451	200 - 803	804 - 976	977 - 2000
Science	Grade 6	-0.028	400 - 860	861 - 1033	1034 - 2000
	Grade 7	0.329	400 - 907	908 - 1080	1081 - 2000
	Grade 8	0.639	400 - 948	949 - 1121	1122 - 2000
	Biology	1.112	400 - 1011	1012 - 1184	1185 - 2000
	Chemistry	1.356	400 - 1044	1045 - 1217	1218 - 2000
Writing Lower Grades	Grade 2	-2.989	200 - 465	466 - 638	639 - 2000
	Grade 3	-1.874	200 - 613	614 - 786	787 - 2000
	Grade 4	-1.084	200 - 718	719 - 891	892 - 2000
	Grade 5	-0.569	200 - 786	787 - 959	960 - 2000
Writing/ English Composition	Grade 6	0.063	400 - 871	872 - 1044	1045 - 2000
	Grade 7	0.586	400 - 940	941 - 1113	1114 - 2000
	Grade 8	0.919	400 - 984	985 - 1157	1158 - 2000
	English Composition	0.981	400 - 993	994 - 1166	1167 - 2000

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APPENDIX A: GENERAL DEVELOPMENT AND FIELD TEST CYCLE FOR THE CLASSROOM DIAGNOSTIC TOOLS

Table A–1. General Development and Field Test Cycle for the Classroom Diagnostic Tools

		Content Area			
		Mathematics	**Reading/Literature**	**Science**	**Writing/English Composition**
Events Occurring in Calendar Year	**Summer 2009**	Item Development and Internal Reviews			
	Fall 2009				
	Winter 2009/2010	Item Review by Pennsylvania Educators	Item Development and Internal Reviews	Item Development and Internal Reviews	
	Spring 2010	Standalone Field Test			
	Summer 2010	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Item Review by Pennsylvania Educators	Item Review by Pennsylvania Educators	Item Development and Internal Reviews
	Fall 2010	Operational Assessments Available	Standalone Field Test	Standalone Field Test	
	Winter 2010/2011	Operational Assessments Available	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Data Review, Items Aligned to the Learning Progression Map, and Benchmarking	Item Review by Pennsylvania Educators
	Spring 2011	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Standalone Field Test
	Summer 2011				Data Review, Items Aligned to the Learning Progression Map, and Benchmarking
	Fall 2011	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
	Winter 2011/2012	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available

Appendix A: General Development and Field Test Cycle for the Classroom Diagnostic Tools

Table A–1 (continued). General Development and Field Test Cycle for the Classroom Diagnostic Tools

		Content Area			
		Mathematics	**Reading/Literature**	**Science**	**Writing/English Composition**
Events Occurring in Calendar Year	**Spring 2012**	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available	Operational Assessments Available
	Summer 2012	Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards Begins	Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards Begins		
	Fall 2012	Operational Assessments Available and Completion of Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards	Operational Assessments Available and Completion of Item Development and Internal Reviews of Items Aligned to Pennsylvania Core Standards	Operational Assessments Available	Operational Assessments Available
	Winter 2012/2013	Operational Assessments Available and Item Review by Pennsylvania Educators for Items Aligned to Pennsylvania Core Standards	Operational Assessments Available and Item Review by Pennsylvania Educators for Items Aligned to Pennsylvania Core Standards	Operational Assessments Available	Operational Assessments Available

Table A–1 (continued). General Development and Field Test Cycle for the Classroom Diagnostic Tools

		Content Area			
		Mathematics	**Reading/Literature**	**Science**	**Writing/English Composition**
Events Occurring in Calendar Year	**Spring 2013**	Operational Assessments with Embedded Field Test Items Aligned to the Pennsylvania Core Standards Available and Item Development and Internal Reviews of Items for Lower Grades CDT	Operational Assessments with Embedded Field Test Items Aligned to the Pennsylvania Core Standards Available and Item Development and Internal Reviews of Items Lower Grades CDT	Operational Assessments Available and Item Development and Internal Reviews of Items for Lower Grades CDT	Operational Assessments Available and Item Development and Internal Reviews of Items for Lower Grades CDT
	Summer 2013	Data Review and Items Aligned to the Learning Progression Map for Items Aligned to the Pennsylvania Core Standards and Item Review by Pennsylvania Educators for Items for Lower Grades	Data Review and Items Aligned to the Learning Progression Map for Items Aligned to the Pennsylvania Core Standards and Item Review by Pennsylvania Educators for Items for Lower Grades	Item Review by Pennsylvania Educators for Items for Lower Grades	Item Review by Pennsylvania Educators for Items for Lower Grades
	Fall 2013	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades	Operational Assessments Aligned to PCS Including Embedded Field Test Items at Grade 6 Available and Standalone Field Test for Lower Grades

Table A–1 (continued). General Development and Field Test Cycle for the Classroom Diagnostic Tools

		Content Area			
		Mathematics	**Reading/Literature**	**Science**	**Writing/English Composition**
Events Occurring in Calendar Year	**Winter 2013/2014**	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT	Operational Assessments Aligned to PCS Available and Data Review and Items Aligned to the Learning Progression Map for Items for Lower Grades CDT
	Spring 2014	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available	Operational Assessments, including Lower Grades, Available

APPENDIX B: FIELD TEST ITEM STATISTICS

Table B–1. Item Statistics

Column Heading	Definition
Ref	Reference line number
333ID	Item ID
FT Grade	Item grade or course alignement when field tested
PCS Grade[1]	Item grade or course when aligned to PA Core Standards
N	Number of students
PVal	P-Value
P( )	Proportion selecting given response (- = blank)
PtBis	Point biserial
PT( )	Point biserial of response
Meas	Rasch item difficulty measure estimate
MSE	Standard error of Rasch item difficulty measure estimate
t	t fit statistic
MS	Mean square fit statistic
M/F	Male/female DIF statistic
W/B	White/black DIF statistic

[1] Items in the content areas of mathematics, reading, and writing, were realigned to the Pennsylania core standards prior to the start of the 2013-2014 school year.

Appendix B: Field Test Item Statistics

MATHEMATICS MULTIPLE-CHOICE ITEMS

Table B–2. Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rash		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1	600437	3	1	1282	.921	.921	.045	.013	.019	.003	.400	.400	-.276	-.193	-.166	-3.932	0.117	-1.2	0.9	-1.6	0.8	A+	B-
2	601973	3	1	1282	.818	.060	.818	.082	.036	.005	.439	-.233	.439	-.228	-.223	-2.648	0.086	0.9	1.0	0.6	1.1	A+	A-
3	601588	3	3	1925	.872	.872	.057	.042	.027	.003	.459	.459	-.269	-.280	-.184	-3.199	0.078	-1.6	0.9	-2.0	0.8	A+	B-
4	603742	3	1	1285	.850	.850	.090	.036	.016	.008	.338	.338	-.133	-.215	-.198	-2.989	0.090	2.2	1.1	4.5	1.6	A-	A+
5	600920	3	3	1285	.662	.183	.069	.074	.662	.013	.547	-.353	-.205	-.181	.547	-1.530	0.071	-1.7	0.9	-0.4	1.0	A+	A-
6	601977	3	3	1285	.788	.040	.083	.788	.078	.012	.483	-.227	-.256	.483	-.228	-2.439	0.080	-0.2	1.0	-0.3	1.0	A-	A+
7	601978	3	3	1282	.857	.040	.056	.857	.044	.003	.415	-.178	-.232	.415	-.260	-3.009	0.092	-0.1	1.0	-0.2	1.0	A+	A+
8	600863	3	2	1286	.686	.071	.065	.686	.177	.002	.504	-.250	-.223	.504	-.291	-1.765	0.072	0.3	1.0	0.4	1.0	A+	A-
9	601558	3	3	1286	.453	.080	.453	.134	.331	.003	.506	-.106	.506	-.162	-.346	-0.286	0.071	1.9	1.1	6.2	1.5	A+	B+
10	602676	3	3	1286	.641	.083	.214	.641	.060	.002	.489	-.236	-.268	.489	-.234	-1.474	0.070	1.2	1.0	1.0	1.1	A+	A-
11	600424	3	3	1286	.785	.084	.061	.785	.065	.004	.482	-.302	-.244	.482	-.192	-2.497	0.079	-1.9	0.9	-2.2	0.8	B+	A-
12	601559	3	3	1287	.649	.079	.066	.649	.202	.004	.517	-.112	-.177	.517	-.417	-1.605	0.070	0.9	1.0	0.8	1.0	A-	A+
13	601898	3	3	1287	.781	.781	.069	.136	.009	.005	.438	.438	-.182	-.355	-.040	-2.538	0.078	1.5	1.1	1.2	1.1	A+	A-
14	600864	3	2	1287	.772	.113	.057	.054	.772	.005	.536	-.318	-.237	-.267	.536	-2.462	0.077	-3.9	0.9	-3.9	0.7	A+	A-
15	600413	3	1	644	.792	.109	.028	.071	.792	.000	.441	-.278	-.226	-.214	.441	-2.535	0.110	0.2	1.0	0.6	1.1	A+	A-
16	600867	3	3	1283	.658	.658	.150	.066	.123	.003	.560	.560	-.280	-.196	-.346	-1.559	0.069	-1.6	1.0	-1.6	0.9	A+	A-
17	602677	3	3	1286	.547	.547	.180	.085	.182	.007	.539	.539	-.216	-.230	-.284	-0.901	0.067	0.4	1.0	1.1	1.1	A-	B-
18	600425	3	3	1286	.663	.081	.663	.149	.102	.005	.498	-.188	.498	-.292	-.244	-1.582	0.069	0.5	1.0	1.8	1.1	A+	A-
19	600423	3	1	1281	.881	.881	.045	.063	.006	.005	.412	.412	-.242	-.253	-.152	-3.262	0.096	-0.4	1.0	-0.8	0.9	A-	B+
20	601438	3	3	1280	.883	.049	.054	.883	.013	.002	.427	-.277	-.254	.427	-.153	-3.250	0.097	-0.9	0.9	-0.9	0.9	A+	A+
21	601976	3	3	639	.664	.105	.052	.180	.664	.000	.532	-.234	-.312	-.288	.532	-1.508	0.099	0.2	1.0	0.1	1.0	A-	A-
22	600868	3	3	639	.833	.022	.089	.833	.056	.000	.386	-.199	-.219	.386	-.229	-2.750	0.119	1.4	1.1	0.9	1.1	A+	A+
23	601900	3	1	1280	.896	.038	.896	.021	.045	.001	.399	-.224	.399	-.186	-.243	-3.411	0.101	-0.5	1.0	-1.1	0.9	B+	A+
24	600439	3	3	1281	.786	.003	.786	.050	.159	.002	.481	-.049	.481	-.237	-.374	-2.345	0.078	-0.4	1.0	-1.6	0.9	A-	A-
25	601216	3	3	641	.939	.037	.019	.939	.005	.000	.387	-.268	-.262	.387	-.090	-4.083	0.180	-1.2	0.9	-0.5	0.9	A+	A-
26	602675	3	1	1283	.894	.048	.894	.030	.020	.008	.407	-.220	.407	-.209	-.199	-3.429	0.103	-0.2	1.0	-1.3	0.8	B+	A-
27	600866	3	3	641	.903	.017	.044	.034	.903	.002	.432	-.206	-.224	-.278	.432	-3.488	0.149	-0.8	0.9	-1.9	0.7	A-	A-
28	601439	3	3	1283	.933	.018	.021	.933	.025	.003	.373	-.209	-.217	.373	-.176	-4.009	0.124	-1.1	0.9	-0.6	0.9	A+	A-
29	600431	3	1	1285	.834	.024	.083	.834	.051	.009	.469	-.241	-.301	.469	-.166	-2.828	0.087	-1.1	1.0	-1.3	0.9	A-	A-
30	601975	3	3	1283	.723	.098	.723	.067	.110	.002	.460	-.224	.460	-.315	-.188	-1.977	0.072	1.9	1.1	1.8	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
31	600865	3	3	1280	.913	.027	.913	.046	.014	.001	.362	-.208	.362	-.227	-.162	-3.637	0.108	-0.2	1.0	-0.7	0.9	A-	B+
32	601897	3	3	1286	.799	.098	.089	.799	.011	.003	.438	-.233	-.293	.438	-.152	-2.613	0.081	0.8	1.0	0.2	1.0	A+	A-
33	601437	3	3	1280	.891	.066	.018	.020	.891	.005	.436	-.257	-.228	-.239	.436	-3.380	0.101	-2.1	0.9	0.0	1.0	A+	A+
34	600438	3	3	1283	.782	.782	.183	.007	.023	.005	.492	.492	-.441	-.097	-.115	-2.418	0.078	-0.9	1.0	-1.4	0.9	A-	A-
35	601587	3	3	1285	.544	.143	.135	.171	.544	.007	.475	-.246	-.283	-.103	.475	-0.770	0.068	2.5	1.1	3.5	1.2	A-	A+
36	600921	3	3	1282	.708	.022	.030	.708	.232	.009	.511	-.183	-.235	.511	-.359	-1.770	0.075	-0.3	1.0	-0.1	1.0	B+	B-
37	600872	3	1	1282	.906	.906	.027	.058	.008	.002	.328	.328	-.240	-.168	-.166	-3.615	0.107	0.1	1.0	2.7	1.4	B+	B-
38	601441	3	N/A	1282	.701	.120	.083	.701	.093	.003	.492	-.259	-.249	.492	-.240	-1.700	0.074	1.3	1.0	1.8	1.1	A+	A+
39	603743	3	2	1286	.924	.015	.924	.016	.044	.002	.382	-.161	.382	-.219	-.241	-4.042	0.116	-1.2	0.9	-0.7	0.9	B+	B-
40	604350	3	1	1283	.929	.019	.929	.023	.023	.006	.378	-.174	.378	-.221	-.207	-4.075	0.120	-1.5	0.9	-0.9	0.8	B+	A+
41	600870	3	3	639	.836	.077	.044	.836	.042	.002	.431	-.247	-.289	.431	-.168	-2.790	0.120	0.1	1.0	-0.1	1.0	A-	A+
42	604351	3	1	639	.917	.030	.917	.022	.028	.003	.344	-.190	.344	-.234	-.151	-3.777	0.157	-0.5	0.9	1.1	1.2	B+	A-
43	600922	3	3	641	.435	.086	.435	.236	.237	.006	.606	-.104	.606	-.246	-.369	0.052	0.103	-0.4	1.0	2.7	1.3	C-	A+
44	600441	3	3	1283	.917	.009	.029	.917	.041	.006	.345	-.089	-.176	.345	-.225	-3.743	0.114	0.7	1.1	0.6	1.1	A-	B-
45	600426	3	3	1283	.470	.108	.470	.246	.165	.010	.545	-.226	.545	-.236	-.216	-0.305	0.068	1.2	1.0	4.2	1.3	B-	A+
46	600869	3	3	1283	.794	.023	.794	.114	.067	.002	.424	-.184	.424	-.291	-.204	-2.505	0.079	1.1	1.1	1.5	1.1	A-	A+
47	600871	3	1	1285	.938	.035	.938	.013	.007	.008	.383	-.252	.383	-.202	-.148	-4.307	0.133	-1.1	0.9	-2.6	0.5	A+	A-
48	601980	3	2	1286	.831	.063	.831	.047	.054	.005	.407	-.225	.407	-.214	-.196	-2.809	0.084	0.6	1.0	0.7	1.1	A-	B-
49	600440	3	3	641	.861	.034	.861	.023	.078	.003	.354	-.156	.354	-.080	-.277	-2.978	0.130	1.8	1.2	2.2	1.4	A+	C-
50	601440	3	N/A	1285	.628	.205	.628	.079	.078	.010	.443	-.258	.443	-.227	-.116	-1.305	0.069	4.2	1.1	4.3	1.2	A+	A+
51	601905	3	K	1924	.952	.024	.008	.015	.952	.002	.293	-.138	-.175	-.186	.293	-4.502	0.116	0.3	1.0	0.7	1.1	A+	B-
52	601906	3	K	1282	.939	.009	.939	.016	.035	.002	.295	-.121	.295	-.152	-.216	-4.189	0.128	0.1	1.0	0.9	1.2	A+	A-
53	600923	3	K	1930	.749	.204	.749	.041	.004	.003	.405	-.325	.405	-.162	-.131	-2.214	0.061	4.2	1.1	2.5	1.1	A-	A-
54	600443	3	4	1286	.904	.002	.904	.002	.086	.006	.276	-.087	.276	-.100	-.221	-3.648	0.106	2.1	1.2	2.7	1.5	A-	A-
55	601442	3	K	1283	.973	.973	.016	.006	.002	.004	.247	.247	-.167	-.142	-.049	-5.264	0.189	-0.3	0.9	-0.7	0.8	A+	A-
56	600873	3	4	1283	.669	.669	.072	.017	.239	.004	.510	.510	-.191	-.090	-.405	-1.628	0.070	1.1	1.0	1.4	1.1	A+	A-
57	601443	3	K	1280	.850	.096	.021	.029	.850	.004	.332	-.167	-.174	-.227	.332	-2.910	0.089	3.1	1.2	4.5	1.5	A+	A-
58	600874	3	4	1280	.927	.009	.927	.046	.012	.006	.341	-.135	.341	-.257	-.123	-3.971	0.121	0.2	1.0	-0.6	0.9	B+	A-
59	601982	3	K	1283	.958	.013	.017	.007	.958	.006	.310	-.160	-.163	-.144	.310	-4.688	0.158	-0.2	1.0	-0.5	0.9	A+	A+
60	601981	3	K	641	.892	.006	.084	.013	.892	.005	.355	-.184	-.276	-.097	.355	-3.377	0.145	0.9	1.1	1.3	1.3	A+	A+
61	600442	3	4	1287	.987	.004	.987	.002	.002	.005	.205	-.111	.205	-.046	-.097	-6.641	0.323	-0.1	0.9	-2.1	0.4	A+	A-
62	600427	3	K	1286	.766	.766	.105	.090	.036	.003	.379	.379	-.264	-.177	-.153	-2.266	0.075	3.5	1.1	2.4	1.2	A+	A+
63	600875	3	4	1282	.909	.909	.037	.027	.024	.002	.496	.496	-.295	-.245	-.267	-3.714	0.110	-3.3	0.8	-4.0	0.5	A+	B-
64	600428	3	3	1282	.846	.846	.073	.021	.055	.005	.357	.357	-.213	-.154	-.182	-2.937	0.091	2.5	1.1	3.1	1.3	A+	A-
65	600876	3	4	1282	.889	.022	.036	.889	.050	.004	.409	-.219	-.232	.409	-.235	-3.392	0.101	-0.9	0.9	-1.3	0.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
66	600924	3	3	1282	.830	.830	.047	.037	.083	.003	.397	.397	-.224	-.201	-.220	-2.730	0.086	1.3	1.1	0.6	1.1	A+	A+
67	601983	3	3	1283	.877	.877	.083	.023	.016	.001	.434	.434	-.354	-.167	-.162	-3.273	0.094	-1.7	0.9	-2.6	0.7	A+	A-
68	604353	3	3	644	.863	.056	.863	.036	.045	.000	.457	-.271	.457	-.234	-.246	-3.177	0.127	-1.4	0.9	-1.8	0.7	A+	A+
69	600444	3	4	1283	.964	.011	.016	.964	.004	.005	.349	-.200	-.217	.349	-.091	-4.881	0.170	-0.8	0.9	-3.0	0.4	A-	A-
70	601444	3	3	641	.881	.047	.881	.030	.036	.006	.373	-.172	.373	-.218	-.176	-3.236	0.140	0.9	1.1	1.8	1.3	A-	A-
71	601445	3	3	1283	.914	.015	.041	.022	.914	.009	.425	-.205	-.249	-.192	.425	-3.744	0.114	-1.2	0.9	-1.4	0.8	A-	A-
72	604352	3	3	1287	.682	.079	.159	.076	.682	.005	.509	-.287	-.249	-.229	.509	-1.826	0.071	0.1	1.0	0.7	1.0	A+	B-
73	601589	3	4	641	.964	.964	.006	.019	.008	.003	.270	.270	-.105	-.132	-.186	-4.842	0.235	0.2	1.0	0.2	1.0	A+	A-
74	601984	3	3	1280	.895	.035	.023	.045	.895	.002	.390	-.148	-.194	-.295	.390	-3.408	0.101	-1.1	0.9	1.4	1.2	A+	A-
75	601447	3	3	1282	.954	.008	.022	.954	.008	.009	.302	-.113	-.213	.302	-.099	-4.824	0.158	-0.3	1.0	-1.0	0.8	C+	A+
76	601570	3	3	1925	.757	.074	.757	.117	.049	.003	.522	-.194	.522	-.323	-.296	-2.203	0.063	-2.7	0.9	-1.3	0.9	A+	A-
77	601986	3	2	644	.938	.011	.938	.040	.008	.003	.261	-.076	.261	-.212	-.122	-4.257	0.177	0.3	1.0	0.2	1.0	A+	A+
78	600878	3	1	644	.880	.053	.880	.033	.034	.000	.348	-.257	.348	-.111	-.198	-3.365	0.133	0.5	1.0	1.0	1.2	B+	A-
79	600445	3	3	1281	.980	.980	.006	.000	.013	.002	.293	.293	-.141	.000	-.246	-5.492	0.216	-1.0	0.8	-3.5	0.2	A+	A+
80	601909	3	2	1280	.950	.007	.950	.026	.013	.004	.282	-.141	.282	-.167	-.146	-4.438	0.141	0.2	1.0	0.4	1.1	A+	A-
81	600446	3	3	1280	.921	.041	.921	.018	.016	.004	.393	-.257	.393	-.199	-.164	-3.824	0.115	-1.4	0.9	0.2	1.0	B+	A-
82	601908	3	2	1281	.913	.063	.016	.913	.006	.002	.371	-.290	-.178	.371	-.114	-3.678	0.109	-0.8	0.9	-0.3	1.0	A+	A-
83	600429	3	3	641	.793	.016	.119	.793	.072	.002	.507	-.192	-.363	.507	-.233	-2.316	0.113	-1.2	0.9	0.3	1.0	A+	C-
84	601446	3	3	1283	.711	.090	.083	.711	.108	.007	.545	-.254	-.179	.545	-.361	-1.773	0.072	-2.6	0.9	-0.6	1.0	A+	A+
85	601985	3	2	1287	.929	.009	.929	.012	.047	.002	.380	-.115	.380	-.187	-.292	-4.173	0.119	-1.9	0.9	-2.5	0.6	B+	A-
86	600877	3	1	1287	.938	.024	.938	.013	.022	.003	.351	-.227	.351	-.179	-.161	-4.369	0.127	-1.1	0.9	-1.2	0.8	A+	B-
87	604186	4	4	965	.442	.442	.167	.354	.037	.000	.449	.449	-.293	-.150	-.221	0.131	0.076	2.9	1.1	2.8	1.2	A-	A+
88	601958	4	3	962	.859	.013	.036	.859	.092	.001	.397	-.131	-.186	.397	-.301	-2.572	0.101	-0.7	1.0	-1.6	0.8	A+	A-
89	604488	4	3	962	.844	.844	.077	.054	.021	.004	.424	.424	-.257	-.252	-.146	-2.486	0.099	-0.9	0.9	-0.3	1.0	A+	A+
90	604492	4	3	964	.766	.041	.766	.099	.092	.003	.448	-.138	.448	-.259	-.267	-1.928	0.084	-1.1	1.0	-1.4	0.9	A-	B-
91	601962	4	4	964	.639	.173	.126	.639	.060	.002	.377	-.148	-.241	.377	-.175	-0.917	0.078	3.7	1.1	2.8	1.1	A-	A+
92	601987	4	4	963	.720	.044	.181	.720	.054	.002	.458	-.195	-.302	.458	-.204	-1.604	0.080	-0.8	1.0	-0.6	1.0	C-	A+
93	604187	4	4	966	.655	.154	.099	.088	.655	.003	.494	-.249	-.257	-.219	.494	-1.006	0.078	-0.5	1.0	-0.5	1.0	B-	A-
94	601638	4	4	965	.729	.056	.157	.729	.058	.001	.529	-.197	-.379	.529	-.218	-1.512	0.082	-3.2	0.9	-3.1	0.8	A+	B+
95	602968	4	3	1926	.822	.822	.111	.034	.032	.001	.408	.408	-.248	-.211	-.218	-2.250	0.066	-0.7	1.0	-0.2	1.0	A+	B-
96	601988	4	4	965	.911	.911	.029	.042	.018	.001	.391	.391	-.226	-.252	-.160	-3.156	0.122	-1.4	0.9	-1.6	0.7	A-	A+
97	602969	4	3	966	.611	.611	.198	.104	.088	.000	.485	.485	-.239	-.176	-.309	-0.735	0.077	1.3	1.0	1.1	1.1	A+	A+
98	604348	4	4	966	.582	.114	.191	.582	.113	.001	.454	-.301	-.229	.454	-.116	-0.576	0.076	0.9	1.0	1.4	1.1	A-	A+
99	604184	4	3	964	.809	.032	.060	.097	.809	.002	.471	-.169	-.277	-.291	.471	-2.059	0.092	-2.0	0.9	-3.2	0.7	A+	A+
100	604968	4	3	1445	.857	.041	.074	.857	.024	.004	.411	-.195	-.265	.411	-.198	-2.577	0.083	-1.0	1.0	-2.2	0.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
101	602970	4	3	964	.845	.014	.099	.845	.041	.002	.410	-.124	-.305	.410	-.201	-2.379	0.099	-0.5	1.0	-1.2	0.9	A+	A+
102	604877	4	3	1445	.762	.015	.046	.762	.172	.005	.359	-.155	-.195	.359	-.220	-1.822	0.069	2.0	1.1	1.5	1.1	A-	A+
103	601963	4	4	964	.627	.185	.111	.627	.076	.002	.327	-.112	-.202	.327	-.181	-1.072	0.076	4.7	1.2	4.1	1.2	A+	A+
104	604878	4	3	964	.302	.066	.302	.269	.358	.005	.312	-.094	.312	-.167	-.083	0.781	0.082	4.0	1.2	7.0	1.7	A-	A+
105	602004	4	3	964	.439	.082	.453	.023	.439	.003	.505	-.314	-.253	-.206	.505	-0.026	0.075	-1.3	1.0	-0.7	1.0	A-	C-
106	601959	4	3	964	.416	.503	.048	.416	.030	.003	.489	-.374	-.172	.489	-.060	0.100	0.076	0.6	1.0	0.6	1.0	A+	A-
107	601960	4	3	963	.863	.011	.062	.863	.062	.001	.296	-.165	-.246	.296	-.101	-2.680	0.102	0.9	1.1	0.9	1.1	B+	A-
108	602005	4	3	963	.733	.733	.061	.070	.135	.001	.521	.521	-.233	-.338	-.257	-1.649	0.082	-3.5	0.9	-2.7	0.8	A-	A-
109	601640	4	4	963	.713	.074	.156	.713	.057	.000	.500	-.277	-.292	.500	-.205	-1.518	0.080	-2.3	0.9	-1.6	0.9	A+	A+
110	602001	4	4	962	.632	.039	.267	.632	.060	.002	.442	-.194	-.241	.442	-.286	-0.976	0.078	0.8	1.0	1.3	1.1	A+	B+
111	602006	4	3	1443	.675	.189	.031	.105	.675	.001	.440	-.120	-.230	-.386	.440	-1.274	0.064	0.2	1.0	0.5	1.0	A+	B-
112	601641	4	4	961	.512	.149	.278	.512	.058	.003	.411	-.351	-.117	.411	-.102	-0.378	0.075	4.0	1.1	3.8	1.2	A-	A-
113	602002	4	4	961	.605	.226	.605	.090	.071	.009	.495	-.221	.495	-.313	-.190	-0.909	0.076	-1.1	1.0	-1.3	0.9	A+	A-
114	601636	4	4	481	.578	.094	.578	.154	.173	.002	.435	-.165	.435	-.229	-.209	-0.828	0.104	1.1	1.1	1.0	1.1	A-	A+
115	604484	4	4	481	.628	.206	.628	.092	.073	.002	.502	-.230	.502	-.274	-.253	-1.097	0.106	-1.2	1.0	-1.4	0.9	B+	A-
116	601965	4	4	963	.758	.022	.119	.097	.758	.004	.401	-.193	-.291	-.146	.401	-1.863	0.084	0.7	1.0	0.4	1.0	A+	A+
117	604349	4	5	963	.722	.722	.166	.058	.051	.003	.486	.486	-.275	-.192	-.303	-1.619	0.080	-1.9	0.9	-2.1	0.9	A+	A-
118	601637	4	4	963	.709	.068	.116	.709	.104	.003	.520	-.218	-.258	.520	-.306	-1.544	0.079	-3.1	0.9	-3.1	0.8	A-	A+
119	604490	4	3	963	.910	.025	.033	.030	.910	.002	.350	-.106	-.230	-.232	.350	-3.248	0.120	-1.0	0.9	-1.2	0.8	A-	A-
120	604185	4	4	482	.764	.133	.764	.081	.021	.002	.456	-.256	.456	-.269	-.219	-1.868	0.119	-0.9	0.9	0.0	1.0	A-	
121	601961	4	4	966	.674	.227	.053	.046	.674	.001	.478	-.289	-.264	-.204	.478	-1.115	0.079	-0.1	1.0	-0.7	1.0	A+	A+
122	601639	4	4	964	.687	.042	.219	.687	.049	.004	.385	-.153	-.258	.385	-.167	-1.402	0.078	2.0	1.1	1.3	1.1	A-	B-
123	601991	4	5	963	.558	.558	.131	.149	.159	.004	.546	.546	-.200	-.268	-.281	-0.693	0.074	-3.3	0.9	-2.5	0.9	A-	A-
124	601964	4	4	963	.566	.051	.566	.358	.023	.002	.465	-.193	.465	-.325	-.192	-0.730	0.074	0.6	1.0	1.0	1.1	A+	C-
125	604967	4	3	963	.914	.914	.028	.034	.023	.001	.359	.359	-.228	-.189	-.185	-3.294	0.123	-1.2	0.9	-1.4	0.8	B+	B-
126	603609	4	3	963	.581	.060	.581	.320	.035	.004	.390	-.101	.390	-.294	-.144	-0.815	0.074	4.4	1.1	3.9	1.2	A-	A-
127	604189	4	3	964	.573	.024	.573	.274	.128	.002	.476	-.157	.476	-.294	-.239	-0.748	0.075	-1.8	1.0	-1.7	0.9	A-	A-
128	603744	4	3	482	.826	.826	.135	.019	.019	.002	.446	.446	-.334	-.198	-.189	-2.342	0.132	-1.2	0.9	-1.0	0.9	A+	
129	604493	4	3	1443	.634	.213	.074	.634	.079	.000	.433	-.260	-.235	.433	-.151	-1.015	0.063	1.2	1.0	1.3	1.1	B-	A+
130	602008	4	3	965	.636	.125	.636	.032	.205	.001	.485	-.237	.485	-.188	-.298	-0.950	0.077	0.2	1.0	-0.1	1.0	A+	A+
131	601999	4	4	966	.684	.112	.684	.054	.149	.001	.404	-.212	.404	-.148	-.241	-1.178	0.080	2.5	1.1	2.1	1.1	A-	B-
132	601992	4	4	962	.633	.633	.082	.251	.029	.005	.484	.484	-.198	-.324	-.194	-0.990	0.077	-0.7	1.0	-1.0	1.0	B-	A-
133	604188	4	3	964	.681	.030	.681	.111	.173	.005	.431	-.133	.431	-.299	-.195	-1.394	0.078	0.4	1.0	0.0	1.0	C-	A-
134	604494	4	3	961	.857	.014	.062	.857	.065	.002	.384	-.164	-.256	.384	-.215	-2.632	0.101	-0.7	1.0	-1.4	0.8	B-	A+
135	602007	4	3	482	.849	.095	.849	.029	.027	.000	.317	-.222	.317	-.173	-.121	-2.527	0.138	1.1	1.1	0.2	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
136	602885	4	3	965	.755	.110	.755	.123	.011	.000	.309	-.163	.309	-.196	-.163	-1.687	0.084	4.2	1.2	4.1	1.3	A+	A+
137	602971	4	3	481	.796	.023	.121	.796	.058	.002	.395	-.033	-.355	.395	-.152	-2.154	0.124	0.0	1.0	-0.3	1.0	C-	A-
138	601993	4	3	1447	.748	.130	.748	.065	.057	.000	.427	-.243	.427	-.255	-.176	-1.566	0.069	1.3	1.1	0.9	1.1	A-	A-
139	602010	4	1	964	.906	.906	.062	.009	.020	.003	.363	.363	-.226	-.184	-.176	-3.188	0.118	-0.8	0.9	-1.3	0.8	A+	A-
140	602009	4	1	964	.966	.016	.011	.966	.006	.001	.243	-.103	-.186	.243	-.128	-4.388	0.183	-0.4	0.9	-0.3	0.9	A+	A-
141	604514	4	4	482	.907	.050	.021	.907	.021	.002	.311	-.189	-.167	.311	-.162	-3.198	0.168	0.2	1.0	-0.3	0.9	A-	
142	604190	4	4	962	.730	.093	.730	.060	.118	.000	.395	-.134	.395	-.171	-.298	-1.574	0.083	2.0	1.1	1.3	1.1	A+	A-
143	604191	4	4	961	.681	.074	.168	.073	.681	.005	.450	-.154	-.287	-.209	.450	-1.340	0.079	1.3	1.1	0.8	1.0	A+	A-
144	604495	4	4	963	.543	.057	.543	.173	.223	.003	.415	-.216	.415	-.172	-.212	-0.619	0.074	3.5	1.1	3.0	1.1	A+	A+
145	602887	4	5	964	.836	.130	.836	.020	.012	.002	.309	-.212	.309	-.148	-.171	-2.292	0.097	1.2	1.1	2.7	1.3	B+	A-
146	604969	4	4	481	.466	.046	.316	.466	.171	.002	.444	-.083	-.297	.444	-.162	-0.240	0.104	1.4	1.1	1.7	1.1	A-	B+
147	602000	4	3	962	.418	.136	.147	.418	.296	.003	.464	-.260	-.215	.464	-.127	0.235	0.078	2.1	1.1	2.2	1.1	A+	A+
148	602973	4	4	965	.775	.169	.775	.039	.016	.001	.474	-.330	.474	-.267	-.170	-1.834	0.087	-1.3	0.9	-1.4	0.9	A-	A+
149	604193	4	4	964	.829	.079	.053	.829	.034	.005	.434	-.210	-.251	.434	-.230	-2.421	0.094	-1.6	0.9	-1.7	0.8	A-	A-
150	601646	4	3	962	.882	.006	.882	.079	.031	.002	.332	-.146	.332	-.213	-.199	-2.827	0.109	0.3	1.0	0.0	1.0	A+	A-
151	604195	4	3	482	.849	.035	.849	.079	.035	.002	.478	-.176	.478	-.307	-.293	-2.546	0.139	-1.8	0.9	-2.8	0.6	A-	
152	604497	4	3	1448	.870	.870	.019	.022	.089	.000	.330	.330	-.174	-.192	-.207	-2.657	0.085	0.4	1.0	1.1	1.1	B+	A-
153	604498	4	3	964	.829	.020	.829	.078	.072	.002	.402	-.155	.402	-.229	-.252	-2.227	0.095	0.1	1.0	0.0	1.0	A+	A+
154	604192	4	4	962	.819	.021	.111	.819	.045	.004	.402	-.202	-.274	.402	-.170	-2.238	0.093	-1.0	1.0	-1.3	0.9	A+	A-
155	601647	4	3	964	.902	.048	.018	.902	.032	.001	.322	-.185	-.153	.322	-.198	-3.139	0.115	-0.6	1.0	-0.8	0.9	A-	B-
156	604485	4	4	962	.837	.049	.078	.837	.033	.003	.394	-.185	-.219	.394	-.227	-2.408	0.097	-0.2	1.0	-0.5	1.0	A+	A+
157	602012	4	4	961	.851	.051	.055	.851	.040	.003	.366	-.194	-.177	.366	-.203	-2.570	0.099	0.1	1.0	-0.2	1.0	A-	A+
158	601995	4	4	963	.781	.135	.781	.043	.042	.000	.410	-.215	.410	-.231	-.248	-2.003	0.086	-0.5	1.0	0.6	1.1	A+	B-
159	601994	4	4	481	.703	.135	.106	.052	.703	.004	.476	-.187	-.321	-.231	.476	-1.542	0.112	-1.0	1.0	-1.3	0.9	A-	A+
160	604879	4	4	1446	.767	.767	.069	.082	.078	.004	.391	.391	-.211	-.287	-.120	-1.898	0.069	0.5	1.0	-0.1	1.0	A+	A+
161	602015	4	3	482	.927	.039	.023	.008	.927	.002	.267	-.174	-.158	-.115	.267	-3.513	0.187	-0.1	1.0	0.3	1.1	A+	
162	601972	4	3	966	.904	.017	.904	.018	.061	.001	.437	-.180	.437	-.168	-.344	-3.030	0.118	-2.5	0.8	-2.5	0.6	A+	A+
163	604501	4	3	962	.661	.661	.149	.060	.127	.003	.571	.571	-.254	-.245	-.346	-1.156	0.079	-4.9	0.8	-4.5	0.8	A-	C-
164	602890	4	3	962	.945	.027	.945	.017	.008	.003	.351	-.280	.351	-.127	-.139	-3.829	0.152	-1.1	0.9	-2.7	0.5	A+	A-
165	601996	4	N/A	1445	.945	.009	.945	.034	.010	.003	.336	-.162	.336	-.218	-.160	-3.871	0.122	-1.1	0.9	-2.8	0.5	A+	A-
166	601997	4	N/A	963	.816	.135	.041	.816	.007	.001	.294	-.188	-.205	.294	-.095	-2.254	0.092	2.3	1.1	3.0	1.3	A-	A+
167	604970	4	3	961	.881	.035	.032	.881	.049	.002	.355	-.226	-.155	.355	-.194	-2.880	0.108	-0.8	0.9	0.5	1.1	A+	B-
168	602014	4	3	963	.792	.138	.031	.792	.036	.002	.343	-.199	-.151	.343	-.223	-2.100	0.088	1.7	1.1	1.8	1.2	A+	A-
169	604499	4	3	963	.820	.099	.019	.820	.061	.001	.438	-.229	-.192	.438	-.304	-2.287	0.093	-1.9	0.9	-1.8	0.8	B-	B-
170	602889	4	3	964	.797	.797	.034	.143	.024	.002	.445	.445	-.279	-.273	-.192	-1.959	0.090	-1.6	0.9	-0.9	0.9	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
171	601998	4	N/A	962	.831	.004	.005	.158	.831	.002	.304	-.074	-.126	-.270	.304	-2.350	0.096	2.2	1.1	3.4	1.4	B+	A-
172	604486	4	3	481	.807	.067	.119	.008	.807	.000	.418	-.210	-.323	-.094	.418	-2.219	0.126	-0.9	0.9	-0.5	0.9	A+	A-
173	604956	5	4	1194	.628	.126	.142	.088	.628	.016	.598	-.349	-.240	-.236	.598	-0.587	0.069	-6.5	0.8	-5.5	0.8	A+	A-
174	604783	5	5	1189	.819	.819	.051	.041	.080	.008	.480	.480	-.212	-.217	-.296	-1.991	0.087	-2.3	0.9	-1.5	0.8	A-	B-
175	606159	5	2	1194	.757	.071	.757	.146	.023	.003	.427	-.139	.427	-.344	-.125	-1.334	0.075	-0.2	1.0	-0.5	1.0	A+	A-
176	601532	5	5	2383	.868	.868	.047	.048	.031	.006	.423	.423	-.217	-.240	-.204	-2.210	0.068	-2.0	0.9	-1.6	0.9	A+	A-
177	606160	5	4	1193	.796	.020	.068	.796	.114	.003	.453	-.226	-.237	.453	-.270	-1.490	0.080	-1.3	0.9	-1.4	0.9	A-	A-
178	604834	5	5	1192	.889	.014	.052	.889	.042	.003	.376	-.156	-.243	.376	-.213	-2.328	0.102	-0.3	1.0	-0.2	1.0	A+	B-
179	604865	5	4	1196	.830	.039	.085	.830	.042	.003	.476	-.176	-.340	.476	-.217	-1.714	0.087	-1.7	0.9	-2.3	0.8	A+	A+
180	604851	5	2	1191	.554	.140	.061	.554	.230	.015	.622	-.275	-.164	.622	-.355	-0.139	0.069	-6.4	0.8	-5.5	0.8	A-	A-
181	606169	5	4	1189	.485	.485	.188	.092	.229	.007	.570	.570	-.242	-.175	-.298	0.231	0.070	-3.0	0.9	-1.5	0.9	A+	A-
182	606168	5	4	1191	.474	.144	.474	.171	.201	.010	.404	-.193	.404	-.218	-.094	0.326	0.069	6.3	1.2	5.5	1.3	A-	A-
183	600850	5	5	1189	.495	.495	.158	.183	.146	.018	.611	.611	-.383	-.191	-.203	0.139	0.071	-5.0	0.9	-3.6	0.8	A+	A-
184	600851	5	5	1784	.529	.063	.215	.182	.529	.012	.639	-.198	-.392	-.237	.639	-0.022	0.057	-8.7	0.8	-5.9	0.8	A-	A-
185	601591	5	6	1786	.759	.165	.759	.040	.029	.008	.409	-.233	.409	-.215	-.196	-1.323	0.064	1.9	1.1	1.6	1.1	A+	A-
186	601537	5	5	1191	.503	.032	.191	.267	.503	.008	.575	-.174	-.340	-.248	.575	0.274	0.068	-5.1	0.9	-2.5	0.9	A-	A+
187	604837	5	4	1191	.348	.170	.228	.241	.348	.013	.403	-.177	-.184	-.061	.403	1.172	0.072	4.3	1.2	6.8	1.6	A-	B+
188	604788	5	4	1195	.936	.029	.936	.021	.012	.002	.346	-.193	.346	-.213	-.159	-2.973	0.127	-0.9	0.9	-2.8	0.6	A-	B-
189	604849	5	5	1195	.911	.027	.013	.047	.911	.002	.350	-.176	-.162	-.237	.350	-2.555	0.110	-0.9	0.9	-0.8	0.9	A+	A-
190	604838	5	4	1195	.604	.210	.604	.140	.044	.002	.548	-.433	.548	-.184	-.133	-0.164	0.068	-3.8	0.9	-3.5	0.9	A-	A+
191	601535	5	6	1195	.914	.914	.039	.017	.028	.003	.387	.387	-.233	-.198	-.188	-2.614	0.112	-1.7	0.9	-2.2	0.7	A-	A-
192	604850	5	5	1196	.673	.673	.120	.171	.036	.001	.476	.476	-.262	-.280	-.163	-0.556	0.071	-1.0	1.0	-0.4	1.0	A-	B-
193	601536	5	6	1196	.829	.829	.059	.039	.073	.001	.391	.391	-.172	-.166	-.277	-1.681	0.086	-0.1	1.0	1.1	1.1	A-	A+
194	604866	5	4	1790	.717	.063	.075	.139	.717	.007	.560	-.231	-.316	-.301	.560	-0.929	0.060	-6.1	0.8	-6.2	0.7	A+	A-
195	604786	5	N/A	1192	.790	.113	.790	.071	.023	.003	.430	-.328	.430	-.173	-.143	-1.357	0.081	0.1	1.0	0.6	1.0	B-	A-
196	606161	5	5	1193	.817	.057	.046	.075	.817	.004	.487	-.185	-.270	-.301	.487	-1.673	0.083	-2.7	0.9	-2.6	0.8	A+	B-
197	604854	5	4	1194	.580	.092	.203	.580	.121	.005	.482	-.159	-.285	.482	-.213	-0.280	0.067	0.4	1.0	0.2	1.0	A+	A-
198	606827	5	4	1194	.816	.037	.816	.080	.059	.009	.320	-.180	.320	-.147	-.154	-1.806	0.083	1.5	1.1	4.0	1.5	A+	A-
199	606274	5	4	1194	.768	.080	.768	.077	.064	.011	.495	-.180	.495	-.315	-.236	-1.446	0.077	-2.8	0.9	-3.1	0.8	A+	A-
200	604797	5	N/A	1194	.797	.096	.797	.071	.026	.010	.424	-.242	.424	-.200	-.192	-1.663	0.080	-0.5	1.0	0.0	1.0	A-	A-
201	604957	5	4	596	.760	.057	.059	.760	.112	.012	.490	-.162	-.179	.490	-.336	-1.396	0.108	-1.6	0.9	-1.1	0.9	A-	A+
202	606153	5	N/A	598	.798	.008	.018	.162	.798	.013	.468	-.106	-.176	-.379	.468	-1.681	0.114	-1.8	0.9	-1.8	0.8	A-	A-
203	606154	5	4	1196	.663	.100	.189	.663	.047	.001	.463	-.254	-.259	.463	-.195	-0.497	0.071	0.9	1.0	1.5	1.1	A-	A+
204	606826	5	4	598	.748	.179	.748	.040	.025	.008	.273	-.077	.273	-.209	-.217	-1.285	0.105	3.9	1.2	4.8	1.6	B+	B-
205	604836	5	4	1189	.546	.050	.546	.310	.084	.011	.470	-.155	.470	-.293	-.180	-0.136	0.070	3.0	1.1	5.7	1.3	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
206	601590	5	5	2382	.639	.639	.263	.076	.019	.004	.494	.494	-.309	-.264	-.181	-0.574	0.050	-0.9	1.0	-1.2	1.0	A-	A-
207	604953	5	4	1189	.625	.625	.110	.204	.046	.015	.537	.537	-.181	-.327	-.242	-0.623	0.072	-1.2	1.0	-1.2	0.9	A-	A-
208	604853	5	2	1189	.601	.029	.279	.601	.078	.012	.604	-.120	-.476	.604	-.154	-0.470	0.071	-5.3	0.8	-3.8	0.8	A-	B-
209	604784	5	5	1190	.861	.861	.031	.055	.043	.010	.453	.453	-.173	-.299	-.198	-2.371	0.097	-1.7	0.9	-1.4	0.8	A+	A-
210	604856	5	4	1194	.594	.131	.130	.134	.594	.012	.526	-.179	-.207	-.322	.526	-0.380	0.068	-1.7	1.0	-1.8	0.9	A+	A+
211	604958	5	4	1191	.729	.729	.066	.085	.108	.013	.541	.541	-.228	-.345	-.215	-1.196	0.075	-3.4	0.9	-2.4	0.8	B-	A-
212	600853	5	3	1791	.774	.117	.047	.061	.774	.001	.360	-.172	-.191	-.220	.360	-1.224	0.064	2.9	1.1	3.2	1.2	A-	A-
213	606163	5	2	1191	.657	.265	.041	.657	.034	.003	.340	-.204	-.241	.340	-.112	-0.699	0.071	6.0	1.2	5.9	1.4	A-	A-
214	604960	5	4	596	.698	.030	.180	.089	.698	.003	.429	-.160	-.239	-.238	.429	-0.954	0.101	1.0	1.1	0.6	1.1	A-	A-
215	604959	5	4	1190	.834	.834	.060	.055	.046	.006	.514	.514	-.264	-.282	-.250	-2.048	0.089	-3.2	0.8	-2.6	0.7	A-	A-
216	604857	5	3	1191	.623	.623	.200	.045	.121	.012	.275	.275	-.025	-.113	-.254	-0.424	0.070	9.4	1.3	9.2	1.5	A-	A-
217	604796	5	6	1195	.610	.039	.223	.610	.127	.001	.405	-.129	-.214	.405	-.240	-0.192	0.068	2.7	1.1	1.8	1.1	A-	A-
218	606162	5	2	596	.611	.029	.017	.339	.611	.005	.293	-.221	-.206	-.139	.293	-0.451	0.096	6.7	1.3	6.0	1.5	A-	A-
219	604841	5	4	598	.881	.022	.881	.020	.070	.007	.270	-.109	.270	-.169	-.144	-2.413	0.137	0.6	1.1	2.0	1.4	B+	A-
220	604868	5	5	1189	.747	.034	.747	.074	.135	.011	.436	-.206	.436	-.293	-.166	-1.412	0.077	0.2	1.0	1.7	1.1	A+	A-
221	601542	5	3	1193	.575	.064	.575	.279	.079	.003	.417	-.144	.417	-.271	-.160	-0.111	0.068	3.8	1.1	3.7	1.2	A-	A-
222	604869	5	4	1194	.812	.078	.090	.812	.018	.003	.444	-.284	-.256	.444	-.142	-1.735	0.081	-1.6	0.9	-2.9	0.8	B+	A-
223	604790	5	4	596	.857	.025	.017	.084	.857	.017	.392	-.218	-.202	-.179	.392	-2.259	0.133	-0.3	1.0	-0.3	0.9	A-	A-
224	604843	5	3	1191	.615	.615	.170	.123	.088	.004	.528	.528	-.282	-.283	-.173	-0.358	0.069	-2.0	0.9	-1.9	0.9	A+	A-
225	604961	5	4	1195	.811	.091	.811	.034	.063	.002	.396	-.261	.396	-.155	-.195	-1.496	0.082	0.2	1.0	-0.1	1.0	A-	A-
226	604858	5	2	1191	.499	.073	.120	.499	.303	.005	.427	-.230	-.246	.427	-.140	0.199	0.068	5.4	1.2	5.9	1.3	A+	A+
227	606275	5	8	1193	.816	.117	.055	.008	.816	.004	.366	-.212	-.245	-.131	.366	-1.662	0.083	0.3	1.0	0.3	1.0	A+	A-
228	604962	5	4	1192	.763	.053	.148	.036	.763	.000	.381	-.148	-.294	-.131	.381	-1.141	0.078	3.2	1.1	2.4	1.2	A+	A+
229	604859	5	2	1784	.461	.163	.252	.114	.461	.010	.458	-.258	-.124	-.198	.458	0.402	0.058	5.7	1.2	4.8	1.2	A+	A+
230	606155	5	4	1194	.499	.434	.054	.499	.013	.001	.354	-.263	-.152	.354	-.097	0.162	0.067	7.2	1.2	8.6	1.4	A-	A-
231	606276	5	8	598	.610	.052	.197	.610	.127	.013	.344	-.132	-.176	.344	-.161	-0.479	0.096	5.2	1.2	4.9	1.4	A-	A-
232	604842	5	3	1190	.760	.063	.029	.760	.141	.007	.463	-.205	-.187	.463	-.299	-1.429	0.079	-0.2	1.0	-0.4	1.0	A+	A+
233	604862	5	4	1194	.670	.092	.116	.112	.670	.010	.570	-.259	-.284	-.274	.570	-0.809	0.070	-5.2	0.9	-5.2	0.7	A+	B+
234	600852	5	4	1191	.720	.056	.050	.720	.162	.011	.463	-.195	-.171	.463	-.284	-1.127	0.074	0.6	1.0	-1.0	0.9	A+	B-
235	606278	5	3	1191	.632	.632	.069	.248	.040	.012	.511	.511	-.191	-.325	-.202	-0.477	0.070	-1.4	1.0	-0.9	1.0	A+	A-
236	606165	5	4	1785	.740	.075	.740	.151	.025	.010	.394	-.163	.394	-.233	-.187	-1.318	0.062	3.5	1.1	3.1	1.2	A-	A-
237	601538	5	4	1189	.416	.121	.188	.262	.416	.013	.506	-.193	-.106	-.298	.506	0.645	0.072	2.2	1.1	5.1	1.4	A-	A-
238	601539	5	4	1190	.827	.101	.827	.037	.022	.013	.446	-.274	.446	-.183	-.202	-2.039	0.090	-0.8	1.0	-0.2	1.0	A-	A-
239	604793	5	4	1191	.900	.900	.030	.019	.041	.009	.309	.309	-.184	-.135	-.138	-2.662	0.109	0.5	1.0	0.9	1.1	B+	A+
240	606156	5	4	1792	.635	.085	.067	.635	.211	.002	.398	-.206	-.197	.398	-.200	-0.333	0.057	4.4	1.1	3.8	1.2	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
241	604872	5	3	1196	.729	.729	.161	.066	.041	.003	.489	.489	-.301	-.258	-.186	-0.922	0.075	-1.6	0.9	-1.6	0.9	A+	A-
242	604861	5	4	598	.679	.075	.147	.679	.097	.002	.394	-.147	-.258	.394	-.170	-0.833	0.099	2.1	1.1	1.6	1.1	A+	A+
243	606164	5	4	596	.894	.894	.027	.052	.024	.003	.450	.450	-.205	-.301	-.186	-2.548	0.143	-1.9	0.8	-2.8	0.5	A+	A-
244	606277	5	3	1190	.819	.819	.092	.019	.057	.013	.437	.437	-.271	-.148	-.205	-1.949	0.088	-0.2	1.0	1.6	1.2	A+	A-
245	604860	5	4	1193	.476	.086	.112	.319	.476	.008	.435	-.182	-.267	-.155	.435	0.432	0.068	3.6	1.1	4.3	1.2	A+	B-
246	606166	5	4	1189	.892	.892	.032	.043	.027	.007	.443	.443	-.220	-.265	-.190	-2.754	0.105	-2.3	0.9	-2.4	0.6	A+	A-
247	606157	5	4	1192	.750	.156	.040	.050	.750	.003	.422	-.274	-.198	-.184	.422	-1.055	0.077	-0.2	1.0	-0.6	1.0	A-	A+
248	604848	5	7	1790	.841	.024	.841	.080	.051	.003	.373	-.133	.373	-.261	-.177	-1.884	0.072	0.4	1.0	0.6	1.1	A+	A-
249	604966	5	3	598	.977	.005	.010	.977	.005	.003	.217	-.090	-.159	.217	-.155	-4.367	0.293	-0.4	0.9	-1.5	0.5	A+	A-
250	604965	5	3	1193	.916	.026	.916	.025	.030	.003	.359	-.210	.359	-.136	-.238	-2.742	0.112	-1.3	0.9	-1.7	0.7	A+	A-
251	606158	5	6	1189	.800	.054	.070	.067	.800	.009	.407	-.188	-.142	-.274	.407	-1.824	0.084	0.3	1.0	2.4	1.3	A+	A+
252	601540	5	6	1194	.666	.182	.666	.068	.080	.004	.500	-.257	.500	-.212	-.285	-0.766	0.070	-1.8	1.0	-2.0	0.9	A+	A+
253	606167	5	7	1190	.883	.039	.883	.040	.030	.008	.423	-.184	.423	-.242	-.215	-2.604	0.103	-0.9	0.9	-1.7	0.8	A+	B-
254	601592	5	6	596	.737	.114	.737	.082	.065	.002	.509	-.208	.509	-.303	-.307	-1.199	0.104	-2.3	0.9	-2.3	0.8	B+	A+
255	604964	5	3	1192	.953	.016	.953	.008	.022	.002	.275	-.198	.275	-.140	-.134	-3.436	0.147	-0.2	1.0	0.5	1.1	A+	A-
256	604794	5	6	1189	.853	.014	.100	.853	.024	.010	.359	-.104	-.254	.359	-.139	-2.302	0.093	0.0	1.0	1.7	1.2	A+	A+
257	606279	5	7	1196	.605	.605	.283	.062	.050	.000	.482	.482	-.304	-.272	-.151	-0.146	0.069	0.5	1.0	0.7	1.0	A-	A-
258	599668	6	6	611	.789	.084	.066	.789	.057	.005	.397	-.187	-.134	.397	-.295	-1.234	0.110	-0.3	1.0	-0.5	0.9	A+	A-
259	602174	6	6	1229	.513	.513	.197	.130	.144	.016	.467	.467	-.230	-.200	-.173	0.232	0.066	0.5	1.0	0.2	1.0	A+	A-
260	599670	6	6	1230	.795	.037	.795	.103	.040	.025	.417	-.246	.417	-.205	-.162	-1.499	0.084	0.0	1.0	0.5	1.0	A-	A+
261	599667	6	5	1230	.811	.046	.078	.063	.811	.003	.387	-.186	-.240	-.181	.387	-1.291	0.081	0.0	1.0	-0.1	1.0	A+	A-
262	599595	6	6	1228	.963	.015	.014	.963	.007	.002	.299	-.159	-.172	.299	-.136	-3.515	0.160	-0.8	0.9	-3.0	0.4	A+	A+
263	599591	6	6	1228	.913	.022	.913	.024	.030	.011	.360	-.164	.360	-.176	-.188	-2.598	0.114	-0.7	0.9	-1.3	0.8	A-	A-
264	599607	6	5	1228	.555	.555	.128	.245	.057	.015	.597	.597	-.163	-.415	-.184	0.167	0.067	-6.1	0.8	-5.0	0.8	A-	A+
265	599594	6	6	1228	.966	.005	.966	.016	.004	.009	.249	-.108	.249	-.137	-.115	-3.821	0.185	-0.4	0.9	-1.1	0.7	A+	A+
266	601812	6	6	1233	.592	.083	.142	.174	.592	.009	.411	-.188	-.187	-.189	.411	0.023	0.068	3.7	1.1	2.5	1.1	A+	A+
267	599644	6	6	1233	.542	.359	.040	.045	.542	.015	.449	-.229	-.260	-.204	.449	0.285	0.067	2.1	1.1	2.8	1.1	A+	A-
268	599598	6	6	1230	.780	.087	.039	.076	.780	.018	.545	-.322	-.204	-.270	.545	-1.311	0.081	-4.4	0.8	-4.4	0.6	A-	A+
269	599666	6	5	1230	.458	.458	.073	.224	.231	.014	.416	.416	-.069	-.340	-.068	0.751	0.069	5.5	1.2	5.0	1.3	A-	A+
270	599662	6	6	1230	.916	.046	.916	.009	.011	.018	.372	-.234	.372	-.168	-.146	-2.896	0.123	-0.7	0.9	-2.1	0.6	A+	A+
271	601794	6	6	1230	.816	.816	.055	.050	.060	.018	.471	.471	-.242	-.246	-.211	-1.632	0.086	-2.4	0.9	-2.3	0.8	A+	A+
272	599599	6	6	1230	.874	.066	.035	.024	.874	.001	.425	-.245	-.266	-.197	.425	-1.872	0.094	-2.6	0.9	-3.3	0.6	A+	A-
273	601795	6	6	1230	.828	.037	.067	.828	.063	.007	.413	-.193	-.206	.413	-.253	-1.461	0.085	-1.4	0.9	-1.3	0.9	A+	A+
274	599671	6	6	1230	.632	.259	.059	.632	.047	.002	.326	-.206	-.195	.326	-.093	-0.105	0.068	6.3	1.2	5.0	1.3	A+	A-
275	599663	6	6	1230	.968	.968	.007	.008	.014	.002	.245	.245	-.160	-.119	-.117	-3.627	0.175	-0.5	0.9	-1.5	0.6	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
276	599615	6	6	1228	.793	.038	.066	.793	.103	.000	.327	-.219	-.238	.327	-.104	-1.324	0.078	1.9	1.1	2.1	1.2	A+	B+
277	599654	6	6	1228	.384	.043	.415	.158	.384	.000	.525	-.193	-.238	-.271	.525	1.064	0.068	-2.4	0.9	-1.8	0.9	A-	A-
278	599700	6	5	1231	.549	.549	.243	.070	.133	.005	.545	.545	-.286	-.197	-.276	0.119	0.066	-5.1	0.9	-4.3	0.8	A-	A-
279	601071	6	6	1231	.652	.069	.067	.652	.208	.003	.424	-.209	-.281	.424	-.182	-0.447	0.068	0.6	1.0	-0.6	1.0	A+	A-
280	601789	6	6	1231	.802	.802	.087	.037	.066	.008	.377	.377	-.208	-.175	-.199	-1.456	0.080	-0.6	1.0	-0.1	1.0	A-	A-
281	599655	6	6	1231	.836	.077	.836	.055	.028	.003	.429	-.338	.429	-.219	-.085	-1.686	0.084	-2.1	0.9	-3.1	0.7	A-	A-
282	601072	6	6	1231	.644	.113	.106	.644	.129	.007	.437	-.258	-.264	.437	-.111	-0.417	0.068	0.1	1.0	-1.0	1.0	B+	A+
283	599617	6	6	1231	.668	.032	.187	.668	.099	.015	.317	-.092	-.090	.317	-.253	-0.577	0.069	4.7	1.2	4.6	1.3	A+	B+
284	601790	6	6	1231	.375	.437	.054	.120	.375	.013	.462	-.205	-.229	-.158	.462	1.016	0.067	-0.2	1.0	-0.4	1.0	A-	B+
285	599701	6	5	1231	.590	.590	.197	.122	.085	.007	.465	.465	-.339	-.178	-.094	-0.118	0.066	-0.5	1.0	-1.3	0.9	A-	A-
286	601115	6	6	1227	.569	.305	.033	.569	.091	.002	.444	-.279	-.220	.444	-.172	-0.052	0.065	0.8	1.0	1.4	1.1	A+	A-
287	599672	6	6	615	.810	.011	.106	.810	.070	.003	.412	-.164	-.209	.412	-.290	-1.508	0.113	-0.8	1.0	-1.1	0.9	A-	A-
288	601753	6	6	1227	.306	.547	.069	.074	.306	.004	.422	-.123	-.250	-.239	.422	1.365	0.070	1.2	1.0	3.4	1.2	A-	B+
289	599723	6	5	615	.485	.485	.304	.135	.067	.010	.447	.447	-.206	-.198	-.181	0.372	0.092	1.0	1.0	1.0	1.1	A-	A-
290	599676	6	6	615	.889	.007	.023	.065	.889	.016	.359	-.144	-.167	-.211	.359	-2.398	0.146	-0.5	1.0	-0.4	0.9	A-	A+
291	599674	6	8	1223	.583	.121	.227	.583	.058	.011	.419	-.199	-.225	.419	-.168	-0.162	0.066	2.9	1.1	1.9	1.1	B+	A-
292	601751	6	N/A	1223	.804	.018	.034	.135	.804	.010	.437	-.082	-.224	-.330	.437	-1.536	0.080	-1.8	0.9	-1.8	0.8	A-	A-
293	599678	6	6	1223	.680	.091	.159	.062	.680	.008	.424	-.167	-.245	-.208	.424	-0.696	0.069	1.0	1.0	1.3	1.1	A+	A-
294	601754	6	6	612	.925	.925	.036	.021	.016	.002	.328	.328	-.223	-.182	-.118	-2.783	0.162	-0.6	0.9	-1.0	0.8	A-	B-
295	599680	6	4	1223	.865	.065	.044	.865	.023	.003	.461	-.310	-.244	.461	-.177	-2.021	0.090	-3.5	0.8	-3.3	0.6	A-	A-
296	602147	6	6	1223	.499	.110	.499	.258	.128	.005	.487	-.144	.487	-.298	-.185	0.307	0.066	0.1	1.0	0.1	1.0	A+	A-
297	599677	6	6	612	.719	.023	.211	.719	.041	.007	.471	-.233	-.390	.471	-.044	-0.935	0.102	-0.6	1.0	-1.4	0.9	A+	B+
298	601116	6	6	612	.508	.170	.508	.178	.131	.013	.435	-.293	.435	-.143	-.119	0.229	0.093	2.1	1.1	1.8	1.1	A+	A-
299	599673	6	6	1227	.709	.097	.112	.064	.709	.018	.584	-.190	-.386	-.264	.584	-0.889	0.071	-6.3	0.8	-5.5	0.7	B-	A+
300	599724	6	5	612	.807	.023	.101	.044	.807	.025	.324	-.203	-.044	-.260	.324	-1.666	0.118	1.4	1.1	2.3	1.4	A+	B-
301	602148	6	6	1222	.930	.010	.012	.044	.930	.003	.275	-.119	-.113	-.190	.275	-2.782	0.120	-0.5	1.0	0.9	1.2	A+	B-
302	599681	6	4	1222	.858	.052	.034	.039	.858	.016	.469	-.287	-.221	-.207	.469	-1.979	0.092	-3.3	0.8	-3.7	0.6	A+	C-
303	601752	6	N/A	1222	.665	.056	.665	.111	.165	.004	.499	-.024	.499	-.264	-.382	-0.509	0.068	-2.9	0.9	-2.4	0.9	C-	A+
304	599679	6	6	1222	.717	.038	.717	.104	.133	.008	.457	-.154	.457	-.271	-.245	-0.838	0.071	-1.3	1.0	-1.4	0.9	A-	A-
305	599675	6	8	611	.452	.219	.232	.452	.080	.016	.474	-.245	-.169	.474	-.174	0.534	0.094	0.6	1.0	1.4	1.1	A-	A-
306	601787	6	N/A	611	.570	.211	.570	.156	.046	.018	.484	-.279	.484	-.219	-.170	0.035	0.094	-0.2	1.0	-0.2	1.0	A-	A-
307	599669	6	6	1225	.617	.136	.617	.118	.115	.015	.430	-.181	.430	-.240	-.164	-0.286	0.067	1.6	1.1	0.5	1.0	A+	A+
308	602151	6	6	611	.761	.761	.066	.092	.075	.007	.407	.407	-.208	-.262	-.147	-1.049	0.106	-0.3	1.0	-0.4	1.0	A+	A-
309	599661	6	8	1225	.557	.189	.106	.137	.557	.011	.567	-.247	-.244	-.268	.567	0.048	0.065	-5.4	0.9	-5.0	0.8	A-	A-
310	599620	6	4	611	.759	.077	.057	.080	.759	.026	.539	-.277	-.232	-.249	.539	-1.137	0.109	-3.2	0.8	-1.3	0.9	B+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
311	599656	6	8	611	.594	.111	.594	.234	.031	.030	.583	-.161	.583	-.391	-.189	-0.124	0.095	-3.3	0.9	-3.8	0.8	A+	A+
312	599621	6	4	1225	.845	.057	.038	.043	.845	.016	.464	-.302	-.196	-.219	.464	-1.859	0.089	-2.8	0.9	-3.5	0.6	B+	A-
313	601788	6	N/A	1225	.749	.019	.112	.099	.749	.021	.332	-.155	-.113	-.218	.332	-1.120	0.075	2.8	1.1	3.0	1.3	A+	A+
314	599601	6	8	1229	.560	.267	.560	.110	.059	.004	.505	-.364	.505	-.163	-.151	0.016	0.065	-2.2	0.9	-1.7	0.9	A+	A+
315	599641	6	6	1229	.683	.112	.125	.075	.683	.006	.402	-.200	-.206	-.187	.402	-0.664	0.069	1.8	1.1	0.7	1.0	A-	A-
316	599664	6	4	1229	.801	.033	.065	.094	.801	.007	.503	-.234	-.277	-.274	.503	-1.455	0.079	-3.9	0.8	-4.1	0.7	B+	A-
317	601791	6	N/A	1229	.515	.209	.515	.135	.133	.007	.529	-.342	.529	-.205	-.133	0.244	0.065	-3.3	0.9	-1.7	0.9	A-	B-
318	602153	6	6	614	.267	.235	.181	.285	.267	.033	.354	-.067	-.095	-.132	.354	1.522	0.103	1.8	1.1	4.0	1.4	A+	A-
319	599642	6	6	615	.581	.096	.581	.033	.289	.002	.378	-.187	.378	-.181	-.212	-0.031	0.094	3.7	1.2	2.9	1.2	A-	A-
320	599592	6	8	1226	.503	.065	.307	.503	.113	.012	.520	-.181	-.412	.520	-.041	0.356	0.066	-1.7	1.0	-1.6	0.9	A+	A+
321	599602	6	8	615	.558	.047	.558	.309	.083	.003	.529	-.149	.529	-.401	-.151	0.085	0.093	-2.3	0.9	-2.2	0.9	A-	A+
322	599596	6	4	1226	.879	.055	.879	.042	.019	.005	.415	-.235	.415	-.247	-.171	-2.108	0.095	-1.7	0.9	-3.2	0.6	A-	A-
323	601792	6	N/A	615	.932	.023	.932	.028	.008	.010	.275	-.145	.275	-.175	-.048	-2.960	0.179	-0.1	1.0	0.2	1.0	A+	A+
324	599665	6	4	615	.842	.039	.078	.842	.029	.011	.485	-.246	-.313	.485	-.169	-1.812	0.124	-2.4	0.8	-2.8	0.6	A+	A-
325	599608	6	6	611	.712	.070	.141	.712	.075	.002	.359	-.170	-.193	.359	-.191	-0.754	0.100	2.4	1.1	0.5	1.1	A-	B+
326	599597	6	4	1226	.848	.042	.052	.057	.848	.002	.430	-.242	-.245	-.214	.430	-1.747	0.085	-2.5	0.9	-3.0	0.7	A+	A+
327	601797	6	N/A	611	.841	.012	.121	.023	.841	.003	.345	-.096	-.253	-.175	.345	-1.688	0.121	0.1	1.0	0.9	1.1	B-	A-
328	602125	6	6	611	.611	.611	.106	.174	.092	.018	.550	.550	-.249	-.251	-.261	-0.229	0.095	-2.8	0.9	-2.6	0.8	A+	A-
329	602126	6	6	1226	.384	.218	.384	.324	.048	.026	.408	-.219	.408	-.102	-.160	0.896	0.066	2.0	1.1	3.8	1.2	A+	A-
330	599606	6	5	1228	.457	.457	.142	.303	.095	.003	.490	.490	-.105	-.347	-.142	0.590	0.065	-2.3	0.9	-1.6	0.9	A-	A-
331	601811	6	6	1228	.862	.059	.862	.037	.036	.007	.322	-.189	.322	-.125	-.176	-1.910	0.090	0.2	1.0	0.4	1.0	A+	A-
332	599590	6	6	2456	.818	.818	.156	.010	.011	.004	.355	.355	-.297	-.133	-.098	-1.523	0.058	0.3	1.0	-1.4	0.9	B-	A-
333	599643	6	6	1228	.512	.213	.235	.512	.032	.009	.298	-.058	-.182	.298	-.212	0.290	0.064	6.7	1.2	5.3	1.2	A-	A-
334	599593	6	8	1226	.483	.254	.100	.483	.160	.004	.504	-.323	-.068	.504	-.241	0.427	0.064	-2.7	0.9	-2.2	0.9	A+	A+
335	599609	6	6	1226	.651	.135	.651	.140	.060	.016	.430	-.211	.430	-.217	-.174	-0.483	0.067	0.0	1.0	0.2	1.0	A+	A-
336	601799	6	N/A	1226	.662	.662	.089	.080	.157	.012	.416	.416	-.273	-.128	-.192	-0.536	0.068	0.5	1.0	0.7	1.0	A-	A-
337	602175	6	6	615	.577	.085	.296	.577	.041	.002	.483	-.102	-.387	.483	-.154	-0.015	0.094	-0.5	1.0	0.3	1.0	A-	A+
338	602096	6	3	1227	.717	.060	.109	.717	.103	.011	.427	-.124	-.286	.427	-.200	-0.928	0.072	0.3	1.0	0.1	1.0	B-	A-
339	601730	6	3	1226	.665	.072	.223	.665	.038	.002	.465	-.276	-.284	.465	-.142	-0.492	0.068	-0.7	1.0	-0.9	1.0	A-	A+
340	602176	6	3	1233	.707	.035	.048	.707	.194	.016	.488	-.103	-.234	.488	-.333	-0.701	0.073	-0.9	1.0	-2.1	0.9	A-	A-
341	602104	6	N/A	611	.358	.403	.139	.093	.358	.007	.423	-.176	-.214	-.122	.423	1.148	0.096	0.8	1.0	2.5	1.2	B-	A-
342	601720	6	4	1228	.883	.883	.065	.033	.016	.003	.390	.390	-.239	-.234	-.148	-2.104	0.095	-1.7	0.9	-3.0	0.7	A+	A-
343	602127	6	3	1228	.655	.110	.057	.655	.169	.010	.396	-.246	-.184	.396	-.145	-0.465	0.067	1.2	1.0	0.5	1.0	A+	A-
344	602106	6	N/A	1228	.338	.091	.073	.486	.338	.012	.244	-.045	-.174	-.082	.244	1.210	0.068	6.4	1.2	8.4	1.5	A-	A+
345	602107	6	N/A	1233	.788	.048	.032	.126	.788	.007	.233	-.069	-.149	-.140	.233	-1.226	0.079	4.7	1.2	7.1	1.8	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
346	601721	6	4	1233	.884	.032	.884	.023	.050	.011	.421	-.207	.421	-.219	-.230	-2.203	0.101	-1.4	0.9	-2.2	0.7	A-	B-
347	602090	6	4	1229	.736	.079	.023	.736	.157	.006	.382	-.150	-.112	.382	-.279	-0.828	0.075	3.3	1.1	2.7	1.2	A-	B-
348	602091	6	4	1230	.594	.594	.023	.226	.158	.000	.413	.413	-.101	-.163	-.328	0.120	0.067	2.6	1.1	3.4	1.2	A-	A-
349	602083	6	4	1230	.685	.052	.092	.166	.685	.005	.436	-.166	-.220	-.258	.436	-0.430	0.071	0.2	1.0	0.6	1.0	A+	B-
350	602149	6	3	1230	.449	.215	.449	.264	.066	.006	.467	-.192	.467	-.238	-.167	0.904	0.068	0.8	1.0	4.2	1.2	A-	A+
351	602150	6	3	1231	.245	.039	.245	.176	.531	.009	.409	-.080	.409	-.123	-.200	1.896	0.076	-0.2	1.0	3.3	1.3	A-	A-
352	602092	6	4	1231	.744	.116	.005	.744	.132	.002	.398	-.189	-.075	.398	-.305	-1.007	0.073	0.4	1.0	0.4	1.0	A-	A-
353	602082	6	3	1231	.622	.053	.622	.154	.162	.010	.464	-.191	.464	-.258	-.201	-0.303	0.067	-0.9	1.0	-1.1	1.0	A-	A-
354	602094	6	4	1227	.688	.688	.212	.076	.022	.002	.457	.457	-.283	-.248	-.185	-0.711	0.069	-0.8	1.0	-0.4	1.0	A-	C-
355	602093	6	4	1230	.717	.153	.085	.717	.035	.011	.368	-.118	-.277	.368	-.179	-0.891	0.070	1.2	1.0	1.2	1.1	A-	A+
356	602097	6	3	612	.721	.093	.721	.155	.029	.002	.504	-.315	.504	-.316	-.110	-0.924	0.101	-2.7	0.9	-0.5	1.0	A-	A-
357	602098	6	3	1223	.700	.023	.154	.117	.700	.007	.479	-.179	-.325	-.208	.479	-0.807	0.070	-1.9	0.9	-2.0	0.9	A-	A-
358	602089	6	3	1222	.850	.042	.067	.850	.037	.004	.320	-.177	-.176	.320	-.149	-1.802	0.087	0.2	1.0	0.8	1.1	A+	A-
359	602099	6	3	1222	.750	.750	.145	.056	.043	.007	.387	.387	-.293	-.137	-.128	-1.039	0.074	0.6	1.0	0.1	1.0	A-	A+
360	601722	6	3	611	.777	.021	.082	.777	.120	.000	.363	-.187	-.288	.363	-.139	-1.125	0.107	0.3	1.0	0.7	1.1	A+	A+
361	602100	6	3	611	.727	.062	.727	.082	.105	.025	.418	-.265	.418	-.176	-.137	-0.899	0.104	0.3	1.0	0.6	1.1	A-	A-
362	601729	6	3	1229	.697	.111	.139	.697	.050	.004	.442	-.258	-.228	.442	-.180	-0.740	0.070	-0.7	1.0	-1.4	0.9	A-	A-
363	601728	6	3	614	.370	.199	.308	.370	.109	.015	.348	-.265	-.054	.348	-.060	0.941	0.095	3.6	1.2	4.0	1.3	A-	A-
364	602102	6	N/A	1229	.708	.056	.080	.143	.708	.013	.333	-.104	-.205	-.159	.333	-0.843	0.071	3.5	1.1	4.1	1.3	A+	A-
365	602103	6	N/A	615	.568	.062	.075	.294	.568	.002	.224	-.032	-.088	-.175	.224	0.035	0.093	8.8	1.4	7.9	1.6	A-	A+
366	601718	6	4	611	.856	.856	.108	.021	.012	.003	.374	.374	-.258	-.209	-.169	-1.829	0.125	-1.0	0.9	-0.5	0.9	B-	A-
367	601719	6	4	1226	.885	.055	.885	.020	.038	.002	.344	-.189	.344	-.152	-.216	-2.128	0.096	-0.6	1.0	-1.4	0.8	A-	A-
368	602105	6	N/A	1226	.448	.115	.083	.349	.448	.005	.355	.017	-.181	-.264	.355	0.601	0.064	4.6	1.1	4.7	1.2	A-	A-
369	602095	6	4	612	.722	.167	.025	.722	.077	.010	.376	-.160	-.182	.376	-.257	-0.976	0.102	1.8	1.1	1.9	1.2	A-	A-
370	602177	6	3	1230	.563	.070	.202	.155	.563	.011	.455	-.202	-.221	-.186	.455	0.154	0.069	2.5	1.1	1.8	1.1	A+	A-
371	601220	6	4	1229	.912	.041	.912	.021	.007	.020	.363	-.202	.363	-.193	-.121	-2.758	0.121	-0.6	1.0	-1.4	0.7	A+	B-
372	602101	6	3	614	.725	.147	.725	.073	.052	.003	.314	-.153	.314	-.188	-.144	-0.942	0.100	2.1	1.1	2.6	1.3	A-	A-
373	602088	6	3	1226	.874	.038	.068	.874	.020	.000	.373	-.194	-.282	.373	-.113	-2.028	0.091	-1.6	0.9	-2.6	0.7	A-	A-
374	601689	6	4	611	.784	.118	.075	.784	.020	.003	.431	-.269	-.267	.431	-.108	-1.331	0.108	-1.6	0.9	-0.2	1.0	A-	B-
375	601249	6	5	611	.849	.849	.084	.033	.016	.018	.394	.394	-.242	-.209	-.123	-1.889	0.128	-0.6	1.0	-0.6	0.9	A+	A+
376	601260	6	5	611	.728	.051	.095	.728	.124	.002	.407	-.177	-.149	.407	-.293	-0.806	0.101	0.7	1.0	-0.1	1.0	A+	A-
377	601716	6	4	1228	.953	.953	.009	.005	.015	.019	.315	.315	-.155	-.101	-.178	-3.693	0.175	-0.6	0.9	-2.9	0.4	A+	A-
378	601266	6	7	1228	.581	.023	.581	.077	.309	.010	.252	-.130	.252	-.298	-.028	-0.062	0.065	7.5	1.2	7.3	1.3	A-	A-
379	601258	6	5	1233	.778	.087	.778	.103	.026	.007	.447	-.187	.447	-.289	-.204	-1.145	0.078	-0.5	1.0	-1.5	0.9	A-	B-
380	601267	6	N/A	1233	.710	.192	.055	.710	.030	.013	.511	-.287	-.307	.511	-.177	-0.700	0.073	-2.4	0.9	-1.9	0.9	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
381	601717	6	4	1233	.801	.025	.801	.029	.125	.020	.282	-.195	.282	-.221	-.067	-1.422	0.083	4.0	1.2	4.5	1.6	A+	A+
382	601239	6	4	1229	.945	.012	.008	.945	.030	.005	.235	-.099	-.134	.235	-.121	-3.130	0.138	0.4	1.0	0.8	1.2	A+	A+
383	601281	6	5	1229	.855	.054	.855	.027	.056	.008	.372	-.181	.372	-.180	-.202	-1.844	0.092	0.1	1.0	0.7	1.1	A-	A-
384	601268	6	N/A	1229	.732	.149	.050	.732	.058	.011	.465	-.258	-.215	.465	-.217	-0.830	0.076	-0.3	1.0	-1.3	0.9	A+	A+
385	602068	6	N/A	1230	.658	.158	.658	.072	.111	.002	.531	-.320	.531	-.305	-.177	-0.252	0.069	-3.9	0.9	-3.8	0.8	A+	B-
386	601241	6	4	1228	.501	.067	.326	.103	.501	.004	.462	-.229	-.242	-.186	.462	0.417	0.066	0.3	1.0	0.7	1.0	A+	A-
387	601283	6	5	1228	.725	.090	.725	.016	.168	.002	.449	-.228	.449	-.160	-.306	-0.856	0.072	-1.4	1.0	-1.0	0.9	A+	B-
388	601242	6	4	1231	.827	.074	.827	.019	.077	.003	.342	-.288	.342	-.190	-.085	-1.627	0.083	0.2	1.0	0.7	1.1	A+	A-
389	601276	6	5	1231	.865	.080	.033	.865	.019	.003	.320	-.194	-.156	.320	-.161	-1.982	0.091	0.2	1.0	-0.4	0.9	A-	A+
390	601228	6	N/A	615	.618	.050	.618	.104	.228	.000	.469	-.233	.469	-.273	-.224	-0.300	0.093	-0.9	1.0	-1.0	0.9	A+	B-
391	601221	6	5	1230	.800	.019	.103	.071	.800	.007	.409	-.179	-.248	-.215	.409	-1.436	0.078	-1.1	1.0	-1.1	0.9	A+	A+
392	601229	6	N/A	1227	.800	.800	.040	.063	.091	.007	.475	.475	-.221	-.330	-.199	-1.478	0.079	-2.8	0.9	-2.8	0.8	A-	A-
393	601243	6	4	615	.829	.829	.021	.109	.024	.016	.304	.304	-.163	-.195	-.062	-1.762	0.121	1.0	1.1	1.7	1.3	A-	A-
394	601223	6	5	1227	.680	.680	.129	.120	.055	.017	.495	.495	-.146	-.296	-.285	-0.721	0.070	-1.8	0.9	-1.7	0.9	A-	B-
395	601701	6	4	1227	.447	.447	.108	.105	.329	.011	.445	.445	-.202	-.210	-.173	0.566	0.066	1.4	1.0	1.2	1.1	A-	A-
396	601224	6	5	612	.724	.724	.172	.052	.051	.002	.363	.363	-.191	-.215	-.181	-0.941	0.101	2.1	1.1	0.9	1.1	A-	A-
397	601230	6	N/A	612	.814	.047	.814	.044	.072	.023	.485	-.161	.485	-.283	-.259	-1.709	0.120	-1.9	0.9	-1.3	0.8	A-	A+
398	601225	6	5	1226	.709	.709	.140	.103	.045	.003	.404	.404	-.206	-.264	-.141	-0.817	0.069	-0.4	1.0	-0.5	1.0	A-	A-
399	601259	6	5	1222	.751	.115	.032	.751	.097	.006	.339	-.204	-.161	.339	-.149	-1.044	0.074	2.1	1.1	2.2	1.2	A+	A-
400	601237	6	N/A	1222	.447	.360	.099	.447	.080	.014	.486	-.147	-.246	.486	-.293	0.638	0.066	0.2	1.0	1.0	1.0	A+	A+
401	601690	6	4	1222	.646	.195	.106	.646	.048	.006	.459	-.263	-.218	.459	-.191	-0.409	0.068	-0.6	1.0	-0.8	1.0	A+	A-
402	601235	6	N/A	611	.534	.534	.211	.134	.102	.020	.491	.491	-.204	-.246	-.203	0.085	0.094	-0.2	1.0	-0.7	1.0	A+	A+
403	601665	6	4	1225	.783	.783	.040	.039	.124	.014	.365	.365	-.154	-.202	-.185	-1.316	0.078	0.9	1.0	1.9	1.2	A+	A-
404	601695	6	N/A	1225	.441	.183	.242	.441	.114	.020	.474	-.242	-.198	.474	-.092	0.635	0.066	0.1	1.0	1.1	1.1	A-	A-
405	601668	6	4	1229	.821	.067	.821	.059	.053	.001	.368	-.190	.368	-.161	-.249	-1.576	0.081	-0.6	1.0	-0.2	1.0	A+	B-
406	602069	6	N/A	1229	.727	.136	.065	.068	.727	.003	.422	-.223	-.227	-.206	.422	-0.925	0.072	0.1	1.0	-1.2	0.9	A-	A-
407	601261	6	7	614	.518	.018	.422	.518	.033	.010	.391	-.170	-.268	.391	-.135	0.170	0.091	2.7	1.1	2.0	1.1	A+	A-
408	601265	6	7	1229	.578	.116	.137	.156	.578	.013	.486	-.210	-.252	-.188	.486	-0.104	0.066	-0.8	1.0	-1.0	1.0	A+	A+
409	601666	6	4	614	.749	.021	.104	.098	.749	.028	.454	-.207	-.222	-.235	.454	-1.223	0.107	-0.6	1.0	-1.7	0.8	A-	B-
410	601226	6	7	1226	.839	.839	.016	.122	.016	.007	.358	.358	-.150	-.264	-.128	-1.722	0.086	0.1	1.0	0.1	1.0	A-	A-
411	601248	6	5	1226	.879	.074	.007	.879	.032	.008	.357	-.244	-.139	.357	-.177	-2.132	0.096	-0.9	0.9	-0.5	0.9	A-	A-
412	601269	6	N/A	1226	.788	.043	.043	.111	.788	.015	.500	-.236	-.254	-.277	.500	-1.349	0.079	-3.6	0.9	-3.4	0.7	B-	A-
413	601270	6	N/A	611	.802	.074	.052	.802	.067	.005	.403	-.242	-.240	.403	-.154	-1.377	0.112	-0.2	1.0	-1.0	0.9	A-	A-
414	601227	6	7	611	.527	.527	.350	.066	.056	.002	.321	.321	-.142	-.174	-.193	0.263	0.092	5.3	1.2	4.2	1.3	A-	A-
415	601250	6	5	615	.852	.138	.007	.852	.003	.000	.326	-.283	-.144	.326	-.120	-1.786	0.120	-0.5	1.0	0.4	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
416	601257	6	5	1228	.888	.011	.070	.019	.888	.011	.369	-.105	-.269	-.149	.369	-2.258	0.102	-0.9	0.9	-1.1	0.8	A+	A-
417	601714	6	4	1226	.875	.015	.875	.019	.073	.019	.284	-.150	.284	-.223	-.111	-2.186	0.098	0.1	1.0	1.5	1.2	A+	A-
418	601700	6	N/A	1231	.876	.041	.066	.016	.876	.001	.382	-.171	-.291	-.141	.382	-2.076	0.093	-1.7	0.9	-1.7	0.8	A-	B-
419	601664	6	N/A	614	.682	.218	.034	.682	.042	.023	.507	-.331	-.148	.507	-.220	-0.767	0.099	-1.6	0.9	-2.2	0.8	A-	A-
420	601694	6	7	1226	.665	.081	.208	.665	.034	.012	.427	-.177	-.272	.427	-.170	-0.552	0.068	-0.1	1.0	-0.3	1.0	A-	A+
421	601702	6	4	612	.583	.583	.114	.018	.273	.011	.343	.343	-.184	-.073	-.193	-0.167	0.094	4.6	1.2	4.6	1.3	A+	A+
422	600989	6	4	1231	.223	.223	.430	.202	.139	.007	.272	.272	-.032	.003	-.259	2.062	0.079	4.0	1.2	8.3	1.9	A-	A+
423	601031	6	6	1233	.820	.076	.062	.820	.020	.022	.474	-.231	-.275	.474	-.218	-1.605	0.087	-2.3	0.9	-2.5	0.7	B+	A-
424	600978	6	6	615	.813	.813	.115	.050	.021	.000	.400	.400	-.234	-.248	-.188	-1.477	0.113	-0.6	1.0	0.3	1.0	A-	A-
425	601024	6	4	611	.696	.070	.696	.174	.056	.005	.447	-.282	.447	-.176	-.259	-0.668	0.099	-0.6	1.0	0.1	1.0	A+	A+
426	600997	6	4	1228	.873	.053	.024	.046	.873	.003	.370	-.200	-.207	-.186	.370	-1.991	0.094	-0.8	1.0	-1.8	0.8	A+	B+
427	601036	6	6	1228	.582	.228	.086	.090	.582	.014	.494	-.199	-.223	-.272	.494	0.021	0.067	-0.7	1.0	-0.6	1.0	A+	A+
428	601005	6	4	1233	.165	.078	.650	.090	.165	.018	.219	-.238	.196	-.315	.219	2.748	0.089	3.8	1.2	9.9	3.9	A-	A+
429	601041	6	6	1230	.711	.711	.059	.139	.067	.024	.518	.518	-.197	-.290	-.241	-0.837	0.075	-2.7	0.9	-2.8	0.8	A+	A-
430	601012	6	4	1229	.710	.055	.098	.126	.710	.011	.510	-.180	-.292	-.258	.510	-0.676	0.074	-1.9	0.9	-1.9	0.9	A-	A+
431	601013	6	4	1228	.815	.815	.041	.074	.067	.003	.517	.517	-.255	-.309	-.264	-1.515	0.082	-4.2	0.8	-4.4	0.6	A-	A-
432	601033	6	6	1228	.937	.033	.937	.025	.003	.002	.230	-.126	.230	-.164	-.075	-2.939	0.125	0.2	1.0	2.7	1.7	B+	A+
433	601014	6	4	1231	.849	.034	.849	.083	.028	.006	.426	-.167	.426	-.308	-.183	-1.849	0.088	-2.0	0.9	-2.6	0.7	A-	A-
434	601000	6	6	1231	.711	.217	.047	.021	.711	.004	.293	-.166	-.146	-.170	.293	-0.794	0.070	3.9	1.1	5.3	1.4	A+	A+
435	601001	6	6	615	.961	.034	.961	.005	.000	.000	.206	-.168	.206	-.137	.000	-3.448	0.214	0.0	1.0	0.3	1.1	A+	A-
436	601017	6	4	1227	.741	.086	.065	.099	.741	.010	.527	-.247	-.232	-.304	.527	-1.071	0.073	-3.9	0.9	-3.9	0.7	B+	A-
437	601016	6	4	615	.715	.062	.104	.114	.715	.005	.454	-.241	-.207	-.253	.454	-0.875	0.100	-1.2	0.9	-1.1	0.9	C+	A-
438	600992	6	4	615	.581	.581	.145	.208	.062	.005	.453	.453	-.190	-.239	-.222	-0.116	0.092	-0.2	1.0	-0.1	1.0	A-	A-
439	601002	6	4	1227	.623	.097	.095	.623	.177	.009	.439	-.175	-.197	.439	-.248	-0.364	0.067	1.2	1.0	0.1	1.0	A-	A+
440	601039	6	6	1227	.797	.025	.135	.797	.021	.021	.419	-.176	-.252	.419	-.214	-1.543	0.081	-0.7	1.0	-0.7	0.9	A-	A-
441	601020	6	6	1223	.927	.927	.041	.016	.015	.002	.331	.331	-.247	-.171	-.119	-2.796	0.116	-1.1	0.9	-2.6	0.6	A+	A-
442	601003	6	4	1223	.872	.034	.872	.053	.038	.003	.325	-.162	.325	-.159	-.209	-2.095	0.092	-0.1	1.0	-1.1	0.9	A-	A-
443	600981	6	4	1223	.429	.180	.429	.134	.231	.026	.449	-.125	.449	-.175	-.218	0.633	0.067	2.1	1.1	3.0	1.1	B+	A+
444	601004	6	4	611	.358	.358	.077	.038	.524	.003	.333	.333	-.180	-.178	-.162	1.073	0.097	4.4	1.2	5.7	1.5	A-	A+
445	600984	6	6	611	.483	.455	.033	.028	.483	.002	.451	-.337	-.192	-.148	.451	0.398	0.093	1.2	1.1	1.4	1.1	A-	A-
446	600983	6	6	1222	.619	.037	.033	.619	.304	.007	.216	-.177	-.113	.216	-.087	-0.263	0.067	9.9	1.4	8.7	1.5	A-	A-
447	600985	6	6	1222	.795	.025	.016	.153	.795	.010	.371	-.159	-.177	-.240	.371	-1.381	0.079	0.9	1.0	-0.4	1.0	A-	A+
448	600982	6	6	611	.612	.038	.082	.259	.612	.010	.461	-.113	-.184	-.322	.461	-0.311	0.095	0.0	1.0	-0.1	1.0	B+	A+
449	601022	6	4	1222	.726	.042	.069	.154	.726	.010	.428	-.161	-.192	-.282	.428	-0.905	0.072	-0.8	1.0	-0.2	1.0	A-	A-
450	601023	6	4	1225	.847	.049	.058	.847	.040	.006	.384	-.147	-.243	.384	-.235	-1.793	0.087	-1.3	0.9	-1.8	0.8	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
451	601018	6	6	1225	.522	.522	.286	.087	.088	.016	.496	.496	-.238	-.214	-.203	0.216	0.065	-1.3	1.0	-1.1	1.0	B+	A+
452	600986	6	6	1225	.764	.053	.764	.069	.087	.028	.487	-.244	.487	-.246	-.210	-1.259	0.077	-2.4	0.9	-2.7	0.8	A+	A-
453	600987	6	6	614	.754	.754	.138	.088	.015	.005	.495	.495	-.380	-.182	-.162	-1.130	0.104	-2.5	0.9	-2.5	0.8	A+	A-
454	601670	6	4	614	.899	.023	.029	.899	.041	.008	.406	-.187	-.194	.406	-.251	-2.456	0.147	-1.4	0.9	-1.7	0.7	A+	A-
455	601019	6	6	614	.394	.090	.132	.352	.394	.033	.393	-.148	-.146	-.150	.393	0.768	0.094	2.4	1.1	2.9	1.2	A+	A+
456	600979	6	6	1226	.874	.874	.062	.042	.020	.002	.358	.358	-.229	-.196	-.149	-2.017	0.093	-0.7	1.0	-1.8	0.8	A+	A-
457	600998	6	6	615	.738	.738	.179	.044	.037	.002	.279	.279	-.190	-.139	-.096	-0.947	0.103	3.9	1.2	2.2	1.3	A-	A-
458	600999	6	6	1226	.550	.038	.051	.350	.550	.011	.534	-.170	-.208	-.358	.534	0.114	0.066	-2.8	0.9	-2.8	0.9	A+	A+
459	601691	6	4	1226	.803	.044	.102	.803	.033	.018	.458	-.214	-.294	.458	-.168	-1.489	0.081	-2.0	0.9	-2.6	0.8	A+	A-
460	601034	6	6	611	.722	.722	.170	.034	.070	.003	.465	.465	-.328	-.204	-.156	-0.813	0.101	-1.3	0.9	-1.2	0.9	A+	A-
461	601028	6	6	611	.658	.110	.658	.113	.093	.026	.490	-.185	.490	-.327	-.154	-0.527	0.098	-1.2	1.0	-0.2	1.0	C+	A+
462	601035	6	6	615	.732	.732	.197	.054	.016	.002	.306	.306	-.186	-.199	-.112	-0.927	0.099	1.5	1.1	2.3	1.2	A+	A-
463	601029	6	6	615	.514	.047	.046	.361	.514	.033	.231	-.083	-.167	-.071	.231	0.144	0.091	7.1	1.3	5.4	1.3	A+	A+
464	601026	6	4	615	.842	.041	.041	.075	.842	.002	.410	-.135	-.245	-.281	.410	-1.712	0.118	-1.7	0.9	-1.1	0.9	A+	A-
465	601032	6	6	1229	.850	.054	.850	.054	.028	.016	.423	-.194	.423	-.218	-.236	-1.853	0.093	-1.5	0.9	-2.0	0.8	A-	A+
466	601030	6	6	1228	.675	.073	.675	.204	.039	.009	.427	-.199	.427	-.261	-.141	-0.500	0.070	0.9	1.0	0.2	1.0	A+	A+
467	601678	6	4	1229	.862	.030	.064	.862	.037	.007	.374	-.179	-.218	.374	-.171	-1.987	0.091	-1.0	0.9	-1.0	0.9	A-	A-
468	601044	6	6	1229	.736	.118	.093	.736	.037	.016	.476	-.224	-.276	.476	-.185	-0.883	0.076	-1.2	1.0	-1.3	0.9	A-	A+
469	601040	6	7	611	.583	.146	.583	.072	.196	.003	.574	-.345	.574	-.162	-.296	-0.129	0.093	-5.0	0.8	-4.4	0.7	A+	A-
470	602081	6	5	1223	.499	.142	.499	.132	.209	.020	.390	-.038	.390	-.134	-.285	0.275	0.066	5.1	1.2	5.5	1.3	A+	A-
471	602070	6	5	615	.911	.055	.911	.018	.015	.002	.357	-.281	.357	-.187	-.079	-2.513	0.150	-0.9	0.9	-0.4	0.9	A+	A-
472	601706	6	6	1228	.722	.096	.722	.101	.065	.016	.471	-.238	.471	-.187	-.253	-0.830	0.074	-1.3	1.0	-0.3	1.0	B+	A+
473	602071	6	N/A	1230	.876	.038	.876	.050	.020	.016	.464	-.215	.464	-.286	-.190	-2.248	0.101	-2.4	0.9	-3.8	0.5	A-	A-
474	601712	6	N/A	1228	.626	.626	.164	.161	.041	.008	.487	.487	-.223	-.278	-.181	-0.213	0.068	-1.7	1.0	-1.1	0.9	A-	A-
475	601256	6	7	1228	.727	.071	.099	.727	.093	.011	.493	-.234	-.311	.493	-.167	-0.839	0.073	-2.2	0.9	-2.3	0.8	A+	A+
476	601253	6	6	1230	.673	.673	.111	.082	.124	.009	.463	.463	-.185	-.150	-.318	-0.514	0.072	1.6	1.1	0.7	1.0	A+	A+
477	601244	6	7	1230	.559	.559	.122	.222	.078	.020	.504	.504	-.289	-.222	-.146	0.142	0.069	-0.8	1.0	-0.2	1.0	A+	A-
478	601254	6	6	1229	.773	.028	.773	.081	.107	.012	.514	-.165	.514	-.273	-.304	-1.138	0.080	-3.2	0.9	-3.9	0.7	A+	A-
479	601711	6	7	1228	.841	.073	.041	.045	.841	.001	.399	-.187	-.207	-.272	.399	-1.727	0.086	-1.3	0.9	-1.3	0.9	A+	A-
480	602063	6	5	1228	.218	.218	.172	.119	.482	.009	.265	.265	-.077	-.143	-.048	2.139	0.080	4.3	1.2	6.5	1.8	A+	A-
481	602066	6	5	1228	.627	.627	.271	.033	.064	.005	.427	.427	-.223	-.233	-.240	-0.274	0.068	1.4	1.0	0.7	1.0	A-	A-
482	602067	6	5	1231	.599	.189	.164	.599	.046	.003	.396	-.257	-.111	.396	-.241	-0.158	0.066	2.2	1.1	1.8	1.1	A+	A+
483	602064	6	5	1231	.652	.652	.033	.160	.152	.003	.372	.372	-.161	-.257	-.129	-0.448	0.068	2.2	1.1	2.2	1.1	A-	B-
484	601279	6	7	615	.642	.215	.029	.111	.642	.003	.588	-.371	-.155	-.312	.588	-0.437	0.094	-5.3	0.8	-4.5	0.7	A-	B-
485	602074	6	5	1227	.621	.017	.621	.342	.017	.003	.524	-.192	.524	-.428	-.157	-0.337	0.067	-2.7	0.9	-3.0	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
486	602075	6	5	1227	.307	.176	.307	.279	.218	.020	.186	-.020	.186	-.036	-.105	1.337	0.070	9.8	1.4	9.9	1.7	A+	A+
487	601042	6	7	1223	.609	.290	.047	.609	.052	.001	.524	-.389	-.213	.524	-.148	-0.269	0.067	-3.5	0.9	-2.4	0.9	A-	A-
488	602077	6	5	1223	.492	.492	.133	.230	.138	.007	.523	.523	-.149	-.313	-.205	0.337	0.066	-2.3	0.9	-1.8	0.9	A+	B-
489	601299	6	7	1227	.494	.214	.215	.494	.067	.010	.603	-.317	-.290	.603	-.162	0.308	0.065	-7.5	0.8	-6.1	0.8	A+	B-
490	602079	6	5	611	.696	.118	.129	.054	.696	.003	.415	-.197	-.248	-.173	.415	-0.755	0.098	0.2	1.0	0.5	1.0	A+	A-
491	602080	6	5	611	.902	.902	.049	.018	.021	.010	.342	.342	-.182	-.193	-.178	-2.505	0.150	-0.9	0.9	-0.2	0.9	A+	B-
492	600993	6	7	611	.658	.172	.124	.658	.043	.003	.532	-.363	-.231	.532	-.171	-0.397	0.096	-3.1	0.9	-2.8	0.8	A+	B-
493	601696	6	5	611	.444	.106	.242	.444	.198	.010	.264	-.215	.047	.264	-.167	0.736	0.093	6.8	1.3	6.6	1.4	A+	A+
494	602084	6	5	611	.393	.393	.182	.358	.051	.016	.305	.305	-.279	.046	-.178	0.996	0.095	5.6	1.2	4.8	1.3	A-	A-
495	600996	6	7	1225	.560	.257	.122	.560	.051	.011	.506	-.234	-.308	.506	-.149	0.036	0.066	-2.6	0.9	-1.3	0.9	A-	B-
496	602085	6	5	1225	.756	.084	.098	.039	.756	.023	.436	-.138	-.312	-.148	.436	-1.171	0.076	-0.8	1.0	-0.8	0.9	C+	A+
497	601303	6	6	614	.660	.155	.660	.067	.114	.005	.429	-.192	.429	-.153	-.293	-0.565	0.096	0.2	1.0	-0.5	1.0	A+	A-
498	601715	6	N/A	614	.759	.759	.065	.106	.065	.005	.449	.449	-.166	-.260	-.253	-1.166	0.105	-1.4	0.9	-0.7	0.9	A+	A-
499	601290	6	7	1229	.705	.705	.214	.058	.020	.003	.404	.404	-.251	-.221	-.168	-0.783	0.070	1.5	1.1	-0.2	1.0	A+	B-
500	601285	6	6	1226	.612	.126	.076	.612	.185	.002	.479	-.344	-.137	.479	-.210	-0.193	0.066	-1.3	1.0	-0.5	1.0	A+	A-
501	601697	6	N/A	1226	.533	.381	.533	.043	.040	.003	.270	-.121	.270	-.163	-.202	0.223	0.065	9.9	1.3	8.4	1.4	B+	A+
502	601709	6	N/A	615	.234	.502	.153	.102	.234	.008	.288	-.042	-.163	-.102	.288	1.982	0.110	3.8	1.2	6.3	2.0	A-	A-
503	601294	6	7	615	.753	.063	.753	.132	.041	.011	.491	-.246	.491	-.259	-.240	-1.093	0.106	-2.2	0.9	-1.7	0.8	A+	A-
504	601304	6	6	615	.782	.039	.049	.119	.782	.011	.364	-.164	-.159	-.211	.364	-1.309	0.110	0.8	1.1	1.4	1.2	A+	A+
505	601296	6	7	1226	.695	.047	.127	.119	.695	.011	.534	-.188	-.256	-.335	.534	-0.706	0.070	-4.5	0.9	-4.0	0.8	A+	A-
506	601692	6	N/A	1226	.850	.088	.017	.044	.850	.001	.316	-.207	-.150	-.158	.316	-1.762	0.086	-0.3	1.0	2.7	1.3	A+	A+
507	601274	6	6	1226	.598	.133	.598	.158	.099	.012	.512	-.261	.512	-.234	-.209	-0.186	0.066	-3.2	0.9	-3.1	0.9	A+	A-
508	601708	6	7	1226	.668	.101	.121	.098	.668	.012	.453	-.162	-.245	-.240	.453	-0.570	0.068	-0.8	1.0	-1.6	0.9	A+	A+
509	601255	6	7	615	.210	.652	.210	.075	.057	.007	.129	.081	.129	-.246	-.093	1.898	0.108	3.4	1.2	6.9	1.9	A-	B+
510	601693	6	N/A	615	.837	.034	.837	.018	.083	.028	.354	-.229	.354	-.117	-.162	-1.873	0.125	0.1	1.0	-0.7	0.9	A-	B-
511	601705	6	5	1225	.550	.009	.550	.233	.205	.003	.348	-.068	.348	-.113	-.289	0.102	0.065	5.5	1.2	4.3	1.2	B-	B-
512	601277	6	7	1231	.651	.093	.145	.651	.105	.007	.527	-.293	-.232	.527	-.243	-0.454	0.068	-4.5	0.9	-4.0	0.8	A+	A-
513	602073	6	5	615	.781	.047	.070	.083	.781	.020	.430	-.263	-.191	-.176	.430	-1.380	0.110	-0.5	1.0	-0.7	0.9	A+	A+
514	601275	6	6	615	.389	.187	.389	.306	.081	.037	.455	-.140	.455	-.174	-.203	0.782	0.093	-0.6	1.0	-0.1	1.0	A-	A+
515	601301	6	N/A	1229	.884	.055	.024	.030	.884	.007	.381	-.212	-.159	-.205	.381	-2.163	0.101	-1.0	0.9	-0.3	1.0	A+	A+
516	601245	6	7	1230	.595	.095	.186	.595	.120	.004	.447	-.258	-.275	.447	-.099	0.102	0.068	1.2	1.0	1.3	1.1	A+	A+
517	599720	7	6	797	.565	.565	.274	.079	.033	.050	.449	.449	-.238	-.184	-.155	-0.129	0.085	1.6	1.1	1.0	1.1	A+	A+
518	599734	7	6	799	.611	.131	.099	.150	.611	.009	.471	-.173	-.164	-.310	.471	-0.034	0.082	-1.7	0.9	-1.1	0.9	A-	A+
519	602189	7	7	800	.640	.110	.078	.148	.640	.025	.507	-.175	-.266	-.238	.507	-0.363	0.084	-2.0	0.9	-1.9	0.9	B-	B-
520	599633	7	6	800	.848	.069	.848	.063	.018	.004	.372	-.085	.372	-.342	-.176	-1.589	0.110	-0.9	0.9	0.4	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
521	599685	7	7	400	.840	.840	.083	.045	.033	.000	.417	.417	-.234	-.229	-.230	-1.510	0.146	-1.4	0.9	-1.8	0.7	B+	A-
522	599708	7	7	1592	.576	.162	.076	.168	.576	.018	.517	-.310	-.164	-.216	.517	0.058	0.060	-2.2	0.9	-3.2	0.9	A-	B+
523	599715	7	6	799	.593	.033	.307	.593	.045	.023	.314	-.159	-.136	.314	-.196	-0.054	0.082	6.0	1.2	3.9	1.3	A+	A+
524	599650	7	7	800	.566	.158	.566	.228	.046	.003	.395	-.200	.395	-.202	-.165	0.346	0.084	3.7	1.1	3.4	1.2	A-	A+
525	599630	7	7	800	.375	.375	.181	.270	.164	.010	.384	.384	-.113	-.208	-.107	1.117	0.084	3.2	1.1	3.5	1.2	A+	A+
526	599631	7	7	797	.502	.084	.153	.502	.220	.041	.497	-.172	-.277	.497	-.177	0.262	0.084	-0.7	1.0	0.3	1.0	A-	A-
527	599730	7	7	800	.758	.758	.128	.053	.054	.009	.458	.458	-.264	-.287	-.154	-1.030	0.092	-2.2	0.9	-1.9	0.8	B-	B-
528	599707	7	7	1600	.814	.056	.052	.068	.814	.010	.390	-.190	-.208	-.198	.390	-1.400	0.072	-0.7	1.0	-1.1	0.9	B+	A-
529	599719	7	6	800	.664	.071	.060	.664	.161	.044	.412	-.166	-.180	.412	-.184	-0.616	0.088	1.3	1.1	0.6	1.0	A-	B+
530	599721	7	6	800	.514	.514	.180	.156	.114	.036	.489	.489	-.201	-.205	-.181	0.196	0.080	-2.5	0.9	-2.8	0.9	A+	A-
531	599709	7	7	800	.573	.075	.245	.573	.066	.041	.553	-.174	-.362	.553	-.160	-0.133	0.082	-4.8	0.9	-4.3	0.8	A+	A+
532	599632	7	7	800	.471	.103	.193	.471	.170	.064	.458	-.190	-.163	.458	-.171	0.329	0.081	0.2	1.0	-0.2	1.0	A-	A+
533	599725	7	7	800	.820	.030	.108	.820	.040	.003	.464	-.202	-.342	.464	-.175	-1.319	0.103	-2.1	0.9	-3.1	0.6	A-	A-
534	599726	7	7	795	.684	.684	.102	.162	.047	.005	.491	.491	-.226	-.315	-.180	-0.399	0.091	-2.0	0.9	-2.1	0.8	A+	A+
535	599634	7	6	795	.538	.072	.538	.096	.292	.003	.491	-.291	.491	-.173	-.262	0.436	0.084	0.3	1.0	0.3	1.0	A-	A-
536	601120	7	7	795	.564	.174	.209	.564	.050	.004	.492	-.336	-.196	.492	-.163	0.288	0.085	-1.3	1.0	-0.4	1.0	A+	A-
537	599690	7	6	799	.801	.100	.801	.035	.059	.005	.515	-.309	.515	-.226	-.264	-1.204	0.097	-3.8	0.8	-4.1	0.6	A+	A+
538	601133	7	7	799	.383	.116	.383	.399	.093	.009	.417	-.176	.417	-.214	-.127	1.136	0.082	0.2	1.0	0.6	1.0	A-	A+
539	599683	7	6	799	.369	.179	.369	.115	.303	.034	.184	-.097	.184	-.233	.118	1.147	0.083	7.9	1.3	7.6	1.5	A+	A+
540	599691	7	6	400	.893	.015	.065	.023	.893	.005	.358	-.096	-.282	-.118	.358	-2.067	0.172	-0.5	0.9	-1.0	0.8	A+	
541	601134	7	7	798	.650	.650	.053	.266	.023	.009	.440	.440	-.197	-.278	-.215	-0.276	0.083	-1.0	1.0	-0.1	1.0	A+	A-
542	599733	7	6	400	.543	.040	.543	.230	.168	.020	.501	-.121	.501	-.196	-.284	0.197	0.112	-2.1	0.9	-2.2	0.9	B+	
543	599624	7	6	400	.335	.145	.178	.335	.315	.028	.363	-.109	-.229	.363	-.012	1.234	0.117	0.9	1.0	1.5	1.1	A+	
544	599710	7	6	398	.696	.108	.111	.696	.083	.003	.449	-.194	-.321	.449	-.156	-0.466	0.122	-1.0	0.9	-0.8	0.9	A+	A-
545	599625	7	6	398	.312	.312	.405	.194	.055	.035	.267	.267	-.078	-.023	-.126	1.536	0.122	3.4	1.2	4.3	1.5	B+	A+
546	599626	7	6	798	.556	.107	.246	.556	.054	.038	.474	-.172	-.259	.474	-.133	0.147	0.083	0.7	1.0	0.0	1.0	A+	A+
547	602161	7	7	798	.479	.234	.120	.479	.129	.038	.449	-.025	-.181	.449	-.345	0.566	0.082	1.7	1.1	1.3	1.1	A+	A+
548	599735	7	6	798	.538	.150	.538	.103	.167	.043	.499	-.078	.499	-.223	-.313	0.233	0.083	-1.0	1.0	-0.8	1.0	C-	B-
549	599736	7	6	400	.433	.160	.290	.433	.108	.010	.424	-.130	-.277	.424	-.103	0.856	0.116	1.4	1.1	1.6	1.1	A-	A-
550	599627	7	7	800	.751	.063	.080	.055	.751	.051	.527	-.201	-.257	-.245	.527	-1.196	0.097	-3.2	0.9	-3.2	0.7	C+	B+
551	599692	7	7	800	.324	.334	.164	.324	.146	.033	.122	.123	-.109	.122	-.113	1.329	0.085	9.6	1.4	9.1	1.7	A+	A+
552	599629	7	7	799	.820	.050	.084	.820	.029	.018	.454	-.241	-.261	.454	-.186	-1.544	0.103	-2.4	0.9	-2.5	0.7	A+	A-
553	599636	7	7	799	.348	.078	.388	.177	.348	.010	.440	-.176	-.193	-.149	.440	1.210	0.084	0.1	1.0	-0.1	1.0	A+	A+
554	599635	7	7	400	.408	.220	.408	.155	.190	.028	.300	-.107	.300	-.087	-.087	0.793	0.115	3.4	1.2	4.5	1.3	A-	A+
555	599628	7	7	400	.648	.648	.125	.095	.100	.033	.522	.522	-.246	-.277	-.140	-0.493	0.119	-2.3	0.9	-1.8	0.8	C+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
556	601783	7	7	400	.723	.050	.723	.105	.088	.035	.483	-.191	.483	-.246	-.187	-0.967	0.128	-1.2	0.9	-1.3	0.8	A-	A+
557	601809	7	7	799	.601	.081	.601	.134	.163	.021	.483	-.140	.483	-.231	-.255	-0.157	0.082	-1.4	1.0	-1.6	0.9	A-	A-
558	599713	7	6	400	.248	.125	.390	.173	.248	.065	.299	-.214	.057	-.052	.299	1.649	0.130	2.1	1.1	3.7	1.5	C-	A-
559	599714	7	6	799	.543	.103	.543	.274	.039	.041	.378	-.272	.378	-.090	-.123	0.093	0.082	3.9	1.1	2.6	1.1	A-	A-
560	599647	7	7	799	.621	.621	.192	.116	.054	.018	.582	.582	-.313	-.277	-.211	-0.180	0.083	-5.9	0.8	-5.2	0.7	A+	A-
561	599648	7	7	400	.358	.358	.500	.095	.048	.000	.415	.415	-.191	-.222	-.181	1.295	0.119	1.2	1.1	1.3	1.1	A+	A-
562	599717	7	6	802	.858	.011	.062	.057	.858	.011	.368	-.109	-.172	-.231	.368	-1.732	0.111	-0.5	1.0	-0.4	0.9	C-	A+
563	599716	7	6	400	.820	.048	.820	.080	.025	.028	.310	-.124	.310	-.166	-.161	-1.551	0.149	0.5	1.0	1.0	1.2	A-	A+
564	599729	7	7	803	.407	.247	.189	.407	.152	.005	.430	-.091	-.111	.430	-.339	1.031	0.081	0.4	1.0	2.6	1.1	A-	A-
565	599693	7	7	402	.463	.082	.463	.087	.341	.027	.523	-.189	.523	-.238	-.213	0.696	0.114	-1.5	0.9	-1.2	0.9	B+	A-
566	599687	7	7	803	.493	.149	.493	.193	.137	.027	.435	-.234	.435	-.157	-.126	0.531	0.081	0.5	1.0	-0.1	1.0	A-	A-
567	599718	7	6	803	.765	.765	.079	.077	.037	.042	.396	.396	-.192	-.234	-.146	-1.147	0.097	-0.9	1.0	-0.3	1.0	B+	A+
568	602155	7	7	398	.626	.143	.626	.085	.138	.008	.402	-.274	.402	-.255	-.037	-0.089	0.117	1.2	1.1	0.8	1.1	A-	B-
569	599682	7	6	795	.755	.064	.755	.128	.050	.003	.487	-.227	.487	-.282	-.264	-0.882	0.096	-2.4	0.9	-0.6	0.9	A-	A-
570	599732	7	7	797	.531	.067	.215	.151	.531	.038	.505	-.214	-.213	-.249	.505	0.114	0.083	-3.1	0.9	-3.1	0.8	A+	A+
571	599727	7	6	799	.875	.034	.030	.875	.035	.026	.353	-.211	-.146	.353	-.171	-2.084	0.125	-0.8	0.9	-1.9	0.7	A-	B-
572	599686	7	7	802	.458	.458	.247	.166	.100	.030	.423	.423	-.176	-.173	-.166	0.689	0.082	1.8	1.1	1.3	1.1	A+	A+
573	599722	7	6	800	.741	.048	.048	.160	.741	.004	.468	-.167	-.229	-.321	.468	-0.729	0.093	-0.9	1.0	-1.3	0.9	A+	A-
574	599684	7	7	799	.677	.096	.677	.109	.093	.025	.449	-.186	.449	-.230	-.219	-0.539	0.086	-0.5	1.0	-0.6	1.0	A+	A+
575	599712	7	7	800	.299	.123	.299	.460	.090	.029	.018	-.075	.018	.166	-.128	1.377	0.086	9.9	1.5	8.7	1.7	A-	A-
576	599711	7	7	798	.525	.248	.132	.525	.078	.018	.548	-.246	-.254	.548	-.191	0.392	0.081	-2.9	0.9	-2.9	0.9	A+	A+
577	602215	7	6	797	.694	.129	.082	.055	.694	.040	.541	-.343	-.220	-.202	.541	-0.825	0.090	-5.0	0.8	-4.7	0.7	A+	A+
578	602190	7	5	799	.542	.170	.542	.194	.080	.014	.568	-.330	.568	-.211	-.204	0.257	0.081	-5.3	0.8	-4.1	0.8	A-	A-
579	602193	7	3	799	.492	.190	.492	.073	.237	.009	.457	-.399	.457	-.100	-.082	0.565	0.080	-0.5	1.0	-0.4	1.0	A-	A-
580	602180	7	5	803	.390	.131	.390	.364	.098	.017	.557	-.086	.557	-.319	-.215	1.103	0.082	-4.1	0.9	-3.2	0.8	A-	A-
581	602139	7	5	800	.383	.100	.383	.309	.183	.026	.306	-.162	.306	-.080	-.101	1.026	0.084	5.5	1.2	5.4	1.4	A-	A+
582	602197	7	6	800	.628	.134	.628	.033	.189	.018	.446	-.250	.446	-.206	-.195	-0.282	0.084	0.4	1.0	-0.1	1.0	A-	A+
583	602140	7	6	797	.344	.344	.083	.427	.109	.038	.489	.489	-.190	-.187	-.178	1.171	0.086	0.1	1.0	-0.1	1.0	A+	A-
584	602211	7	6	800	.659	.060	.659	.098	.154	.030	.486	-.201	.486	-.287	-.182	-0.569	0.085	-2.9	0.9	-2.5	0.8	A+	A-
585	602166	7	6	800	.313	.143	.355	.313	.131	.059	.235	-.116	.037	.235	-.139	1.221	0.086	5.3	1.2	6.4	1.5	A-	A-
586	602216	7	7	800	.453	.065	.155	.321	.453	.006	.556	-.087	-.322	-.296	.556	0.982	0.085	-3.4	0.9	-2.6	0.8	A-	B-
587	602178	7	4	800	.440	.440	.084	.375	.098	.004	.385	.385	-.113	-.336	.026	1.059	0.085	5.2	1.2	5.1	1.4	A-	A+
588	602192	7	4	795	.584	.205	.117	.584	.078	.016	.470	-.353	-.143	.470	-.092	0.131	0.086	0.4	1.0	0.1	1.0	A+	A-
589	602219	7	7	795	.531	.067	.235	.159	.531	.009	.573	-.279	-.267	-.256	.573	0.464	0.085	-4.2	0.9	-2.6	0.9	A-	A-
590	602220	7	7	799	.652	.145	.106	.652	.080	.016	.514	-.308	-.260	.514	-.119	-0.303	0.084	-3.4	0.9	-2.8	0.8	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
591	602213	7	6	798	.297	.297	.335	.227	.104	.038	.396	.396	-.127	-.105	-.118	1.516	0.086	0.6	1.0	1.6	1.1	A+	A-
592	602198	7	7	798	.734	.051	.088	.734	.102	.025	.562	-.228	-.277	.562	-.268	-0.852	0.091	-4.2	0.8	-4.6	0.7	A+	A-
593	602194	7	7	798	.509	.150	.249	.509	.079	.013	.320	-.278	-.088	.320	-.022	0.485	0.081	5.7	1.2	4.1	1.2	A+	A-
594	602214	7	7	398	.523	.276	.523	.078	.085	.030	.420	-.228	.420	-.092	-.124	0.372	0.116	1.8	1.1	2.1	1.2	A+	A+
595	602199	7	7	398	.751	.053	.088	.751	.043	.065	.554	-.287	-.297	.554	-.182	-1.202	0.142	-2.5	0.8	-2.9	0.6	B-	A+
596	602195	7	7	800	.478	.273	.183	.478	.056	.011	.357	-.217	-.054	.357	-.178	0.549	0.080	3.7	1.1	3.4	1.2	A+	A+
597	602200	7	7	400	.510	.113	.158	.510	.205	.015	.343	-.133	-.172	.343	-.101	0.309	0.113	2.1	1.1	2.4	1.2	A-	A+
598	602179	7	7	400	.353	.200	.300	.353	.098	.050	.445	-.269	-.134	.445	.049	1.036	0.119	0.2	1.0	0.4	1.0	A+	A-
599	602217	7	7	799	.389	.389	.264	.190	.116	.040	.528	.528	-.142	-.237	-.200	0.997	0.084	-2.0	0.9	-1.4	0.9	B-	A+
600	602181	7	7	399	.494	.113	.256	.494	.065	.060	.611	-.250	-.366	.611	-.063	0.315	0.118	-4.4	0.8	-3.8	0.7	A-	A-
601	602201	7	7	399	.406	.206	.143	.188	.406	.058	.113	.091	-.004	-.144	.113	0.822	0.118	8.6	1.5	7.8	1.7	A-	A+
602	602164	7	5	400	.663	.020	.033	.285	.663	.000	.432	-.152	-.151	-.346	.432	-0.332	0.118	-0.3	1.0	-0.7	0.9	A-	A+
603	602228	7	7	400	.550	.178	.160	.550	.095	.018	.421	-.068	-.237	.421	-.267	0.217	0.115	1.5	1.1	1.1	1.1	A+	A-
604	602196	7	6	803	.659	.111	.659	.135	.088	.008	.515	-.346	.515	-.230	-.163	-0.298	0.083	-3.9	0.9	-3.6	0.8	A+	A-
605	602165	7	5	402	.468	.127	.291	.468	.087	.027	.456	-.238	-.195	.456	-.066	0.673	0.114	0.8	1.0	0.6	1.0	A-	A-
606	602231	7	7	402	.460	.187	.177	.460	.149	.027	.298	.092	-.245	.298	-.134	0.715	0.114	4.8	1.2	4.7	1.4	A-	A+
607	602182	7	6	402	.587	.065	.587	.110	.209	.030	.487	-.233	.487	-.203	-.196	0.025	0.116	-0.7	1.0	-1.2	0.9	C+	A+
608	602142	7	6	400	.415	.120	.415	.050	.405	.010	.560	-.327	.560	-.241	-.206	0.960	0.116	-2.5	0.9	-2.2	0.9	A-	B-
609	602144	7	7	800	.589	.120	.116	.165	.589	.010	.575	-.262	-.347	-.210	.575	-0.031	0.081	-5.7	0.8	-4.7	0.8	A-	A+
610	602141	7	7	799	.647	.138	.150	.647	.048	.004	.481	-.284	-.288	.481	-.049	-0.312	0.084	-2.1	0.9	-0.7	1.0	A-	A-
611	602143	7	7	798	.590	.123	.198	.590	.061	.028	.473	-.295	-.182	.473	-.174	0.008	0.083	-1.4	1.0	-0.5	1.0	A-	A-
612	601784	7	N/A	398	.744	.744	.058	.073	.063	.063	.545	.545	-.306	-.300	-.152	-1.128	0.140	-2.6	0.8	-2.2	0.7	A-	A-
613	601704	7	6	795	.847	.009	.025	.111	.847	.009	.395	-.108	-.177	-.285	.395	-1.686	0.111	-0.8	1.0	-1.0	0.8	B+	A-
614	601827	7	Ge	800	.529	.179	.114	.144	.529	.035	.491	-.217	-.174	-.213	.491	0.204	0.083	-0.6	1.0	-0.3	1.0	A+	A+
615	602202	7	Ge	795	.787	.126	.042	.045	.787	.000	.384	-.256	-.223	-.135	.384	-1.119	0.098	0.6	1.0	1.3	1.2	A+	A+
616	602236	7	Ge	800	.671	.671	.165	.105	.029	.030	.520	.520	-.255	-.286	-.200	-0.594	0.087	-2.7	0.9	-2.5	0.8	A+	A-
617	601761	7	8	800	.600	.600	.131	.101	.121	.046	.499	.499	-.233	-.236	-.162	-0.240	0.085	-1.3	1.0	0.0	1.0	A+	A-
618	602218	7	Ge	797	.606	.123	.168	.606	.068	.035	.359	-.158	-.145	.359	-.200	-0.294	0.084	3.0	1.1	2.7	1.2	A-	A-
619	601828	7	Ge	797	.297	.060	.129	.461	.297	.053	.388	-.122	-.068	-.174	.388	1.420	0.089	1.9	1.1	2.2	1.2	A+	A-
620	601762	7	8	797	.594	.078	.183	.594	.082	.064	.373	-.110	-.144	.373	-.210	-0.321	0.086	2.1	1.1	2.0	1.1	A-	A+
621	602221	7	Ge	802	.779	.060	.779	.107	.042	.011	.413	-.162	.413	-.229	-.225	-1.173	0.096	-0.9	1.0	-1.0	0.9	A+	A+
622	601786	7	Ge	802	.513	.172	.151	.137	.513	.027	.413	-.220	-.157	-.115	.413	0.351	0.081	0.5	1.0	-0.1	1.0	A+	A-
623	601765	7	6	802	.814	.814	.036	.050	.060	.040	.363	.363	-.121	-.240	-.162	-1.644	0.109	-0.4	1.0	-1.1	0.9	A+	A-
624	601766	7	6	800	.794	.013	.794	.065	.129	.000	.432	-.106	.432	-.343	-.234	-1.093	0.099	-0.9	1.0	-1.0	0.9	A-	B-
625	601822	7	Ge	800	.893	.893	.041	.043	.023	.001	.312	.312	-.128	-.196	-.197	-2.058	0.125	-0.3	1.0	0.2	1.0	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
626	602222	7	Ge	800	.706	.119	.054	.116	.706	.005	.431	-.157	-.270	-.244	.431	-0.502	0.090	0.4	1.0	1.5	1.1	A+	B-
627	601671	7	8	795	.501	.255	.501	.175	.057	.013	.391	-.137	.391	-.124	-.294	0.634	0.085	4.6	1.2	4.2	1.3	A-	A-
628	601815	7	N/A	798	.310	.310	.075	.361	.222	.033	.309	.309	-.183	-.134	-.009	1.451	0.085	3.2	1.1	3.5	1.2	A-	A-
629	602060	7	8	798	.399	.196	.295	.085	.399	.026	.407	-.208	-.071	-.193	.407	0.976	0.081	1.6	1.1	1.3	1.1	A+	A+
630	601684	7	6	798	.810	.104	.038	.810	.028	.021	.389	-.224	-.150	.389	-.160	-1.384	0.102	-0.4	1.0	0.0	1.0	A+	C-
631	602145	7	Ge	801	.621	.621	.075	.121	.152	.031	.506	.506	-.228	-.256	-.166	-0.217	0.083	-1.9	0.9	-0.7	1.0	A-	A-
632	601683	7	6	400	.630	.310	.033	.008	.630	.020	.345	-.224	-.090	-.153	.345	-0.254	0.115	1.6	1.1	2.0	1.2	A-	
633	602050	7	8	801	.562	.562	.065	.105	.210	.059	.473	.473	-.254	-.261	-.094	0.000	0.082	-0.3	1.0	-0.3	1.0	A-	A-
634	601674	7	6	398	.591	.091	.176	.116	.591	.028	.540	-.205	-.196	-.294	.540	0.024	0.117	-1.7	0.9	-1.6	0.9	A-	A-
635	601685	7	6	800	.795	.020	.043	.139	.795	.004	.214	-.099	-.034	-.164	.214	-1.238	0.095	2.8	1.2	4.9	1.6	A-	A+
636	601823	7	N/A	800	.801	.801	.099	.049	.016	.035	.517	.517	-.331	-.208	-.150	-1.486	0.103	-3.1	0.8	-3.6	0.6	A+	A+
637	601785	7	N/A	801	.832	.080	.832	.035	.036	.018	.456	-.258	.456	-.223	-.168	-1.554	0.106	-1.9	0.9	-2.0	0.7	A+	A-
638	602108	7	8	801	.463	.463	.112	.225	.160	.040	.500	.500	-.243	-.279	-.035	0.638	0.082	-0.4	1.0	-0.7	1.0	A-	A-
639	602109	7	8	800	.768	.059	.103	.058	.768	.014	.508	-.238	-.282	-.223	.508	-1.096	0.093	-3.2	0.9	-3.9	0.7	A+	B-
640	601824	7	N/A	400	.693	.185	.053	.068	.693	.003	.519	-.302	-.236	-.265	.519	-0.635	0.120	-3.0	0.9	-1.8	0.8	A-	A-
641	602110	7	8	400	.240	.240	.293	.233	.223	.013	.349	.349	-.197	-.279	.144	1.779	0.129	0.6	1.0	1.2	1.1	A+	B-
642	601710	7	6	799	.753	.120	.063	.753	.060	.004	.306	-.109	-.142	.306	-.217	-0.963	0.090	1.3	1.1	1.9	1.2	A-	A-
643	601825	7	N/A	399	.852	.038	.058	.852	.045	.008	.425	-.231	-.243	.425	-.191	-1.705	0.153	-1.4	0.9	-2.0	0.6	A-	A-
644	601767	7	6	399	.529	.053	.070	.336	.529	.013	.411	-.171	-.223	-.184	.411	0.316	0.114	1.3	1.1	1.2	1.1	A+	A+
645	601679	7	8	799	.764	.034	.168	.033	.764	.003	.404	-.199	-.265	-.181	.404	-0.968	0.091	-1.0	1.0	0.1	1.0	A-	A-
646	601768	7	6	799	.657	.031	.049	.657	.227	.036	.411	-.223	-.141	.411	-.221	-0.466	0.086	1.0	1.0	1.2	1.1	A-	A-
647	601833	7	N/A	799	.451	.081	.451	.303	.121	.044	.455	-.081	.455	-.219	-.215	0.641	0.082	1.1	1.0	1.5	1.1	A-	A+
648	601680	7	8	802	.698	.698	.075	.153	.067	.006	.385	.385	-.183	-.215	-.169	-0.537	0.086	0.5	1.0	1.5	1.1	A+	A-
649	601834	7	Ge	802	.334	.302	.197	.130	.334	.037	.427	-.136	-.119	-.169	.427	1.361	0.086	1.2	1.1	2.8	1.2	A+	B-
650	601688	7	6	402	.463	.463	.289	.102	.129	.017	.481	.481	-.082	-.342	-.260	0.714	0.114	-0.8	1.0	-1.3	0.9	A+	A-
651	601699	7	6	803	.553	.108	.553	.218	.079	.042	.446	-.232	.446	-.131	-.203	0.157	0.082	1.4	1.1	0.6	1.0	A-	A-
652	601703	7	8	803	.682	.682	.220	.054	.029	.015	.426	.426	-.244	-.189	-.175	-0.459	0.085	0.1	1.0	-0.2	1.0	A+	A-
653	601660	7	8	402	.711	.070	.087	.097	.711	.035	.546	-.134	-.265	-.327	.546	-0.721	0.127	-2.8	0.8	-2.1	0.8	A+	A-
654	601826	7	Ge	803	.736	.088	.051	.067	.736	.057	.457	-.151	-.185	-.243	.457	-1.021	0.096	-0.9	1.0	-0.8	0.9	B+	A+
655	601835	7	Ge	402	.455	.455	.182	.149	.154	.060	.485	.485	-.255	-.109	-.142	0.647	0.116	-0.5	1.0	-0.1	1.0	B+	A+
656	601677	7	8	399	.622	.025	.130	.198	.622	.025	.329	-.022	-.010	-.285	.329	-0.225	0.118	3.4	1.2	2.3	1.2	A+	B+
657	601687	7	6	802	.549	.077	.549	.165	.187	.022	.393	-.211	.393	-.212	-.111	0.229	0.081	2.2	1.1	3.1	1.2	A-	A-
658	601218	7	6	400	.645	.140	.040	.148	.645	.028	.511	-.243	-.203	-.247	.511	-0.336	0.120	-1.5	0.9	-0.9	0.9	A+	A+
659	602234	7	Ge	803	.269	.269	.088	.265	.347	.030	.215	.215	-.092	-.152	.079	1.783	0.090	5.8	1.3	6.4	1.6	A-	A+
660	602146	7	8	398	.636	.636	.043	.294	.028	.000	.285	.285	-.151	-.168	-.184	-0.116	0.117	3.7	1.2	2.7	1.3	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rash		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
661	601287	7	6	400	.860	.860	.075	.028	.025	.013	.481	.481	-.316	-.211	-.159	-1.782	0.158	-1.7	0.8	-2.7	0.6	A+	
662	601772	7	4	795	.870	.029	.039	.870	.059	.003	.387	-.163	-.217	.387	-.261	-1.912	0.118	-1.0	0.9	-1.2	0.8	A-	A-
663	601273	7	6	800	.341	.341	.368	.145	.099	.048	.278	.278	.140	-.290	-.169	1.192	0.085	6.0	1.2	5.7	1.4	A+	B+
664	601278	7	7	402	.525	.045	.525	.197	.231	.003	.424	.000	.424	-.208	-.304	0.428	0.113	0.2	1.0	0.1	1.0	A-	A-
665	601067	7	6	799	.442	.063	.085	.388	.442	.023	.358	-.183	-.193	-.113	.358	0.752	0.082	4.8	1.2	5.2	1.3	A+	A-
666	601771	7	4	802	.531	.531	.168	.165	.092	.044	.534	.534	-.237	-.271	-.162	0.207	0.082	-3.3	0.9	-3.1	0.8	A+	A-
667	601271	7	6	798	.605	.605	.150	.130	.068	.046	.566	.566	-.301	-.245	-.186	-0.163	0.085	-3.8	0.9	-2.4	0.9	B+	B+
668	601355	7	7	400	.678	.678	.153	.113	.055	.003	.497	.497	-.278	-.269	-.204	-0.425	0.119	-2.4	0.9	-1.9	0.8	A-	A+
669	601769	7	4	800	.713	.220	.713	.025	.019	.024	.415	-.257	.415	-.191	-.174	-0.817	0.090	0.5	1.0	0.1	1.0	A+	A+
670	601305	7	7	797	.601	.113	.112	.144	.601	.030	.549	-.177	-.227	-.314	.549	-0.272	0.085	-3.8	0.9	-2.9	0.8	A-	A+
671	601284	7	8	797	.525	.033	.088	.525	.304	.051	.451	-.204	-.299	.451	-.137	0.093	0.084	1.7	1.1	1.0	1.1	A-	A-
672	601310	7	6	797	.783	.072	.107	.783	.018	.021	.406	-.212	-.224	.406	-.163	-1.424	0.099	-0.1	1.0	-0.4	1.0	A-	A-
673	601350	7	6	797	.705	.054	.119	.082	.705	.040	.492	-.233	-.259	-.214	.492	-0.958	0.092	-3.1	0.9	-2.6	0.8	B+	B+
674	601297	7	6	797	.724	.099	.122	.724	.049	.006	.536	-.296	-.315	.536	-.176	-0.861	0.089	-3.9	0.9	-4.1	0.7	A+	B-
675	601362	7	6	797	.464	.464	.154	.272	.070	.039	.464	.464	-.197	-.169	-.209	0.485	0.083	-0.3	1.0	-0.2	1.0	A+	A+
676	601319	7	7	797	.491	.073	.235	.491	.147	.055	.522	-.187	-.268	.522	-.169	0.293	0.083	-2.2	0.9	-2.4	0.9	A-	A+
677	601770	7	4	797	.591	.190	.156	.591	.021	.043	.551	-.307	-.249	.551	-.168	-0.218	0.084	-3.2	0.9	-2.5	0.9	A+	A-
678	601298	7	6	802	.594	.594	.180	.125	.087	.015	.535	.535	-.232	-.273	-.218	-0.051	0.082	-3.4	0.9	-3.0	0.8	A+	A-
679	601363	7	6	802	.294	.294	.243	.292	.137	.034	.306	.306	-.120	-.114	-.009	1.558	0.088	3.8	1.2	3.3	1.3	B-	A-
680	601320	7	7	802	.686	.037	.069	.686	.167	.041	.484	-.154	-.241	.484	-.274	-0.678	0.089	-1.7	0.9	-2.4	0.8	A+	A+
681	601321	7	7	795	.598	.218	.598	.126	.055	.004	.513	-.273	.513	-.261	-.220	0.142	0.087	-1.3	1.0	-0.6	1.0	A-	B-
682	601364	7	6	795	.601	.148	.107	.136	.601	.008	.562	-.222	-.258	-.315	.562	0.107	0.088	-2.2	0.9	-2.9	0.8	B+	A+
683	601351	7	6	795	.589	.374	.020	.018	.589	.000	.489	-.428	-.126	-.121	.489	0.207	0.087	0.1	1.0	-0.8	1.0	A-	A-
684	601316	7	6	795	.370	.313	.101	.213	.370	.004	.416	-.301	-.080	-.084	.416	1.411	0.088	2.9	1.1	3.6	1.3	A+	A-
685	601713	7	4	795	.767	.068	.128	.767	.029	.008	.461	-.261	-.303	.461	-.132	-1.010	0.096	-2.0	0.9	-1.8	0.8	A-	A+
686	601286	7	6	795	.864	.864	.055	.035	.043	.003	.430	.430	-.230	-.253	-.223	-1.817	0.114	-2.2	0.9	-2.1	0.7	A+	A+
687	601317	7	6	400	.473	.473	.108	.185	.223	.013	.431	.431	-.244	-.209	-.110	0.567	0.111	-0.7	1.0	-0.7	1.0	B+	
688	601356	7	6	798	.551	.551	.168	.214	.033	.034	.385	.385	-.291	-.058	-.177	0.152	0.081	2.5	1.1	1.4	1.1	A+	A+
689	601318	7	6	798	.717	.717	.125	.108	.036	.014	.521	.521	-.322	-.256	-.176	-0.684	0.088	-3.9	0.8	-3.8	0.7	A+	A-
690	601746	7	4	400	.913	.048	.010	.913	.020	.010	.371	-.192	-.127	.371	-.192	-2.385	0.193	-0.5	0.9	-1.4	0.7	A-	
691	601366	7	7	400	.380	.440	.380	.110	.040	.030	.229	.069	.229	-.247	-.156	0.985	0.114	4.4	1.2	5.4	1.4	B-	
692	601747	7	4	798	.703	.083	.140	.703	.043	.031	.343	-.146	-.189	.343	-.128	-0.689	0.088	1.8	1.1	1.5	1.1	A-	A+
693	601774	7	7	798	.456	.098	.456	.302	.109	.035	.406	-.149	.406	-.150	-.223	0.646	0.081	1.5	1.1	1.4	1.1	A-	A-
694	601352	7	6	798	.608	.078	.608	.179	.118	.018	.502	-.197	.502	-.293	-.164	-0.061	0.083	-1.2	1.0	-1.3	0.9	A+	A+
695	601781	7	8	798	.447	.447	.239	.143	.130	.040	.547	.547	-.197	-.213	-.226	0.731	0.082	-2.9	0.9	-2.4	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
696	601748	7	4	398	.653	.653	.103	.091	.085	.068	.540	.540	-.290	-.178	-.227	-0.523	0.126	-1.8	0.9	-1.5	0.8	A-	B+
697	601749	7	4	400	.613	.128	.148	.613	.108	.005	.415	-.186	-.247	.415	-.151	-0.082	0.116	1.0	1.1	0.8	1.1	A+	A-
698	601750	7	4	800	.519	.204	.519	.150	.101	.026	.362	-.115	.362	-.121	-.202	0.293	0.081	4.4	1.2	3.0	1.2	A+	A-
699	601311	7	6	800	.830	.029	.055	.830	.055	.031	.500	-.182	-.304	.500	-.214	-1.719	0.109	-2.6	0.8	-3.7	0.6	A+	A+
700	601745	7	8	400	.613	.195	.613	.093	.085	.015	.490	-.151	.490	-.293	-.236	-0.101	0.117	-0.5	1.0	-0.2	1.0	A+	A-
701	601367	7	8	800	.658	.658	.121	.145	.066	.010	.419	.419	-.183	-.228	-.168	-0.402	0.084	0.3	1.0	0.7	1.1	A-	A-
702	601312	7	6	799	.760	.031	.095	.081	.760	.033	.500	-.196	-.253	-.249	.500	-1.160	0.095	-3.0	0.9	-2.7	0.7	A+	A+
703	601376	7	8	799	.770	.770	.046	.144	.033	.008	.407	.407	-.238	-.215	-.160	-1.085	0.092	-0.5	1.0	-1.3	0.9	A-	A-
704	601353	7	6	799	.339	.164	.263	.200	.339	.034	.409	-.132	-.196	-.054	.409	1.207	0.085	1.4	1.1	2.9	1.2	A+	A-
705	601686	7	4	799	.292	.119	.343	.292	.182	.065	.459	-.154	-.118	.459	-.118	1.426	0.088	-1.0	1.0	1.5	1.1	A-	A-
706	601313	7	6	399	.747	.075	.068	.747	.108	.003	.487	-.257	-.293	.487	-.199	-0.873	0.126	-1.9	0.9	-2.4	0.7	A+	A-
707	601354	7	6	399	.649	.113	.123	.110	.649	.005	.509	-.279	-.167	-.281	.509	-0.305	0.117	-2.1	0.9	-1.2	0.9	A-	A-
708	601314	7	6	799	.583	.174	.583	.184	.050	.009	.275	.042	.275	-.224	-.217	0.055	0.081	6.2	1.2	6.7	1.4	A+	A+
709	601322	7	8	399	.456	.173	.456	.186	.165	.020	.254	-.112	.254	-.215	.088	0.673	0.115	5.9	1.3	5.3	1.4	A-	A+
710	601307	7	6	802	.707	.032	.045	.187	.707	.029	.474	-.153	-.139	-.343	.474	-0.688	0.089	-1.8	0.9	-2.2	0.8	B+	A-
711	601323	7	8	400	.665	.158	.665	.115	.053	.010	.528	-.256	.528	-.305	-.197	-0.381	0.119	-2.4	0.9	-2.3	0.8	A-	A-
712	601324	7	8	802	.746	.050	.150	.746	.045	.010	.465	-.216	-.257	.465	-.220	-0.842	0.090	-2.0	0.9	-2.0	0.8	A-	A+
713	601291	7	7	802	.481	.119	.090	.481	.298	.013	.404	-.272	-.228	.404	-.079	0.609	0.081	3.0	1.1	2.7	1.1	A-	A+
714	601315	7	6	802	.692	.042	.692	.140	.102	.024	.530	-.184	.530	-.289	-.243	-0.568	0.087	-3.5	0.9	-3.0	0.8	A+	A+
715	601308	7	6	402	.796	.149	.032	.022	.796	.000	.410	-.334	-.103	-.189	.410	-1.120	0.134	-0.8	0.9	0.1	1.0	B+	A-
716	601306	7	8	402	.363	.363	.167	.336	.117	.017	.409	.409	-.285	-.116	-.019	1.260	0.118	1.5	1.1	1.5	1.1	C-	A+
717	601359	7	6	402	.406	.067	.406	.393	.065	.070	.472	-.146	.472	-.196	-.197	0.891	0.118	-0.1	1.0	0.2	1.0	B+	A+
718	601361	7	6	401	.511	.075	.511	.352	.050	.013	.411	-.147	.411	-.213	-.225	0.468	0.114	1.1	1.1	0.7	1.1	A-	A+
719	601282	7	8	401	.743	.125	.060	.743	.040	.032	.443	-.192	-.191	.443	-.210	-0.950	0.131	-0.1	1.0	-0.4	0.9	A-	A-
720	601309	7	6	401	.798	.100	.798	.030	.018	.055	.396	-.127	.396	-.244	-.153	-1.532	0.151	-0.2	1.0	0.8	1.2	A-	A-
721	601280	7	7	401	.464	.464	.125	.160	.192	.060	.423	.423	-.132	-.161	-.121	0.577	0.117	2.0	1.1	2.0	1.1	A-	A+
722	601365	7	7	799	.672	.083	.144	.672	.090	.011	.415	-.158	-.200	.415	-.209	-0.396	0.085	0.0	1.0	-0.3	1.0	B-	A-
723	601300	7	6	400	.720	.068	.143	.720	.050	.020	.533	-.202	-.313	.533	-.204	-0.748	0.126	-1.9	0.9	-2.1	0.8	B+	B+
724	601773	7	6	399	.679	.083	.095	.128	.679	.015	.558	-.227	-.253	-.280	.558	-0.511	0.121	-3.4	0.8	-3.0	0.7	A-	B-
725	601272	7	6	400	.280	.158	.300	.230	.280	.033	.399	-.137	-.040	-.186	.399	1.684	0.126	0.5	1.0	2.6	1.3	A-	B-
726	601357	7	8	800	.523	.523	.148	.280	.039	.011	.413	.413	-.230	-.167	-.171	0.218	0.079	0.5	1.0	1.2	1.1	A-	A-
727	601050	7	6	400	.785	.113	.038	.785	.063	.003	.478	-.297	-.189	.478	-.237	-1.211	0.132	-2.2	0.9	-2.4	0.7	A+	B+
728	601132	7	7	797	.655	.051	.198	.655	.054	.041	.535	-.193	-.343	.535	-.157	-0.626	0.088	-3.2	0.9	-2.9	0.8	A-	A-
729	601123	7	7	399	.579	.113	.188	.579	.085	.035	.586	-.260	-.286	.586	-.179	-0.030	0.117	-3.3	0.9	-3.0	0.8	A-	A-
730	601099	7	6	799	.615	.217	.615	.078	.064	.028	.385	-.111	.385	-.203	-.209	-0.137	0.083	2.4	1.1	1.5	1.1	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
731	601124	7	7	797	.629	.036	.054	.266	.629	.015	.501	-.194	-.244	-.298	.501	-0.370	0.085	-1.2	1.0	-1.2	0.9	A+	C-
732	601379	7	6	795	.745	.115	.082	.057	.745	.003	.494	-.281	-.255	-.230	.494	-0.811	0.095	-2.5	0.9	-2.0	0.8	A+	A-
733	601079	7	6	797	.324	.217	.256	.173	.324	.030	.351	-.043	-.035	-.259	.351	1.325	0.089	4.7	1.2	5.5	1.5	A+	A+
734	601080	7	6	800	.251	.398	.251	.180	.131	.040	.161	.183	.161	-.150	-.204	1.648	0.091	4.7	1.2	5.9	1.6	A-	A-
735	601125	7	7	800	.468	.060	.168	.263	.468	.043	.496	-.216	-.255	-.149	.496	0.410	0.081	-2.0	0.9	-1.8	0.9	A-	A+
736	601049	7	7	800	.340	.089	.340	.393	.141	.038	.359	-.036	.359	-.113	-.216	1.107	0.084	1.7	1.1	2.0	1.1	A-	A-
737	601064	7	6	802	.417	.392	.070	.084	.417	.039	.490	-.181	-.190	-.241	.490	0.836	0.082	-1.1	1.0	-0.9	1.0	C-	A-
738	601108	7	6	802	.273	.426	.273	.137	.123	.040	.176	.132	.176	-.134	-.212	1.685	0.090	5.5	1.3	7.4	1.8	A+	B+
739	601077	7	6	795	.806	.060	.081	.806	.045	.008	.454	-.249	-.237	.454	-.208	-1.322	0.104	-1.0	1.0	-0.7	0.9	A+	B-
740	601111	7	7	795	.531	.043	.126	.299	.531	.001	.491	-.216	-.333	-.195	.491	0.553	0.087	2.1	1.1	2.9	1.2	A+	A-
741	601052	7	7	799	.473	.131	.262	.473	.126	.008	.525	-.278	-.211	.525	-.187	0.665	0.080	-3.9	0.9	-3.5	0.8	A+	A-
742	601112	7	7	400	.255	.255	.245	.170	.293	.038	.301	.301	-.181	-.144	.091	1.672	0.125	1.1	1.1	3.1	1.3	A+	
743	601045	7	6	798	.405	.285	.135	.405	.152	.024	.217	.040	-.149	.217	-.147	0.946	0.081	7.0	1.3	7.3	1.4	A-	A-
744	601043	7	6	400	.185	.185	.253	.415	.093	.055	.135	.135	.061	-.076	.002	2.118	0.138	2.4	1.2	3.7	1.6	A-	
745	601066	7	6	798	.585	.114	.140	.585	.107	.054	.566	-.246	-.282	.566	-.204	-0.101	0.083	-5.0	0.8	-4.3	0.8	A+	A-
746	601129	7	7	798	.568	.568	.155	.251	.023	.004	.579	.579	-.255	-.404	-.115	0.203	0.081	-5.4	0.8	-4.2	0.8	A-	B-
747	601113	7	7	799	.571	.178	.146	.571	.095	.010	.501	-.219	-.240	.501	-.213	0.179	0.081	-1.9	0.9	-1.8	0.9	A-	A-
748	601037	7	6	798	.862	.024	.862	.080	.030	.004	.323	-.168	.323	-.213	-.119	-1.726	0.111	-0.2	1.0	1.0	1.2	A+	A-
749	601046	7	7	798	.587	.158	.169	.587	.065	.021	.580	-.267	-.297	.580	-.177	0.043	0.082	-4.2	0.9	-3.8	0.8	A+	A-
750	601038	7	6	400	.663	.085	.663	.220	.033	.000	.439	-.254	.439	-.263	-.156	-0.336	0.119	0.2	1.0	0.8	1.1	A-	A+
751	601047	7	7	400	.163	.163	.470	.253	.098	.018	.316	.316	-.178	.143	-.197	2.598	0.149	0.4	1.0	2.2	1.4	B-	A+
752	601084	7	7	400	.405	.153	.278	.405	.153	.013	.389	-.214	-.131	.389	-.085	0.848	0.114	0.7	1.0	2.0	1.1	A-	A-
753	601109	7	N/A	799	.125	.125	.210	.269	.372	.024	.175	.175	-.092	-.057	.068	2.800	0.116	1.5	1.1	6.3	2.2	A-	A+
754	601118	7	6	799	.630	.080	.630	.141	.099	.050	.556	-.162	.556	-.222	-.300	-0.413	0.085	-3.6	0.9	-2.9	0.8	A+	B+
755	601085	7	7	799	.486	.131	.243	.100	.486	.040	.547	-.177	-.258	-.209	.547	0.404	0.081	-3.9	0.9	-3.0	0.9	A-	A-
756	601058	7	7	799	.479	.260	.105	.479	.149	.006	.498	-.371	-.079	.498	-.141	0.600	0.081	-1.9	0.9	-1.4	0.9	A+	A-
757	601101	7	6	399	.790	.083	.053	.790	.055	.020	.502	-.261	-.209	.502	-.258	-1.279	0.138	-1.8	0.9	-2.3	0.7	A+	A-
758	601081	7	7	400	.795	.030	.065	.108	.795	.003	.369	-.101	-.244	-.223	.369	-1.170	0.135	-0.3	1.0	-0.3	1.0	A+	A-
759	601075	7	6	802	.761	.060	.062	.112	.761	.005	.471	-.254	-.249	-.227	.471	-0.921	0.091	-2.5	0.9	-2.6	0.8	A+	A+
760	601060	7	7	802	.413	.084	.413	.278	.202	.024	.368	-.020	.368	-.207	-.126	0.954	0.082	3.8	1.1	4.9	1.3	A-	A-
761	601107	7	6	400	.835	.010	.835	.068	.063	.025	.338	-.061	.338	-.091	-.303	-1.666	0.153	0.1	1.0	-0.2	1.0	A+	B+
762	601065	7	7	802	.623	.147	.623	.104	.095	.031	.581	-.307	.581	-.239	-.215	-0.202	0.084	-5.2	0.8	-4.4	0.7	A+	A-
763	601059	7	7	400	.453	.210	.110	.453	.178	.050	.442	-.287	-.118	.442	-.096	0.633	0.117	1.4	1.1	1.4	1.1	B-	A-
764	601076	7	6	803	.768	.044	.093	.768	.075	.020	.456	-.182	-.312	.456	-.159	-1.051	0.094	-1.8	0.9	-1.6	0.8	A+	A-
765	601082	7	7	803	.543	.075	.294	.543	.061	.027	.379	-.246	-.089	.379	-.223	0.253	0.081	3.9	1.1	3.4	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
766	601057	7	6	401	.726	.010	.192	.072	.726	.000	.359	-.086	-.283	-.156	.359	-0.665	0.123	0.3	1.0	2.4	1.3	C+	A+
767	601083	7	7	401	.641	.047	.641	.279	.022	.010	.474	-.279	.474	-.289	-.173	-0.206	0.117	-0.7	1.0	0.0	1.0	A-	A-
768	601131	7	7	401	.289	.150	.187	.344	.289	.030	.339	-.204	-.242	.110	.339	1.645	0.125	2.7	1.2	2.5	1.3	A-	A+
769	601054	7	7	400	.315	.133	.253	.315	.288	.013	.329	-.044	-.250	.329	-.041	1.339	0.120	1.3	1.1	2.5	1.2	A-	A-
770	601117	7	6	400	.195	.195	.163	.385	.238	.020	.208	.208	-.133	-.151	.124	2.121	0.135	1.4	1.1	3.0	1.5	A+	
771	601130	7	7	400	.528	.243	.528	.190	.040	.000	.532	-.346	.532	-.222	-.155	0.389	0.114	-1.9	0.9	-1.7	0.9	A+	B-
772	601051	7	6	799	.228	.434	.228	.143	.156	.039	.134	.156	.134	-.182	-.087	2.015	0.094	5.4	1.3	8.1	1.9	A-	A-
773	601110	7	7	802	.395	.395	.176	.186	.224	.019	.477	.477	-.126	-.364	-.044	1.009	0.082	-1.7	0.9	0.0	1.0	B+	A+
774	601086	7	7	803	.481	.481	.166	.249	.102	.003	.542	.542	-.240	-.320	-.137	0.654	0.080	-4.6	0.9	-4.3	0.8	C-	A-
775	599651	8	N/A	319	.426	.433	.078	.426	.060	.003	.421	-.292	-.137	.421	-.123	0.832	0.127	0.5	1.0	0.8	1.1	B+	A+
776	599610	8	7	160	.594	.131	.594	.100	.175	.000	.246	-.234	.246	-.108	-.024	-0.094	0.170	1.0	1.1	1.6	1.1	B+	
777	599698	8	6	158	.481	.057	.481	.291	.158	.013	.122	-.095	.122	-.004	-.100	0.287	0.171	3.4	1.2	3.1	1.2	A-	
778	599640	8	N/A	314	.350	.102	.280	.258	.350	.010	.373	-.059	-.155	-.168	.373	0.984	0.130	0.5	1.0	0.8	1.1	A+	
779	599613	8	6	318	.431	.113	.431	.157	.296	.003	.340	-.252	.340	-.229	.001	0.592	0.125	0.4	1.0	0.6	1.0	A-	A+
780	599583	8	8	639	.798	.064	.060	.798	.074	.005	.391	-.270	-.165	.391	-.187	-1.386	0.107	-1.5	0.9	-1.6	0.8	B+	A+
781	599645	8	7	160	.400	.069	.288	.400	.244	.000	.323	.136	-.255	.323	-.180	0.791	0.172	0.2	1.0	0.4	1.0	A-	
782	599611	8	6	314	.637	.137	.637	.140	.076	.010	.407	-.163	.407	-.199	-.168	-0.439	0.128	-0.3	1.0	-1.0	0.9	A+	
783	599612	8	6	313	.371	.371	.310	.198	.109	.013	.434	.434	-.146	-.173	-.165	0.747	0.128	-1.6	0.9	-1.4	0.9	A+	
784	599581	8	8	633	.713	.713	.120	.025	.136	.006	.453	.453	-.199	-.174	-.301	-0.700	0.096	-3.7	0.9	-1.8	0.9	B+	A+
785	599638	8	N/A	318	.550	.160	.157	.129	.550	.003	.456	-.245	-.194	-.180	.456	0.005	0.124	-1.3	0.9	-0.9	0.9	B-	A-
786	599600	8	8	316	.525	.095	.060	.288	.525	.032	.337	-.110	-.126	-.160	.337	-0.027	0.126	1.6	1.1	1.6	1.1	A+	A+
787	599696	8	6	316	.541	.032	.136	.272	.541	.019	.508	-.119	-.272	-.261	.508	-0.078	0.125	-2.8	0.9	-2.6	0.8	A-	A-
788	599704	8	N/A	316	.532	.142	.532	.161	.139	.025	.443	-.219	.443	-.195	-.120	-0.041	0.125	-1.4	0.9	-1.4	0.9	A-	A+
789	599603	8	8	315	.648	.191	.105	.648	.048	.010	.424	-.209	-.199	.424	-.175	-0.299	0.129	-1.2	0.9	-1.6	0.9	A+	A+
790	599705	8	N/A	315	.460	.184	.152	.187	.460	.016	.200	.035	-.124	-.129	.200	0.604	0.124	2.3	1.1	2.3	1.2	A+	A-
791	599616	8	6	318	.381	.236	.381	.167	.208	.009	.350	-.073	.350	-.077	-.251	1.206	0.128	0.9	1.1	2.8	1.2	A-	A+
792	599706	8	N/A	318	.692	.063	.082	.164	.692	.000	.334	-.158	-.175	-.183	.334	-0.343	0.132	0.4	1.0	0.1	1.0	A+	B-
793	599604	8	8	318	.742	.742	.098	.047	.104	.009	.515	.515	-.253	-.252	-.255	-0.666	0.140	-2.5	0.8	-1.9	0.8	A+	A-
794	599688	8	8	318	.692	.054	.692	.091	.164	.000	.377	-.026	.377	-.176	-.318	-0.514	0.133	-1.5	0.9	-1.2	0.9	A+	A-
795	599728	8	N/A	318	.456	.110	.239	.189	.456	.006	.485	-.153	-.237	-.224	.485	0.681	0.126	-1.1	1.0	-0.5	1.0	A-	B-
796	599689	8	8	319	.674	.260	.674	.047	.019	.000	.446	-.336	.446	-.210	-.129	-0.438	0.132	-1.7	0.9	-0.2	1.0	A+	A-
797	599622	8	6	319	.508	.144	.176	.508	.163	.009	.413	-.185	-.248	.413	-.098	0.401	0.126	1.6	1.1	0.2	1.0	A-	A-
798	599694	8	7	319	.630	.630	.125	.166	.069	.009	.534	.534	-.273	-.310	-.200	-0.413	0.125	-3.5	0.8	-3.4	0.8	B+	A-
799	599623	8	6	319	.536	.132	.536	.245	.082	.006	.285	-.163	.285	-.119	-.135	0.046	0.121	1.6	1.1	2.7	1.2	A-	A+
800	599652	8	N/A	319	.376	.216	.260	.138	.376	.009	.298	.082	-.285	-.143	.298	0.804	0.124	1.0	1.1	0.6	1.0	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
801	599699	8	6	318	.849	.047	.019	.085	.849	.000	.338	-.073	-.139	-.312	.338	-1.617	0.161	-0.8	0.9	-0.6	0.9	A-	A-
802	599653	8	7	158	.253	.253	.177	.209	.361	.000	.372	.372	-.248	-.278	.096	1.464	0.193	-0.4	1.0	-0.6	0.9	A-	
803	599605	8	7	318	.582	.582	.195	.151	.069	.003	.247	.247	-.022	-.226	-.120	-0.097	0.121	1.6	1.1	2.2	1.1	A+	A+
804	599695	8	7	158	.563	.133	.234	.563	.051	.019	.401	-.197	-.232	.401	-.088	-0.101	0.173	-0.8	1.0	-0.8	0.9	A+	
805	599660	8	7	318	.519	.088	.230	.519	.129	.035	.465	-.219	-.188	.465	-.261	0.103	0.121	-2.9	0.9	-2.7	0.9	A-	A+
806	599584	8	7	317	.685	.148	.685	.114	.051	.003	.345	-.169	.345	-.192	-.166	-0.590	0.128	-0.5	1.0	-0.4	1.0	A+	B+
807	599658	8	6	317	.205	.205	.379	.208	.183	.025	.413	.413	.011	-.093	-.224	1.839	0.149	-1.0	0.9	-0.4	0.9	A-	A-
808	599614	8	6	160	.525	.119	.525	.219	.106	.031	.476	-.154	.476	-.293	-.134	0.144	0.171	-2.1	0.9	-2.0	0.9	A-	
809	599649	8	7	157	.452	.089	.420	.452	.032	.006	.232	-.126	-.119	.232	-.090	0.489	0.174	1.9	1.1	3.6	1.4	A-	
810	599659	8	N/A	317	.511	.297	.511	.104	.069	.019	.455	-.103	.455	-.235	-.281	0.237	0.123	-1.3	0.9	-1.2	0.9	A-	A-
811	601114	8	7	317	.495	.495	.120	.148	.211	.025	.463	.463	-.168	-.187	-.157	0.302	0.124	-1.3	0.9	-1.3	0.9	A+	A-
812	599702	8	N/A	319	.571	.028	.304	.571	.085	.013	.380	-.113	-.175	.380	-.234	-0.013	0.123	0.3	1.0	0.3	1.0	A-	A-
813	599586	8	7	160	.606	.125	.606	.150	.088	.031	.435	-.071	.435	-.228	-.171	-0.211	0.180	0.3	1.0	-0.6	0.9	A+	
814	601119	8	7	160	.638	.081	.088	.638	.150	.044	.558	-.150	-.245	.558	-.266	-0.432	0.185	-2.0	0.9	-2.0	0.8	B+	
815	599731	8	N/A	160	.719	.719	.094	.125	.019	.044	.526	.526	-.302	-.220	-.093	-0.913	0.200	-1.9	0.8	2.1	1.4	A+	
816	599587	8	7	319	.658	.053	.658	.147	.113	.028	.438	-.160	.438	-.191	-.189	-0.507	0.130	-0.9	1.0	-0.8	0.9	A-	A+
817	599703	8	N/A	159	.629	.031	.076	.629	.264	.000	.345	-.176	-.245	.345	-.161	-0.284	0.175	-0.2	1.0	-0.3	1.0	A-	
818	601122	8	7	159	.472	.063	.182	.472	.264	.019	.164	-.202	-.101	.164	.042	0.422	0.172	3.4	1.2	2.9	1.3	A+	
819	599589	8	6	317	.243	.079	.243	.309	.360	.010	.323	-.096	.323	-.192	-.001	1.669	0.141	0.4	1.0	1.7	1.2	A-	
820	599588	8	6	159	.201	.208	.277	.302	.201	.013	.200	-.129	.043	-.055	.200	1.898	0.211	1.0	1.1	1.5	1.3	A+	
821	601121	8	7	319	.699	.085	.088	.699	.119	.009	.407	-.184	-.148	.407	-.232	-0.658	0.132	-0.9	1.0	-1.2	0.9	A-	A-
822	599639	8	N/A	158	.411	.127	.203	.234	.411	.025	.414	-.106	-.127	-.177	.414	0.741	0.179	0.1	1.0	-0.1	1.0	A-	
823	599582	8	8	632	.737	.022	.051	.737	.179	.011	.406	-.153	-.169	.406	-.279	-0.987	0.099	-1.3	0.9	-1.1	0.9	A+	B-
824	599697	8	6	315	.283	.235	.295	.283	.184	.003	.365	-.254	.066	.365	-.201	1.557	0.136	-0.1	1.0	-0.2	1.0	A-	A+
825	599619	8	6	318	.324	.076	.324	.481	.107	.013	.290	-.063	.290	-.135	-.137	1.362	0.134	1.9	1.1	2.4	1.3	A+	A-
826	599585	8	7	317	.391	.391	.240	.202	.145	.022	.344	.344	.011	-.190	-.156	0.824	0.126	0.8	1.0	0.5	1.0	C+	A-
827	599637	8	N/A	313	.559	.559	.137	.109	.179	.016	.383	.383	-.207	-.185	-.100	-0.176	0.125	-0.9	1.0	-1.1	0.9	B+	
828	601801	8	5	158	.354	.165	.228	.228	.354	.025	.391	.001	-.219	-.130	.391	1.035	0.184	0.3	1.0	0.4	1.0	A+	
829	601725	8	5	318	.635	.072	.110	.176	.635	.006	.415	-.174	-.218	-.205	.415	-0.056	0.128	-0.2	1.0	-0.5	1.0	B-	A-
830	601744	8	N/A	160	.444	.094	.175	.269	.444	.019	.448	-.226	-.112	-.190	.448	0.625	0.175	-0.3	1.0	-0.6	0.9	C-	
831	601804	8	N/A	319	.382	.382	.376	.169	.069	.003	.250	.250	.008	-.262	-.111	0.783	0.124	1.8	1.1	1.2	1.1	A-	A+
832	602158	8	5	315	.457	.108	.457	.210	.210	.016	.402	-.176	.402	-.186	-.116	0.616	0.124	-1.0	1.0	-1.1	0.9	A-	A+
833	601759	8	N/A	314	.624	.194	.624	.089	.070	.022	.472	-.200	.472	-.211	-.205	-0.416	0.128	-2.2	0.9	-2.0	0.8	A+	
834	601778	8	5	313	.358	.121	.367	.358	.137	.016	.224	-.078	-.086	.224	-.051	0.816	0.129	2.5	1.1	3.0	1.2	A-	
835	601779	8	5	318	.682	.091	.682	.195	.028	.003	.463	-.161	.463	-.336	-.182	-0.678	0.132	-1.3	0.9	-1.6	0.8	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
836	601741	8	N/A	318	.377	.245	.377	.176	.198	.003	.336	-.039	.336	-.212	-.150	0.863	0.127	1.8	1.1	1.8	1.2	A+	A-
837	601742	8	N/A	316	.541	.111	.541	.241	.098	.010	.433	-.056	.433	-.236	-.279	-0.050	0.124	-0.9	1.0	-1.3	0.9	A+	B-
838	602111	8	N/A	315	.337	.295	.194	.337	.171	.003	.157	-.012	-.086	.157	-.069	1.256	0.130	4.0	1.2	4.0	1.4	A-	A+
839	602114	8	6	318	.396	.082	.459	.396	.057	.006	.424	-.081	-.359	.424	-.019	0.980	0.128	-0.4	1.0	-0.4	1.0	A+	B-
840	601780	8	5	318	.418	.066	.387	.120	.418	.009	.394	-.226	-.152	-.164	.394	0.877	0.127	1.7	1.1	1.3	1.1	B-	A-
841	602054	8	6	319	.357	.260	.245	.357	.125	.013	.354	-.163	-.106	.354	-.130	0.889	0.126	0.3	1.0	0.1	1.0	A-	A+
842	602055	8	5	158	.298	.215	.310	.152	.298	.025	.440	-.193	-.157	-.102	.440	1.167	0.185	-1.2	0.9	-0.6	0.9	A-	
843	601726	8	N/A	318	.264	.267	.138	.296	.264	.035	.345	-.176	-.137	-.038	.345	1.385	0.136	-0.1	1.0	-0.2	1.0	B-	A-
844	602116	8	5	317	.716	.133	.057	.716	.069	.025	.417	-.258	-.137	.417	-.122	-0.842	0.135	-1.2	0.9	-1.1	0.9	B+	A+
845	601739	8	N/A	160	.300	.231	.325	.131	.300	.013	.445	-.200	-.112	-.164	.445	1.269	0.184	-1.1	0.9	-0.8	0.9	A-	
846	601734	8	N/A	317	.489	.123	.252	.489	.104	.032	.337	-.140	.007	.337	-.217	0.319	0.124	2.0	1.1	1.5	1.1	A+	A-
847	601735	8	N/A	160	.575	.575	.225	.150	.044	.006	.482	.482	-.242	-.222	-.199	0.017	0.175	-1.1	0.9	-1.1	0.9	A+	
848	601667	8	N/A	319	.583	.176	.583	.129	.091	.022	.400	-.088	.400	-.277	-.129	-0.101	0.124	-0.1	1.0	-0.4	1.0	A-	A-
849	601669	8	N/A	317	.644	.644	.076	.167	.104	.010	.478	.478	-.258	-.204	-.210	-0.381	0.127	-2.3	0.9	-2.1	0.8	A+	
850	601737	8	N/A	317	.353	.379	.145	.114	.353	.010	.391	-.192	-.193	-.026	.391	1.042	0.128	-0.3	1.0	0.2	1.0	A-	
851	601738	8	N/A	158	.449	.342	.146	.449	.044	.019	.406	-.104	-.223	.406	-.170	0.562	0.177	0.1	1.0	0.4	1.0	A+	
852	601740	8	N/A	313	.377	.102	.336	.163	.377	.022	.240	-.066	.001	-.179	.240	0.690	0.128	2.9	1.2	3.1	1.2	A-	
853	602118	8	6	319	.414	.075	.414	.414	.097	.000	.366	.016	-.309	.366	-.109	0.907	0.128	1.2	1.1	1.7	1.1	A+	B-
854	601733	8	N/A	157	.287	.255	.268	.153	.287	.038	.464	-.122	-.138	-.087	.464	1.293	0.192	-1.3	0.9	-0.7	0.9	A+	
855	602117	8	5	157	.325	.293	.325	.255	.089	.038	.201	.188	.201	-.137	-.195	1.078	0.186	2.4	1.2	2.2	1.3	A+	
856	601802	8	5	319	.777	.063	.060	.100	.777	.000	.415	-.203	-.228	-.232	.415	-1.071	0.146	-0.9	0.9	-1.6	0.8	B-	A-
857	601723	8	5	314	.248	.248	.258	.319	.150	.026	.344	.344	.047	-.175	-.129	1.554	0.143	0.5	1.0	0.7	1.1	A+	
858	601736	8	N/A	319	.351	.241	.226	.172	.351	.009	.349	-.161	-.101	-.112	.349	1.067	0.127	0.6	1.0	1.4	1.1	A+	A-
859	601782	8	N/A	158	.399	.127	.184	.399	.279	.013	.228	-.155	-.083	.228	-.070	0.673	0.174	1.5	1.1	1.3	1.1	A-	
860	602115	8	5	318	.220	.088	.346	.220	.343	.003	.165	-.266	-.119	.165	.138	1.710	0.143	1.4	1.1	2.3	1.3	A-	A+
861	601724	8	5	316	.418	.418	.279	.149	.136	.019	.514	.514	-.194	-.178	-.210	0.547	0.126	-2.6	0.9	-2.3	0.9	A-	A+
862	602113	8	6	318	.286	.261	.274	.170	.286	.009	.382	-.203	-.070	-.102	.382	1.733	0.136	-0.4	1.0	0.7	1.1	A-	A-
863	601743	8	N/A	317	.495	.129	.495	.230	.107	.038	.408	-.082	.408	-.129	-.194	0.274	0.124	0.2	1.0	0.0	1.0	A+	A-
864	601263	8	6	315	.781	.114	.781	.057	.029	.019	.409	-.212	.409	-.224	-.145	-1.146	0.150	-1.9	0.9	-2.4	0.7	B+	A+
865	602058	8	6	314	.908	.908	.026	.026	.019	.022	.358	.358	-.179	-.116	-.145	-2.624	0.226	-0.3	0.9	-1.2	0.7	B+	
866	602086	8	7	314	.385	.108	.172	.385	.319	.016	.327	-.076	-.188	.327	-.095	0.787	0.128	1.7	1.1	1.9	1.2	A-	
867	601328	8	6	318	.676	.110	.057	.676	.154	.003	.396	-.170	-.256	.396	-.186	-0.643	0.131	-0.3	1.0	-0.5	1.0	A-	A-
868	602129	8	6	318	.638	.239	.050	.066	.638	.006	.430	-.198	-.298	-.197	.430	-0.454	0.128	-0.9	1.0	-0.4	1.0	A+	A+
869	602209	8	7	315	.286	.168	.349	.286	.181	.016	.134	-.068	-.049	.134	.028	1.297	0.135	2.7	1.2	5.0	1.6	A+	A-
870	602203	8	6	315	.552	.552	.067	.302	.048	.032	.371	.371	-.149	-.159	-.149	-0.096	0.126	0.4	1.0	-0.1	1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
871	602210	8	7	315	.784	.048	.092	.784	.057	.019	.348	-.144	-.249	.348	-.065	-1.168	0.151	-0.2	1.0	-0.2	1.0	A-	A+
872	601264	8	6	319	.884	.884	.085	.022	.009	.000	.306	.306	-.272	-.057	-.147	-1.822	0.185	-0.6	0.9	-0.1	1.0	A+	A-
873	602206	8	6	318	.934	.934	.019	.031	.016	.000	.224	.224	-.181	-.127	-.072	-2.597	0.233	-0.1	1.0	0.0	1.0	B+	A-
874	602135	8	7	318	.371	.116	.208	.371	.299	.006	.247	-.128	-.207	.247	.012	1.116	0.130	3.1	1.2	3.6	1.3	A-	A-
875	602207	8	6	321	.925	.925	.028	.044	.003	.000	.337	.337	-.241	-.223	-.058	-2.617	0.222	-0.7	0.9	-2.0	0.5	B+	
876	602119	8	7	158	.203	.184	.354	.260	.203	.000	.344	.007	-.127	-.183	.344	1.784	0.207	-0.2	1.0	-0.5	0.9	A-	
877	602120	8	7	318	.428	.154	.208	.201	.428	.009	.264	-.082	-.092	-.129	.264	0.600	0.121	1.6	1.1	1.5	1.1	B+	A-
878	601325	8	8	158	.519	.108	.120	.247	.519	.006	.452	-.248	-.198	-.201	.452	0.132	0.170	-1.8	0.9	-1.8	0.9	A+	
879	602121	8	7	317	.316	.316	.385	.158	.136	.006	.345	.345	-.124	-.132	-.135	1.188	0.130	0.3	1.0	0.6	1.0	A-	A-
880	601327	8	8	317	.344	.110	.199	.344	.325	.022	.356	-.140	-.040	.356	-.188	1.012	0.128	0.2	1.0	0.3	1.0	B-	B-
881	601330	8	8	157	.325	.108	.325	.446	.089	.032	.096	-.009	.096	.082	-.060	1.099	0.186	3.8	1.3	3.4	1.4	A-	
882	601756	8	8	160	.494	.050	.494	.250	.206	.000	.080	-.042	.080	-.132	.065	0.421	0.173	4.4	1.3	3.5	1.4	A-	
883	602076	8	7	319	.674	.113	.674	.132	.069	.013	.364	-.163	.364	-.181	-.135	-0.538	0.130	-0.1	1.0	0.2	1.0	B-	A+
884	602062	8	7	160	.613	.094	.144	.613	.106	.044	.450	-.126	-.174	.450	-.188	-0.296	0.183	-0.1	1.0	-0.6	0.9	A+	
885	601732	8	8	159	.308	.189	.308	.258	.226	.019	.332	-.157	.332	-.160	.001	1.228	0.185	0.5	1.0	0.5	1.1	B+	
886	601217	8	8	317	.555	.054	.555	.117	.262	.013	.480	-.188	.480	-.088	-.328	0.047	0.123	-1.9	0.9	-1.9	0.9	A+	
887	601219	8	6	158	.779	.082	.082	.779	.044	.013	.432	-.118	-.236	.432	-.261	-1.177	0.208	-0.9	0.9	-0.9	0.8	A+	
888	602057	8	6	158	.823	.823	.019	.044	.108	.006	.153	.153	-.105	-.121	.017	-1.464	0.222	1.0	1.1	2.5	1.7	A+	
889	602078	8	7	158	.639	.057	.639	.203	.095	.006	.591	-.209	.591	-.314	-.289	-0.342	0.180	-3.5	0.8	-2.8	0.7	A+	
890	601222	8	6	314	.334	.089	.334	.092	.475	.010	.365	-.194	.365	-.102	-.147	1.069	0.132	0.3	1.0	0.6	1.1	A-	
891	602056	8	7	317	.454	.227	.199	.454	.085	.035	.397	-.114	-.119	.397	-.233	0.483	0.124	0.2	1.0	0.0	1.0	B-	
892	602059	8	7	157	.675	.675	.204	.083	.032	.006	.412	.412	-.235	-.217	-.133	-0.606	0.184	-0.7	1.0	-0.6	0.9	A+	
893	602133	8	7	321	.567	.567	.137	.190	.103	.003	.379	.379	-.223	-.193	-.120	-0.014	0.125	0.7	1.0	1.1	1.1	A+	
894	602128	8	6	317	.713	.085	.713	.066	.120	.016	.468	-.219	.468	-.221	-.230	-0.945	0.136	-1.4	0.9	-2.0	0.8	B+	A-
895	602205	8	6	319	.944	.006	.944	.044	.003	.003	.212	-.102	.212	-.196	-.090	-2.743	0.257	-0.2	1.0	-0.3	0.9	A-	B-
896	602208	8	7	318	.437	.230	.214	.437	.116	.003	.286	.016	-.199	.286	-.192	0.561	0.125	3.4	1.2	3.1	1.2	A-	A-
897	601326	8	8	318	.550	.214	.123	.550	.110	.003	.394	-.251	-.141	.394	-.151	0.049	0.120	-1.1	1.0	-1.4	0.9	A+	B-
898	601338	8	6	317	.716	.044	.079	.716	.142	.019	.496	-.134	-.306	.496	-.259	-0.973	0.137	-2.2	0.9	-2.2	0.8	B+	A-
899	601371	8	6	318	.465	.465	.242	.195	.091	.006	.422	.422	-.139	-.265	-.146	0.628	0.125	-0.2	1.0	0.2	1.0	A+	A+
900	602136	8	8	319	.555	.072	.166	.198	.555	.009	.321	-.137	-.215	-.110	.321	-0.049	0.122	1.2	1.1	1.1	1.1	A-	A+
901	601755	8	8	317	.432	.054	.237	.432	.243	.035	.215	-.182	-.209	.215	.166	0.590	0.125	4.2	1.2	3.5	1.2	A-	A+
902	601372	8	6	321	.408	.122	.231	.224	.408	.016	.443	-.024	-.243	-.216	.443	0.765	0.127	-1.3	0.9	-0.6	1.0	A+	
903	602204	8	6	315	.759	.051	.051	.118	.759	.022	.384	-.169	-.269	-.139	.384	-1.013	0.146	-0.2	1.0	0.4	1.1	A+	A-
904	602131	8	7	319	.511	.072	.119	.511	.292	.006	.287	-.177	-.151	.287	-.094	0.169	0.121	1.7	1.1	1.6	1.1	A-	B+
905	602061	8	7	317	.360	.123	.268	.240	.360	.010	.383	-.126	-.119	-.152	.383	1.009	0.127	0.1	1.0	0.0	1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
906	602087	8	7	317	.584	.584	.136	.123	.142	.016	.477	.477	-.212	-.262	-.160	-0.249	0.126	-1.6	0.9	-1.4	0.9	A+	A+
907	602212	8	7	319	.332	.370	.332	.219	.078	.000	.282	-.145	.282	-.106	-.072	1.445	0.131	2.2	1.1	2.3	1.2	A+	A-
908	601329	8	6	315	.702	.702	.098	.089	.070	.041	.488	.488	-.277	-.164	-.131	-0.940	0.139	-1.5	0.9	-1.2	0.9	B+	A-
909	601757	8	4	158	.810	.051	.101	.810	.038	.000	.451	-.345	-.271	.451	-.102	-1.353	0.215	-1.1	0.9	-1.2	0.7	B+	
910	601073	8	6	315	.664	.105	.664	.191	.038	.003	.355	-.233	.355	-.147	-.158	-0.368	0.129	-0.5	1.0	-0.1	1.0	A+	A+
911	601288	8	7	160	.244	.125	.544	.244	.069	.019	.042	-.141	.179	.042	-.141	1.591	0.196	2.1	1.2	2.9	1.4	A-	
912	601247	8	6	317	.580	.092	.580	.196	.117	.016	.387	-.113	.387	-.254	-.116	-0.233	0.125	-0.2	1.0	-0.8	0.9	A+	B+
913	601763	8	6	313	.534	.272	.093	.534	.080	.022	.550	-.264	-.192	.550	-.265	-0.075	0.124	-3.7	0.9	-3.4	0.8	B+	
914	602072	8	4	317	.656	.047	.066	.224	.656	.006	.431	-.208	-.233	-.223	.431	-0.450	0.128	-0.9	1.0	-1.2	0.9	A-	B+
915	601707	8	4	319	.596	.596	.113	.085	.201	.006	.496	.496	-.228	-.252	-.238	0.093	0.127	-2.9	0.9	-2.3	0.8	A-	A+
916	601332	8	6	317	.293	.215	.186	.290	.293	.016	.303	-.094	-.069	-.110	.303	1.352	0.134	1.0	1.1	1.5	1.1	A-	
917	601675	8	6	319	.589	.144	.141	.119	.589	.006	.509	-.296	-.271	-.160	.509	-0.013	0.127	-3.0	0.9	-1.9	0.8	A+	A+
918	601340	8	6	157	.420	.420	.293	.198	.083	.006	.456	.456	-.114	-.315	-.172	0.637	0.176	-2.2	0.9	-2.0	0.8	A-	
919	601344	8	6	321	.530	.246	.065	.159	.530	.000	.372	-.170	-.234	-.149	.372	0.184	0.124	1.0	1.1	0.9	1.1	C+	
920	601341	8	6	314	.354	.354	.293	.213	.127	.013	.404	.404	-.089	-.246	-.088	0.959	0.130	-0.1	1.0	-0.1	1.0	A+	
921	602132	8	4	314	.510	.121	.510	.277	.073	.019	.422	-.169	.422	-.166	-.173	0.169	0.124	-0.2	1.0	-0.9	0.9	A+	
922	601349	8	6	313	.201	.304	.201	.208	.259	.029	.142	.161	.142	-.180	-.067	1.715	0.152	2.0	1.2	2.1	1.3	A+	
923	601289	8	6	317	.562	.139	.186	.562	.098	.016	.415	-.100	-.285	.415	-.156	-0.132	0.125	-0.7	1.0	-0.8	1.0	B+	A-
924	602123	8	4	317	.227	.092	.249	.416	.227	.016	.194	.047	.044	-.201	.194	1.646	0.146	1.7	1.1	2.9	1.4	A-	A-
925	601233	8	6	318	.315	.315	.418	.192	.072	.003	.311	.311	.027	-.232	-.235	1.201	0.133	0.7	1.0	1.7	1.2	A-	A+
926	602124	8	4	318	.616	.154	.138	.616	.082	.009	.503	-.217	-.287	.503	-.223	-0.354	0.127	-2.5	0.9	-2.6	0.8	A-	B+
927	601295	8	6	316	.636	.076	.636	.203	.079	.006	.435	-.124	.435	-.270	-.208	-0.512	0.128	-0.9	1.0	-0.8	0.9	A+	A-
928	602137	8	4	315	.454	.073	.194	.244	.454	.035	.413	-.212	-.118	-.127	.413	0.387	0.125	-1.1	1.0	-0.8	1.0	A-	A-
929	602134	8	4	315	.524	.121	.524	.241	.089	.025	.351	-.060	.351	-.241	-.093	0.268	0.125	0.4	1.0	0.1	1.0	A+	A+
930	601342	8	6	318	.538	.132	.138	.186	.538	.006	.387	-.133	-.120	-.258	.387	0.440	0.124	-0.5	1.0	0.0	1.0	A+	A+
931	601074	8	6	319	.756	.756	.075	.091	.075	.003	.543	.543	-.263	-.322	-.255	-0.795	0.142	-3.8	0.8	-3.2	0.6	B+	A-
932	601343	8	6	319	.589	.589	.132	.066	.213	.000	.472	.472	-.328	-.238	-.153	0.141	0.126	-1.9	0.9	-1.5	0.9	A-	A+
933	601760	8	6	319	.542	.129	.542	.223	.100	.006	.445	-.110	.445	-.288	-.180	0.370	0.125	-1.5	0.9	-1.7	0.9	B+	A+
934	601240	8	6	319	.533	.144	.147	.172	.533	.003	.394	-.158	-.163	-.211	.394	0.295	0.126	0.7	1.0	0.2	1.0	A+	A+
935	600988	8	6	321	.321	.321	.305	.209	.162	.003	.423	.423	-.173	-.221	-.073	1.243	0.132	-1.6	0.9	-0.7	0.9	C+	
936	602053	8	4	321	.673	.673	.125	.069	.131	.003	.475	.475	-.223	-.208	-.283	-0.561	0.131	-1.9	0.9	-2.1	0.8	A+	
937	601676	8	6	321	.511	.206	.511	.162	.115	.006	.431	-.160	.431	-.194	-.233	0.265	0.124	-1.1	1.0	-0.6	1.0	A+	
938	602122	8	4	319	.317	.251	.317	.198	.232	.003	.207	-.206	.207	.084	-.093	1.118	0.129	2.4	1.1	1.5	1.1	B+	A+
939	601292	8	6	319	.796	.044	.796	.063	.097	.000	.434	-.203	.434	-.237	-.255	-1.322	0.146	-1.4	0.9	-2.2	0.7	B+	A+
940	601731	8	6	158	.329	.152	.260	.260	.329	.000	.374	-.069	-.132	-.213	.374	1.050	0.180	-0.2	1.0	0.4	1.0	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
941	601302	8	6	158	.557	.158	.184	.557	.101	.000	.324	-.128	-.235	.324	-.078	-0.020	0.170	0.1	1.0	-0.3	1.0	A-	
942	601251	8	6	318	.616	.167	.116	.098	.616	.003	.439	-.205	-.232	-.214	.439	-0.260	0.122	-2.5	0.9	-2.2	0.9	A+	A-
943	601336	8	6	318	.632	.050	.632	.223	.088	.006	.466	-.132	.466	-.300	-.244	-0.346	0.123	-2.9	0.9	-2.8	0.8	B+	A-
944	602130	8	4	158	.348	.348	.386	.184	.076	.006	.267	.267	-.108	-.137	-.069	0.938	0.178	0.8	1.1	0.8	1.1	B+	
945	601358	8	6	318	.456	.160	.456	.242	.116	.025	.337	-.195	.337	-.150	-.077	0.426	0.121	0.1	1.0	0.2	1.0	A+	A+
946	601337	8	6	160	.506	.244	.506	.181	.063	.006	.083	.011	.083	-.030	-.112	0.295	0.168	3.7	1.2	4.1	1.3	A+	
947	601339	8	6	317	.388	.256	.170	.180	.388	.006	.323	-.056	-.156	-.127	.323	0.824	0.124	0.3	1.0	0.9	1.1	A+	A+
948	601662	8	4	317	.492	.092	.492	.334	.082	.000	.289	-.054	.289	-.170	-.178	0.339	0.120	1.9	1.1	1.5	1.1	B-	A-
949	601252	8	6	160	.463	.125	.306	.463	.094	.013	.378	-.199	-.144	.378	-.152	0.471	0.169	-0.4	1.0	-0.4	1.0	A-	
950	601331	8	7	317	.290	.290	.325	.271	.095	.019	.309	.309	-.018	-.164	-.122	1.310	0.133	0.9	1.1	1.1	1.1	A+	A-
951	601661	8	4	160	.363	.194	.300	.363	.106	.038	.244	-.128	-.025	.244	-.081	0.905	0.177	1.3	1.1	1.5	1.1	B-	
952	601293	8	6	317	.508	.224	.107	.508	.158	.003	.343	-.073	-.171	.343	-.218	0.288	0.122	1.3	1.1	0.7	1.1	A+	A-
953	601262	8	7	157	.758	.083	.758	.089	.064	.006	.444	-.051	.444	-.391	-.204	-1.084	0.200	-1.2	0.9	-0.9	0.8	A+	
954	602138	8	6	317	.577	.107	.136	.158	.577	.022	.488	-.260	-.236	-.090	.488	-0.088	0.125	-2.1	0.9	-1.4	0.9	A+	A+
955	601333	8	7	317	.316	.202	.271	.186	.316	.025	.452	-.098	-.185	-.140	.452	1.214	0.132	-1.8	0.9	-1.1	0.9	A+	A-
956	602051	8	4	160	.581	.125	.194	.581	.094	.006	.225	-.056	-.028	.225	-.245	-0.016	0.175	2.1	1.1	2.0	1.2	A-	
957	601727	8	6	319	.583	.075	.176	.166	.583	.000	.372	-.043	-.221	-.236	.372	-0.037	0.123	-0.4	1.0	0.4	1.0	A+	A+
958	601246	8	6	319	.263	.263	.351	.188	.176	.022	.426	.426	-.075	-.214	-.095	1.529	0.137	-1.0	0.9	-0.4	1.0	A+	A+
959	601334	8	7	319	.665	.665	.063	.053	.194	.025	.358	.358	-.199	-.254	-.069	-0.529	0.130	0.5	1.0	0.8	1.1	A-	A-
960	601347	8	6	159	.208	.138	.579	.208	.069	.006	-.065	-.171	.344	-.065	-.313	1.863	0.208	2.9	1.4	3.2	1.7	A-	
961	601672	8	6	159	.528	.528	.138	.120	.214	.000	.448	.448	-.142	-.220	-.252	0.192	0.170	-1.5	0.9	-1.4	0.9	A-	
962	601698	8	4	317	.186	.120	.186	.360	.319	.016	.263	-.247	.263	.045	-.037	2.058	0.155	0.4	1.0	2.3	1.4	A-	
963	601673	8	6	317	.663	.663	.117	.117	.088	.016	.445	.445	-.253	-.204	-.116	-0.499	0.129	-1.3	0.9	-1.3	0.9	A+	
964	601335	8	6	159	.736	.057	.736	.113	.076	.019	.443	-.226	.443	-.244	-.164	-0.930	0.195	-1.1	0.9	-1.0	0.8	A+	
965	601758	8	6	158	.715	.063	.715	.082	.127	.013	.431	-.291	.431	-.262	-.136	-0.796	0.193	-1.0	0.9	-0.9	0.8	A+	
966	601238	8	6	158	.646	.646	.139	.152	.063	.000	.352	.352	-.239	-.178	-.089	-0.370	0.181	0.0	1.0	4.1	1.7	A+	
967	601345	8	6	158	.234	.120	.285	.354	.234	.006	.546	-.063	-.226	-.176	.546	1.774	0.204	-1.9	0.8	-2.4	0.6	A+	
968	601360	8	6	157	.580	.580	.178	.159	.070	.013	.420	.420	-.204	-.246	.024	-0.123	0.175	-1.0	0.9	0.4	1.0	A+	
969	601764	8	6	318	.689	.689	.072	.116	.116	.006	.496	.496	-.208	-.334	-.220	-0.354	0.132	-2.2	0.9	-2.4	0.8	A-	A+
970	602052	8	4	318	.569	.569	.173	.110	.148	.000	.518	.518	-.269	-.309	-.164	0.131	0.125	-2.6	0.9	-2.1	0.8	B+	B+
971	602065	8	4	157	.191	.548	.217	.191	.038	.006	.264	-.151	-.052	.264	.042	1.953	0.217	0.5	1.1	1.1	1.2	A-	
972	601346	8	6	315	.568	.054	.149	.200	.568	.029	.599	-.198	-.273	-.280	.599	-0.179	0.126	-3.7	0.8	-3.4	0.8	A+	B-
973	600980	8	6	318	.481	.104	.481	.305	.110	.000	.359	-.146	.359	-.186	-.157	0.569	0.125	1.5	1.1	1.2	1.1	A+	A-
974	601776	8	6	316	.468	.193	.468	.184	.139	.016	.492	-.193	.492	-.229	-.161	0.293	0.124	-2.6	0.9	-1.4	0.9	A-	A-
975	601232	8	7	158	.437	.437	.260	.158	.101	.044	.444	.444	-.161	-.263	-.160	0.414	0.174	-1.3	0.9	-1.3	0.9	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
976	601348	8	6	317	.215	.215	.170	.372	.224	.019	.163	.163	-.081	.061	-.079	1.843	0.148	2.3	1.2	2.9	1.4	A+	
977	601777	8	6	315	.549	.549	.152	.130	.143	.025	.427	.427	-.214	-.181	-.116	-0.064	0.125	-1.5	0.9	-0.7	1.0	A+	A+
978	601384	8	6	317	.628	.139	.628	.136	.098	.000	.441	-.309	.441	-.175	-.157	-0.296	0.124	-2.4	0.9	-1.2	0.9	A+	A+
979	601231	8	7	319	.489	.097	.223	.172	.489	.019	.468	-.108	-.159	-.319	.468	0.244	0.122	-2.3	0.9	-1.8	0.9	B+	A-
980	601663	8	4	159	.321	.201	.321	.220	.233	.025	.169	.022	.169	-.043	-.122	1.142	0.183	2.2	1.2	2.5	1.3	A+	
981	601234	8	6	315	.340	.178	.156	.289	.340	.038	.316	-.168	-.111	-.006	.316	0.964	0.131	0.6	1.0	0.2	1.0	A-	A+
982	601775	8	6	317	.338	.167	.123	.357	.338	.016	.359	-.205	-.151	-.047	.359	0.982	0.130	-0.2	1.0	-0.1	1.0	A-	A+
983	601069	8	8	313	.435	.115	.150	.284	.435	.016	.505	-.202	-.240	-.165	.505	0.418	0.125	-2.6	0.9	-2.0	0.9	A+	
984	601097	8	N/A	159	.610	.069	.270	.050	.610	.000	.568	-.275	-.352	-.233	.568	-0.193	0.174	-3.7	0.8	-2.9	0.7	A-	
985	601090	8	6	160	.288	.069	.131	.475	.288	.038	.381	-.108	-.264	-.051	.381	1.303	0.187	-0.4	1.0	0.1	1.0	A-	
986	601100	8	7	160	.588	.206	.094	.094	.588	.019	.491	-.238	-.128	-.268	.491	-0.084	0.177	-1.6	0.9	-1.3	0.9	A+	
987	600990	8	6	315	.413	.140	.216	.413	.203	.029	.329	-.154	-.178	.329	.015	0.603	0.126	1.0	1.1	1.6	1.1	B-	A+
988	601006	8	7	313	.150	.185	.150	.556	.080	.029	-.022	-.125	-.022	.190	-.013	2.136	0.169	2.2	1.3	4.1	1.9	A+	
989	601009	8	7	317	.120	.120	.328	.401	.145	.006	.023	.023	-.024	.028	-.005	2.551	0.184	1.3	1.2	2.6	1.7	A+	A-
990	601093	8	6	317	.205	.205	.148	.230	.401	.016	.292	.292	-.243	-.189	.140	1.792	0.150	1.0	1.1	1.2	1.2	A-	A-
991	601096	8	8	317	.555	.060	.180	.189	.555	.016	.468	-.208	-.194	-.225	.468	-0.107	0.125	-1.7	0.9	-2.0	0.9	A+	A-
992	601087	8	8	316	.475	.104	.475	.310	.092	.019	.253	-.092	.253	-.044	-.161	0.264	0.125	3.2	1.2	2.0	1.1	A-	A+
993	601055	8	6	316	.377	.101	.247	.260	.377	.016	.396	-.261	-.071	-.132	.396	0.753	0.128	0.1	1.0	0.4	1.0	A-	B-
994	601025	8	7	316	.453	.098	.203	.453	.234	.013	.301	-.215	-.084	.301	-.093	0.371	0.125	1.5	1.1	0.9	1.1	A+	A-
995	601007	8	7	315	.479	.118	.181	.479	.210	.013	.251	-.183	-.069	.251	-.040	0.308	0.124	3.0	1.1	2.8	1.2	A+	A+
996	601106	8	8	318	.440	.101	.176	.440	.283	.000	.365	-.175	-.252	.365	-.073	0.924	0.125	1.1	1.1	1.2	1.1	A-	A-
997	600991	8	6	318	.582	.204	.160	.054	.582	.000	.446	-.213	-.247	-.193	.446	0.230	0.125	-1.0	1.0	-1.3	0.9	A-	B-
998	601068	8	7	318	.252	.132	.550	.252	.060	.006	.189	-.169	.008	.189	-.097	1.951	0.141	1.7	1.1	2.6	1.3	A+	A+
999	601062	8	7	319	.314	.050	.314	.072	.564	.000	.208	-.171	.208	-.222	-.004	1.550	0.133	2.7	1.2	2.7	1.3	C+	A+
1000	601021	8	6	319	.451	.125	.238	.182	.451	.003	.150	-.170	.052	-.116	.150	0.814	0.125	4.4	1.2	3.6	1.3	B+	A+
1001	601008	8	6	319	.683	.025	.683	.207	.085	.000	.382	-.087	.382	-.297	-.157	-0.491	0.133	-0.2	1.0	-0.7	0.9	A-	A+
1002	601094	8	7	319	.304	.147	.304	.376	.163	.009	.296	-.238	.296	-.130	.048	1.494	0.137	2.3	1.2	2.8	1.3	A-	A-
1003	600994	8	6	321	.816	.140	.816	.022	.022	.000	.395	-.295	.395	-.142	-.206	-1.462	0.155	-0.4	1.0	-1.1	0.8	A+	
1004	601104	8	7	158	.323	.190	.323	.342	.146	.000	.177	-.175	.177	-.024	-.007	1.082	0.180	1.5	1.1	1.7	1.2	A+	
1005	601105	8	8	318	.657	.657	.248	.047	.038	.009	.342	.342	-.245	-.148	-.068	-0.475	0.126	-0.4	1.0	-0.4	1.0	A-	A-
1006	601056	8	6	318	.223	.107	.223	.230	.418	.022	.038	-.127	.038	-.126	.164	1.655	0.143	2.6	1.2	3.3	1.4	A-	A+
1007	600995	8	6	158	.532	.070	.152	.532	.196	.051	.236	-.061	-.108	.236	-.152	-0.063	0.175	1.5	1.1	1.2	1.1	A-	
1008	601128	8	8	317	.464	.079	.215	.230	.464	.013	.417	-.065	-.087	-.287	.417	0.454	0.121	-1.3	1.0	-1.4	0.9	B-	B+
1009	602112	8	N/A	160	.338	.125	.231	.288	.338	.019	.258	-.051	-.142	-.045	.258	1.068	0.179	1.1	1.1	1.1	1.1	A-	
1010	601681	8	N/A	317	.498	.306	.079	.498	.085	.032	.406	-.177	-.117	.406	-.155	0.247	0.122	-0.7	1.0	-0.7	1.0	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1011	601098	8	6	157	.408	.204	.268	.408	.115	.006	.343	-.055	-.193	.343	-.145	0.701	0.177	0.7	1.1	0.7	1.1	A-	
1012	601095	8	8	317	.678	.678	.110	.107	.085	.019	.341	.341	-.040	-.206	-.182	-0.606	0.132	0.1	1.0	0.4	1.0	A-	A+
1013	601682	8	N/A	157	.516	.121	.191	.127	.516	.045	.440	-.172	-.247	-.006	.440	0.097	0.177	-0.7	1.0	-0.7	0.9	A-	
1014	601807	8	N/A	319	.884	.022	.031	.884	.056	.006	.352	-.201	-.172	.352	-.172	-2.006	0.185	-0.6	0.9	-0.6	0.9	C+	A+
1015	601027	8	8	319	.608	.608	.188	.122	.063	.019	.500	.500	-.253	-.202	-.188	-0.215	0.125	-2.4	0.9	-2.5	0.8	A-	B-
1016	601806	8	N/A	160	.525	.106	.525	.175	.150	.044	.356	-.264	.356	.023	-.117	0.156	0.177	1.4	1.1	1.0	1.1	A+	
1017	601063	8	8	160	.613	.613	.163	.094	.088	.044	.446	.446	-.126	-.146	-.230	-0.296	0.183	-0.4	1.0	-0.1	1.0	A-	
1018	601088	8	N/A	317	.672	.672	.047	.028	.249	.003	.523	.523	-.218	-.204	-.352	-0.507	0.128	-3.3	0.8	-2.3	0.8	A-	
1019	601061	8	7	159	.233	.233	.170	.359	.226	.013	.233	.233	-.138	.057	-.123	1.686	0.201	0.8	1.1	1.6	1.3	A+	
1020	601010	8	8	159	.654	.151	.069	.113	.654	.013	.583	-.274	-.196	-.339	.583	-0.447	0.180	-3.2	0.8	-2.8	0.7	A-	
1021	601015	8	7	317	.476	.177	.180	.139	.476	.028	.477	-.209	-.179	-.167	.477	0.385	0.124	-1.9	0.9	-1.9	0.9	A-	
1022	601011	8	8	317	.457	.107	.230	.457	.177	.028	.410	-.121	-.095	.410	-.247	0.477	0.124	-0.2	1.0	-0.2	1.0	A-	
1023	601053	8	8	158	.228	.253	.228	.342	.158	.019	.210	.043	.210	-.179	.046	1.795	0.207	1.4	1.2	2.4	1.5	B-	
1024	601070	8	7	158	.310	.367	.184	.310	.095	.044	.127	.136	-.102	.127	-.111	1.257	0.190	3.2	1.3	4.0	1.6	A-	
1025	601102	8	7	319	.749	.069	.091	.749	.063	.028	.423	-.243	-.188	.423	-.099	-1.044	0.143	-0.6	1.0	-1.0	0.9	A+	A-
1026	601127	8	8	160	.475	.100	.113	.300	.475	.013	.404	-.237	-.146	-.159	.404	0.413	0.169	-0.7	1.0	-1.0	0.9	B-	
1027	601092	8	6	313	.326	.185	.326	.310	.157	.022	.391	-.053	.391	-.173	-.139	0.965	0.132	-0.4	1.0	0.2	1.0	B-	
1028	601091	8	6	317	.716	.047	.716	.164	.063	.010	.470	-.183	.470	-.327	-.159	-0.790	0.133	-2.4	0.9	-2.0	0.8	B+	A-
1029	601126	8	N/A	315	.083	.054	.768	.073	.083	.022	-.153	-.088	.343	-.156	-.153	2.985	0.213	1.6	1.3	3.9	2.4	A-	A+
1030	601089	8	6	158	.279	.139	.481	.057	.279	.044	.191	-.209	.095	-.032	.191	1.443	0.196	2.3	1.2	2.8	1.5	A-	
1031	601103	8	7	321	.277	.146	.277	.371	.199	.006	.170	-.177	.170	.020	-.050	1.490	0.138	2.7	1.2	3.6	1.5	A-	
1032	600842	11	7	718	.403	.403	.074	.096	.426	.001	.315	.315	-.195	-.246	-.062	1.254	0.081	-0.1	1.0	0.1	1.0	A-	A-
1033	600646	11	7	714	.775	.775	.130	.050	.039	.006	.335	.335	-.200	-.144	-.121	-0.672	0.094	-1.6	0.9	-1.9	0.9	A-	
1034	601630	11	7	719	.655	.022	.655	.056	.266	.001	.372	-.124	.372	-.189	-.257	0.005	0.084	-1.2	1.0	-1.8	0.9	A+	B-
1035	600826	11	7	717	.728	.014	.036	.728	.220	.001	.333	-.098	-.158	.333	-.257	-0.384	0.089	-0.5	1.0	-0.2	1.0	A-	
1036	602260	11	7	717	.459	.159	.459	.195	.187	.000	.255	-.031	.255	-.172	-.121	0.951	0.081	3.4	1.1	3.1	1.1	C-	
1037	602644	11	7	719	.349	.330	.195	.349	.120	.007	.126	.090	-.175	.126	-.084	1.450	0.084	5.4	1.2	6.3	1.3	A+	A+
1038	604162	11	7	715	.435	.435	.106	.066	.392	.001	.290	.290	-.214	-.264	-.020	1.179	0.081	2.6	1.1	2.5	1.1	C-	A-
1039	601556	11	8	717	.374	.314	.190	.374	.121	.001	.341	-.103	-.199	.341	-.111	1.361	0.084	0.6	1.0	1.6	1.1	A-	
1040	601524	11	7	717	.520	.520	.272	.127	.078	.003	.445	.445	-.201	-.251	-.174	0.659	0.081	-3.2	0.9	-3.0	0.9	B-	
1041	601502	11	8	717	.713	.202	.713	.050	.034	.001	.449	-.348	.449	-.159	-.156	-0.297	0.088	-2.5	0.9	-2.6	0.8	A+	
1042	601455	11	8	717	.593	.593	.144	.163	.093	.007	.518	.518	-.309	-.225	-.197	0.301	0.082	-5.9	0.8	-5.1	0.8	A-	
1043	601458	11	8	719	.752	.013	.752	.141	.089	.006	.412	-.133	.412	-.272	-.216	-0.540	0.092	-2.2	0.9	-3.0	0.8	A+	A-
1044	601557	11	8	719	.577	.129	.234	.057	.577	.003	.455	-.209	-.294	-.113	.455	0.380	0.081	-4.9	0.9	-4.5	0.8	A+	A+
1045	600825	11	7	719	.604	.043	.604	.291	.061	.001	.364	-.111	.364	-.286	-.106	0.258	0.082	-1.7	1.0	-1.9	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1046	601503	11	8	719	.665	.131	.665	.131	.061	.013	.429	-.211	.429	-.191	-.169	-0.082	0.085	-2.1	0.9	-2.2	0.9	A-	A+
1047	604829	11	7	715	.859	.859	.042	.046	.053	.000	.380	.380	-.188	-.212	-.223	-1.175	0.112	-1.4	0.9	-2.6	0.7	A-	A-
1048	601523	11	8	715	.720	.720	.084	.164	.028	.004	.475	.475	-.263	-.301	-.173	-0.231	0.089	-3.5	0.9	-3.8	0.8	A+	A-
1049	600548	11	8	715	.333	.076	.137	.333	.445	.010	.176	-.119	-.236	.176	.056	1.665	0.085	3.8	1.1	4.0	1.2	A+	A+
1050	600836	11	8	718	.740	.070	.740	.086	.095	.010	.357	-.178	.357	-.216	-.143	-0.414	0.091	-1.2	1.0	-2.2	0.9	A-	A-
1051	604515	11	7	718	.717	.050	.105	.121	.717	.007	.403	.000	-.269	-.257	.403	-0.276	0.088	-2.1	0.9	-1.9	0.9	A-	B-
1052	602658	11	8	718	.447	.107	.306	.447	.125	.014	.302	-.165	-.139	.302	-.044	1.014	0.080	0.7	1.0	0.9	1.0	A+	A-
1053	602659	11	8	714	.415	.242	.269	.415	.062	.013	.261	-.103	-.121	.261	-.045	1.090	0.081	1.6	1.0	1.5	1.1	A-	
1054	600843	11	7	714	.740	.029	.740	.063	.167	.001	.383	-.159	.383	-.168	-.260	-0.447	0.089	-2.7	0.9	-3.6	0.8	A-	
1055	601629	11	8	714	.266	.177	.325	.266	.217	.015	.215	-.093	-.124	.215	.056	1.850	0.090	1.4	1.1	1.7	1.1	A+	
1056	602261	11	7	962	.288	.090	.288	.190	.429	.002	.281	-.023	.281	-.208	-.071	2.299	0.077	2.1	1.1	2.9	1.2	C-	A-
1057	604176	11	7	482	.255	.635	.255	.042	.069	.000	.420	-.284	.420	-.065	-.132	2.453	0.113	-1.1	0.9	-0.9	0.9	C-	
1058	604516	11	7	480	.473	.213	.473	.190	.110	.015	.338	-.197	.338	-.180	-.026	1.435	0.099	0.9	1.0	0.3	1.0	B-	A-
1059	600837	11	7	483	.443	.110	.099	.348	.443	.000	.488	-.120	-.224	-.290	.488	1.689	0.100	-3.3	0.9	-2.0	0.9	A-	A-
1060	602661	11	4	532	.790	.790	.043	.111	.055	.002	.396	.396	-.126	-.277	-.211	-0.441	0.113	-1.5	0.9	-2.3	0.8	A-	
1061	604163	11	8	531	.836	.030	.068	.066	.836	.000	.399	-.226	-.271	-.165	.399	-0.741	0.123	-1.8	0.9	-2.8	0.7	B+	
1062	604799	11	Ge	532	.227	.278	.120	.367	.227	.008	.381	.008	-.193	-.191	.381	2.527	0.112	-0.4	1.0	-0.2	1.0	A-	
1063	600651	11	7	532	.603	.258	.603	.062	.075	.002	.433	-.221	.433	-.219	-.220	0.574	0.095	-3.2	0.9	-2.9	0.9	A-	A-
1064	604180	11	6	533	.289	.113	.289	.467	.122	.009	.373	-.174	.373	-.111	-.167	2.171	0.104	-0.6	1.0	0.8	1.1	A-	A-
1065	601544	11	4	533	.675	.038	.026	.675	.259	.002	.460	-.207	-.162	.460	-.333	0.251	0.099	-2.6	0.9	-2.5	0.8	C-	
1066	600749	11	7	533	.411	.411	.306	.201	.079	.004	.527	.527	-.230	-.221	-.231	1.520	0.095	-5.2	0.8	-4.7	0.8	A-	
1067	600844	11	6	533	.257	.158	.257	.317	.250	.019	.241	-.060	.241	-.174	.028	2.319	0.107	1.8	1.1	3.2	1.3	A-	
1068	604798	11	4	533	.863	.863	.032	.075	.030	.000	.356	.356	-.177	-.220	-.196	-0.985	0.131	-1.0	0.9	-2.4	0.7	A+	
1069	602258	11	Ge	533	.462	.462	.096	.387	.047	.009	.403	.403	-.271	-.210	-.060	1.268	0.095	-0.9	1.0	-0.8	1.0	A-	
1070	602647	11	7	532	.376	.126	.244	.241	.376	.013	.407	-.152	-.166	-.171	.407	1.657	0.098	-1.1	1.0	-1.1	0.9	A+	
1071	600845	11	6	532	.329	.098	.284	.329	.276	.013	.219	-.151	-.064	.219	-.047	1.907	0.101	3.2	1.1	3.6	1.2	A-	
1072	604801	11	Ge	532	.481	.085	.481	.235	.149	.006	.262	-.161	.262	-.159	-.139	1.029	0.096	0.2	1.0	0.0	1.0	A+	
1073	602263	11	7	531	.663	.196	.663	.098	.032	.011	.304	-.138	.304	-.202	-.078	0.301	0.100	0.8	1.0	0.2	1.0	A-	
1074	600846	11	6	531	.420	.138	.420	.316	.090	.036	.375	-.238	.375	-.108	-.098	1.421	0.096	-0.5	1.0	-0.3	1.0	A+	
1075	604517	11	8	533	.499	.499	.266	.206	.024	.004	.444	.444	-.289	-.166	-.151	1.132	0.094	-3.7	0.9	-3.3	0.9	A-	A+
1076	600712	11	7	533	.413	.069	.308	.413	.205	.006	.164	-.098	.054	.164	-.190	1.538	0.096	5.2	1.2	4.3	1.2	A+	B-
1077	604165	11	8	532	.652	.152	.652	.160	.026	.009	.246	-.196	.246	-.062	-.111	0.308	0.098	1.2	1.1	1.9	1.1	A+	A-
1078	600828	11	7	532	.630	.032	.179	.630	.156	.004	.278	-.069	-.208	.278	-.095	0.443	0.096	1.4	1.1	1.1	1.1	A+	A-
1079	604177	11	8	481	.599	.119	.195	.599	.077	.010	.189	-.098	-.192	.189	.066	0.747	0.100	2.3	1.1	4.0	1.2	A+	
1080	601545	11	4	481	.738	.738	.081	.146	.035	.000	.343	.343	-.166	-.238	-.116	0.064	0.109	-0.9	1.0	-0.9	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1081	602646	11	7	482	.448	.268	.448	.237	.035	.012	.142	-.059	.142	-.077	-.031	1.419	0.099	6.0	1.2	5.3	1.3	A-	
1082	601525	11	6	482	.320	.309	.214	.320	.156	.002	.241	-.182	-.085	.241	.020	2.080	0.106	2.5	1.1	2.2	1.1	B-	
1083	602262	11	7	480	.567	.223	.567	.135	.046	.029	.097	.031	.097	-.057	-.100	0.944	0.101	6.9	1.2	7.6	1.5	A-	A+
1084	600827	11	7	480	.429	.429	.231	.315	.017	.008	.465	.465	-.088	-.359	-.172	1.657	0.100	-3.2	0.9	-2.4	0.9	A+	A-
1085	604949	11	8	483	.329	.420	.128	.329	.104	.019	.369	-.294	-.071	.369	.008	2.226	0.107	0.4	1.0	0.5	1.0	A-	A-
1086	605040	11	7	483	.590	.031	.259	.590	.120	.000	.338	-.106	-.149	.338	-.254	0.985	0.100	0.8	1.0	0.8	1.1	B+	A-
1087	601547	11	Ge	481	.568	.220	.568	.141	.062	.008	.268	-.045	.268	-.197	-.168	0.920	0.099	1.9	1.1	1.0	1.1	A+	
1088	604164	11	8	481	.453	.223	.262	.453	.048	.015	.268	-.133	-.127	.268	-.049	1.446	0.100	2.0	1.1	1.3	1.1	A-	
1089	601543	11	4	481	.778	.058	.013	.778	.152	.000	.326	-.187	-.058	.326	-.237	-0.159	0.115	-1.3	0.9	-0.2	1.0	C-	
1090	604178	11	8	532	.853	.853	.066	.055	.024	.002	.363	.363	-.145	-.254	-.209	-0.928	0.128	-1.2	0.9	-2.3	0.7	A-	
1091	600785	11	Ge	531	.290	.073	.290	.401	.234	.002	.182	-.212	.182	-.055	.010	2.159	0.103	2.6	1.1	3.6	1.3	A-	
1092	604522	11	8	533	.743	.032	.143	.743	.083	.000	.423	-.143	-.286	.423	-.217	-0.099	0.105	-2.3	0.9	-2.9	0.8	A+	A-
1093	602650	11	8	533	.433	.058	.176	.327	.433	.006	.528	-.115	-.310	-.240	.528	1.406	0.095	-4.5	0.9	-3.5	0.9	A+	
1094	601550	11	7	532	.620	.030	.620	.032	.314	.004	.216	-.173	.216	-.185	-.085	0.486	0.096	3.1	1.1	2.3	1.1	A+	A-
1095	604170	11	8	532	.596	.079	.164	.596	.154	.008	.502	-.208	-.189	.502	-.305	0.598	0.095	-4.3	0.9	-4.1	0.8	A-	A-
1096	601549	11	7	533	.762	.762	.098	.064	.071	.006	.454	.454	-.284	-.229	-.190	-0.243	0.109	-2.9	0.9	-3.0	0.7	A+	A-
1097	602268	11	8	531	.567	.567	.260	.083	.083	.008	.489	.489	-.284	-.245	-.151	0.791	0.095	-3.2	0.9	-2.7	0.9	A-	
1098	601528	11	Ge	533	.330	.161	.330	.250	.250	.009	.197	.029	.197	-.152	-.074	1.914	0.100	3.6	1.2	2.9	1.2	A-	
1099	602266	11	Ge	533	.589	.071	.180	.589	.146	.013	.465	-.161	-.197	.465	-.305	0.641	0.096	-2.6	0.9	-2.7	0.9	A+	
1100	604803	11	7	533	.478	.227	.203	.478	.086	.006	.501	-.208	-.312	.501	-.111	1.195	0.094	-3.8	0.9	-3.2	0.9	A-	
1101	604831	11	Ge	533	.353	.109	.158	.368	.353	.013	.310	-.075	-.236	-.058	.310	1.792	0.098	1.7	1.1	0.9	1.1	A-	
1102	600803	11	Ge	532	.380	.290	.241	.380	.085	.006	.362	-.249	-.026	.362	-.163	1.662	0.097	0.8	1.0	0.9	1.1	A+	
1103	601954	11	Ge	532	.355	.105	.397	.355	.141	.002	.263	-.134	-.074	.263	-.128	1.792	0.099	2.3	1.1	3.6	1.2	A+	
1104	604518	11	Ge	532	.509	.017	.118	.509	.344	.011	.141	-.104	-.171	.141	.020	1.024	0.095	7.7	1.3	5.6	1.3	A-	
1105	601548	11	7	532	.696	.696	.105	.139	.056	.004	.457	.457	-.217	-.254	-.235	0.113	0.101	-3.4	0.9	-3.2	0.8	A+	
1106	604158	11	Ge	531	.840	.030	.040	.840	.090	.000	.395	-.220	-.139	.395	-.280	-0.772	0.124	-1.8	0.9	-3.0	0.7	A-	
1107	602666	11	7	531	.733	.733	.151	.072	.043	.002	.485	.485	-.315	-.288	-.141	-0.053	0.105	-3.7	0.8	-3.8	0.7	A-	
1108	600688	11	Ge	531	.271	.104	.428	.271	.185	.013	.304	-.081	-.154	.304	-.066	2.246	0.105	-0.4	1.0	0.3	1.0	A-	
1109	600829	11	Ge	531	.782	.089	.782	.109	.019	.002	.320	-.171	.320	-.249	-.055	-0.357	0.112	-0.5	1.0	-1.1	0.9	A+	
1110	604519	11	Ge	531	.567	.234	.567	.147	.032	.021	.278	-.124	.278	-.157	-.082	0.746	0.096	2.1	1.1	1.6	1.1	A-	
1111	600838	11	Ge	533	.475	.263	.161	.475	.084	.017	.350	-.141	-.149	.350	-.173	1.208	0.095	0.8	1.0	0.0	1.0	A-	A-
1112	600833	11	Ge	533	.814	.066	.045	.066	.814	.009	.365	-.225	-.213	-.154	.365	-0.624	0.119	-1.3	0.9	-1.6	0.8	B-	A-
1113	604179	11	8	533	.672	.111	.071	.145	.672	.002	.417	-.200	-.185	-.254	.417	0.287	0.099	-1.8	0.9	-2.2	0.9	A+	A-
1114	604159	11	Ge	533	.752	.028	.086	.752	.126	.008	.281	-.107	-.240	.281	-.097	-0.195	0.108	-0.1	1.0	0.9	1.1	A+	A+
1115	604520	11	Ge	533	.533	.291	.533	.096	.066	.015	.287	-.036	.287	-.250	-.164	0.932	0.095	2.8	1.1	2.6	1.1	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1116	602648	11	Ge	532	.632	.632	.102	.218	.045	.004	.543	.543	-.185	-.411	-.177	0.430	0.097	-6.2	0.8	-5.1	0.7	A-	C-
1117	604830	11	Ge	532	.624	.038	.199	.624	.124	.015	.222	-.130	-.066	.222	-.149	0.432	0.097	2.7	1.1	2.2	1.1	B-	B-
1118	601527	11	Ge	532	.743	.058	.081	.743	.107	.011	.373	-.134	-.200	.373	-.214	-0.197	0.107	-1.0	1.0	-1.2	0.9	A+	B-
1119	600834	11	Ge	532	.541	.290	.083	.541	.087	.000	.320	-.102	-.222	.320	-.185	0.873	0.094	1.3	1.0	1.3	1.1	A-	A-
1120	602267	11	8	532	.607	.607	.239	.073	.075	.006	.303	.303	-.150	-.226	-.077	0.543	0.096	1.0	1.0	0.4	1.0	B+	A+
1121	602649	11	Ge	481	.638	.119	.127	.638	.110	.006	.223	.000	-.175	.223	-.161	0.564	0.101	1.6	1.1	2.2	1.1	A+	
1122	601632	11	Ge	481	.572	.083	.572	.158	.187	.000	.408	-.158	.408	-.239	-.182	0.904	0.098	-2.2	0.9	-1.4	0.9	A-	
1123	600848	11	8	481	.289	.210	.405	.089	.289	.006	.395	-.166	-.229	.006	.395	2.259	0.108	-1.0	1.0	-0.1	1.0	B-	
1124	600849	11	N/A	482	.228	.430	.272	.228	.066	.004	.340	-.077	-.197	.340	-.064	2.620	0.117	0.3	1.0	0.4	1.0	A-	
1125	604521	11	8	482	.772	.029	.060	.772	.139	.000	.365	-.101	-.155	.365	-.287	-0.164	0.114	-1.4	0.9	-2.1	0.8	A-	
1126	601504	11	Ge	482	.473	.102	.288	.135	.473	.002	.471	-.133	-.283	-.201	.471	1.325	0.098	-3.3	0.9	-3.2	0.9	A-	
1127	604168	11	8	480	.752	.031	.060	.752	.152	.004	.359	-.141	-.172	.359	-.237	0.069	0.112	-1.1	0.9	-1.4	0.9	A-	A-
1128	601529	11	8	480	.773	.040	.058	.127	.773	.002	.303	-.087	-.132	-.233	.303	-0.052	0.115	-0.9	1.0	1.0	1.1	A+	B-
1129	601505	11	Ge	480	.506	.094	.506	.290	.106	.004	.456	-.175	.456	-.208	-.263	1.304	0.099	-4.0	0.9	-3.1	0.9	A+	A-
1130	601530	11	8	483	.406	.087	.236	.248	.406	.023	.462	-.139	-.255	-.147	.462	1.824	0.102	-1.3	1.0	-1.3	0.9	A+	B-
1131	600815	11	Ge	483	.625	.091	.139	.625	.128	.017	.435	-.210	-.246	.435	-.144	0.760	0.103	-1.6	0.9	-1.4	0.9	A+	A+
1132	604169	11	8	483	.747	.116	.747	.091	.035	.010	.387	-.221	.387	-.214	-.138	0.109	0.113	-1.2	0.9	-1.5	0.8	A-	A-
1133	601631	11	Ge	481	.518	.100	.518	.106	.270	.006	.416	-.112	.416	-.146	-.274	1.163	0.099	-2.2	0.9	-1.7	0.9	A-	
1134	600847	11	8	481	.526	.133	.526	.262	.056	.023	.364	-.112	.364	-.197	-.150	1.090	0.100	-1.0	1.0	-0.3	1.0	A+	
1135	602669	11	A1	717	.194	.292	.163	.340	.194	.011	.216	.008	-.137	-.071	.216	2.400	0.101	1.3	1.1	2.7	1.3	A-	
1136	601551	11	A1	715	.455	.455	.175	.179	.180	.011	.401	.401	-.265	-.160	-.089	1.068	0.081	-1.4	1.0	-1.7	0.9	A+	A+
1137	601552	11	A1	718	.216	.078	.297	.400	.216	.010	.153	.000	-.118	-.001	.153	2.240	0.095	1.6	1.1	3.2	1.3	A-	A+
1138	602668	11	N/A	714	.224	.279	.224	.270	.209	.018	.140	-.106	.140	-.042	.059	2.089	0.095	2.6	1.1	3.2	1.2	A+	
1139	604832	11	A2	481	.472	.260	.156	.472	.112	.000	.327	-.118	-.197	.327	-.126	1.363	0.098	0.5	1.0	0.2	1.0	A-	
1140	602653	11	6	481	.815	.052	.037	.815	.096	.000	.407	-.186	-.152	.407	-.299	-0.427	0.122	-1.7	0.9	-2.8	0.7	A+	
1141	604950	11	A1	482	.506	.243	.203	.506	.039	.008	.422	-.225	-.215	.422	-.132	1.158	0.098	-2.1	0.9	-2.0	0.9	A-	
1142	602269	11	6	482	.486	.486	.208	.212	.085	.010	.439	.439	-.186	-.245	-.148	1.250	0.098	-2.8	0.9	-2.7	0.9	A+	
1143	602270	11	6	480	.675	.071	.675	.217	.027	.010	.378	-.103	.378	-.267	-.157	0.471	0.104	-1.5	0.9	-0.4	1.0	A-	A+
1144	604524	11	A2	483	.621	.162	.621	.184	.025	.008	.433	-.266	.433	-.193	-.156	0.811	0.102	-2.3	0.9	-1.9	0.9	A-	A-
1145	602657	11	6	481	.568	.052	.220	.568	.146	.015	.255	-.106	-.091	.255	-.141	0.908	0.100	2.7	1.1	1.7	1.1	A-	
1146	604171	11	A2	481	.405	.137	.152	.405	.297	.008	.424	-.110	-.219	.424	-.179	1.691	0.101	-1.5	1.0	-1.2	0.9	B-	
1147	602259	11	6	717	.580	.580	.153	.204	.059	.004	.422	.422	-.194	-.274	-.120	0.367	0.082	-2.8	0.9	-2.5	0.9	A-	
1148	604952	11	7	718	.586	.159	.586	.163	.081	.011	.499	-.188	.499	-.290	-.176	0.375	0.081	-5.5	0.9	-5.3	0.8	A+	B-
1149	601554	11	6	714	.468	.157	.186	.468	.185	.004	.284	-.056	-.177	.284	-.128	0.858	0.080	0.7	1.0	0.1	1.0	A-	
1150	604806	11	7	714	.727	.035	.163	.727	.070	.006	.381	-.088	-.306	.381	-.114	-0.390	0.089	-2.5	0.9	-2.8	0.8	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1151	600839	11	6	715	.836	.056	.039	.066	.836	.003	.332	-.203	-.152	-.174	.332	-1.000	0.107	-0.9	0.9	-1.0	0.9	A-	A-
1152	601461	11	6	718	.673	.673	.146	.082	.089	.010	.387	.387	-.218	-.119	-.181	-0.049	0.085	-1.4	1.0	-1.6	0.9	A+	A-
1153	604804	11	6	719	.125	.388	.136	.331	.125	.020	.028	.035	-.138	.102	.028	2.913	0.118	1.8	1.2	4.7	1.7	A-	A+
1154	602274	11	7	715	.197	.050	.197	.697	.053	.003	.287	-.098	.287	-.186	-.015	2.484	0.099	-0.3	1.0	1.9	1.2	B-	A-
1155	601507	11	6	717	.782	.024	.782	.134	.059	.001	.348	-.145	.348	-.209	-.211	-0.717	0.096	-1.1	0.9	-1.0	0.9	A+	
1156	604805	11	6	717	.565	.565	.163	.156	.113	.003	.314	.314	-.195	-.215	-.028	0.442	0.081	1.3	1.0	1.1	1.1	A+	
1157	600822	11	6	719	.545	.118	.235	.545	.099	.003	.393	-.233	-.197	.393	-.108	0.528	0.080	-2.0	1.0	-2.1	0.9	B-	A+
1158	604160	11	A2	719	.239	.239	.271	.104	.378	.007	.238	.238	-.019	-.231	-.031	2.051	0.093	1.0	1.1	1.8	1.1	A-	A+
1159	604181	11	6	719	.143	.435	.210	.143	.199	.013	.052	.048	-.022	.052	-.053	2.746	0.111	1.7	1.1	4.6	1.6	A-	A-
1160	602654	11	A2	715	.376	.376	.115	.123	.382	.004	.400	.400	-.193	-.220	-.119	1.458	0.083	-2.0	0.9	-1.4	0.9	B-	A-
1161	600823	11	6	715	.685	.043	.685	.208	.063	.000	.369	-.217	.369	-.230	-.138	-0.022	0.086	-0.8	1.0	-1.2	0.9	B+	A-
1162	601955	11	6	715	.439	.201	.090	.439	.264	.006	.313	-.065	-.246	.313	-.110	1.154	0.081	1.5	1.0	1.3	1.1	A+	A+
1163	600824	11	6	718	.625	.164	.127	.625	.081	.003	.307	-.106	-.179	.307	-.179	0.218	0.082	0.1	1.0	0.6	1.0	A+	A-
1164	601463	11	6	718	.652	.652	.152	.148	.046	.003	.378	.378	-.225	-.157	-.202	0.088	0.083	-1.5	1.0	-1.5	0.9	A+	A-
1165	602655	11	A2	718	.220	.178	.220	.542	.057	.003	.314	.095	.314	-.321	-.018	2.230	0.095	-0.5	1.0	-0.2	1.0	A-	A-
1166	601506	11	6	714	.633	.633	.165	.136	.060	.006	.403	.403	-.140	-.232	-.209	0.098	0.082	-4.4	0.9	-3.3	0.9	A+	
1167	601555	11	6	714	.325	.325	.444	.130	.083	.018	.244	.244	.076	-.224	-.151	1.524	0.085	2.1	1.1	1.7	1.1	A+	
1168	604808	11	7	714	.457	.118	.284	.457	.125	.017	.316	-.134	-.081	.316	-.147	0.884	0.080	0.1	1.0	0.4	1.0	A-	
1169	604174	11	A2	481	.102	.761	.102	.112	.025	.000	.080	.124	.080	-.176	-.139	3.713	0.159	1.4	1.2	2.8	1.5	A-	
1170	600835	11	A2	481	.805	.031	.062	.100	.805	.002	.383	-.158	-.200	-.254	.383	-0.367	0.121	-1.7	0.9	-2.4	0.8	A+	
1171	600840	11	A2	482	.315	.058	.529	.315	.095	.002	.234	-.192	-.189	.234	.109	2.104	0.106	2.2	1.1	1.8	1.1	A-	
1172	604175	11	A2	482	.280	.125	.280	.098	.496	.002	.309	-.081	.309	-.125	-.145	2.304	0.110	0.8	1.0	1.4	1.1	A-	
1173	604951	11	A2	480	.181	.148	.096	.575	.181	.000	.147	-.263	-.173	.178	.147	3.105	0.127	2.5	1.2	2.8	1.3	A-	A+
1174	600841	11	A2	480	.485	.015	.038	.454	.485	.008	.329	-.062	-.056	-.289	.329	1.391	0.099	0.4	1.0	1.5	1.1	A+	A+
1175	602656	11	A2	480	.367	.175	.367	.310	.142	.006	.331	-.129	.331	-.306	.092	1.965	0.103	1.2	1.1	0.7	1.0	A-	B+
1176	602271	11	A2	483	.364	.385	.364	.184	.050	.017	.304	-.122	.304	-.153	-.092	2.042	0.104	2.3	1.1	1.8	1.1	A-	A-
1177	604833	11	A2	483	.354	.095	.360	.354	.186	.004	.330	-.105	-.214	.330	-.059	2.123	0.105	1.0	1.0	1.4	1.1	A+	A-
1178	601508	11	A2	483	.286	.166	.379	.286	.170	.000	.238	-.266	-.130	.238	.145	2.517	0.111	2.4	1.1	2.8	1.2	A-	A+
1179	604527	11	A2	481	.370	.027	.366	.370	.235	.002	.371	-.176	-.224	.371	-.090	1.879	0.103	0.0	1.0	0.0	1.0	A-	
1180	604526	11	A2	481	.179	.139	.179	.044	.634	.004	.383	-.107	.383	-.063	-.183	3.056	0.130	0.0	1.0	0.7	1.1	B-	
1181	600930	A1	A1	717	.569	.087	.569	.243	.088	.014	.403	-.184	.403	-.234	-.113	0.396	0.082	-0.3	1.0	-0.7	1.0	A-	
1182	600929	A1	A1	1433	.356	.161	.316	.356	.117	.050	.252	-.049	-.028	.252	-.084	1.308	0.059	2.4	1.1	2.9	1.1	A+	A+
1183	600933	A1	A1	2870	.504	.076	.266	.125	.504	.029	.390	-.185	-.079	-.225	.390	0.670	0.041	-3.1	1.0	-3.2	0.9	A+	A+
1184	600937	A1	A1	1436	.218	.329	.218	.169	.219	.066	.218	.057	.218	-.065	-.042	2.005	0.068	0.9	1.0	1.5	1.1	A-	A-
1185	600935	A1	A1	2868	.398	.398	.154	.257	.144	.047	.484	.484	-.195	-.151	-.141	1.105	0.042	-7.4	0.9	-6.5	0.9	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1186	600942	A1	A1	1432	.207	.207	.235	.298	.185	.075	.279	.279	-.019	-.066	-.066	2.103	0.070	0.7	1.0	1.5	1.1	A-	A-
1187	600944	A1	A1	2867	.509	.128	.148	.190	.509	.026	.415	-.092	-.188	-.206	.415	0.655	0.040	-6.0	0.9	-5.2	0.9	A-	A-
1188	600951	A1	A1	1434	.335	.335	.132	.236	.285	.013	.344	.344	-.109	-.137	-.113	1.418	0.059	-2.5	0.9	-1.9	0.9	A-	A-
1189	600965	A1	A1	1432	.262	.262	.256	.241	.214	.027	.169	.169	-.022	-.028	-.066	1.878	0.064	2.4	1.1	2.8	1.1	A-	A+
1190	600949	A1	A1	1432	.511	.511	.108	.124	.245	.013	.461	.461	-.193	-.241	-.146	0.685	0.056	-6.4	0.9	-5.9	0.9	A+	B-
1191	600950	A1	A1	1433	.311	.311	.381	.170	.125	.013	.187	.187	.095	-.162	-.138	1.747	0.061	4.3	1.1	4.5	1.2	A-	B-
1192	600927	A1	A1	717	.658	.151	.658	.116	.070	.006	.352	-.178	.352	-.124	-.221	-0.019	0.085	-0.1	1.0	-0.7	1.0	C+	
1193	600955	A1	A1	1434	.667	.069	.667	.131	.089	.045	.503	-.172	.503	-.231	-.199	-0.150	0.063	-4.2	0.9	-3.9	0.8	A-	A-
1194	600934	A1	A1	1434	.416	.195	.416	.243	.094	.053	.255	.034	.255	-.112	-.105	1.099	0.059	5.7	1.1	5.2	1.2	A+	A-
1195	600956	A1	A1	1433	.470	.470	.239	.132	.140	.019	.400	.400	-.104	-.195	-.162	0.939	0.057	-2.6	1.0	-2.6	0.9	A-	B-
1196	600940	A1	A1	1433	.352	.107	.352	.279	.218	.043	.397	-.048	.397	-.178	-.122	1.448	0.060	-1.9	1.0	-1.6	1.0	A+	B+
1197	600945	A1	A1	1432	.341	.142	.341	.180	.316	.022	.441	-.204	.441	-.068	-.150	1.470	0.060	-4.0	0.9	-3.3	0.9	A-	A+
1198	600963	A1	A1	1432	.244	.136	.348	.207	.244	.065	.193	-.017	.125	-.151	.193	1.914	0.066	2.8	1.1	3.6	1.2	A-	A+
1199	600975	A1	A1	1429	.402	.250	.402	.190	.107	.051	.244	.007	.244	-.116	-.058	1.086	0.058	4.5	1.1	4.1	1.1	A-	A+
1200	600952	A1	A1	1429	.471	.066	.216	.471	.200	.047	.435	-.142	-.168	.435	-.155	0.771	0.057	-5.0	0.9	-4.6	0.9	A-	A-
1201	600976	A1	A1	715	.297	.164	.297	.393	.133	.014	.228	-.049	.228	-.053	-.130	1.730	0.086	1.3	1.1	1.9	1.1	A-	
1202	600936	A1	A1	714	.475	.475	.132	.167	.205	.022	.461	.461	-.137	-.217	-.172	0.790	0.080	-4.7	0.9	-3.8	0.9	B+	A+
1203	600941	A1	A1	717	.179	.488	.085	.179	.230	.018	-.015	.080	-.168	-.015	.088	2.350	0.102	3.0	1.2	5.5	1.5	A-	A+
1204	600946	A1	A1	1434	.436	.126	.436	.281	.116	.041	.338	-.081	.338	-.174	-.126	0.932	0.057	-0.8	1.0	-0.7	1.0	A+	A-
1205	600954	A1	A1	717	.273	.511	.116	.273	.095	.006	.277	-.029	-.189	.277	-.140	1.878	0.088	0.2	1.0	1.1	1.1	A-	A+
1206	600964	A1	A1	1433	.268	.069	.208	.428	.268	.027	.261	-.111	-.147	.039	.261	1.837	0.063	1.4	1.0	1.2	1.1	A+	A-
1207	600928	A1	A1	1429	.400	.400	.351	.106	.126	.017	.414	.414	-.232	-.132	-.082	1.177	0.057	-3.5	0.9	-3.4	0.9	A+	A+
1208	600926	A1	A1	2866	.588	.171	.102	.588	.121	.017	.376	-.266	-.175	.376	-.005	0.342	0.041	-2.3	1.0	-2.8	1.0	B-	A-
1209	600953	A1	A1	715	.365	.101	.365	.152	.304	.078	.387	-.069	.387	-.008	-.197	1.241	0.084	-1.3	1.0	-1.2	1.0	A+	
1210	600966	A1	A1	1433	.350	.131	.350	.280	.214	.027	.139	-.078	.139	-.110	.078	1.509	0.060	5.8	1.1	5.7	1.2	A+	A-
1211	601837	A1	A1	717	.658	.658	.121	.117	.080	.024	.535	.535	-.197	-.247	-.236	-0.014	0.085	-5.5	0.8	-5.2	0.8	A+	A-
1212	602184	A1	A1	1432	.756	.756	.186	.026	.024	.008	.312	.312	-.188	-.152	-.116	-0.547	0.065	-1.0	1.0	0.5	1.0	A+	A-
1213	602171	A1	A1	1434	.514	.514	.248	.105	.097	.036	.393	.393	-.163	-.173	-.130	0.672	0.058	-1.5	1.0	-1.9	1.0	A+	A-
1214	601841	A1	A1	1434	.759	.048	.087	.070	.759	.036	.458	-.192	-.227	-.219	.458	-0.681	0.069	-3.2	0.9	-4.5	0.7	A-	A-
1215	602241	A1	A1	1433	.626	.114	.091	.159	.626	.009	.477	-.200	-.154	-.290	.477	0.224	0.059	-6.5	0.9	-5.9	0.8	A+	A-
1216	601793	A1	A1	1433	.572	.043	.572	.066	.313	.006	.419	-.105	.419	-.151	-.310	0.502	0.057	-4.1	0.9	-4.3	0.9	B-	A+
1217	602159	A1	A1	1433	.239	.239	.309	.214	.227	.012	.146	.146	.050	-.149	-.039	1.981	0.065	3.0	1.1	3.4	1.2	A-	A+
1218	601144	A1	A1	1434	.445	.213	.445	.141	.188	.013	.387	-.067	.387	-.257	-.133	1.058	0.058	-0.9	1.0	-0.8	1.0	A-	A+
1219	601370	A1	A1	1434	.551	.100	.130	.551	.170	.049	.409	-.105	-.174	.409	-.167	0.377	0.058	-2.8	1.0	-2.4	0.9	A+	A+
1220	600931	A1	A1	1429	.326	.154	.197	.285	.326	.038	.283	.030	-.007	-.225	.283	1.503	0.060	1.2	1.0	1.2	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1221	601410	A1	A1	1433	.500	.112	.223	.500	.128	.038	.396	-.128	-.140	.396	-.136	0.650	0.057	-2.7	1.0	-2.0	1.0	A+	A+
1222	600939	A1	A1	1436	.229	.172	.282	.277	.229	.040	.228	-.019	.012	-.073	.228	1.974	0.066	0.7	1.0	1.2	1.1	A-	B+
1223	602247	A1	A1	1436	.352	.217	.237	.352	.158	.036	.171	.007	-.024	.171	-.063	1.298	0.059	4.0	1.1	4.0	1.1	A-	A+
1224	601168	A1	A1	1433	.668	.116	.126	.668	.064	.026	.446	-.167	-.199	.446	-.171	-0.130	0.060	-3.5	0.9	-4.0	0.9	A+	A-
1225	601858	A1	A1	1436	.719	.070	.719	.091	.066	.054	.480	-.149	.480	-.212	-.207	-0.610	0.066	-3.3	0.9	-4.3	0.8	B+	A-
1226	601412	A1	A1	1433	.373	.155	.202	.219	.373	.050	.364	-.013	-.198	-.076	.364	1.222	0.058	-1.6	1.0	-1.9	1.0	A+	A-
1227	601831	A1	A1	1436	.297	.082	.219	.297	.351	.052	.162	-.060	-.110	.162	.109	1.557	0.062	3.4	1.1	3.6	1.1	A-	A+
1228	602229	A1	A1	1433	.211	.211	.272	.306	.165	.047	.174	.174	.017	-.018	-.079	2.129	0.068	1.6	1.1	2.3	1.1	A-	A+
1229	601387	A1	A1	1433	.386	.451	.386	.085	.039	.039	.356	-.111	.356	-.196	-.106	1.184	0.058	-2.6	1.0	-1.8	1.0	A+	A+
1230	601855	A1	A1	1436	.467	.467	.092	.295	.093	.052	.461	.461	-.148	-.172	-.168	0.707	0.057	-5.7	0.9	-5.4	0.9	A-	A-
1231	601864	A1	A1	1436	.210	.210	.347	.233	.144	.067	.126	.126	.092	-.031	-.048	2.054	0.069	2.4	1.1	3.6	1.2	A+	A+
1232	601181	A1	A1	1435	.676	.676	.064	.130	.102	.028	.507	.507	-.178	-.205	-.240	-0.280	0.062	-4.9	0.9	-5.1	0.8	A+	B-
1233	601810	A1	A1	1435	.221	.221	.145	.501	.081	.052	.243	.243	-.172	.131	-.159	2.026	0.068	0.9	1.0	2.6	1.1	A+	A+
1234	601411	A1	A1	1435	.558	.181	.114	.558	.112	.036	.380	-.123	-.109	.380	-.192	0.298	0.058	-1.1	1.0	-1.5	1.0	A+	A-
1235	601856	A1	A1	1435	.399	.399	.165	.167	.208	.063	.302	.302	-.164	-.090	.031	0.998	0.059	1.6	1.0	1.8	1.1	A+	A+
1236	602169	A1	A1	1435	.516	.516	.268	.105	.052	.061	.458	.458	-.150	-.181	-.176	0.430	0.059	-5.0	0.9	-4.4	0.9	A+	A+
1237	601414	A1	A1	1435	.422	.422	.205	.213	.105	.056	.402	.402	-.142	-.080	-.117	0.908	0.059	-2.6	1.0	-2.2	0.9	A+	A+
1238	601832	A1	A1	1435	.240	.235	.215	.240	.240	.070	.228	.005	-.137	.228	.059	1.863	0.067	2.4	1.1	2.5	1.1	A+	A+
1239	602255	A1	A1	1435	.265	.105	.265	.381	.192	.056	.311	-.047	.311	-.060	-.061	1.742	0.065	0.6	1.0	1.0	1.0	A+	A+
1240	602232	A1	A1	1435	.408	.096	.408	.285	.137	.075	.320	-.069	.320	-.098	-.058	0.929	0.059	2.3	1.1	1.5	1.0	A+	A+
1241	601861	A1	A1	1435	.262	.088	.140	.452	.262	.059	.330	-.086	-.193	.022	.330	1.752	0.065	0.3	1.0	1.2	1.1	A-	A-
1242	601417	A1	A1	1432	.644	.141	.644	.122	.064	.029	.394	-.169	.394	-.196	-.116	-0.089	0.061	-2.7	0.9	-1.4	0.9	B+	A-
1243	602235	A1	A1	1432	.409	.115	.409	.309	.136	.031	.344	-.105	.344	-.092	-.149	1.060	0.058	0.5	1.0	0.8	1.0	A-	A-
1244	601182	A1	A1	1432	.380	.147	.204	.212	.380	.057	.341	-.014	-.114	-.166	.341	1.133	0.060	-0.2	1.0	-0.8	1.0	A+	A+
1245	601420	A1	A1	1432	.360	.134	.167	.279	.360	.059	.383	-.004	-.192	-.124	.383	1.230	0.060	-1.5	1.0	-1.5	1.0	A+	A-
1246	602162	A1	A1	1432	.437	.183	.173	.437	.136	.072	.391	-.105	-.151	.391	-.121	0.808	0.059	-2.1	1.0	-1.9	1.0	A-	A-
1247	600957	A1	A1	1432	.292	.143	.262	.222	.292	.082	.350	-.079	-.072	-.116	.350	1.553	0.063	-0.5	1.0	-0.3	1.0	A+	A-
1248	602183	A1	A1	1434	.301	.301	.224	.206	.250	.020	.312	.312	-.077	-.168	-.052	1.586	0.061	-1.9	1.0	-1.5	1.0	A+	A+
1249	602256	A1	A1	1434	.213	.213	.273	.215	.271	.027	.319	.319	-.074	-.108	-.046	2.083	0.068	-1.5	1.0	-1.2	0.9	A-	A-
1250	602156	A1	A1	1434	.350	.156	.253	.350	.206	.036	.099	.066	-.058	.099	-.036	1.292	0.059	5.4	1.1	4.7	1.2	A+	A+
1251	602239	A1	A1	1434	.258	.114	.258	.227	.386	.016	.083	-.112	.083	-.139	.158	1.823	0.064	3.6	1.1	4.2	1.2	B-	A+
1252	600961	A1	A1	1434	.291	.234	.250	.291	.195	.029	.247	-.134	-.018	.247	-.054	1.609	0.062	0.2	1.0	-0.1	1.0	A-	A+
1253	601857	A1	A1	1434	.221	.181	.376	.171	.221	.051	.249	-.034	.027	-.151	.249	1.980	0.067	0.2	1.0	1.7	1.1	A-	A+
1254	602240	A1	A1	1434	.409	.170	.199	.219	.409	.004	.369	-.197	-.096	-.153	.369	1.095	0.057	-3.7	0.9	-3.4	0.9	A+	A-
1255	602157	A1	A1	1434	.236	.149	.446	.151	.236	.017	.055	-.083	.057	-.006	.055	1.968	0.065	3.8	1.1	3.6	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1256	601421	A1	A1	1434	.423	.190	.186	.423	.185	.017	.301	-.071	-.164	.301	-.088	1.006	0.057	-2.8	1.0	-2.1	1.0	A-	A-
1257	602244	A1	A1	1434	.635	.635	.121	.110	.125	.010	.491	.491	-.207	-.231	-.223	0.048	0.058	-5.6	0.9	-5.7	0.8	A-	C-
1258	601185	A1	A1	1434	.214	.214	.226	.469	.081	.011	.188	.188	-.028	-.019	-.111	2.121	0.067	0.6	1.0	0.4	1.0	A-	A+
1259	602163	A1	A1	1434	.238	.186	.315	.245	.238	.017	.210	-.029	.037	-.141	.210	1.959	0.065	0.4	1.0	0.4	1.0	A-	A+
1260	602238	A1	A1	1434	.414	.141	.414	.217	.201	.027	.314	-.054	.314	-.153	-.064	1.023	0.057	-1.3	1.0	-0.6	1.0	A+	A+
1261	602254	A1	A1	1434	.426	.172	.219	.426	.167	.017	.200	-.043	-.068	.200	-.041	0.991	0.057	3.1	1.1	2.6	1.1	A+	A+
1262	602257	A1	A1	1434	.312	.306	.312	.249	.115	.017	.232	.022	.232	-.129	-.091	1.539	0.060	0.8	1.0	0.6	1.0	A-	A+
1263	601424	A1	A1	1434	.345	.151	.163	.317	.345	.026	.375	-.109	-.224	-.019	.375	1.364	0.059	-3.0	0.9	-3.1	0.9	A-	A-
1264	600968	A1	A1	1432	.233	.313	.269	.161	.233	.024	.167	.101	-.118	-.093	.167	2.063	0.066	1.7	1.1	3.2	1.2	A+	A+
1265	601846	A1	A1	1432	.423	.145	.423	.253	.171	.008	.365	-.046	.365	-.300	-.073	1.097	0.057	-3.8	0.9	-3.1	0.9	A-	A+
1266	601374	A1	A1	1432	.333	.244	.333	.187	.214	.022	.260	-.053	.260	-.086	-.076	1.503	0.060	1.3	1.0	2.1	1.1	A-	A+
1267	601395	A1	A1	1432	.545	.545	.103	.129	.211	.012	.309	.309	-.156	-.167	-.061	0.527	0.057	0.3	1.0	-0.5	1.0	A-	A-
1268	601186	A1	A1	1432	.322	.149	.322	.400	.108	.021	.245	-.069	.245	-.059	-.073	1.566	0.060	1.9	1.1	2.2	1.1	A+	A+
1269	601137	A1	A1	1433	.646	.112	.086	.142	.646	.014	.455	-.252	-.161	-.194	.455	0.110	0.060	-5.2	0.9	-4.9	0.8	A+	A-
1270	601381	A1	A1	1433	.299	.230	.299	.180	.271	.020	.111	-.027	.111	-.131	.062	1.798	0.062	5.8	1.2	5.6	1.2	A-	A+
1271	600972	A1	A1	1433	.300	.125	.292	.264	.300	.019	.323	-.100	-.080	-.118	.323	1.793	0.062	-0.7	1.0	-0.9	1.0	A+	A+
1272	602252	A1	A1	1433	.392	.365	.098	.121	.392	.024	.481	-.110	-.172	-.272	.481	1.314	0.058	-5.5	0.9	-5.1	0.9	A-	A-
1273	601382	A1	A1	1434	.554	.554	.224	.085	.114	.024	.267	.267	-.121	-.114	-.064	0.515	0.058	3.9	1.1	3.4	1.1	A-	A+
1274	601375	A1	A1	1434	.280	.266	.197	.216	.280	.040	.237	-.039	-.041	-.105	.237	1.862	0.064	3.0	1.1	3.4	1.2	A+	A-
1275	602185	A1	A1	1434	.381	.256	.175	.176	.381	.012	.458	-.195	-.132	-.188	.458	1.376	0.059	-4.8	0.9	-3.4	0.9	A+	A-
1276	601400	A1	A1	1434	.602	.602	.149	.149	.070	.031	.398	.398	-.158	-.156	-.169	0.252	0.059	-1.4	1.0	-1.4	1.0	A+	A-
1277	601847	A1	A1	1434	.452	.452	.280	.151	.084	.032	.447	.447	-.099	-.244	-.171	0.985	0.058	-3.7	0.9	-2.4	0.9	A-	A-
1278	601796	A1	A1	1434	.267	.096	.267	.395	.199	.043	.294	-.102	.294	-.081	-.019	1.938	0.065	1.5	1.1	2.7	1.1	A+	A-
1279	602172	A1	A1	1436	.593	.593	.095	.174	.123	.015	.353	.353	-.208	-.139	-.110	0.273	0.058	0.7	1.0	0.6	1.0	A+	B-
1280	601842	A1	A1	1436	.395	.478	.395	.087	.024	.016	.387	-.112	.387	-.290	-.146	1.226	0.059	-0.5	1.0	0.6	1.0	A-	A+
1281	601403	A1	A1	1436	.516	.516	.171	.231	.064	.017	.365	.365	-.131	-.194	-.111	0.638	0.058	-0.8	1.0	-1.5	1.0	A+	A+
1282	600943	A1	A1	1436	.349	.183	.328	.349	.118	.022	.179	.043	-.031	.179	-.194	1.437	0.060	5.6	1.1	6.0	1.2	A-	A+
1283	601147	A1	A1	1436	.361	.163	.219	.236	.361	.021	.281	.026	-.073	-.201	.281	1.380	0.060	2.7	1.1	2.6	1.1	A-	A+
1284	601383	A1	A1	1436	.330	.453	.087	.330	.111	.020	.171	-.007	-.074	.171	-.086	1.539	0.061	6.7	1.2	6.7	1.3	A-	A-
1285	601141	A1	A1	1436	.655	.093	.655	.131	.076	.046	.559	-.222	.559	-.282	-.194	-0.156	0.062	-7.6	0.8	-7.1	0.7	A+	A-
1286	602186	A1	A1	1436	.733	.113	.056	.072	.733	.027	.531	-.243	-.213	-.264	.531	-0.526	0.066	-5.9	0.8	-6.3	0.7	A+	A-
1287	601798	A1	A1	1436	.305	.305	.265	.277	.100	.053	.368	.368	-.115	-.056	-.115	1.617	0.062	0.1	1.0	0.8	1.0	A+	A-
1288	601377	A1	A1	1436	.375	.155	.287	.375	.134	.048	.156	-.009	-.029	.156	-.063	1.242	0.060	7.5	1.2	8.2	1.3	A+	A-
1289	601848	A1	A1	1436	.323	.323	.217	.225	.183	.053	.399	.399	-.152	-.150	-.045	1.513	0.062	-1.6	1.0	-0.4	1.0	A-	A-
1290	600947	A1	A1	1434	.215	.215	.163	.224	.351	.048	.182	.182	-.071	-.102	.068	2.220	0.068	2.7	1.1	3.4	1.2	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1291	601385	A1	A1	1434	.515	.515	.204	.158	.107	.016	.383	.383	-.130	-.209	-.135	0.703	0.058	-0.6	1.0	-0.4	1.0	A+	A+
1292	601849	A1	A1	1434	.563	.074	.563	.174	.137	.052	.464	-.137	.464	-.266	-.119	0.370	0.059	-4.3	0.9	-4.1	0.9	A-	A-
1293	602173	A1	A1	1434	.519	.064	.283	.114	.519	.020	.470	-.170	-.169	-.271	.470	0.672	0.058	-3.5	0.9	-3.3	0.9	A+	A+
1294	601378	A1	A1	1434	.182	.038	.182	.628	.114	.037	.124	-.007	.124	.037	-.027	2.486	0.072	3.0	1.1	6.0	1.5	A-	A+
1295	601157	A1	A1	1434	.467	.467	.181	.206	.096	.050	.514	.514	-.209	-.138	-.200	0.851	0.058	-6.6	0.9	-6.1	0.9	A-	B-
1296	601142	A1	A1	1434	.666	.666	.090	.096	.117	.032	.540	.540	-.222	-.289	-.201	-0.109	0.062	-6.7	0.8	-6.7	0.8	A+	A-
1297	602187	A1	A1	1434	.648	.058	.648	.156	.096	.043	.529	-.140	.529	-.305	-.188	-0.047	0.062	-5.5	0.9	-5.6	0.8	A+	A-
1298	601407	A1	A1	1434	.592	.155	.090	.592	.117	.046	.347	-.052	-.189	.347	-.134	0.238	0.060	2.0	1.1	0.8	1.0	A+	A-
1299	601820	A1	A1	1433	.733	.040	.054	.141	.733	.033	.439	-.107	-.217	-.250	.439	-0.474	0.067	-2.8	0.9	-3.4	0.8	A-	A-
1300	601388	A1	A1	1433	.320	.320	.240	.248	.161	.031	.224	.224	-.059	-.042	-.072	1.640	0.061	3.0	1.1	3.5	1.1	A+	A-
1301	601843	A1	A1	1433	.518	.040	.193	.218	.518	.032	.489	-.140	-.118	-.308	.489	0.675	0.058	-5.6	0.9	-4.6	0.9	B-	A+
1302	601850	A1	A1	1433	.246	.214	.281	.236	.246	.024	.086	.042	.046	-.084	.086	2.077	0.065	4.9	1.2	5.6	1.3	A-	A+
1303	600958	A1	A1	1433	.385	.144	.154	.286	.385	.031	.118	-.043	-.037	.037	.118	1.316	0.058	9.0	1.2	9.1	1.3	A+	A+
1304	601169	A1	A1	1433	.373	.373	.241	.222	.136	.029	.321	.321	-.054	-.159	-.066	1.390	0.059	0.5	1.0	0.6	1.0	A+	A-
1305	601413	A1	A1	1433	.214	.214	.472	.137	.144	.034	.270	.270	.022	-.109	-.103	2.260	0.068	0.3	1.0	2.5	1.1	A+	A-
1306	601145	A1	A1	1433	.736	.736	.112	.080	.036	.036	.578	.578	-.282	-.287	-.198	-0.493	0.067	-6.5	0.8	-7.5	0.7	A+	A+
1307	602225	A1	A1	1433	.168	.168	.405	.215	.140	.073	.211	.211	.232	-.224	-.113	2.526	0.074	0.8	1.0	3.1	1.2	A-	B+
1308	601183	A1	A1	1432	.261	.163	.297	.230	.261	.050	.195	-.043	.074	-.093	.195	1.851	0.064	2.9	1.1	3.9	1.2	A-	A+
1309	601844	A1	A1	1432	.607	.122	.607	.164	.078	.030	.502	-.192	.502	-.219	-.162	0.178	0.059	-5.3	0.9	-5.2	0.9	A-	A-
1310	602242	A1	A1	1432	.363	.233	.201	.363	.151	.052	.301	.087	-.145	.301	-.157	1.283	0.059	1.6	1.0	1.9	1.1	A-	A+
1311	601390	A1	A1	1432	.330	.330	.215	.195	.207	.052	.315	.315	-.059	-.120	-.012	1.454	0.060	0.4	1.0	0.3	1.0	A+	B+
1312	601415	A1	A1	1432	.433	.095	.233	.202	.433	.037	.307	-.085	-.076	-.092	.307	0.981	0.058	0.2	1.0	-0.5	1.0	A+	A-
1313	601851	A1	A1	1432	.325	.325	.208	.219	.205	.043	.274	.274	-.043	-.142	.015	1.499	0.060	1.5	1.0	1.4	1.1	A+	A-
1314	601821	A1	A1	1432	.467	.087	.159	.211	.467	.078	.457	-.090	-.169	-.150	.457	0.709	0.058	-5.1	0.9	-4.9	0.9	A+	A+
1315	600962	A1	A1	1432	.383	.137	.307	.383	.107	.066	.069	.094	.082	.069	-.098	1.151	0.059	9.9	1.2	9.9	1.3	A-	A+
1316	601146	A1	A1	1432	.520	.074	.159	.520	.172	.076	.400	-.151	-.185	.400	-.040	0.452	0.059	-2.2	1.0	-2.1	1.0	A+	A+
1317	601391	A1	A1	1429	.304	.231	.253	.304	.183	.029	.277	.022	-.105	.277	-.119	1.634	0.061	2.2	1.1	2.0	1.1	A+	A+
1318	601865	A1	A1	1429	.348	.222	.325	.348	.081	.025	.194	-.007	-.058	.194	-.081	1.414	0.059	4.8	1.1	4.7	1.2	A+	A+
1319	600969	A1	A1	1429	.268	.127	.268	.356	.202	.048	.143	.057	.143	-.055	.015	1.796	0.064	4.7	1.2	4.9	1.2	A-	A+
1320	601153	A1	A1	1429	.529	.529	.132	.116	.205	.018	.437	.437	-.178	-.221	-.122	0.580	0.057	-6.3	0.9	-5.5	0.9	A+	A-
1321	602227	A1	A1	714	.343	.343	.161	.223	.228	.045	.274	.274	-.069	-.067	-.010	1.367	0.085	1.6	1.1	1.8	1.1	A-	
1322	601845	A1	A1	1429	.640	.112	.640	.169	.047	.032	.481	-.220	.481	-.224	-.081	0.008	0.060	-5.2	0.9	-5.0	0.8	A-	B-
1323	601852	A1	A1	1429	.377	.267	.164	.165	.377	.027	.372	-.043	-.187	-.127	.372	1.271	0.058	-2.9	0.9	-2.1	0.9	A-	A-
1324	601184	A1	A1	1429	.547	.060	.547	.316	.032	.046	.369	-.114	.369	-.178	-.135	0.413	0.058	-2.5	1.0	-2.5	0.9	A-	A+
1325	601389	A1	A1	714	.338	.153	.276	.338	.142	.092	.203	-.043	-.032	.203	.070	1.282	0.086	3.9	1.1	3.5	1.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1326	602243	A1	A1	1429	.314	.314	.185	.199	.231	.071	.407	.407	-.032	-.130	-.096	1.501	0.061	-2.6	0.9	-2.1	0.9	A+	A+
1327	601174	A1	A1	715	.674	.122	.674	.063	.136	.006	.320	-.178	.320	-.191	-.118	-0.030	0.084	-1.0	1.0	-0.7	1.0	A+	
1328	601393	A1	A1	1429	.349	.134	.222	.349	.276	.019	.202	-.105	-.106	.202	.013	1.423	0.059	4.2	1.1	4.1	1.1	A+	A+
1329	601860	A1	A1	715	.182	.102	.182	.271	.438	.007	.193	-.131	.193	-.212	.135	2.457	0.101	0.6	1.0	1.4	1.1	B-	
1330	602233	A1	A1	1429	.792	.053	.069	.792	.067	.020	.410	-.214	-.194	.410	-.149	-0.820	0.070	-2.3	0.9	-4.3	0.8	A+	A-
1331	601853	A1	A1	1429	.299	.276	.254	.299	.130	.042	.300	-.022	-.045	.300	-.192	1.637	0.061	0.8	1.0	1.1	1.0	A-	A+
1332	601862	A1	A1	1429	.515	.071	.113	.515	.294	.006	.348	-.161	-.135	.348	-.171	0.677	0.056	-1.7	1.0	-1.9	1.0	B-	A+
1333	601867	A1	A1	1429	.457	.457	.289	.145	.074	.036	.459	.459	-.139	-.189	-.171	0.879	0.057	-5.6	0.9	-4.9	0.9	A+	A-
1334	601392	A1	A1	715	.407	.132	.119	.407	.325	.018	.303	-.141	-.104	.303	-.055	1.181	0.081	1.3	1.0	1.0	1.0	A-	
1335	602248	A1	A1	715	.539	.154	.104	.539	.179	.025	.442	-.166	-.215	.442	-.120	0.559	0.080	-3.4	0.9	-3.1	0.9	A+	
1336	601422	A1	A1	715	.382	.087	.192	.304	.382	.036	.367	-.084	-.118	-.108	.367	1.258	0.082	-0.8	1.0	-1.1	1.0	A-	
1337	602152	A1	A1	1429	.361	.169	.259	.361	.178	.033	.116	.030	-.035	.116	-.042	1.328	0.059	7.3	1.2	7.4	1.2	A-	A-
1338	601416	A1	A1	1431	.247	.140	.201	.358	.247	.054	.287	-.080	-.091	.017	.287	1.905	0.065	0.4	1.0	1.2	1.1	A+	A+
1339	602230	A1	A1	715	.509	.509	.084	.260	.088	.059	.571	.571	-.171	-.256	-.171	0.604	0.081	-7.8	0.8	-7.0	0.8	A+	
1340	601418	A1	A1	1429	.476	.191	.476	.172	.113	.048	.419	-.043	.419	-.171	-.195	0.755	0.057	-3.2	1.0	-3.0	0.9	A+	A+
1341	602249	A1	A1	1429	.359	.359	.195	.272	.136	.039	.382	.382	-.134	-.096	-.124	1.330	0.059	-2.2	1.0	-1.7	1.0	A+	A+
1342	601396	A1	A1	1431	.331	.152	.331	.335	.128	.055	.162	-.045	.162	-.041	.057	1.440	0.060	5.3	1.1	5.8	1.2	A+	A+
1343	601866	A1	A1	715	.513	.183	.513	.148	.077	.078	.416	-.103	.416	-.125	-.193	0.518	0.082	-2.2	1.0	-2.2	0.9	A+	
1344	602250	A1	A1	714	.466	.466	.212	.240	.074	.008	.341	.341	-.134	-.189	-.121	0.856	0.080	-2.0	1.0	-2.1	0.9	A-	A-
1345	601178	A1	A1	1430	.218	.618	.094	.066	.218	.004	.132	.089	-.184	-.149	.132	2.137	0.067	2.8	1.1	3.5	1.2	A+	A+
1346	600938	A1	A1	714	.416	.185	.164	.416	.212	.024	.378	-.187	-.143	.378	-.068	1.057	0.081	-0.9	1.0	-1.2	1.0	A-	A-
1347	601404	A1	A1	1434	.290	.259	.222	.204	.290	.025	.278	-.077	-.090	-.061	.278	1.708	0.062	0.5	1.0	1.3	1.1	A+	A-
1348	601401	A1	A1	717	.349	.349	.307	.172	.160	.013	.272	.272	-.119	-.101	-.070	1.377	0.083	0.3	1.0	1.3	1.1	A-	A+
1349	601369	A1	A1	717	.513	.513	.172	.179	.134	.003	.383	.383	-.113	-.193	-.205	0.636	0.079	-3.2	0.9	-3.0	0.9	A-	A+
1350	602170	A1	A1	717	.251	.134	.165	.441	.251	.010	.229	-.095	-.123	-.031	.229	1.899	0.091	1.0	1.1	1.1	1.1	A-	A-
1351	601800	A1	A1	717	.357	.357	.133	.336	.163	.011	.283	.283	-.214	-.078	-.042	1.331	0.082	0.7	1.0	0.3	1.0	A+	A+
1352	601808	A1	A1	1434	.327	.130	.327	.211	.315	.017	.290	-.123	.290	-.128	-.033	1.525	0.060	0.2	1.0	1.0	1.0	A-	A-
1353	600959	A1	A1	717	.324	.324	.121	.276	.251	.028	.376	.376	-.188	-.095	-.087	1.458	0.084	-1.3	1.0	-1.4	0.9	A+	A-
1354	601399	A1	A1	717	.346	.346	.177	.247	.191	.039	.335	.335	-.097	-.144	-.058	1.319	0.083	-0.3	1.0	-0.4	1.0	A+	A+
1355	601814	A1	A1	717	.441	.159	.441	.240	.124	.036	.354	-.101	.354	-.153	-.106	0.870	0.080	-0.6	1.0	-0.7	1.0	A+	A-
1356	601143	A1	A1	1434	.289	.289	.324	.188	.146	.053	.320	.320	-.033	-.160	-.052	1.642	0.062	0.4	1.0	0.1	1.0	A+	A+
1357	601402	A1	A1	1434	.517	.517	.140	.251	.066	.026	.359	.359	-.175	-.130	-.138	0.596	0.057	-1.5	1.0	-1.7	1.0	A+	A-
1358	600967	A1	A1	1434	.310	.262	.167	.227	.310	.034	.278	.035	-.141	-.147	.278	1.569	0.061	1.0	1.0	1.7	1.1	A-	A+
1359	602223	A1	A1	1434	.361	.203	.222	.361	.153	.061	.297	-.058	-.102	.297	-.059	1.252	0.059	1.6	1.0	2.4	1.1	A-	A-
1360	601816	A1	A1	717	.791	.082	.080	.791	.042	.006	.369	-.189	-.169	.369	-.230	-0.709	0.096	-1.6	0.9	-2.3	0.8	A-	C-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1361	601817	A1	A1	1433	.580	.169	.105	.121	.580	.026	.350	-.161	-.121	-.121	.350	0.331	0.057	-0.5	1.0	-0.7	1.0	A-	A+
1362	602245	A1	A1	1433	.816	.059	.816	.064	.058	.004	.312	-.117	.312	-.159	-.193	-0.888	0.071	-0.9	1.0	-1.8	0.9	A-	B-
1363	600970	A1	A1	717	.276	.294	.198	.227	.276	.004	.385	-.099	-.093	-.209	.385	1.864	0.088	-2.1	0.9	-1.7	0.9	A+	A-
1364	601839	A1	A1	1433	.735	.078	.072	.735	.098	.017	.374	-.058	-.201	.374	-.217	-0.432	0.064	-1.9	0.9	-1.9	0.9	A-	A-
1365	601405	A1	A1	717	.464	.464	.180	.198	.142	.015	.477	.477	-.227	-.151	-.223	0.910	0.080	-5.2	0.9	-5.0	0.9	A-	A-
1366	601373	A1	A1	717	.110	.110	.367	.206	.310	.007	.077	.077	.079	-.161	.033	3.099	0.123	1.4	1.1	2.7	1.4	A-	A-
1367	602168	A1	A1	717	.400	.145	.400	.173	.259	.022	.138	-.006	.138	-.141	.049	1.203	0.081	5.7	1.2	5.2	1.2	A+	A+
1368	601160	A1	A1	1433	.366	.276	.366	.184	.158	.016	.272	-.024	.272	-.167	-.054	1.347	0.058	2.3	1.1	2.1	1.1	A+	A+
1369	601406	A1	A1	717	.286	.286	.174	.223	.276	.040	.160	.160	-.020	-.086	.054	1.746	0.088	3.5	1.1	3.8	1.2	A+	B+
1370	601829	A1	A1	1433	.244	.183	.244	.288	.260	.025	.161	-.001	.161	-.059	-.026	1.978	0.065	2.8	1.1	4.3	1.2	A+	A-
1371	601803	A1	A1	717	.368	.140	.269	.368	.158	.066	.193	-.055	.015	.193	-.061	1.261	0.084	4.3	1.1	4.3	1.2	A+	A-
1372	601818	A1	A1	717	.234	.120	.264	.318	.234	.064	.252	-.051	-.051	-.018	.252	2.005	0.094	1.0	1.1	1.6	1.1	A-	A+
1373	601154	A1	A1	717	.499	.499	.173	.170	.095	.063	.476	.476	-.156	-.164	-.201	0.631	0.082	-4.3	0.9	-3.8	0.9	B+	B-
1374	602224	A1	A1	1433	.433	.062	.103	.433	.355	.047	.241	-.114	-.147	.241	.008	0.957	0.057	4.4	1.1	4.3	1.1	A-	A-
1375	601819	A1	A1	1433	.315	.315	.184	.341	.102	.059	.305	.305	-.098	-.039	-.091	1.516	0.061	0.5	1.0	1.0	1.0	A+	A-
1376	601408	A1	A1	716	.437	.437	.143	.193	.217	.011	.408	.408	-.160	-.188	-.157	0.992	0.079	-4.6	0.9	-3.9	0.9	A+	A+
1377	601386	A1	A1	716	.584	.109	.144	.584	.163	.000	.439	-.200	-.237	.439	-.191	0.362	0.079	-4.4	0.9	-4.0	0.9	A+	A-
1378	601863	A1	A1	716	.349	.068	.133	.349	.441	.008	.263	-.054	-.178	.263	-.070	1.407	0.082	-0.1	1.0	0.5	1.0	A+	A-
1379	601838	A1	A1	716	.732	.048	.127	.732	.074	.020	.478	-.153	-.294	.478	-.159	-0.447	0.090	-3.0	0.9	-3.5	0.8	B+	A-
1380	601840	A1	A1	716	.620	.189	.073	.620	.091	.028	.403	-.123	-.114	.403	-.220	0.114	0.082	-1.7	1.0	-1.9	0.9	A-	A-
1381	601830	A1	A1	716	.247	.314	.205	.186	.247	.048	.242	-.079	-.047	.037	.242	1.880	0.091	0.7	1.0	1.2	1.1	A-	B+
1382	602246	A1	A1	716	.318	.226	.233	.318	.173	.049	.172	.004	-.051	.172	.011	1.486	0.085	3.0	1.1	3.7	1.2	A-	A+
1383	601409	A1	A1	716	.439	.102	.254	.439	.149	.056	.235	-.051	-.048	.235	-.048	0.885	0.081	3.4	1.1	3.0	1.1	A+	A-
1384	602226	A1	A1	716	.235	.144	.225	.335	.235	.062	.228	-.006	-.047	-.026	.228	1.931	0.093	0.8	1.0	1.8	1.1	A-	A-
1385	602167	A1	A1	714	.233	.289	.212	.249	.233	.018	.244	-.021	-.104	-.072	.244	2.026	0.093	0.7	1.0	1.7	1.1	A+	C+
1386	601423	A1	A1	714	.314	.478	.314	.142	.060	.007	.291	-.081	.291	-.183	-.111	1.588	0.085	0.4	1.0	0.6	1.0	A+	A-
1387	602188	A1	A1	714	.395	.084	.395	.360	.153	.008	.273	-.040	.273	-.176	-.096	1.182	0.081	1.5	1.0	1.9	1.1	A+	A-
1388	600971	A1	A1	1433	.419	.156	.251	.419	.156	.018	.271	-.113	-.050	.271	-.119	1.089	0.057	2.2	1.0	2.6	1.1	A+	A+
1389	601180	A1	A1	1431	.674	.069	.079	.137	.674	.041	.440	-.137	-.174	-.249	.440	-0.250	0.062	-3.9	0.9	-4.7	0.8	A+	A-
1390	601854	A1	A1	714	.214	.199	.294	.231	.214	.062	.311	-.023	.004	-.133	.311	2.074	0.096	0.1	1.0	-0.1	1.0	A+	A-
1391	602253	A1	A1	714	.328	.377	.328	.200	.083	.013	.237	.063	.237	-.196	-.150	1.510	0.084	2.2	1.1	2.0	1.1	A-	A+
1392	601419	A1	A1	714	.265	.265	.209	.217	.280	.029	.171	.171	-.088	-.049	.063	1.816	0.090	2.4	1.1	3.1	1.2	A-	B+
1393	602251	A1	A1	1431	.323	.341	.323	.150	.144	.042	.278	-.045	.278	-.067	-.152	1.461	0.060	0.9	1.0	1.3	1.0	A-	A-
1394	602237	A1	A1	714	.620	.128	.105	.074	.620	.073	.472	-.240	-.190	-.133	.472	-0.073	0.086	-3.7	0.9	-3.8	0.8	B+	C-
1395	601394	A1	A1	714	.452	.210	.452	.210	.104	.024	.392	-.174	.392	-.128	-.120	0.885	0.080	-1.5	1.0	-1.6	1.0	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1396	600973	A1	A1	715	.241	.208	.250	.241	.255	.046	.246	.088	-.146	.246	-.038	1.997	0.093	1.1	1.1	1.4	1.1	A-	
1397	601397	A1	A1	1431	.157	.274	.142	.390	.157	.037	.141	-.019	-.118	.090	.141	2.511	0.076	1.8	1.1	3.1	1.2	A-	A+
1398	601368	A1	A1	1431	.203	.099	.203	.317	.340	.040	.171	-.183	.171	-.103	.120	2.154	0.069	1.9	1.1	3.1	1.2	A-	A+
1399	601136	A1	A1	717	.395	.174	.227	.395	.193	.011	.353	-.111	-.183	.353	-.095	1.152	0.081	-0.3	1.0	-0.6	1.0	A+	A-
1400	601836	A1	A1	717	.590	.063	.085	.590	.257	.006	.344	-.174	-.229	.344	-.127	0.282	0.080	-1.7	1.0	-1.7	0.9	A-	A-
1401	602160	A1	A1	1434	.579	.579	.091	.098	.207	.026	.411	.411	-.200	-.171	-.139	0.317	0.057	-3.2	0.9	-3.4	0.9	A+	A-
1402	601813	A1	A1	1431	.475	.224	.103	.475	.194	.005	.306	-.217	-.191	.306	-.001	0.817	0.056	0.4	1.0	0.2	1.0	A+	A-
1403	601805	A1	A1	1431	.181	.181	.375	.236	.150	.058	.175	.175	.007	-.010	-.074	2.281	0.072	1.4	1.1	2.8	1.2	A+	A+
1404	600932	A1	A1	1433	.369	.369	.244	.262	.110	.015	.423	.423	-.174	-.141	-.133	1.316	0.058	-4.8	0.9	-3.8	0.9	A-	A+
1405	601398	A1	A1	1431	.551	.112	.551	.139	.183	.015	.335	-.181	.335	-.183	-.080	0.444	0.056	-1.8	1.0	-1.4	1.0	A+	A-
1406	602154	A1	A1	1431	.595	.105	.100	.595	.169	.031	.363	-.099	-.187	.363	-.144	0.195	0.058	-1.1	1.0	-0.8	1.0	A-	A+
1407	601380	A1	A1	1431	.382	.382	.250	.187	.153	.027	.314	.314	-.098	-.155	-.057	1.190	0.058	-0.3	1.0	-0.4	1.0	A-	A+
1408	601135	A1	A1	1433	.637	.038	.137	.178	.637	.011	.465	-.136	-.161	-.309	.465	0.107	0.058	-6.1	0.9	-5.1	0.9	A-	A-
1409	601138	A1	A1	1433	.645	.060	.203	.645	.054	.038	.506	-.130	-.282	.506	-.186	-0.048	0.060	-5.1	0.9	-5.4	0.8	A-	A-
1410	601139	A1	A1	1433	.504	.133	.134	.504	.215	.014	.388	-.197	-.146	.388	-.121	0.798	0.057	-3.3	0.9	-2.3	0.9	A-	A+
1411	601140	A1	A1	1430	.713	.126	.713	.111	.036	.015	.405	-.200	.405	-.209	-.145	-0.332	0.062	-3.2	0.9	-3.4	0.9	A-	B-
1412	601152	A1	A1	1436	.297	.198	.306	.297	.143	.057	.084	.003	.059	.084	-.015	1.545	0.062	6.2	1.2	5.8	1.2	A-	A+
1413	601158	A1	A1	1436	.364	.253	.220	.364	.132	.032	.402	-.158	-.132	.402	-.046	1.250	0.059	-2.3	1.0	-2.0	0.9	A-	B-
1414	601167	A1	A1	1432	.180	.180	.270	.226	.276	.050	.264	.264	-.133	-.094	.078	2.360	0.074	0.5	1.0	2.0	1.1	A-	A+
1415	601159	A1	A1	1432	.490	.068	.268	.490	.116	.058	.387	-.125	-.120	.387	-.173	0.584	0.058	-1.0	1.0	-1.6	1.0	A-	A-
1416	601162	A1	A1	1434	.483	.184	.181	.483	.119	.034	.349	-.080	-.123	.349	-.135	0.663	0.057	-1.5	1.0	-1.1	1.0	A-	A-
1417	601173	A1	A1	1434	.330	.204	.202	.220	.330	.043	-.030	-.090	.053	.127	-.030	1.373	0.060	9.4	1.2	9.4	1.3	A+	A+
1418	601171	A1	A1	1432	.480	.119	.182	.480	.205	.015	.314	-.123	-.127	.314	-.123	0.817	0.057	0.1	1.0	0.0	1.0	A-	A-
1419	601179	A1	A1	1432	.269	.066	.133	.269	.515	.017	.097	-.019	-.119	.097	.046	1.859	0.063	4.1	1.1	5.1	1.2	A-	A-
1420	601151	A1	A1	1436	.218	.057	.218	.585	.095	.045	.010	-.109	.010	.237	-.144	2.159	0.069	7.0	1.3	9.1	1.6	A+	B+
1421	601163	A1	A1	1434	.386	.149	.192	.222	.386	.052	.305	-.141	-.001	-.096	.305	1.249	0.059	3.5	1.1	2.9	1.1	A-	A-
1422	601165	A1	A1	1433	.283	.223	.119	.357	.283	.017	.307	.059	-.168	-.160	.307	1.876	0.062	-0.1	1.0	1.1	1.1	A-	A-
1423	601166	A1	A1	1432	.571	.049	.571	.244	.069	.066	.461	-.140	.461	-.156	-.199	0.229	0.059	-4.0	0.9	-4.0	0.9	A-	A-
1424	601172	A1	A1	1429	.451	.451	.078	.291	.099	.081	.470	.470	-.167	-.129	-.160	0.776	0.058	-5.6	0.9	-5.3	0.9	A+	A-
1425	601177	A1	A1	715	.702	.034	.702	.151	.036	.077	.332	-.103	.332	-.124	-.095	-0.499	0.095	0.3	1.0	0.0	1.0	A+	
1426	601150	A1	A1	1431	.384	.180	.162	.231	.384	.043	.459	-.100	-.180	-.160	.459	1.147	0.058	-5.0	0.9	-4.5	0.9	A-	A-
1427	600960	A1	A1	1431	.248	.430	.220	.248	.066	.036	.229	.034	-.084	.229	-.147	1.879	0.065	1.6	1.1	3.0	1.1	A-	A-
1428	600974	A1	A1	717	.365	.179	.292	.146	.365	.018	.269	-.074	-.030	-.213	.269	1.275	0.082	0.7	1.0	0.6	1.0	A-	A+
1429	601156	A1	A1	717	.530	.039	.239	.183	.530	.010	.406	-.034	-.183	-.264	.406	0.539	0.079	-3.8	0.9	-3.3	0.9	A+	A-
1430	600977	A1	A1	1434	.658	.110	.097	.112	.658	.024	.430	-.151	-.234	-.179	.430	-0.069	0.060	-3.8	0.9	-4.1	0.9	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1431	601161	A1	A1	1434	.402	.263	.402	.249	.067	.019	.295	-.039	.295	-.188	-.097	1.142	0.057	1.5	1.0	2.0	1.1	A-	A+
1432	601170	A1	A1	1433	.341	.519	.341	.078	.043	.020	.323	-.071	.323	-.186	-.144	1.465	0.059	-0.2	1.0	0.2	1.0	A-	A+
1433	601149	A1	A1	717	.138	.138	.343	.315	.144	.060	.214	.214	.083	-.034	-.120	2.731	0.113	0.3	1.0	2.1	1.2	A-	A+
1434	601176	A1	A1	717	.600	.082	.600	.191	.070	.057	.407	-.156	.407	-.171	-.135	0.154	0.084	-1.6	1.0	-1.8	0.9	B+	A-
1435	601148	A1	A1	1433	.265	.125	.392	.265	.193	.027	-.006	-.081	.162	-.006	-.054	1.835	0.063	6.4	1.2	6.3	1.3	A-	B+
1436	600948	A1	A1	1429	.232	.107	.190	.232	.442	.029	.151	-.067	-.081	.151	.062	2.043	0.066	3.3	1.1	4.6	1.2	A+	A-
1437	604671	Ge	Ge	2127	.592	.035	.592	.162	.134	.027	.376	-.155	.376	-.233	-.236	0.413	0.051	-5.6	0.9	-5.3	0.9	A+	A-
1438	604400	Ge	Ge	1065	.678	.052	.678	.128	.074	.069	.475	-.123	.475	-.209	-.213	-0.069	0.075	-3.0	0.9	-3.3	0.8	A+	A-
1439	604389	Ge	Ge	1063	.410	.114	.209	.209	.410	.058	.493	-.169	-.164	-.167	.493	1.398	0.069	-4.2	0.9	-3.5	0.9	A-	A-
1440	604418	Ge	Ge	532	.397	.243	.160	.397	.100	.102	.283	-.009	-.130	.283	-.119	1.304	0.099	2.7	1.1	2.7	1.1	A-	
1441	604707	Ge	Ge	1064	.468	.168	.180	.174	.468	.010	.253	-.108	-.057	-.122	.253	1.175	0.066	3.5	1.1	3.0	1.1	A+	B+
1442	604378	Ge	Ge	1065	.573	.027	.099	.285	.573	.016	.515	-.130	-.258	-.300	.515	0.711	0.068	-6.0	0.9	-5.6	0.8	A+	A+
1443	604392	Ge	Ge	1067	.504	.166	.172	.145	.504	.013	.374	-.178	-.149	-.128	.374	1.055	0.065	-1.9	1.0	-2.0	1.0	A-	A+
1444	604395	Ge	Ge	1064	.603	.057	.085	.603	.217	.038	.419	-.092	-.244	.419	-.140	0.460	0.069	-1.7	1.0	-0.9	1.0	B-	A+
1445	604763	Ge	Ge	532	.265	.107	.265	.359	.214	.055	.307	-.069	.307	-.170	.138	2.122	0.105	0.3	1.0	1.4	1.1	A-	
1446	604474	Ge	Ge	1065	.621	.051	.621	.102	.154	.072	.512	-.168	.512	-.225	-.206	0.265	0.072	-4.6	0.9	-4.7	0.8	A-	A+
1447	604600	Ge	Ge	1064	.199	.192	.243	.356	.199	.010	.344	-.018	-.188	-.082	.344	2.751	0.082	-1.3	0.9	-1.8	0.9	A+	A-
1448	604361	Ge	Ge	530	.213	.449	.211	.117	.213	.009	.429	-.149	-.126	-.100	.429	2.524	0.115	-1.5	0.9	-0.4	1.0	A-	A-
1449	604360	Ge	Ge	1064	.346	.346	.190	.196	.248	.021	.322	.322	-.085	-.202	-.046	1.765	0.070	1.7	1.1	2.1	1.1	A+	A+
1450	604354	Ge	Ge	1070	.249	.139	.234	.320	.249	.005	.252	-.095	-.120	-.108	.252	2.257	0.075	-0.1	1.0	0.6	1.0	A-	A+
1451	604453	Ge	Ge	1065	.684	.058	.684	.091	.064	.055	.352	-.137	.352	-.219	-.253	-0.294	0.080	-2.9	0.9	-3.5	0.8	A+	A+
1452	604718	Ge	Ge	1064	.834	.049	.834	.051	.032	.035	.390	-.148	.390	-.202	-.085	-1.016	0.094	-0.7	1.0	-1.0	0.9	A-	A-
1453	605047	Ge	Ge	1064	.410	.087	.382	.410	.107	.015	.324	-.184	-.106	.324	-.112	1.447	0.067	0.3	1.0	1.1	1.0	A+	A-
1454	604658	Ge	Ge	2128	.304	.372	.304	.219	.072	.034	.234	.053	.234	-.134	-.127	2.006	0.051	4.8	1.1	5.6	1.2	A+	A-
1455	604371	Ge	Ge	1064	.118	.091	.329	.434	.118	.028	.106	-.048	-.028	.063	.106	3.308	0.100	1.5	1.1	4.3	1.5	A-	A-
1456	604417	Ge	Ge	1064	.627	.071	.138	.136	.627	.028	.497	-.158	-.252	-.187	.497	0.374	0.069	-4.4	0.9	-3.9	0.9	A-	A-
1457	604742	Ge	Ge	1065	.465	.465	.303	.155	.055	.022	.331	.331	-.190	-.089	-.083	1.209	0.067	1.8	1.0	1.8	1.1	A+	A+
1458	604358	Ge	Ge	1065	.585	.165	.154	.585	.080	.016	.436	-.220	-.268	.436	-.053	0.644	0.068	-2.9	0.9	-2.9	0.9	A+	A-
1459	604758	Ge	Ge	1064	.681	.039	.681	.167	.071	.043	.396	-.197	.396	-.135	-.115	0.031	0.073	-0.3	1.0	0.1	1.0	A+	A-
1460	604740	Ge	Ge	1064	.403	.137	.102	.403	.334	.024	.358	.014	.000	.358	-.315	1.458	0.067	-0.4	1.0	-0.2	1.0	A+	A-
1461	604437	Ge	Ge	1065	.319	.511	.319	.108	.046	.016	.377	-.182	.377	-.126	-.107	1.956	0.071	-1.7	1.0	-1.3	0.9	A-	A-
1462	604729	Ge	Ge	1065	.612	.612	.116	.203	.052	.018	.362	.362	-.235	-.110	-.158	0.498	0.069	0.0	1.0	0.4	1.0	A+	A+
1463	604659	Ge	Ge	1598	.287	.287	.213	.272	.188	.040	.263	.263	-.161	-.016	-.033	2.087	0.060	2.8	1.1	4.6	1.2	A-	A+
1464	604405	Ge	Ge	1065	.590	.590	.132	.124	.135	.020	.436	.436	-.169	-.212	-.185	0.605	0.068	-2.7	0.9	-2.3	0.9	A+	A+
1465	604693	Ge	Ge	1065	.421	.421	.227	.247	.085	.020	.405	.405	-.060	-.215	-.219	1.425	0.068	-2.7	0.9	-2.1	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1466	604438	Ge	Ge	1065	.361	.318	.216	.361	.081	.024	.291	-.040	-.213	.291	-.028	1.721	0.070	0.8	1.0	2.2	1.1	A-	A-
1467	604764	Ge	Ge	1065	.580	.031	.170	.580	.195	.024	.409	-.083	-.268	.409	-.164	0.637	0.068	-2.1	1.0	-2.1	0.9	C-	B-
1468	604393	Ge	Ge	1064	.472	.060	.331	.472	.044	.038	.234	-.067	-.129	.234	-.124	0.932	0.069	2.0	1.0	1.3	1.0	A+	A+
1469	604753	Ge	Ge	1065	.255	.082	.281	.347	.255	.037	.347	-.051	-.162	-.070	.347	2.293	0.076	-0.2	1.0	0.5	1.0	A+	A+
1470	604397	Ge	Ge	1067	.533	.080	.371	.533	.012	.004	.437	-.165	-.325	.437	-.139	0.965	0.067	-4.2	0.9	-3.7	0.9	A+	A-
1471	604375	Ge	Ge	1067	.150	.088	.150	.250	.504	.008	.148	-.024	.148	-.070	-.028	3.153	0.091	1.4	1.1	4.7	1.5	A+	A+
1472	604751	Ge	Ge	1067	.492	.058	.167	.271	.492	.012	.285	-.178	-.105	-.115	.285	1.141	0.067	2.1	1.1	1.8	1.1	A-	A-
1473	604708	Ge	Ge	1067	.209	.130	.229	.414	.209	.018	.187	.024	-.181	.037	.187	2.673	0.081	2.7	1.1	5.5	1.5	A-	A+
1474	604755	Ge	Ge	1067	.458	.082	.458	.330	.113	.017	.316	-.146	.316	-.160	-.067	1.289	0.067	1.8	1.0	1.6	1.1	A+	A+
1475	605048	Ge	Ge	1067	.369	.187	.331	.369	.105	.008	.316	-.211	-.078	.316	-.076	1.755	0.069	0.5	1.0	0.4	1.0	A+	A+
1476	604423	Ge	Ge	1067	.685	.685	.090	.187	.031	.007	.292	.292	-.130	-.171	-.114	0.195	0.071	1.8	1.1	1.2	1.1	A+	A+
1477	604427	Ge	Ge	1067	.794	.094	.047	.794	.057	.008	.500	-.297	-.237	.500	-.222	-0.480	0.082	-3.8	0.8	-4.7	0.7	A-	A-
1478	604641	Ge	Ge	1067	.370	.135	.377	.370	.090	.028	.199	-.106	-.013	.199	-.069	1.707	0.069	5.5	1.2	5.0	1.2	A-	A+
1479	604765	Ge	Ge	1067	.521	.085	.521	.344	.040	.009	.493	-.097	.493	-.384	-.107	1.010	0.067	-6.7	0.9	-6.0	0.8	A-	A-
1480	604408	Ge	Ge	1064	.396	.396	.181	.337	.073	.012	.423	.423	-.200	-.186	-.102	1.625	0.068	-3.0	0.9	-3.1	0.9	A+	A-
1481	604709	Ge	Ge	1064	.270	.446	.270	.214	.038	.033	.154	-.074	.154	.011	-.093	2.253	0.074	3.6	1.1	4.0	1.2	A-	A+
1482	604448	Ge	Ge	1064	.316	.470	.141	.060	.316	.013	.393	-.086	-.248	-.148	.393	2.029	0.071	-2.8	0.9	-1.7	0.9	A+	A+
1483	604442	Ge	Ge	1064	.533	.039	.187	.533	.207	.035	.415	-.151	-.123	.415	-.256	0.896	0.068	-3.2	0.9	-3.0	0.9	A-	B+
1484	604367	Ge	Ge	1064	.343	.157	.284	.186	.343	.030	.556	-.235	-.161	-.197	.556	1.847	0.070	-6.6	0.8	-5.1	0.8	A-	A-
1485	604730	Ge	Ge	1064	.574	.132	.167	.574	.086	.041	.391	-.103	-.218	.391	-.150	0.671	0.069	-1.6	1.0	-0.8	1.0	A+	A-
1486	604409	Ge	Ge	1064	.511	.079	.198	.193	.511	.019	.357	-.078	-.080	-.249	.357	1.046	0.067	0.8	1.0	1.4	1.1	A-	A-
1487	604464	Ge	Ge	1063	.596	.596	.191	.151	.053	.009	.389	.389	-.180	-.197	-.170	0.649	0.068	-2.3	1.0	-2.3	0.9	C+	A+
1488	604589	Ge	Ge	1063	.228	.228	.192	.477	.064	.040	.421	.421	-.279	-.022	-.119	2.470	0.078	-2.6	0.9	-1.9	0.9	A+	A+
1489	604646	Ge	Ge	1063	.121	.100	.121	.412	.326	.041	.002	.089	.002	-.072	.081	3.317	0.098	2.8	1.2	4.8	1.6	A-	A-
1490	604428	Ge	Ge	1063	.412	.412	.224	.215	.128	.021	.328	.328	-.149	-.112	-.082	1.502	0.067	1.2	1.0	1.6	1.1	A+	B+
1491	605049	Ge	Ge	1063	.687	.085	.097	.687	.095	.037	.480	-.216	-.245	.480	-.202	0.080	0.073	-3.7	0.9	-4.2	0.8	A+	A+
1492	604766	Ge	Ge	1063	.178	.104	.321	.363	.178	.034	.264	-.134	-.072	.004	.264	2.832	0.085	0.7	1.0	1.5	1.1	A+	A-
1493	604601	Ge	Ge	1063	.294	.280	.240	.294	.143	.043	.148	-.025	-.102	.148	.060	2.064	0.073	4.5	1.2	4.3	1.2	A+	A+
1494	604390	Ge	Ge	1063	.214	.214	.204	.379	.142	.061	.213	.213	-.032	-.037	-.064	2.518	0.080	1.6	1.1	4.3	1.3	A-	A-
1495	604762	Ge	Ge	1063	.570	.081	.176	.570	.135	.039	.387	-.094	-.141	.387	-.232	0.689	0.068	-0.6	1.0	-1.0	1.0	A-	A-
1496	604752	Ge	Ge	1063	.342	.205	.307	.342	.091	.055	.178	.047	-.101	.178	-.062	1.779	0.070	5.6	1.2	4.4	1.2	A-	A+
1497	605887	Ge	Ge	1065	.499	.058	.108	.499	.316	.019	.265	-.097	-.117	.265	-.128	1.056	0.067	4.0	1.1	4.0	1.1	A-	A-
1498	605050	Ge	Ge	1065	.578	.234	.092	.578	.068	.029	.397	-.191	-.160	.397	-.192	0.632	0.068	-0.9	1.0	-0.8	1.0	A+	A-
1499	604767	Ge	Ge	1065	.523	.112	.523	.239	.112	.014	.344	-.226	.344	-.123	-.104	0.956	0.067	1.2	1.0	1.4	1.1	A-	C-
1500	604672	Ge	Ge	533	.636	.165	.124	.066	.636	.009	.470	-.185	-.347	-.143	.470	0.431	0.097	-3.1	0.9	-3.1	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1501	604412	Ge	Ge	1065	.424	.245	.424	.247	.064	.021	.346	-.217	.346	-.014	-.215	1.412	0.068	1.8	1.1	0.8	1.0	A-	A+
1502	604471	Ge	Ge	1065	.645	.070	.167	.090	.645	.027	.469	-.145	-.249	-.267	.469	0.291	0.071	-4.6	0.9	-4.2	0.8	A+	A-
1503	604402	Ge	Ge	1065	.324	.158	.324	.317	.180	.021	.373	-.122	.373	-.188	-.053	1.932	0.071	0.3	1.0	1.6	1.1	A-	A-
1504	604602	Ge	Ge	1065	.120	.266	.272	.314	.120	.028	.230	.031	-.121	-.014	.230	3.377	0.100	0.6	1.0	3.2	1.4	A-	A-
1505	604757	Ge	Ge	533	.584	.081	.229	.584	.088	.019	.339	-.099	-.158	.339	-.164	0.668	0.095	0.0	1.0	-0.4	1.0	A-	
1506	604425	Ge	Ge	1065	.803	.803	.060	.057	.069	.011	.447	.447	-.206	-.226	-.230	-0.584	0.083	-2.6	0.9	-3.8	0.7	A+	A-
1507	604710	Ge	Ge	1065	.622	.133	.111	.096	.622	.039	.402	-.137	-.204	-.176	.402	0.379	0.070	-1.2	1.0	-1.3	0.9	A-	A+
1508	604451	Ge	Ge	1065	.404	.227	.404	.211	.111	.047	.459	-.187	.459	-.150	-.156	1.447	0.069	-2.6	0.9	-1.5	1.0	A-	A+
1509	604653	Ge	Ge	1065	.341	.189	.341	.307	.108	.055	.139	-.017	.139	-.050	-.002	1.757	0.071	8.1	1.3	7.0	1.3	A-	A+
1510	604466	Ge	Ge	1063	.456	.209	.241	.456	.048	.046	.373	-.127	-.138	.373	-.120	1.202	0.068	0.2	1.0	0.6	1.0	A+	A+
1511	605882	Ge	Ge	1063	.587	.143	.587	.150	.079	.041	.521	-.209	.521	-.252	-.162	0.563	0.069	-5.4	0.9	-5.1	0.8	A-	A+
1512	604720	Ge	Ge	1063	.353	.165	.353	.181	.249	.053	.190	.021	.190	-.198	.066	1.709	0.071	6.8	1.2	6.3	1.3	A-	A+
1513	605903	Ge	Ge	1063	.457	.120	.277	.457	.085	.062	.341	-.126	-.079	.341	-.149	1.148	0.069	2.6	1.1	2.0	1.1	A-	A-
1514	604439	Ge	Ge	1063	.433	.062	.106	.377	.433	.022	.501	-.162	-.237	-.215	.501	1.379	0.068	-4.8	0.9	-4.2	0.9	A+	A-
1515	604479	Ge	Ge	1063	.535	.136	.150	.130	.535	.050	.458	-.157	-.167	-.189	.458	0.789	0.069	-2.7	0.9	-2.6	0.9	A+	A-
1516	604695	Ge	Ge	1063	.612	.224	.078	.612	.052	.034	.426	-.208	-.203	.426	-.141	0.446	0.070	-2.1	1.0	-2.0	0.9	A-	A-
1517	604379	Ge	Ge	1063	.509	.037	.213	.205	.509	.037	.343	-.135	-.208	-.075	.343	0.958	0.068	0.6	1.0	1.0	1.0	A-	B-
1518	604426	Ge	Ge	1063	.612	.051	.115	.154	.612	.068	.541	-.155	-.241	-.272	.541	0.317	0.072	-5.8	0.8	-5.7	0.8	A+	B-
1519	604435	Ge	Ge	1063	.350	.202	.350	.202	.175	.071	.420	-.028	.420	-.199	-.138	1.678	0.071	-0.7	1.0	0.2	1.0	A+	A-
1520	604655	Ge	Ge	531	.371	.245	.313	.371	.049	.023	.095	.014	.006	.095	-.146	1.690	0.097	6.0	1.2	5.0	1.3	A+	
1521	604581	Ge	Ge	1064	.562	.064	.149	.562	.191	.034	.396	-.169	-.197	.396	-.119	0.732	0.068	-0.6	1.0	-0.4	1.0	A+	A-
1522	604440	Ge	Ge	1064	.601	.070	.107	.160	.601	.014	.406	-.254	-.219	-.200	.406	0.432	0.071	-4.8	0.9	-4.3	0.8	A+	A-
1523	604399	Ge	Ge	1064	.315	.124	.407	.315	.095	.059	.361	-.165	-.142	.361	-.023	1.900	0.072	-0.6	1.0	0.7	1.0	B-	A-
1524	604667	Ge	Ge	1064	.615	.057	.126	.615	.149	.053	.366	-.080	-.231	.366	-.127	0.383	0.071	-0.7	1.0	-0.8	1.0	A-	A+
1525	604748	Ge	Ge	1064	.295	.441	.160	.295	.051	.054	.243	-.037	-.092	.243	-.086	2.023	0.073	3.4	1.1	4.3	1.2	A-	A+
1526	604769	Ge	Ge	1064	.172	.170	.172	.322	.278	.057	-.019	.060	-.019	-.065	.148	2.843	0.087	5.6	1.3	7.4	1.7	A-	C+
1527	604715	Ge	Ge	1064	.591	.116	.591	.157	.084	.053	.485	-.145	.485	-.247	-.175	0.520	0.070	-5.0	0.9	-4.0	0.9	A+	A+
1528	605883	Ge	Ge	1064	.326	.054	.097	.479	.326	.044	.162	-.114	-.154	.094	.162	1.882	0.071	6.4	1.2	5.3	1.2	A-	A+
1529	604663	Ge	Ge	1064	.527	.527	.160	.214	.056	.043	.498	.498	-.124	-.270	-.181	0.870	0.068	-5.8	0.9	-5.7	0.8	B+	A+
1530	604603	Ge	Ge	1064	.139	.139	.196	.454	.134	.076	.140	.140	-.021	.099	-.092	3.079	0.094	2.0	1.1	4.8	1.5	A-	A+
1531	604382	Ge	Ge	1064	.364	.364	.390	.120	.066	.060	.426	.426	-.018	-.293	-.155	1.649	0.070	-1.7	1.0	-1.3	1.0	A+	A+
1532	604359	Ge	Ge	1065	.369	.085	.369	.397	.109	.040	.386	-.047	.386	-.211	-.100	1.641	0.070	0.2	1.0	0.1	1.0	A-	A-
1533	606225	Ge	Ge	1065	.455	.048	.224	.455	.248	.025	.246	-.112	-.175	.246	-.002	1.236	0.067	6.0	1.2	4.8	1.2	A-	A-
1534	604386	Ge	Ge	1065	.670	.670	.174	.092	.049	.015	.470	.470	-.272	-.193	-.181	0.208	0.071	-3.2	0.9	-3.3	0.8	A+	A-
1535	604716	Ge	Ge	1065	.571	.052	.085	.270	.571	.023	.356	-.099	-.179	-.169	.356	0.694	0.068	-0.3	1.0	0.3	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1536	604665	Ge	Ge	1065	.512	.154	.204	.512	.101	.029	.470	-.172	-.229	.470	-.156	0.958	0.067	-3.2	0.9	-3.3	0.9	A-	A-
1537	604669	Ge	Ge	1065	.493	.100	.493	.294	.068	.046	.376	-.061	.376	-.177	-.187	0.999	0.068	0.2	1.0	0.9	1.0	B-	A-
1538	604694	Ge	Ge	1065	.327	.327	.311	.226	.074	.062	.391	.391	.015	-.230	-.181	1.808	0.072	-0.2	1.0	-0.3	1.0	A+	B+
1539	604483	Ge	Ge	1065	.222	.222	.108	.159	.398	.066	.366	.366	-.160	-.119	-.084	2.333	0.080	-2.0	0.9	-1.2	0.9	A-	A-
1540	604713	Ge	Ge	533	.540	.051	.540	.231	.111	.068	.505	-.142	.505	-.271	-.174	0.723	0.098	-3.1	0.9	-2.7	0.9	A+	A+
1541	605884	Ge	Ge	1065	.335	.158	.335	.289	.111	.059	.230	-.026	.230	-.094	-.143	1.644	0.072	3.1	1.1	2.2	1.1	A-	A-
1542	604443	Ge	Ge	1065	.445	.445	.193	.185	.097	.081	.414	.414	-.164	-.142	-.124	1.137	0.069	-0.8	1.0	-1.0	1.0	A+	A+
1543	604460	Ge	Ge	1064	.221	.177	.197	.348	.221	.057	.267	.018	-.094	-.091	.267	2.417	0.080	1.8	1.1	2.5	1.2	A+	A+
1544	604712	Ge	Ge	1064	.440	.419	.440	.055	.082	.005	.493	-.269	.493	-.173	-.234	1.330	0.067	-5.6	0.9	-5.0	0.9	A+	A-
1545	604746	Ge	Ge	1064	.411	.089	.249	.411	.203	.048	.498	-.185	-.140	.498	-.220	1.375	0.068	-5.0	0.9	-4.5	0.9	A-	A+
1546	604363	Ge	Ge	1064	.280	.155	.324	.175	.280	.066	.379	-.105	-.073	-.137	.379	2.031	0.074	-1.0	1.0	-0.1	1.0	A-	A+
1547	604727	Ge	Ge	1064	.562	.168	.142	.102	.562	.026	.438	-.193	-.133	-.225	.438	0.700	0.067	-3.6	0.9	-3.3	0.9	A+	A-
1548	604768	Ge	Ge	1064	.355	.065	.438	.355	.120	.022	.307	-.143	-.131	.307	-.056	1.716	0.069	1.6	1.1	2.1	1.1	A-	A-
1549	604388	Ge	Ge	1064	.608	.079	.608	.181	.100	.032	.399	-.157	.399	-.249	-.079	0.454	0.069	-1.1	1.0	-1.6	0.9	A-	A+
1550	604413	Ge	Ge	532	.438	.167	.438	.103	.231	.060	.346	-.105	.346	-.267	.001	1.207	0.097	1.0	1.0	0.4	1.0	A+	A-
1551	604454	Ge	Ge	1064	.428	.039	.428	.360	.134	.040	.375	-.104	.375	-.203	-.124	1.309	0.068	-0.5	1.0	0.7	1.0	A-	A+
1552	604731	Ge	Ge	1064	.290	.466	.290	.137	.050	.056	.144	.107	.144	-.145	-.125	2.006	0.074	6.1	1.2	5.8	1.3	A+	A-
1553	604714	Ge	Ge	1064	.255	.102	.255	.314	.251	.078	.280	-.132	.280	.009	-.076	2.168	0.077	1.9	1.1	2.7	1.2	A-	A+
1554	604364	Ge	Ge	532	.256	.196	.395	.256	.139	.015	.289	.027	-.186	.289	-.108	2.281	0.107	1.4	1.1	1.1	1.1	A+	
1555	604743	Ge	Ge	532	.692	.692	.194	.056	.049	.009	.371	.371	-.240	-.104	-.163	0.115	0.100	-1.0	1.0	0.0	1.0	A+	
1556	604455	Ge	Ge	1065	.566	.049	.207	.566	.166	.012	.463	-.063	-.235	.463	-.260	0.723	0.067	-4.9	0.9	-4.4	0.9	A-	B-
1557	604728	Ge	Ge	1065	.804	.059	.056	.804	.044	.037	.430	-.199	-.196	.430	-.169	-0.757	0.087	-2.1	0.9	-3.4	0.7	B+	B-
1558	605898	Ge	Ge	1064	.531	.090	.200	.138	.531	.040	.408	-.139	-.138	-.156	.408	0.818	0.067	-1.8	1.0	-1.8	1.0	A+	
1559	604698	Ge	Ge	532	.442	.256	.239	.442	.058	.006	.372	-.195	-.136	.372	-.128	1.329	0.094	0.1	1.0	0.1	1.0	A-	
1560	604741	Ge	Ge	532	.269	.269	.241	.325	.141	.024	.423	.423	-.017	-.187	-.188	2.194	0.106	-1.4	0.9	-1.3	0.9	A-	
1561	604745	Ge	Ge	1065	.425	.061	.105	.368	.425	.040	.436	-.146	-.107	-.205	.436	1.320	0.068	-2.0	1.0	-1.9	0.9	A-	A-
1562	604436	Ge	Ge	532	.579	.064	.203	.579	.139	.015	.427	-.183	-.202	.427	-.182	0.660	0.095	-2.7	0.9	-2.1	0.9	A+	
1563	604381	Ge	Ge	532	.363	.363	.387	.188	.045	.017	.316	.316	-.016	-.202	-.191	1.695	0.098	0.7	1.0	0.9	1.1	A+	
1564	604385	Ge	Ge	1064	.599	.190	.599	.126	.056	.030	.468	-.194	.468	-.192	-.172	0.520	0.068	-3.8	0.9	-3.6	0.9	A-	
1565	604431	Ge	Ge	1065	.409	.312	.409	.161	.081	.038	.354	-.103	.354	-.169	-.053	1.406	0.068	1.4	1.0	1.4	1.1	A-	A+
1566	604369	Ge	Ge	1065	.572	.034	.126	.572	.246	.023	.354	-.128	-.119	.354	-.205	0.664	0.067	0.1	1.0	0.2	1.0	A+	A-
1567	605899	Ge	Ge	1065	.259	.200	.301	.259	.196	.044	.169	.027	-.031	.169	-.069	2.192	0.076	4.7	1.2	4.9	1.3	A-	A+
1568	604702	Ge	Ge	1065	.527	.527	.243	.138	.048	.044	.436	.436	-.184	-.186	-.095	0.820	0.067	-2.1	1.0	-2.5	0.9	A+	A-
1569	605886	Ge	Ge	1065	.556	.067	.140	.556	.208	.030	.441	-.191	-.245	.441	-.148	0.720	0.067	-4.5	0.9	-3.9	0.9	A+	A-
1570	604469	Ge	Ge	532	.145	.145	.199	.421	.158	.077	.375	.375	.061	-.098	-.127	2.995	0.132	-1.0	0.9	0.0	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1571	604419	Ge	Ge	1065	.255	.278	.268	.151	.255	.049	.145	.021	-.074	.022	.145	2.218	0.076	5.0	1.2	6.1	1.4	A+	A+
1572	605885	Ge	Ge	532	.487	.197	.487	.100	.122	.094	.398	-.043	.398	-.195	-.184	0.874	0.098	-0.3	1.0	-0.9	1.0	A-	
1573	604394	Ge	Ge	1065	.318	.177	.214	.238	.318	.054	.421	-.186	-.135	-.090	.421	1.834	0.072	-2.1	0.9	-2.0	0.9	A+	A+
1574	604457	Ge	Ge	1065	.549	.147	.187	.549	.106	.010	.382	-.069	-.255	.382	-.190	0.833	0.066	-1.8	1.0	-1.7	0.9	A-	A+
1575	604377	Ge	Ge	1065	.290	.167	.290	.390	.133	.020	.219	-.001	.219	-.160	-.043	2.040	0.072	2.5	1.1	2.7	1.1	A-	A+
1576	604747	Ge	Ge	533	.328	.328	.257	.263	.135	.017	.376	.376	-.073	-.152	-.202	1.856	0.100	-1.3	0.9	-1.2	0.9	A-	A-
1577	604456	Ge	Ge	533	.557	.353	.557	.030	.056	.004	.422	-.310	.422	-.148	-.137	0.786	0.094	-2.3	0.9	-1.2	1.0	A+	A+
1578	604734	Ge	Ge	1065	.501	.501	.214	.077	.204	.005	.164	.164	-.091	-.103	-.026	1.077	0.066	8.3	1.2	7.0	1.2	A-	B+
1579	604420	Ge	Ge	1065	.439	.439	.325	.093	.132	.011	.273	.273	-.125	-.108	-.093	1.350	0.067	4.0	1.1	3.7	1.1	A-	A-
1580	604387	Ge	Ge	1065	.473	.473	.226	.212	.076	.012	.467	.467	-.201	-.241	-.148	1.186	0.066	-4.6	0.9	-4.1	0.9	A+	A-
1581	604403	Ge	Ge	1065	.403	.101	.329	.403	.130	.038	.412	-.086	-.208	.412	-.138	1.463	0.068	-1.4	1.0	-1.6	1.0	A-	A-
1582	605900	Ge	Ge	533	.351	.167	.268	.351	.191	.023	.229	-.105	-.074	.229	-.022	1.726	0.098	3.6	1.2	4.0	1.2	A-	B-
1583	604406	Ge	Ge	533	.460	.460	.068	.295	.161	.017	.316	.316	-.153	-.098	-.125	1.207	0.094	1.0	1.0	1.2	1.1	A-	A+
1584	604462	Ge	Ge	533	.533	.141	.148	.533	.150	.028	.460	-.077	-.264	.460	-.189	0.828	0.095	-2.3	0.9	-2.4	0.9	A-	C-
1585	604756	Ge	Ge	533	.619	.060	.101	.619	.191	.028	.431	-.074	-.174	.431	-.233	0.408	0.097	-1.5	1.0	-1.8	0.9	B-	A+
1586	604749	Ge	Ge	1065	.488	.027	.410	.056	.488	.018	.504	-.076	-.357	-.154	.504	1.104	0.067	-6.8	0.9	-5.7	0.8	A+	A-
1587	604370	Ge	Ge	533	.433	.103	.433	.240	.178	.045	.421	-.158	.421	-.143	-.093	1.265	0.096	-0.8	1.0	-0.5	1.0	A+	A-
1588	604365	Ge	Ge	1065	.320	.169	.111	.335	.320	.065	.362	-.055	-.105	-.070	.362	1.796	0.071	0.5	1.0	0.8	1.0	A+	A-
1589	604754	Ge	Ge	1065	.208	.208	.238	.327	.181	.047	.309	.309	-.022	-.100	-.076	2.564	0.081	0.8	1.0	1.1	1.1	A-	A-
1590	604421	Ge	Ge	1065	.681	.072	.057	.681	.155	.035	.418	-.135	-.198	.418	-.195	0.084	0.072	-2.3	0.9	-1.8	0.9	A+	A-
1591	604356	Ge	Ge	1065	.482	.482	.212	.178	.056	.071	.449	.449	-.141	-.159	-.159	0.986	0.068	-2.1	1.0	-2.0	0.9	A+	A+
1592	604546	Ge	Ge	533	.342	.197	.268	.342	.109	.084	.316	-.115	-.034	.316	-.045	1.639	0.101	2.2	1.1	2.1	1.1	A-	A+
1593	605901	Ge	Ge	1065	.405	.047	.405	.397	.100	.052	.381	-.122	.381	-.171	-.072	1.424	0.069	0.4	1.0	0.3	1.0	A-	A+
1594	604590	Ge	Ge	1065	.506	.125	.506	.212	.077	.080	.339	-.131	.339	-.081	-.098	0.833	0.069	3.1	1.1	1.4	1.1	A-	A-
1595	604482	Ge	Ge	1062	.420	.051	.143	.308	.420	.024	.293	-.075	-.183	-.140	.293	1.248	0.069	1.1	1.0	0.8	1.0	A-	A-
1596	604380	Ge	Ge	1062	.702	.073	.702	.172	.051	.002	.385	-.140	.385	-.291	-.108	0.063	0.071	-2.7	0.9	-1.9	0.9	A+	A+
1597	604366	Ge	Ge	1062	.299	.299	.282	.261	.118	.041	.307	.307	-.129	-.114	.013	1.980	0.073	1.9	1.1	2.2	1.1	A+	A+
1598	604410	Ge	Ge	1062	.545	.107	.545	.271	.063	.013	.143	-.012	.143	-.060	-.154	0.804	0.067	8.0	1.2	7.6	1.3	A+	A-
1599	604432	Ge	Ge	532	.404	.355	.177	.404	.047	.017	.396	-.216	-.179	.396	-.033	1.535	0.096	-1.2	1.0	-0.2	1.0	A-	
1600	606220	Ge	Ge	532	.453	.098	.333	.453	.092	.024	.226	-.091	-.091	.226	-.070	1.283	0.095	4.0	1.1	4.0	1.2	A-	
1601	604750	Ge	Ge	1062	.706	.026	.706	.170	.084	.014	.432	-.113	.432	-.269	-.192	-0.005	0.073	-3.2	0.9	-3.9	0.8	A+	A-
1602	604661	Ge	Ge	1064	.550	.043	.139	.550	.246	.022	.367	-.109	-.182	.367	-.173	0.800	0.067	-1.0	1.0	-1.1	1.0	A-	
1603	604422	Ge	Ge	532	.305	.526	.085	.068	.305	.017	.421	-.163	-.157	-.148	.421	2.059	0.102	-0.9	1.0	-1.0	0.9	A+	
1604	604429	Ge	Ge	1062	.606	.606	.151	.095	.120	.029	.517	.517	-.196	-.256	-.180	0.479	0.069	-5.7	0.9	-4.8	0.8	A+	A-
1605	604759	Ge	Ge	532	.624	.624	.092	.154	.098	.032	.468	.468	-.208	-.247	-.094	0.435	0.098	-2.7	0.9	-1.7	0.9	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1606	604401	Ge	Ge	532	.374	.141	.337	.374	.096	.053	.361	-.110	-.107	.361	-.098	1.617	0.098	0.7	1.0	1.6	1.1	A+	
1607	604475	Ge	Ge	1062	.489	.148	.275	.489	.057	.031	.383	-.151	-.158	.383	-.097	1.037	0.067	0.6	1.0	1.4	1.1	A-	B-
1608	604591	Ge	Ge	1062	.187	.187	.191	.412	.174	.036	.380	.380	-.054	-.180	-.039	2.702	0.085	-1.0	1.0	-0.1	1.0	A-	A-
1609	604673	Ge	Ge	1062	.557	.199	.099	.557	.103	.042	.427	-.105	-.166	.427	-.230	0.665	0.068	-2.0	1.0	-1.7	0.9	A-	A-
1610	604433	Ge	Ge	1062	.501	.104	.501	.243	.114	.039	.459	-.157	.459	-.215	-.158	0.949	0.068	-3.2	0.9	-2.6	0.9	A+	A+
1611	604407	Ge	Ge	532	.214	.214	.425	.258	.047	.056	.112	.112	.180	-.125	-.102	2.531	0.114	3.7	1.3	4.3	1.4	A+	
1612	605902	Ge	Ge	532	.696	.062	.073	.696	.107	.062	.497	-.138	-.177	.497	-.283	-0.094	0.108	-2.8	0.9	-2.8	0.8	A+	
1613	604447	Ge	Ge	532	.382	.382	.214	.188	.139	.077	.422	.422	-.062	-.124	-.182	1.511	0.099	-0.4	1.0	-0.7	1.0	A+	
1614	606221	Ge	Ge	1062	.332	.246	.332	.195	.184	.044	.238	.006	.238	-.032	-.162	1.791	0.071	4.6	1.2	4.7	1.2	B-	A-
1615	604470	Ge	Ge	1064	.333	.333	.174	.285	.162	.047	.378	.378	-.151	-.143	-.035	1.789	0.070	-0.4	1.0	-0.8	1.0	A+	
1616	605041	Ge	Ge	532	.293	.293	.265	.271	.090	.081	.441	.441	-.162	-.095	-.093	1.988	0.105	-1.2	1.0	-1.3	0.9	B+	
1617	604670	Ge	Ge	1062	.138	.121	.196	.497	.138	.049	.028	.032	-.101	.102	.028	3.122	0.095	4.3	1.3	6.6	1.8	A+	A-
1618	604461	Ge	Ge	530	.381	.162	.406	.381	.047	.004	.124	-.094	-.005	.124	-.077	1.563	0.097	6.7	1.3	6.0	1.4	A-	A+
1619	604373	Ge	Ge	530	.300	.070	.266	.351	.300	.013	.381	-.161	-.247	-.050	.381	1.965	0.103	-1.0	1.0	-0.9	0.9	A+	B-
1620	605043	Ge	Ge	1065	.242	.206	.272	.270	.242	.009	.296	-.046	-.077	-.133	.296	2.363	0.077	1.8	1.1	1.1	1.1	B-	A+
1621	604676	Ge	Ge	530	.291	.243	.336	.291	.106	.025	.204	-.100	-.034	.204	-.058	1.996	0.104	2.9	1.2	4.1	1.3	A-	A-
1622	604633	Ge	Ge	1065	.250	.094	.308	.307	.250	.041	.412	-.093	-.151	-.115	.412	2.254	0.077	-1.7	0.9	-0.7	1.0	A+	A+
1623	606223	Ge	Ge	1062	.477	.127	.165	.477	.215	.016	.471	-.151	-.164	.471	-.230	1.095	0.066	-5.2	0.9	-5.1	0.9	A-	A-
1624	604674	Ge	Ge	530	.383	.383	.115	.266	.221	.015	.440	.440	-.098	-.196	-.171	1.533	0.098	-1.5	0.9	-1.4	0.9	A+	B-
1625	604449	Ge	Ge	1065	.575	.575	.052	.254	.110	.010	.460	.460	-.151	-.314	-.120	0.664	0.067	-4.1	0.9	-3.6	0.9	A+	A+
1626	606222	Ge	Ge	1065	.637	.056	.637	.146	.141	.021	.406	-.086	.406	-.190	-.223	0.322	0.069	-1.8	1.0	-1.9	0.9	A-	A+
1627	604477	Ge	Ge	1065	.677	.025	.075	.677	.201	.022	.481	-.140	-.232	.481	-.259	0.102	0.071	-3.9	0.9	-2.9	0.9	A-	A-
1628	606224	Ge	Ge	1065	.701	.033	.149	.701	.098	.019	.446	-.098	-.273	.446	-.184	-0.020	0.073	-2.7	0.9	-2.7	0.9	A-	A-
1629	604444	Ge	Ge	1065	.458	.102	.162	.232	.458	.046	.454	-.110	-.101	-.239	.454	1.128	0.068	-2.4	0.9	-1.8	0.9	A-	A-
1630	604459	Ge	Ge	1065	.482	.110	.482	.255	.121	.033	.481	-.147	.481	-.250	-.122	1.044	0.067	-3.5	0.9	-3.4	0.9	A+	A-
1631	604677	Ge	Ge	1065	.305	.305	.290	.218	.139	.048	.381	.381	-.119	-.113	-.073	1.907	0.073	0.2	1.0	-0.1	1.0	A+	A+
1632	605042	Ge	Ge	1062	.458	.102	.210	.458	.170	.061	.279	-.031	-.094	.279	-.041	1.081	0.068	4.9	1.1	4.5	1.1	A-	A+
1633	604411	Ge	Ge	1065	.362	.168	.198	.362	.237	.036	.266	-.067	-.157	.266	.007	1.631	0.070	4.4	1.1	4.7	1.2	A-	A+
1634	604398	Ge	Ge	1065	.514	.107	.514	.192	.144	.044	.487	-.094	.487	-.205	-.233	0.855	0.068	-4.1	0.9	-4.0	0.9	A+	A+
1635	604434	Ge	Ge	530	.262	.204	.270	.194	.262	.070	.452	-.135	-.097	-.095	.452	2.082	0.109	-1.4	0.9	-1.1	0.9	A+	A+
1636	604476	Ge	Ge	530	.294	.164	.251	.211	.294	.079	.505	-.154	-.130	-.128	.505	1.865	0.105	-2.9	0.9	-2.6	0.8	B-	A-
1637	604579	Ge	Ge	530	.557	.076	.557	.202	.083	.083	.420	-.085	.420	-.192	-.160	0.471	0.099	-1.1	1.0	-0.8	1.0	A+	A+
1638	604592	Ge	Ge	530	.277	.277	.343	.181	.108	.091	.216	.216	.043	-.106	-.054	1.935	0.107	3.5	1.2	3.4	1.3	A-	A+
1639	604593	Ge	Ge	1065	.614	.108	.614	.146	.068	.065	.407	-.126	.407	-.181	-.176	0.270	0.071	-1.5	1.0	-1.0	1.0	A+	A-
1640	604445	Ge	Ge	535	.566	.170	.566	.165	.088	.011	.323	-.216	.323	-.230	.025	0.739	0.094	0.1	1.0	1.5	1.1	A+	A-

Appendix B: Field Test Item Statistics

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1641	604362	Ge	Ge	535	.267	.224	.344	.155	.267	.009	.203	.025	-.251	.056	.203	2.238	0.105	1.9	1.1	2.6	1.2	A-	A+
1642	605044	Ge	Ge	535	.191	.191	.581	.194	.030	.004	.294	.294	.096	-.326	-.171	2.748	0.117	0.5	1.0	0.1	1.0	A+	A-
1643	604683	Ge	Ge	535	.411	.127	.183	.273	.411	.006	.407	-.154	-.057	-.282	.407	1.489	0.095	-1.6	0.9	-1.3	0.9	A+	B-
1644	604580	Ge	Ge	1070	.612	.148	.612	.127	.102	.011	.332	-.186	.332	-.173	-.073	0.567	0.067	0.2	1.0	0.9	1.0	A+	A-
1645	604415	Ge	Ge	1070	.426	.207	.426	.159	.198	.010	.265	-.090	.265	-.129	-.090	1.438	0.066	3.6	1.1	3.5	1.1	A-	A+
1646	604383	Ge	Ge	535	.862	.019	.026	.862	.088	.006	.305	-.107	-.172	.305	-.191	-1.031	0.132	-0.3	1.0	0.2	1.0	A+	B-
1647	604414	Ge	Ge	535	.639	.639	.043	.194	.118	.006	.546	.546	-.214	-.339	-.225	0.402	0.097	-5.4	0.8	-5.0	0.7	A-	A-
1648	604596	Ge	Ge	1070	.877	.019	.877	.058	.040	.007	.324	-.167	.324	-.154	-.195	-1.125	0.098	-0.9	0.9	-1.2	0.9	B+	A-
1649	604721	Ge	Ge	535	.497	.213	.497	.230	.037	.022	.342	-.138	.342	-.180	-.072	1.037	0.094	1.1	1.0	0.7	1.0	A+	B-
1650	604430	Ge	Ge	535	.421	.060	.322	.187	.421	.011	.403	-.073	-.188	-.186	.403	1.428	0.095	-0.6	1.0	-0.4	1.0	A-	A+
1651	604441	Ge	Ge	1070	.336	.161	.272	.214	.336	.018	.401	-.168	-.034	-.223	.401	1.865	0.069	-1.7	1.0	-0.9	1.0	A-	B-
1652	604682	Ge	Ge	1070	.209	.209	.269	.333	.149	.040	.183	.183	-.033	-.055	-.010	2.567	0.080	2.3	1.1	3.8	1.3	A-	A-
1653	604472	Ge	Ge	535	.254	.254	.234	.335	.151	.026	.205	.205	-.034	-.127	.062	2.288	0.107	2.7	1.2	3.3	1.3	A-	A+
1654	604696	Ge	Ge	535	.594	.594	.150	.187	.039	.030	.270	.270	-.111	-.103	-.081	0.542	0.097	3.3	1.1	2.9	1.2	A-	A-
1655	604458	Ge	Ge	535	.230	.379	.122	.234	.230	.036	.378	-.016	-.077	-.198	.378	2.422	0.110	-0.4	1.0	0.2	1.0	A+	A+
1656	604639	Ge	Ge	1070	.244	.127	.244	.220	.358	.051	.214	-.025	.214	-.048	-.035	2.324	0.076	2.7	1.1	3.9	1.2	A-	A-
1657	604478	Ge	Ge	1070	.694	.064	.694	.153	.064	.025	.446	-.229	.446	-.212	-.170	0.089	0.072	-2.8	0.9	-3.1	0.9	A+	A-
1658	604699	Ge	Ge	1070	.286	.286	.193	.353	.131	.037	.445	.445	-.153	-.106	-.152	2.100	0.073	-2.8	0.9	-2.3	0.9	A-	A-
1659	604384	Ge	Ge	1070	.394	.165	.394	.316	.098	.027	.338	.002	.338	-.178	-.180	1.556	0.067	0.7	1.0	0.9	1.0	A-	A-
1660	604468	Ge	Ge	1070	.551	.066	.146	.551	.201	.036	.460	-.157	-.207	.460	-.212	0.783	0.067	-4.0	0.9	-4.0	0.9	B+	A-
1661	604372	Ge	Ge	1070	.343	.326	.208	.343	.090	.033	.276	-.052	-.152	.276	-.055	1.800	0.069	2.3	1.1	2.9	1.1	A+	A+
1662	604368	Ge	Ge	1067	.274	.160	.274	.393	.136	.038	.113	-.015	.113	-.020	-.016	2.134	0.073	5.0	1.2	4.7	1.2	A-	A-
1663	604761	Ge	Ge	535	.445	.355	.142	.445	.056	.002	.419	-.119	-.311	.419	-.188	1.401	0.092	-2.0	0.9	-2.1	0.9	A-	A+
1664	604737	Ge	Ge	535	.536	.054	.082	.325	.536	.002	.490	-.219	-.190	-.303	.490	0.984	0.092	-5.3	0.9	-5.0	0.8	A+	A-
1665	604640	Ge	Ge	535	.251	.608	.251	.069	.065	.008	.204	-.102	.204	-.087	-.056	2.371	0.105	1.5	1.1	2.1	1.2	A-	A+
1666	604717	Ge	Ge	1067	.642	.100	.642	.207	.023	.028	.468	-.183	.468	-.247	-.149	0.360	0.069	-3.9	0.9	-3.8	0.9	A+	A-
1667	604733	Ge	Ge	1067	.473	.099	.307	.473	.095	.026	.258	-.092	-.104	.258	-.137	1.156	0.066	2.7	1.1	3.7	1.1	A-	A-
1668	604599	Ge	Ge	535	.843	.032	.086	.843	.039	.000	.337	-.169	-.202	.337	-.187	-0.704	0.123	-0.8	0.9	-1.7	0.8	B+	B-
1669	604719	Ge	Ge	535	.544	.054	.150	.544	.230	.022	.318	-.136	-.159	.318	-.103	0.902	0.093	1.1	1.0	0.9	1.0	A-	A+
1670	604374	Ge	Ge	1067	.310	.370	.147	.310	.157	.016	.249	-.104	-.182	.249	.069	1.977	0.070	2.2	1.1	2.2	1.1	A-	A+
1671	605046	Ge	Ge	1067	.509	.200	.105	.177	.509	.009	.462	-.240	-.160	-.189	.462	1.045	0.065	-6.2	0.9	-5.5	0.9	A+	A-
1672	604463	Ge	Ge	535	.626	.051	.107	.626	.196	.021	.293	-.153	-.032	.293	-.168	0.517	0.096	1.1	1.0	1.4	1.1	B+	A+
1673	604736	Ge	Ge	535	.365	.105	.351	.365	.153	.026	.417	-.127	-.172	.417	-.111	1.742	0.096	-2.2	0.9	-1.2	1.0	A-	A+
1674	604701	Ge	Ge	535	.161	.198	.286	.312	.161	.043	.172	-.014	.008	-.025	.172	2.941	0.123	0.9	1.1	1.8	1.2	A-	A-
1675	604355	Ge	Ge	535	.587	.587	.135	.204	.049	.026	.308	.308	-.157	-.076	-.142	0.695	0.095	1.2	1.0	1.6	1.1	A+	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1676	604416	Ge	Ge	1067	.609	.241	.609	.091	.037	.023	.354	-.148	.354	-.201	-.133	0.542	0.067	-0.6	1.0	-1.3	1.0	B-	A-
1677	604738	Ge	Ge	1067	.352	.075	.330	.187	.352	.056	.276	-.119	.025	-.112	.276	1.692	0.069	2.6	1.1	2.6	1.1	A+	A-
1678	605045	Ge	Ge	535	.256	.256	.258	.280	.155	.051	.290	.290	-.002	-.130	-.056	2.267	0.105	0.3	1.0	1.2	1.1	A+	A+
1679	604668	Ge	Ge	535	.402	.232	.200	.120	.402	.047	.426	-.058	-.225	-.141	.426	1.509	0.095	-2.0	0.9	-1.7	0.9	A-	A-
1680	604662	Ge	Ge	1067	.350	.157	.350	.126	.191	.057	.318	-.127	.318	-.141	-.060	1.420	0.072	-1.3	1.0	-1.0	1.0	A+	A+
1681	604679	Ge	Ge	1067	.147	.518	.183	.120	.147	.032	.037	.069	.006	-.076	.037	3.013	0.090	2.7	1.2	4.5	1.4	A+	A-
1682	604473	Ge	Ge	1067	.320	.481	.098	.320	.041	.060	.374	-.042	-.187	.374	-.141	1.852	0.070	-1.1	1.0	-0.4	1.0	A+	B+
1683	604739	Ge	Ge	1067	.366	.080	.366	.369	.128	.057	.364	-.071	.364	-.081	-.146	1.619	0.069	-0.4	1.0	0.5	1.0	A-	A-
1684	604691	Ge	Ge	532	.656	.656	.167	.109	.060	.008	.254	.254	-.105	-.184	-.032	0.306	0.097	0.9	1.0	1.1	1.1	A-	
1685	604376	Ge	Ge	532	.368	.056	.368	.391	.124	.004	.143	-.038	.143	-.082	-.145	1.517	0.097	2.4	1.1	2.2	1.1	A-	
1686	604404	Ge	Ge	532	.115	.479	.280	.120	.115	.006	.273	-.024	-.023	-.168	.273	3.314	0.141	-0.4	1.0	0.4	1.1	C-	
1687	604357	Ge	Ge	532	.451	.271	.451	.175	.070	.034	.317	-.186	.317	-.042	-.011	1.203	0.094	1.1	1.0	1.0	1.0	A-	
1688	604547	Ge	Ge	532	.466	.139	.235	.466	.117	.043	.274	-.115	-.077	.274	-.094	1.129	0.097	4.5	1.2	3.9	1.2	A-	
1689	604548	Ge	Ge	1064	.479	.069	.253	.479	.137	.062	.419	-.118	-.152	.419	-.154	1.051	0.068	-0.7	1.0	-0.8	1.0	A-	A-
1690	604604	Ge	Ge	1065	.310	.082	.287	.286	.310	.035	.399	-.133	-.046	-.218	.399	1.966	0.072	-1.2	1.0	-1.0	1.0	A+	A+
1691	604605	Ge	Ge	1064	.102	.321	.217	.312	.102	.047	.118	.003	-.112	.087	.118	3.482	0.106	1.6	1.1	3.3	1.4	A-	A+
1692	604732	Ge	Ge	1065	.153	.508	.120	.135	.153	.084	.164	.023	-.088	.063	.164	2.893	0.091	2.4	1.1	3.8	1.4	A-	A+
1693	604735	Ge	Ge	533	.550	.550	.175	.084	.184	.008	.396	.396	-.110	-.181	-.232	0.810	0.094	-1.8	1.0	-1.4	0.9	C-	A-
1694	603086	A2	A2	963	.146	.648	.056	.099	.146	.051	.166	.109	-.118	-.142	.166	3.205	0.098	2.2	1.1	4.1	1.5	A+	
1695	603043	A2	A2	962	.577	.078	.162	.577	.152	.031	.351	-.087	-.194	.351	-.167	0.815	0.072	-0.4	1.0	-0.1	1.0	A-	A+
1696	603000	A2	A2	480	.483	.204	.483	.131	.163	.019	.443	-.152	.443	-.205	-.200	1.293	0.100	-2.5	0.9	-2.3	0.9	A-	
1697	603018	A2	A2	964	.729	.729	.117	.085	.041	.028	.466	.466	-.232	-.208	-.148	0.058	0.080	-3.2	0.9	-3.6	0.7	A+	A-
1698	603098	A2	A2	960	.281	.230	.314	.158	.281	.017	.379	-.145	-.233	.037	.379	2.370	0.077	-0.5	1.0	-0.2	1.0	A-	
1699	603042	A2	A2	960	.718	.034	.138	.718	.085	.025	.325	-.123	-.156	.325	-.186	0.111	0.078	-0.2	1.0	-0.8	0.9	A+	A+
1700	603094	A2	A2	960	.804	.041	.804	.078	.044	.033	.392	-.120	.392	-.249	-.151	-0.562	0.092	-1.0	0.9	-1.9	0.8	A+	A-
1701	603038	A2	A2	1440	.553	.553	.282	.083	.065	.017	.432	.432	-.217	-.195	-.173	0.998	0.058	-4.0	0.9	-2.7	0.9	A-	A+
1702	603047	A2	A2	1444	.433	.085	.240	.433	.234	.008	.473	-.150	-.297	.473	-.124	1.595	0.059	-4.5	0.9	-3.8	0.9	A-	A+
1703	603051	A2	A2	964	.492	.492	.048	.174	.270	.017	.428	.428	.021	-.216	-.277	1.247	0.071	-2.1	1.0	-1.4	0.9	A+	A-
1704	603064	A2	A2	960	.312	.045	.312	.115	.502	.027	.458	-.097	.458	-.135	-.264	2.157	0.076	-2.0	0.9	-0.7	1.0	A-	A+
1705	603083	A2	A2	960	.208	.279	.349	.208	.109	.054	.075	.102	-.047	.075	-.091	2.763	0.087	5.6	1.3	7.0	1.6	A-	A+
1706	603050	A2	A2	960	.597	.069	.597	.159	.141	.034	.447	-.161	.447	-.253	-.202	0.698	0.073	-4.8	0.9	-3.7	0.8	B+	A-
1707	603067	A2	A2	963	.486	.130	.486	.159	.206	.020	.382	-.193	.382	-.146	-.122	1.346	0.071	0.9	1.0	0.3	1.0	A+	A-
1708	603095	A2	A2	963	.869	.040	.070	.020	.869	.002	.300	-.118	-.224	-.125	.300	-0.884	0.101	-0.6	1.0	-1.8	0.8	A-	C-
1709	603084	A2	A2	963	.121	.121	.425	.119	.292	.044	.350	.350	-.104	-.053	-.053	3.700	0.110	-0.2	1.0	0.4	1.0	A-	A-
1710	603112	A2	A2	962	.826	.060	.039	.826	.054	.021	.347	-.192	-.140	.347	-.126	-0.666	0.094	-1.2	0.9	-1.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1711	603065	A2	A2	1440	.485	.163	.173	.485	.133	.047	.443	-.230	-.118	.443	-.137	1.261	0.059	-2.9	0.9	-2.5	0.9	A+	B-
1712	603074	A2	A2	962	.614	.035	.163	.614	.161	.026	.511	-.124	-.254	.511	-.262	0.648	0.073	-5.3	0.9	-4.5	0.8	A+	
1713	603085	A2	A2	962	.367	.075	.232	.367	.258	.069	.425	-.133	-.142	.425	-.140	1.815	0.075	-2.1	0.9	-1.8	0.9	A-	
1714	603075	A2	A2	962	.342	.209	.229	.174	.342	.047	.494	-.189	-.127	-.135	.494	1.906	0.075	-4.4	0.9	-3.6	0.8	A-	A-
1715	603070	A2	A2	1442	.514	.514	.233	.132	.092	.029	.495	.495	-.165	-.257	-.197	1.123	0.058	-6.3	0.9	-5.2	0.8	A-	A-
1716	603071	A2	A2	963	.437	.437	.130	.372	.043	.019	.518	.518	-.202	-.276	-.141	1.478	0.071	-5.9	0.9	-5.6	0.8	A-	
1717	603127	A2	A2	481	.187	.187	.349	.312	.096	.056	.364	.364	.125	-.267	-.130	2.833	0.126	-0.2	1.0	-0.5	0.9	A+	
1718	603087	A2	A2	962	.442	.152	.442	.174	.167	.066	.355	-.192	.355	-.139	-.053	1.383	0.072	0.6	1.0	0.0	1.0	A-	A+
1719	603088	A2	A2	482	.504	.147	.504	.201	.141	.006	.317	-.135	.317	-.172	-.107	1.171	0.099	0.6	1.0	1.2	1.1	B+	
1720	603120	A2	A2	963	.677	.064	.118	.108	.677	.032	.423	-.133	-.185	-.192	.423	0.392	0.076	-2.2	0.9	-2.9	0.8	A+	A-
1721	603063	A2	A2	963	.493	.133	.195	.493	.157	.022	.431	-.198	-.225	.431	-.099	1.360	0.071	-2.9	0.9	-2.9	0.9	A+	A+
1722	603116	A2	A2	963	.357	.357	.163	.191	.232	.057	.443	.443	-.186	-.110	-.098	1.954	0.075	-1.2	1.0	-1.5	0.9	A+	B-
1723	603096	A2	A2	963	.247	.178	.247	.216	.262	.098	.265	.031	.265	-.162	.030	2.533	0.084	3.5	1.2	3.8	1.3	A+	A-
1724	603082	A2	A2	964	.441	.132	.193	.441	.206	.028	.435	-.130	-.148	.435	-.200	1.550	0.072	-2.6	0.9	-2.2	0.9	A-	A+
1725	603041	A2	A2	964	.260	.146	.132	.435	.260	.027	.485	-.186	-.027	-.209	.485	2.553	0.081	-2.1	0.9	-2.0	0.9	A+	B-
1726	603117	A2	A2	964	.404	.164	.182	.176	.404	.075	.508	-.067	-.221	-.194	.508	1.630	0.074	-5.6	0.9	-4.6	0.8	A+	A-
1727	603052	A2	A2	961	.497	.056	.084	.341	.497	.021	.377	-.111	-.136	-.203	.377	1.270	0.071	1.0	1.0	0.0	1.0	A+	A-
1728	603099	A2	A2	961	.798	.050	.798	.084	.027	.041	.453	-.176	.453	-.227	-.140	-0.527	0.092	-2.6	0.9	-3.5	0.7	B+	A-
1729	603039	A2	A2	961	.339	.189	.247	.339	.161	.064	.183	.023	-.003	.183	-.073	1.978	0.076	8.3	1.3	7.6	1.4	A-	A-
1730	603101	A2	A2	964	.445	.445	.213	.163	.162	.018	.453	.453	-.133	-.217	-.177	1.583	0.071	-2.2	0.9	-2.5	0.9	A+	A+
1731	603019	A2	A2	958	.545	.153	.157	.132	.545	.014	.433	-.081	-.246	-.242	.433	1.081	0.071	-3.4	0.9	-2.3	0.9	A-	A-
1732	603053	A2	A2	964	.258	.258	.404	.060	.268	.010	.447	.447	-.330	-.138	.028	2.616	0.081	-1.4	0.9	-0.7	1.0	A-	A-
1733	603020	A2	A2	964	.590	.590	.125	.137	.114	.034	.481	.481	-.227	-.232	-.092	0.824	0.072	-4.7	0.9	-2.0	0.9	A+	A-
1734	603048	A2	A2	964	.341	.341	.110	.090	.396	.062	.460	.460	-.214	-.173	-.085	2.015	0.076	-1.2	1.0	-0.6	1.0	A-	A-
1735	603072	A2	A2	484	.337	.337	.362	.128	.161	.012	.521	.521	-.174	-.189	-.243	2.156	0.106	-3.2	0.9	-2.4	0.9	A-	A-
1736	603045	A2	A2	484	.632	.632	.207	.087	.068	.006	.466	.466	-.260	-.205	-.225	0.705	0.102	-3.9	0.9	-3.1	0.8	A+	A+
1737	603111	A2	A2	484	.205	.205	.322	.236	.198	.039	.370	.370	-.122	-.096	-.100	2.921	0.125	0.0	1.0	0.7	1.1	A+	A-
1738	603066	A2	A2	966	.288	.288	.068	.152	.465	.027	.595	.595	-.121	-.076	-.350	2.349	0.078	-6.3	0.8	-6.3	0.7	A-	A+
1739	603073	A2	A2	966	.461	.083	.306	.461	.116	.034	.399	-.112	-.194	.399	-.108	1.440	0.071	-0.4	1.0	-0.7	1.0	A-	A-
1740	603049	A2	A2	484	.322	.322	.252	.165	.192	.068	.567	.567	-.100	-.212	-.243	2.100	0.109	-3.9	0.8	-3.6	0.8	A-	A+
1741	603100	A2	A2	964	.566	.087	.566	.080	.247	.020	.423	-.138	.423	-.218	-.189	0.959	0.070	-3.1	0.9	-3.1	0.9	A-	
1742	603076	A2	A2	964	.331	.163	.156	.331	.301	.050	.319	-.043	-.042	.319	-.157	2.033	0.074	1.4	1.0	1.5	1.1	A+	
1743	603089	A2	A2	964	.197	.102	.547	.113	.197	.042	.504	-.143	-.154	-.117	.504	2.874	0.087	-3.4	0.8	-3.0	0.8	A-	
1744	603097	A2	A2	964	.577	.106	.577	.122	.148	.047	.412	-.188	.412	-.127	-.158	0.831	0.071	-2.6	0.9	-2.5	0.9	A-	
1745	603046	A2	A2	482	.535	.095	.129	.170	.535	.071	.457	-.118	-.211	-.215	.457	0.927	0.101	-3.9	0.9	-2.9	0.8	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1746	602999	A2	A2	962	.194	.278	.329	.149	.194	.051	.482	-.128	-.079	-.197	.482	2.888	0.089	-2.3	0.9	-1.8	0.9	A+	
1747	603118	A2	A2	962	.283	.283	.246	.246	.197	.028	.374	.374	-.143	-.087	-.112	2.339	0.078	0.5	1.0	0.3	1.0	A+	
1748	603077	A2	A2	482	.145	.259	.299	.257	.145	.039	.298	-.069	-.092	-.012	.298	3.308	0.138	0.0	1.0	0.1	1.0	A-	
1749	603121	A2	A2	482	.355	.079	.154	.369	.355	.044	.448	-.081	-.146	-.186	.448	1.933	0.104	-1.8	0.9	-1.4	0.9	A-	
1750	603102	A2	A2	482	.483	.483	.230	.168	.058	.060	.436	.436	-.057	-.291	-.076	1.260	0.101	-1.6	1.0	-1.7	0.9	A+	
1751	603103	A2	A2	480	.506	.027	.135	.323	.506	.008	.418	-.049	-.189	-.272	.418	1.214	0.099	-1.8	0.9	-1.6	0.9	A+	
1752	603023	A2	A2	960	.376	.194	.376	.201	.185	.044	.356	-.097	.356	-.175	-.115	1.807	0.074	1.7	1.1	1.8	1.1	A+	A-
1753	603119	A2	A2	960	.185	.241	.317	.224	.185	.033	.315	-.030	-.032	-.174	.315	3.036	0.092	1.8	1.1	2.9	1.3	A-	A+
1754	603104	A2	A2	960	.459	.124	.223	.190	.459	.004	.502	-.268	-.166	-.217	.502	1.492	0.071	-4.7	0.9	-3.7	0.9	A+	A-
1755	603040	A2	A2	958	.656	.113	.656	.075	.149	.007	.435	-.144	.435	-.193	-.290	0.554	0.073	-3.5	0.9	-2.3	0.9	A-	A-
1756	603105	A2	A2	958	.255	.255	.341	.281	.105	.018	.469	.469	-.109	-.246	-.080	2.579	0.081	-2.0	0.9	-1.8	0.9	A+	A-
1757	603024	A2	A2	958	.264	.264	.298	.258	.157	.024	.423	.423	-.128	-.167	-.098	2.505	0.080	-1.2	1.0	0.1	1.0	A+	A+
1758	603062	A2	A2	958	.224	.399	.261	.224	.090	.026	.379	-.155	-.121	.379	-.032	2.752	0.084	0.0	1.0	0.0	1.0	A+	A+
1759	604700	A2	A2	961	.533	.533	.071	.306	.055	.035	.325	.325	-.167	-.086	-.138	1.057	0.072	2.4	1.1	4.3	1.2	A-	B-
1760	603013	A2	A2	966	.619	.063	.619	.227	.082	.009	.421	-.147	.421	-.254	-.163	0.751	0.071	-3.9	0.9	-1.9	0.9	B-	A-
1761	604570	A2	A2	482	.531	.531	.077	.214	.137	.042	.396	.396	-.161	-.157	-.087	1.074	0.100	-0.7	1.0	0.7	1.0	A-	
1762	604625	A2	A2	958	.573	.573	.161	.184	.072	.010	.449	.449	-.243	-.203	-.177	0.950	0.071	-3.1	0.9	-2.1	0.9	A-	A+
1763	604530	A2	A2	962	.393	.393	.226	.197	.157	.028	.476	.476	-.170	-.183	-.147	1.727	0.072	-3.6	0.9	-3.0	0.9	B+	A-
1764	604686	A2	A2	478	.333	.153	.297	.333	.151	.067	.332	-.074	-.116	.332	-.052	1.992	0.106	1.3	1.1	1.8	1.1	A-	
1765	603037	A2	A2	964	.510	.189	.104	.183	.510	.015	.457	-.147	-.203	-.222	.457	1.276	0.071	-4.0	0.9	-3.3	0.9	A-	C+
1766	604572	A2	A2	484	.628	.155	.628	.099	.054	.064	.384	-.191	.384	-.126	-.133	0.511	0.107	-0.6	1.0	0.5	1.0	A-	A+
1767	604537	A2	A2	964	.569	.165	.569	.163	.046	.058	.414	-.168	.414	-.147	-.137	0.852	0.073	-1.1	1.0	0.5	1.0	A+	B-
1768	604685	A2	A2	480	.500	.119	.150	.500	.223	.008	.320	-.186	-.217	.320	-.043	1.323	0.100	3.2	1.1	2.2	1.1	A-	A+
1769	604539	A2	A2	958	.310	.411	.310	.190	.071	.018	.387	-.134	.387	-.195	-.078	2.240	0.076	0.5	1.0	0.8	1.0	C-	A+
1770	604540	A2	A2	963	.299	.299	.290	.233	.102	.077	.464	.464	-.086	-.168	-.116	2.238	0.079	-2.2	0.9	-1.1	0.9	A+	A-
1771	604703	A2	A2	480	.904	.904	.046	.031	.017	.002	.257	.257	-.143	-.154	-.132	-1.193	0.160	-0.3	1.0	0.3	1.0	A+	A-
1772	604629	A2	A2	964	.403	.403	.152	.240	.142	.064	.485	.485	-.153	-.191	-.121	1.658	0.074	-4.3	0.9	-3.5	0.9	A+	A-
1773	603003	A2	A2	484	.349	.176	.271	.349	.182	.023	.439	-.121	-.208	.439	-.114	2.057	0.105	-0.8	1.0	0.6	1.0	A+	A+
1774	604550	A2	A2	961	.459	.074	.204	.459	.240	.023	.316	-.121	-.111	.316	-.125	1.452	0.071	3.1	1.1	2.7	1.1	A+	A-
1775	604544	A2	A2	482	.324	.143	.440	.324	.050	.044	.398	-.071	-.191	.398	-.108	2.059	0.105	-0.9	1.0	-1.0	0.9	B-	
1776	604627	A2	A2	963	.342	.291	.177	.181	.342	.010	.293	-.039	-.207	-.092	.293	2.099	0.075	2.7	1.1	2.8	1.1	A-	A+
1777	604626	A2	A2	964	.217	.483	.112	.174	.217	.014	.390	-.181	-.193	-.006	.390	2.792	0.086	-0.6	1.0	0.2	1.0	A+	A-
1778	604552	A2	A2	964	.525	.139	.144	.525	.175	.017	.335	.041	-.242	.335	-.211	1.085	0.071	1.4	1.0	0.2	1.0	A+	A-
1779	604619	A2	A2	964	.231	.084	.231	.230	.441	.014	.281	-.129	.281	-.147	-.017	2.696	0.084	2.0	1.1	3.4	1.3	A-	A+
1780	604578	A2	A2	964	.327	.074	.327	.381	.186	.033	.461	-.119	.461	-.220	-.161	2.063	0.077	-2.6	0.9	-1.7	0.9	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1781	604654	A2	A2	964	.191	.238	.306	.246	.191	.020	.236	.005	.001	-.189	.236	2.986	0.091	2.4	1.1	3.3	1.3	A+	A-
1782	604607	A2	A2	960	.731	.098	.056	.107	.731	.007	.354	-.081	-.195	-.243	.354	0.080	0.078	-1.7	0.9	0.1	1.0	A+	A-
1783	604568	A2	A2	960	.579	.579	.084	.164	.129	.044	.524	.524	-.194	-.274	-.184	0.763	0.073	-6.3	0.8	-4.5	0.8	A+	A-
1784	603004	A2	A2	960	.243	.243	.333	.257	.117	.050	.418	.418	-.063	-.196	-.111	2.539	0.083	-1.4	0.9	-0.1	1.0	A+	A+
1785	604660	A2	A2	964	.402	.183	.402	.243	.130	.044	.457	-.249	.457	-.143	-.120	1.637	0.074	-2.9	0.9	-2.5	0.9	A+	A+
1786	604582	A2	A2	963	.345	.345	.137	.347	.159	.013	.448	.448	-.171	-.165	-.173	2.083	0.075	-2.5	0.9	-2.4	0.9	A-	A-
1787	604621	A2	A2	963	.680	.080	.680	.102	.132	.006	.255	-.048	.255	-.140	-.157	0.404	0.075	1.6	1.1	2.1	1.1	A+	A-
1788	604614	A2	A2	963	.407	.327	.407	.145	.108	.013	.379	-.180	.379	-.173	-.096	1.753	0.073	-0.1	1.0	-0.8	1.0	B-	A-
1789	604556	A2	A2	963	.514	.151	.257	.514	.058	.021	.402	-.128	-.236	.402	-.096	1.208	0.071	-2.1	1.0	-0.5	1.0	A+	A-
1790	603005	A2	A2	963	.118	.561	.118	.137	.152	.032	.175	.056	.175	-.077	-.132	3.720	0.110	2.5	1.2	4.8	1.8	A-	A+
1791	604609	A2	A2	963	.638	.638	.189	.128	.034	.011	.486	.486	-.258	-.253	-.162	0.609	0.073	-5.4	0.9	-4.5	0.8	A+	B-
1792	604656	A2	A2	962	.364	.126	.248	.364	.227	.035	.174	.036	-.133	.174	-.024	1.889	0.075	6.4	1.2	7.0	1.4	A+	
1793	604664	A2	A2	962	.539	.169	.096	.539	.183	.014	.415	-.180	-.171	.415	-.183	1.072	0.071	-2.6	0.9	-2.5	0.9	A-	
1794	603001	A2	A2	962	.381	.105	.282	.381	.204	.029	.382	-.151	-.240	.382	-.008	1.815	0.074	-0.2	1.0	0.1	1.0	A-	
1795	603010	A2	A2	962	.202	.202	.195	.293	.241	.069	.387	.387	-.129	.006	-.140	2.843	0.089	-0.6	1.0	0.1	1.0	A-	
1796	604657	A2	A2	962	.296	.246	.286	.296	.124	.048	.190	-.126	-.048	.190	.074	2.147	0.078	4.7	1.2	4.4	1.3	A+	A-
1797	603011	A2	A2	962	.277	.277	.188	.260	.207	.069	.244	.244	-.059	-.058	-.047	2.213	0.079	2.7	1.1	3.7	1.2	A-	A-
1798	604558	A2	A2	962	.278	.411	.147	.278	.129	.036	.081	.096	-.146	.081	.026	2.286	0.079	7.0	1.3	7.2	1.5	A+	A+
1799	604632	A2	A2	962	.356	.113	.229	.232	.356	.071	.428	-.128	-.116	-.161	.428	1.768	0.075	-2.4	0.9	-1.4	0.9	A+	A+
1800	604610	A2	A2	962	.730	.053	.730	.129	.063	.025	.469	-.139	.469	-.296	-.171	-0.046	0.080	-3.2	0.9	-3.4	0.8	A+	B-
1801	604622	A2	A2	962	.629	.049	.159	.629	.107	.056	.358	-.121	-.087	.358	-.200	0.408	0.075	0.4	1.0	0.9	1.1	A+	B-
1802	604666	A2	A2	962	.519	.113	.519	.075	.250	.044	.380	-.188	.380	-.137	-.096	1.019	0.072	-0.2	1.0	-0.3	1.0	A+	A+
1803	604615	A2	A2	962	.214	.162	.329	.232	.214	.063	.361	-.119	-.056	-.055	.361	2.645	0.086	-0.4	1.0	-0.1	1.0	A-	A+
1804	604553	A2	A2	963	.393	.172	.283	.142	.393	.010	.423	-.136	-.180	-.175	.423	1.708	0.072	-2.3	0.9	-2.3	0.9	A+	
1805	603014	A2	A2	963	.415	.271	.171	.415	.095	.048	.422	-.214	-.168	.422	-.063	1.513	0.072	-1.7	1.0	-1.7	0.9	A+	
1806	603002	A2	A2	963	.422	.157	.160	.234	.422	.028	.480	-.145	-.171	-.212	.480	1.531	0.071	-4.7	0.9	-4.4	0.9	A+	
1807	604616	A2	A2	963	.603	.603	.200	.105	.062	.029	.447	.447	-.190	-.216	-.174	0.650	0.072	-3.5	0.9	-2.3	0.9	A-	
1808	604623	A2	A2	963	.903	.035	.903	.038	.014	.009	.267	-.112	.267	-.168	-.113	-1.377	0.117	-0.1	1.0	-1.2	0.8	A+	
1809	604678	A2	A2	963	.202	.224	.185	.375	.202	.015	.295	-.144	-.169	.047	.295	2.807	0.087	0.7	1.0	1.8	1.1	A+	
1810	604576	A2	A2	963	.419	.419	.182	.217	.164	.019	.417	.417	-.200	-.192	-.066	1.566	0.071	-2.6	0.9	-2.1	0.9	A-	
1811	604706	A2	A2	963	.388	.117	.430	.388	.046	.019	.257	-.201	-.047	.257	-.073	1.711	0.072	4.1	1.1	3.9	1.2	A-	
1812	604635	A2	A2	963	.216	.216	.090	.586	.087	.021	.307	.307	-.127	-.070	-.125	2.693	0.085	1.2	1.1	1.7	1.1	A-	
1813	603015	A2	A2	963	.559	.088	.559	.166	.118	.069	.248	-.026	.248	-.143	-.066	0.734	0.073	2.9	1.1	1.8	1.1	A+	
1814	604577	A2	A2	962	.208	.306	.192	.271	.208	.023	.348	-.086	-.136	-.091	.348	2.818	0.087	0.2	1.0	0.1	1.0	A+	A+
1815	603016	A2	A2	962	.398	.208	.398	.243	.107	.044	.444	-.170	.444	-.162	-.131	1.658	0.073	-2.5	0.9	-2.2	0.9	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1816	603031	A2	A2	962	.212	.084	.366	.290	.212	.048	.370	-.072	-.116	-.079	.370	2.754	0.087	-0.3	1.0	1.7	1.1	A+	A-
1817	604681	A2	A2	962	.377	.377	.287	.138	.172	.026	.358	.358	-.002	-.187	-.199	1.807	0.073	1.4	1.0	1.5	1.1	A+	C+
1818	604650	A2	A2	962	.259	.264	.291	.259	.152	.034	.290	-.174	.004	.290	-.039	2.457	0.081	2.4	1.1	3.2	1.2	A-	A+
1819	603025	A2	A2	962	.569	.194	.569	.130	.071	.036	.428	-.121	.428	-.241	-.163	0.847	0.072	-2.1	1.0	-1.2	1.0	A+	A-
1820	604624	A2	A2	962	.728	.097	.061	.728	.052	.062	.433	-.229	-.205	.433	-.128	-0.156	0.084	-2.5	0.9	-2.5	0.8	A+	A-
1821	604569	A2	A2	963	.263	.283	.346	.263	.076	.033	.185	.137	-.150	.185	-.112	2.557	0.081	5.2	1.2	6.2	1.4	A-	A+
1822	603026	A2	A2	963	.378	.188	.378	.277	.110	.047	.356	.021	.356	-.206	-.122	1.868	0.074	1.5	1.1	1.6	1.1	A+	A-
1823	604697	A2	A2	963	.479	.118	.479	.267	.094	.043	.393	-.119	.393	-.188	-.084	1.367	0.072	-0.1	1.0	0.0	1.0	A-	A-
1824	604704	A2	A2	480	.585	.129	.142	.585	.106	.038	.367	-.144	-.143	.367	-.116	0.813	0.102	0.4	1.0	1.1	1.1	A-	A-
1825	603032	A2	A2	963	.409	.142	.296	.409	.088	.064	.323	-.053	-.185	.323	-.044	1.668	0.073	2.7	1.1	1.9	1.1	A+	A+
1826	604532	A2	A2	963	.354	.229	.354	.128	.239	.051	.430	-.111	.430	-.166	-.117	1.988	0.075	-0.7	1.0	-0.1	1.0	A+	A-
1827	603027	A2	A2	964	.767	.049	.767	.089	.056	.039	.433	-.153	.433	-.215	-.199	-0.259	0.087	-2.4	0.9	-3.2	0.7	A-	A-
1828	604705	A2	A2	964	.183	.108	.183	.253	.395	.061	.246	-.129	.246	-.119	.086	3.060	0.093	2.6	1.2	3.5	1.3	A+	A+
1829	603033	A2	A2	964	.143	.139	.380	.254	.143	.084	.363	-.005	-.089	-.033	.363	3.375	0.102	0.1	1.0	1.5	1.2	A+	B+
1830	604651	A2	A2	964	.299	.155	.230	.227	.299	.089	.472	-.099	-.142	-.137	.472	2.191	0.079	-2.5	0.9	-2.1	0.9	A+	A-
1831	603017	A2	A2	483	.313	.139	.313	.375	.073	.101	.339	-.082	.339	-.041	-.114	2.155	0.111	1.6	1.1	1.3	1.1	A+	A+
1832	604574	A2	A2	964	.313	.143	.313	.241	.226	.077	.366	-.009	.366	-.190	-.050	2.124	0.078	1.6	1.1	1.6	1.1	A+	A-
1833	603021	A2	A2	961	.408	.408	.267	.164	.115	.046	.468	.468	-.228	-.171	-.051	1.649	0.073	-3.5	0.9	-2.6	0.9	A-	A-
1834	604652	A2	A2	961	.353	.330	.154	.353	.132	.031	.320	-.059	-.177	.320	-.047	1.973	0.075	3.5	1.1	3.3	1.2	A-	A-
1835	604575	A2	A2	961	.309	.179	.182	.284	.309	.046	.511	-.093	-.173	-.174	.511	2.190	0.077	-3.3	0.9	-2.7	0.9	A-	A-
1836	604543	A2	A2	481	.171	.171	.270	.299	.214	.046	.342	.342	-.090	-.054	-.033	3.087	0.134	0.8	1.1	3.3	1.5	A-	
1837	604541	A2	A2	961	.306	.306	.351	.179	.125	.040	.375	.375	-.163	-.112	-.044	2.208	0.078	1.0	1.0	1.7	1.1	A-	A-
1838	604636	A2	A2	961	.372	.166	.372	.300	.116	.048	.369	-.154	.369	-.111	-.095	1.843	0.074	0.5	1.0	1.2	1.1	B-	B+
1839	603006	A2	A2	480	.410	.215	.410	.244	.092	.040	.270	-.081	.270	-.185	-.002	1.703	0.103	3.8	1.2	3.0	1.2	A+	B+
1840	604613	A2	A2	964	.491	.160	.491	.269	.064	.017	.445	-.175	.445	-.269	-.109	1.362	0.071	-2.6	0.9	-2.7	0.9	A-	A+
1841	603079	A2	A2	964	.338	.138	.152	.351	.338	.022	.385	-.110	-.153	-.144	.385	2.121	0.075	-0.1	1.0	0.3	1.0	A-	A+
1842	603022	A2	A2	480	.367	.367	.206	.206	.185	.035	.334	.334	-.126	-.126	-.100	1.932	0.105	1.8	1.1	1.6	1.1	A-	A-
1843	604637	A2	A2	480	.544	.158	.196	.544	.092	.010	.339	-.206	-.144	.339	-.079	1.118	0.100	1.1	1.0	0.5	1.0	A-	B+
1844	603078	A2	A2	958	.570	.206	.570	.133	.066	.026	.417	-.080	.417	-.261	-.208	0.928	0.071	-1.8	1.0	-1.0	1.0	A+	A-
1845	604566	A2	A2	480	.263	.204	.277	.242	.263	.015	.434	-.108	-.120	-.147	.434	2.577	0.114	-1.0	0.9	-0.3	1.0	A-	A-
1846	604680	A2	A2	480	.288	.292	.327	.288	.054	.040	.228	-.033	-.041	.228	-.063	2.380	0.112	3.4	1.2	4.1	1.3	A-	A+
1847	604587	A2	A2	480	.735	.083	.060	.079	.735	.042	.456	-.161	-.221	-.143	.456	-0.019	0.116	-1.8	0.9	-1.8	0.8	A-	A-
1848	604611	A2	A2	480	.567	.102	.067	.223	.567	.042	.507	-.157	-.197	-.217	.507	0.916	0.102	-3.7	0.9	-2.8	0.8	B+	A-
1849	604551	A2	A2	964	.387	.198	.167	.213	.387	.035	.405	-.027	-.172	-.193	.405	1.835	0.073	0.2	1.0	0.5	1.0	A+	A+
1850	604542	A2	A2	480	.381	.167	.252	.381	.133	.067	.364	.011	-.156	.364	-.108	1.795	0.105	2.0	1.1	1.7	1.1	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1851	603012	A2	A2	964	.081	.084	.252	.518	.081	.065	.132	-.095	.044	.008	.132	4.181	0.129	2.0	1.2	4.6	1.9	A+	A+
1852	603090	A2	A2	966	.311	.241	.212	.311	.213	.023	.061	.089	-.090	.061	-.024	2.227	0.076	8.6	1.3	8.7	1.5	A-	A+
1853	604647	A2	A2	966	.595	.089	.595	.173	.108	.035	.415	-.119	.415	-.211	-.158	0.782	0.072	-2.5	0.9	-2.4	0.9	A+	A-
1854	604573	A2	A2	966	.505	.109	.505	.252	.123	.011	.419	-.091	.419	-.232	-.181	1.288	0.070	-3.2	0.9	-2.9	0.9	A+	A+
1855	604642	A2	A2	966	.122	.144	.533	.163	.122	.038	.213	-.058	.095	-.160	.213	3.587	0.106	1.6	1.1	3.4	1.4	A+	A+
1856	604649	A2	A2	966	.149	.206	.246	.343	.149	.056	.214	.021	-.019	-.083	.214	3.280	0.098	1.8	1.1	4.4	1.5	A-	A+
1857	604564	A2	A2	966	.275	.166	.322	.275	.178	.059	.398	-.140	-.175	.398	-.005	2.342	0.079	-0.5	1.0	0.3	1.0	A-	A+
1858	604726	A2	A2	962	.388	.072	.388	.220	.274	.046	.309	-.127	.309	-.090	-.074	1.776	0.073	3.6	1.1	2.7	1.1	A-	A-
1859	604538	A2	A2	966	.386	.156	.386	.266	.134	.058	.245	.005	.245	-.169	-.006	1.733	0.073	5.3	1.2	4.3	1.2	A-	A-
1860	604562	A2	A2	966	.380	.270	.182	.380	.111	.057	.378	-.146	-.182	.378	-.002	1.771	0.073	0.4	1.0	0.6	1.0	A-	B-
1861	604638	A2	A2	962	.523	.116	.523	.223	.101	.037	.475	-.136	.475	-.200	-.226	1.126	0.071	-4.0	0.9	-3.4	0.9	A+	A-
1862	604588	A2	A2	484	.310	.310	.229	.324	.085	.052	.394	.394	-.072	-.117	-.157	2.222	0.110	0.9	1.0	1.1	1.1	A-	A-
1863	604648	A2	A2	482	.535	.535	.176	.212	.066	.010	.319	.319	-.157	-.098	-.192	1.126	0.097	0.1	1.0	-0.5	1.0	A-	
1864	604585	A2	A2	964	.599	.071	.156	.165	.599	.010	.412	-.180	-.207	-.187	.412	0.833	0.070	-4.3	0.9	-3.4	0.9	A-	
1865	603009	A2	A2	964	.232	.232	.319	.164	.247	.038	.377	.377	-.164	-.029	-.099	2.630	0.082	-1.2	1.0	-0.4	1.0	A+	
1866	604531	A2	A2	964	.481	.221	.165	.481	.087	.046	.389	-.171	-.122	.389	-.131	1.292	0.070	-2.1	1.0	-1.8	0.9	A-	
1867	603034	A2	A2	482	.195	.017	.104	.195	.678	.006	.460	-.062	-.192	.460	-.225	2.928	0.123	-1.3	0.9	-1.1	0.9	C-	
1868	603035	A2	A2	964	.367	.367	.178	.248	.155	.052	.228	.228	-.160	.034	-.054	1.829	0.073	4.9	1.1	4.7	1.2	A-	
1869	603109	A2	A2	482	.504	.033	.504	.371	.066	.025	.260	-.073	.260	-.071	-.168	1.235	0.098	2.7	1.1	2.5	1.1	A+	
1870	603008	A2	A2	482	.353	.255	.139	.353	.183	.071	.208	.057	-.139	.208	-.093	1.832	0.104	3.2	1.1	4.0	1.2	A+	
1871	604675	A2	A2	482	.322	.322	.145	.216	.268	.050	.397	.397	-.099	-.010	-.213	2.066	0.106	-0.6	1.0	-0.7	1.0	A+	
1872	604565	A2	A2	482	.357	.189	.357	.249	.133	.073	.254	-.127	.254	-.024	-.049	1.806	0.104	2.7	1.1	2.1	1.1	A-	
1873	604563	A2	A2	482	.226	.226	.266	.247	.191	.071	.283	.283	-.068	-.087	-.052	2.549	0.117	0.7	1.0	1.7	1.2	A-	
1874	604545	A2	A2	964	.595	.074	.119	.176	.595	.035	.302	-.098	-.184	-.067	.302	0.762	0.071	1.0	1.0	1.4	1.1	A+	
1875	604643	A2	A2	964	.571	.056	.154	.167	.571	.053	.442	-.131	-.219	-.166	.442	0.827	0.072	-4.0	0.9	-2.7	0.9	A+	
1876	604594	A2	A2	960	.543	.275	.064	.079	.543	.040	.305	-.153	-.100	-.124	.305	1.007	0.071	2.0	1.1	2.1	1.1	A-	A-
1877	604630	A2	A2	960	.378	.438	.076	.100	.378	.008	.431	-.272	-.132	-.109	.431	1.878	0.072	-2.8	0.9	-2.6	0.9	A+	A+
1878	604533	A2	A2	962	.194	.194	.211	.370	.175	.050	.337	.337	-.139	-.050	-.075	2.893	0.089	0.5	1.0	1.9	1.2	A+	
1879	604725	A2	A2	482	.467	.278	.467	.145	.093	.017	.366	-.105	.366	-.231	-.090	1.446	0.099	-0.1	1.0	-0.5	1.0	A+	
1880	603028	A2	A2	962	.639	.133	.072	.144	.639	.013	.448	-.201	-.166	-.242	.448	0.597	0.072	-5.1	0.9	-4.0	0.8	A+	
1881	604559	A2	A2	962	.405	.096	.273	.405	.156	.070	.224	-.073	-.112	.224	.002	1.583	0.073	6.8	1.2	5.7	1.2	A-	
1882	604595	A2	A2	962	.296	.148	.319	.225	.296	.013	.268	-.028	-.029	-.193	.268	2.296	0.077	3.5	1.1	3.3	1.2	A+	
1883	604645	A2	A2	962	.519	.157	.103	.519	.203	.019	.390	-.177	-.225	.390	-.071	1.168	0.070	-1.2	1.0	-0.6	1.0	A+	
1884	603036	A2	A2	962	.429	.144	.109	.296	.429	.022	.357	-.082	-.153	-.163	.357	1.579	0.071	0.5	1.0	0.5	1.0	A-	
1885	604534	A2	A2	962	.338	.165	.148	.297	.338	.052	.296	-.090	-.121	-.084	.296	1.963	0.075	2.4	1.1	2.5	1.1	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1886	604571	A2	A2	962	.686	.099	.067	.686	.120	.029	.352	-.145	-.109	.352	-.168	0.287	0.076	-0.6	1.0	1.1	1.1	A+	
1887	604586	A2	A2	482	.440	.274	.176	.440	.081	.029	.290	-.025	-.118	.290	-.154	1.543	0.100	2.6	1.1	1.9	1.1	A+	
1888	604631	A2	A2	962	.350	.350	.209	.255	.123	.063	.493	.493	-.239	-.147	-.078	1.889	0.075	-3.7	0.9	-3.3	0.9	A-	
1889	604606	A2	A2	962	.313	.155	.206	.274	.313	.052	.439	-.124	-.119	-.157	.439	2.124	0.077	-1.7	0.9	-1.1	1.0	A-	
1890	604644	A2	A2	482	.328	.307	.328	.191	.066	.108	.414	-.041	.414	-.145	-.146	1.958	0.108	-0.6	1.0	-0.2	1.0	A+	
1891	604560	A2	A2	480	.392	.392	.219	.169	.200	.021	.313	.313	-.133	-.156	-.073	1.729	0.102	2.2	1.1	1.8	1.1	A+	
1892	604583	A2	A2	960	.224	.224	.384	.167	.183	.042	.325	.325	-.008	-.126	-.172	2.723	0.086	2.1	1.1	2.7	1.2	A+	A+
1893	604535	A2	A2	480	.215	.083	.331	.350	.215	.021	.344	-.119	-.172	-.045	.344	2.769	0.123	0.6	1.0	0.8	1.1	A-	
1894	604684	A2	A2	960	.380	.103	.380	.245	.247	.025	.403	-.107	.403	-.220	-.100	1.837	0.074	0.6	1.0	0.4	1.0	A-	B-
1895	604722	A2	A2	480	.458	.067	.244	.215	.458	.017	.458	-.143	-.173	-.234	.458	1.422	0.100	-2.8	0.9	-2.3	0.9	A+	
1896	603007	A2	A2	960	.287	.287	.380	.241	.070	.023	.334	.334	-.192	-.090	.014	2.369	0.079	1.8	1.1	2.7	1.2	A+	A-
1897	603110	A2	A2	480	.500	.500	.183	.185	.100	.031	.451	.451	-.264	-.175	-.111	1.177	0.100	-3.6	0.9	-2.6	0.9	A-	
1898	603029	A2	A2	480	.160	.235	.294	.260	.160	.050	.483	-.109	-.126	-.083	.483	3.188	0.139	-1.2	0.9	-0.1	1.0	A-	
1899	604597	A2	A2	480	.154	.075	.342	.388	.154	.042	.404	-.119	-.097	-.074	.404	3.248	0.141	0.1	1.0	1.2	1.2	A-	
1900	604608	A2	A2	960	.367	.367	.232	.205	.164	.032	.447	.447	-.174	-.267	-.026	1.893	0.074	-1.6	1.0	-1.5	0.9	A+	A-
1901	603030	A2	A2	960	.298	.092	.298	.369	.199	.043	.420	-.112	.420	-.148	-.163	2.241	0.078	-0.3	1.0	0.3	1.0	A+	A+
1902	604557	A2	A2	960	.453	.453	.201	.181	.100	.065	.488	.488	-.240	-.212	-.105	1.357	0.073	-4.3	0.9	-3.6	0.9	A+	A-
1903	604584	A2	A2	480	.408	.096	.367	.408	.090	.040	.336	-.109	-.160	.336	-.140	1.707	0.104	2.0	1.1	2.2	1.1	A-	A-
1904	604618	A2	A2	958	.314	.216	.156	.314	.291	.023	.274	-.108	-.097	.274	-.074	2.208	0.076	3.6	1.1	3.7	1.2	A+	A+
1905	604555	A2	A2	958	.810	.810	.087	.041	.056	.006	.418	.418	-.269	-.168	-.200	-0.367	0.087	-2.6	0.9	-3.4	0.7	A+	A-
1906	604554	A2	A2	480	.744	.744	.127	.090	.035	.004	.437	.437	-.258	-.250	-.161	0.082	0.112	-2.1	0.9	-2.7	0.7	A+	A-
1907	604724	A2	A2	480	.410	.410	.148	.202	.213	.027	.309	.309	-.084	-.159	-.121	1.725	0.103	2.5	1.1	2.3	1.1	A+	A+
1908	604561	A2	A2	480	.815	.040	.815	.079	.056	.010	.369	-.217	.369	-.203	-.144	-0.419	0.126	-1.0	0.9	-1.9	0.7	A+	A-
1909	604617	A2	A2	480	.619	.142	.619	.094	.127	.019	.354	-.103	.354	-.142	-.220	0.705	0.103	0.5	1.0	1.5	1.1	A+	A-
1910	603091	A2	A2	958	.311	.096	.311	.336	.208	.049	.400	-.080	.400	-.155	-.121	2.174	0.077	0.2	1.0	0.8	1.0	A+	A-
1911	604598	A2	A2	480	.204	.190	.235	.304	.204	.067	.470	-.120	-.251	.011	.470	2.889	0.126	-1.0	0.9	-0.6	0.9	A-	A-
1912	604612	A2	A2	480	.581	.581	.169	.117	.088	.046	.469	.469	-.243	-.180	-.145	0.817	0.104	-1.5	0.9	-2.0	0.9	A-	A-
1913	604549	A2	A2	958	.202	.138	.243	.353	.202	.065	.333	-.074	-.085	-.062	.333	2.850	0.088	0.9	1.0	1.9	1.2	A+	B-
1914	604628	A2	A2	478	.157	.391	.157	.218	.209	.025	.105	-.009	.105	-.037	-.015	3.214	0.134	2.2	1.2	3.0	1.4	A+	
1915	604567	A2	A2	478	.339	.084	.339	.375	.140	.063	.246	-.159	.246	-.023	-.063	1.962	0.106	3.1	1.1	2.9	1.2	A-	
1916	604620	A2	A2	478	.425	.195	.193	.119	.425	.069	.480	-.203	-.156	-.130	.480	1.502	0.102	-2.6	0.9	-2.2	0.9	A+	
1917	604634	A2	A2	480	.654	.060	.654	.117	.152	.017	.377	-.138	.377	-.181	-.186	0.470	0.104	-1.7	0.9	-0.1	1.0	B-	
1918	603106	A2	A2	963	.505	.085	.081	.262	.505	.068	.374	-.168	-.175	-.070	.374	1.165	0.073	1.0	1.0	1.6	1.1	A-	A+
1919	603057	A2	A2	482	.270	.145	.270	.303	.228	.054	.187	-.032	.187	-.009	-.010	2.395	0.112	3.5	1.2	3.8	1.3	A-	
1920	603055	A2	A2	960	.485	.071	.217	.184	.485	.043	.423	-.156	-.120	-.248	.423	1.255	0.072	-1.4	1.0	-1.3	1.0	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1921	603126	A2	A2	482	.494	.106	.494	.293	.091	.017	.302	-.096	.302	-.116	-.197	1.307	0.099	1.5	1.1	1.2	1.1	B-	
1922	603056	A2	A2	964	.193	.246	.421	.193	.103	.037	.045	.008	.044	.045	-.009	2.896	0.088	5.2	1.3	6.2	1.5	A+	
1923	603115	A2	A2	964	.465	.065	.164	.284	.465	.022	.390	-.126	-.066	-.268	.390	1.369	0.072	-1.6	1.0	-1.3	1.0	A-	B-
1924	603124	A2	A2	960	.345	.345	.283	.210	.146	.016	.379	.379	-.188	-.094	-.120	2.003	0.074	-0.1	1.0	-0.5	1.0	A+	A-
1925	603080	A2	A2	960	.428	.083	.114	.352	.428	.023	.237	-.141	-.148	-.027	.237	1.561	0.072	4.1	1.1	5.0	1.2	A+	A-
1926	603128	A2	A2	964	.493	.103	.266	.493	.099	.041	.236	-.048	-.147	.236	-.027	1.176	0.072	6.7	1.2	7.0	1.3	A-	A+
1927	605889	A2	A2	962	.168	.600	.168	.061	.137	.033	.236	-.017	.236	-.076	-.070	3.180	0.094	2.4	1.1	1.6	1.2	B-	
1928	603122	A2	A2	962	.297	.150	.297	.305	.216	.032	.402	-.082	.402	-.138	-.154	2.262	0.078	-0.6	1.0	0.1	1.0	A-	
1929	604690	A2	A2	481	.302	.351	.302	.225	.100	.023	.265	-.022	.265	-.105	-.143	2.168	0.107	1.6	1.1	2.2	1.2	B-	
1930	605890	A2	A2	481	.212	.040	.195	.212	.489	.064	.121	-.096	-.126	.121	.121	2.631	0.121	3.3	1.2	3.8	1.4	A+	
1931	605891	A2	A2	962	.264	.450	.264	.087	.165	.033	.351	-.142	.351	-.090	-.083	2.425	0.080	2.0	1.1	2.4	1.1	A-	A+
1932	604692	A2	A2	962	.458	.112	.215	.458	.177	.037	.380	-.096	-.162	.380	-.154	1.383	0.071	-0.6	1.0	-0.2	1.0	A+	A+
1933	605904	A2	A2	963	.243	.243	.084	.572	.073	.028	.390	.390	-.143	-.156	-.071	2.689	0.083	0.4	1.0	1.2	1.1	A-	A-
1934	603123	A2	A2	964	.744	.032	.120	.744	.062	.042	.477	-.137	-.249	.477	-.187	-0.107	0.084	-3.4	0.9	-3.7	0.7	A+	A-
1935	605905	A2	A2	964	.449	.216	.449	.219	.069	.048	.303	-.128	.303	-.017	-.118	1.474	0.072	4.6	1.1	4.6	1.2	A-	A-
1936	603060	A2	A2	961	.801	.030	.098	.801	.034	.036	.428	-.177	-.198	.428	-.145	-0.525	0.092	-2.2	0.9	-2.6	0.7	B-	C-
1937	604687	A2	A2	961	.386	.073	.386	.376	.126	.040	.302	-.184	.302	-.030	-.086	1.779	0.073	4.3	1.1	4.6	1.2	A-	A+
1938	604688	A2	A2	964	.524	.137	.185	.116	.524	.038	.370	.020	-.169	-.224	.370	1.143	0.072	2.0	1.1	2.4	1.1	A+	C-
1939	603061	A2	A2	964	.546	.089	.156	.182	.546	.028	.449	-.152	-.189	-.194	.449	1.064	0.071	-1.7	1.0	-1.6	0.9	A-	B-
1940	604689	A2	A2	484	.736	.035	.736	.116	.099	.015	.336	-.115	.336	-.189	-.145	0.116	0.111	-0.3	1.0	-0.2	1.0	A-	B-
1941	604723	A2	A2	966	.598	.101	.598	.220	.036	.045	.182	-.090	.182	-.020	-.066	0.726	0.072	5.2	1.1	8.4	1.5	A+	A+
1942	603092	A2	A2	484	.843	.033	.843	.050	.035	.039	.389	-.119	.389	-.195	-.164	-0.867	0.146	-0.9	0.9	-1.6	0.7	A+	C-
1943	603093	A2	A2	960	.643	.075	.116	.643	.156	.010	.331	-.126	-.174	.331	-.161	0.609	0.072	-0.5	1.0	0.2	1.0	A-	
1944	603113	A2	A2	964	.553	.082	.553	.209	.119	.037	.463	-.151	.463	-.216	-.168	0.968	0.071	-4.6	0.9	-3.9	0.9	A-	
1945	603107	A2	A2	960	.325	.020	.293	.341	.325	.022	.391	-.067	-.219	-.106	.391	2.139	0.076	1.2	1.0	0.4	1.0	A-	A-
1946	603068	A2	A2	480	.581	.073	.154	.581	.144	.048	.258	-.049	-.166	.258	-.045	0.732	0.103	2.9	1.1	3.2	1.3	A-	
1947	603054	A2	A2	480	.331	.331	.113	.302	.185	.069	.482	.482	-.134	-.204	-.149	1.942	0.108	-2.3	0.9	-2.0	0.9	A-	
1948	603069	A2	A2	958	.228	.152	.204	.366	.228	.050	.351	-.078	-.086	-.106	.351	2.700	0.085	1.0	1.0	1.3	1.1	A-	A+
1949	603108	A2	A2	958	.161	.120	.311	.161	.372	.037	-.043	.079	-.096	-.043	.111	3.226	0.095	6.1	1.4	8.4	2.0	A-	A-
1950	657875	6	6	162	.463	.179	.204	.154	.463	.000	.000	.004	-.061	.064	.000	-0.073	0.177	6.4	1.5	5.5	1.7	A+	
1951	657876	6	6	298	.245	.101	.245	.138	.517	.000	-.096	-.149	-.096	-.172	.290	1.338	0.144	4.5	1.3	6.9	2.2	B-	
1952	657877	6	6	304	.181	.049	.181	.359	.411	.000	.044	-.041	.044	-.036	.019	1.711	0.158	2.0	1.2	5.1	2.2	A-	
1953	657878	6	6	306	.049	.049	.098	.775	.078	.000	-.137	-.137	-.318	.380	-.129	3.389	0.273	0.7	1.1	5.2	4.8	A-	
1954	657879	6	6	172	.442	.081	.215	.262	.442	.000	.422	-.210	-.218	-.142	.422	0.012	0.169	-0.7	1.0	-0.4	1.0	B+	
1955	657880	6	6	169	.278	.077	.278	.414	.231	.000	.243	-.008	.243	-.354	.160	0.950	0.187	0.8	1.1	2.3	1.4	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1956	657881	6	6	326	.442	.138	.163	.258	.442	.000	.167	.025	-.170	-.066	.167	0.231	0.123	4.7	1.2	4.9	1.4	A+	
1957	657882	6	6	152	.283	.276	.105	.336	.283	.000	.070	.055	-.120	-.041	.070	0.908	0.195	2.6	1.2	3.7	1.7	A+	
1958	657883	6	6	167	.659	.659	.156	.072	.114	.000	.447	.447	-.353	-.086	-.194	-1.078	0.184	-0.2	1.0	-0.5	0.9	A-	
1959	657884	6	6	169	.325	.172	.361	.142	.325	.000	.322	-.032	-.142	-.202	.322	0.592	0.182	1.0	1.1	1.1	1.2	A-	
1960	657885	6	6	286	.217	.364	.294	.126	.217	.000	.158	-.126	-.192	.250	.158	1.485	0.153	1.0	1.1	4.9	2.0	A+	A+
1961	657886	6	6	182	.176	.401	.176	.236	.187	.000	.046	-.072	.046	-.079	.132	1.608	0.206	1.3	1.2	4.4	2.3	A-	
1962	657887	6	6	182	.418	.236	.154	.418	.192	.000	.131	-.062	-.079	.131	-.026	0.150	0.168	4.4	1.3	4.5	1.6	A+	
1963	657888	6	6	295	.176	.176	.278	.407	.139	.000	.160	.160	-.040	-.165	.108	1.687	0.162	0.5	1.1	4.3	2.1	B-	
1964	657899	6	6	284	.873	.873	.035	.053	.039	.000	.368	.368	-.340	-.119	-.171	-2.453	0.194	-0.3	1.0	0.1	1.0	C+	
1965	657936	6	6	181	.204	.204	.343	.249	.204	.000	.306	-.191	-.039	-.065	.306	1.392	0.198	-0.1	1.0	0.4	1.1	A-	
1966	657937	6	6	183	.404	.208	.404	.219	.169	.000	.292	-.021	.292	-.273	-.059	0.202	0.168	1.5	1.1	2.8	1.3	A-	
1967	657938	6	6	177	.492	.107	.141	.260	.492	.000	.513	-.196	-.183	-.302	.513	-0.038	0.168	-1.8	0.9	-2.0	0.8	A+	
1968	657939	6	6	165	.655	.061	.206	.655	.079	.000	.490	-.231	-.266	.490	-.262	-1.017	0.183	-1.0	0.9	-1.4	0.8	B-	
1969	657940	6	6	318	.478	.031	.399	.478	.091	.000	.385	-.068	-.292	.385	-.130	0.071	0.124	0.1	1.0	0.0	1.0	A-	
1970	657941	6	6	300	.510	.263	.143	.510	.083	.000	.416	-.205	-.214	.416	-.156	-0.169	0.128	-0.5	1.0	-0.3	1.0	A+	
1971	657942	6	6	307	.254	.254	.248	.186	.313	.000	.260	.260	-.141	.005	-.118	1.081	0.142	0.3	1.0	5.3	1.9	A-	
1972	657943	6	6	287	.718	.038	.098	.718	.146	.000	.262	-.185	-.109	.262	-.142	-1.224	0.144	1.9	1.1	1.4	1.2	A+	
1973	657944	6	6	276	.605	.094	.605	.199	.101	.000	.264	-.080	.264	-.146	-.157	-0.568	0.135	1.8	1.1	1.5	1.1	A-	
1974	657945	6	6	178	.332	.320	.332	.264	.084	.000	.218	-.043	.218	-.113	-.119	0.527	0.174	1.8	1.1	2.0	1.3	B-	
1975	657946	6	6	177	.401	.401	.322	.203	.073	.000	.098	.098	.014	-.008	-.196	0.358	0.169	4.4	1.3	3.7	1.5	A+	
1976	657947	6	6	176	.426	.426	.284	.216	.074	.000	.304	.304	-.158	-.220	.042	0.091	0.171	1.7	1.1	2.5	1.3	A+	
1977	657948	6	6	152	.355	.217	.224	.355	.204	.000	.245	-.150	-.346	.245	.220	0.276	0.188	1.7	1.1	2.8	1.5	A+	
1978	657949	6	6	166	.139	.139	.217	.530	.115	.000	-.089	-.089	.049	.151	-.204	1.908	0.240	1.7	1.3	5.2	3.5	A+	
1979	657950	6	6	161	.441	.180	.273	.441	.106	.000	.210	-.097	-.189	.210	.057	0.054	0.176	2.8	1.2	3.5	1.4	A-	
1980	657976	6	6	306	.556	.232	.095	.556	.118	.000	.351	-.069	-.245	.351	-.229	-0.347	0.129	1.2	1.1	2.2	1.2	A+	
1981	657977	6	6	180	.450	.161	.450	.261	.128	.000	.353	.008	.353	-.325	-.107	0.047	0.166	0.6	1.0	1.3	1.1	A-	
1982	657978	6	6	159	.226	.082	.484	.208	.226	.000	.391	-.111	-.291	.030	.391	1.177	0.204	-0.8	0.9	-0.8	0.8	A+	
1983	657979	6	6	174	.132	.132	.132	.207	.529	.000	.312	.312	-.063	-.206	-.002	2.034	0.235	-0.5	0.9	-0.2	0.9	A+	
1984	657980	6	6	319	.495	.097	.138	.495	.270	.000	.346	-.094	-.169	.346	-.195	-0.185	0.125	1.3	1.1	1.6	1.1	A+	
1985	657981	6	6	310	.319	.136	.329	.216	.319	.000	.376	-.191	-.100	-.153	.376	0.759	0.135	-0.5	1.0	1.9	1.2	A-	
1986	657982	6	6	340	.382	.382	.391	.153	.074	.000	.384	.384	-.217	-.203	-.030	0.595	0.123	-0.2	1.0	1.4	1.1	A+	
1987	657983	6	6	182	.330	.028	.489	.330	.154	.000	.289	-.150	-.129	.289	-.130	0.624	0.172	1.0	1.1	1.3	1.2	A-	
1988	657984	6	6	177	.429	.102	.322	.147	.429	.000	.392	-.142	-.234	-.117	.392	0.200	0.167	-0.1	1.0	-0.3	1.0	A+	
1989	657985	6	6	317	.350	.271	.186	.192	.350	.000	.335	.000	-.238	-.171	.335	0.550	0.129	0.1	1.0	2.8	1.3	B+	
1990	657986	6	6	312	.401	.157	.282	.401	.160	.000	.214	-.207	-.076	.214	.012	0.394	0.127	3.0	1.2	4.0	1.4	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1991	657987	6	6	302	.358	.070	.113	.460	.358	.000	.260	-.150	-.221	-.033	.260	0.513	0.133	2.0	1.1	3.8	1.4	A+	
1992	657988	6	6	180	.122	.122	.233	.206	.439	.000	.215	.215	-.138	-.144	.093	1.917	0.240	-0.3	1.0	2.1	1.8	A+	
1993	657989	6	6	154	.188	.175	.474	.162	.188	.000	.342	-.228	.010	-.140	.342	1.510	0.221	-0.4	0.9	0.0	1.0	A-	
1994	657990	6	6	154	.494	.494	.130	.162	.214	.000	.365	.365	-.173	-.137	-.179	-0.243	0.178	0.1	1.0	0.1	1.0	A+	
1995	657991	6	6	307	.407	.195	.248	.407	.150	.000	.271	-.144	-.052	.271	-.151	0.360	0.127	1.5	1.1	3.2	1.3	A+	
1996	657992	6	6	155	.477	.477	.348	.084	.090	.000	.341	.341	-.090	-.321	-.134	-0.266	0.181	0.9	1.1	3.1	1.4	A-	
1997	657993	6	6	288	.663	.663	.146	.115	.076	.000	.430	.430	-.201	-.289	-.152	-0.863	0.138	-0.4	1.0	-0.8	0.9	A-	
1998	657994	6	6	314	.455	.210	.172	.455	.162	.000	.350	-.083	-.196	.350	-.181	0.230	0.126	0.8	1.0	1.6	1.1	A-	
1999	657995	6	6	326	.896	.028	.896	.068	.009	.000	.386	-.107	.386	-.325	-.197	-2.689	0.194	-0.8	0.9	-1.2	0.7	A+	
2000	657996	6	6	311	.621	.174	.621	.100	.106	.000	.349	-.180	.349	-.221	-.114	-0.777	0.130	1.1	1.1	0.4	1.0	A-	B-
2001	657997	6	6	290	.521	.300	.114	.066	.521	.000	.450	-.153	-.213	-.351	.450	-0.338	0.133	-0.5	1.0	-0.6	1.0	A+	
2002	657998	6	6	295	.268	.563	.102	.268	.068	.000	.056	.249	-.351	.056	-.167	1.111	0.142	3.4	1.2	5.5	1.9	A-	
2003	657999	6	6	291	.409	.175	.409	.282	.134	.000	.261	.122	.261	-.149	-.316	0.270	0.131	2.4	1.1	2.8	1.3	B-	
2004	658000	6	6	301	.535	.535	.269	.136	.060	.000	.417	.417	-.290	-.187	-.064	-0.398	0.129	-0.5	1.0	0.3	1.0	A-	
2005	658051	6	6	305	.315	.338	.315	.193	.154	.000	.062	-.114	.062	-.047	.121	0.786	0.135	4.2	1.3	6.8	1.9	A-	
2006	658052	6	6	281	.644	.164	.644	.146	.046	.000	.345	-.292	.345	-.113	-.081	-1.035	0.140	1.6	1.1	1.2	1.1	A+	
2007	658053	6	6	303	.419	.178	.419	.185	.218	.000	.069	.016	.069	-.153	.046	0.281	0.128	6.0	1.3	7.3	1.7	A-	
2008	658056	6	6	300	.553	.133	.553	.243	.070	.000	.433	-.124	.433	-.324	-.133	-0.342	0.129	-1.0	1.0	0.5	1.0	A-	
2009	658057	6	6	185	.730	.038	.103	.130	.730	.000	.556	-.268	-.329	-.285	.556	-1.576	0.185	-1.9	0.8	-2.2	0.7	A+	
2010	658058	6	6	167	.287	.216	.353	.144	.287	.000	.300	-.186	-.073	-.068	.300	1.065	0.189	0.3	1.0	5.5	2.3	A+	
2011	658059	6	6	301	.621	.621	.140	.176	.063	.000	.430	.430	-.304	-.106	-.258	-0.611	0.131	-0.9	1.0	-0.7	0.9	A+	
2012	658061	6	6	291	.608	.096	.608	.131	.165	.000	.430	-.152	.430	-.238	-.228	-0.700	0.135	-0.2	1.0	-0.5	1.0	A-	
2013	658062	6	7	174	.207	.362	.293	.138	.207	.000	.407	-.219	-.008	-.163	.407	1.434	0.202	-1.3	0.9	1.2	1.3	A+	
2014	658064	6	6	184	.788	.054	.788	.103	.054	.000	.342	-.232	.342	-.251	-.046	-1.802	0.199	0.4	1.0	0.2	1.0	B+	
2015	658065	6	6	318	.682	.082	.129	.107	.682	.000	.497	-.179	-.297	-.268	.497	-1.037	0.134	-1.7	0.9	-1.9	0.8	B+	
2016	658066	6	6	306	.229	.360	.206	.206	.229	.000	.414	-.063	-.267	-.089	.414	1.429	0.146	-1.5	0.9	-1.2	0.8	A+	
2017	658067	6	6	167	.329	.365	.174	.329	.132	.000	.368	-.107	-.303	.368	-.019	0.662	0.180	-0.4	1.0	0.8	1.1	A-	
2018	658068	6	6	286	.465	.224	.189	.122	.465	.000	.395	-.173	-.213	-.127	.395	0.074	0.132	-0.1	1.0	0.4	1.0	A-	
2019	658069	6	6	298	.440	.440	.208	.302	.050	.000	.189	.189	-.074	-.060	-.165	0.315	0.129	4.1	1.2	4.5	1.4	A-	
2020	658071	6	6	324	.460	.111	.460	.244	.185	.000	.263	-.181	.263	-.177	.005	0.085	0.123	2.7	1.1	4.0	1.3	A+	
2021	658119	6	6	169	.462	.462	.231	.201	.107	.000	.362	.362	-.260	-.163	-.019	-0.054	0.174	1.0	1.1	1.9	1.2	A+	
2022	658135	6	6	174	.529	.161	.529	.126	.184	.000	.391	-.266	.391	-.185	-.092	-0.408	0.170	0.3	1.0	1.2	1.1	A-	
2023	658164	6	6	184	.620	.620	.152	.130	.098	.000	.311	.311	-.184	-.109	-.162	-0.718	0.170	1.5	1.1	1.5	1.2	B+	
2024	658176	6	6	168	.417	.089	.250	.244	.417	.000	.300	-.198	-.201	-.011	.300	0.163	0.176	1.3	1.1	3.1	1.4	B+	
2025	658225	6	6	292	.394	.171	.240	.195	.394	.000	.375	-.100	-.116	-.242	.375	0.424	0.133	-0.3	1.0	2.1	1.2	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2026	658252	6	6	307	.280	.147	.189	.384	.280	.000	.164	-.087	.040	-.120	.164	1.068	0.138	1.9	1.1	4.9	1.7	B-	
2027	658263	6	6	321	.421	.268	.168	.421	.143	.000	.264	-.175	-.100	.264	-.044	0.356	0.125	2.8	1.1	2.6	1.2	A-	
2028	658277	6	6	167	.281	.281	.222	.281	.216	.000	.079	.079	-.157	.052	.016	0.880	0.186	2.2	1.2	5.0	2.1	A+	
2029	658298	6	6	172	.233	.233	.204	.413	.151	.000	.279	.279	-.105	-.058	-.130	1.118	0.198	-0.2	1.0	4.2	2.2	A+	
2030	658299	6	6	278	.619	.119	.619	.119	.144	.000	.478	-.254	.478	-.179	-.263	-0.865	0.139	-0.8	1.0	-1.3	0.9	A-	
2031	658309	6	6	315	.311	.311	.321	.333	.035	.000	.384	.384	-.232	-.104	-.112	0.871	0.132	-0.9	1.0	-0.5	0.9	A-	
2032	658313	6	6	307	.251	.352	.238	.160	.251	.000	.368	-.158	.001	-.230	.368	1.239	0.143	-0.8	1.0	0.1	1.0	A-	
2033	658329	6	6	288	.559	.243	.139	.559	.059	.000	.427	-.104	-.341	.427	-.208	-0.308	0.133	0.0	1.0	-0.6	1.0	A-	
2034	658380	6	6	156	.321	.295	.167	.321	.218	.000	.320	-.111	-.258	.320	-.007	0.633	0.190	0.7	1.1	1.8	1.3	A-	
2035	658381	6	6	309	.327	.282	.301	.327	.091	.000	.285	-.005	-.182	.285	-.168	0.737	0.132	1.3	1.1	1.3	1.1	A-	
2036	658392	6	7	294	.422	.248	.174	.422	.157	.000	.383	-.056	-.158	.383	-.290	0.130	0.132	0.5	1.0	1.5	1.1	A-	
2037	658395	6	6	286	.654	.654	.122	.147	.077	.000	.369	.369	-.164	-.281	-.083	-0.971	0.140	0.9	1.1	1.5	1.1	A-	
2038	658411	6	6	179	.553	.235	.553	.145	.067	.000	.016	-.119	.016	.118	.005	-0.503	0.169	6.2	1.5	6.0	1.7	A+	
2039	658430	6	6	179	.363	.156	.363	.363	.117	.000	.225	-.205	.225	-.093	.035	0.475	0.171	2.2	1.2	2.1	1.3	A-	
2040	658466	6	6	311	.788	.080	.788	.090	.042	.000	.393	-.158	.393	-.216	-.279	-1.785	0.152	-0.3	1.0	0.0	1.0	A+	
2041	658467	6	6	314	.481	.131	.481	.319	.070	.000	.260	-.228	.260	-.013	-.184	-0.067	0.126	2.9	1.1	4.1	1.3	A-	
2042	658523	6	6	306	.814	.065	.814	.039	.082	.000	.385	-.163	.385	-.090	-.336	-1.937	0.161	0.0	1.0	-0.8	0.9	A-	
2043	658557	6	6	167	.557	.186	.557	.150	.108	.000	.420	-.315	.420	-.119	-.140	-0.475	0.175	0.1	1.0	0.4	1.0	A+	
2044	658571	6	6	317	.530	.142	.088	.240	.530	.000	.364	-.211	-.358	-.016	.364	-0.315	0.125	1.0	1.1	0.6	1.0	A+	
2045	658572	6	6	166	.398	.169	.319	.398	.115	.000	.378	-.073	-.141	.378	-.290	0.154	0.175	0.1	1.0	0.4	1.0	A+	
2046	658574	6	6	159	.635	.635	.094	.069	.201	.000	.546	.546	-.290	-.299	-.255	-0.960	0.187	-1.6	0.9	-1.7	0.8	A-	
2047	658575	6	6	312	.869	.869	.055	.032	.045	.000	.412	.412	-.295	-.215	-.167	-2.460	0.182	-0.5	0.9	-1.7	0.7	A+	B-
2048	658586	6	6	283	.357	.357	.297	.166	.180	.000	.397	.397	-.154	-.118	-.199	0.681	0.136	-0.9	1.0	0.1	1.0	A-	
2049	658587	6	6	321	.564	.100	.212	.125	.564	.000	.546	-.165	-.272	-.334	.546	-0.409	0.126	-3.0	0.9	-2.6	0.8	A+	
2050	659340	6	6	313	.425	.329	.115	.425	.131	.000	.363	-.184	-.213	.363	-.075	0.222	0.128	1.0	1.1	1.3	1.1	B-	
2051	659341	6	6	298	.681	.060	.681	.235	.024	.000	.283	-.276	.283	-.110	-.129	-0.976	0.139	2.1	1.2	2.3	1.2	A-	
2052	659342	6	6	195	.436	.226	.190	.436	.149	.000	.245	-.103	-.028	.245	-.190	0.354	0.161	2.7	1.2	2.9	1.3	A+	
2053	659344	6	6	307	.599	.599	.042	.124	.235	.000	.492	.492	-.218	-.294	-.237	-0.611	0.130	-1.6	0.9	-2.0	0.9	A-	
2054	659345	6	6	320	.678	.100	.678	.113	.109	.000	.172	-.089	.172	-.111	-.059	-1.074	0.133	3.9	1.3	3.5	1.4	A-	
2055	659346	6	7	170	.177	.241	.177	.406	.177	.000	.346	-.031	-.166	-.113	.346	1.570	0.216	-0.4	1.0	0.2	1.0	A-	
2056	659347	6	6	193	.358	.078	.358	.497	.067	.000	-.068	-.056	-.068	.147	-.103	0.393	0.166	5.9	1.5	7.2	2.2	A-	
2057	659348	6	6	291	.557	.103	.165	.557	.175	.000	.428	-.228	-.210	.428	-.172	-0.373	0.130	-1.2	0.9	-0.7	1.0	A-	
2058	659349	6	6	298	.732	.091	.111	.732	.067	.000	.412	-.163	-.274	.412	-.199	-1.205	0.145	0.0	1.0	-0.8	0.9	A-	A+
2059	659381	6	6	177	.367	.311	.243	.367	.079	.000	.177	.092	-.296	.177	-.002	0.400	0.173	3.5	1.3	2.6	1.3	B-	
2060	659383	6	6	270	.107	.415	.156	.107	.322	.000	-.106	.059	-.172	-.106	.141	2.392	0.204	1.2	1.2	6.6	4.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2061	659385	6	6	181	.370	.238	.370	.238	.155	.000	.001	-.033	.001	.023	.011	0.506	0.168	4.6	1.3	5.3	1.7	A+	
2062	659386	6	6	158	.051	.222	.209	.519	.051	.000	.045	-.348	-.051	.311	.045	3.255	0.372	0.1	1.0	3.3	3.8	A-	
2063	659387	6	6	307	.332	.147	.332	.355	.166	.000	.220	-.232	.220	.048	-.119	0.684	0.134	2.7	1.2	4.3	1.5	A-	
2064	659389	6	6	279	.416	.172	.212	.201	.416	.000	.370	-.090	-.123	-.246	.370	0.330	0.135	-0.2	1.0	2.2	1.2	A-	
2065	660528	6	6	189	.497	.497	.323	.122	.058	.000	.531	.531	-.162	-.390	-.266	-0.299	0.165	-2.2	0.9	-0.6	0.9	A+	
2066	660529	6	6	173	.809	.041	.110	.809	.041	.000	.332	-.181	-.202	.332	-.160	-2.067	0.212	0.4	1.1	-0.2	0.9	A+	
2067	660530	6	6	172	.180	.238	.279	.302	.180	.000	.171	.083	-.220	-.005	.171	1.606	0.213	0.7	1.1	3.1	2.1	A-	
2068	660531	6	6	321	.277	.576	.277	.081	.065	.000	.010	.187	.010	-.290	-.072	1.077	0.134	3.6	1.2	6.5	1.9	A+	
2069	660562	6	6	184	.250	.250	.179	.342	.228	.000	-.034	-.034	-.013	.169	-.144	1.098	0.184	3.4	1.3	4.8	2.0	A+	
2070	660563	6	6	167	.413	.275	.198	.413	.114	.000	.249	-.124	-.095	.249	-.093	0.164	0.173	2.4	1.2	1.8	1.2	A-	
2071	662164	6	6	172	.256	.297	.256	.331	.116	.000	.229	.210	.229	-.279	-.201	1.066	0.192	1.3	1.1	2.4	1.5	A+	
2072	662165	6	6	304	.543	.171	.095	.191	.543	.000	.488	-.154	-.248	-.286	.488	-0.265	0.128	-1.8	0.9	-1.8	0.9	A+	
2073	662166	6	6	186	.538	.118	.296	.048	.538	.000	.445	-.290	-.188	-.199	.445	-0.385	0.167	0.1	1.0	-0.3	1.0	A+	
2074	662167	6	6	283	.657	.081	.230	.657	.032	.000	.377	-.149	-.291	.377	-.093	-0.992	0.140	0.5	1.0	0.6	1.1	B+	
2075	662168	6	7	169	.391	.231	.172	.391	.207	.000	.319	-.043	-.203	.319	-.150	0.341	0.176	1.3	1.1	1.5	1.2	A-	
2076	662169	6	6	159	.509	.509	.220	.170	.101	.000	.303	.303	.086	-.246	-.315	-0.198	0.177	2.1	1.2	1.1	1.1	A+	
2077	662170	6	6	189	.217	.217	.286	.138	.360	.000	-.017	-.017	.039	-.056	.018	1.445	0.190	2.3	1.2	7.1	3.5	B-	
2078	662171	6	6	162	.241	.432	.241	.117	.210	.000	.214	-.190	.214	-.019	.020	1.171	0.199	0.7	1.1	3.5	1.9	B-	
2079	662172	6	6	141	.326	.121	.199	.355	.326	.000	.194	-.191	-.008	-.054	.194	0.630	0.198	1.6	1.1	4.7	2.0	A-	
2080	662173	6	6	169	.254	.254	.178	.509	.059	.000	.115	.115	-.118	.038	-.104	0.934	0.192	2.0	1.2	4.5	2.0	A+	
2081	662175	6	6	167	.521	.114	.204	.521	.162	.000	.454	-.043	-.180	.454	-.383	-0.402	0.177	-0.2	1.0	0.8	1.1	A+	
2082	662176	6	6	172	.552	.052	.145	.552	.250	.000	.243	-.008	-.083	.243	-.207	-0.518	0.175	3.2	1.3	3.2	1.4	A+	
2083	662204	6	6	165	.424	.424	.182	.182	.212	.000	.125	.125	-.086	-.131	.054	0.269	0.174	3.8	1.3	4.9	1.7	A-	
2084	662205	6	6	267	.794	.015	.142	.049	.794	.000	.419	-.250	-.271	-.207	.419	-1.724	0.167	-0.5	1.0	-0.5	0.9	B+	
2085	662207	6	6	297	.306	.199	.306	.391	.104	.000	.008	-.250	.008	.184	.021	0.912	0.137	5.3	1.3	6.5	2.0	A-	
2086	662208	6	6	303	.861	.020	.861	.050	.069	.000	.410	-.147	.410	-.320	-.205	-2.298	0.181	-0.7	0.9	-0.8	0.8	B-	
2087	662209	6	6	171	.515	.129	.281	.515	.076	.000	.443	-.275	-.184	.443	-.175	-0.311	0.170	-0.8	1.0	-0.3	1.0	B-	
2088	662210	6	6	282	.553	.167	.177	.553	.103	.000	.510	-.279	-.189	.510	-.255	-0.308	0.133	-2.8	0.9	-1.7	0.9	A-	
2089	662211	6	6	198	.288	.222	.253	.237	.288	.000	.332	-.177	-.173	-.004	.332	0.819	0.171	-0.4	1.0	2.1	1.3	A+	
2090	662212	6	6	300	.443	.283	.203	.443	.070	.000	.349	-.074	-.170	.349	-.280	0.200	0.130	1.3	1.1	1.6	1.1	A-	
2091	662214	6	6	167	.569	.084	.287	.569	.060	.000	.402	-.264	-.256	.402	-.043	-0.523	0.175	0.1	1.0	0.0	1.0	B+	
2092	662215	6	6	174	.793	.086	.109	.012	.793	.000	.345	-.205	-.212	-.152	.345	-1.977	0.210	1.1	1.1	-0.1	1.0	A+	
2093	662216	6	6	182	.901	.039	.901	.033	.028	.000	.389	-.269	.389	-.067	-.321	-2.792	0.270	-0.3	0.9	-0.3	0.9	A+	
2094	662241	6	6	166	.127	.187	.530	.157	.127	.000	.249	-.001	-.005	-.220	.249	2.064	0.245	0.1	1.0	-0.2	0.9	A+	A-
2095	662242	6	6	178	.848	.848	.039	.023	.090	.000	.546	.546	-.240	-.174	-.432	-2.425	0.229	-1.7	0.8	-2.1	0.5	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2096	662243	6	6	161	.311	.385	.311	.155	.149	.000	.005	.191	.005	-.259	-.004	0.827	0.187	4.3	1.4	4.5	1.9	A+	
2097	662244	6	6	157	.459	.159	.459	.147	.236	.000	.032	-.187	.032	-.023	.143	0.013	0.179	5.7	1.5	5.6	1.7	A-	
2098	662245	6	6	159	.711	.088	.088	.711	.113	.000	.412	-.242	-.186	.412	-.208	-1.306	0.194	0.0	1.0	-0.3	0.9	B-	
2099	662246	6	6	278	.543	.194	.543	.184	.079	.000	.333	-.089	.333	-.161	-.254	-0.302	0.134	1.3	1.1	1.3	1.1	A+	
2100	662247	6	6	173	.642	.064	.156	.642	.139	.000	.244	-.004	-.071	.244	-.260	-0.882	0.180	2.8	1.3	2.1	1.3	B-	
2101	662248	6	6	304	.500	.112	.500	.362	.026	.000	.156	-.321	.156	.097	-.147	-0.201	0.128	5.4	1.3	4.8	1.4	A+	
2102	662249	6	6	291	.491	.491	.151	.217	.141	.000	.485	.485	-.320	-.176	-.160	-0.137	0.131	-2.1	0.9	-0.8	0.9	A+	
2103	662250	6	6	295	.515	.125	.264	.095	.515	.000	.537	-.038	-.390	-.285	.537	-0.227	0.130	-3.2	0.9	-2.6	0.8	A+	
2104	662251	6	6	194	.371	.371	.150	.345	.134	.000	.315	.315	-.214	.047	-.289	0.377	0.166	1.3	1.1	1.6	1.2	A+	
2105	662252	6	6	290	.348	.166	.348	.255	.231	.000	.099	.033	.099	-.069	-.070	0.748	0.136	4.6	1.3	6.6	1.8	A-	
2106	657795	7	7	653	.294	.294	.279	.340	.087	.000	.291	.291	-.138	-.105	-.074	1.227	0.094	1.2	1.1	3.6	1.3	B-	
2107	657797	7	7	661	.239	.239	.362	.235	.165	.000	-.069	-.069	.130	-.116	.044	1.526	0.099	7.4	1.4	9.9	2.6	A-	
2108	657798	7	7	715	.259	.340	.298	.259	.104	.000	.059	-.020	-.023	.059	-.019	1.458	0.092	5.2	1.2	9.9	2.4	A+	
2109	657799	7	7	690	.457	.151	.457	.259	.133	.000	.165	-.126	.165	.039	-.159	0.423	0.085	7.0	1.2	8.6	1.5	A+	A-
2110	657801	7	7	758	.416	.410	.416	.119	.055	.000	.237	-.057	.237	-.203	-.101	0.612	0.082	4.3	1.1	7.6	1.5	A+	
2111	657804	7	7	706	.140	.568	.140	.255	.037	.000	-.183	.259	-.183	-.117	-.073	2.391	0.114	3.4	1.3	9.9	4.7	A-	A+
2112	657805	7	7	661	.581	.581	.272	.077	.070	.000	.471	.471	-.226	-.260	-.247	-0.249	0.088	-1.7	0.9	-1.7	0.9	A+	A+
2113	657807	7	7	699	.385	.385	.270	.157	.187	.000	.148	.148	-.080	-.200	.093	0.719	0.086	7.1	1.3	8.8	1.6	A-	
2114	657808	7	7	723	.261	.170	.375	.261	.194	.000	.039	.057	-.044	.039	-.043	1.468	0.092	5.7	1.3	9.9	2.2	A+	A+
2115	657809	7	7	696	.316	.122	.300	.262	.316	.000	.144	-.030	-.065	-.062	.144	1.058	0.090	5.7	1.2	8.1	1.8	A+	
2116	657810	7	7	665	.134	.071	.108	.687	.134	.000	.219	-.244	-.248	.140	.219	2.394	0.120	-0.4	1.0	4.2	1.8	A+	B+
2117	657811	7	7	720	.631	.044	.631	.118	.207	.000	.384	-.183	.384	-.262	-.155	-0.497	0.087	1.4	1.1	1.2	1.1	A-	A-
2118	657815	7	7	709	.484	.210	.205	.484	.102	.000	.336	-.215	-.129	.336	-.093	0.312	0.084	2.1	1.1	3.3	1.2	A-	A-
2119	657816	7	7	718	.362	.373	.362	.127	.138	.000	.087	.113	.087	-.260	-.029	0.814	0.086	8.4	1.3	9.9	1.9	A-	
2120	657819	7	7	705	.184	.562	.200	.184	.054	.000	-.030	.205	-.125	-.030	-.176	1.988	0.104	4.0	1.3	9.9	3.0	A+	
2121	657820	7	7	749	.768	.039	.081	.112	.768	.000	.494	-.254	-.316	-.232	.494	-1.354	0.098	-1.3	0.9	-1.6	0.9	B+	B-
2122	657821	7	7	675	.453	.287	.169	.453	.090	.000	.365	-.130	-.229	.365	-.129	0.405	0.086	0.1	1.0	4.3	1.3	A-	A-
2123	657822	7	7	687	.272	.080	.234	.413	.272	.000	.265	-.180	-.189	.021	.265	1.299	0.093	1.0	1.0	4.1	1.4	A-	A+
2124	657823	7	7	701	.411	.181	.243	.411	.166	.000	.224	-.050	-.127	.224	-.097	0.603	0.085	5.0	1.2	6.0	1.4	A-	A-
2125	657824	7	7	694	.343	.130	.287	.241	.343	.000	.151	-.109	-.045	-.034	.151	0.897	0.089	7.0	1.3	6.7	1.6	A+	
2126	657825	7	7	712	.291	.143	.275	.291	.291	.000	.261	-.088	-.063	-.131	.261	1.212	0.090	2.0	1.1	3.7	1.3	A-	
2127	657826	7	7	708	.482	.041	.482	.356	.122	.000	.207	-.251	.207	-.091	-.030	0.255	0.084	6.4	1.2	6.7	1.4	A+	
2128	657827	7	7	706	.465	.062	.465	.217	.256	.000	.334	-.188	.334	-.264	-.029	0.329	0.084	2.0	1.1	4.4	1.3	A-	A-
2129	657828	7	7	693	.222	.228	.432	.222	.118	.000	.024	-.006	-.079	.024	.099	1.711	0.099	4.6	1.3	9.4	2.4	A+	
2130	657829	7	7	724	.699	.113	.699	.087	.101	.000	.300	-.222	.300	-.104	-.126	-0.942	0.092	4.2	1.2	2.5	1.2	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2131	657830	7	7	713	.467	.140	.467	.286	.107	.000	.235	-.177	.235	-.082	-.061	0.330	0.084	5.8	1.2	7.5	1.5	A+	A+
2132	657831	7	7	721	.609	.108	.609	.207	.076	.000	.341	-.296	.341	-.086	-.149	-0.456	0.086	2.4	1.1	3.0	1.2	A-	
2133	657832	7	7	646	.098	.173	.060	.098	.669	.000	-.095	-.135	-.298	-.095	.319	2.893	0.138	1.5	1.2	8.2	3.6	C-	
2134	657833	7	7	710	.549	.549	.190	.130	.131	.000	.475	.475	-.253	-.267	-.141	-0.077	0.085	-1.9	0.9	-1.8	0.9	A-	A-
2135	657834	7	7	707	.359	.023	.311	.307	.359	.000	.493	-.210	-.282	-.162	.493	0.970	0.087	-4.2	0.9	-0.6	1.0	A-	A-
2136	657835	7	7	684	.624	.091	.624	.173	.113	.000	.353	-.199	.353	-.226	-.090	-0.421	0.089	2.4	1.1	1.8	1.1	A+	A-
2137	657836	7	7	686	.523	.156	.523	.184	.137	.000	.273	-.109	.273	-.188	-.071	0.086	0.085	4.2	1.1	5.2	1.3	A+	
2138	657837	7	7	672	.274	.429	.167	.131	.274	.000	.430	-.134	-.145	-.213	.430	1.334	0.094	-2.9	0.9	0.3	1.0	A-	B-
2139	657838	7	7	683	.583	.231	.129	.583	.057	.000	.573	-.348	-.313	.573	-.133	-0.222	0.087	-5.2	0.8	-4.9	0.8	A-	A+
2140	657839	7	6	691	.489	.151	.182	.489	.178	.000	.231	-.114	-.069	.231	-.126	0.178	0.085	5.4	1.2	6.8	1.4	A+	
2141	657840	7	7	722	.562	.223	.562	.137	.078	.000	.289	.006	.289	-.260	-.210	-0.148	0.084	3.9	1.1	4.1	1.2	A+	A-
2142	657841	7	7	734	.375	.375	.180	.199	.247	.000	.276	.276	-.161	-.235	.052	0.754	0.084	3.0	1.1	5.6	1.4	A+	
2143	657842	7	7	738	.472	.472	.305	.113	.111	.000	.093	.093	.016	-.162	-.007	0.353	0.082	9.9	1.4	9.5	1.5	A-	A+
2144	657843	7	7	741	.619	.619	.174	.144	.062	.000	.235	.235	-.056	-.136	-.187	-0.435	0.086	6.0	1.3	6.0	1.4	A+	
2145	657844	7	7	722	.231	.298	.380	.231	.091	.000	-.004	-.024	.090	-.004	-.109	1.610	0.095	5.2	1.3	9.9	3.1	A+	
2146	657845	7	7	724	.192	.160	.413	.235	.192	.000	.169	-.075	-.011	-.079	.169	1.915	0.101	1.7	1.1	5.0	1.7	A-	B-
2147	657846	7	7	722	.247	.114	.314	.326	.247	.000	.097	-.110	.015	-.030	.097	1.505	0.093	4.3	1.2	7.7	1.9	A+	
2148	657847	7	7	671	.560	.064	.560	.288	.088	.000	.451	-.163	.451	-.257	-.239	-0.182	0.089	0.1	1.0	0.2	1.0	A-	
2149	657848	7	7	682	.485	.249	.202	.485	.063	.000	.422	-.202	-.260	.422	-.080	0.298	0.085	-1.2	1.0	1.3	1.1	A-	
2150	657849	7	7	676	.681	.118	.681	.120	.081	.000	.344	-.118	.344	-.178	-.236	-0.769	0.093	2.3	1.1	2.0	1.2	A+	
2151	657889	7	7	667	.411	.210	.411	.271	.108	.000	.299	-.056	.299	-.095	-.264	0.618	0.088	2.8	1.1	4.9	1.3	A-	
2152	657890	7	7	722	.622	.127	.105	.145	.622	.000	.521	-.255	-.346	-.174	.521	-0.496	0.087	-2.7	0.9	-2.4	0.9	A-	
2153	657891	7	7	674	.407	.407	.151	.349	.094	.000	.172	.172	-.104	.073	-.281	0.612	0.087	5.6	1.2	9.9	1.7	A-	
2154	657892	7	7	696	.263	.263	.430	.158	.149	.000	.176	.176	-.077	-.008	-.102	1.434	0.093	2.5	1.1	6.8	1.8	A+	A-
2155	657893	7	7	665	.265	.241	.168	.326	.265	.000	.349	.037	-.245	-.167	.349	1.402	0.096	-0.6	1.0	2.1	1.2	A+	A+
2156	658825	7	7	691	.177	.177	.201	.439	.184	.000	.161	.161	-.144	.061	-.088	2.007	0.106	1.7	1.1	3.9	1.6	A-	A-
2157	658828	7	7	687	.176	.176	.236	.435	.153	.000	.161	.161	-.037	-.006	-.119	2.081	0.107	0.7	1.0	8.1	2.5	A+	
2158	658830	7	7	653	.891	.020	.072	.017	.891	.000	.264	-.067	-.170	-.225	.264	-2.341	0.136	0.7	1.1	1.2	1.2	A-	
2159	660526	7	7	673	.213	.400	.224	.163	.213	.000	.276	-.135	-.069	-.048	.276	1.782	0.101	-0.3	1.0	4.8	1.7	A-	
2160	660527	7	7	734	.279	.326	.279	.151	.244	.000	.033	-.169	.033	.010	.142	1.342	0.090	6.6	1.3	9.9	2.2	A+	A+
2161	660777	7	7	716	.334	.334	.201	.406	.059	.000	.091	.091	-.289	.179	-.063	1.070	0.086	6.8	1.3	7.9	1.7	A-	
2162	660778	7	7	704	.553	.263	.046	.139	.553	.000	.415	-.238	-.227	-.158	.415	-0.050	0.085	0.0	1.0	0.3	1.0	A+	
2163	661063	7	7	682	.911	.028	.911	.048	.013	.000	.414	-.164	.414	-.322	-.194	-2.882	0.147	-0.8	0.9	-1.1	0.8	B+	
2164	661064	7	7	686	.251	.216	.348	.185	.251	.000	.202	-.010	-.062	-.138	.202	1.478	0.096	2.8	1.1	5.7	1.7	A+	A-
2165	661065	7	7	691	.180	.172	.460	.188	.180	.000	.073	-.138	.123	-.095	.073	2.023	0.106	2.6	1.2	7.1	2.3	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2166	662340	7	7	740	.401	.127	.354	.401	.118	.000	.266	-.216	-.030	.266	-.138	0.625	0.083	3.1	1.1	8.4	1.6	A-	A+
2167	662341	7	7	726	.657	.657	.125	.091	.127	.000	.484	.484	-.280	-.243	-.202	-0.662	0.089	-1.4	0.9	-1.2	0.9	A+	B-
2168	662342	7	7	749	.486	.164	.166	.486	.184	.000	.328	-.246	-.293	.328	.094	0.284	0.081	2.0	1.1	4.4	1.2	A-	A-
2169	662343	7	7	668	.537	.192	.537	.142	.129	.000	.401	-.228	.401	-.194	-.128	-0.024	0.087	0.4	1.0	1.2	1.1	A-	
2170	662344	7	7	679	.356	.138	.356	.331	.174	.000	.084	.098	.084	-.021	-.169	0.860	0.089	8.8	1.4	8.5	1.7	A+	
2171	662346	7	7	713	.498	.498	.220	.184	.098	.000	.440	.440	-.160	-.218	-.233	0.154	0.084	-1.4	1.0	1.2	1.1	A+	
2172	662347	7	7	679	.390	.390	.253	.199	.158	.000	.169	.169	-.208	-.120	.154	0.746	0.088	6.9	1.3	8.0	1.6	A+	A+
2173	662348	7	7	708	.735	.047	.735	.110	.109	.000	.376	-.097	.376	-.243	-.222	-1.109	0.095	1.0	1.1	0.4	1.0	A+	
2174	662349	7	7	702	.739	.148	.073	.739	.040	.000	.447	-.237	-.251	.447	-.239	-1.194	0.097	-0.2	1.0	-1.2	0.9	A+	A-
2175	662350	7	7	655	.415	.415	.194	.308	.082	.000	.363	.363	-.191	-.191	-.055	0.594	0.088	0.6	1.0	2.3	1.1	A-	A+
2176	662352	7	7	730	.785	.785	.080	.099	.037	.000	.464	.464	-.269	-.257	-.219	-1.418	0.100	-1.4	0.9	-2.2	0.8	A+	A+
2177	662353	7	7	666	.476	.476	.165	.237	.122	.000	.436	.436	-.199	-.222	-.151	0.285	0.086	-1.5	1.0	0.5	1.0	A+	
2178	662354	7	7	691	.511	.245	.511	.152	.093	.000	.325	-.209	.325	-.153	-.061	0.053	0.086	3.4	1.1	4.8	1.3	A-	
2179	657850	8	8	160	.288	.144	.275	.288	.294	.000	.092	-.053	-.141	.092	.088	1.179	0.188	2.7	1.2	2.4	1.5	A+	
2180	657851	8	8	200	.345	.205	.265	.345	.185	.000	.146	-.104	-.074	.146	.013	0.760	0.164	3.4	1.2	2.9	1.4	A-	
2181	657852	8	8	215	.251	.335	.247	.167	.251	.000	.210	-.044	-.122	-.048	.210	1.484	0.173	1.2	1.1	4.7	2.1	A-	A-
2182	657853	8	8	185	.357	.270	.189	.357	.184	.000	.109	.011	-.058	.109	-.087	0.586	0.171	4.4	1.3	5.2	1.9	B+	B-
2183	657854	8	8	213	.310	.225	.263	.310	.202	.000	.245	-.155	.005	.245	-.126	1.066	0.164	1.9	1.1	2.8	1.4	A-	
2184	657855	8	8	148	.257	.257	.230	.291	.223	.000	.104	.104	-.168	.008	.052	1.268	0.202	2.3	1.2	2.3	1.6	A+	
2185	657856	8	8	142	.204	.078	.254	.204	.465	.000	.267	-.244	-.206	.267	.095	1.592	0.220	-0.3	1.0	0.6	1.1	A+	
2186	657857	8	8	196	.097	.097	.316	.194	.393	.000	.010	.010	.044	-.030	-.024	2.738	0.254	0.9	1.2	3.2	2.5	A-	
2187	657858	8	8	200	.200	.035	.080	.200	.685	.000	.235	.053	-.133	.235	-.146	1.753	0.192	0.1	1.0	4.2	2.3	B-	
2188	657859	8	8	196	.235	.158	.235	.372	.235	.000	.108	-.028	.108	.097	-.195	1.371	0.185	2.0	1.2	5.3	2.6	A+	
2189	657860	8	8	159	.365	.126	.365	.138	.371	.000	.319	-.174	.319	-.027	-.179	0.720	0.184	0.4	1.0	2.9	1.5	A+	
2190	657861	8	8	203	.365	.232	.365	.335	.069	.000	.191	-.015	.191	-.106	-.140	0.731	0.161	2.9	1.2	3.9	1.5	A-	
2191	657862	8	8	176	.205	.415	.205	.108	.273	.000	-.060	.074	-.060	-.159	.083	1.565	0.204	2.9	1.4	5.4	2.8	B-	
2192	657863	8	8	193	.176	.197	.404	.176	.223	.000	-.110	.012	-.047	-.110	.144	1.745	0.203	2.7	1.4	5.2	2.8	A-	
2193	657864	8	8	201	.199	.159	.199	.448	.194	.000	-.108	.022	-.108	.065	.007	1.675	0.193	3.7	1.4	5.9	2.8	A+	
2194	657865	8	8	197	.223	.066	.152	.558	.223	.000	.099	-.223	-.150	.137	.099	1.622	0.186	2.0	1.2	3.6	1.9	A-	
2195	657866	8	8	184	.495	.125	.332	.495	.049	.000	.294	-.155	-.097	.294	-.234	-0.044	0.165	2.2	1.1	2.3	1.2	A+	
2196	657867	8	8	202	.515	.515	.183	.158	.144	.000	.342	.342	-.154	-.300	-.005	-0.283	0.159	1.4	1.1	1.6	1.2	A+	
2197	657868	8	8	142	.183	.183	.197	.423	.197	.000	.173	.173	-.243	.133	-.089	1.900	0.229	0.4	1.1	1.3	1.3	A-	
2198	657869	8	8	154	.221	.279	.201	.299	.221	.000	.188	-.007	-.150	-.032	.188	1.504	0.208	0.6	1.1	2.6	1.6	A-	
2199	657870	8	8	154	.318	.299	.266	.117	.318	.000	.177	-.043	-.053	-.122	.177	1.039	0.188	1.4	1.1	3.5	1.6	B-	
2200	657871	8	8	181	.541	.149	.541	.243	.066	.000	.317	-.154	.317	-.251	.018	-0.270	0.171	2.3	1.2	2.5	1.3	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2201	657872	8	8	204	.270	.343	.270	.186	.201	.000	.127	-.088	.127	-.138	.098	1.202	0.172	2.7	1.2	3.7	1.8	B-	
2202	657873	8	8	204	.172	.172	.289	.427	.113	.000	.102	.102	.025	.037	-.215	1.820	0.197	1.4	1.2	3.0	1.9	A+	A-
2203	657874	8	8	147	.333	.048	.333	.442	.177	.000	.307	.025	.307	-.146	-.204	0.903	0.192	0.6	1.1	1.7	1.3	A+	
2204	657894	8	8	141	.461	.170	.461	.213	.156	.000	.184	-.026	.184	-.189	-.012	0.266	0.184	2.6	1.2	2.1	1.2	A+	
2205	657895	8	8	188	.293	.293	.330	.133	.245	.000	.329	.329	-.096	-.336	.022	1.082	0.177	0.4	1.0	1.3	1.2	A+	
2206	657896	8	8	196	.260	.219	.245	.260	.276	.000	.213	-.014	-.193	.213	-.010	1.383	0.176	0.6	1.1	4.9	2.1	A+	
2207	657897	8	8	190	.347	.211	.347	.190	.253	.000	.098	.009	.098	-.092	-.033	0.773	0.169	4.0	1.3	6.0	2.1	A+	
2208	657898	8	8	209	.215	.215	.263	.163	.359	.000	.164	.164	-.004	-.143	-.027	1.456	0.183	0.9	1.1	6.2	3.1	A+	
2209	657900	8	8	202	.455	.203	.455	.238	.104	.000	.237	.077	.237	-.266	-.117	0.214	0.157	3.1	1.2	2.4	1.3	A+	
2210	657901	8	8	159	.377	.377	.428	.151	.044	.000	.347	.347	-.174	-.088	-.246	0.573	0.181	0.7	1.1	0.8	1.1	A+	
2211	657902	8	8	140	.536	.107	.236	.536	.121	.000	.359	-.155	-.175	.359	-.173	-0.188	0.189	0.9	1.1	0.5	1.1	A+	
2212	657903	8	8	182	.610	.192	.610	.148	.050	.000	.451	-.267	.451	-.212	-.181	-0.526	0.171	-0.5	1.0	-0.8	0.9	A+	
2213	657904	8	8	186	.247	.226	.183	.344	.247	.000	.177	-.077	-.128	.011	.177	1.306	0.185	1.8	1.2	2.3	1.4	A-	
2214	657905	8	8	209	.191	.191	.325	.292	.191	.000	.031	.031	-.009	-.031	.016	1.718	0.190	2.0	1.2	4.5	2.3	A-	
2215	657906	8	8	145	.372	.310	.372	.207	.110	.000	.144	.068	.144	-.082	-.216	0.536	0.190	2.8	1.2	4.5	1.7	A-	
2216	657907	8	8	134	.276	.299	.276	.276	.149	.000	.184	-.129	.184	.013	-.082	1.124	0.210	1.0	1.1	3.4	1.9	A+	
2217	657908	8	8	133	.218	.150	.399	.233	.218	.000	.245	-.058	-.167	.004	.245	1.489	0.225	0.3	1.0	1.3	1.3	A+	
2218	657909	8	8	123	.407	.073	.301	.220	.407	.000	.271	-.341	-.021	-.084	.271	0.468	0.199	0.9	1.1	1.3	1.2	A-	
2219	657910	8	8	137	.256	.256	.329	.270	.146	.000	-.034	-.034	-.110	-.024	.220	1.257	0.213	3.0	1.3	5.8	2.9	A+	
2220	657911	8	8	160	.456	.119	.206	.456	.219	.000	.161	-.172	.018	.161	-.077	0.024	0.176	3.4	1.2	3.7	1.4	A-	
2221	657912	8	8	167	.389	.132	.264	.389	.216	.000	.232	-.118	-.159	.232	-.008	0.549	0.175	2.1	1.1	2.3	1.3	A+	
2222	657913	8	8	206	.660	.660	.087	.136	.117	.000	.203	.203	-.131	-.113	-.064	-0.967	0.166	3.3	1.3	2.8	1.4	A+	
2223	657914	8	8	130	.315	.315	.246	.146	.292	.000	.424	.424	-.122	-.266	-.111	0.945	0.209	-0.8	0.9	0.2	1.0	A+	
2224	657915	8	8	151	.238	.265	.272	.225	.238	.000	.315	-.134	-.183	.015	.315	1.308	0.205	-0.3	1.0	1.0	1.2	A+	
2225	657916	8	8	146	.288	.288	.288	.274	.151	.000	.051	-.053	.051	-.101	.129	1.029	0.198	2.9	1.3	4.0	1.9	A-	
2226	657917	8	8	143	.378	.112	.420	.378	.091	.000	.222	-.149	-.040	.222	-.143	0.696	0.190	2.0	1.2	2.8	1.5	B+	
2227	657918	8	8	183	.312	.230	.257	.202	.312	.000	.264	.021	-.153	-.160	.264	0.862	0.175	1.2	1.1	3.0	1.5	A+	
2228	657919	8	8	153	.248	.248	.386	.301	.065	.000	.012	.012	-.015	-.090	.175	1.260	0.202	2.2	1.2	6.7	3.3	A-	
2229	657920	8	8	146	.288	.418	.288	.116	.178	.000	-.061	.104	-.061	-.143	.059	1.117	0.195	3.2	1.3	4.4	1.8	A+	
2230	657921	8	8	135	.415	.415	.363	.141	.082	.000	.357	.357	-.145	-.222	-.105	0.479	0.195	0.8	1.1	0.7	1.1	C+	
2231	657922	8	8	144	.243	.417	.194	.146	.243	.000	.248	.054	-.171	-.186	.248	1.354	0.208	0.1	1.0	2.5	1.6	B-	
2232	657923	8	8	190	.642	.063	.200	.642	.095	.000	.414	-.176	-.226	.414	-.222	-0.681	0.173	0.8	1.1	0.0	1.0	A-	
2233	657924	8	8	139	.648	.086	.648	.216	.050	.000	.426	-.036	.426	-.327	-.270	-0.758	0.199	-0.1	1.0	-0.4	1.0	A-	
2234	657951	8	8	139	.525	.194	.525	.201	.079	.000	.348	-.233	.348	-.186	-.026	-0.126	0.193	1.4	1.1	1.6	1.2	B-	
2235	657952	8	8	151	.517	.185	.185	.517	.113	.000	.339	-.016	-.281	.339	-.171	-0.067	0.183	1.5	1.1	1.4	1.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2236	657953	8	8	182	.291	.269	.291	.319	.121	.000	-.039	.182	-.039	-.120	-.022	1.001	0.178	4.4	1.4	5.4	2.1	A+	
2237	657954	8	8	149	.490	.161	.490	.269	.081	.000	.310	-.180	.310	-.126	-.122	-0.047	0.186	2.1	1.2	2.0	1.3	A+	
2238	657955	8	8	201	.468	.239	.468	.169	.124	.000	.110	-.058	.110	-.077	-.004	-0.028	0.159	5.4	1.4	4.7	1.5	A-	
2239	657956	8	8	205	.220	.293	.220	.249	.239	.000	-.134	-.097	-.134	.054	.179	1.612	0.183	3.8	1.4	7.2	3.3	A-	
2240	657957	8	8	188	.484	.229	.484	.229	.059	.000	.262	-.006	.262	-.259	-.083	0.167	0.160	1.9	1.1	1.8	1.2	A-	
2241	657958	8	8	214	.463	.084	.463	.215	.238	.000	.167	-.004	.167	-.055	-.139	0.187	0.152	3.6	1.2	5.1	1.5	A-	
2242	657959	8	8	145	.393	.166	.131	.310	.393	.000	.280	-.116	-.179	-.072	.280	0.514	0.188	1.6	1.1	1.3	1.2	A-	A+
2243	657960	8	8	157	.459	.166	.191	.459	.185	.000	.316	-.348	-.157	.316	.086	0.246	0.175	0.8	1.1	0.6	1.1	B+	
2244	657961	8	8	137	.292	.168	.292	.409	.131	.000	.165	.020	.165	-.012	-.226	1.211	0.204	2.0	1.2	2.7	1.6	A-	
2245	657962	8	8	198	.313	.232	.197	.313	.258	.000	.121	-.042	-.026	.121	-.065	1.079	0.169	3.3	1.3	4.3	1.7	B-	
2246	657963	8	8	130	.454	.092	.108	.454	.346	.000	.235	-.162	-.244	.235	.012	0.192	0.198	2.5	1.2	2.3	1.3	A+	
2247	657964	8	8	131	.389	.084	.389	.305	.221	.000	.212	-.061	.212	-.176	-.012	0.525	0.202	2.5	1.2	4.0	1.7	B-	
2248	657965	8	8	159	.365	.270	.239	.365	.126	.000	.111	.276	-.176	.111	-.304	0.671	0.180	3.3	1.2	3.9	1.6	B+	
2249	657966	8	8	153	.340	.340	.203	.288	.170	.000	.274	.274	-.228	-.038	-.056	0.790	0.188	1.2	1.1	1.0	1.1	A+	
2250	657967	8	8	167	.611	.611	.174	.144	.072	.000	.493	.493	-.357	-.211	-.121	-0.628	0.177	-1.4	0.9	-1.3	0.9	A+	
2251	657968	8	8	147	.293	.204	.293	.299	.204	.000	.138	.183	.138	-.262	-.041	1.073	0.196	2.0	1.2	2.4	1.5	A+	
2252	657969	8	8	138	.449	.123	.449	.225	.203	.000	.266	-.030	.266	-.167	-.132	0.407	0.186	1.1	1.1	2.0	1.2	A-	
2253	657970	8	8	153	.438	.275	.157	.438	.131	.000	.243	-.230	-.187	.243	.149	0.391	0.179	1.9	1.1	2.6	1.3	A-	
2254	657971	8	8	189	.497	.169	.497	.249	.085	.000	.207	-.127	.207	-.108	-.034	0.034	0.161	3.3	1.2	2.9	1.3	A-	
2255	657972	8	8	145	.324	.235	.324	.324	.117	.000	.016	-.025	-.016	.016	.033	0.725	0.192	3.8	1.3	3.5	1.6	B+	
2256	657973	8	8	140	.400	.371	.400	.150	.079	.000	.211	.047	.211	-.240	-.148	0.461	0.191	2.9	1.2	1.9	1.3	A+	
2257	657974	8	8	210	.281	.557	.281	.114	.048	.000	.411	-.130	.411	-.277	-.151	1.058	0.167	-0.6	1.0	-0.9	0.9	A+	
2258	657975	8	8	217	.286	.286	.055	.203	.456	.000	.229	.229	-.219	.028	-.130	1.149	0.163	1.3	1.1	2.4	1.4	A+	A-
2259	658001	8	8	145	.283	.283	.207	.166	.345	.000	.176	.176	-.302	-.096	.165	1.314	0.200	1.3	1.1	3.6	1.8	A+	
2260	658002	8	8	139	.237	.245	.216	.302	.237	.000	.323	.123	-.253	-.187	.323	1.522	0.213	-0.2	1.0	-0.1	1.0	A+	
2261	658003	8	8	154	.240	.318	.292	.149	.240	.000	.196	.095	-.154	-.163	.196	1.352	0.205	1.3	1.1	2.0	1.5	B+	
2262	658004	8	8	153	.203	.307	.248	.242	.203	.000	.052	.085	-.019	-.121	.052	1.800	0.213	1.6	1.2	2.9	1.8	A-	
2263	658005	8	8	196	.194	.138	.194	.225	.444	.000	-.042	-.105	-.042	-.269	.332	1.809	0.196	2.9	1.4	6.2	3.5	A+	
2264	658006	8	8	210	.514	.110	.210	.514	.167	.000	.356	-.170	-.314	.356	.009	-0.125	0.154	0.8	1.1	1.1	1.1	A-	
2265	658007	8	8	185	.405	.222	.178	.195	.405	.000	.417	-.183	-.327	-.009	.417	0.365	0.165	-1.1	0.9	0.1	1.0	A-	
2266	658008	8	8	197	.269	.178	.198	.355	.269	.000	.346	-.089	-.344	.037	.346	1.124	0.175	-0.3	1.0	1.3	1.2	A-	
2267	658009	8	8	195	.456	.200	.456	.226	.118	.000	.380	-.268	.380	-.188	-.010	0.243	0.161	0.6	1.0	1.2	1.1	A-	
2268	658010	8	8	167	.431	.431	.240	.174	.156	.000	.449	.449	-.290	-.193	-.070	0.305	0.175	-0.7	1.0	0.0	1.0	A-	
2269	658011	8	8	125	.688	.688	.160	.120	.032	.000	.351	.351	-.297	-.093	-.134	-0.901	0.217	0.9	1.1	0.7	1.1	A+	
2270	658012	8	8	147	.483	.252	.191	.483	.075	.000	.017	-.066	.022	.017	.042	0.108	0.185	5.6	1.5	5.8	1.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2271	658013	8	8	159	.396	.101	.333	.170	.396	.000	.355	-.180	-.198	-.070	.355	0.640	0.180	-0.2	1.0	3.5	1.5	A-	
2272	658014	8	8	138	.645	.044	.645	.094	.217	.000	.388	-.263	.388	-.282	-.120	-0.677	0.197	0.2	1.0	-0.3	1.0	A+	
2273	658015	8	8	198	.131	.263	.475	.131	.131	.000	-.005	-.024	.135	-.164	-.005	2.098	0.220	1.1	1.2	3.8	2.5	B+	
2274	658016	8	8	195	.385	.139	.364	.385	.113	.000	.300	-.222	-.146	.300	.002	0.541	0.167	1.9	1.1	2.8	1.4	A-	
2275	658017	8	8	138	.297	.297	.174	.333	.196	.000	.233	.233	-.329	.062	-.028	1.057	0.202	0.7	1.1	3.4	1.8	A+	
2276	658018	8	8	149	.362	.175	.362	.309	.154	.000	.046	-.103	.046	-.036	.093	0.766	0.187	3.5	1.3	5.9	2.1	A-	
2277	658019	8	8	161	.236	.205	.236	.447	.112	.000	.111	.028	.111	-.033	-.133	1.397	0.200	1.9	1.2	2.6	1.6	A+	
2278	658020	8	8	203	.177	.187	.330	.305	.177	.000	.169	-.172	-.133	.142	.169	1.780	0.195	0.7	1.1	3.4	2.0	A-	A-
2279	658021	8	8	141	.418	.128	.312	.418	.142	.000	.107	-.093	-.044	.107	-.004	0.381	0.190	3.7	1.3	6.2	2.1	A+	
2280	658022	8	8	151	.470	.133	.232	.470	.166	.000	.117	.070	-.041	.117	-.175	0.093	0.181	4.1	1.3	4.0	1.5	B+	
2281	658023	8	8	144	.326	.340	.250	.326	.083	.000	.257	.139	-.391	.257	-.062	0.937	0.196	1.5	1.1	1.5	1.3	A+	
2282	658024	8	8	147	.170	.122	.415	.170	.293	.000	-.133	-.336	.168	-.133	.170	1.801	0.234	2.5	1.4	4.5	2.9	A-	
2283	658025	8	8	214	.332	.262	.243	.164	.332	.000	.299	-.012	-.219	-.112	.299	0.857	0.159	0.4	1.0	2.3	1.3	A-	
2284	658026	8	8	137	.131	.131	.336	.402	.131	.000	.152	.143	-.128	-.080	.152	2.194	0.263	0.3	1.0	2.0	1.8	A-	
2285	658027	8	8	219	.215	.343	.324	.119	.215	.000	-.012	-.001	.081	-.101	-.012	1.548	0.179	3.1	1.3	5.1	2.5	A+	
2286	658028	8	8	188	.261	.356	.261	.218	.165	.000	-.051	.276	-.051	-.139	-.141	1.089	0.178	3.2	1.3	5.4	2.1	A-	
2287	658029	8	8	143	.154	.441	.154	.252	.154	.000	.099	.239	.099	-.276	-.095	2.068	0.244	0.8	1.1	2.2	1.7	A+	
2288	658030	8	8	146	.349	.123	.274	.253	.349	.000	.289	-.140	-.088	-.120	.289	0.892	0.190	1.2	1.1	0.7	1.1	A+	
2289	658031	8	8	194	.299	.139	.294	.268	.299	.000	.141	.126	-.133	-.108	.141	1.000	0.172	3.0	1.3	2.8	1.4	A+	
2290	658032	8	8	150	.193	.193	.353	.353	.100	.000	.141	.141	-.016	-.082	-.030	1.757	0.221	0.8	1.1	3.4	2.1	A+	
2291	658033	8	8	211	.152	.251	.341	.256	.152	.000	.005	.259	-.202	-.042	.005	2.211	0.203	1.3	1.2	4.6	2.6	A+	
2292	658034	8	8	117	.222	.120	.513	.145	.222	.000	.045	-.165	.000	.099	.045	1.517	0.239	1.7	1.2	3.2	2.0	A-	
2293	658035	8	8	152	.375	.079	.336	.375	.211	.000	.168	-.024	-.182	.168	.027	0.758	0.185	2.9	1.2	3.7	1.6	B-	
2294	658036	8	8	152	.296	.197	.217	.290	.296	.000	.177	.010	-.095	-.101	.177	1.223	0.196	1.9	1.2	4.0	2.0	A+	
2295	658037	8	8	219	.292	.393	.192	.292	.123	.000	-.023	.070	-.085	-.023	.029	1.052	0.163	4.6	1.4	6.4	2.2	A-	
2296	658038	8	8	197	.376	.376	.244	.234	.147	.000	.306	.306	-.088	-.190	-.086	0.596	0.163	1.4	1.1	1.6	1.2	A+	
2297	658039	8	8	154	.546	.546	.221	.130	.104	.000	.271	.271	-.155	-.110	-.110	-0.323	0.181	2.1	1.2	1.9	1.2	A+	
2298	658040	8	8	137	.423	.423	.263	.248	.066	.000	.257	.257	-.137	-.151	-.006	0.336	0.194	2.6	1.2	1.6	1.2	A-	
2299	658041	8	8	172	.209	.209	.361	.273	.157	.000	.188	.188	-.012	-.153	-.008	1.659	0.202	1.0	1.1	2.0	1.5	B-	
2300	658042	8	8	201	.299	.299	.224	.309	.169	.000	.479	.479	-.149	-.134	-.254	1.043	0.171	-1.7	0.9	-1.0	0.9	A+	
2301	658043	8	8	147	.259	.211	.286	.259	.245	.000	-.098	-.024	.129	-.098	-.014	1.263	0.200	2.6	1.3	6.9	3.0	A-	
2302	658044	8	8	143	.035	.035	.161	.357	.448	.000	-.080	-.080	.146	-.049	-.031	3.651	0.465	0.4	1.1	2.2	3.1	A+	
2303	658045	8	8	158	.114	.108	.462	.317	.114	.000	.212	-.126	-.061	.005	.212	2.484	0.264	-0.4	0.9	3.5	3.1	A-	
2304	658046	8	8	199	.241	.266	.286	.241	.206	.000	.131	-.075	-.010	.131	-.046	1.427	0.179	1.3	1.1	5.8	2.5	A-	
2305	658047	8	8	204	.490	.265	.490	.113	.132	.000	.310	-.094	.310	-.201	-.148	-0.171	0.158	2.1	1.1	2.3	1.2	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2306	658048	8	8	196	.270	.480	.148	.270	.102	.000	.339	-.149	-.147	.339	-.080	1.192	0.176	0.1	1.0	0.7	1.1	A-	
2307	658049	8	8	146	.507	.130	.507	.253	.110	.000	.338	.056	.338	-.377	-.077	0.175	0.181	0.4	1.0	0.3	1.0	A+	
2308	658050	8	8	159	.572	.572	.214	.126	.088	.000	.379	.379	-.265	-.157	-.095	-0.400	0.181	0.8	1.1	1.3	1.1	A-	
2309	662217	8	8	207	.440	.440	.203	.271	.087	.000	.307	.307	-.205	-.227	.109	0.372	0.154	1.2	1.1	1.3	1.1	A-	A+
2310	662218	8	8	136	.434	.118	.434	.338	.110	.000	.042	.149	.042	-.150	.006	0.308	0.195	5.3	1.5	5.1	1.9	B-	
2311	662221	8	8	194	.505	.113	.505	.304	.077	.000	.120	.180	.120	-.194	-.104	-0.114	0.159	4.9	1.3	4.3	1.5	A+	
2312	662222	8	8	184	.429	.332	.429	.179	.060	.000	.005	.115	.005	-.138	-.013	0.354	0.164	5.9	1.4	6.4	1.9	A-	
2313	662223	8	8	227	.238	.256	.410	.238	.097	.000	.069	-.082	.060	.069	-.079	1.424	0.170	3.0	1.3	5.2	2.3	A-	
2314	662224	8	8	134	.299	.149	.246	.306	.299	.000	.340	-.042	-.301	-.024	.340	1.063	0.205	-0.7	0.9	2.9	1.6	A+	
2315	662225	8	8	215	.219	.112	.219	.181	.488	.000	.155	-.294	.155	-.028	.078	1.485	0.178	1.1	1.1	4.8	2.2	A-	
2316	662453	8	8	154	.409	.409	.130	.292	.169	.000	.297	.297	-.131	-.223	.000	0.473	0.182	1.2	1.1	2.6	1.4	A+	
2317	662454	8	8	209	.407	.297	.177	.407	.120	.000	.225	-.038	-.297	.225	.062	0.465	0.156	2.6	1.2	3.7	1.5	A+	
2318	662455	8	8	216	.662	.056	.028	.255	.662	.000	.379	-.263	-.256	-.177	.379	-0.766	0.163	0.9	1.1	0.8	1.1	A-	
2319	662456	8	8	203	.301	.301	.237	.360	.103	.000	.245	.245	-.204	.040	-.147	0.936	0.167	1.7	1.1	0.9	1.1	A-	
2320	662457	8	8	230	.587	.091	.191	.587	.130	.000	.264	-.241	-.120	.264	-.040	-0.425	0.149	2.6	1.2	1.8	1.2	A-	
2321	662458	8	8	209	.632	.110	.177	.081	.632	.000	.414	-.091	-.239	-.292	.414	-0.654	0.161	-0.1	1.0	0.6	1.1	A+	
2322	662459	8	8	210	.262	.310	.262	.281	.148	.000	-.073	.004	-.073	.022	.058	1.187	0.170	4.1	1.4	6.6	2.5	B-	
2323	662460	8	8	138	.261	.261	.225	.319	.196	.000	.194	.194	-.172	.092	-.142	1.118	0.209	1.1	1.1	2.2	1.5	A+	
2324	662461	8	8	212	.198	.198	.198	.377	.226	.000	.303	.303	-.205	-.040	-.048	1.562	0.185	-0.2	1.0	1.5	1.3	A-	A-
2325	662462	8	8	230	.522	.074	.239	.522	.165	.000	.351	-.132	-.122	.351	-.239	-0.266	0.147	1.0	1.1	1.8	1.2	A+	
2326	662463	8	8	156	.539	.096	.263	.103	.539	.000	.491	-.035	-.435	-.142	.491	-0.293	0.181	-1.1	0.9	-0.9	0.9	A+	
2327	662464	8	8	186	.237	.237	.409	.220	.134	.000	.275	.275	.109	-.179	-.281	1.360	0.187	0.3	1.0	2.8	1.6	A-	
2328	662465	8	8	224	.571	.054	.571	.317	.058	.000	.296	-.007	.296	-.256	-.112	-0.500	0.151	2.0	1.1	1.8	1.2	A+	
2329	662466	8	8	145	.614	.110	.186	.614	.090	.000	.466	-.190	-.262	.466	-.229	-0.656	0.194	-0.3	1.0	-0.2	1.0	A-	
2330	662467	8	8	213	.455	.127	.455	.282	.136	.000	.306	-.221	.306	-.142	-.044	0.191	0.155	2.2	1.1	2.5	1.3	A+	
2331	662468	8	8	214	.500	.500	.094	.294	.112	.000	.453	.453	-.104	-.273	-.228	-0.137	0.153	-0.9	1.0	0.1	1.0	A+	
2332	662469	8	8	190	.400	.168	.142	.290	.400	.000	.385	-.323	-.155	-.030	.385	0.380	0.163	-0.3	1.0	0.7	1.1	C+	
2333	662470	8	8	220	.455	.155	.205	.186	.455	.000	.404	-.176	-.191	-.155	.404	0.178	0.152	-0.1	1.0	1.4	1.1	A+	
2334	662778	8	8	206	.243	.194	.408	.243	.155	.000	-.045	.018	.129	-.045	-.141	1.342	0.178	3.9	1.4	5.9	2.3	A+	
2335	662779	8	8	188	.489	.154	.245	.489	.112	.000	.142	-.161	.016	.142	-.062	-0.117	0.163	4.2	1.3	4.5	1.5	A-	
2336	672176	K	K	431	.882	.882	.012	.053	.051	.002	.442	.442	-.084	-.306	-.263	-4.194	0.163	-0.3	1.0	-0.2	0.9	C+	B-
2337	670543	K	K	431	.979	.014	.002	.979	.005	.000	.260	-.232	-.024	.260	-.131	-6.252	0.347	-0.1	1.0	-1.2	0.5	A-	A-
2338	678374	K	K	431	.796	.037	.796	.032	.121	.014	.640	-.274	.640	-.247	-.412	-3.393	0.135	-3.3	0.8	-3.1	0.6	A+	A-
2339	675631	K	K	431	.740	.039	.123	.081	.740	.016	.433	-.246	-.193	-.209	.433	-2.988	0.126	1.1	1.1	0.5	1.1	A+	A+
2340	671375	K	K	439	.909	.909	.030	.009	.052	.000	.278	.278	-.120	-.071	-.238	-4.909	0.177	0.4	1.0	0.8	1.2	B-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2341	678375	K	K	439	.852	.041	.016	.852	.087	.005	.354	-.287	-.215	.354	-.147	-4.263	0.147	0.3	1.0	1.0	1.2	A+	
2342	675341	K	K	439	.902	.057	.025	.902	.016	.000	.438	-.224	-.274	.438	-.283	-4.817	0.172	-0.9	0.9	0.5	1.1	A+	
2343	675346	K	K	439	.845	.055	.041	.055	.845	.005	.428	-.315	-.137	-.198	.428	-4.199	0.145	-0.3	1.0	-0.7	0.9	A+	
2344	672175	K	K	433	.582	.037	.053	.582	.326	.002	.254	-.057	-.070	.254	-.205	-2.017	0.113	6.3	1.3	6.1	1.5	A+	A+
2345	675633	K	K	433	.850	.850	.028	.032	.081	.009	.582	.582	-.284	-.267	-.366	-3.840	0.149	-2.3	0.8	-2.4	0.6	A+	A-
2346	675630	K	K	433	.755	.755	.053	.115	.067	.009	.618	.618	-.211	-.371	-.341	-3.074	0.127	-2.9	0.8	-3.1	0.7	A+	B-
2347	670541	K	K	433	.871	.065	.037	.871	.007	.021	.391	-.202	-.232	.391	-.139	-4.050	0.157	0.2	1.0	-0.5	0.9	A+	A-
2348	671947	K	K	435	.671	.018	.671	.143	.163	.005	.546	-.156	.546	-.195	-.435	-2.485	0.115	-2.0	0.9	-1.9	0.8	A+	C-
2349	675050	K	K	435	.681	.074	.092	.149	.680	.005	.347	-.228	-.183	-.122	.347	-2.538	0.116	2.4	1.1	2.3	1.2	A-	A-
2350	675632	K	K	435	.563	.317	.563	.060	.055	.005	.270	-.063	.270	-.218	-.165	-1.896	0.110	4.9	1.2	4.6	1.3	A-	A+
2351	671368	K	K	435	.933	.014	.933	.023	.021	.009	.519	-.180	.519	-.285	-.306	-4.787	0.203	-1.5	0.8	-2.2	0.5	A+	A-
2352	678370	K	K	435	.575	.228	.575	.154	.032	.011	.400	-.271	.400	-.086	-.164	-1.957	0.110	1.8	1.1	2.1	1.2	A+	A+
2353	675342	K	K	430	.637	.035	.047	.637	.277	.005	.465	-.150	-.061	.465	-.406	-2.844	0.111	-0.7	1.0	-1.3	0.9	A-	
2354	678371	K	K	430	.754	.209	.028	.753	.009	.000	.444	-.352	-.256	.444	-.060	-3.521	0.123	-0.4	1.0	-1.1	0.9	A+	
2355	671371	K	K	430	.630	.028	.230	.630	.107	.005	.248	-.065	-.267	.248	.014	-2.807	0.111	4.2	1.2	3.6	1.3	A-	
2356	675628	K	K	430	.519	.309	.065	.098	.519	.009	.279	-.104	-.171	-.135	.279	-2.238	0.108	3.7	1.2	5.1	1.3	A-	
2357	675049	K	K	448	.875	.875	.022	.096	.007	.000	.339	.339	-.175	-.246	-.170	-3.764	0.154	0.4	1.0	0.4	1.1	A-	A-
2358	677742	K	K	448	.922	.042	.922	.020	.013	.002	.332	-.268	.332	-.103	-.139	-4.362	0.187	-0.1	1.0	-0.5	0.9	B-	A-
2359	675343	K	K	448	.971	.009	.971	.011	.007	.002	.307	-.190	.307	-.126	-.193	-5.499	0.291	-0.2	0.9	-1.5	0.5	A+	B-
2360	677743	K	K	433	.656	.118	.079	.656	.143	.005	.515	-.189	-.213	.515	-.328	-2.376	0.116	-0.5	1.0	-0.4	1.0	B-	B-
2361	675052	K	K	433	.337	.162	.337	.268	.229	.005	.324	-.141	.324	-.117	-.106	-0.611	0.117	1.7	1.1	4.2	1.5	A-	A-
2362	678372	K	K	433	.972	.009	.016	.972	.002	.000	.319	-.228	-.253	.319	.027	-5.876	0.304	-0.4	0.9	-0.6	0.7	B+	A-
2363	675053	K	K	433	.552	.268	.037	.552	.132	.012	.233	-.149	-.094	.233	-.050	-1.794	0.112	6.4	1.3	6.3	1.5	B+	B+
2364	671951	K	K	431	.882	.053	.053	.882	.009	.002	.310	-.117	-.233	.310	-.174	-4.531	0.163	0.6	1.1	1.9	1.5	A-	A+
2365	670540	K	K	431	.933	.012	.035	.933	.016	.005	.375	-.216	-.232	.375	-.158	-5.256	0.205	-0.4	0.9	-0.5	0.8	A-	A+
2366	677892	K	K	431	.773	.773	.021	.081	.118	.007	.561	.561	-.187	-.446	-.243	-3.566	0.129	-2.0	0.9	-1.3	0.8	A-	A-
2367	678373	K	K	431	.926	.926	.023	.016	.030	.005	.437	.437	-.267	-.219	-.216	-5.134	0.197	-0.9	0.9	-0.7	0.8	B+	A-
2368	672182	K	K	436	.963	.018	.009	.009	.963	.000	.350	-.194	-.206	-.212	.350	-5.552	0.267	-0.3	0.9	-1.6	0.4	A+	A-
2369	675347	K	K	436	.727	.032	.009	.227	.727	.005	.446	-.187	-.099	-.361	.446	-2.789	0.125	1.3	1.1	-0.4	1.0	A+	C-
2370	670537	K	K	436	.837	.018	.837	.011	.117	.016	.596	-.259	.596	-.116	-.459	-3.646	0.146	-2.3	0.8	-2.8	0.5	A+	B-
2371	675629	K	K	436	.782	.782	.080	.078	.050	.009	.568	.568	-.291	-.242	-.338	-3.185	0.133	-1.6	0.9	-1.8	0.7	B+	A-
2372	675184	K	K	438	.895	.034	.034	.895	.037	.000	.476	-.183	-.280	.476	-.330	-4.187	0.170	-0.9	0.9	-1.3	0.7	B+	
2373	671380	K	K	438	.922	.922	.014	.007	.057	.000	.409	.409	-.146	-.246	-.311	-4.578	0.192	-0.6	0.9	-0.8	0.8	A-	
2374	675183	K	K	438	.690	.098	.689	.180	.032	.000	.480	-.319	.480	-.262	-.149	-2.498	0.118	-0.1	1.0	-1.0	0.9	A+	
2375	671942	K	K	438	.881	.023	.050	.881	.046	.000	.463	-.286	-.210	.463	-.293	-4.021	0.162	-0.8	0.9	-0.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2376	675186	K	K	438	.710	.096	.084	.710	.107	.002	.473	-.317	-.301	.473	-.116	-2.626	0.120	0.2	1.0	-0.5	0.9	A+	
2377	675344	K	K	424	.922	.035	.019	.019	.922	.005	.237	-.148	-.133	-.100	.237	-5.043	0.194	0.8	1.1	1.0	1.3	A+	
2378	677746	K	K	424	.425	.285	.425	.009	.278	.002	.389	-.279	.389	-.073	-.117	-1.546	0.113	1.4	1.1	2.7	1.2	A-	
2379	675185	K	K	424	.910	.910	.019	.028	.042	.000	.427	.427	-.157	-.250	-.293	-4.865	0.183	-0.5	0.9	-1.3	0.7	A+	
2380	671944	K	K	424	.868	.019	.868	.017	.094	.002	.531	-.232	.531	-.153	-.415	-4.348	0.157	-1.5	0.9	-1.6	0.7	A+	
2381	670534	K	K	424	.887	.028	.009	.068	.887	.007	.406	-.287	-.038	-.234	.406	-4.559	0.167	-0.4	1.0	1.5	1.3	A+	
2382	675345	K	K	433	.979	.979	.002	.009	.007	.002	.288	.288	-.147	-.243	-.137	-6.360	0.348	-0.2	0.9	-0.8	0.6	A-	
2383	670535	K	K	433	.903	.055	.903	.018	.023	.000	.442	-.329	.442	-.177	-.213	-4.520	0.179	-0.3	1.0	-0.7	0.8	A-	
2384	671370	K	K	433	.898	.035	.898	.018	.044	.005	.467	-.207	.467	-.201	-.304	-4.457	0.176	-0.7	0.9	-0.8	0.8	A+	
2385	671376	K	K	433	.917	.917	.014	.018	.048	.002	.425	.425	-.130	-.249	-.285	-4.724	0.190	-0.5	0.9	-0.9	0.7	A+	
2386	677747	K	K	433	.492	.492	.074	.111	.319	.005	.454	.454	-.296	.029	-.310	-1.550	0.112	0.6	1.0	1.9	1.2	A+	
2387	677738	K	K	439	.975	.975	.016	.005	.002	.002	.276	.276	-.230	-.094	-.133	-5.900	0.312	-0.1	1.0	-1.5	0.4	B+	
2388	670539	K	K	439	.948	.014	.948	.025	.011	.002	.253	-.074	.253	-.239	-.087	-5.088	0.223	0.2	1.0	-0.6	0.8	A-	
2389	672185	K	K	439	.954	.954	.018	.018	.009	.000	.309	.309	-.262	-.194	-.036	-5.246	0.237	-0.2	1.0	-1.1	0.6	A-	
2390	675627	K	K	439	.576	.576	.410	.005	.007	.002	.358	.358	-.310	-.137	-.091	-2.057	0.109	2.3	1.1	1.6	1.1	A-	
2391	672179	K	K	428	.689	.051	.689	.098	.157	.005	.428	-.166	.428	-.125	-.343	-3.014	0.117	0.5	1.0	-0.4	1.0	A-	
2392	671379	K	K	428	.610	.610	.044	.287	.056	.002	.514	.514	-.207	-.362	-.191	-2.570	0.112	-1.6	0.9	-0.9	0.9	A+	
2393	670536	K	K	428	.949	.009	.016	.019	.949	.007	.442	-.180	-.262	-.281	.442	-5.537	0.230	-1.0	0.8	-2.0	0.4	A+	
2394	675051	K	K	428	.935	.935	.016	.026	.021	.002	.456	.456	-.185	-.217	-.335	-5.251	0.207	-1.1	0.8	-1.6	0.6	A+	
2395	671950	K	K	428	.937	.014	.019	.937	.026	.005	.418	-.159	-.251	.418	-.231	-5.294	0.211	-0.8	0.9	-0.8	0.7	A+	
2396	671712	1	1	431	.819	.819	.046	.014	.121	.000	.530	.530	-.210	-.179	-.426	-3.582	0.140	-1.3	0.9	-1.8	0.7	A+	A-
2397	671692	1	1	431	.893	.046	.032	.893	.026	.002	.501	-.311	-.245	.501	-.244	-4.333	0.170	-1.2	0.9	-2.0	0.6	A+	A+
2398	675391	1	1	431	.777	.777	.093	.100	.026	.005	.506	.506	-.416	-.209	-.128	-3.251	0.131	-0.6	1.0	-0.9	0.9	A-	A+
2399	670464	1	1	431	.722	.176	.051	.722	.037	.014	.241	-.122	.007	.241	-.207	-2.863	0.123	5.1	1.3	4.9	1.6	B+	A-
2400	673094	1	1	431	.743	.742	.093	.044	.109	.012	.497	.497	-.178	-.253	-.282	-3.003	0.126	-0.2	1.0	-0.5	0.9	A+	A-
2401	675155	1	1	431	.863	.021	.863	.035	.072	.009	.414	-.234	.414	-.130	-.249	-3.992	0.155	-0.2	1.0	0.4	1.1	A+	A-
2402	671693	1	1	439	.925	.925	.009	.039	.025	.002	.406	.406	-.228	-.240	-.246	-5.147	0.192	-0.6	0.9	-1.4	0.6	B-	
2403	675156	1	1	439	.836	.023	.836	.123	.018	.000	.436	-.133	.436	-.374	-.141	-4.117	0.142	-0.3	1.0	-0.3	1.0	A+	
2404	670466	1	1	439	.961	.011	.014	.961	.011	.002	.314	-.159	-.200	.314	-.154	-5.919	0.256	-0.2	1.0	-1.4	0.5	A-	
2405	675054	1	1	439	.834	.073	.834	.068	.021	.005	.384	-.188	.384	-.264	-.114	-4.097	0.141	0.3	1.0	0.5	1.1	A+	
2406	671713	1	1	439	.681	.681	.018	.241	.057	.002	.417	.417	-.094	-.332	-.176	-3.022	0.117	1.5	1.1	1.6	1.2	B-	
2407	675160	1	1	439	.743	.743	.089	.034	.132	.002	.657	.657	-.182	-.276	-.549	-3.409	0.123	-4.3	0.8	-4.0	0.6	A-	
2408	673093	1	1	433	.670	.104	.670	.143	.079	.005	.535	-.277	.535	-.265	-.255	-2.523	0.118	-1.0	1.0	-1.0	0.9	A-	A+
2409	670462	1	1	433	.721	.065	.721	.048	.164	.002	.578	-.191	.578	-.160	-.479	-2.841	0.123	-2.0	0.9	-2.0	0.8	B+	A-
2410	675389	1	1	433	.878	.030	.046	.878	.044	.002	.467	-.355	-.157	.467	-.266	-4.125	0.160	-0.9	0.9	0.1	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2411	671711	1	1	433	.908	.037	.908	.018	.032	.005	.514	-.268	.514	-.261	-.307	-4.497	0.179	-1.5	0.8	-2.3	0.5	A-	B-
2412	675154	1	1	433	.395	.150	.217	.224	.395	.014	.438	-.259	-.113	-.139	.438	-0.984	0.115	0.9	1.0	1.6	1.2	A-	A+
2413	671691	1	1	433	.698	.185	.697	.039	.065	.014	.445	-.153	.445	-.184	-.356	-2.693	0.120	1.1	1.1	1.2	1.1	B+	A-
2414	671718	1	1	435	.931	.005	.034	.030	.931	.000	.298	-.129	-.171	-.208	.298	-4.746	0.201	0.3	1.1	0.0	1.0	A+	A-
2415	675062	1	1	435	.832	.832	.071	.053	.044	.000	.529	.529	-.339	-.279	-.236	-3.583	0.141	-1.6	0.9	-2.1	0.7	A+	A-
2416	671178	1	1	435	.395	.483	.076	.395	.046	.000	.399	-.220	-.192	.399	-.164	-1.016	0.112	0.3	1.0	2.8	1.2	A+	A+
2417	675395	1	1	435	.738	.738	.083	.057	.117	.005	.326	.326	-.136	-.237	-.109	-2.889	0.122	2.2	1.1	2.4	1.3	A+	A-
2418	675381	1	1	435	.782	.080	.782	.108	.025	.005	.530	-.262	.530	-.378	-.110	-3.187	0.129	-1.6	0.9	-2.1	0.8	A+	A+
2419	675059	1	1	435	.839	.032	.839	.023	.103	.002	.400	-.184	.400	-.226	-.238	-3.644	0.143	0.0	1.0	-0.4	0.9	A-	B-
2420	671702	1	1	430	.807	.044	.807	.009	.137	.002	.428	-.288	.428	-.268	-.229	-3.897	0.133	-0.6	1.0	0.4	1.0	A+	
2421	675384	1	1	430	.772	.772	.086	.037	.102	.002	.548	.548	-.201	-.286	-.385	-3.645	0.126	-2.3	0.9	-2.2	0.8	A+	
2422	670456	1	1	430	.928	.928	.033	.019	.019	.002	.313	.313	-.248	-.098	-.172	-5.192	0.196	-0.1	1.0	-0.5	0.8	A+	
2423	676745	1	1	430	.893	.021	.893	.053	.030	.002	.496	-.100	.496	-.360	-.318	-4.704	0.166	-1.3	0.9	-2.2	0.6	A+	
2424	671661	1	1	430	.802	.065	.049	.802	.079	.005	.526	-.298	-.224	.526	-.297	-3.862	0.132	-1.8	0.9	-1.5	0.8	A+	
2425	671658	1	1	430	.772	.772	.114	.079	.028	.007	.389	.389	-.309	-.174	-.072	-3.645	0.126	0.3	1.0	0.1	1.0	A+	
2426	675070	1	1	430	.798	.019	.798	.051	.126	.007	.510	-.176	.510	-.275	-.331	-3.827	0.131	-1.6	0.9	-1.1	0.9	A+	
2427	671698	1	1	448	.942	.002	.007	.942	.049	.000	.137	-.006	-.110	.137	-.105	-4.717	0.213	0.8	1.1	1.2	1.4	A-	A-
2428	675390	1	1	448	.344	.344	.170	.328	.156	.002	.240	.240	-.308	.059	-.060	-0.610	0.110	2.8	1.1	4.0	1.4	A-	A+
2429	673088	1	1	448	.491	.107	.047	.355	.491	.000	.149	-.119	-.162	-.008	.149	-1.362	0.105	7.0	1.3	6.7	1.5	A-	A-
2430	671703	1	1	448	.871	.045	.058	.871	.027	.000	.371	-.176	-.240	.371	-.198	-3.718	0.152	0.1	1.0	-0.3	0.9	B+	A-
2431	676747	1	1	448	.877	.047	.877	.047	.025	.004	.546	-.261	.546	-.354	-.261	-3.788	0.155	-2.0	0.8	-2.2	0.6	A+	A-
2432	670458	1	1	448	.891	.891	.054	.029	.025	.002	.418	.418	-.219	-.285	-.185	-3.939	0.163	-0.7	0.9	-0.5	0.9	A-	A-
2433	675151	1	1	448	.900	.013	.042	.900	.040	.004	.409	-.241	-.225	.409	-.238	-4.049	0.168	-0.8	0.9	0.1	1.0	A+	A-
2434	675386	1	1	448	.978	.000	.009	.004	.978	.009	.250	.000	-.210	-.092	.250	-5.782	0.328	-0.1	1.0	-0.4	0.8	A-	A-
2435	670459	1	1	433	.896	.055	.023	.025	.896	.000	.325	-.008	-.328	-.305	.325	-4.291	0.172	0.2	1.0	3.2	2.0	A+	A-
2436	673091	1	1	433	.915	.028	.030	.915	.028	.000	.508	-.272	-.324	.508	-.256	-4.547	0.186	-1.3	0.8	-1.9	0.5	A+	A-
2437	675382	1	1	433	.748	.171	.748	.058	.023	.000	.388	-.193	.388	-.300	-.173	-2.959	0.126	1.6	1.1	2.8	1.4	A-	B-
2438	671709	1	1	433	.970	.012	.007	.970	.009	.002	.415	-.245	-.222	.415	-.206	-5.787	0.293	-0.8	0.8	-2.3	0.2	A+	A-
2439	675387	1	1	433	.845	.081	.845	.039	.030	.005	.511	-.323	.511	-.247	-.215	-3.734	0.148	-1.0	0.9	-1.6	0.7	A-	B-
2440	676766	1	1	433	.621	.231	.062	.621	.079	.007	.600	-.413	-.201	.600	-.198	-2.177	0.114	-3.0	0.9	-2.5	0.8	A-	A+
2441	671659	1	1	433	.704	.072	.704	.145	.069	.009	.581	-.327	.581	-.312	-.209	-2.671	0.121	-2.2	0.9	-2.7	0.8	A-	A+
2442	675152	1	1	433	.852	.042	.852	.014	.083	.009	.575	-.361	.575	-.226	-.318	-3.801	0.151	-1.9	0.8	-2.6	0.6	A-	A-
2443	670460	1	1	431	.673	.049	.673	.021	.255	.002	.591	-.169	.591	-.187	-.475	-2.919	0.117	-2.8	0.9	-2.4	0.8	B-	A+
2444	676767	1	1	431	.378	.100	.378	.211	.306	.005	.382	-.139	.382	-.075	-.229	-1.285	0.116	0.8	1.0	3.4	1.4	A-	A+
2445	673092	1	1	431	.910	.053	.019	.910	.016	.002	.391	-.212	-.199	.391	-.244	-4.885	0.181	-0.2	1.0	-1.2	0.7	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2446	671710	1	1	431	.933	.042	.933	.016	.007	.002	.344	-.169	.344	-.348	-.020	-5.256	0.205	-0.4	0.9	0.5	1.1	A-	A+
2447	675388	1	1	431	.717	.023	.717	.030	.225	.005	.533	-.212	.533	-.168	-.409	-3.190	0.122	-1.4	0.9	-0.2	1.0	A-	A-
2448	675153	1	1	431	.733	.067	.733	.097	.093	.009	.536	-.222	.536	-.218	-.369	-3.295	0.123	-1.4	0.9	-2.1	0.8	A-	A+
2449	671660	1	1	431	.963	.016	.963	.002	.014	.005	.316	-.175	.316	-.076	-.214	-5.955	0.266	-0.2	0.9	-0.6	0.7	A+	A-
2450	670451	1	4	436	.835	.039	.835	.046	.078	.002	.503	-.213	.503	-.326	-.274	-3.625	0.145	-0.8	0.9	-1.0	0.8	A-	A+
2451	671720	1	1	436	.876	.018	.028	.876	.076	.002	.526	-.167	-.236	.526	-.416	-4.043	0.161	-1.2	0.9	-2.0	0.6	A-	A-
2452	675061	1	1	436	.745	.071	.745	.083	.099	.002	.583	-.106	.583	-.370	-.405	-2.916	0.127	-1.9	0.9	-1.9	0.8	A-	B-
2453	671180	1	1	436	.764	.037	.046	.764	.154	.000	.511	-.133	-.128	.511	-.458	-3.047	0.130	-0.3	1.0	-1.1	0.8	A-	A+
2454	676743	1	1	436	.796	.796	.032	.085	.085	.002	.621	.621	-.129	-.357	-.445	-3.292	0.135	-2.8	0.8	-2.6	0.6	B+	A+
2455	675383	1	1	436	.878	.076	.016	.878	.025	.005	.266	-.159	-.091	.266	-.159	-4.069	0.162	1.5	1.2	1.7	1.5	A+	A-
2456	671699	1	1	436	.927	.018	.011	.034	.927	.009	.444	-.285	-.216	-.208	.444	-4.731	0.198	-0.9	0.9	-1.2	0.6	A-	A-
2457	671694	1	1	438	.897	.055	.027	.016	.897	.005	.373	-.269	-.177	-.174	.373	-4.216	0.172	0.3	1.0	-0.9	0.8	A+	
2458	671714	1	1	438	.685	.219	.068	.685	.025	.002	.409	-.355	-.068	.409	-.126	-2.470	0.118	1.7	1.1	1.1	1.1	A-	
2459	675392	1	1	438	.438	.041	.027	.438	.486	.007	.299	-.171	-.225	.299	-.127	-1.104	0.112	5.0	1.3	4.9	1.4	A+	
2460	675157	1	1	438	.888	.018	.888	.025	.068	.000	.388	-.208	.388	-.224	-.236	-4.102	0.166	0.2	1.0	-0.7	0.8	A-	
2461	670467	1	1	438	.929	.027	.007	.929	.034	.002	.450	-.221	-.179	.450	-.346	-4.693	0.200	-0.8	0.9	-1.8	0.5	A+	
2462	675055	1	1	438	.941	.011	.941	.005	.041	.002	.440	-.227	.440	-.114	-.356	-4.908	0.215	-0.9	0.9	-0.7	0.7	A-	
2463	675057	1	1	424	.953	.033	.005	.953	.007	.002	.426	-.373	-.130	.426	-.142	-5.644	0.240	-0.6	0.9	-1.6	0.5	A+	
2464	671176	1	1	424	.743	.743	.068	.087	.101	.000	.294	.294	-.174	-.188	-.105	-3.328	0.125	2.9	1.2	1.9	1.2	A-	
2465	671715	1	1	424	.901	.028	.019	.901	.050	.002	.426	-.121	-.108	.426	-.392	-4.735	0.176	-0.6	0.9	-0.3	0.9	A-	
2466	675393	1	1	424	.934	.005	.031	.024	.934	.007	.375	-.088	-.323	-.125	.375	-5.245	0.208	-0.4	0.9	-0.2	0.9	A-	
2467	671695	1	1	424	.658	.151	.127	.059	.658	.005	.342	-.196	-.204	-.042	.342	-2.805	0.116	2.9	1.2	2.8	1.2	A+	
2468	675158	1	1	424	.925	.007	.019	.925	.042	.007	.399	-.155	-.141	.399	-.290	-5.081	0.197	-0.3	1.0	-0.9	0.7	A+	
2469	671696	1	1	433	.744	.192	.051	.744	.012	.002	.382	-.245	-.190	.382	-.198	-3.032	0.127	2.3	1.2	1.2	1.1	A-	
2470	675058	1	1	433	.940	.025	.940	.028	.007	.000	.360	-.196	.360	-.234	-.196	-5.137	0.218	-0.1	1.0	0.8	1.3	A+	
2471	671716	1	1	433	.711	.711	.085	.118	.081	.005	.590	.590	-.207	-.329	-.328	-2.815	0.123	-2.2	0.9	-2.0	0.8	B+	
2472	675394	1	1	433	.898	.051	.898	.025	.021	.005	.480	-.318	.480	-.206	-.201	-4.457	0.176	-0.9	0.9	-1.4	0.7	A+	
2473	671177	1	1	433	.831	.028	.072	.062	.831	.007	.457	-.224	-.145	-.347	.457	-3.726	0.145	0.1	1.0	0.0	1.0	A+	
2474	675159	1	1	433	.915	.023	.915	.005	.048	.009	.497	-.295	.497	-.056	-.343	-4.688	0.188	-1.0	0.9	-2.1	0.5	A+	
2475	670452	1	1	439	.877	.027	.877	.018	.077	.000	.380	-.180	.380	-.262	-.226	-4.055	0.155	-0.4	1.0	1.1	1.2	A+	
2476	673087	1	1	439	.918	.918	.023	.009	.050	.000	.275	.275	-.120	-.157	-.195	-4.563	0.183	0.3	1.0	-0.1	1.0	A-	
2477	676744	1	1	439	.745	.144	.745	.080	.030	.002	.349	-.125	.349	-.200	-.312	-3.005	0.121	1.2	1.1	2.2	1.3	B+	
2478	671700	1	1	439	.950	.009	.016	.950	.021	.005	.396	-.109	-.248	.396	-.219	-5.138	0.227	-0.7	0.9	-2.0	0.4	A+	
2479	675385	1	1	439	.731	.731	.034	.048	.180	.007	.413	.413	-.225	-.218	-.217	-2.919	0.119	0.2	1.0	0.6	1.1	A-	
2480	671181	1	1	439	.761	.157	.016	.057	.761	.009	.387	-.234	-.129	-.191	.387	-3.108	0.123	0.4	1.0	0.0	1.0	B+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2481	671697	1	1	439	.688	.688	.198	.068	.034	.011	.420	.420	-.180	-.285	-.158	-2.661	0.114	0.3	1.0	-0.1	1.0	B-	
2482	671179	1	1	428	.811	.026	.811	.089	.075	.000	.272	-.228	.272	-.145	-.111	-3.833	0.136	2.1	1.2	1.2	1.2	A-	
2483	671719	1	1	428	.888	.075	.888	.019	.014	.005	.386	-.307	.386	-.135	-.213	-4.571	0.166	-0.2	1.0	0.4	1.1	A-	
2484	675396	1	1	428	.879	.028	.040	.879	.047	.007	.511	-.251	-.289	.511	-.263	-4.464	0.161	-1.6	0.8	-0.9	0.8	A+	
2485	675060	1	1	428	.608	.093	.236	.607	.056	.007	.271	-.187	-.096	.271	-.115	-2.557	0.112	4.5	1.2	3.8	1.3	A-	
2486	679235	2	2	431	.587	.587	.202	.074	.137	.000	.434	.434	-.145	-.144	-.344	-2.053	0.115	1.9	1.1	2.0	1.2	A+	B-
2487	676750	2	2	431	.622	.049	.622	.107	.223	.000	.467	-.123	.467	-.371	-.205	-2.253	0.116	1.0	1.1	0.8	1.1	B-	A-
2488	675332	2	2	431	.729	.151	.074	.729	.039	.007	.414	-.226	-.205	.414	-.183	-2.909	0.124	1.7	1.1	0.2	1.0	A-	A+
2489	677765	2	2	431	.722	.060	.090	.123	.722	.005	.269	-.213	-.076	-.109	.269	-2.863	0.123	4.5	1.3	4.9	1.7	A-	A-
2490	675009	2	2	431	.682	.682	.121	.132	.053	.012	.605	.605	-.308	-.364	-.178	-2.613	0.120	-2.7	0.9	-2.9	0.7	A+	A-
2491	677946	2	2	431	.777	.777	.042	.060	.111	.009	.650	.650	-.261	-.309	-.410	-3.251	0.131	-3.6	0.8	-3.6	0.6	A-	A-
2492	677943	2	2	431	.759	.021	.056	.759	.153	.012	.558	-.257	-.233	.558	-.345	-3.117	0.128	-1.6	0.9	-1.0	0.9	A+	A-
2493	678163	2	2	431	.399	.081	.401	.109	.399	.009	.421	-.230	-.171	-.125	.421	-0.992	0.117	1.9	1.1	3.1	1.3	A-	A+
2494	675023	2	2	431	.578	.121	.155	.578	.135	.012	.437	-.131	-.225	.437	-.205	-2.001	0.114	2.1	1.1	1.2	1.1	A-	B+
2495	677771	2	2	431	.773	.179	.016	.773	.019	.014	.616	-.496	-.134	.616	-.236	-3.217	0.131	-2.8	0.8	-2.9	0.7	A+	A-
2496	676738	2	2	439	.683	.162	.100	.055	.683	.000	.470	-.154	-.311	-.303	.470	-3.036	0.117	0.1	1.0	0.6	1.1	A-	
2497	676994	2	2	439	.649	.121	.093	.132	.649	.005	.628	-.364	-.213	-.321	.628	-2.835	0.114	-4.1	0.8	-3.2	0.8	A-	
2498	675333	2	2	439	.663	.219	.062	.057	.663	.000	.522	-.382	-.193	-.182	.522	-2.914	0.115	-1.1	0.9	-1.6	0.9	A+	
2499	675010	2	2	439	.718	.075	.043	.718	.159	.005	.468	-.276	-.211	.468	-.239	-3.246	0.120	0.0	1.0	-1.1	0.9	B+	
2500	676995	2	2	439	.964	.002	.014	.964	.021	.000	.227	-.111	-.118	.227	-.167	-5.987	0.263	0.2	1.0	0.3	1.1	A-	
2501	673180	2	2	439	.419	.077	.465	.036	.419	.002	.459	-.153	-.265	-.256	.459	-1.573	0.113	-0.2	1.0	1.2	1.1	A+	
2502	679240	2	2	439	.613	.048	.613	.123	.210	.007	.551	-.136	.551	-.111	-.474	-2.629	0.113	-1.8	0.9	-1.0	0.9	B-	
2503	680213	2	2	439	.533	.137	.533	.153	.169	.009	.394	-.054	.394	-.233	-.248	-2.193	0.111	2.5	1.1	2.3	1.2	A+	
2504	677944	2	2	439	.948	.948	.009	.011	.030	.002	.408	.408	-.161	-.179	-.327	-5.575	0.224	-0.7	0.9	-1.9	0.4	B-	
2505	675074	2	2	439	.702	.089	.043	.702	.164	.002	.413	-.222	-.167	.413	-.245	-3.146	0.118	1.2	1.1	1.1	1.1	A-	
2506	677099	2	2	433	.878	.065	.037	.021	.878	.000	.248	-.171	-.085	-.162	.248	-4.125	0.160	1.3	1.1	2.9	1.8	A+	B-
2507	675335	2	2	433	.633	.189	.633	.058	.115	.005	.480	-.264	.480	-.228	-.209	-2.305	0.116	0.4	1.0	-0.3	1.0	B-	A+
2508	676749	2	2	433	.801	.095	.801	.035	.069	.000	.357	-.220	.357	-.108	-.230	-3.418	0.136	1.5	1.1	1.4	1.2	A-	A+
2509	677002	2	2	433	.908	.025	.908	.030	.037	.000	.356	-.184	.356	-.133	-.273	-4.497	0.179	-0.2	1.0	0.5	1.1	A+	A-
2510	679234	2	2	433	.665	.187	.051	.665	.095	.002	.554	-.384	-.209	.554	-.208	-2.495	0.118	-1.4	0.9	-2.1	0.8	C-	A+
2511	677945	2	2	433	.642	.109	.125	.120	.642	.005	.438	-.179	-.246	-.200	.438	-2.359	0.116	1.4	1.1	0.7	1.1	A-	A+
2512	677103	2	2	433	.822	.025	.065	.081	.822	.007	.405	-.251	-.198	-.220	.405	-3.589	0.140	0.6	1.0	1.7	1.3	A-	A+
2513	675022	2	2	433	.788	.788	.060	.088	.051	.014	.501	.501	-.219	-.283	-.231	-3.310	0.133	-0.6	1.0	-1.2	0.8	A+	A+
2514	678162	2	2	433	.829	.072	.829	.065	.025	.009	.578	-.374	.578	-.306	-.202	-3.649	0.142	-2.3	0.8	-2.2	0.7	A-	B-
2515	677772	2	2	433	.497	.139	.497	.111	.242	.012	.481	-.027	.481	-.286	-.286	-1.548	0.112	0.2	1.0	0.8	1.1	A-	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2516	677948	2	2	435	.800	.069	.800	.039	.092	.000	.563	-.328	.563	-.211	-.349	-3.323	0.133	-2.1	0.9	-2.6	0.7	A+	A-
2517	676740	2	2	435	.784	.078	.025	.113	.784	.000	.465	-.338	-.243	-.197	.465	-3.203	0.129	-0.5	1.0	-0.8	0.9	A+	A+
2518	675072	2	2	435	.926	.926	.039	.009	.018	.007	.430	.430	-.255	-.271	-.125	-4.668	0.195	-0.7	0.9	-1.9	0.5	A-	A+
2519	676754	2	2	435	.655	.145	.655	.078	.115	.007	.422	-.196	.422	-.241	-.155	-2.393	0.114	0.8	1.0	0.3	1.0	A-	A-
2520	675015	2	2	435	.832	.832	.025	.074	.062	.007	.426	.426	-.237	-.146	-.275	-3.583	0.141	-0.2	1.0	-0.7	0.9	B-	A+
2521	679236	2	2	435	.469	.163	.246	.469	.113	.009	.351	-.234	-.102	.351	-.070	-1.406	0.109	2.5	1.1	2.6	1.2	A-	A-
2522	675018	2	2	435	.623	.184	.623	.124	.055	.014	.433	-.256	.433	-.131	-.192	-2.215	0.112	0.9	1.0	0.7	1.1	B-	A-
2523	678160	2	2	435	.812	.041	.811	.101	.034	.011	.403	-.107	.403	-.207	-.271	-3.412	0.135	0.2	1.0	0.6	1.1	B-	B-
2524	675013	2	2	435	.871	.871	.078	.011	.028	.011	.287	.287	-.136	-.156	-.113	-3.953	0.155	0.8	1.1	0.8	1.1	A-	A+
2525	677107	2	2	430	.337	.337	.056	.505	.098	.005	.406	.406	-.079	-.231	-.182	-1.304	0.114	-1.1	1.0	0.4	1.0	A-	
2526	673579	2	2	430	.891	.026	.044	.891	.040	.000	.382	-.267	-.253	.382	-.127	-4.676	0.165	-0.4	1.0	-0.7	0.9	A-	
2527	680216	2	2	430	.954	.016	.012	.953	.019	.000	.345	-.235	-.276	.345	-.098	-5.703	0.238	-0.4	0.9	-0.7	0.7	B-	
2528	675012	2	2	430	.802	.802	.058	.056	.081	.002	.384	.384	-.309	-.071	-.220	-3.862	0.132	0.1	1.0	0.9	1.1	A+	
2529	676125	2	2	430	.707	.072	.707	.184	.033	.005	.248	-.268	.248	-.010	-.186	-3.234	0.117	3.2	1.2	4.0	1.4	B+	
2530	675008	2	2	430	.786	.121	.786	.049	.040	.005	.478	-.341	.478	-.201	-.184	-3.743	0.129	-1.1	0.9	-1.4	0.8	A+	
2531	677947	2	2	430	.561	.351	.560	.040	.042	.007	.514	-.387	.514	-.119	-.188	-2.447	0.108	-2.9	0.9	-2.2	0.9	B-	
2532	678362	2	2	430	.665	.665	.056	.109	.158	.012	.510	.510	-.286	-.165	-.309	-2.995	0.113	-1.8	0.9	-1.7	0.9	A-	
2533	673585	2	2	430	.588	.112	.074	.216	.588	.009	.279	-.192	-.185	-.057	.279	-2.589	0.109	3.7	1.2	3.7	1.3	A-	
2534	679232	2	2	448	.942	.016	.942	.002	.040	.000	.475	-.331	.475	-.150	-.320	-4.717	0.213	-1.2	0.8	-2.1	0.5	A-	A-
2535	678363	2	2	448	.835	.071	.835	.038	.051	.004	.318	-.131	.318	-.105	-.281	-3.382	0.139	0.9	1.1	0.2	1.0	A-	A-
2536	676043	2	2	448	.507	.217	.063	.212	.507	.002	.300	-.166	-.107	-.134	.300	-1.440	0.105	3.0	1.1	3.9	1.3	A+	A-
2537	676998	2	2	448	.518	.518	.038	.074	.368	.002	.501	.501	-.192	-.246	-.309	-1.495	0.105	-2.6	0.9	-2.3	0.9	A-	A-
2538	675014	2	2	448	.594	.042	.279	.083	.594	.002	.307	-.142	-.196	-.108	.307	-1.875	0.107	2.8	1.1	2.5	1.2	A+	A+
2539	680217	2	2	448	.880	.056	.879	.042	.020	.002	.522	-.383	.522	-.188	-.284	-3.812	0.157	-1.7	0.8	-2.2	0.6	A+	A+
2540	675331	2	2	448	.518	.114	.261	.518	.103	.004	.404	-.264	-.091	.404	-.221	-1.495	0.105	0.6	1.0	0.6	1.0	A+	B+
2541	673575	2	2	448	.614	.123	.614	.165	.094	.004	.540	-.199	.540	-.240	-.334	-1.979	0.108	-2.9	0.9	-2.4	0.8	A-	A-
2542	673586	2	2	448	.607	.103	.203	.607	.080	.007	.434	-.142	-.185	.434	-.306	-1.944	0.107	-0.1	1.0	0.5	1.0	A+	A-
2543	677104	2	2	433	.748	.044	.039	.169	.748	.000	.407	-.374	-.128	-.202	.407	-2.959	0.126	1.4	1.1	1.5	1.2	B+	A-
2544	676044	2	2	433	.529	.529	.145	.164	.159	.002	.501	.501	-.083	-.266	-.317	-1.670	0.111	-0.6	1.0	-0.2	1.0	A+	C-
2545	675064	2	2	433	.905	.025	.905	.035	.023	.012	.437	-.164	.437	-.240	-.232	-4.414	0.179	-0.6	0.9	-0.8	0.8	A+	A-
2546	680845	2	2	433	.587	.210	.099	.587	.097	.007	.497	-.308	-.220	.497	-.129	-1.984	0.113	-0.3	1.0	-0.6	1.0	A-	A+
2547	678164	2	2	433	.734	.053	.734	.150	.055	.007	.488	-.235	.488	-.295	-.184	-2.865	0.124	-0.2	1.0	0.6	1.1	A+	A+
2548	680218	2	2	433	.517	.238	.127	.109	.517	.009	.412	-.153	-.205	-.185	.412	-1.608	0.111	1.6	1.1	3.0	1.2	A+	A-
2549	680231	2	2	433	.813	.813	.085	.062	.025	.014	.361	.361	-.321	-.086	-.081	-3.446	0.139	1.5	1.1	1.1	1.2	A+	A+
2550	679233	2	2	433	.954	.016	.014	.954	.005	.012	.405	-.208	-.222	.405	-.145	-5.297	0.242	-0.6	0.9	-1.8	0.4	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2551	677000	2	2	431	.963	.007	.026	.963	.002	.002	.299	-.151	-.254	.299	-.042	-5.955	0.266	0.0	1.0	-1.2	0.5	A+	A-
2552	675065	2	2	431	.336	.555	.067	.037	.336	.005	.404	-.223	-.201	-.131	.404	-1.038	0.119	-1.0	0.9	3.8	1.5	A-	A-
2553	677102	2	2	431	.673	.014	.042	.673	.271	.000	.322	-.200	-.087	.322	-.248	-2.919	0.117	3.7	1.2	3.1	1.3	A+	A-
2554	675334	2	2	431	.643	.643	.100	.174	.081	.002	.515	.515	-.215	-.190	-.378	-2.742	0.115	-0.8	1.0	-0.3	1.0	A-	A-
2555	678155	2	2	431	.515	.209	.121	.515	.151	.005	.407	-.234	-.247	.407	-.053	-2.039	0.112	2.2	1.1	2.6	1.2	C+	A+
2556	680220	2	2	431	.710	.051	.023	.710	.211	.005	.588	-.160	-.060	.588	-.524	-3.146	0.121	-2.7	0.9	-1.8	0.8	A-	A+
2557	677767	2	2	431	.940	.028	.940	.007	.012	.014	.390	-.282	.390	-.151	-.149	-5.388	0.215	-0.6	0.9	-1.3	0.6	B-	A+
2558	677105	2	2	431	.724	.142	.081	.724	.044	.009	.539	-.414	-.184	.539	-.187	-3.234	0.122	-1.5	0.9	-1.4	0.9	A-	A-
2559	677108	2	2	431	.729	.102	.729	.123	.039	.007	.437	-.126	.437	-.336	-.186	-3.264	0.123	0.7	1.0	1.9	1.2	A-	A-
2560	675068	2	2	436	.796	.025	.103	.796	.073	.002	.459	-.198	-.300	.459	-.225	-3.292	0.135	0.4	1.0	-0.3	0.9	A+	A-
2561	676759	2	2	436	.789	.055	.124	.789	.032	.000	.403	-.282	-.204	.403	-.187	-3.238	0.134	1.4	1.1	1.4	1.2	A+	A+
2562	675025	2	2	436	.927	.927	.028	.034	.011	.000	.360	.360	-.301	-.147	-.168	-4.731	0.198	-0.1	1.0	-0.3	0.9	A-	A+
2563	679239	2	2	436	.826	.064	.826	.039	.064	.007	.454	-.272	.454	-.197	-.253	-3.543	0.142	0.2	1.0	-0.5	0.9	B-	A+
2564	676046	2	2	436	.431	.321	.431	.147	.094	.007	.452	-.220	.452	-.077	-.279	-1.046	0.115	-0.2	1.0	3.2	1.3	B-	A-
2565	673181	2	2	436	.512	.511	.073	.200	.202	.014	.520	.520	-.201	-.061	-.416	-1.500	0.114	-0.7	1.0	1.2	1.1	A+	A-
2566	673577	2	2	436	.940	.940	.021	.011	.018	.009	.391	.391	-.218	-.159	-.209	-4.985	0.215	-0.6	0.9	-0.7	0.7	A-	A+
2567	680210	2	2	436	.706	.126	.067	.085	.706	.016	.442	-.212	-.271	-.180	.442	-2.652	0.122	1.7	1.1	0.5	1.1	A-	B+
2568	678360	2	2	436	.252	.681	.048	.252	.009	.009	.349	-.173	-.203	.349	-.115	0.093	0.131	1.1	1.1	2.4	1.4	C-	A-
2569	675066	2	2	438	.970	.970	.005	.007	.016	.002	.365	.365	-.097	-.199	-.258	-5.707	0.293	-0.5	0.9	-1.7	0.4	A+	
2570	680214	2	2	438	.505	.167	.219	.505	.105	.005	.458	-.209	-.178	.458	-.229	-1.462	0.111	0.3	1.0	1.1	1.1	A+	
2571	676996	2	2	438	.911	.041	.911	.023	.025	.000	.351	-.262	.351	-.062	-.248	-4.403	0.182	0.2	1.0	-0.4	0.9	B+	
2572	675069	2	2	438	.804	.030	.804	.030	.135	.002	.615	-.177	.615	-.216	-.519	-3.286	0.135	-2.7	0.8	-3.2	0.6	A+	
2573	675020	2	2	438	.863	.863	.064	.023	.048	.002	.499	.499	-.387	-.201	-.217	-3.822	0.154	-1.0	0.9	-1.8	0.7	A-	
2574	673188	2	2	438	.484	.231	.110	.484	.169	.007	.309	-.058	-.162	.309	-.194	-1.351	0.111	4.5	1.2	4.8	1.4	A-	
2575	676757	2	2	438	.498	.196	.114	.187	.498	.005	.372	-.149	-.178	-.173	.372	-1.425	0.111	2.7	1.1	3.8	1.3	B-	
2576	673587	2	2	438	.895	.027	.895	.041	.034	.002	.466	-.194	.466	-.231	-.349	-4.187	0.170	-0.7	0.9	-1.4	0.7	A-	
2577	678158	2	2	438	.457	.251	.457	.123	.162	.007	.407	-.225	.407	-.025	-.257	-1.203	0.111	1.9	1.1	2.4	1.2	C-	
2578	678359	2	2	424	.818	.040	.083	.057	.818	.002	.415	-.182	-.301	-.183	.415	-3.887	0.140	0.3	1.0	-0.2	1.0	A+	
2579	675067	2	2	424	.606	.139	.014	.606	.241	.000	.449	-.181	-.135	.449	-.329	-2.515	0.114	0.3	1.0	0.9	1.1	A-	
2580	679241	2	2	424	.764	.031	.047	.764	.158	.000	.564	-.255	-.283	.564	-.371	-3.473	0.129	-2.0	0.9	-2.4	0.7	A-	
2581	675021	2	2	424	.715	.189	.715	.052	.040	.005	.463	-.231	.463	-.298	-.194	-3.145	0.122	0.2	1.0	-0.5	1.0	B-	
2582	675026	2	2	424	.807	.057	.042	.807	.090	.005	.535	-.246	-.368	.535	-.230	-3.790	0.137	-1.4	0.9	-1.7	0.8	A+	
2583	678156	2	2	424	.795	.101	.795	.066	.033	.005	.591	-.433	.591	-.192	-.256	-3.698	0.134	-2.4	0.8	-2.6	0.7	A-	
2584	676045	2	2	424	.811	.811	.059	.094	.028	.007	.496	.496	-.278	-.295	-.172	-3.828	0.138	-0.8	0.9	-0.7	0.9	A-	
2585	673189	2	2	424	.693	.097	.693	.142	.064	.005	.394	-.175	.394	-.166	-.236	-3.014	0.119	1.5	1.1	0.9	1.1	A-	

Appendix B: Field Test Item Statistics

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2586	676758	2	2	424	.637	.050	.637	.083	.224	.007	.462	-.254	.462	-.199	-.233	-2.685	0.115	0.1	1.0	0.8	1.1	A-	
2587	676739	2	2	433	.961	.021	.961	.009	.009	.000	.318	-.224	.318	-.074	-.238	-5.645	0.261	-0.1	1.0	-0.5	0.8	A-	
2588	679238	2	2	433	.591	.122	.233	.591	.046	.007	.508	-.325	-.210	.508	-.165	-2.095	0.114	-0.3	1.0	0.1	1.0	A-	
2589	677100	2	2	433	.734	.734	.115	.088	.055	.007	.430	.430	-.227	-.237	-.163	-2.969	0.126	1.4	1.1	0.4	1.0	A-	
2590	673111	2	2	433	.815	.815	.104	.062	.016	.002	.499	.499	-.296	-.304	-.176	-3.583	0.141	-0.4	1.0	-1.1	0.8	A-	
2591	678157	2	2	433	.781	.099	.781	.058	.058	.005	.428	-.174	.428	-.292	-.183	-3.302	0.133	1.1	1.1	0.5	1.1	B+	
2592	675006	2	2	433	.679	.025	.058	.679	.231	.007	.640	-.089	-.067	.640	-.609	-2.609	0.119	-3.6	0.8	-2.4	0.8	A+	
2593	675071	2	2	433	.963	.023	.963	.005	.005	.005	.370	-.234	.370	-.128	-.176	-5.715	0.269	-0.6	0.9	-0.8	0.6	A+	
2594	676748	2	2	433	.423	.111	.356	.106	.423	.005	.332	-.245	-.066	-.135	.332	-1.171	0.113	3.4	1.2	5.3	1.6	A-	
2595	680846	2	2	433	.637	.109	.637	.141	.106	.007	.391	-.146	.391	-.238	-.156	-2.360	0.116	3.0	1.2	2.9	1.3	A-	
2596	675011	2	2	439	.633	.075	.633	.155	.132	.005	.480	-.223	.480	-.262	-.209	-2.357	0.111	-1.0	1.0	-0.9	0.9	A+	
2597	676736	2	2	439	.128	.014	.128	.036	.820	.002	.217	-.040	.217	.037	-.175	0.838	0.165	1.6	1.2	3.4	2.0	A+	
2598	675007	2	2	439	.663	.198	.087	.048	.663	.005	.424	-.214	-.194	-.240	.424	-2.519	0.113	0.4	1.0	-0.2	1.0	B+	
2599	673110	2	2	439	.590	.057	.282	.590	.068	.002	.493	-.219	-.230	.493	-.319	-2.128	0.109	-1.1	1.0	-0.9	0.9	A-	
2600	677106	2	2	439	.640	.171	.640	.089	.096	.005	.456	-.235	.456	-.123	-.276	-2.394	0.111	-0.4	1.0	-0.6	1.0	B+	
2601	676735	2	2	439	.841	.068	.052	.841	.030	.009	.517	-.335	-.186	.517	-.231	-3.707	0.141	-1.9	0.9	-1.9	0.7	A+	
2602	675073	2	2	439	.790	.073	.066	.790	.059	.011	.441	-.109	-.262	.441	-.288	-3.312	0.128	-0.7	1.0	0.4	1.1	A-	
2603	680211	2	2	439	.401	.226	.146	.401	.214	.014	.406	-.222	-.082	.406	-.142	-1.148	0.111	0.1	1.0	1.5	1.1	A+	
2604	680215	2	2	439	.588	.185	.588	.182	.034	.011	.396	-.187	.396	-.222	-.105	-2.116	0.109	1.4	1.1	0.5	1.0	A-	
2605	676756	2	2	428	.631	.028	.631	.079	.259	.002	.351	-.001	.351	-.100	-.330	-2.684	0.113	2.6	1.1	3.3	1.3	A-	
2606	675024	2	2	428	.430	.180	.430	.063	.325	.002	.344	-.182	.344	-.158	-.131	-1.637	0.111	2.4	1.1	3.3	1.3	A+	
2607	678161	2	2	428	.234	.301	.262	.201	.234	.002	.318	-.047	-.164	-.084	.318	-0.483	0.129	0.4	1.0	2.1	1.3	A-	
2608	678159	2	2	428	.439	.283	.439	.241	.035	.002	.397	-.143	.397	-.192	-.236	-1.686	0.110	1.0	1.0	2.1	1.2	B-	
2609	677101	2	2	428	.960	.009	.005	.021	.960	.005	.247	-.125	-.156	-.092	.247	-5.834	0.258	0.1	1.0	-0.3	0.8	A+	
2610	678361	2	2	428	.680	.098	.112	.680	.105	.005	.468	-.121	-.252	.468	-.294	-2.959	0.116	-0.3	1.0	-0.3	1.0	A+	
2611	675019	2	2	428	.907	.907	.030	.030	.026	.007	.520	.520	-.296	-.252	-.268	-4.808	0.179	-1.6	0.8	-2.2	0.5	A+	
2612	676999	2	2	428	.752	.752	.035	.051	.154	.007	.535	.535	-.249	-.319	-.287	-3.408	0.125	-1.7	0.9	-2.2	0.8	A-	
2613	677775	2	2	428	.916	.014	.035	.916	.028	.007	.462	-.198	-.265	.462	-.254	-4.941	0.187	-1.0	0.9	-1.7	0.6	A+	
2614	679237	2	2	428	.862	.030	.044	.862	.054	.009	.578	-.306	-.317	.578	-.307	-4.291	0.153	-2.4	0.8	-2.4	0.6	A+	
2615	675017	2	2	428	.460	.203	.110	.213	.460	.014	.468	-.200	-.095	-.263	.468	-1.795	0.110	-1.4	0.9	-0.2	1.0	B-	
2616	661925	3	3	474	.650	.110	.103	.650	.135	.002	.384	-.200	-.206	.384	-.164	-1.584	0.106	0.9	1.0	0.8	1.1	A+	A+
2617	661167	3	3	474	.416	.411	.053	.416	.118	.002	.374	-.258	-.052	.374	-.131	-0.399	0.104	1.7	1.1	1.2	1.1	A-	A-
2618	679468	3	3	474	.517	.517	.177	.198	.108	.000	.426	.426	-.125	-.233	-.233	-0.907	0.102	0.2	1.0	0.6	1.0	A-	A-
2619	679740	3	3	474	.430	.122	.430	.234	.213	.000	.394	-.155	.394	-.081	-.268	-0.474	0.103	1.1	1.0	1.1	1.1	A-	A-
2620	679545	3	3	474	.662	.086	.084	.165	.662	.002	.320	-.147	-.116	-.198	.320	-1.652	0.107	2.3	1.1	1.8	1.2	A-	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2621	661169	3	3	474	.076	.253	.078	.589	.076	.004	.146	-.103	-.114	.091	.146	2.158	0.182	0.4	1.1	2.6	1.8	A-	A+
2622	679590	3	3	474	.574	.574	.051	.205	.165	.006	.610	.610	-.146	-.296	-.385	-1.191	0.103	-5.2	0.8	-4.7	0.7	A-	A-
2623	683672	3	3	474	.179	.304	.179	.443	.070	.004	.151	-.180	.151	.117	-.095	1.040	0.130	2.8	1.2	4.6	1.8	A-	A+
2624	683678	3	3	474	.850	.011	.850	.036	.097	.006	.434	-.135	.434	-.247	-.271	-2.902	0.138	-1.2	0.9	-1.9	0.7	A+	A-
2625	679735	3	3	474	.502	.093	.293	.502	.105	.006	.414	-.223	-.155	.414	-.194	-0.833	0.102	0.7	1.0	0.5	1.0	A-	A+
2626	661926	3	3	474	.449	.378	.133	.030	.449	.011	.393	-.353	.056	-.135	.393	-0.570	0.103	1.2	1.1	0.9	1.1	A+	C+
2627	679469	3	3	474	.418	.418	.133	.253	.181	.015	.343	.343	-.064	-.096	-.203	-0.410	0.104	2.3	1.1	1.6	1.1	A+	A-
2628	683937	3	3	474	.614	.614	.154	.074	.137	.021	.374	.374	-.202	-.146	-.110	-1.396	0.104	1.4	1.1	1.1	1.1	A-	A-
2629	683805	3	3	474	.340	.340	.129	.205	.306	.021	.485	.485	-.068	-.202	-.197	0.003	0.108	-2.0	0.9	-1.1	0.9	A-	A-
2630	679741	3	3	474	.639	.053	.200	.639	.084	.023	.539	-.217	-.335	.539	-.144	-1.528	0.106	-3.0	0.9	-2.7	0.8	A+	A+
2631	677709	3	3	474	.846	.055	.846	.025	.051	.023	.391	-.194	.391	-.170	-.155	-2.864	0.136	-0.6	1.0	-1.2	0.8	A+	A-
2632	662161	3	3	474	.508	.167	.124	.508	.175	.025	.510	-.160	-.219	.510	-.223	-0.865	0.102	-2.1	0.9	-1.9	0.9	A-	A-
2633	683933	3	3	474	.717	.046	.080	.131	.717	.025	.486	-.188	-.271	-.195	.486	-1.962	0.112	-1.8	0.9	-1.7	0.8	A+	B-
2634	661171	3	3	474	.546	.076	.546	.270	.084	.023	.590	-.303	.590	-.296	-.165	-1.054	0.103	-4.6	0.8	-4.0	0.8	A-	A-
2635	684152	3	3	474	.511	.089	.162	.213	.511	.025	.297	-.166	-.170	-.002	.297	-0.875	0.102	4.0	1.2	4.2	1.3	B+	A-
2636	661927	3	3	470	.368	.106	.489	.036	.368	.000	.483	-.237	-.297	-.060	.483	-0.238	0.106	-2.0	0.9	-1.3	0.9	B+	
2637	679394	3	3	470	.202	.043	.423	.202	.328	.004	-.043	-.042	-.104	-.043	.176	0.776	0.126	5.1	1.4	7.1	2.2	A+	
2638	679591	3	3	470	.757	.189	.023	.757	.030	.000	.568	-.503	-.177	.568	-.116	-2.304	0.118	-3.4	0.8	-3.2	0.7	A-	
2639	683679	3	3	470	.883	.049	.883	.038	.030	.000	.220	-.144	.220	-.145	-.070	-3.327	0.152	0.8	1.1	1.9	1.4	A-	
2640	679388	3	3	470	.515	.515	.260	.085	.140	.000	.417	.417	-.251	-.139	-.172	-0.983	0.103	0.6	1.0	-0.1	1.0	A+	
2641	683938	3	3	469	.682	.079	.085	.149	.682	.004	.554	-.290	-.245	-.304	.554	-1.851	0.109	-3.1	0.9	-2.9	0.8	A+	
2642	679544	3	3	469	.320	.294	.217	.320	.164	.004	.373	-.073	-.215	.373	-.125	0.028	0.110	0.6	1.0	1.0	1.1	B-	
2643	679739	3	3	469	.137	.548	.136	.209	.104	.002	-.058	.122	-.058	-.021	-.099	1.336	0.145	3.3	1.3	7.8	3.1	B-	
2644	683804	3	3	469	.399	.068	.458	.075	.399	.000	.503	-.373	-.290	-.028	.503	-0.396	0.105	-2.3	0.9	-1.9	0.9	A-	
2645	679540	3	3	469	.832	.060	.832	.070	.038	.000	.302	-.173	.302	-.110	-.229	-2.841	0.133	0.7	1.1	0.8	1.1	B+	
2646	661869	3	3	469	.793	.793	.038	.130	.036	.002	.362	.362	-.188	-.195	-.222	-2.546	0.124	0.2	1.0	0.3	1.0	A+	
2647	662160	3	3	469	.375	.068	.375	.171	.380	.006	.432	.030	.432	-.196	-.277	-0.274	0.106	-0.6	1.0	0.1	1.0	A-	
2648	661924	3	3	469	.836	.836	.043	.070	.047	.004	.394	.394	-.093	-.329	-.175	-2.877	0.134	-0.4	1.0	-1.2	0.8	A+	
2649	661170	3	3	469	.092	.648	.128	.092	.128	.004	.292	-.206	.013	.292	.048	1.854	0.171	-0.7	0.9	2.6	1.7	A-	
2650	661161	3	3	469	.923	.019	.038	.923	.015	.004	.284	-.164	-.115	.284	-.204	-3.842	0.181	-0.2	1.0	0.2	1.0	A+	
2651	683671	3	3	469	.574	.360	.023	.034	.574	.009	.494	-.435	-.114	-.053	.494	-1.275	0.104	-1.5	0.9	-2.1	0.9	A+	
2652	661861	3	3	469	.755	.177	.755	.043	.019	.006	.561	-.444	.561	-.205	-.161	-2.285	0.117	-3.0	0.8	-3.4	0.7	A+	
2653	683932	3	3	469	.761	.062	.761	.085	.083	.009	.503	-.283	.503	-.221	-.277	-2.327	0.118	-1.9	0.9	-2.4	0.8	C-	
2654	677710	3	3	469	.693	.126	.693	.087	.087	.006	.532	-.232	.532	-.302	-.265	-1.911	0.110	-2.6	0.9	-2.5	0.8	A-	
2655	679742	3	3	469	.674	.085	.179	.674	.055	.006	.382	-.217	-.208	.382	-.131	-1.803	0.109	0.9	1.0	0.6	1.1	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2656	683680	3	3	464	.703	.129	.063	.703	.106	.000	.497	-.235	-.142	.497	-.371	-1.945	0.112	-1.6	0.9	-2.0	0.8	A-	
2657	679393	3	3	464	.295	.179	.295	.241	.282	.002	.353	-.145	.353	-.086	-.158	0.221	0.114	1.2	1.1	1.4	1.1	A+	
2658	661929	3	3	464	.612	.142	.612	.099	.147	.000	.450	-.150	.450	-.270	-.244	-1.446	0.106	-0.4	1.0	-1.0	0.9	A-	
2659	679738	3	3	464	.793	.030	.039	.793	.136	.002	.390	-.172	-.240	.390	-.240	-2.530	0.125	0.3	1.0	-0.7	0.9	C-	
2660	677711	3	3	464	.869	.056	.869	.060	.013	.002	.477	-.327	.477	-.270	-.170	-3.169	0.147	-1.6	0.9	-1.8	0.7	A-	
2661	661922	3	3	464	.825	.825	.071	.019	.084	.000	.411	.411	-.133	.012	-.445	-2.779	0.133	-0.7	1.0	1.9	1.3	A+	
2662	661868	3	3	464	.851	.851	.030	.084	.032	.002	.344	.344	-.207	-.187	-.186	-3.003	0.141	0.3	1.0	-0.7	0.9	A+	
2663	661870	3	3	464	.819	.136	.819	.030	.011	.004	.444	-.389	.444	-.106	-.087	-2.727	0.131	-1.0	0.9	-1.0	0.8	A-	
2664	679541	3	3	464	.877	.877	.084	.011	.022	.006	.389	.389	-.256	-.078	-.225	-3.259	0.151	-0.8	0.9	-0.3	0.9	B+	
2665	661168	3	3	464	.231	.123	.231	.101	.534	.011	.413	-.145	.413	-.067	-.170	0.641	0.123	-1.8	0.9	1.6	1.2	A-	
2666	683666	3	3	463	.492	.181	.248	.069	.492	.009	.354	-.191	-.110	-.140	.354	-0.837	0.104	2.6	1.1	2.8	1.2	A+	
2667	679387	3	3	463	.659	.052	.659	.048	.233	.009	.346	-.298	.346	-.221	-.073	-1.697	0.109	2.2	1.1	0.8	1.1	A+	
2668	683797	3	3	936	.861	.074	.041	.861	.017	.007	.418	-.244	-.229	.418	-.172	-3.094	0.102	-1.2	0.9	-0.8	0.9	A+	A+
2669	683939	3	3	463	.767	.069	.767	.099	.054	.011	.453	-.198	.453	-.254	-.198	-2.347	0.121	-0.8	1.0	-1.0	0.9	A+	
2670	683670	3	3	463	.270	.270	.443	.175	.102	.011	.420	.420	-.120	-.124	-.193	0.378	0.117	-1.2	0.9	1.5	1.2	B-	
2671	661162	3	3	936	.763	.032	.159	.763	.041	.005	.555	-.183	-.464	.555	-.116	-2.313	0.085	-3.7	0.9	-3.9	0.7	A+	B+
2672	683803	3	3	463	.441	.255	.441	.134	.156	.015	.309	-.100	.309	-.219	-.037	-0.575	0.105	3.7	1.2	3.6	1.3	A+	
2673	679592	3	3	463	.685	.102	.073	.121	.685	.019	.485	-.283	-.177	-.219	.485	-1.842	0.111	-1.3	0.9	-0.3	1.0	B+	
2674	661865	3	3	463	.806	.054	.093	.806	.032	.015	.452	-.248	-.218	.452	-.218	-2.624	0.128	-1.1	0.9	0.9	1.1	C+	
2675	679543	3	3	463	.434	.093	.153	.434	.302	.017	.392	-.259	-.219	.392	-.042	-0.541	0.105	0.8	1.0	1.5	1.1	B-	
2676	661770	3	3	464	.640	.099	.099	.162	.640	.000	.434	-.179	-.137	-.309	.434	-1.484	0.108	0.2	1.0	0.0	1.0	A+	
2677	679588	3	3	464	.597	.159	.597	.147	.097	.000	.359	-.219	.359	-.179	-.112	-1.255	0.106	2.4	1.1	2.2	1.2	A-	
2678	661857	3	3	464	.345	.082	.297	.274	.345	.002	.312	-.081	-.144	-.137	.312	0.070	0.111	3.1	1.2	2.9	1.3	A-	
2679	679744	3	3	464	.627	.627	.248	.034	.091	.000	.386	.386	-.198	-.274	-.179	-1.414	0.107	1.5	1.1	1.2	1.1	A+	
2680	683941	3	3	464	.565	.287	.069	.080	.565	.000	.492	-.368	-.161	-.135	.492	-1.088	0.105	-1.1	1.0	-0.8	0.9	B-	
2681	679477	3	3	464	.431	.336	.431	.147	.084	.002	.391	-.141	.391	-.226	-.162	-0.400	0.106	1.6	1.1	1.9	1.1	A-	
2682	683935	3	3	464	.528	.528	.166	.207	.093	.006	.477	.477	-.258	-.134	-.259	-0.900	0.105	-0.6	1.0	-1.0	0.9	B+	
2683	683808	3	4	464	.153	.431	.054	.353	.153	.009	.297	-.263	-.169	.164	.297	1.428	0.144	0.4	1.0	1.9	1.4	A+	
2684	679475	3	3	464	.632	.631	.097	.166	.097	.009	.489	.489	-.267	-.205	-.216	-1.437	0.107	-1.2	1.0	-1.0	0.9	A-	
2685	661859	3	3	464	.679	.679	.088	.069	.155	.009	.360	.360	-.270	-.166	-.088	-1.698	0.110	1.7	1.1	1.0	1.1	A-	
2686	680004	3	3	464	.644	.140	.078	.644	.129	.009	.523	-.348	-.223	.523	-.156	-1.507	0.108	-2.1	0.9	-2.4	0.8	A+	
2687	683677	3	3	464	.519	.084	.519	.280	.108	.009	.472	-.144	.472	-.245	-.221	-0.856	0.105	-0.4	1.0	-0.9	0.9	A-	
2688	679391	3	3	464	.095	.222	.235	.435	.095	.013	.134	-.225	-.207	.337	.134	2.101	0.175	1.4	1.2	3.4	2.1	A+	
2689	677713	3	3	464	.373	.095	.119	.373	.397	.017	.231	-.144	-.109	.231	-.016	-0.087	0.109	5.1	1.3	5.1	1.4	A+	
2690	679539	3	3	464	.825	.086	.825	.041	.034	.013	.461	-.301	.461	-.244	-.112	-2.660	0.132	-1.4	0.9	-1.9	0.7	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2691	683794	3	3	464	.884	.032	.884	.050	.019	.015	.381	-.201	.381	-.239	-.100	-3.201	0.154	-0.6	0.9	-1.4	0.7	A+	
2692	679805	3	3	464	.776	.030	.157	.776	.017	.019	.573	-.178	-.443	.573	-.162	-2.293	0.121	-3.4	0.8	-3.4	0.6	A-	
2693	683684	3	3	464	.716	.078	.157	.716	.032	.017	.580	-.314	-.333	.580	-.177	-1.910	0.113	-3.7	0.8	-3.2	0.7	A+	
2694	678951	3	3	464	.679	.269	.015	.022	.679	.015	.461	-.295	-.176	-.267	.461	-1.698	0.110	-0.7	1.0	0.6	1.1	A-	
2695	680005	3	3	464	.707	.707	.093	.114	.071	.015	.545	.545	-.193	-.236	-.362	-1.859	0.113	-3.0	0.9	-1.9	0.8	B-	
2696	684220	3	4	458	.550	.057	.550	.066	.328	.000	.299	-.284	.299	-.252	-.044	-1.111	0.106	4.3	1.2	3.8	1.3	A+	
2697	681716	3	3	458	.579	.107	.579	.253	.061	.000	.236	-.175	.236	-.042	-.184	-1.258	0.107	5.5	1.3	5.6	1.4	A+	
2698	679736	3	3	458	.445	.358	.114	.445	.079	.004	.426	-.176	-.292	.426	-.118	-0.576	0.106	0.5	1.0	1.1	1.1	A+	
2699	679997	3	3	458	.526	.120	.526	.179	.170	.004	.477	-.222	.477	-.110	-.310	-0.988	0.106	-0.6	1.0	-0.3	1.0	A-	
2700	679650	3	3	458	.417	.328	.417	.148	.103	.004	.270	.008	.270	-.289	-.093	-0.429	0.107	4.4	1.2	4.7	1.4	A-	
2701	683798	3	3	458	.625	.098	.624	.118	.155	.004	.488	-.277	.488	-.312	-.117	-1.501	0.109	-0.7	1.0	-1.6	0.9	A-	
2702	683689	3	3	458	.598	.063	.142	.598	.188	.009	.524	-.240	-.183	.524	-.310	-1.361	0.107	-1.9	0.9	-1.4	0.9	A+	
2703	661932	3	3	458	.649	.648	.098	.162	.085	.007	.497	.497	-.205	-.288	-.193	-1.632	0.110	-1.0	1.0	-1.1	0.9	A+	
2704	684206	3	3	458	.563	.192	.194	.563	.037	.013	.457	-.180	-.273	.457	-.144	-1.179	0.106	0.1	1.0	0.0	1.0	A-	
2705	682589	3	3	458	.572	.052	.068	.572	.301	.007	.385	-.198	-.079	.385	-.240	-1.224	0.106	2.0	1.1	1.7	1.1	A-	
2706	661854	3	3	458	.771	.151	.050	.771	.020	.009	.628	-.454	-.241	.628	-.193	-2.380	0.123	-3.8	0.8	-3.7	0.6	A+	
2707	677715	3	3	458	.382	.441	.382	.059	.107	.011	.169	.084	.169	-.123	-.230	-0.245	0.108	5.8	1.3	6.6	1.6	A+	
2708	678948	3	3	458	.915	.020	.013	.915	.041	.011	.484	-.187	-.201	.484	-.318	-3.751	0.178	-1.4	0.8	-2.4	0.5	A+	
2709	684154	3	3	458	.535	.153	.124	.172	.535	.015	.525	-.342	-.194	-.118	.525	-1.033	0.106	-1.9	0.9	-1.7	0.9	A+	
2710	679999	3	3	458	.849	.044	.849	.050	.037	.020	.518	-.159	.518	-.338	-.248	-3.005	0.142	-2.0	0.8	-2.4	0.6	A+	
2711	678956	3	3	458	.590	.186	.122	.590	.083	.020	.528	-.101	-.325	.528	-.291	-1.315	0.107	-1.9	0.9	-1.8	0.9	A+	
2712	661866	3	3	458	.819	.046	.819	.057	.063	.015	.396	-.280	.396	-.185	-.102	-2.740	0.133	0.1	1.0	-0.1	1.0	A-	
2713	661762	3	3	458	.666	.092	.090	.666	.135	.017	.615	-.230	-.265	.615	-.341	-1.730	0.111	-4.1	0.8	-3.8	0.7	A-	
2714	683683	3	2	458	.836	.050	.048	.046	.836	.020	.507	-.258	-.257	-.220	.507	-2.887	0.138	-1.7	0.9	-2.2	0.7	A+	
2715	661164	3	3	458	.760	.033	.068	.120	.760	.020	.450	-.140	-.186	-.285	.450	-2.305	0.121	-0.4	1.0	0.3	1.0	A+	
2716	679743	3	3	474	.553	.553	.042	.241	.165	.000	.375	.375	-.168	-.195	-.187	-1.165	0.101	1.0	1.0	1.1	1.1	A-	
2717	679392	3	3	474	.937	.015	.937	.019	.030	.000	.282	-.154	.282	-.117	-.202	-4.007	0.196	0.1	1.0	-1.3	0.7	B-	
2718	683801	3	3	474	.298	.207	.230	.297	.264	.002	.360	-.267	-.185	.360	.058	0.125	0.110	0.1	1.0	0.5	1.0	A-	
2719	683793	3	3	474	.538	.538	.217	.165	.078	.002	.295	.295	.016	-.254	-.216	-1.093	0.101	3.1	1.1	2.8	1.2	A+	
2720	683942	3	3	474	.848	.848	.146	.002	.004	.000	.345	.345	-.325	-.069	-.090	-2.933	0.136	-0.3	1.0	-0.6	0.9	A+	
2721	684201	3	3	474	.557	.194	.148	.557	.101	.000	.522	-.332	-.162	.522	-.235	-1.185	0.101	-3.2	0.9	-2.8	0.8	A-	
2722	677714	3	3	474	.644	.643	.076	.118	.162	.000	.256	.256	-.129	-.011	-.230	-1.619	0.105	3.3	1.1	2.5	1.2	A+	
2723	679646	3	3	474	.226	.494	.186	.093	.226	.002	.439	-.396	-.023	.096	.439	0.567	0.119	-1.5	0.9	-1.1	0.9	B-	
2724	683690	3	3	474	.631	.631	.099	.190	.078	.002	.625	.625	-.150	-.463	-.263	-1.553	0.104	-5.9	0.8	-4.5	0.7	A-	
2725	661849	3	3	474	.500	.500	.080	.027	.386	.006	.473	.473	-.136	-.072	-.358	-0.909	0.101	-1.7	0.9	-1.9	0.9	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2726	680003	3	3	474	.298	.082	.297	.046	.568	.006	.246	-.202	.246	-.200	-.003	0.125	0.110	2.6	1.1	2.7	1.2	A-	
2727	683685	3	3	474	.578	.044	.209	.578	.162	.006	.408	-.211	-.312	.408	-.047	-1.289	0.102	0.0	1.0	0.8	1.1	A-	
2728	679589	3	3	474	.272	.344	.209	.272	.165	.011	.155	.050	-.140	.155	-.064	0.273	0.112	3.4	1.2	4.9	1.5	A-	
2729	678950	3	3	474	.654	.654	.036	.215	.084	.011	.442	.442	-.267	-.216	-.209	-1.674	0.105	-1.0	1.0	-1.1	0.9	B-	
2730	683682	3	3	474	.753	.753	.049	.101	.082	.015	.549	.549	-.173	-.273	-.379	-2.239	0.115	-3.3	0.8	-3.0	0.7	A+	
2731	661769	3	3	474	.352	.082	.074	.352	.477	.015	.217	-.151	-.213	.217	.014	-0.175	0.105	3.7	1.2	4.1	1.3	C+	
2732	682587	3	3	474	.760	.095	.759	.080	.051	.015	.454	-.223	.454	-.207	-.270	-2.279	0.116	-1.4	0.9	-1.7	0.8	A-	
2733	683676	3	3	474	.684	.089	.684	.110	.105	.013	.453	-.220	.453	-.178	-.276	-1.833	0.108	-1.2	1.0	-1.5	0.9	A+	
2734	679476	3	3	474	.527	.200	.527	.198	.059	.015	.391	-.287	.391	-.129	-.078	-1.042	0.101	0.7	1.0	-0.2	1.0	A-	
2735	679474	3	3	947	.911	.011	.032	.911	.037	.010	.416	-.146	-.232	.416	-.277	-3.639	0.120	-1.5	0.9	-2.7	0.6	A-	A-
2736	678376	3	3	458	.428	.428	.122	.242	.205	.002	.312	.312	-.158	-.167	-.065	-0.169	0.108	3.5	1.2	4.7	1.4	A-	
2737	661165	3	3	458	.908	.908	.070	.015	.007	.000	.218	.218	-.152	-.093	-.156	-3.368	0.173	0.5	1.1	3.1	2.0	B+	
2738	684215	3	3	458	.710	.129	.090	.070	.710	.002	.500	-.402	-.225	-.102	.500	-1.691	0.115	-1.2	0.9	-1.2	0.9	A+	
2739	683693	3	3	458	.747	.114	.028	.111	.747	.000	.455	-.302	-.127	-.258	.455	-1.926	0.120	-0.3	1.0	-1.2	0.9	A+	
2740	683692	3	3	458	.579	.074	.179	.579	.166	.002	.456	-.164	-.331	.456	-.158	-0.957	0.107	0.6	1.0	0.4	1.0	A-	
2741	681717	3	3	458	.369	.336	.153	.369	.140	.002	.361	-.048	-.218	.361	-.205	0.152	0.110	2.5	1.1	2.6	1.2	A+	
2742	679653	3	3	458	.714	.181	.076	.026	.714	.002	.558	-.398	-.282	-.139	.558	-1.718	0.116	-2.6	0.9	-2.1	0.8	A+	
2743	678377	3	3	458	.686	.229	.015	.686	.068	.002	.547	-.499	-.122	.547	-.106	-1.548	0.113	-2.2	0.9	-2.0	0.8	A-	
2744	662158	3	3	458	.314	.207	.314	.282	.190	.007	.319	-.113	.319	-.175	-.035	0.467	0.114	2.1	1.1	4.5	1.5	A-	
2745	679471	3	3	458	.397	.072	.301	.397	.225	.004	.446	-.203	-.121	.446	-.246	-0.005	0.109	0.9	1.0	0.8	1.1	B-	
2746	683667	3	3	458	.483	.070	.483	.153	.290	.004	.376	-.331	.376	-.240	-.021	-0.456	0.107	2.7	1.1	1.6	1.1	A+	
2747	661852	3	3	458	.662	.094	.662	.105	.133	.007	.597	-.382	.597	-.283	-.211	-1.409	0.111	-3.7	0.8	-2.3	0.8	B-	
2748	684157	3	3	458	.400	.400	.310	.129	.153	.009	.190	.190	-.116	-.075	-.007	-0.016	0.109	6.8	1.3	6.3	1.6	A+	
2749	683695	3	3	458	.463	.463	.046	.463	.020	.009	.518	-.336	-.297	.518	-.132	-0.353	0.107	-1.6	0.9	-1.2	0.9	A+	
2750	679648	3	3	458	.579	.579	.120	.079	.212	.011	.584	.584	-.152	-.299	-.362	-0.957	0.107	-3.5	0.9	-2.9	0.8	A+	
2751	679395	3	3	458	.448	.162	.127	.249	.448	.015	.565	-.443	-.168	-.110	.565	-0.273	0.107	-3.2	0.9	-2.5	0.8	A+	
2752	661764	3	3	458	.699	.699	.124	.096	.066	.015	.447	.447	-.281	-.184	-.177	-1.625	0.114	0.3	1.0	-0.7	0.9	A+	
2753	681710	3	3	458	.793	.103	.055	.035	.793	.015	.520	-.353	-.284	-.169	.520	-2.245	0.127	-2.0	0.9	-1.6	0.8	A-	
2754	680001	3	3	458	.659	.041	.659	.105	.183	.011	.435	-.232	.435	-.238	-.194	-1.397	0.111	0.6	1.0	1.4	1.1	A+	
2755	678954	3	3	458	.873	.055	.031	.873	.026	.015	.379	-.216	-.241	.379	-.125	-2.951	0.152	0.2	1.0	-1.2	0.8	A-	
2756	677712	3	3	460	.513	.070	.280	.513	.137	.000	.354	-.088	-.182	.354	-.212	-0.993	0.104	2.4	1.1	1.6	1.1	A+	
2757	683800	3	3	460	.367	.224	.174	.367	.233	.002	.396	-.061	-.180	.396	-.226	-0.253	0.108	0.6	1.0	1.1	1.1	A-	
2758	679473	3	3	460	.550	.124	.165	.550	.161	.000	.544	-.242	-.181	.544	-.337	-1.178	0.104	-2.9	0.9	-3.1	0.8	A-	
2759	683792	3	3	460	.344	.274	.343	.143	.239	.000	.025	-.048	.025	.025	.002	-0.124	0.109	8.4	1.4	7.6	1.7	B-	
2760	684153	3	3	460	.311	.148	.370	.311	.167	.004	.152	-.060	-.061	.152	-.051	0.058	0.112	4.9	1.3	5.5	1.6	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2761	679654	3	3	460	.313	.313	.120	.461	.107	.000	.320	.320	-.115	-.070	-.246	0.046	0.111	1.5	1.1	2.5	1.2	A-	
2762	679470	3	3	460	.520	.272	.096	.520	.113	.000	.454	-.228	-.197	.454	-.212	-1.026	0.104	-0.3	1.0	0.4	1.0	A-	
2763	662159	3	3	460	.361	.491	.096	.361	.052	.000	.418	-.271	-.133	.418	-.118	-0.219	0.108	-0.2	1.0	0.8	1.1	A+	
2764	661851	3	3	460	.657	.657	.246	.063	.035	.000	.460	.460	-.381	-.121	-.137	-1.730	0.109	-0.8	1.0	-0.9	0.9	A-	
2765	684158	3	3	460	.504	.226	.174	.096	.504	.000	.440	-.168	-.231	-.211	.440	-0.950	0.104	0.1	1.0	0.2	1.0	A+	
2766	681714	3	3	460	.496	.496	.067	.141	.296	.000	.405	.405	-.143	-.168	-.237	-0.907	0.104	1.0	1.0	0.6	1.0	A-	
2767	683686	3	3	460	.478	.133	.478	.089	.298	.002	.447	-.033	.447	-.127	-.379	-0.820	0.104	-0.2	1.0	-0.4	1.0	A+	
2768	679651	3	3	460	.509	.228	.509	.150	.107	.007	.444	-.277	.444	-.205	-.073	-0.972	0.104	-0.1	1.0	0.4	1.0	A+	
2769	680002	3	3	460	.596	.187	.111	.596	.100	.007	.522	-.352	-.170	.522	-.185	-1.409	0.106	-2.2	0.9	-1.3	0.9	A-	
2770	679647	3	3	460	.707	.122	.085	.080	.707	.007	.559	-.240	-.260	-.346	.559	-2.012	0.113	-3.3	0.8	-2.8	0.8	A+	
2771	679396	3	3	460	.291	.176	.052	.291	.470	.011	.223	-.242	-.043	.223	.025	0.172	0.114	3.0	1.2	4.3	1.5	A-	
2772	661863	3	3	460	.657	.109	.657	.080	.139	.015	.613	-.191	.613	-.204	-.465	-1.730	0.109	-4.8	0.8	-3.8	0.7	A+	
2773	683687	3	3	460	.750	.104	.750	.030	.102	.013	.508	-.262	.508	-.228	-.280	-2.277	0.118	-2.1	0.9	-1.9	0.8	A+	
2774	681709	3	3	460	.774	.107	.052	.774	.052	.015	.531	-.357	-.253	.531	-.162	-2.435	0.122	-2.7	0.8	-2.5	0.7	A+	
2775	678955	3	3	460	.767	.074	.767	.037	.107	.015	.529	-.134	.529	-.161	-.449	-2.391	0.121	-2.7	0.8	-2.1	0.8	A-	
2776	679800	3	3	473	.478	.478	.087	.030	.404	.002	.242	.242	-.166	.014	-.158	-0.717	0.104	5.9	1.3	5.1	1.4	A-	A+
2777	661862	3	3	473	.679	.023	.076	.679	.222	.000	.498	-.132	-.083	.498	-.459	-1.784	0.110	-1.1	0.9	-1.0	0.9	A+	A-
2778	679807	3	3	936	.834	.075	.834	.046	.033	.012	.457	-.271	.457	-.234	-.177	-2.835	0.095	-1.7	0.9	-2.0	0.8	A-	A+
2779	679389	3	3	473	.355	.347	.355	.063	.233	.002	.246	-.091	.246	-.143	-.084	-0.068	0.108	4.6	1.2	4.8	1.4	A+	A-
2780	679802	3	3	473	.493	.072	.129	.493	.304	.002	.386	-.163	-.197	.386	-.186	-0.793	0.104	1.7	1.1	1.9	1.1	A-	A+
2781	662157	3	3	473	.820	.049	.078	.053	.820	.000	.401	-.212	-.256	-.178	.401	-2.730	0.131	0.0	1.0	-0.5	0.9	B+	A-
2782	683688	3	3	473	.918	.019	.044	.918	.015	.004	.324	-.085	-.307	.324	-.046	-3.756	0.176	-0.3	1.0	-0.6	0.8	C-	A-
2783	679803	3	3	473	.651	.125	.651	.104	.112	.008	.549	-.220	.549	-.171	-.383	-1.628	0.108	-2.4	0.9	-2.0	0.8	A-	A+
2784	679998	3	3	936	.540	.245	.118	.540	.092	.006	.492	-.267	-.209	.492	-.192	-1.071	0.073	-2.1	0.9	-1.9	0.9	A+	A+
2785	683795	3	3	473	.670	.670	.235	.025	.057	.013	.511	.511	-.330	-.211	-.190	-1.735	0.110	-1.4	0.9	-1.0	0.9	A-	A-
2786	661760	3	3	473	.630	.630	.078	.066	.207	.019	.418	.418	-.270	-.198	-.125	-1.512	0.107	1.1	1.1	0.6	1.1	A+	B+
2787	683806	3	3	473	.503	.068	.281	.503	.127	.021	.518	-.235	-.208	.518	-.225	-0.847	0.104	-1.9	0.9	-1.9	0.9	B-	A-
2788	683790	3	3	473	.924	.924	.027	.023	.004	.021	.322	.322	-.130	-.153	-.085	-3.853	0.182	-0.3	1.0	-0.1	1.0	A-	A+
2789	683934	3	3	473	.848	.030	.057	.044	.848	.021	.462	-.143	-.240	-.246	.462	-2.965	0.139	-1.1	0.9	-1.8	0.7	A-	A-
2790	679586	3	3	473	.660	.156	.660	.074	.089	.021	.631	-.357	.631	-.236	-.253	-1.676	0.109	-4.7	0.8	-4.0	0.7	A+	A-
2791	678953	3	3	473	.738	.133	.738	.066	.042	.021	.495	-.348	.495	-.125	-.165	-2.142	0.116	-1.2	0.9	-1.5	0.8	A+	C-
2792	679645	3	3	473	.290	.351	.290	.307	.032	.021	.404	-.195	.404	-.083	-.094	0.312	0.114	-0.6	1.0	1.0	1.1	B-	A-
2793	661864	3	3	462	.509	.067	.509	.193	.232	.000	.410	-.246	.410	-.283	-.076	-0.634	0.105	1.2	1.1	2.0	1.1	A-	
2794	661166	3	3	462	.587	.058	.281	.587	.074	.000	.526	-.158	-.369	.526	-.215	-1.033	0.106	-2.2	0.9	-1.3	0.9	A-	
2795	683681	3	3	462	.870	.032	.017	.080	.870	.000	.293	-.067	-.123	-.260	.293	-2.897	0.148	0.3	1.0	1.2	1.3	C+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2796	683674	3	3	462	.178	.121	.177	.262	.439	.000	.194	-.038	.194	.278	-.371	1.379	0.138	2.6	1.2	4.0	1.8	A-	
2797	679737	3	3	462	.868	.061	.868	.041	.028	.002	.421	-.266	.421	-.239	-.189	-2.876	0.147	-1.0	0.9	-1.3	0.8	A+	
2798	683669	3	3	462	.723	.097	.045	.723	.134	.000	.454	-.239	-.176	.454	-.281	-1.787	0.115	-0.7	1.0	-0.6	0.9	A-	
2799	678949	3	3	462	.926	.926	.017	.052	.002	.002	.260	.260	-.123	-.214	-.075	-3.603	0.187	0.1	1.0	-0.4	0.9	B+	
2800	679593	3	3	462	.775	.097	.061	.775	.067	.000	.442	-.275	-.223	.442	-.199	-2.121	0.122	-0.7	1.0	-1.0	0.9	A+	
2801	679542	3	3	462	.768	.050	.768	.074	.106	.002	.523	-.231	.523	-.221	-.363	-2.077	0.121	-2.2	0.9	-1.9	0.8	A-	
2802	679584	3	3	462	.422	.422	.472	.035	.071	.000	.396	.396	-.301	-.120	-.090	-0.188	0.107	0.7	1.0	1.9	1.1	A-	
2803	661931	3	3	462	.390	.180	.390	.156	.271	.004	.305	-.171	.305	-.016	-.158	-0.015	0.108	3.1	1.2	3.5	1.3	A-	
2804	683940	3	3	462	.844	.013	.117	.019	.844	.006	.358	-.184	-.253	-.100	.358	-2.653	0.138	0.0	1.0	0.4	1.1	B+	
2805	661867	3	3	462	.825	.104	.024	.037	.825	.011	.441	-.252	-.227	-.215	.441	-2.489	0.132	-0.8	0.9	-1.1	0.8	A+	
2806	661921	3	3	462	.794	.794	.050	.076	.067	.013	.445	.445	-.093	-.291	-.248	-2.258	0.125	-0.9	0.9	-0.8	0.9	A+	
2807	661761	3	3	462	.645	.082	.645	.052	.212	.009	.333	-.229	.333	-.214	-.078	-1.342	0.108	2.7	1.1	0.8	1.1	A-	
2808	679799	3	3	462	.286	.584	.052	.286	.067	.011	.286	-.067	-.210	.286	-.114	0.586	0.117	1.5	1.1	4.4	1.5	A+	
2809	679806	3	3	462	.745	.063	.745	.076	.104	.013	.549	-.219	.549	-.216	-.360	-1.921	0.117	-2.8	0.9	-2.5	0.8	A+	
2810	683802	3	3	462	.411	.130	.130	.310	.411	.019	.538	-.172	-.282	-.199	.538	-0.131	0.107	-2.8	0.9	-1.7	0.9	A-	
2811	683796	3	3	462	.786	.069	.104	.026	.786	.015	.446	-.200	-.290	-.159	.446	-2.196	0.124	-1.1	0.9	0.0	1.0	B+	
2812	661163	3	3	462	.571	.110	.238	.065	.571	.015	.458	-.111	-.335	-.125	.458	-0.955	0.106	-0.5	1.0	0.2	1.0	A-	
2813	683668	3	3	463	.492	.391	.039	.078	.492	.000	.394	-.286	-.231	-.049	.394	-0.803	0.105	1.7	1.1	2.3	1.2	A+	A-
2814	661858	3	3	463	.240	.048	.512	.199	.240	.002	.376	-.151	-.228	-.036	.376	0.610	0.121	0.0	1.0	0.3	1.0	A+	A+
2815	683791	3	3	463	.965	.026	.002	.006	.965	.000	.157	-.126	-.011	-.100	.157	-4.837	0.265	0.3	1.0	0.9	1.4	A-	B-
2816	683807	3	3	463	.708	.086	.045	.708	.160	.000	.472	-.201	-.185	.472	-.327	-1.977	0.115	-0.3	1.0	-0.7	0.9	A-	A-
2817	661856	3	3	463	.454	.266	.454	.179	.102	.000	.444	-.319	.444	-.102	-.136	-0.603	0.106	0.0	1.0	0.8	1.1	A-	A-
2818	683694	3	3	463	.786	.089	.069	.786	.056	.000	.420	-.199	-.325	.420	-.144	-2.495	0.126	0.4	1.0	-0.6	0.9	A+	A-
2819	683799	3	3	463	.492	.492	.151	.171	.184	.002	.339	.339	-.105	-.062	-.264	-0.803	0.105	3.1	1.1	3.6	1.3	A-	A+
2820	679547	3	3	463	.711	.201	.035	.050	.711	.004	.630	-.533	-.208	-.109	.630	-1.990	0.115	-4.1	0.8	-3.8	0.7	A-	A+
2821	661768	3	3	463	.499	.080	.104	.499	.311	.006	.379	-.173	-.266	.379	-.109	-0.836	0.105	2.0	1.1	2.5	1.2	A-	A-
2822	679585	3	3	463	.747	.035	.028	.747	.184	.006	.500	-.234	-.138	.500	-.354	-2.224	0.120	-1.1	0.9	-1.5	0.8	A-	B-
2823	679804	3	3	463	.752	.158	.063	.022	.752	.006	.533	-.403	-.164	-.199	.533	-2.253	0.120	-1.8	0.9	-1.8	0.8	A+	B-
2824	679801	3	3	463	.721	.721	.093	.119	.056	.011	.500	.500	-.250	-.187	-.305	-2.057	0.116	-1.1	0.9	-0.8	0.9	A-	A-
2825	679390	3	3	463	.909	.024	.013	.909	.043	.011	.298	-.101	-.035	.298	-.233	-3.692	0.174	0.0	1.0	1.1	1.3	A-	A+
2826	679548	3	3	463	.691	.216	.032	.052	.691	.009	.608	-.501	-.161	-.124	.608	-1.873	0.113	-3.6	0.8	-3.3	0.7	A-	A-
2827	661771	3	3	463	.555	.099	.166	.166	.555	.013	.422	-.279	-.114	-.178	.422	-1.125	0.106	1.4	1.1	1.2	1.1	A-	A+
2828	678952	3	3	463	.814	.814	.082	.035	.056	.013	.507	.507	-.288	-.306	-.186	-2.711	0.132	-1.5	0.9	-1.6	0.8	A-	A-
2829	683675	3	3	463	.415	.244	.263	.415	.058	.019	.334	-.187	-.137	.334	-.009	-0.401	0.106	2.8	1.1	2.5	1.2	A+	A+
2830	681712	3	3	463	.762	.762	.084	.076	.058	.019	.548	.548	-.210	-.300	-.312	-2.326	0.122	-2.0	0.9	-2.6	0.7	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2831	679587	3	3	463	.797	.013	.147	.797	.022	.022	.611	-.084	-.542	.611	-.137	-2.576	0.128	-3.3	0.8	-3.5	0.6	A-	A+
2832	679549	3	3	463	.210	.076	.076	.210	.620	.019	.153	-.284	-.206	.153	.184	0.822	0.126	3.1	1.2	5.4	2.0	A+	A+
2833	680006	3	3	463	.696	.695	.190	.054	.060	.000	.397	.397	-.176	-.235	-.254	-1.908	0.110	-0.2	1.0	-0.2	1.0	A+	A+
2834	661933	3	3	463	.566	.052	.160	.566	.222	.000	.431	-.187	-.238	.431	-.204	-1.236	0.103	-0.3	1.0	-0.8	1.0	A-	A-
2835	678378	3	3	463	.676	.238	.676	.032	.054	.000	.328	-.170	.328	-.195	-.207	-1.801	0.108	1.5	1.1	1.2	1.1	A+	A+
2836	678957	3	3	463	.754	.114	.754	.078	.052	.002	.505	-.269	.505	-.257	-.278	-2.252	0.116	-2.3	0.9	-2.7	0.7	A+	A-
2837	679472	3	3	463	.626	.626	.022	.037	.315	.000	.507	.507	-.192	-.217	-.380	-1.539	0.105	-2.5	0.9	-2.2	0.9	A+	B-
2838	683673	3	3	463	.164	.222	.164	.130	.482	.002	.248	.011	.248	.133	-.282	1.048	0.135	0.6	1.1	2.6	1.4	B-	A-
2839	681718	3	3	463	.657	.067	.086	.657	.186	.004	.420	-.230	-.165	.420	-.222	-1.697	0.107	-0.4	1.0	-0.7	0.9	A+	A-
2840	680000	3	3	463	.888	.028	.888	.041	.039	.004	.389	-.132	.389	-.238	-.230	-3.327	0.154	-1.0	0.9	-1.5	0.7	A+	A-
2841	679798	3	3	463	.909	.043	.015	.909	.028	.004	.197	-.064	-.134	.197	-.108	-3.587	0.169	0.5	1.1	0.9	1.2	C+	A+
2842	679649	3	3	463	.389	.287	.389	.210	.106	.009	.302	-.089	.302	-.117	-.138	-0.360	0.105	2.6	1.1	2.3	1.2	A-	A-
2843	683691	3	3	463	.356	.356	.190	.322	.125	.006	.208	.208	-.132	.006	-.108	-0.191	0.107	4.3	1.2	4.4	1.3	A+	A-
2844	683789	3	3	463	.598	.093	.175	.123	.598	.011	.520	-.236	-.216	-.252	.520	-1.397	0.104	-2.9	0.9	-2.2	0.9	A+	A+
2845	661853	3	3	463	.382	.045	.184	.374	.382	.015	.268	-.142	-.083	-.093	.268	-0.327	0.106	3.7	1.2	3.2	1.2	A-	A+
2846	682588	3	3	463	.600	.600	.160	.073	.153	.013	.469	.469	-.223	-.159	-.235	-1.408	0.104	-1.5	0.9	-1.4	0.9	A+	A+
2847	661763	3	3	463	.436	.233	.436	.222	.089	.019	.469	-.275	.469	-.151	-.086	-0.600	0.104	-1.5	0.9	-1.4	0.9	A+	A-
2848	679652	3	3	463	.594	.594	.054	.244	.089	.019	.548	.548	-.170	-.342	-.190	-1.375	0.104	-3.6	0.9	-3.5	0.8	A-	A-
2849	661172	3	3	463	.672	.672	.022	.225	.063	.019	.464	.464	-.128	-.270	-.245	-1.777	0.108	-1.4	0.9	-1.8	0.9	A-	A+
2850	684155	3	3	463	.335	.121	.289	.335	.235	.019	.392	-.188	-.126	.392	-.092	-0.075	0.109	-0.2	1.0	1.2	1.1	A+	A-
2851	682415	4	4	515	.581	.091	.581	.208	.120	.000	.457	-.164	.457	-.332	-.134	-1.285	0.099	-0.8	1.0	-1.5	0.9	A-	
2852	661635	4	4	515	.588	.146	.085	.181	.588	.000	.366	-.180	-.178	-.174	.366	-1.324	0.099	1.6	1.1	1.7	1.1	A+	
2853	678097	4	4	515	.845	.052	.037	.066	.845	.000	.405	-.180	-.214	-.268	.405	-2.897	0.129	-0.9	0.9	-1.8	0.7	A+	
2854	678030	4	4	515	.237	.068	.237	.161	.534	.000	.176	-.095	.176	.007	-.107	0.555	0.114	2.6	1.2	5.6	1.7	A-	
2855	661389	4	4	515	.876	.050	.016	.054	.876	.004	.416	-.222	-.152	-.313	.416	-3.186	0.140	-1.2	0.9	-2.2	0.6	A+	
2856	677932	4	4	515	.610	.184	.087	.610	.117	.002	.422	-.198	-.345	.422	-.099	-1.433	0.100	-0.1	1.0	0.2	1.0	A+	
2857	661697	4	4	515	.575	.128	.134	.575	.163	.000	.368	-.125	-.140	.368	-.250	-1.256	0.099	1.6	1.1	1.2	1.1	A+	
2858	682428	4	4	515	.606	.097	.606	.231	.064	.002	.411	-.254	.411	-.150	-.235	-1.413	0.099	0.2	1.0	1.2	1.1	B+	
2859	661147	4	4	515	.590	.250	.087	.590	.070	.002	.445	-.288	-.139	.445	-.194	-1.334	0.099	-0.6	1.0	-0.7	1.0	A-	
2860	683963	4	4	1512	.767	.063	.113	.053	.767	.003	.419	-.178	-.242	-.231	.419	-2.308	0.066	-1.6	1.0	-1.6	0.9	A+	A-
2861	661644	4	4	515	.406	.406	.307	.080	.206	.002	.344	.344	-.161	-.198	-.089	-0.414	0.100	2.2	1.1	2.1	1.1	A-	
2862	681013	4	4	515	.761	.068	.761	.080	.087	.004	.432	-.098	.432	-.266	-.284	-2.284	0.112	-1.1	0.9	-1.3	0.9	A+	
2863	661639	4	4	515	.652	.231	.074	.652	.039	.004	.484	-.233	-.320	.484	-.214	-1.655	0.102	-2.0	0.9	-0.6	1.0	A+	
2864	683651	4	4	1012	.203	.280	.219	.292	.203	.007	.255	-.077	-.004	-.121	.255	0.828	0.087	1.3	1.1	5.4	1.5	A-	
2865	678028	4	4	515	.303	.324	.303	.070	.297	.006	.119	-.104	.119	.004	.007	0.143	0.106	5.5	1.3	6.8	1.6	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2866	661679	4	4	515	.528	.212	.528	.130	.122	.008	.594	-.273	.594	-.249	-.285	-1.025	0.098	-5.2	0.8	-4.5	0.8	A-	
2867	677698	4	4	515	.786	.786	.047	.045	.115	.008	.359	.359	-.087	-.169	-.265	-2.452	0.116	-0.2	1.0	-0.3	1.0	A-	
2868	661383	4	4	515	.276	.272	.398	.276	.041	.014	.389	-.104	-.170	.389	-.179	0.306	0.109	-0.2	1.0	1.0	1.1	A-	
2869	682617	4	4	515	.687	.111	.687	.155	.035	.012	.494	-.278	.494	-.278	-.176	-1.845	0.104	-2.0	0.9	-2.4	0.8	A-	
2870	683944	4	4	515	.687	.037	.204	.060	.687	.012	.574	-.200	-.465	-.135	.574	-1.845	0.104	-4.2	0.8	-3.7	0.7	A+	
2871	682443	4	4	512	.354	.256	.129	.258	.354	.004	.323	-.121	-.288	-.020	.323	0.663	0.105	2.2	1.1	5.3	1.5	A-	A+
2872	682292	4	4	512	.965	.002	.012	.021	.965	.000	.261	-.091	-.209	-.149	.261	-4.154	0.251	-0.2	1.0	0.6	1.2	A-	A-
2873	682391	4	4	512	.807	.021	.111	.059	.807	.002	.449	-.270	-.253	-.236	.449	-1.960	0.125	-0.2	1.0	-0.7	0.9	A-	A-
2874	677700	4	4	512	.549	.172	.549	.150	.127	.002	.403	-.164	.403	-.083	-.311	-0.378	0.101	2.2	1.1	2.1	1.2	A+	A+
2875	682848	4	4	512	.775	.031	.127	.063	.775	.004	.454	-.244	-.265	-.199	.454	-1.723	0.119	-0.2	1.0	-0.4	1.0	A-	A+
2876	661158	4	4	512	.791	.053	.139	.791	.016	.002	.569	-.254	-.464	.569	-.097	-1.838	0.122	-2.4	0.8	-2.9	0.7	A-	A-
2877	683980	4	4	512	.381	.092	.342	.381	.186	.000	.420	-.291	-.247	.420	-.007	0.510	0.104	0.3	1.0	1.9	1.2	A+	A+
2878	661388	4	4	512	.418	.418	.066	.084	.430	.002	.433	.433	-.219	-.372	-.103	0.309	0.102	0.8	1.0	1.5	1.1	A-	A+
2879	678022	4	4	512	.848	.848	.055	.041	.055	.002	.529	.529	-.290	-.208	-.343	-2.316	0.136	-2.0	0.8	-2.2	0.7	A+	A-
2880	682844	4	4	512	.500	.289	.139	.500	.064	.008	.320	-.149	-.169	.320	-.095	-0.123	0.101	5.3	1.2	4.3	1.3	A+	A-
2881	677027	4	4	512	.449	.236	.117	.449	.189	.008	.500	-.267	-.270	.500	-.091	0.143	0.101	-1.6	0.9	-0.6	1.0	A-	A+
2882	676954	4	4	512	.549	.549	.146	.076	.221	.008	.469	.469	-.309	-.203	-.138	-0.378	0.101	0.3	1.0	1.0	1.1	A+	A-
2883	682441	4	4	512	.586	.586	.107	.240	.057	.010	.449	.449	-.212	-.284	-.087	-0.576	0.102	0.8	1.0	1.5	1.1	A-	A+
2884	677507	4	4	512	.260	.301	.230	.195	.260	.014	.307	.063	-.167	-.200	.307	1.233	0.114	2.7	1.2	3.3	1.4	A-	A-
2885	678104	4	4	512	.682	.682	.023	.123	.160	.012	.469	.469	-.146	-.255	-.268	-1.113	0.108	0.2	1.0	-0.1	1.0	A-	B-
2886	661672	4	4	512	.531	.201	.209	.047	.531	.012	.485	-.317	-.145	-.197	.485	-0.286	0.101	-0.3	1.0	-0.2	1.0	B+	A+
2887	676950	4	4	512	.938	.938	.031	.014	.006	.012	.332	.332	-.217	-.202	-.057	-3.484	0.195	0.0	1.0	-1.2	0.7	A-	A-
2888	661669	4	4	512	.318	.137	.318	.447	.080	.018	.351	.004	.351	-.222	-.137	0.867	0.108	1.3	1.1	4.8	1.5	A-	B+
2889	678101	4	4	512	.738	.047	.145	.738	.055	.016	.505	-.108	-.330	.505	-.269	-1.466	0.114	-1.0	0.9	-1.1	0.9	A-	B-
2890	682449	4	4	512	.856	.049	.045	.037	.855	.014	.504	-.338	-.227	-.216	.504	-2.391	0.139	-1.5	0.9	-1.4	0.8	A+	A-
2891	682457	4	4	507	.420	.327	.193	.420	.059	.000	.382	-.195	-.164	.382	-.138	-0.043	0.103	2.6	1.1	2.8	1.2	A+	A+
2892	661643	4	4	507	.533	.296	.533	.144	.028	.000	.338	-.411	.338	.054	.001	-0.638	0.102	4.2	1.2	3.2	1.2	A-	A+
2893	682851	4	4	507	.864	.073	.864	.047	.016	.000	.337	-.206	.337	-.221	-.120	-2.786	0.140	0.4	1.0	0.4	1.1	A+	B-
2894	678106	4	4	507	.779	.108	.779	.043	.067	.002	.409	-.199	.409	-.192	-.258	-2.080	0.119	0.5	1.0	0.5	1.1	A-	A+
2895	677696	4	4	507	.888	.077	.006	.028	.888	.002	.458	-.348	-.166	-.236	.458	-3.039	0.151	-1.2	0.9	-2.2	0.6	A+	A-
2896	683967	4	4	507	.773	.047	.114	.065	.773	.000	.489	-.240	-.322	-.208	.489	-2.038	0.118	-1.0	0.9	-1.9	0.8	A-	A-
2897	661703	4	4	507	.789	.073	.071	.067	.789	.000	.558	-.255	-.344	-.292	.558	-2.152	0.120	-2.9	0.8	-1.6	0.8	A+	A+
2898	677941	4	4	507	.888	.012	.077	.888	.020	.004	.349	-.155	-.208	.349	-.231	-3.039	0.151	-0.3	1.0	1.1	1.2	A+	B-
2899	661636	4	4	507	.657	.657	.077	.187	.077	.002	.432	.432	-.231	-.197	-.232	-1.311	0.106	1.0	1.1	0.2	1.0	A-	A+
2900	677029	4	4	507	.566	.160	.140	.566	.132	.002	.495	-.141	-.253	.495	-.298	-0.815	0.102	-0.6	1.0	-0.6	1.0	A-	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2901	677023	4	4	507	.286	.008	.286	.107	.596	.004	.408	-.079	.408	-.219	-.210	0.735	0.112	0.1	1.0	2.0	1.2	A-	A+
2902	677465	4	4	507	.324	.440	.124	.323	.108	.004	.218	.048	-.234	.218	-.127	0.503	0.109	5.5	1.3	6.1	1.7	B+	A+
2903	682288	4	4	507	.533	.146	.533	.162	.156	.004	.280	-.013	.280	-.116	-.233	-0.638	0.102	5.9	1.3	5.1	1.4	A-	A+
2904	683972	4	4	507	.371	.195	.221	.205	.371	.008	.473	-.079	-.266	-.191	.473	0.229	0.105	-1.3	0.9	0.3	1.0	A-	A-
2905	677939	4	4	1015	.969	.011	.968	.001	.008	.012	.218	-.117	.218	-.073	-.076	-4.617	0.185	-0.2	1.0	-0.6	0.8	A+	A-
2906	678100	4	4	507	.391	.280	.142	.179	.391	.008	.520	-.083	-.296	-.270	.520	0.119	0.104	-2.1	0.9	-1.5	0.9	B-	A-
2907	661638	4	4	507	.663	.089	.108	.132	.663	.008	.523	-.194	-.339	-.218	.523	-1.345	0.106	-1.4	0.9	-1.7	0.9	A-	A-
2908	661149	4	4	507	.809	.061	.809	.108	.012	.010	.409	-.238	.409	-.227	-.146	-2.301	0.124	0.0	1.0	0.7	1.1	A-	A+
2909	683975	4	4	507	.795	.795	.099	.049	.049	.008	.470	.470	-.290	-.244	-.174	-2.196	0.122	-1.1	0.9	-0.7	0.9	A-	A-
2910	661677	4	4	507	.669	.669	.065	.219	.039	.008	.593	.593	-.298	-.386	-.172	-1.379	0.107	-3.5	0.8	-3.1	0.8	A+	A+
2911	661700	4	4	509	.918	.028	.031	.024	.917	.000	.144	-.149	-.079	-.011	.144	-3.588	0.167	0.7	1.1	1.3	1.3	A-	
2912	682439	4	4	509	.976	.010	.976	.000	.014	.000	.090	-.046	.090	.000	-.079	-4.971	0.296	0.2	1.0	0.3	1.1	A-	
2913	682850	4	4	509	.817	.029	.817	.128	.026	.000	.292	-.228	.292	-.160	-.132	-2.583	0.122	0.5	1.0	0.9	1.1	A-	
2914	682289	4	4	509	.356	.261	.214	.163	.356	.006	.314	-.058	-.175	-.137	.314	-0.081	0.103	2.2	1.1	2.0	1.1	A+	
2915	677936	4	4	509	.540	.269	.100	.540	.088	.002	.428	-.195	-.206	.428	-.210	-1.010	0.098	-0.2	1.0	-0.8	1.0	A-	
2916	681011	4	4	509	.646	.100	.151	.100	.646	.002	.475	-.212	-.258	-.234	.475	-1.542	0.101	-2.0	0.9	-1.6	0.9	A-	
2917	677940	4	4	509	.808	.045	.807	.094	.049	.004	.353	-.180	.353	-.216	-.160	-2.510	0.120	-0.3	1.0	-0.3	1.0	A+	
2918	677510	4	4	509	.595	.063	.238	.595	.100	.004	.430	-.237	-.246	.430	-.132	-1.282	0.099	-0.5	1.0	0.3	1.0	A+	
2919	677022	4	4	509	.434	.118	.098	.434	.344	.006	.477	-.051	-.266	.477	-.274	-0.488	0.099	-1.4	1.0	-0.9	1.0	A+	
2920	661704	4	4	509	.474	.473	.196	.189	.136	.006	.433	.433	-.275	-.147	-.118	-0.683	0.098	-0.5	1.0	-0.5	1.0	A+	
2921	661379	4	4	509	.371	.151	.230	.371	.244	.004	.306	-.247	-.227	.306	.103	-0.165	0.102	3.0	1.1	3.0	1.2	A-	
2922	661150	4	4	509	.843	.843	.061	.065	.024	.008	.447	.447	-.228	-.250	-.218	-2.787	0.129	-1.5	0.9	-2.1	0.7	A+	
2923	678099	4	4	509	.358	.143	.108	.358	.381	.010	.352	-.285	-.142	.352	-.020	-0.092	0.103	1.6	1.1	1.5	1.1	A-	
2924	682304	4	4	509	.383	.477	.383	.081	.049	.010	.436	-.284	.436	-.130	-.091	-0.227	0.101	-0.3	1.0	0.2	1.0	A-	
2925	677026	4	4	509	.682	.151	.682	.090	.063	.014	.514	-.284	.514	-.249	-.203	-1.731	0.103	-2.9	0.9	-2.7	0.8	A+	
2926	681003	4	4	509	.745	.086	.124	.745	.028	.018	.354	-.198	-.166	.354	-.129	-2.092	0.110	0.3	1.0	1.0	1.1	A-	
2927	661676	4	4	509	.550	.161	.100	.550	.173	.016	.451	-.202	-.225	.451	-.169	-1.058	0.098	-0.9	1.0	-1.1	0.9	A+	
2928	661642	4	4	509	.707	.057	.707	.083	.138	.016	.418	-.189	.418	-.153	-.249	-1.873	0.106	-0.9	1.0	-0.3	1.0	A+	
2929	661645	4	4	509	.611	.230	.611	.073	.069	.018	.431	-.270	.431	-.202	-.099	-1.361	0.100	-0.6	1.0	-1.1	0.9	A+	
2930	678105	4	4	513	.450	.450	.277	.138	.133	.002	.376	.376	-.194	-.091	-.209	-0.190	0.100	1.9	1.1	2.6	1.2	A+	A-
2931	677937	4	4	513	.714	.058	.135	.090	.713	.004	.541	-.198	-.328	-.288	.541	-1.589	0.109	-2.6	0.9	-1.8	0.8	A+	B+
2932	677702	4	4	513	.499	.082	.127	.499	.292	.000	.420	-.103	-.321	.420	-.166	-0.438	0.099	1.0	1.0	0.2	1.0	A-	A+
2933	663176	4	4	513	.483	.483	.242	.193	.078	.004	.328	.328	-.156	-.119	-.148	-0.359	0.100	3.8	1.2	3.5	1.2	A+	A-
2934	661634	4	4	513	.415	.339	.090	.154	.415	.002	.442	-.134	-.185	-.266	.442	-0.008	0.101	0.2	1.0	0.2	1.0	A+	A+
2935	661855	4	4	513	.671	.671	.076	.105	.146	.002	.626	.626	-.187	-.314	-.403	-1.339	0.105	-5.1	0.8	-3.2	0.8	A+	B-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2936	677513	4	4	513	.271	.212	.261	.271	.250	.006	.361	.049	-.383	.361	-.015	0.808	0.111	0.5	1.0	2.1	1.2	A-	A-
2937	682614	4	4	513	.222	.411	.187	.222	.177	.002	.402	-.243	-.139	.402	.023	1.135	0.118	-1.2	0.9	1.4	1.2	A-	A-
2938	661152	4	4	513	.626	.263	.626	.082	.029	.000	.414	-.272	.414	-.138	-.254	-1.093	0.102	1.0	1.0	1.2	1.1	B-	C-
2939	683961	4	4	513	.704	.704	.070	.127	.094	.006	.389	.389	-.195	-.308	-.045	-1.530	0.108	0.9	1.0	1.5	1.1	A-	B+
2940	678025	4	4	513	.710	.088	.080	.710	.115	.008	.555	-.247	-.210	.555	-.355	-1.565	0.108	-2.8	0.9	-2.9	0.7	A+	A-
2941	683965	4	4	513	.883	.072	.883	.031	.010	.004	.473	-.333	.473	-.249	-.145	-2.914	0.148	-1.4	0.9	-2.4	0.6	A+	C-
2942	677697	4	4	513	.544	.214	.544	.144	.094	.004	.299	-.123	.299	-.146	-.133	-0.666	0.100	4.4	1.2	3.5	1.2	A+	B+
2943	677934	4	4	513	.538	.538	.168	.203	.080	.012	.402	.402	-.341	-.117	-.054	-0.636	0.100	1.7	1.1	0.9	1.1	A+	A-
2944	677938	4	4	513	.778	.076	.778	.023	.119	.004	.408	-.181	.408	-.116	-.296	-2.006	0.117	-0.1	1.0	0.0	1.0	A-	B+
2945	661675	4	4	513	.743	.115	.078	.743	.058	.006	.461	-.151	-.348	.461	-.214	-1.771	0.112	-0.9	1.0	-0.4	1.0	A+	A-
2946	676947	4	4	513	.836	.023	.066	.836	.070	.004	.375	-.280	-.160	.375	-.189	-2.458	0.130	-0.1	1.0	0.6	1.1	A+	B-
2947	661646	4	4	513	.694	.694	.117	.144	.037	.008	.492	.492	-.282	-.218	-.259	-1.473	0.107	-1.3	0.9	-1.3	0.9	A+	B-
2948	682623	4	4	513	.402	.279	.402	.105	.207	.008	.302	.028	.302	-.194	-.225	0.063	0.101	3.8	1.2	4.3	1.3	A-	A+
2949	682431	4	4	513	.296	.296	.121	.495	.078	.010	.188	.188	-.322	.155	-.176	0.652	0.108	4.3	1.2	6.0	1.7	A+	A+
2950	683950	4	4	508	.303	.490	.303	.144	.063	.000	.386	-.301	.386	-.025	-.074	0.320	0.108	0.6	1.0	1.2	1.1	A-	
2951	661701	4	4	508	.528	.528	.081	.161	.228	.002	.471	.471	-.036	-.197	-.350	-0.865	0.100	-0.6	1.0	-0.1	1.0	A+	
2952	683978	4	4	508	.329	.236	.163	.272	.329	.000	.277	-.061	-.253	-.023	.277	0.173	0.106	3.8	1.2	4.5	1.4	A+	
2953	682287	4	4	508	.472	.189	.185	.472	.154	.000	.485	-.228	-.234	.485	-.173	-0.586	0.100	-1.1	1.0	-0.9	1.0	B+	
2954	677701	4	4	508	.114	.114	.091	.636	.159	.000	.182	.182	-.200	.214	-.282	1.778	0.149	0.9	1.1	3.0	1.7	A+	
2955	661156	4	4	508	.813	.055	.813	.045	.085	.002	.480	-.165	.480	-.185	-.379	-2.529	0.123	-1.7	0.9	-2.3	0.7	A+	
2956	682845	4	4	508	.506	.506	.112	.093	.287	.002	.365	.365	-.130	-.312	-.101	-0.755	0.100	2.4	1.1	2.1	1.1	A+	
2957	661387	4	4	508	.671	.087	.671	.081	.156	.006	.511	-.232	.511	-.302	-.226	-1.618	0.105	-1.9	0.9	-2.4	0.8	A-	
2958	682392	4	4	508	.593	.264	.114	.026	.593	.004	.478	-.218	-.331	-.148	.478	-1.196	0.101	-0.9	1.0	-0.6	1.0	A+	
2959	661694	4	4	508	.467	.203	.177	.144	.467	.010	.450	-.209	-.213	-.121	.450	-0.556	0.100	0.0	1.0	0.1	1.0	A+	
2960	677505	4	4	508	.358	.100	.112	.358	.419	.010	.224	-.167	-.249	.224	.078	0.009	0.104	4.7	1.2	5.0	1.4	A-	
2961	677025	4	4	508	.695	.195	.073	.695	.030	.008	.575	-.382	-.249	.575	-.199	-1.752	0.107	-3.6	0.8	-3.4	0.7	A-	
2962	681002	4	4	508	.799	.799	.055	.045	.093	.008	.440	.440	-.225	-.138	-.280	-2.425	0.121	-0.9	0.9	-1.5	0.8	B-	
2963	681010	4	4	508	.400	.366	.126	.098	.400	.010	.476	-.176	-.197	-.228	.476	-0.212	0.102	-1.2	1.0	0.3	1.0	A+	
2964	677509	4	4	508	.793	.014	.144	.793	.035	.014	.458	-.160	-.331	.458	-.174	-2.382	0.119	-1.2	0.9	-1.6	0.8	A-	
2965	682284	4	4	508	.445	.126	.343	.445	.073	.014	.492	-.103	-.314	.492	-.164	-0.446	0.100	-1.7	0.9	-0.7	1.0	A-	
2966	661680	4	4	508	.321	.213	.354	.321	.096	.016	.232	-.106	.064	.232	-.257	0.217	0.106	4.2	1.2	4.4	1.4	A+	
2967	682413	4	4	508	.811	.053	.043	.811	.075	.018	.442	-.184	-.244	.442	-.235	-2.514	0.123	-1.1	0.9	-1.5	0.8	A-	
2968	661382	4	4	508	.335	.213	.118	.335	.319	.016	.283	-.324	-.137	.283	.135	0.139	0.105	3.5	1.2	3.0	1.3	A+	
2969	677474	4	4	507	.556	.136	.235	.556	.071	.002	.266	-.177	-.117	.266	-.076	-1.173	0.100	4.9	1.2	3.1	1.2	A-	
2970	682440	4	4	507	.708	.103	.079	.708	.110	.000	.426	-.225	-.235	.426	-.197	-1.984	0.107	-0.4	1.0	-0.5	1.0	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2971	661154	4	4	1004	.843	.843	.032	.060	.063	.003	.427	.427	-.162	-.184	-.325	-2.891	0.093	-1.7	0.9	-2.1	0.8	A+	
2972	682450	4	4	1004	.914	.038	.032	.914	.016	.000	.336	-.271	-.164	.336	-.108	-3.663	0.118	-0.6	1.0	-1.9	0.7	A+	
2973	682849	4	4	507	.227	.649	.091	.227	.034	.000	.390	-.225	-.141	.390	-.085	0.647	0.118	-0.3	1.0	2.1	1.3	A+	
2974	682389	4	4	1004	.933	.013	.040	.933	.008	.006	.318	-.152	-.190	.318	-.142	-3.957	0.131	-0.8	0.9	1.3	1.3	B+	
2975	677935	4	4	507	.491	.183	.249	.071	.491	.006	.510	-.265	-.226	-.191	.510	-0.846	0.099	-2.2	0.9	-1.8	0.9	A-	
2976	683539	4	4	507	.740	.081	.071	.740	.107	.002	.427	-.194	-.255	.427	-.210	-2.174	0.111	-0.5	1.0	-1.2	0.9	A+	
2977	661159	4	4	1004	.617	.617	.069	.078	.235	.002	.527	.527	-.186	-.312	-.286	-1.459	0.072	-3.9	0.9	-3.4	0.8	A-	
2978	676946	4	4	507	.452	.063	.087	.389	.452	.010	.512	-.136	-.219	-.315	.512	-0.648	0.100	-2.1	0.9	-1.4	0.9	B-	
2979	677514	4	4	507	.180	.400	.247	.179	.166	.008	.136	-.004	-.102	.136	.021	1.010	0.128	3.0	1.3	4.6	1.8	A-	
2980	676953	4	4	507	.359	.114	.209	.310	.359	.008	.298	-.008	-.157	-.132	.298	-0.162	0.104	2.9	1.1	3.4	1.3	A-	
2981	661673	4	4	507	.716	.069	.716	.075	.132	.008	.554	-.225	.554	-.204	-.363	-2.030	0.108	-3.3	0.8	-3.2	0.7	A-	
2982	677468	4	4	507	.819	.024	.128	.024	.819	.006	.313	-.077	-.221	-.141	.313	-2.718	0.124	0.6	1.0	0.3	1.0	A-	
2983	683974	4	4	507	.702	.189	.069	.702	.034	.006	.456	-.174	-.326	.456	-.247	-1.950	0.107	-1.4	0.9	1.0	1.1	B+	
2984	682847	4	4	507	.661	.179	.091	.661	.063	.006	.510	-.258	-.305	.510	-.170	-1.717	0.104	-2.2	0.9	-2.4	0.8	A-	
2985	676949	4	4	507	.566	.566	.083	.071	.274	.006	.376	.376	-.189	-.172	-.172	-1.223	0.100	2.0	1.1	1.1	1.1	A-	
2986	678027	4	4	507	.706	.138	.105	.706	.045	.006	.530	-.285	-.339	.530	-.124	-1.973	0.107	-2.7	0.9	-2.6	0.8	A-	
2987	682442	4	4	507	.225	.243	.225	.335	.187	.010	.142	-.046	.142	.092	-.175	0.661	0.119	4.1	1.3	5.3	1.7	A-	
2988	682394	4	4	507	.525	.525	.071	.045	.353	.006	.544	.544	-.324	-.247	-.259	-1.015	0.099	-3.1	0.9	-0.5	1.0	A+	
2989	682846	4	6	491	.654	.090	.132	.124	.654	.000	.396	-.044	-.310	-.214	.396	-1.160	0.105	0.8	1.0	0.7	1.1	A-	A+
2990	682305	4	4	491	.729	.055	.079	.729	.136	.000	.386	-.172	-.231	.386	-.203	-1.591	0.111	0.4	1.0	0.3	1.0	A-	A-
2991	683968	4	4	491	.611	.022	.088	.277	.611	.002	.444	-.187	-.076	-.371	.444	-0.933	0.103	-0.1	1.0	-0.4	1.0	A-	A-
2992	681004	4	4	491	.515	.130	.244	.515	.108	.002	.447	-.209	-.120	.447	-.322	-0.445	0.101	0.1	1.0	0.3	1.0	B+	A-
2993	677467	4	4	491	.583	.238	.582	.081	.096	.002	.440	-.265	.440	-.232	-.139	-0.786	0.102	0.2	1.0	-0.5	1.0	A+	A+
2994	661155	4	4	491	.855	.049	.055	.041	.855	.000	.346	-.302	-.095	-.177	.346	-2.509	0.137	-0.4	1.0	1.5	1.3	A-	B-
2995	661699	4	4	989	.382	.173	.288	.382	.156	.001	.251	-.090	-.217	.251	.026	0.223	0.074	7.3	1.3	7.6	1.5	A-	A-
2996	661633	4	4	491	.426	.155	.189	.226	.426	.004	.562	-.218	-.236	-.236	.562	0.012	0.103	-3.5	0.9	-2.7	0.8	B+	B+
2997	682283	4	4	491	.733	.733	.071	.096	.094	.006	.439	.439	-.228	-.246	-.194	-1.616	0.112	-0.7	1.0	-0.7	0.9	A-	B-
2998	661695	4	4	491	.444	.143	.444	.165	.236	.012	.367	-.167	.367	-.180	-.098	-0.083	0.102	2.2	1.1	1.7	1.1	B-	A+
2999	661641	4	4	491	.187	.348	.145	.187	.310	.010	.234	.027	-.008	.234	-.184	1.478	0.128	2.0	1.2	3.2	1.5	A+	A+
3000	677506	4	4	491	.593	.057	.593	.293	.045	.012	.374	-.169	.374	-.207	-.151	-0.838	0.103	1.9	1.1	2.8	1.2	A+	A-
3001	682301	4	4	491	.454	.265	.454	.128	.141	.012	.328	-.041	.328	-.281	-.092	-0.135	0.102	3.2	1.1	3.4	1.2	A+	A+
3002	682285	4	4	491	.566	.084	.566	.191	.141	.018	.536	-.293	.536	-.215	-.206	-0.702	0.102	-2.7	0.9	-1.9	0.9	A+	A-
3003	682286	4	4	989	.707	.707	.069	.048	.161	.016	.472	.472	-.194	-.198	-.272	-1.524	0.078	-0.8	1.0	-1.5	0.9	A-	A-
3004	677024	4	4	491	.674	.037	.210	.065	.674	.014	.552	-.215	-.381	-.160	.552	-1.272	0.106	-3.2	0.9	-2.7	0.8	A+	A-
3005	677469	4	4	491	.758	.110	.045	.073	.758	.014	.185	-.099	-.100	-.016	.185	-1.769	0.115	3.1	1.2	4.9	1.7	A+	A-

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3006	661681	4	4	491	.552	.552	.128	.145	.159	.016	.607	.607	-.255	-.221	-.317	-0.630	0.102	-4.9	0.8	-4.4	0.8	C-	A+
3007	683949	4	4	491	.462	.122	.462	.253	.147	.016	.475	-.195	.475	-.245	-.122	-0.176	0.102	-0.6	1.0	-0.4	1.0	A-	A+
3008	661381	4	4	491	.330	.251	.206	.193	.330	.020	.421	-.161	-.093	-.162	.421	0.531	0.108	0.0	1.0	0.8	1.1	A-	A+
3009	683543	4	4	496	.845	.040	.845	.058	.054	.002	.487	-.218	.487	-.287	-.267	-2.631	0.137	-1.2	0.9	-0.8	0.9	A-	
3010	682427	4	4	496	.811	.081	.087	.810	.022	.000	.470	-.291	-.316	.470	-.108	-2.334	0.128	-0.5	1.0	-1.4	0.8	B-	
3011	661670	4	4	496	.496	.147	.496	.117	.240	.000	.480	-.112	.480	-.189	-.327	-0.412	0.105	-0.1	1.0	0.5	1.0	A-	
3012	678102	4	4	496	.710	.073	.710	.165	.052	.000	.474	-.159	.474	-.314	-.257	-1.623	0.113	0.2	1.0	-0.8	0.9	B-	
3013	682396	4	4	496	.879	.014	.095	.879	.010	.002	.532	-.160	-.487	.532	-.134	-2.978	0.150	-1.9	0.8	-2.2	0.6	A-	
3014	661157	4	4	496	.825	.109	.030	.036	.825	.000	.571	-.510	-.162	-.162	.571	-2.451	0.131	-2.6	0.8	-1.7	0.8	A-	
3015	682454	4	4	496	.645	.117	.117	.121	.645	.000	.493	-.225	-.306	-.201	.493	-1.236	0.108	-0.3	1.0	-0.1	1.0	A-	
3016	677471	4	4	496	.766	.048	.085	.101	.766	.000	.350	-.147	-.241	-.164	.350	-1.999	0.119	2.2	1.1	1.0	1.1	A+	
3017	682420	4	4	496	.641	.224	.641	.079	.056	.000	.456	-.232	.456	-.234	-.257	-1.213	0.108	1.0	1.0	0.3	1.0	A-	
3018	676948	4	4	496	.752	.034	.147	.067	.752	.000	.389	-.275	-.199	-.191	.389	-1.901	0.117	1.5	1.1	1.3	1.2	C+	
3019	677021	4	4	496	.581	.248	.581	.147	.024	.000	.354	-.326	.354	-.051	-.101	-0.873	0.105	4.1	1.2	4.2	1.3	A-	
3020	683945	4	4	496	.770	.040	.770	.165	.024	.000	.512	-.203	.512	-.406	-.161	-2.028	0.120	-1.0	0.9	-1.9	0.8	A-	
3021	682619	4	4	496	.976	.976	.012	.006	.006	.000	.144	.144	-.059	-.073	-.130	-4.884	0.300	0.3	1.1	0.5	1.2	A+	
3022	661153	4	4	496	.843	.022	.843	.091	.042	.002	.551	-.147	.551	-.442	-.242	-2.612	0.136	-2.2	0.8	-2.2	0.7	B+	
3023	677694	4	4	496	.359	.302	.359	.276	.058	.004	.344	-.302	.344	-.008	-.081	0.362	0.110	3.1	1.2	4.2	1.4	B-	
3024	677512	4	4	496	.575	.190	.097	.575	.133	.006	.403	-.166	-.261	.403	-.153	-0.840	0.105	2.4	1.1	1.8	1.1	A+	
3025	677508	4	4	496	.417	.252	.135	.192	.417	.004	.444	-.003	-.159	-.405	.444	0.021	0.107	1.3	1.1	1.3	1.1	A-	
3026	676951	4	4	496	.639	.024	.639	.198	.131	.008	.451	-.030	.451	-.374	-.153	-1.201	0.108	1.3	1.1	1.4	1.1	A+	
3027	661671	4	4	496	.821	.022	.028	.821	.123	.006	.431	-.141	-.207	.431	-.308	-2.417	0.130	-0.1	1.0	1.2	1.2	A+	
3028	682290	4	4	496	.932	.931	.036	.016	.008	.008	.213	.213	-.075	-.158	-.109	-3.701	0.188	0.8	1.1	0.5	1.1	A+	
3029	676952	4	4	497	.837	.008	.006	.147	.837	.002	.368	-.090	.009	-.366	.368	-2.819	0.130	-0.4	1.0	-0.9	0.9	B+	
3030	661380	4	4	985	.354	.142	.175	.354	.328	.001	.257	-.229	-.258	.257	.118	-0.115	0.075	6.6	1.2	5.8	1.3	A+	A+
3031	682620	4	4	497	.787	.058	.787	.119	.036	.000	.441	-.274	.441	-.304	-.097	-2.435	0.119	-1.0	0.9	-1.3	0.8	A-	
3032	682455	4	4	497	.419	.419	.280	.123	.175	.004	.385	.385	-.218	-.121	-.135	-0.439	0.102	1.1	1.0	1.5	1.1	A+	
3033	682451	4	4	985	.192	.752	.192	.040	.016	.000	.332	-.149	.332	-.230	-.170	0.949	0.091	0.5	1.0	3.6	1.4	A-	A-
3034	677693	4	4	497	.264	.312	.231	.193	.264	.000	.287	-.212	-.020	-.050	.287	0.434	0.114	2.3	1.1	2.8	1.3	B-	
3035	682458	4	4	497	.425	.189	.101	.425	.276	.010	.331	-.113	-.114	.331	-.145	-0.470	0.101	2.5	1.1	2.5	1.2	A-	
3036	682456	4	4	497	.608	.338	.012	.032	.608	.010	.388	-.263	-.142	-.177	.388	-1.391	0.102	1.2	1.1	0.1	1.0	B-	
3037	682618	4	4	497	.952	.010	.012	.012	.952	.014	.353	-.111	-.146	-.190	.353	-4.300	0.215	-0.7	0.9	-2.1	0.5	A+	
3038	683948	4	4	497	.751	.074	.751	.123	.038	.014	.417	-.226	.417	-.211	-.132	-2.194	0.113	-0.4	1.0	-0.7	0.9	A+	
3039	677028	4	4	497	.543	.149	.163	.543	.131	.014	.566	-.289	-.218	.566	-.214	-1.065	0.100	-4.0	0.9	-3.7	0.8	A+	
3040	681001	4	4	497	.638	.638	.145	.066	.137	.014	.524	.524	-.177	-.206	-.328	-1.548	0.103	-2.8	0.9	-0.7	1.0	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3041	677470	4	4	497	.799	.046	.799	.097	.040	.018	.553	-.221	.553	-.391	-.149	-2.521	0.121	-3.1	0.8	-3.3	0.6	A+	
3042	677030	4	4	497	.543	.163	.543	.109	.165	.020	.303	.035	.303	-.164	-.222	-1.065	0.100	3.9	1.2	4.3	1.3	A-	
3043	681000	4	4	497	.660	.169	.660	.089	.066	.016	.473	-.276	.473	-.193	-.160	-1.667	0.104	-1.3	0.9	-1.4	0.9	A+	
3044	677695	4	4	498	.797	.054	.797	.098	.048	.002	.469	-.284	.469	-.273	-.178	-2.214	0.125	-0.4	1.0	-1.4	0.8	A-	A+
3045	682621	4	4	498	.781	.022	.116	.781	.080	.000	.501	-.179	-.293	.501	-.320	-2.093	0.122	-1.1	0.9	-1.1	0.9	A-	A-
3046	661637	4	4	498	.709	.127	.046	.118	.709	.000	.558	-.304	-.221	-.328	.558	-1.605	0.112	-2.1	0.9	-2.1	0.8	A+	A-
3047	677472	4	4	498	.783	.052	.106	.058	.783	.000	.352	-.256	-.116	-.224	.352	-2.108	0.122	1.6	1.1	1.3	1.2	B+	A-
3048	678021	4	4	498	.219	.337	.333	.104	.219	.006	.292	-.120	-.025	-.141	.292	1.234	0.122	1.9	1.1	3.8	1.6	A+	A+
3049	661702	4	4	498	.637	.088	.637	.183	.086	.006	.523	-.258	.523	-.359	-.101	-1.176	0.107	-1.0	1.0	-1.1	0.9	A+	A-
3050	682429	4	4	498	.337	.122	.060	.470	.337	.010	.493	-.311	-.206	-.126	.493	0.460	0.109	-1.3	0.9	-0.6	1.0	A-	B-
3051	661148	4	4	498	.602	.287	.602	.056	.044	.010	.255	.000	.255	-.243	-.233	-0.985	0.105	6.3	1.3	7.2	1.7	A-	A-
3052	683979	4	4	498	.619	.618	.052	.088	.233	.008	.356	.356	-.175	-.245	-.112	-1.074	0.106	3.7	1.2	2.7	1.2	A-	B+
3053	681012	4	4	498	.793	.028	.052	.118	.793	.008	.547	-.211	-.324	-.301	.547	-2.183	0.124	-2.2	0.9	-2.4	0.7	A-	A-
3054	678098	4	4	498	.655	.086	.116	.133	.655	.010	.579	-.260	-.296	-.260	.579	-1.280	0.108	-2.6	0.9	-2.3	0.8	A+	A+
3055	682397	4	4	498	.416	.076	.416	.028	.464	.016	.319	-.294	.319	-.118	-.073	0.019	0.105	4.6	1.2	4.4	1.4	A+	A-
3056	682393	4	4	498	.372	.410	.112	.090	.371	.016	.581	-.289	-.201	-.162	.581	0.264	0.107	-4.1	0.8	-2.1	0.8	A-	A+
3057	661384	4	4	498	.643	.076	.219	.643	.050	.012	.478	-.294	-.217	.478	-.181	-1.210	0.107	0.3	1.0	-0.1	1.0	A+	A+
3058	661640	4	4	498	.263	.199	.145	.382	.263	.012	.334	-.111	-.111	-.086	.334	0.923	0.116	1.1	1.1	3.3	1.4	A+	A-
3059	661678	4	4	498	.739	.030	.739	.074	.145	.012	.531	-.130	.531	-.284	-.327	-1.799	0.115	-1.3	0.9	-2.3	0.7	A-	A-
3060	682616	4	4	498	.349	.165	.255	.219	.349	.012	.378	-.112	-.105	-.173	.378	0.390	0.108	1.7	1.1	2.5	1.2	A-	A+
3061	683943	4	4	498	.747	.060	.094	.086	.747	.012	.607	-.279	-.314	-.301	.607	-1.853	0.116	-3.6	0.8	-3.1	0.7	A+	A-
3062	682622	4	4	502	.530	.319	.054	.530	.098	.000	.201	-.032	-.174	.201	-.156	-0.910	0.100	6.9	1.3	5.9	1.4	A-	
3063	661386	4	4	502	.861	.042	.044	.052	.861	.002	.437	-.296	-.224	-.199	.437	-2.959	0.138	-1.1	0.9	-2.2	0.7	A-	
3064	683966	4	4	502	.683	.042	.683	.195	.078	.002	.386	-.102	.386	-.302	-.135	-1.715	0.106	1.1	1.1	0.4	1.0	A+	
3065	677699	4	4	502	.566	.171	.183	.076	.566	.004	.360	-.237	-.110	-.162	.360	-1.091	0.101	2.4	1.1	1.7	1.1	B+	
3066	678026	4	4	502	.793	.112	.034	.793	.054	.008	.287	-.083	-.131	.287	-.246	-2.404	0.120	1.6	1.1	0.8	1.1	A-	
3067	682291	4	4	502	.618	.161	.108	.112	.618	.002	.475	-.240	-.299	-.150	.475	-1.358	0.102	-1.0	1.0	-0.5	1.0	A-	
3068	663179	4	4	502	.632	.631	.193	.078	.096	.002	.419	.419	-.209	-.214	-.202	-1.432	0.103	0.5	1.0	-0.3	1.0	A+	
3069	661390	4	4	502	.610	.026	.080	.279	.610	.006	.527	-.069	-.206	-.393	.527	-1.317	0.102	-2.5	0.9	-2.5	0.8	A+	
3070	661160	4	4	502	.641	.229	.641	.066	.050	.014	.380	-.202	.380	-.173	-.145	-1.485	0.103	1.5	1.1	0.4	1.0	B-	
3071	683981	4	4	502	.379	.378	.341	.189	.082	.010	.492	.492	-.208	-.240	-.095	-0.139	0.103	-1.4	0.9	-1.9	0.9	A+	
3072	682615	4	4	502	.442	.361	.080	.442	.110	.008	.502	-.318	-.203	.502	-.078	-0.469	0.101	-2.2	0.9	-1.5	0.9	A-	
3073	678023	4	4	502	.863	.034	.044	.040	.863	.020	.486	-.212	-.262	-.240	.486	-2.979	0.139	-1.5	0.9	-3.0	0.6	B+	
3074	683650	4	4	502	.173	.476	.209	.173	.125	.016	.101	-.187	.200	.101	-.005	1.168	0.129	2.6	1.2	6.3	2.2	A-	
3075	678024	4	4	502	.675	.030	.229	.042	.675	.024	.654	-.176	-.459	-.253	.654	-1.670	0.105	-6.0	0.8	-5.3	0.6	C+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3076	682400	4	4	502	.596	.149	.165	.596	.072	.018	.457	-.305	-.132	.457	-.154	-1.244	0.101	-0.3	1.0	-1.0	0.9	B-	
3077	682453	4	4	502	.351	.163	.351	.239	.225	.022	.288	.002	.288	-.152	-.106	0.012	0.104	2.8	1.1	3.2	1.3	A+	
3078	677511	4	4	502	.390	.311	.137	.141	.390	.020	.370	-.116	.038	-.322	.370	-0.202	0.102	1.6	1.1	2.1	1.1	B-	
3079	661674	4	4	502	.614	.050	.046	.269	.614	.022	.633	-.208	-.292	-.387	.633	-1.337	0.102	-5.7	0.8	-4.8	0.7	A+	
3080	682452	4	4	502	.211	.259	.327	.181	.211	.022	.121	.080	-.164	.059	.121	0.874	0.120	4.0	1.3	5.1	1.8	A-	
3081	661667	4	4	502	.387	.386	.305	.120	.161	.028	.392	.392	-.125	-.128	-.148	-0.181	0.103	0.8	1.0	1.4	1.1	A+	
3082	677466	4	4	488	.709	.107	.131	.709	.053	.000	.556	-.316	-.335	.556	-.185	-2.007	0.110	-3.4	0.8	-3.2	0.7	A+	
3083	677473	4	4	488	.830	.830	.043	.035	.092	.000	.517	.517	-.225	-.177	-.401	-2.828	0.129	-2.7	0.8	-2.7	0.6	A+	
3084	661151	4	4	488	.807	.066	.059	.068	.807	.000	.496	-.284	-.291	-.226	.496	-2.652	0.124	-2.5	0.8	-2.1	0.7	A+	
3085	661698	4	4	488	.750	.750	.150	.041	.059	.000	.484	.484	-.361	-.117	-.245	-2.257	0.114	-1.9	0.9	-2.1	0.8	A-	
3086	683969	4	4	488	.299	.348	.186	.162	.299	.004	.373	-.055	-.183	-.196	.373	0.194	0.113	1.7	1.1	1.4	1.1	A+	
3087	676945	4	4	488	.471	.131	.148	.248	.471	.002	.538	-.226	-.306	-.189	.538	-0.753	0.102	-2.7	0.9	-2.2	0.9	B-	
3088	661696	4	4	488	.297	.234	.297	.309	.156	.004	.302	-.153	.302	-.133	-.018	0.206	0.113	2.6	1.2	5.0	1.5	A+	
3089	682299	4	4	488	.416	.336	.102	.416	.137	.008	.512	-.288	-.138	.512	-.197	-0.466	0.104	-1.6	0.9	-1.5	0.9	A-	
3090	682300	4	4	488	.807	.807	.133	.031	.023	.006	.255	.255	-.173	-.091	-.134	-2.652	0.124	1.7	1.1	1.0	1.1	B+	
3091	678029	4	4	488	.381	.320	.186	.381	.111	.002	.498	-.207	-.256	.498	-.137	-0.279	0.106	-1.1	1.0	-0.5	1.0	A-	
3092	683652	4	3	488	.621	.066	.156	.621	.145	.012	.543	-.213	-.221	.543	-.354	-1.519	0.104	-3.1	0.9	-1.2	0.9	B+	
3093	683653	4	4	488	.660	.129	.660	.117	.080	.014	.446	-.182	.446	-.232	-.255	-1.728	0.106	-0.7	1.0	0.6	1.1	A-	
3094	678103	4	4	488	.285	.307	.111	.281	.285	.016	.419	-.095	-.179	-.186	.419	0.283	0.114	-0.4	1.0	2.6	1.3	A+	
3095	661668	4	4	488	.639	.080	.166	.639	.096	.018	.318	-.120	-.282	.318	-.014	-1.617	0.105	3.0	1.1	1.9	1.2	A+	
3096	677933	4	4	488	.650	.650	.117	.137	.072	.025	.509	.509	-.279	-.232	-.213	-1.673	0.105	-2.2	0.9	-1.9	0.8	A+	
3097	681005	4	4	488	.687	.686	.139	.059	.094	.020	.520	.520	-.297	-.239	-.232	-1.877	0.108	-2.7	0.9	-1.5	0.9	A+	
3098	682297	4	4	488	.592	.592	.152	.150	.086	.020	.345	.345	-.211	-.198	-.044	-1.370	0.103	2.7	1.1	3.5	1.3	B+	
3099	661111	5	5	464	.735	.097	.735	.101	.067	.000	.427	-.255	.427	-.204	-.206	-1.770	0.115	-1.1	0.9	-1.8	0.8	A+	A+
3100	661112	5	5	473	.393	.252	.393	.182	.173	.000	.262	-.006	.262	-.199	-.129	-0.044	0.103	2.2	1.1	3.0	1.2	A-	
3101	661655	5	5	507	.533	.318	.533	.108	.041	.000	.309	-.177	.309	-.136	-.148	-0.714	0.098	2.0	1.1	1.4	1.1	A+	A-
3102	661657	5	5	485	.617	.616	.190	.136	.058	.000	.407	.407	-.271	-.117	-.223	-1.129	0.102	-1.0	1.0	-1.4	0.9	A+	
3103	661659	5	5	515	.550	.173	.550	.194	.083	.000	.283	-.169	.283	-.085	-.157	-0.778	0.098	2.8	1.1	2.9	1.2	A-	A+
3104	661661	5	5	476	.290	.059	.290	.221	.431	.000	.114	-.061	.114	.046	-.114	0.445	0.110	3.6	1.2	6.5	1.6	A+	
3105	661662	5	5	469	.369	.160	.288	.183	.369	.000	.380	-.149	-.135	-.175	.380	0.027	0.105	-0.6	1.0	0.7	1.0	A+	
3106	661663	5	5	454	.692	.099	.167	.692	.042	.000	.300	-.128	-.173	.300	-.177	-1.484	0.110	1.1	1.1	0.2	1.0	A+	
3107	661964	5	5	459	.649	.649	.192	.113	.046	.000	.391	.391	-.189	-.225	-.194	-1.318	0.107	-0.8	1.0	-0.3	1.0	A-	
3108	661965	5	5	490	.286	.380	.286	.184	.151	.000	.118	-.060	.118	-.039	-.025	0.514	0.108	3.8	1.2	4.9	1.5	A+	
3109	661683	5	5	490	.496	.141	.496	.210	.153	.000	.095	-.076	.095	-.062	.012	-0.529	0.100	7.6	1.3	6.5	1.4	A-	A+
3110	661684	5	5	454	.355	.313	.183	.150	.355	.000	.187	-.085	-.044	-.093	.187	0.128	0.108	4.3	1.2	3.7	1.3	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3111	661686	5	5	491	.261	.216	.261	.214	.310	.000	.138	.104	.138	-.070	-.161	0.580	0.111	2.7	1.2	4.3	1.4	B+	
3112	661688	5	5	476	.473	.103	.208	.473	.216	.000	.398	-.090	-.172	.398	-.248	-0.482	0.101	-1.1	1.0	-0.7	1.0	A+	
3113	661691	5	5	480	.360	.360	.125	.288	.227	.000	.250	.250	-.156	-.056	-.102	0.118	0.103	1.7	1.1	2.9	1.2	A+	
3114	661218	5	5	494	.431	.431	.239	.132	.198	.000	.335	.335	-.149	-.152	-.128	-0.226	0.100	1.4	1.1	1.3	1.1	A-	
3115	661211	5	5	506	.300	.300	.243	.255	.202	.000	.197	.197	-.018	-.127	-.068	0.298	0.105	2.2	1.1	3.6	1.3	A+	
3116	661214	5	5	481	.329	.208	.258	.328	.206	.000	.150	-.266	-.050	.150	.147	0.301	0.106	3.6	1.2	6.0	1.5	A+	A+
3117	661215	5	5	482	.403	.151	.299	.402	.147	.000	.440	-.195	-.234	.440	-.110	-0.031	0.102	-2.1	0.9	-1.3	0.9	A+	
3118	661648	5	5	464	.386	.142	.284	.188	.386	.000	.292	-.171	-.098	-.098	.292	-0.024	0.104	1.2	1.1	2.4	1.2	B+	
3119	661650	5	5	450	.556	.038	.342	.064	.556	.000	.303	-.143	-.156	-.202	.303	-0.835	0.104	1.6	1.1	1.4	1.1	A-	
3120	661682	5	5	506	.306	.306	.397	.123	.174	.000	.339	.339	-.299	-.138	.094	0.335	0.105	-0.1	1.0	1.8	1.1	B+	A+
3121	661685	5	5	489	.452	.235	.452	.182	.131	.000	.318	-.127	.318	-.161	-.126	-0.420	0.100	1.1	1.0	1.9	1.1	B-	
3122	661687	5	5	472	.318	.083	.566	.318	.034	.000	.281	-.172	-.122	.281	-.126	0.319	0.107	1.2	1.1	1.4	1.1	A+	
3123	661689	5	5	490	.486	.188	.180	.486	.147	.000	.300	-.187	-.196	.300	-.005	-0.527	0.099	2.0	1.1	2.0	1.1	A+	A-
3124	661690	5	5	489	.462	.194	.196	.462	.147	.000	.338	-.142	-.204	.338	-.087	-0.454	0.099	0.7	1.0	1.4	1.1	A+	A-
3125	661692	5	5	439	.574	.574	.257	.109	.059	.000	.459	.459	-.271	-.201	-.193	-0.907	0.106	-2.1	0.9	-2.2	0.9	C-	
3126	661693	5	5	451	.295	.080	.424	.202	.295	.000	.289	-.166	.126	-.372	.289	0.427	0.112	0.9	1.0	1.0	1.1	A+	
3127	661664	5	5	464	.472	.216	.162	.151	.472	.000	.424	-.106	-.267	-.195	.424	-0.394	0.103	-0.9	1.0	-0.4	1.0	A-	A-
3128	661113	5	5	474	.477	.162	.283	.477	.078	.000	.323	-.249	-.146	.323	-.013	-0.467	0.101	1.3	1.1	1.9	1.1	B-	
3129	661114	5	5	459	.490	.166	.490	.166	.179	.000	.197	-.166	.197	-.097	-.002	-0.569	0.102	4.3	1.2	4.7	1.3	A+	
3130	661115	5	5	451	.384	.162	.251	.384	.204	.000	.152	-.080	-.110	.152	.008	-0.054	0.105	3.8	1.2	5.3	1.4	A+	
3131	661116	5	5	447	.387	.273	.179	.161	.387	.000	.552	-.079	-.359	-.262	.552	-0.088	0.107	-5.0	0.8	-4.0	0.8	B-	
3132	661117	5	5	469	.544	.158	.209	.544	.090	.000	.431	-.146	-.354	.431	-.062	-0.806	0.102	-1.4	1.0	-0.8	1.0	A-	
3133	661118	5	5	472	.587	.108	.239	.066	.587	.000	.490	-.237	-.270	-.212	.490	-0.888	0.102	-3.3	0.9	-3.4	0.8	A-	A-
3134	661119	5	5	471	.845	.028	.051	.845	.076	.000	.433	-.133	-.259	.433	-.294	-2.639	0.135	-1.7	0.9	-2.7	0.7	B-	B-
3135	661120	5	5	443	.246	.246	.187	.153	.413	.000	.298	.298	.077	-.292	-.109	0.831	0.119	0.3	1.0	1.3	1.1	A+	
3136	661216	5	5	461	.451	.202	.200	.451	.148	.000	.450	-.221	-.215	.450	-.139	-0.299	0.103	-2.1	0.9	-1.8	0.9	A+	
3137	661649	5	5	494	.822	.073	.822	.079	.026	.000	.365	-.287	.365	-.108	-.225	-2.412	0.127	-1.0	0.9	0.8	1.1	C+	A-
3138	661213	5	5	451	.687	.133	.153	.687	.027	.000	.384	-.248	-.198	.384	-.140	-1.435	0.111	-0.1	1.0	-1.3	0.9	B+	A-
3139	661966	5	5	457	.632	.096	.166	.105	.632	.000	.506	-.213	-.283	-.246	.506	-1.244	0.106	-3.4	0.9	-3.1	0.8	A+	
3140	675131	5	5	449	.314	.339	.314	.252	.096	.000	.037	.154	.037	-.134	-.109	0.412	0.110	5.3	1.3	6.6	1.6	A+	
3141	675133	5	5	524	.693	.111	.693	.105	.092	.000	.225	-.039	.225	-.219	-.084	-1.547	0.104	3.1	1.2	2.9	1.3	A-	B+
3142	675134	5	5	481	.223	.353	.262	.222	.162	.000	.217	-.214	.022	.217	.006	0.879	0.118	0.8	1.1	3.3	1.4	A-	
3143	675135	5	5	465	.348	.146	.348	.312	.194	.000	.188	-.084	.188	-.065	-.075	0.125	0.107	3.8	1.2	5.2	1.4	A+	
3144	675136	5	5	494	.360	.360	.148	.413	.079	.000	.333	.333	-.110	-.208	-.070	0.139	0.103	0.4	1.0	1.7	1.1	A-	
3145	675137	5	5	460	.576	.267	.135	.576	.022	.000	.462	-.315	-.195	.462	-.152	-0.955	0.104	-2.0	0.9	-2.3	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3146	675138	5	5	472	.403	.087	.424	.403	.087	.000	.318	-.092	-.190	.318	-.129	-0.125	0.103	1.3	1.1	1.5	1.1	A-	
3147	675139	5	5	481	.782	.782	.098	.058	.062	.000	.350	.350	-.304	-.176	-.054	-2.126	0.119	-0.2	1.0	-0.4	1.0	B+	
3148	675140	5	5	505	.604	.139	.162	.604	.095	.000	.380	-.175	-.200	.380	-.176	-1.097	0.099	-0.6	1.0	-0.8	1.0	A-	
3149	675141	5	5	510	.267	.267	.194	.441	.098	.000	.135	.135	-.025	-.058	-.072	0.565	0.108	3.0	1.2	4.5	1.4	A-	A-
3150	675142	5	5	455	.420	.141	.180	.259	.420	.000	.348	-.193	-.196	-.067	.348	-0.234	0.104	0.1	1.0	0.1	1.0	A+	
3151	675143	5	5	474	.331	.266	.274	.331	.129	.000	.315	-.118	-.163	.315	-.070	0.286	0.107	0.7	1.0	2.3	1.2	A-	B-
3152	675144	5	5	453	.225	.060	.419	.296	.225	.000	.284	-.162	-.097	-.071	.284	0.818	0.120	-0.1	1.0	1.2	1.1	A+	
3153	675145	5	5	496	.688	.159	.688	.125	.028	.000	.365	-.276	.365	-.162	-.087	-1.487	0.105	-0.7	1.0	-0.8	0.9	A-	A-
3154	675146	5	5	465	.407	.222	.129	.243	.406	.000	.212	-.047	-.186	-.051	.212	-0.050	0.103	2.9	1.1	4.4	1.3	A+	
3155	675147	5	5	448	.750	.103	.118	.029	.750	.000	.430	-.320	-.200	-.146	.430	-1.839	0.118	-1.6	0.9	-1.9	0.8	B+	
3156	675148	5	5	489	.380	.176	.176	.268	.380	.000	.452	-.294	-.237	-.039	.452	-0.014	0.102	-2.5	0.9	-1.0	0.9	A+	A-
3157	675149	5	5	476	.639	.250	.076	.639	.036	.000	.351	-.152	-.273	.351	-.165	-1.205	0.104	0.0	1.0	0.6	1.0	A+	A-
3158	675370	5	5	468	.427	.212	.212	.427	.150	.000	.453	-.136	-.137	.453	-.315	-0.191	0.103	-2.7	0.9	-0.6	1.0	A-	
3159	675371	5	5	471	.756	.091	.110	.756	.042	.000	.465	-.286	-.238	.465	-.213	-1.843	0.117	-2.0	0.9	-2.2	0.8	A+	A+
3160	675372	5	5	461	.636	.226	.113	.636	.026	.000	.455	-.325	-.147	.455	-.230	-1.205	0.106	-2.2	0.9	-2.3	0.9	A+	A-
3161	675373	5	5	432	.630	.081	.178	.111	.630	.000	.431	-.177	-.245	-.210	.431	-1.191	0.109	-1.5	0.9	-1.7	0.9	A-	
3162	675374	5	5	456	.362	.362	.175	.274	.189	.000	.225	.225	-.147	-.064	-.060	0.107	0.106	2.0	1.1	4.0	1.3	B-	A-
3163	675375	5	5	476	.342	.137	.456	.342	.065	.000	.284	-.261	-.009	.284	-.165	0.261	0.105	1.2	1.1	1.7	1.1	A-	
3164	675376	5	5	496	.333	.294	.218	.333	.155	.000	.236	.039	-.238	.236	-.084	0.246	0.104	2.0	1.1	4.3	1.3	A-	A+
3165	675377	5	5	462	.491	.212	.177	.491	.119	.000	.418	-.195	-.189	.418	-.175	-0.564	0.101	-1.9	0.9	-1.5	0.9	A+	
3166	675378	5	5	444	.651	.651	.216	.083	.050	.000	.356	.356	-.198	-.218	-.129	-1.382	0.109	0.6	1.0	-0.4	1.0	A+	
3167	675379	5	5	482	.425	.114	.301	.425	.160	.000	.164	-.133	-.155	.164	.089	-0.267	0.100	4.5	1.2	5.2	1.3	A+	
3168	675772	5	5	469	.589	.162	.126	.124	.588	.000	.365	-.194	-.142	-.186	.365	-1.011	0.103	0.1	1.0	0.1	1.0	A+	
3169	675773	5	5	497	.376	.165	.203	.256	.376	.000	.382	-.127	-.320	-.021	.382	0.025	0.101	-1.0	1.0	-0.2	1.0	A+	
3170	675774	5	5	464	.834	.026	.056	.834	.084	.000	.435	-.178	-.233	.435	-.289	-2.391	0.133	-1.9	0.9	-2.0	0.7	B+	
3171	675775	5	5	468	.769	.034	.135	.769	.062	.000	.511	-.155	-.337	.511	-.300	-2.062	0.119	-2.8	0.8	-3.6	0.7	C+	
3172	675776	5	5	482	.301	.346	.301	.247	.106	.000	.168	-.026	.168	-.048	-.143	0.426	0.108	3.1	1.2	4.1	1.4	A-	
3173	675777	5	5	459	.534	.096	.220	.150	.534	.000	.383	-.206	-.196	-.137	.383	-0.764	0.103	-0.2	1.0	-0.1	1.0	A+	A-
3174	675778	5	5	475	.236	.168	.522	.236	.074	.000	.200	-.226	.046	.200	-.090	0.732	0.115	0.6	1.0	3.3	1.4	A-	A-
3175	675779	5	5	498	.125	.556	.187	.124	.133	.000	.084	.132	-.279	.084	.046	1.764	0.143	1.1	1.1	4.7	2.0	B-	
3176	675780	5	5	501	.369	.024	.248	.359	.369	.000	.172	-.139	-.164	.019	.172	0.032	0.101	4.1	1.2	4.1	1.3	A-	A-
3177	675781	5	5	487	.454	.359	.136	.454	.051	.000	.282	-.245	.031	.282	-.152	-0.438	0.100	2.7	1.1	2.5	1.1	A+	A+
3178	675782	5	5	470	.470	.074	.245	.211	.470	.000	.421	-.094	-.250	-.191	.421	-0.352	0.101	-1.7	0.9	-1.4	0.9	A-	
3179	675783	5	5	454	.449	.068	.216	.267	.449	.000	.316	-.213	-.164	-.081	.316	-0.372	0.105	1.9	1.1	2.6	1.2	A-	
3180	675784	5	5	464	.724	.060	.067	.149	.724	.000	.473	-.212	-.312	-.234	.473	-1.725	0.113	-2.5	0.9	-1.9	0.8	A+	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3181	675785	5	5	487	.575	.076	.236	.113	.575	.000	.362	-.164	-.086	-.314	.362	-0.901	0.100	0.3	1.0	0.3	1.0	A+	A+
3182	675786	5	5	469	.469	.183	.469	.235	.113	.000	.193	-.145	.193	-.006	-.120	-0.448	0.101	3.9	1.1	4.7	1.2	B+	
3183	675787	5	5	509	.613	.104	.230	.613	.053	.000	.381	-.244	-.223	.381	-.078	-1.068	0.099	-0.7	1.0	-1.0	0.9	A-	
3184	675789	5	5	483	.460	.112	.255	.174	.460	.000	.351	-.148	-.174	-.139	.351	-0.320	0.100	0.1	1.0	0.6	1.0	A+	A-
3185	675790	5	5	417	.796	.029	.796	.094	.082	.000	.216	-.005	.216	-.244	-.055	-2.101	0.130	1.1	1.1	1.3	1.2	A+	
3186	675791	5	5	427	.536	.164	.077	.222	.536	.000	.348	-.108	-.168	-.213	.348	-0.768	0.106	0.4	1.0	0.8	1.0	A-	
3187	676020	5	5	481	.686	.168	.686	.096	.050	.000	.389	-.190	.389	-.268	-.139	-1.602	0.108	-0.5	1.0	-0.3	1.0	A+	A+
3188	676022	5	5	446	.231	.182	.231	.305	.283	.000	.225	-.101	.225	.042	-.167	0.825	0.120	0.3	1.0	3.1	1.4	A+	
3189	676023	5	5	461	.462	.193	.462	.152	.193	.000	.389	-.149	.389	-.178	-.180	-0.377	0.102	-0.8	1.0	-0.3	1.0	A+	B-
3190	676024	5	5	494	.472	.095	.089	.472	.344	.000	.344	-.295	-.142	.344	-.094	-0.404	0.099	0.5	1.0	0.9	1.0	A-	A-
3191	676025	5	5	509	.631	.114	.065	.191	.631	.000	.498	-.342	-.271	-.166	.498	-1.284	0.100	-3.4	0.9	-3.6	0.8	A-	
3192	676026	5	5	463	.475	.147	.248	.475	.130	.000	.382	-.271	-.141	.382	-.100	-0.459	0.102	0.0	1.0	-0.2	1.0	A-	
3193	676027	5	5	467	.872	.060	.047	.872	.021	.000	.363	-.237	-.206	.363	-.149	-2.846	0.146	-0.9	0.9	-1.2	0.8	A-	A-
3194	676028	5	5	465	.475	.254	.138	.133	.475	.000	.346	-.239	-.106	-.095	.346	-0.548	0.102	0.6	1.0	1.2	1.1	A+	
3195	676029	5	5	463	.197	.197	.436	.205	.162	.000	.184	.184	.116	-.236	-.096	0.930	0.124	1.0	1.1	2.3	1.3	A+	B-
3196	676030	5	5	464	.261	.166	.179	.394	.261	.000	.407	-.135	-.100	-.185	.407	0.655	0.114	-1.9	0.9	-0.1	1.0	A-	A-
3197	676031	5	5	484	.382	.306	.382	.217	.095	.000	.238	.049	.238	-.211	-.176	0.033	0.103	2.6	1.1	4.0	1.3	A+	A-
3198	676032	5	5	454	.601	.081	.132	.601	.185	.000	.229	-.178	-.197	.229	.008	-1.038	0.105	2.9	1.1	3.6	1.2	A+	
3199	676033	5	5	469	.252	.367	.252	.213	.168	.000	.096	-.026	.096	-.063	-.009	0.737	0.115	3.0	1.2	6.0	1.7	A-	A+
3200	676034	5	5	483	.354	.354	.331	.153	.161	.000	-.002	-.002	-.064	.047	.039	0.145	0.104	7.6	1.4	8.3	1.7	A+	
3201	676036	5	5	474	.485	.070	.146	.485	.300	.000	.293	-.104	-.127	.293	-.164	-0.522	0.101	2.4	1.1	2.6	1.1	A-	A+
3202	676037	5	5	471	.478	.200	.478	.166	.157	.000	.190	-.026	.190	-.167	-.063	-0.499	0.101	4.5	1.2	4.6	1.3	A+	
3203	676038	5	5	481	.393	.148	.114	.345	.393	.000	.472	-.126	-.165	-.281	.472	-0.117	0.103	-2.7	0.9	-1.7	0.9	A-	B+
3204	676039	5	5	491	.468	.136	.468	.200	.196	.000	.348	-.108	.348	-.310	-.032	-0.420	0.100	0.9	1.0	2.9	1.2	B-	A+
3205	676040	5	5	443	.659	.077	.659	.190	.074	.000	.372	-.125	.372	-.274	-.137	-1.434	0.109	0.0	1.0	-0.8	0.9	A+	A+
3206	676041	5	5	427	.621	.066	.126	.187	.621	.000	.425	-.264	-.249	-.149	.425	-1.236	0.110	-1.4	0.9	-0.6	1.0	A+	
3207	676439	5	5	464	.502	.183	.192	.123	.502	.000	.459	-.302	-.106	-.217	.459	-0.597	0.102	-2.5	0.9	-2.0	0.9	A-	
3208	676440	5	5	456	.559	.107	.559	.149	.184	.000	.417	-.185	.417	-.354	-.060	-0.851	0.104	-0.8	1.0	-0.8	1.0	A-	A+
3209	676441	5	5	479	.752	.752	.148	.054	.046	.000	.419	.419	-.377	-.206	-.003	-1.852	0.114	-1.4	0.9	-2.1	0.8	A+	A+
3210	676442	5	5	491	.745	.094	.116	.745	.045	.000	.491	-.341	-.262	.491	-.147	-1.804	0.112	-2.9	0.9	-2.9	0.8	B+	A+
3211	676443	5	5	492	.362	.258	.146	.234	.362	.000	.448	-.112	-.193	-.232	.448	0.074	0.102	-2.7	0.9	-1.6	0.9	A-	
3212	676444	5	5	480	.388	.388	.129	.327	.156	.000	.373	.373	-.240	-.118	-.127	-0.051	0.103	-0.3	1.0	0.7	1.0	A-	
3213	676445	5	5	486	.704	.115	.704	.138	.043	.000	.429	-.245	.429	-.287	-.092	-1.644	0.108	-1.6	0.9	-1.7	0.9	A+	A+
3214	676446	5	5	495	.497	.083	.281	.497	.139	.000	.302	-.234	-.086	.302	-.138	-0.536	0.099	1.7	1.1	2.0	1.1	A-	A-
3215	676447	5	5	468	.410	.141	.173	.276	.410	.000	.378	-.226	-.184	-.084	.378	-0.144	0.103	-0.2	1.0	0.4	1.0	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3216	676448	5	5	489	.436	.264	.436	.133	.168	.000	.297	-.177	.297	-.072	-.120	-0.252	0.101	2.2	1.1	2.4	1.1	A-	
3217	676721	5	5	438	.432	.263	.164	.142	.432	.000	.490	-.130	-.287	-.227	.490	-0.261	0.106	-3.3	0.9	-2.4	0.9	A-	
3218	676722	5	5	481	.557	.225	.557	.173	.046	.000	.275	-.175	.275	-.139	-.052	-0.847	0.101	2.6	1.1	2.1	1.1	A-	
3219	676723	5	5	491	.752	.098	.049	.102	.752	.000	.419	-.236	-.132	-.274	.419	-1.915	0.113	-1.4	0.9	-2.1	0.8	A-	
3220	676724	5	5	486	.763	.049	.072	.763	.115	.000	.535	-.230	-.222	.535	-.376	-1.942	0.115	-3.5	0.8	-3.9	0.7	A-	A-
3221	676725	5	5	441	.624	.063	.283	.624	.029	.000	.382	-.310	-.190	.382	-.142	-1.191	0.107	-0.3	1.0	-0.8	1.0	A+	
3222	676726	5	5	497	.374	.511	.374	.070	.044	.000	.225	-.022	.225	-.245	-.170	0.018	0.101	2.3	1.1	3.7	1.2	A-	
3223	676727	5	5	496	.484	.196	.194	.127	.484	.000	.463	-.239	-.185	-.191	.463	-0.514	0.099	-2.6	0.9	-1.8	0.9	A+	
3224	676728	5	5	455	.798	.798	.035	.143	.024	.000	.370	.370	-.136	-.243	-.250	-2.157	0.125	-0.8	0.9	-1.4	0.8	B+	
3225	676729	5	5	481	.430	.383	.116	.071	.430	.000	.452	-.350	-.106	-.078	.452	-0.259	0.101	-2.2	0.9	-1.5	0.9	A+	
3226	676730	5	5	500	.592	.316	.592	.064	.028	.000	.338	-.258	.338	-.083	-.156	-1.127	0.100	0.9	1.0	0.3	1.0	A+	
3227	679636	5	5	463	.829	.015	.829	.030	.125	.000	.374	-.158	.374	-.211	-.257	-2.416	0.132	-0.9	0.9	-1.1	0.8	A+	
3228	679639	5	5	497	.588	.187	.145	.588	.080	.000	.364	-.203	-.159	.364	-.161	-1.041	0.100	0.0	1.0	-0.4	1.0	A+	A+
3229	681009	5	5	480	.433	.135	.210	.221	.433	.000	.371	-.252	-.187	-.051	.371	-0.233	0.101	-0.4	1.0	0.6	1.0	A+	
3230	681277	5	5	466	.612	.612	.084	.152	.152	.000	.165	.165	-.210	-.061	-.002	-1.156	0.104	4.3	1.2	3.8	1.2	A+	
3231	681278	5	5	464	.856	.078	.017	.050	.856	.000	.379	-.299	-.105	-.181	.379	-2.675	0.139	-1.1	0.9	-1.6	0.8	A+	
3232	681279	5	5	472	.663	.663	.030	.040	.267	.000	.325	.325	-.168	-.170	-.207	-1.409	0.106	0.5	1.0	0.1	1.0	A+	
3233	681280	5	5	458	.651	.651	.210	.090	.050	.000	.434	.434	-.241	-.240	-.184	-1.377	0.107	-1.6	0.9	-1.5	0.9	A+	A-
3234	681281	5	5	454	.606	.141	.606	.154	.099	.000	.246	-.243	.246	-.047	-.063	-1.116	0.104	2.4	1.1	2.3	1.1	A-	
3235	681282	5	5	481	.424	.173	.214	.424	.189	.000	.245	-.159	-.112	.245	-.038	-0.206	0.101	3.1	1.1	3.8	1.2	A+	B-
3236	681283	5	5	487	.366	.287	.164	.366	.183	.000	.393	-.344	-.045	.393	-.043	0.106	0.103	-1.1	1.0	0.8	1.1	B-	
3237	681284	5	4	464	.448	.205	.448	.248	.099	.000	.167	-.060	.167	-.017	-.172	-0.348	0.103	5.1	1.2	6.0	1.4	A-	
3238	681285	5	5	449	.209	.339	.209	.205	.247	.000	-.117	.244	-.117	-.202	.032	0.967	0.124	4.2	1.3	7.9	2.2	A-	
3239	681286	5	5	484	.643	.186	.643	.120	.052	.000	.396	-.260	.396	-.166	-.158	-1.209	0.103	-0.9	1.0	-1.7	0.9	A+	
3240	681585	5	5	469	.405	.136	.405	.175	.284	.000	.337	-.028	.337	-.202	-.176	-0.161	0.103	0.1	1.0	2.0	1.1	A-	A+
3241	681586	5	5	484	.700	.700	.161	.070	.068	.000	.447	.447	-.301	-.127	-.244	-1.541	0.107	-2.3	0.9	-2.3	0.8	A-	
3242	681587	5	5	478	.462	.165	.184	.462	.188	.000	.226	-.102	-.164	.226	-.029	-0.402	0.100	3.3	1.1	3.8	1.2	A-	A+
3243	681588	5	5	468	.874	.062	.036	.028	.874	.000	.422	-.324	-.199	-.151	.422	-2.869	0.147	-1.5	0.9	-2.3	0.7	A+	A-
3244	681589	5	5	484	.822	.822	.074	.050	.054	.000	.458	.458	-.253	-.287	-.205	-2.398	0.127	-2.1	0.9	-3.1	0.7	A-	
3245	681590	5	5	442	.208	.063	.208	.448	.281	.000	.017	-.051	.017	.117	-.117	0.987	0.125	3.0	1.2	6.0	1.9	A-	A-
3246	681591	5	5	500	.444	.218	.208	.444	.130	.000	.180	-.109	-.047	.180	-.076	-0.436	0.098	4.4	1.2	5.1	1.3	B+	A-
3247	681592	5	5	448	.645	.138	.645	.096	.121	.000	.335	-.238	.335	-.120	-.131	-1.292	0.107	0.2	1.0	-0.4	1.0	A+	
3248	681593	5	5	476	.603	.603	.187	.095	.116	.000	.480	.480	-.326	-.181	-.171	-1.122	0.103	-2.8	0.9	-3.0	0.8	A-	
3249	681594	5	5	504	.460	.226	.133	.181	.460	.000	.416	-.229	-.119	-.186	.416	-0.452	0.098	-1.9	0.9	-0.9	1.0	A-	
3250	681779	5	5	459	.211	.216	.427	.146	.211	.000	.332	-.275	.030	-.106	.332	0.925	0.122	-0.7	1.0	0.2	1.0	A+	A+

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3251	681780	5	5	469	.576	.017	.576	.083	.324	.000	.485	-.068	.485	-.202	-.374	-1.006	0.103	-2.6	0.9	-2.2	0.9	A+	
3252	681781	5	5	442	.412	.412	.165	.222	.201	.000	.298	.298	-.101	-.212	-.052	-0.138	0.106	1.4	1.1	2.1	1.1	A+	
3253	681782	5	5	483	.354	.354	.240	.240	.166	.000	.132	.132	-.044	-.030	-.085	0.139	0.103	3.5	1.2	5.3	1.4	A+	
3254	681783	5	5	488	.418	.301	.418	.133	.148	.000	.269	-.106	.269	-.082	-.158	-0.166	0.099	1.3	1.1	2.9	1.2	A+	
3255	681784	5	5	470	.670	.094	.115	.121	.670	.000	.500	-.163	-.340	-.242	.500	-1.375	0.107	-3.3	0.9	-2.4	0.8	A+	
3256	681785	5	5	475	.413	.297	.200	.413	.091	.000	.334	-.184	-.139	.334	-.087	-0.177	0.103	0.8	1.0	2.4	1.2	A+	A-
3257	681786	5	5	492	.482	.268	.175	.482	.075	.000	.454	-.254	-.200	.454	-.145	-0.539	0.099	-2.3	0.9	-2.3	0.9	A-	
3258	681787	5	5	493	.884	.053	.043	.884	.020	.000	.325	-.198	-.239	.325	-.082	-2.990	0.148	-0.5	0.9	-1.3	0.8	B+	A-
3259	681788	5	5	453	.188	.223	.188	.302	.287	.000	.156	-.028	.156	.015	-.125	1.104	0.128	0.9	1.1	4.7	1.7	A+	
3260	681920	5	5	477	.717	.069	.088	.717	.126	.000	.274	-.132	-.159	.274	-.135	-1.673	0.111	2.0	1.1	1.1	1.1	A+	
3261	681921	5	5	482	.849	.849	.062	.048	.041	.000	.301	.301	-.240	-.201	-.036	-2.656	0.135	-0.4	1.0	0.0	1.0	B+	A-
3262	681922	5	5	480	.750	.019	.056	.175	.750	.000	.347	-.164	-.175	-.230	.347	-1.862	0.114	0.0	1.0	-0.8	0.9	A-	
3263	681923	5	5	464	.382	.153	.381	.302	.164	.000	.256	-.012	.256	-.139	-.152	-0.053	0.105	2.3	1.1	3.3	1.2	B-	B-
3264	681924	5	5	450	.356	.169	.364	.356	.111	.000	.251	-.147	.002	.251	-.210	0.128	0.107	2.3	1.1	2.9	1.2	A-	
3265	681925	5	5	491	.338	.193	.277	.338	.191	.000	.206	-.069	-.090	.206	-.076	0.238	0.103	2.9	1.1	2.7	1.2	A+	A+
3266	681926	5	5	463	.350	.350	.350	.190	.110	.000	.236	.236	-.094	-.104	-.087	0.179	0.106	1.8	1.1	3.4	1.2	A-	
3267	681927	5	5	456	.344	.232	.333	.344	.090	.000	.043	-.038	.034	.043	-.071	0.164	0.107	5.8	1.3	6.3	1.5	A+	A-
3268	681928	5	5	512	.326	.326	.381	.219	.074	.000	.389	.389	-.128	-.148	-.226	0.338	0.103	-1.2	1.0	1.0	1.1	A-	A-
3269	681929	5	5	442	.867	.025	.041	.867	.068	.000	.295	-.179	-.128	.295	-.188	-2.700	0.147	-0.3	1.0	-0.6	0.9	A+	A+
3270	682000	5	5	479	.589	.159	.589	.067	.186	.000	.307	-.082	.307	-.210	-.177	-1.030	0.101	1.4	1.1	1.1	1.1	A-	
3271	682001	5	5	495	.424	.424	.317	.176	.083	.000	.279	.279	-.130	-.144	-.083	-0.277	0.100	1.9	1.1	2.3	1.1	A+	
3272	682002	5	5	470	.328	.204	.296	.172	.328	.000	.361	.024	-.297	-.116	.361	0.286	0.107	-0.2	1.0	0.7	1.1	A+	A+
3273	682003	5	5	478	.646	.146	.646	.153	.054	.000	.318	-.161	.318	-.145	-.189	-1.303	0.104	0.7	1.0	0.9	1.1	A+	A+
3274	682004	5	5	476	.435	.116	.305	.145	.435	.000	.329	-.034	-.327	-.005	.329	-0.176	0.102	1.6	1.1	1.7	1.1	A+	
3275	682005	5	5	475	.722	.097	.097	.722	.084	.000	.319	-.261	-.119	.319	-.110	-1.837	0.111	0.7	1.0	-0.2	1.0	A+	
3276	682006	5	5	484	.446	.118	.446	.275	.161	.000	.302	-.208	.302	-.117	-.085	-0.305	0.101	1.9	1.1	2.7	1.2	B-	A+
3277	682007	5	5	468	.464	.156	.126	.254	.464	.000	.348	-.204	-.303	.002	.348	-0.370	0.102	0.6	1.0	0.7	1.0	A+	
3278	682008	5	5	462	.662	.662	.104	.039	.195	.000	.219	.219	-.012	-.132	-.187	-1.468	0.107	2.3	1.1	3.4	1.3	A+	
3279	682009	5	5	502	.841	.058	.841	.066	.036	.000	.416	-.274	.416	-.259	-.130	-2.589	0.130	-1.4	0.9	-2.3	0.7	A+	A+
3280	682028	5	5	479	.593	.301	.593	.071	.035	.000	.246	-.029	.246	-.253	-.232	-1.062	0.102	2.9	1.1	3.3	1.2	A-	A-
3281	682029	5	5	504	.772	.772	.107	.079	.042	.000	.470	.470	-.256	-.255	-.247	-2.040	0.114	-2.4	0.9	-2.6	0.8	A+	
3282	682032	5	5	471	.539	.074	.539	.291	.096	.000	.450	-.193	.450	-.235	-.229	-0.788	0.102	-1.8	0.9	-1.9	0.9	A+	A+
3283	682035	5	5	483	.335	.335	.277	.248	.139	.000	.132	.132	-.098	.027	-.087	0.138	0.104	3.3	1.2	5.5	1.4	A+	A-
3284	682180	5	5	487	.811	.045	.105	.811	.039	.000	.523	-.241	-.374	.523	-.207	-2.310	0.124	-3.1	0.8	-3.4	0.7	C-	
3285	682181	5	5	459	.612	.612	.211	.133	.044	.000	.436	.436	-.188	-.303	-.162	-1.145	0.105	-1.6	0.9	-1.6	0.9	A-	

Table B–2 (continued). Mathematics Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
3286	682182	5	5	463	.551	.551	.261	.112	.076	.000	.372	.372	-.269	-.220	.010	-0.813	0.101	-0.5	1.0	-0.9	1.0	A-	
3287	682183	5	5	493	.700	.700	.225	.063	.012	.000	.401	.401	-.336	-.173	-.012	-1.517	0.107	-0.7	1.0	-1.2	0.9	A-	A-
3288	682184	5	5	451	.608	.093	.608	.169	.131	.000	.374	-.089	.374	-.237	-.202	-1.079	0.106	0.0	1.0	0.5	1.0	A+	
3289	682185	5	5	434	.279	.279	.320	.115	.286	.000	.286	.286	-.025	-.134	-.163	0.581	0.116	0.7	1.0	1.6	1.2	A-	B-
3290	682186	5	5	489	.777	.106	.777	.086	.031	.000	.418	-.255	.418	-.248	-.151	-2.057	0.117	-1.6	0.9	-1.8	0.8	A+	A+
3291	682187	5	5	481	.568	.568	.214	.156	.062	.000	.420	.420	-.208	-.266	-.109	-0.928	0.101	-1.4	1.0	-2.0	0.9	A+	A-
3292	682188	5	5	494	.591	.158	.178	.591	.073	.000	.317	-.200	-.126	.317	-.134	-1.070	0.100	1.0	1.0	0.9	1.1	A-	A-
3293	682189	5	5	509	.529	.108	.528	.238	.126	.000	.341	-.216	.341	-.157	-.110	-0.783	0.097	0.6	1.0	1.0	1.1	A+	
3294	683533	5	5	464	.782	.782	.099	.080	.039	.000	.418	.418	-.251	-.251	-.153	-2.028	0.121	-1.6	0.9	-1.6	0.8	A-	A-
3295	683535	5	5	460	.472	.472	.196	.102	.230	.000	.386	.386	-.260	-.205	-.065	-0.413	0.103	-0.4	1.0	-0.3	1.0	A-	
3296	683574	5	5	529	.212	.212	.221	.295	.272	.000	.078	.078	-.113	-.033	.068	0.978	0.114	2.6	1.2	5.9	1.7	A-	
3297	683575	5	5	439	.617	.617	.214	.089	.080	.000	.361	.361	-.253	-.164	-.092	-1.139	0.108	0.2	1.0	0.1	1.0	A-	
3298	683576	5	5	440	.264	.377	.193	.166	.264	.000	.422	-.101	-.293	-.058	.422	0.593	0.116	-2.1	0.9	-1.5	0.9	A+	
3299	683577	5	5	466	.092	.303	.513	.092	.092	.000	.148	-.125	.130	-.175	.148	1.978	0.167	0.0	1.0	2.7	1.6	A-	
3300	684043	5	5	490	.508	.508	.229	.186	.078	.000	.384	.384	-.218	-.175	-.121	-0.555	0.099	-0.2	1.0	0.2	1.0	A-	
3301	684044	5	5	446	.718	.220	.031	.717	.031	.000	.512	-.395	-.183	.512	-.200	-1.585	0.114	-3.4	0.8	-3.4	0.7	A-	A-
3302	684045	5	5	469	.872	.049	.055	.023	.872	.000	.455	-.229	-.290	-.239	.455	-2.795	0.146	-1.8	0.8	-3.0	0.6	A+	B-
3303	684046	5	5	476	.828	.074	.069	.029	.828	.000	.469	-.313	-.288	-.132	.469	-2.404	0.131	-2.0	0.9	-2.6	0.7	A+	C-
3304	684048	5	5	477	.426	.254	.195	.426	.126	.000	.505	-.284	-.197	.505	-.145	-0.302	0.102	-3.6	0.9	-2.6	0.9	B-	
3305	684050	5	5	457	.414	.414	.138	.158	.291	.000	.396	.396	-.104	-.270	-.134	-0.075	0.104	-1.4	0.9	0.5	1.0	A-	B+
3306	684052	5	5	483	.323	.340	.323	.232	.106	.000	.152	.060	.152	-.208	-.039	0.314	0.106	3.8	1.2	4.5	1.4	A+	
3307	684054	5	5	449	.450	.450	.216	.249	.085	.000	.208	.208	-.239	.030	-.065	-0.434	0.104	3.9	1.2	3.5	1.2	A-	
3308	684055	5	5	467	.617	.056	.289	.039	.617	.000	.318	-.282	-.140	-.139	.318	-1.140	0.104	0.9	1.0	1.1	1.1	A+	
3309	684057	5	5	481	.642	.048	.116	.642	.193	.000	.378	-.150	-.103	.378	-.295	-1.400	0.104	-0.4	1.0	0.0	1.0	A+	
3310	684061	5	5	495	.566	.093	.210	.131	.566	.000	.401	-.166	-.115	-.308	.401	-0.882	0.100	-0.5	1.0	-0.9	1.0	A+	
3311	684063	5	5	481	.405	.264	.405	.119	.212	.000	.568	-.296	.568	-.209	-.198	-0.137	0.101	-6.0	0.8	-4.7	0.8	B-	A-
3312	684064	5	5	501	.731	.086	.731	.122	.062	.000	.366	-.193	.366	-.147	-.251	-1.774	0.109	-0.4	1.0	-0.7	0.9	A+	
3313	684065	5	5	451	.597	.182	.204	.596	.018	.000	.368	-.211	-.208	.368	-.117	-1.031	0.105	0.0	1.0	-0.5	1.0	A+	
3314	684075	5	5	457	.411	.411	.276	.195	.118	.000	.255	.255	-.096	-.169	-.049	-0.232	0.104	2.3	1.1	5.5	1.4	A+	
3315	684076	5	5	492	.126	.455	.319	.100	.126	.000	.176	-.037	.018	-.162	.176	1.614	0.143	0.0	1.0	3.5	1.7	A+	
3316	684077	5	5	452	.385	.385	.146	.272	.197	.000	.191	.191	-.224	.050	-.091	-0.041	0.106	3.8	1.2	4.4	1.3	A-	
3317	684078	5	5	473	.359	.359	.326	.209	.106	.000	.351	.351	.009	-.256	-.222	0.121	0.105	0.4	1.0	0.6	1.0	A-	A-
3318	684079	5	5	552	.265	.266	.409	.264	.060	.000	.204	-.110	-.047	.204	-.076	0.612	0.104	1.9	1.1	4.1	1.4	A-	A+
3319	684081	5	5	460	.363	.222	.363	.274	.141	.000	.079	-.034	.079	-.007	-.059	0.073	0.106	5.7	1.3	6.2	1.5	A-	

Appendix B: Field Test Item Statistics

Items with reference line numbers 1-1949 were field tested during the stand-alone field test administered in spring 2010. Items with reference line numbers 1950-2335 were field tested during the embedded field test administered in spring 2013. Items with reference line numbers 2336-3319 were field tested during field test administered in fall 2013.

READING/LITERATURE MULTIPLE-CHOICE ITEMS

Table B–3. Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1	613600	3	3	765	.378	.346	.133	.141	.378	.001	.459	-.140	-.243	-.208	.459	0.282	0.086	-1.6	0.9	-0.5	1.0	A+	A+
2	613567	3	N/A	760	.446	.254	.446	.138	.159	.003	.377	-.186	.377	-.135	-.131	-0.213	0.081	1.8	1.1	2.7	1.1	A-	A-
3	613576	3	N/A	760	.571	.125	.076	.217	.571	.011	.449	-.164	-.262	-.166	.449	-0.876	0.082	0.3	1.0	0.2	1.0	A-	A+
4	613575	3	N/A	760	.425	.100	.425	.257	.203	.016	.298	-.322	.298	-.011	-.035	-0.140	0.082	5.3	1.2	5.7	1.3	A+	A-
5	613448	3	3	760	.649	.649	.071	.104	.155	.021	.549	.549	-.220	-.222	-.276	-1.322	0.086	-3.5	0.9	-3.5	0.8	B+	B-
6	613587	3	3	1535	.930	.930	.012	.029	.026	.003	.432	.432	-.175	-.236	-.234	-3.761	0.113	-1.6	0.9	-4.4	0.4	A+	B-
7	613588	3	N/A	1535	.572	.228	.572	.178	.014	.008	.404	-.196	.404	-.212	-.144	-0.847	0.059	3.5	1.1	2.3	1.1	A+	A+
8	613589	3	N/A	1535	.240	.259	.419	.074	.240	.009	.267	-.167	.057	-.179	.267	1.013	0.066	3.8	1.1	5.4	1.4	A+	A+
9	613595	3	3	1530	.680	.153	.680	.116	.043	.009	.511	-.307	.511	-.211	-.211	-1.452	0.061	-4.5	0.9	-5.4	0.8	A+	A-
10	613596	3	N/A	1530	.285	.498	.074	.137	.285	.006	.292	.028	-.220	-.198	.292	0.620	0.062	1.9	1.1	5.6	1.3	A+	A-
11	613571	3	N/A	760	.695	.159	.093	.032	.695	.021	.461	-.120	-.306	-.182	.461	-1.589	0.088	-0.8	1.0	-0.7	1.0	A+	A+
12	613572	3	N/A	760	.709	.101	.111	.054	.709	.025	.606	-.257	-.319	-.214	.606	-1.685	0.089	-5.6	0.8	-5.2	0.7	A-	A-
13	613465	3	3	760	.238	.401	.128	.204	.238	.029	.320	-.019	-.259	.020	.320	0.832	0.092	1.1	1.1	0.6	1.0	A-	A-
14	613466	3	N/A	760	.491	.228	.100	.150	.491	.032	.501	-.122	-.252	-.210	.501	-0.548	0.081	-3.1	0.9	-2.4	0.9	A-	A+
15	613563	3	N/A	770	.768	.053	.078	.068	.768	.034	.530	-.246	-.246	-.241	.530	-2.143	0.098	-2.9	0.9	-3.1	0.7	A-	
16	613467	3	N/A	771	.658	.078	.097	.658	.147	.021	.531	-.243	-.272	.531	-.162	-1.355	0.087	-2.1	0.9	-2.4	0.8	A-	A-
17	613455	3	3	771	.510	.143	.510	.087	.237	.023	.372	-.255	.372	-.244	.052	-0.552	0.082	3.3	1.1	3.5	1.2	A+	A+
18	613456	3	3	771	.822	.053	.051	.822	.051	.023	.590	-.268	-.284	.590	-.242	-2.560	0.111	-3.2	0.8	-4.3	0.5	B+	B+
19	613457	3	3	771	.734	.734	.060	.110	.067	.029	.450	.450	-.254	-.128	-.178	-1.867	0.095	0.5	1.0	-0.3	1.0	A-	A-
20	613458	3	N/A	771	.658	.048	.198	.067	.658	.029	.534	-.268	-.189	-.268	.534	-1.375	0.087	-2.6	0.9	-1.5	0.9	A+	A+
21	613592	3	N/A	5356	.760	.166	.037	.760	.027	.010	.474	-.246	-.247	.474	-.210	-1.967	0.036	-2.8	1.0	-4.5	0.9	A+	A-
22	613593	3	3	5356	.827	.827	.063	.036	.065	.010	.429	.429	-.165	-.224	-.207	-2.500	0.041	-1.3	1.0	-2.3	0.9	A+	A+
23	613461	3	3	5356	.523	.047	.523	.062	.354	.014	.242	-.213	.242	-.201	.016	-0.619	0.031	9.9	1.3	9.9	1.4	A-	A-
24	613462	3	3	5356	.642	.073	.173	.642	.098	.014	.504	-.234	-.229	.504	-.198	-1.253	0.032	-4.5	0.9	-4.9	0.9	A+	A-
25	613445	3	3	764	.736	.100	.110	.736	.039	.016	.554	-.233	-.288	.554	-.264	-1.881	0.094	-2.7	0.9	-2.7	0.8	B+	
26	613443	3	N/A	764	.542	.126	.152	.542	.149	.031	.513	-.159	-.277	.513	-.182	-0.788	0.085	-0.3	1.0	-1.0	1.0	A-	
27	613442	3	3	764	.695	.695	.103	.094	.071	.037	.459	.459	-.277	-.218	-.101	-1.727	0.093	0.6	1.0	0.8	1.1	A+	
28	613441	3	3	764	.584	.130	.111	.136	.584	.039	.518	-.215	-.276	-.165	.518	-1.053	0.086	-0.8	1.0	-0.8	1.0	A+	
29	613447	3	N/A	760	.583	.226	.090	.583	.083	.018	.443	-.197	-.148	.443	-.214	-0.959	0.083	0.5	1.0	0.6	1.0	A+	A+
30	613450	3	3	770	.408	.247	.244	.082	.408	.020	.199	-.107	.001	-.045	.199	-0.051	0.082	8.1	1.3	7.4	1.4	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
31	613451	3	3	770	.449	.268	.140	.120	.449	.023	.395	-.165	-.150	-.092	.395	-0.286	0.081	2.0	1.1	2.4	1.1	A+	
32	613452	3	3	770	.384	.384	.026	.331	.236	.022	.193	.193	-.181	-.049	.001	0.069	0.082	8.2	1.3	7.0	1.4	A+	
33	613468	3	N/A	771	.532	.253	.078	.119	.532	.018	.461	-.134	-.152	-.261	.461	-0.659	0.082	-0.1	1.0	0.0	1.0	A-	A-
34	613463	3	N/A	5356	.854	.854	.033	.034	.066	.013	.486	.486	-.203	-.201	-.261	-2.782	0.044	-4.5	0.9	-6.5	0.7	A-	A-
35	613444	3	3	764	.747	.094	.106	.038	.747	.014	.576	-.315	-.260	-.238	.576	-1.946	0.095	-3.7	0.8	-3.7	0.7	A+	
36	613438	3	3	764	.656	.096	.656	.169	.048	.031	.540	-.225	.540	-.238	-.291	-1.447	0.089	-1.8	0.9	-1.7	0.9	A-	
37	613581	3	N/A	766	.573	.573	.165	.088	.151	.024	.303	.303	-.176	-.110	-.026	-0.944	0.084	6.1	1.2	5.1	1.3	A+	A+
38	613601	3	N/A	765	.761	.059	.076	.761	.099	.005	.527	-.241	-.303	.527	-.261	-1.937	0.096	-2.4	0.9	-3.4	0.7	A+	A-
39	613577	3	N/A	760	.765	.765	.076	.086	.063	.011	.446	.446	-.207	-.200	-.198	-2.006	0.096	-0.3	1.0	-0.7	0.9	A-	A-
40	613598	3	N/A	1530	.712	.712	.110	.102	.070	.006	.322	.322	-.185	-.122	-.141	-1.626	0.062	2.9	1.1	4.2	1.2	A+	A-
41	613597	3	N/A	1530	.282	.191	.282	.158	.361	.008	.268	-.171	.268	.068	-.119	0.641	0.062	3.9	1.1	4.1	1.2	A-	A-
42	613562	3	N/A	770	.617	.617	.094	.117	.146	.027	.513	.513	-.232	-.262	-.155	-1.169	0.084	-2.1	0.9	-2.4	0.9	A+	
43	613583	3	3	766	.608	.158	.107	.103	.608	.024	.472	-.199	-.196	-.176	.472	-1.142	0.085	-0.7	1.0	-1.3	0.9	A+	A-
44	613584	3	3	766	.571	.151	.128	.125	.571	.025	.449	-.130	-.232	-.163	.449	-0.936	0.084	0.9	1.0	1.1	1.1	A+	A-
45	613585	3	3	766	.710	.086	.072	.107	.710	.025	.519	-.316	-.188	-.174	.519	-1.757	0.091	-2.9	0.9	-2.7	0.8	A+	A+
46	613586	3	3	766	.682	.095	.102	.682	.095	.026	.501	-.180	-.274	.501	-.178	-1.581	0.089	-1.9	0.9	-2.4	0.8	A+	A+
47	613602	3	N/A	765	.771	.077	.072	.076	.771	.004	.527	-.279	-.242	-.301	.527	-2.022	0.098	-2.6	0.9	-1.4	0.9	A+	A-
48	613603	3	N/A	765	.399	.218	.216	.157	.399	.011	.400	-.112	-.245	-.088	.400	0.134	0.085	1.9	1.1	2.1	1.2	A+	A+
49	613568	3	3	760	.743	.040	.087	.743	.126	.004	.466	-.157	-.269	.466	-.252	-1.824	0.092	-1.3	0.9	-1.7	0.9	A+	A-
50	613579	3	N/A	760	.486	.070	.107	.328	.486	.011	.382	-.173	-.228	-.099	.382	-0.441	0.081	2.9	1.1	2.9	1.1	A-	A+
51	613580	3	3	760	.740	.072	.740	.133	.045	.011	.448	-.201	.448	-.192	-.239	-1.828	0.092	-0.1	1.0	-0.7	0.9	A+	B-
52	613578	3	N/A	760	.365	.365	.154	.258	.209	.015	.306	.306	-.200	.027	-.135	0.187	0.084	4.1	1.2	4.1	1.3	A-	A+
53	613590	3	N/A	1535	.584	.044	.584	.259	.106	.008	.458	-.112	.458	-.262	-.218	-0.926	0.059	0.4	1.0	0.2	1.0	A+	A-
54	613591	3	3	1535	.371	.371	.212	.141	.265	.011	.267	.267	-.112	-.199	.027	0.200	0.059	8.1	1.2	9.6	1.5	A-	A+
55	613573	3	3	760	.445	.224	.166	.445	.145	.021	.393	-.098	-.135	.393	-.155	-0.289	0.080	1.3	1.0	1.1	1.1	A+	A+
56	613574	3	3	760	.613	.255	.032	.613	.076	.024	.564	-.292	-.175	.564	-.258	-1.140	0.083	-4.9	0.8	-4.7	0.8	A-	B-
57	613564	3	N/A	770	.410	.410	.107	.166	.287	.030	.421	.421	-.200	-.208	-.054	-0.104	0.082	0.8	1.0	1.4	1.1	A-	
58	613565	3	3	770	.513	.175	.125	.513	.156	.031	.482	-.217	-.078	.482	-.251	-0.625	0.081	-1.6	1.0	-1.3	0.9	A-	
59	613599	3	3	765	.777	.042	.050	.129	.777	.003	.432	-.234	-.265	-.214	.432	-2.034	0.098	-1.0	1.0	-1.1	0.9	A+	A+
60	613566	3	3	760	.203	.263	.140	.391	.203	.004	.207	-.062	-.051	-.053	.207	1.216	0.099	2.6	1.2	3.4	1.4	A-	A+
61	613610	3	3	760	.888	.042	.036	.032	.888	.003	.511	-.225	-.276	-.301	.511	-3.035	0.125	-2.6	0.8	-3.9	0.5	A+	A-
62	613611	3	3	760	.803	.803	.074	.034	.082	.008	.428	.428	-.243	-.187	-.195	-2.282	0.102	-0.1	1.0	-1.1	0.9	B-	A-
63	613615	3	3	760	.703	.130	.124	.038	.703	.005	.563	-.319	-.285	-.201	.563	-1.583	0.088	-4.3	0.8	-3.9	0.7	B-	A-
64	613449	3	3	760	.736	.122	.736	.070	.051	.021	.533	-.185	.533	-.314	-.257	-1.852	0.093	-2.7	0.9	-2.9	0.8	A+	B-
65	613606	3	3	764	.547	.101	.123	.221	.547	.008	.351	-.269	-.243	.014	.351	-0.736	0.083	5.1	1.2	4.3	1.3	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
66	613594	3	3	760	.321	.353	.220	.321	.099	.008	.256	.015	-.153	.256	-.180	0.378	0.084	2.7	1.1	4.0	1.3	A-	A+
67	613608	3	3	760	.372	.168	.372	.296	.157	.007	.274	-.150	.274	-.029	-.113	0.118	0.082	3.1	1.1	4.2	1.2	A-	B+
68	613570	3	3	760	.529	.529	.258	.047	.146	.020	.301	.301	-.016	-.220	-.141	-0.698	0.080	4.8	1.2	3.9	1.2	A-	A-
69	613569	3	3	760	.665	.115	.101	.099	.665	.021	.357	-.138	-.149	-.109	.357	-1.415	0.085	2.4	1.1	2.2	1.1	A+	A-
70	613464	3	N/A	760	.508	.508	.149	.137	.179	.028	.417	.417	-.201	-.212	-.039	-0.622	0.081	0.8	1.0	0.3	1.0	A-	A-
71	613616	3	3	770	.399	.157	.308	.131	.399	.005	.414	-.197	-.126	-.156	.414	0.025	0.082	0.4	1.0	0.1	1.0	B-	
72	613560	3	3	770	.643	.226	.643	.065	.042	.025	.482	-.220	.482	-.240	-.182	-1.300	0.085	-1.0	1.0	-1.0	0.9	A+	
73	613561	3	3	770	.551	.162	.117	.143	.551	.027	.524	-.227	-.193	-.198	.524	-0.813	0.082	-2.7	0.9	-2.8	0.9	B-	
74	613612	3	3	771	.140	.067	.514	.272	.140	.007	.130	-.158	.017	.034	.130	1.855	0.115	1.2	1.1	3.1	1.5	A-	A-
75	613609	3	3	771	.816	.053	.087	.038	.816	.007	.545	-.239	-.296	-.237	.545	-2.391	0.106	-2.6	0.8	-3.2	0.7	A-	A+
76	613453	3	N/A	771	.423	.398	.423	.083	.075	.021	.443	-.229	.443	-.125	-.090	-0.107	0.082	-0.2	1.0	0.4	1.0	B-	A-
77	613454	3	3	771	.700	.700	.127	.043	.105	.025	.478	.478	-.175	-.204	-.227	-1.630	0.091	-0.3	1.0	-1.4	0.9	A+	A+
78	613605	3	N/A	5356	.572	.572	.128	.067	.226	.008	.356	.356	-.251	-.146	-.075	-0.856	0.031	9.2	1.1	8.3	1.2	A+	A+
79	613613	3	3	5356	.623	.094	.172	.623	.103	.009	.468	-.198	-.222	.468	-.194	-1.133	0.032	-1.3	1.0	-1.8	1.0	A-	A+
80	613614	3	3	5356	.884	.040	.031	.884	.037	.008	.497	-.260	-.240	.497	-.213	-3.064	0.048	-5.2	0.8	-8.8	0.5	A-	B-
81	613460	3	3	5356	.578	.241	.578	.066	.103	.012	.494	-.191	.494	-.237	-.232	-0.904	0.031	-3.5	1.0	-3.7	0.9	A-	A-
82	613459	3	3	5356	.641	.117	.641	.106	.122	.013	.502	-.207	.502	-.234	-.206	-1.253	0.032	-4.4	0.9	-4.4	0.9	A+	A+
83	613607	3	3	770	.896	.026	.046	.896	.027	.005	.444	-.181	-.247	.444	-.229	-3.150	0.130	-1.4	0.9	-2.5	0.6	B+	
84	613446	3	3	764	.763	.072	.080	.071	.763	.014	.624	-.285	-.293	-.311	.624	-2.068	0.097	-5.4	0.7	-4.8	0.6	B+	
85	613440	3	3	764	.759	.042	.094	.080	.759	.025	.575	-.207	-.291	-.306	.575	-2.109	0.099	-3.1	0.8	-3.7	0.7	B-	
86	613439	3	3	764	.656	.656	.106	.097	.111	.030	.606	.606	-.278	-.277	-.258	-1.431	0.089	-4.8	0.8	-3.9	0.7	A-	
87	613400	4	4	6629	.571	.176	.213	.036	.571	.005	.438	-.219	-.192	-.204	.438	-0.240	0.028	1.7	1.0	1.9	1.0	A+	A-
88	613401	4	4	6629	.780	.090	.046	.780	.079	.005	.562	-.281	-.301	.562	-.265	-1.486	0.033	-9.9	0.8	-9.9	0.7	A+	A-
89	613214	4	4	818	.752	.059	.100	.075	.752	.015	.546	-.253	-.262	-.233	.546	-1.460	0.093	-3.1	0.9	-3.3	0.7	A+	A-
90	613388	4	4	829	.695	.022	.232	.695	.052	.000	.345	-.275	-.176	.345	-.200	-0.895	0.083	1.8	1.1	1.8	1.1	A+	A-
91	613389	4	4	829	.776	.776	.050	.050	.126	.000	.407	.407	-.223	-.291	-.176	-1.408	0.091	-0.3	1.0	-0.2	1.0	A-	A-
92	613390	4	4	829	.487	.122	.487	.215	.175	.001	.341	-.262	.341	-.115	-.099	0.198	0.078	2.6	1.1	2.5	1.1	A+	A+
93	613375	4	4	824	.470	.058	.299	.171	.470	.002	.354	-.214	-.170	-.104	.354	0.199	0.079	3.2	1.1	3.0	1.2	A+	C+
94	613376	4	4	824	.716	.716	.114	.098	.069	.002	.452	.452	-.246	-.291	-.119	-1.129	0.086	-0.8	1.0	-1.4	0.9	A-	A-
95	613377	4	N/A	824	.659	.041	.204	.093	.659	.002	.444	-.223	-.187	-.281	.444	-0.796	0.082	-0.8	1.0	-1.2	0.9	A-	A-
96	608190	4	4	825	.778	.148	.033	.040	.778	.001	.488	-.312	-.261	-.227	.488	-1.348	0.093	-1.9	0.9	-2.5	0.8	A+	A-
97	613216	4	4	825	.689	.090	.142	.689	.079	.001	.466	-.218	-.268	.466	-.210	-0.768	0.084	-0.8	1.0	-0.8	1.0	A-	A-
98	613175	4	N/A	825	.596	.069	.596	.150	.178	.006	.362	-.197	.362	-.131	-.185	-0.277	0.080	3.7	1.1	3.2	1.2	A-	A+
99	613380	4	4	842	.797	.797	.093	.033	.071	.006	.509	.509	-.286	-.177	-.276	-1.661	0.096	-2.3	0.9	-2.1	0.8	A+	A-
100	613365	4	4	823	.583	.351	.022	.583	.039	.005	.387	-.258	-.152	.387	-.133	-0.276	0.079	2.2	1.1	1.6	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
101	613366	4	N/A	823	.712	.153	.712	.038	.092	.005	.451	-.246	.451	-.182	-.207	-0.989	0.085	-0.5	1.0	-1.4	0.9	A-	
102	613207	4	4	823	.521	.521	.086	.061	.323	.009	.372	.372	-.286	-.144	-.082	0.031	0.078	3.3	1.1	3.4	1.2	A-	
103	613206	4	4	823	.490	.332	.095	.073	.490	.011	.379	-.095	-.148	-.273	.379	0.180	0.078	2.7	1.1	3.5	1.2	A+	
104	613405	4	4	1657	.776	.776	.127	.041	.047	.010	.513	.513	-.269	-.248	-.233	-1.422	0.066	-3.4	0.9	-3.8	0.8	A-	A+
105	613404	4	4	1657	.786	.022	.036	.146	.786	.010	.524	-.215	-.229	-.324	.524	-1.501	0.067	-3.9	0.9	-4.2	0.7	A+	A-
106	613393	4	4	834	.705	.077	.104	.705	.109	.005	.456	-.232	-.211	.456	-.224	-0.934	0.086	0.6	1.0	-0.2	1.0	A-	A+
107	613394	4	4	834	.767	.124	.068	.038	.767	.002	.478	-.247	-.284	-.201	.478	-1.340	0.092	-1.0	1.0	-0.9	0.9	A+	A+
108	613171	4	4	834	.781	.089	.034	.781	.092	.005	.498	-.304	-.199	.498	-.234	-1.436	0.094	-1.3	0.9	-2.4	0.8	A+	A-
109	613172	4	4	834	.694	.052	.694	.083	.164	.007	.519	-.254	.519	-.267	-.242	-0.868	0.085	-1.8	0.9	-1.4	0.9	A-	A+
110	613173	4	N/A	834	.784	.784	.092	.048	.070	.006	.533	.533	-.246	-.263	-.287	-1.474	0.095	-2.4	0.9	-2.8	0.7	A-	B-
111	613211	4	4	834	.637	.215	.637	.091	.053	.005	.479	-.314	.479	-.208	-.104	-0.584	0.080	-2.2	0.9	-2.3	0.9	A+	A-
112	613210	4	N/A	834	.644	.023	.644	.113	.215	.006	.432	-.230	.432	-.242	-.187	-0.626	0.081	-0.1	1.0	-0.6	1.0	A+	A+
113	613370	4	4	825	.617	.103	.617	.093	.177	.010	.517	-.169	.517	-.278	-.275	-0.396	0.081	-2.1	0.9	-2.1	0.9	A+	A-
114	613371	4	4	825	.772	.772	.136	.041	.041	.010	.490	.490	-.289	-.274	-.185	-1.342	0.093	-1.8	0.9	-1.7	0.9	A+	A-
115	613220	4	4	6629	.550	.227	.139	.079	.550	.005	.383	-.178	-.133	-.200	.383	-0.129	0.028	8.1	1.1	6.6	1.1	A+	A+
116	613219	4	N/A	6629	.689	.689	.153	.049	.103	.005	.447	.447	-.134	-.216	-.315	-0.892	0.030	-1.2	1.0	-0.4	1.0	A+	A-
117	613213	4	N/A	818	.621	.621	.087	.212	.065	.016	.498	.498	-.209	-.238	-.193	-0.633	0.083	-0.6	1.0	-0.2	1.0	A-	A+
118	613378	4	4	824	.686	.039	.182	.091	.686	.002	.544	-.221	-.274	-.331	.544	-0.948	0.083	-4.2	0.9	-3.9	0.8	A-	A-
119	608188	4	4	825	.748	.063	.044	.748	.146	.000	.395	-.266	-.255	.395	-.155	-1.120	0.089	0.1	1.0	2.5	1.2	A+	A-
120	608189	4	4	825	.552	.552	.085	.218	.144	.001	.483	.483	-.302	-.131	-.279	-0.033	0.079	-1.4	1.0	-1.2	0.9	A+	A-
121	613177	4	N/A	825	.533	.131	.533	.147	.184	.005	.362	-.137	.362	-.216	-.126	0.048	0.078	4.2	1.1	3.6	1.2	A+	A+
122	613176	4	N/A	825	.358	.136	.358	.410	.091	.006	.282	-.126	.282	-.091	-.127	0.974	0.081	5.4	1.2	5.2	1.4	A+	A+
123	613189	4	4	842	.799	.799	.128	.021	.049	.002	.431	.431	-.296	-.128	-.206	-1.649	0.096	-0.4	1.0	-1.2	0.9	A-	A-
124	613190	4	4	842	.534	.330	.018	.112	.534	.006	.391	-.176	-.124	-.240	.391	-0.084	0.078	3.2	1.1	3.3	1.2	A+	A+
125	613188	4	4	842	.169	.448	.169	.352	.027	.005	.203	-.091	.203	.031	-.183	2.177	0.103	1.3	1.1	3.5	1.5	A+	A+
126	613208	4	4	823	.626	.158	.626	.088	.120	.009	.438	-.197	.438	-.122	-.224	-0.508	0.080	0.3	1.0	0.3	1.0	A+	
127	613209	4	N/A	823	.623	.239	.060	.623	.069	.009	.472	-.184	-.199	.472	-.278	-0.495	0.080	-0.9	1.0	-1.5	0.9	A+	
128	613174	4	N/A	834	.614	.162	.614	.124	.092	.008	.455	-.203	.455	-.204	-.201	-0.403	0.081	1.2	1.0	0.8	1.0	A+	A-
129	613402	4	N/A	6629	.622	.091	.172	.622	.109	.006	.397	-.185	-.169	.397	-.184	-0.513	0.029	5.9	1.1	4.8	1.1	A-	A-
130	613403	4	N/A	6629	.626	.174	.626	.108	.086	.006	.470	-.212	.470	-.285	-.143	-0.534	0.029	-2.4	1.0	-2.8	1.0	A+	A-
131	619041	4	N/A	842	.663	.663	.131	.109	.083	.014	.579	.579	-.304	-.281	-.193	-0.803	0.083	-4.2	0.9	-4.5	0.7	A-	A-
132	619042	4	N/A	842	.556	.099	.556	.081	.251	.014	.362	-.237	.362	-.216	-.050	-0.219	0.079	4.6	1.2	4.0	1.2	A+	A+
133	613395	4	N/A	834	.826	.043	.085	.826	.043	.002	.567	-.275	-.382	.567	-.207	-1.803	0.102	-3.7	0.8	-4.0	0.6	A+	B-
134	613372	4	N/A	825	.741	.056	.078	.741	.116	.010	.540	-.284	-.237	.540	-.290	-1.134	0.089	-3.1	0.9	-3.2	0.8	A-	B-
135	613391	4	4	829	.876	.876	.036	.033	.056	.000	.491	.491	-.251	-.312	-.261	-2.260	0.113	-2.1	0.9	-3.1	0.6	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
136	613392	4	4	829	.742	.103	.742	.064	.091	.001	.450	-.287	.450	-.210	-.200	-1.186	0.088	-1.4	0.9	-1.3	0.9	A-	A-
137	613381	4	4	842	.462	.217	.462	.182	.133	.006	.398	-.206	.398	-.096	-.175	0.301	0.078	2.7	1.1	2.3	1.1	A-	A+
138	619044	4	4	842	.840	.057	.045	.840	.046	.012	.437	-.171	-.259	.437	-.184	-2.040	0.106	-1.0	0.9	-0.5	0.9	A+	A+
139	619043	4	4	842	.808	.057	.055	.808	.069	.012	.523	-.252	-.250	.523	-.246	-1.796	0.099	-2.4	0.9	-2.8	0.7	A+	A-
140	619045	4	4	842	.840	.840	.055	.049	.044	.013	.561	.561	-.276	-.261	-.279	-2.095	0.108	-3.1	0.8	-4.4	0.5	A+	B-
141	619046	4	4	842	.599	.170	.599	.057	.160	.014	.520	-.204	.520	-.231	-.257	-0.447	0.080	-2.2	0.9	-1.9	0.9	B+	B-
142	613367	4	4	823	.842	.026	.024	.842	.103	.005	.402	-.206	-.183	.402	-.215	-1.919	0.104	-0.4	1.0	-1.1	0.9	A+	
143	613368	4	4	823	.478	.478	.114	.081	.322	.005	.328	.328	-.086	-.157	-.156	0.254	0.078	4.8	1.2	5.6	1.3	A+	
144	613397	4	4	834	.592	.082	.179	.592	.145	.002	.450	-.170	-.232	.450	-.214	-0.277	0.080	1.3	1.1	0.9	1.1	A-	A-
145	613398	4	4	834	.881	.014	.881	.041	.061	.002	.482	-.154	.482	-.295	-.287	-2.358	0.118	-2.1	0.8	-2.3	0.7	A+	A-
146	613396	4	4	834	.706	.706	.116	.096	.078	.004	.452	.452	-.182	-.189	-.289	-0.933	0.086	0.3	1.0	0.7	1.1	A+	A-
147	613373	4	4	825	.506	.126	.219	.138	.506	.011	.414	-.162	-.206	-.156	.414	0.183	0.078	1.8	1.1	3.0	1.1	A-	A-
148	613399	4	4	6629	.577	.082	.145	.577	.190	.006	.425	-.196	-.270	.425	-.114	-0.272	0.028	3.6	1.0	2.6	1.1	B-	A-
149	613288	4	4	6629	.773	.140	.035	.047	.773	.006	.448	-.237	-.224	-.218	.448	-1.437	0.033	-2.2	1.0	-2.8	0.9	A-	A-
150	613291	4	4	6629	.506	.167	.506	.150	.170	.006	.301	-.129	.301	-.198	-.034	0.098	0.028	9.9	1.2	9.9	1.3	A+	A+
151	613295	4	4	6629	.836	.836	.044	.067	.048	.007	.484	.484	-.266	-.261	-.186	-1.946	0.037	-5.7	0.9	-6.4	0.8	A-	A-
152	613289	4	4	818	.868	.045	.868	.034	.038	.015	.545	-.277	.545	-.245	-.240	-2.492	0.119	-2.6	0.8	-3.4	0.6	A-	A-
153	613292	4	4	818	.782	.049	.782	.059	.097	.013	.490	-.297	.490	-.283	-.121	-1.680	0.097	-0.9	1.0	-1.8	0.8	A+	A-
154	613215	4	4	818	.654	.654	.159	.106	.067	.013	.509	.509	-.213	-.265	-.186	-0.819	0.085	-1.5	0.9	-1.6	0.9	A+	A-
155	613374	4	4	824	.737	.737	.170	.063	.028	.002	.415	.415	-.246	-.198	-.200	-1.257	0.087	-0.2	1.0	0.2	1.0	A+	B-
156	613217	4	4	825	.944	.013	.024	.944	.018	.000	.376	-.134	-.280	.376	-.209	-3.242	0.164	-1.3	0.8	-3.7	0.3	A-	A-
157	613218	4	4	825	.593	.593	.109	.064	.234	.000	.398	.398	-.161	-.259	-.194	-0.241	0.079	2.5	1.1	1.5	1.1	A+	A+
158	613298	4	4	825	.790	.790	.070	.073	.063	.004	.500	.500	-.291	-.257	-.223	-1.445	0.094	-1.9	0.9	-3.0	0.7	A-	A-
159	613379	4	4	842	.910	.910	.037	.026	.023	.005	.391	.391	-.210	-.206	-.150	-2.886	0.137	-0.4	1.0	-1.3	0.7	A+	A-
160	613287	4	4	842	.336	.340	.062	.336	.254	.008	.321	-.109	-.303	.321	-.004	0.955	0.081	3.8	1.1	4.7	1.3	C-	A+
161	613290	4	4	842	.673	.124	.061	.133	.673	.010	.494	-.174	-.292	-.229	.494	-0.854	0.083	-0.8	1.0	-1.4	0.9	A-	A-
162	613294	4	4	842	.672	.249	.050	.672	.019	.010	.496	-.318	-.243	.496	-.112	-0.833	0.083	-1.1	1.0	-1.9	0.9	A-	B-
163	613363	4	4	823	.700	.040	.700	.063	.192	.005	.341	-.123	.341	-.192	-.160	-0.910	0.084	2.7	1.1	1.8	1.1	A-	
164	613364	4	4	823	.683	.683	.103	.058	.150	.006	.379	.379	-.189	-.194	-.160	-0.830	0.083	1.7	1.1	1.6	1.1	A-	
165	613296	4	4	1657	.778	.022	.778	.152	.042	.006	.472	-.209	.472	-.287	-.195	-1.417	0.066	-1.9	0.9	-1.8	0.9	A-	A+
166	613205	4	4	823	.930	.016	.930	.034	.012	.009	.385	-.163	.385	-.155	-.159	-3.040	0.150	-0.6	0.9	-1.5	0.7	A+	
167	613204	4	4	823	.687	.165	.097	.043	.687	.009	.477	-.258	-.186	-.188	.477	-0.845	0.083	-1.4	1.0	-1.7	0.9	A+	
168	613169	4	4	834	.287	.287	.374	.195	.140	.004	.225	.225	.081	-.227	-.104	1.395	0.086	6.3	1.3	5.8	1.6	A-	B+
169	613168	4	4	834	.459	.218	.459	.218	.100	.005	.461	-.158	.461	-.187	-.238	0.426	0.079	0.2	1.0	1.5	1.1	A+	A-
170	613293	4	4	834	.651	.097	.120	.130	.651	.002	.476	-.208	-.192	-.275	.476	-0.656	0.081	-1.9	0.9	-2.4	0.9	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
171	613297	4	4	834	.531	.079	.029	.531	.357	.004	.371	-.155	-.201	.371	-.202	-0.022	0.078	2.3	1.1	3.3	1.2	A-	A-
172	613212	4	4	834	.362	.315	.175	.143	.362	.005	.240	-.078	-.143	-.032	.240	0.835	0.080	5.8	1.2	4.3	1.3	A-	A+
173	613369	4	4	825	.778	.778	.138	.039	.038	.007	.493	.493	-.260	-.326	-.210	-1.385	0.093	-2.0	0.9	-2.2	0.8	A-	A-
174	613006	5	5	7652	.245	.245	.185	.203	.360	.009	.232	.232	-.042	-.089	-.043	1.886	0.029	7.7	1.1	9.4	1.3	A+	A-
175	611374	5	5	7652	.698	.110	.071	.698	.111	.011	.490	-.261	-.237	.490	-.163	-0.546	0.028	-6.2	0.9	-6.2	0.9	A-	A-
176	611375	5	5	7652	.575	.235	.575	.097	.082	.011	.320	-.108	.320	-.125	-.163	0.124	0.026	9.9	1.1	8.4	1.1	A-	A-
177	611244	5	5	954	.703	.091	.101	.080	.703	.025	.463	-.204	-.173	-.206	.463	-0.707	0.081	-1.6	0.9	-1.6	0.9	A+	A-
178	611270	5	5	960	.852	.047	.042	.852	.055	.004	.450	-.193	-.268	.450	-.204	-1.767	0.103	-0.6	1.0	-1.7	0.8	A-	B+
179	611271	5	N/A	960	.649	.188	.013	.146	.649	.005	.519	-.245	-.204	-.307	.519	-0.324	0.076	-2.9	0.9	-3.5	0.8	A+	A-
180	611432	5	5	973	.700	.700	.060	.104	.116	.021	.470	.470	-.116	-.282	-.182	-0.673	0.079	-2.1	0.9	-1.8	0.9	A+	A-
181	611438	5	5	973	.519	.249	.124	.519	.086	.022	.432	-.108	-.150	.432	-.271	0.311	0.072	-0.8	1.0	-1.4	0.9	A+	A+
182	614009	5	5	948	.876	.039	.033	.051	.876	.002	.414	-.192	-.237	-.233	.414	-1.894	0.109	-1.4	0.9	-2.4	0.7	A+	A-
183	614010	5	N/A	948	.856	.856	.032	.075	.036	.002	.433	.433	-.204	-.295	-.174	-1.709	0.104	-1.2	0.9	-1.9	0.8	A+	A-
184	611242	5	5	954	.390	.390	.433	.054	.117	.006	.119	.119	.077	-.219	-.073	1.039	0.072	7.0	1.2	7.0	1.3	A+	A-
185	611222	5	5	960	.397	.400	.137	.059	.397	.007	.479	-.306	-.111	-.084	.479	1.057	0.073	-2.8	0.9	-2.8	0.9	A+	A-
186	611223	5	5	960	.743	.743	.065	.040	.147	.006	.440	.440	-.216	-.210	-.204	-0.801	0.082	-0.3	1.0	-1.4	0.9	A-	A-
187	611224	5	5	960	.400	.102	.400	.227	.264	.007	.396	-.215	.396	-.127	-.114	1.034	0.073	1.1	1.0	2.1	1.1	A+	A+
188	611275	5	5	1910	.798	.097	.042	.798	.054	.008	.493	-.204	-.287	.493	-.237	-1.120	0.063	-3.3	0.9	-4.2	0.8	A+	A+
189	614003	5	5	960	.745	.745	.075	.065	.083	.032	.551	.551	-.142	-.260	-.310	-0.938	0.085	-3.5	0.9	-3.7	0.7	A-	C-
190	614004	5	N/A	960	.799	.064	.799	.051	.053	.033	.499	-.247	.499	-.158	-.233	-1.361	0.093	-1.9	0.9	-2.5	0.8	A+	B+
191	611190	5	5	950	.304	.211	.304	.107	.365	.013	.241	-.067	.241	-.202	.016	1.603	0.076	3.6	1.1	4.5	1.3	A-	A+
192	611173	5	5	950	.418	.418	.070	.259	.238	.016	.341	.341	-.255	-.174	.008	1.001	0.072	2.4	1.1	3.2	1.1	A+	A+
193	611170	5	5	950	.508	.104	.277	.092	.508	.019	.485	-.204	-.210	-.189	.485	0.556	0.071	-3.3	0.9	-2.8	0.9	A+	A-
194	611207	5	5	950	.717	.078	.108	.073	.717	.024	.567	-.270	-.256	-.265	.567	-0.576	0.080	-4.5	0.8	-5.1	0.7	B+	A-
195	611267	5	N/A	953	.892	.892	.028	.048	.030	.001	.394	.394	-.197	-.243	-.215	-1.956	0.111	-1.4	0.9	-1.9	0.8	B+	A+
196	611266	5	5	953	.727	.727	.064	.114	.091	.003	.390	.390	-.230	-.171	-.205	-0.661	0.079	0.0	1.0	-0.5	1.0	A-	A+
197	611212	5	5	953	.879	.051	.039	.879	.022	.008	.484	-.292	-.191	.484	-.215	-1.865	0.108	-2.1	0.9	-3.1	0.7	A+	A+
198	611211	5	5	953	.751	.097	.079	.063	.751	.011	.524	-.253	-.247	-.244	.524	-0.834	0.082	-3.5	0.9	-3.7	0.8	A+	A+
199	611213	5	5	953	.630	.276	.630	.058	.022	.015	.367	-.075	.367	-.357	-.224	-0.155	0.073	1.3	1.0	2.2	1.1	A-	A-
200	611249	5	5	960	.547	.158	.090	.192	.547	.014	.531	-.100	-.233	-.326	.531	0.189	0.073	-4.0	0.9	-3.7	0.9	B+	A+
201	611248	5	5	960	.228	.072	.228	.351	.335	.014	.122	-.096	.122	-.046	.060	1.964	0.084	4.2	1.2	6.2	1.6	A-	A-
202	611278	5	5	960	.677	.121	.120	.067	.677	.016	.501	-.228	-.333	-.071	.501	-0.539	0.079	-1.3	1.0	-0.9	0.9	A-	A-
203	613007	5	5	7652	.764	.099	.061	.764	.069	.008	.439	-.197	-.223	.439	-.192	-0.957	0.030	-2.7	1.0	-3.5	0.9	A+	A-
204	613005	5	5	7652	.282	.135	.448	.282	.126	.008	.149	-.177	.103	.149	-.094	1.657	0.028	9.9	1.2	9.9	1.5	A-	A+
205	611245	5	5	954	.550	.126	.550	.213	.089	.022	.425	-.159	.425	-.193	-.126	0.154	0.073	1.1	1.0	0.4	1.0	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
206	611246	5	5	954	.751	.751	.027	.064	.136	.022	.532	.532	-.205	-.226	-.286	-1.013	0.085	-3.4	0.9	-3.6	0.7	A-	A-
207	611243	5	N/A	954	.629	.247	.082	.629	.037	.005	.313	-.122	-.170	.313	-.204	-0.119	0.073	1.8	1.1	0.7	1.0	A+	C+
208	611237	5	5	960	.803	.078	.074	.803	.039	.006	.471	-.187	-.283	.471	-.192	-1.220	0.089	-1.4	0.9	-2.5	0.8	A-	A+
209	611236	5	5	960	.650	.117	.147	.077	.650	.009	.478	-.203	-.183	-.264	.478	-0.263	0.076	-1.5	1.0	-1.5	0.9	A+	A-
210	611235	5	5	960	.696	.194	.696	.052	.051	.007	.478	-.262	.478	-.211	-.188	-0.518	0.078	-0.7	1.0	-2.0	0.9	A+	A+
211	611168	5	5	950	.793	.057	.793	.084	.052	.015	.508	-.188	.508	-.324	-.191	-1.037	0.088	-2.4	0.9	-3.4	0.7	A+	A+
212	611153	5	N/A	950	.503	.218	.076	.503	.186	.017	.508	-.212	-.197	.508	-.215	0.577	0.071	-4.1	0.9	-3.6	0.9	A+	B-
213	611208	5	5	950	.594	.594	.132	.096	.157	.022	.463	.463	-.213	-.268	-.117	0.114	0.073	-1.5	1.0	-1.4	0.9	A+	B-
214	611209	5	5	950	.662	.238	.662	.041	.037	.022	.493	-.264	.493	-.238	-.212	-0.249	0.076	-2.5	0.9	-2.3	0.9	A+	A+
215	611215	5	N/A	953	.718	.104	.101	.718	.069	.008	.425	-.195	-.226	.425	-.154	-0.616	0.078	-0.9	1.0	-0.3	1.0	A+	A-
216	611214	5	5	953	.897	.897	.028	.036	.028	.011	.530	.530	-.236	-.290	-.254	-2.107	0.117	-2.6	0.8	-5.0	0.4	B+	A-
217	611219	5	5	953	.537	.089	.269	.088	.537	.017	.454	-.223	-.201	-.159	.454	0.306	0.071	-2.2	0.9	-2.1	0.9	A+	A-
218	611220	5	5	953	.489	.214	.489	.136	.143	.018	.318	-.158	.318	-.074	-.115	0.537	0.071	3.5	1.1	3.9	1.2	A+	A+
219	611221	5	5	953	.664	.087	.142	.664	.086	.021	.495	-.238	-.236	.495	-.201	-0.365	0.076	-3.0	0.9	-3.2	0.8	A+	A-
220	611251	5	5	960	.835	.835	.044	.053	.056	.012	.517	.517	-.233	-.256	-.244	-1.696	0.101	-1.3	0.9	-2.5	0.7	A+	A-
221	611250	5	N/A	960	.749	.075	.103	.749	.059	.014	.495	-.257	-.227	.495	-.192	-0.999	0.085	-0.8	1.0	-1.3	0.9	A+	A-
222	611376	5	N/A	7652	.825	.101	.026	.039	.825	.009	.530	-.297	-.214	-.254	.530	-1.427	0.033	-7.6	0.9	-9.9	0.7	A+	B-
223	611272	5	N/A	960	.914	.914	.046	.025	.013	.003	.424	.424	-.279	-.176	-.189	-2.562	0.134	-0.7	0.9	-2.1	0.6	B+	A+
224	611439	5	N/A	973	.694	.694	.069	.082	.137	.019	.511	.511	-.256	-.259	-.164	-0.606	0.078	-3.1	0.9	-2.7	0.8	A+	A+
225	611440	5	5	973	.632	.063	.160	.123	.632	.022	.512	-.200	-.230	-.214	.512	-0.286	0.075	-3.2	0.9	-3.1	0.8	C+	A+
226	614011	5	N/A	948	.732	.114	.732	.043	.107	.004	.450	-.268	.450	-.260	-.169	-0.722	0.082	-1.6	0.9	-1.6	0.9	A-	A-
227	614012	5	5	948	.812	.032	.037	.812	.115	.004	.427	-.201	-.255	.427	-.229	-1.313	0.093	-0.8	1.0	-1.7	0.8	A-	A-
228	611276	5	N/A	1910	.742	.742	.044	.057	.149	.008	.418	.418	-.227	-.246	-.148	-0.731	0.058	-0.6	1.0	0.3	1.0	A+	A-
229	614005	5	N/A	960	.443	.133	.293	.100	.443	.031	.509	-.257	-.133	-.173	.509	0.764	0.073	-2.9	0.9	-2.3	0.9	A+	B-
230	611377	5	5	7652	.585	.117	.585	.159	.131	.009	.401	-.156	.401	-.159	-.181	0.078	0.026	1.3	1.0	1.4	1.0	A+	A+
231	611390	5	5	7652	.408	.238	.167	.176	.408	.010	.360	-.109	-.104	-.162	.360	0.962	0.026	4.2	1.0	6.5	1.1	A-	A-
232	611274	5	5	960	.941	.941	.024	.018	.014	.004	.468	.468	-.243	-.254	-.182	-3.201	0.171	-0.9	0.9	-2.6	0.5	B+	A-
233	611273	5	N/A	960	.289	.230	.229	.289	.245	.007	.300	-.066	-.077	.300	-.120	1.575	0.078	1.2	1.0	4.2	1.3	A-	A-
234	611277	5	5	1910	.585	.031	.175	.585	.198	.010	.403	-.194	-.153	.403	-.194	0.142	0.051	1.8	1.0	1.0	1.0	A+	A-
235	614006	5	5	960	.652	.652	.087	.143	.093	.026	.448	.448	-.189	-.171	-.175	-0.329	0.077	0.6	1.0	0.3	1.0	A+	A-
236	614007	5	5	960	.651	.651	.100	.076	.144	.029	.449	.449	-.176	-.231	-.132	-0.332	0.077	0.6	1.0	0.0	1.0	A+	A-
237	611268	5	N/A	953	.689	.689	.102	.120	.085	.004	.336	.336	-.131	-.180	-.155	-0.438	0.076	1.7	1.1	1.4	1.1	B+	A+
238	611309	5	5	960	.760	.760	.085	.097	.043	.015	.519	.519	-.271	-.252	-.185	-1.070	0.087	-1.8	0.9	-2.1	0.8	A+	A-
239	611291	5	N/A	960	.806	.806	.050	.057	.068	.019	.608	.608	-.232	-.293	-.351	-1.506	0.097	-3.9	0.8	-4.3	0.6	A+	A-
240	611554	5	5	7652	.472	.366	.472	.068	.089	.006	.359	-.121	.359	-.234	-.139	0.645	0.025	5.0	1.1	6.6	1.1	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
241	611354	5	5	7652	.583	.067	.583	.052	.290	.008	.400	-.200	.400	-.232	-.150	0.095	0.026	1.6	1.0	0.1	1.0	A-	A-
242	611550	5	5	954	.763	.763	.049	.090	.083	.015	.528	.528	-.288	-.246	-.180	-1.067	0.086	-2.2	0.9	-2.7	0.8	B-	A-
243	611269	5	5	960	.857	.025	.857	.091	.025	.002	.447	-.280	.447	-.237	-.219	-1.822	0.105	-0.6	1.0	-2.1	0.8	B+	A-
244	611429	5	5	973	.699	.699	.070	.079	.135	.018	.493	.493	-.209	-.290	-.153	-0.651	0.078	-2.1	0.9	-1.7	0.9	A-	A-
245	614008	5	5	948	.769	.769	.197	.018	.015	.001	.491	.491	-.417	-.117	-.170	-0.968	0.086	-2.2	0.9	-2.3	0.8	A-	B-
246	611544	5	5	954	.541	.118	.203	.122	.541	.016	.527	-.174	-.235	-.210	.527	0.229	0.073	-3.9	0.9	-3.6	0.9	A+	A+
247	611241	5	5	954	.884	.039	.043	.031	.884	.003	.405	-.197	-.229	-.171	.405	-1.864	0.108	-0.9	0.9	-2.7	0.7	A+	A+
248	611555	5	5	960	.691	.064	.691	.120	.121	.005	.410	-.214	.410	-.093	-.270	-0.560	0.079	1.0	1.0	0.8	1.1	A-	A+
249	611549	5	5	960	.880	.880	.046	.038	.029	.007	.453	.453	-.221	-.240	-.172	-1.948	0.108	-1.4	0.9	-3.0	0.6	A-	A-
250	611551	5	5	1903	.720	.145	.113	.019	.720	.004	.325	-.270	-.027	-.206	.325	-0.557	0.055	2.0	1.1	3.3	1.2	B-	B+
251	611546	5	5	950	.844	.041	.061	.048	.844	.005	.417	-.208	-.224	-.203	.417	-1.401	0.097	-1.2	0.9	-1.5	0.8	A+	B+
252	611547	5	5	950	.798	.798	.043	.052	.102	.005	.370	.370	-.227	-.129	-.215	-1.019	0.087	0.1	1.0	-0.6	1.0	A-	A-
253	611181	5	5	950	.850	.850	.095	.027	.016	.013	.467	.467	-.281	-.228	-.150	-1.500	0.100	-1.6	0.9	-2.3	0.8	A+	A-
254	611548	5	5	953	.570	.124	.570	.288	.015	.004	.339	-.191	.339	-.181	-.069	0.183	0.071	2.1	1.1	2.0	1.1	A+	B-
255	611552	5	5	953	.607	.104	.172	.110	.607	.007	.333	-.145	-.199	-.083	.333	-0.011	0.072	2.5	1.1	1.6	1.1	A+	A-
256	611210	5	5	953	.639	.639	.176	.134	.042	.008	.382	.382	-.149	-.228	-.121	-0.182	0.073	0.8	1.0	1.0	1.0	A-	A+
257	611247	5	5	960	.868	.024	.047	.050	.868	.012	.540	-.229	-.290	-.258	.540	-2.055	0.113	-1.7	0.9	-3.6	0.6	B+	A-
258	611545	5	5	954	.484	.484	.212	.193	.102	.009	.419	.419	-.150	-.213	-.125	0.581	0.071	-2.5	0.9	-2.4	0.9	A-	B-
259	611553	5	5	954	.782	.072	.782	.049	.090	.006	.446	-.245	.446	-.178	-.202	-1.014	0.085	-1.4	0.9	-1.8	0.9	A-	A+
260	610133	6	6	7268	.646	.224	.646	.070	.041	.019	.499	-.195	.499	-.245	-.250	-0.194	0.028	-4.3	1.0	-4.4	0.9	A+	A-
261	610355	6	6	7268	.569	.090	.078	.569	.243	.020	.413	-.215	-.237	.413	-.075	0.220	0.027	6.0	1.1	5.3	1.1	A+	A-
262	610134	6	6	7268	.696	.159	.072	.696	.052	.021	.515	-.176	-.256	.515	-.257	-0.504	0.029	-5.2	0.9	-5.0	0.9	A+	A-
263	612248	6	6	7268	.735	.067	.094	.735	.076	.027	.535	-.176	-.233	.535	-.259	-0.796	0.031	-6.7	0.9	-6.3	0.8	A+	A-
264	610305	6	6	721	.614	.614	.173	.112	.072	.028	.621	.621	-.297	-.269	-.219	-0.057	0.088	-5.6	0.8	-5.0	0.7	A-	A-
265	610142	6	6	721	.490	.137	.490	.147	.191	.035	.346	-.269	.346	-.173	.086	0.595	0.085	4.8	1.2	4.4	1.2	A+	A+
266	610143	6	6	721	.731	.126	.731	.056	.051	.036	.603	-.274	.603	-.258	-.289	-0.812	0.098	-4.1	0.8	-4.2	0.7	A-	B-
267	610309	6	6	730	.893	.893	.019	.055	.030	.003	.413	.413	-.166	-.256	-.195	-2.027	0.131	-0.7	0.9	-1.6	0.7	A+	A-
268	612265	6	6	725	.430	.334	.101	.131	.430	.004	.231	-.003	-.184	-.142	.231	0.880	0.085	6.7	1.3	6.5	1.4	A+	A+
269	610330	6	6	725	.461	.283	.461	.083	.131	.043	.358	-.051	.358	-.232	-.080	0.642	0.086	4.3	1.2	4.4	1.3	A-	A+
270	612294	6	6	731	.594	.130	.108	.167	.594	.001	.381	-.230	-.122	-.174	.381	0.145	0.084	0.9	1.0	0.5	1.0	A-	A-
271	612237	6	6	731	.781	.019	.781	.044	.155	.001	.395	-.101	.395	-.243	-.257	-0.970	0.099	-0.3	1.0	-1.1	0.9	A-	A+
272	612232	6	6	731	.762	.082	.097	.762	.051	.008	.502	-.231	-.212	.502	-.292	-0.877	0.098	-2.2	0.9	-1.8	0.8	A+	B-
273	612255	6	6	731	.289	.348	.201	.289	.089	.074	.208	.171	-.168	.208	-.103	1.612	0.091	4.4	1.2	5.7	1.5	A+	A+
274	610318	6	6	730	.799	.115	.799	.032	.049	.006	.449	-.264	.449	-.157	-.194	-1.109	0.104	-0.2	1.0	-1.6	0.8	A+	B-
275	610335	6	6	730	.449	.096	.060	.449	.352	.043	.296	-.281	-.267	.296	.161	0.891	0.087	7.1	1.3	6.7	1.4	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
276	609238	6	6	725	.506	.036	.506	.419	.035	.004	.472	-.140	.472	-.330	-.186	0.443	0.083	-2.7	0.9	-2.2	0.9	A+	A-
277	609239	6	6	725	.738	.738	.050	.150	.058	.004	.285	.285	-.226	-.035	-.193	-0.815	0.093	2.0	1.1	3.5	1.3	A+	B-
278	612221	6	6	725	.596	.168	.596	.073	.156	.007	.431	-.244	.431	-.214	-.120	-0.018	0.085	-0.5	1.0	-0.5	1.0	A+	B-
279	612293	6	6	725	.414	.047	.124	.403	.414	.012	.296	-.185	-.133	-.058	.296	0.909	0.085	3.9	1.1	3.9	1.2	A+	A-
280	612262	6	6	725	.259	.259	.030	.550	.152	.008	.186	.186	-.139	-.023	-.047	1.783	0.093	4.3	1.2	6.3	1.6	A-	A-
281	612225	6	6	725	.559	.188	.072	.559	.095	.087	.557	-.206	-.247	.557	-.208	-0.088	0.089	-3.8	0.9	-3.9	0.8	A+	A+
282	609091	6	6	730	.547	.241	.088	.547	.114	.011	.409	-.094	-.195	.409	-.232	0.380	0.084	1.9	1.1	1.4	1.1	A+	A-
283	609092	6	6	730	.451	.177	.127	.234	.451	.011	.263	-.011	-.113	-.130	.263	0.871	0.084	6.5	1.2	5.5	1.3	A+	B-
284	612211	6	6	730	.704	.112	.071	.085	.704	.027	.650	-.283	-.306	-.272	.650	-0.580	0.094	-5.7	0.8	-5.6	0.6	B-	A-
285	612306	6	6	730	.426	.426	.121	.125	.292	.037	.325	.325	-.309	-.215	.156	0.935	0.085	5.1	1.2	4.4	1.3	A+	A-
286	609196	6	6	730	.725	.725	.063	.101	.053	.058	.632	.632	-.296	-.292	-.229	-0.874	0.101	-4.6	0.8	-4.6	0.6	A+	A-
287	609197	6	6	730	.455	.307	.084	.092	.455	.063	.388	.031	-.317	-.188	.388	0.713	0.086	3.1	1.1	3.0	1.2	A+	A+
288	609275	6	N/A	730	.682	.127	.682	.063	.058	.070	.531	-.155	.531	-.261	-.297	-0.650	0.097	-2.0	0.9	-2.0	0.8	A+	A+
289	612257	6	6	721	.792	.185	.792	.011	.008	.004	.450	-.355	.450	-.193	-.091	-1.074	0.102	-0.7	1.0	-1.1	0.9	A+	A-
290	610117	6	6	721	.775	.040	.025	.155	.775	.004	.418	-.234	-.188	-.228	.418	-0.960	0.099	-0.1	1.0	0.0	1.0	A+	A-
291	610074	6	6	721	.376	.067	.376	.257	.295	.006	.291	-.148	.291	-.168	-.027	1.252	0.086	4.4	1.2	4.9	1.3	A+	B-
292	608010	6	6	721	.559	.104	.089	.241	.559	.007	.420	-.263	-.253	-.081	.420	0.302	0.085	1.5	1.1	1.6	1.1	A+	A+
293	610062	6	6	721	.354	.291	.221	.354	.083	.051	.309	-.032	-.059	.309	-.160	1.289	0.088	4.3	1.2	5.3	1.4	A-	A-
294	610060	6	6	721	.501	.501	.164	.119	.158	.058	.509	.509	-.210	-.190	-.149	0.464	0.087	-1.4	1.0	-1.4	0.9	B-	A+
295	610061	6	6	721	.363	.221	.198	.148	.363	.069	.454	-.022	-.176	-.219	.454	1.195	0.088	-0.5	1.0	0.7	1.0	A+	A-
296	610127	6	6	731	.289	.294	.220	.289	.192	.006	.226	.022	-.084	.226	-.159	1.755	0.090	3.7	1.2	6.1	1.6	A-	A-
297	610128	6	6	731	.358	.424	.079	.358	.133	.006	.337	-.060	-.192	.337	-.185	1.367	0.086	2.0	1.1	3.3	1.2	A+	B+
298	610129	6	N/A	731	.296	.042	.296	.116	.539	.007	.191	-.194	.191	-.112	.003	1.717	0.089	5.0	1.2	6.2	1.6	A+	B+
299	609234	6	6	731	.705	.160	.074	.049	.705	.012	.422	-.208	-.165	-.159	.422	-0.503	0.092	0.2	1.0	0.0	1.0	A-	B-
300	609235	6	6	731	.547	.070	.547	.285	.083	.015	.384	-.198	.384	-.105	-.187	0.376	0.084	2.4	1.1	1.5	1.1	A-	A+
301	608003	6	6	731	.501	.140	.093	.224	.501	.042	.466	-.097	-.254	-.104	.466	0.543	0.085	0.7	1.0	1.2	1.1	A+	A-
302	608007	6	6	731	.743	.058	.743	.067	.083	.049	.656	-.223	.656	-.273	-.293	-0.939	0.101	-5.2	0.7	-5.6	0.5	A+	A-
303	610068	6	6	731	.565	.565	.163	.137	.071	.064	.486	.486	-.107	-.160	-.212	0.118	0.088	0.2	1.0	-0.2	1.0	A-	A-
304	610067	6	6	731	.592	.218	.051	.071	.592	.068	.529	-.131	-.212	-.251	.529	-0.052	0.089	-1.2	1.0	-1.7	0.9	A+	A-
305	609089	6	N/A	731	.505	.145	.103	.505	.159	.089	.449	-.062	-.249	.449	-.072	0.389	0.087	1.4	1.1	1.0	1.1	A+	A+
306	610137	6	6	729	.600	.086	.600	.252	.059	.003	.363	-.183	.363	-.166	-.195	0.141	0.085	2.6	1.1	2.3	1.1	A+	A+
307	610138	6	6	729	.325	.191	.082	.325	.392	.010	.132	-.056	-.163	.132	.035	1.550	0.087	7.3	1.3	8.0	1.7	B-	A+
308	610159	6	6	1453	.792	.070	.045	.089	.792	.003	.363	-.201	-.220	-.134	.363	-1.023	0.073	1.3	1.1	1.1	1.1	A-	B-
309	610160	6	6	1453	.646	.044	.285	.646	.019	.007	.373	-.233	-.216	.373	-.130	-0.104	0.062	3.4	1.1	2.0	1.1	A-	A+
310	610161	6	6	1453	.776	.081	.776	.041	.096	.006	.511	-.255	.511	-.225	-.266	-0.931	0.071	-2.6	0.9	-3.6	0.8	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
311	612299	6	6	729	.593	.080	.145	.593	.156	.026	.477	-.313	-.192	.477	-.105	0.107	0.086	0.1	1.0	0.6	1.0	A+	A+
312	612300	6	N/A	729	.689	.093	.084	.102	.689	.033	.561	-.156	-.272	-.301	.561	-0.486	0.093	-3.1	0.9	-1.1	0.9	A+	B-
313	609048	6	6	729	.531	.097	.240	.092	.531	.040	.471	-.199	-.097	-.286	.471	0.394	0.085	0.3	1.0	0.8	1.0	A+	A+
314	609043	6	6	729	.565	.086	.244	.059	.565	.045	.434	-.213	-.072	-.277	.434	0.198	0.087	1.9	1.1	2.2	1.1	A-	A+
315	608008	6	6	729	.744	.744	.062	.108	.030	.056	.542	.542	-.313	-.221	-.198	-0.993	0.103	-2.0	0.9	-2.4	0.8	A-	B-
316	612269	6	N/A	722	.137	.216	.137	.068	.572	.007	-.072	-.205	-.072	-.205	.371	2.980	0.119	2.5	1.2	5.8	2.2	A+	A-
317	612270	6	6	722	.691	.071	.091	.691	.140	.007	.371	-.207	-.284	.371	-.040	-0.339	0.091	1.5	1.1	0.8	1.1	A+	A-
318	609189	6	6	722	.445	.287	.445	.114	.107	.049	.385	.018	.385	-.265	-.144	0.871	0.085	1.5	1.1	1.6	1.1	A-	A+
319	609186	6	6	722	.338	.324	.141	.145	.338	.051	.420	.067	-.284	-.157	.420	1.401	0.087	-0.5	1.0	0.5	1.0	A-	A-
320	609188	6	6	722	.772	.054	.039	.083	.772	.053	.608	-.305	-.224	-.246	.608	-1.165	0.110	-2.8	0.8	-4.1	0.6	A-	A+
321	612235	6	6	722	.770	.043	.089	.770	.035	.064	.593	-.227	-.296	.593	-.212	-1.204	0.112	-2.7	0.8	-4.1	0.6	A+	A+
322	612154	6	6	724	.684	.684	.116	.036	.155	.010	.435	.435	-.251	-.251	-.121	-0.317	0.092	0.1	1.0	1.0	1.1	A+	A-
323	612155	6	6	724	.920	.025	.920	.026	.021	.008	.458	-.211	.458	-.200	-.197	-2.492	0.165	-1.3	0.8	-2.1	0.5	B+	B-
324	612156	6	N/A	724	.547	.044	.029	.370	.547	.010	.358	-.195	-.217	-.147	.358	0.452	0.085	3.2	1.1	2.9	1.2	A+	A-
325	610079	6	6	724	.413	.090	.207	.233	.413	.057	.415	-.216	-.170	-.026	.415	1.044	0.087	1.0	1.0	1.6	1.1	A+	A+
326	610081	6	6	724	.634	.634	.095	.082	.124	.065	.513	.513	-.275	-.225	-.128	-0.229	0.093	-2.1	0.9	-2.6	0.8	A+	A+
327	609083	6	N/A	724	.225	.240	.101	.225	.358	.076	.077	.058	-.153	.077	.108	2.214	0.102	5.3	1.3	9.3	2.3	A+	B+
328	610071	6	6	730	.490	.490	.169	.110	.181	.051	.488	.488	-.179	-.192	-.100	0.633	0.087	-0.4	1.0	-0.5	1.0	A-	A+
329	610070	6	6	730	.573	.573	.127	.077	.169	.055	.513	.513	-.208	-.208	-.141	0.151	0.089	-0.9	1.0	-1.5	0.9	A-	A-
330	609023	6	6	1453	.773	.027	.169	.028	.773	.003	.324	-.183	-.165	-.218	.324	-0.897	0.070	2.2	1.1	0.2	1.0	B+	A-
331	609024	6	N/A	1453	.641	.025	.172	.160	.641	.003	.367	-.135	-.185	-.205	.367	-0.078	0.061	2.5	1.1	2.1	1.1	A+	A+
332	610135	6	6	7268	.862	.862	.042	.034	.046	.016	.559	.559	-.276	-.255	-.237	-1.808	0.039	-8.6	0.8	-9.9	0.5	A+	A-
333	610136	6	6	7268	.648	.081	.100	.150	.648	.022	.589	-.234	-.265	-.250	.589	-0.221	0.028	-9.9	0.8	-9.9	0.7	A+	A-
334	610144	6	6	721	.689	.069	.178	.689	.037	.026	.456	-.150	-.234	.456	-.201	-0.494	0.093	0.4	1.0	0.4	1.0	A+	A+
335	610145	6	6	721	.574	.194	.574	.094	.103	.035	.557	-.142	.557	-.248	-.299	0.149	0.087	-2.8	0.9	-2.9	0.8	A+	A-
336	612251	6	6	725	.585	.105	.095	.149	.585	.066	.579	-.232	-.249	-.185	.579	-0.118	0.090	-3.8	0.9	-4.0	0.8	B+	A-
337	612252	6	6	725	.577	.577	.090	.088	.174	.072	.506	.506	-.281	-.168	-.122	-0.091	0.090	-0.5	1.0	-1.0	0.9	A+	A+
338	612253	6	6	725	.272	.059	.272	.508	.088	.073	.320	-.168	.320	.081	-.246	1.663	0.095	2.3	1.1	4.8	1.5	A+	A-
339	610320	6	6	730	.704	.126	.085	.704	.081	.004	.405	-.136	-.239	.405	-.198	-0.449	0.093	1.4	1.1	1.3	1.1	A+	A-
340	610319	6	N/A	730	.492	.099	.314	.090	.492	.006	.366	-.206	-.187	-.047	.366	0.749	0.085	2.9	1.1	2.6	1.1	A+	A-
341	612222	6	6	725	.749	.749	.044	.149	.052	.006	.473	.473	-.242	-.219	-.252	-0.893	0.095	-1.5	0.9	-1.7	0.9	A-	A+
342	612223	6	6	725	.546	.178	.117	.150	.546	.008	.369	-.163	-.210	-.091	.369	0.233	0.084	2.0	1.1	2.0	1.1	A-	A-
343	612226	6	6	725	.592	.106	.148	.079	.592	.076	.556	-.239	-.202	-.212	.556	-0.239	0.090	-3.0	0.9	-3.0	0.8	A+	A+
344	612227	6	6	725	.469	.123	.469	.236	.092	.080	.462	-.183	.462	-.066	-.243	0.435	0.087	0.0	1.0	-0.1	1.0	A-	A-
345	609162	6	6	730	.597	.208	.597	.156	.033	.006	.291	-.030	.291	-.241	-.145	0.122	0.085	5.2	1.2	5.0	1.3	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
346	609164	6	N/A	730	.392	.107	.392	.310	.186	.006	.293	-.049	.293	-.156	-.099	1.187	0.084	4.5	1.2	4.0	1.3	A+	A+
347	609198	6	6	730	.749	.049	.749	.119	.029	.053	.615	-.271	.615	-.329	-.203	-1.042	0.104	-4.1	0.8	-4.3	0.6	A+	A+
348	609199	6	6	730	.721	.048	.090	.086	.721	.055	.617	-.180	-.250	-.352	.617	-0.832	0.100	-4.2	0.8	-4.2	0.7	A-	A+
349	609200	6	N/A	730	.606	.190	.069	.606	.081	.055	.465	-.202	-.200	.465	-.105	-0.086	0.089	1.1	1.1	0.0	1.0	A+	B-
350	612258	6	6	721	.578	.087	.287	.578	.043	.004	.297	-.245	-.067	.297	-.173	0.208	0.085	5.4	1.2	4.1	1.2	A-	A+
351	608011	6	6	721	.477	.204	.185	.477	.129	.006	.301	-.123	-.134	.301	-.088	0.724	0.084	5.2	1.2	5.6	1.3	A-	B+
352	610130	6	6	731	.662	.040	.066	.223	.662	.010	.314	-.072	-.258	-.118	.314	-0.238	0.088	4.1	1.2	2.8	1.2	A+	A+
353	610131	6	6	731	.639	.093	.639	.223	.040	.006	.479	-.265	.479	-.272	-.129	-0.098	0.087	-1.6	0.9	-2.3	0.9	A-	A-
354	608014	6	6	731	.814	.049	.066	.814	.033	.038	.595	-.233	-.267	.595	-.201	-1.457	0.114	-2.9	0.8	-3.9	0.6	A-	A+
355	609087	6	6	731	.695	.695	.067	.088	.068	.082	.619	.619	-.207	-.294	-.194	-0.771	0.100	-4.1	0.8	-4.3	0.6	A-	A-
356	609088	6	6	731	.532	.137	.170	.075	.532	.086	.539	-.122	-.161	-.248	.539	0.245	0.088	-2.3	0.9	-2.5	0.9	A+	A+
357	610162	6	6	1453	.822	.019	.044	.822	.109	.006	.494	-.218	-.274	.494	-.274	-1.303	0.078	-2.3	0.9	-3.7	0.7	A+	A+
358	612224	6	6	729	.494	.232	.494	.084	.170	.021	.304	-.044	.304	-.267	-.053	0.645	0.084	5.8	1.2	5.3	1.3	A+	A+
359	609036	6	6	729	.855	.026	.855	.058	.026	.036	.503	-.222	.503	-.296	-.139	-1.880	0.128	-1.8	0.9	-1.4	0.8	B-	A-
360	609035	6	6	729	.694	.070	.110	.694	.086	.040	.456	-.125	-.224	.456	-.185	-0.547	0.094	0.7	1.0	0.9	1.1	A+	A-
361	609031	6	N/A	729	.759	.759	.066	.054	.082	.040	.515	.515	-.256	-.282	-.136	-1.002	0.103	-1.3	0.9	-1.2	0.9	A+	A+
362	608009	6	6	729	.787	.045	.060	.055	.787	.052	.648	-.238	-.333	-.338	.648	-1.332	0.111	-5.1	0.7	-5.3	0.5	A-	B-
363	608012	6	6	729	.479	.141	.479	.134	.192	.054	.546	-.180	.546	-.286	-.132	0.638	0.086	-2.8	0.9	-2.3	0.9	A+	A-
364	607993	6	6	722	.751	.062	.060	.751	.096	.032	.531	-.220	-.242	.531	-.196	-0.887	0.102	-1.1	0.9	-1.4	0.9	A+	A-
365	609184	6	6	722	.518	.518	.238	.100	.100	.044	.394	.394	-.130	-.195	-.045	0.477	0.085	2.4	1.1	3.1	1.2	A-	A-
366	609187	6	6	722	.790	.049	.790	.044	.069	.049	.586	-.203	.586	-.256	-.280	-1.268	0.113	-2.7	0.8	-3.5	0.6	A-	B+
367	612157	6	6	724	.856	.856	.028	.043	.066	.007	.478	.478	-.232	-.218	-.233	-1.635	0.124	-1.2	0.9	-1.4	0.8	A+	A-
368	612158	6	6	724	.620	.233	.065	.072	.620	.010	.448	-.171	-.254	-.202	.448	0.030	0.088	0.5	1.0	0.3	1.0	A+	A-
369	609084	6	6	724	.736	.133	.073	.736	.032	.026	.430	-.201	-.198	.430	-.106	-0.679	0.099	0.5	1.0	0.0	1.0	A-	B-
370	609085	6	6	724	.634	.175	.634	.058	.099	.033	.479	-.173	.479	-.183	-.217	-0.128	0.091	-0.1	1.0	-0.8	1.0	A-	A-
371	609086	6	6	724	.481	.102	.286	.481	.097	.035	.292	-.154	.016	.292	-.160	0.732	0.086	7.0	1.3	6.9	1.4	A+	A+
372	609082	6	N/A	724	.105	.408	.105	.115	.304	.069	-.063	.193	-.063	-.206	.120	3.580	0.147	1.9	1.2	5.4	2.7	A+	A+
373	609081	6	6	724	.377	.377	.159	.158	.228	.079	.312	.312	-.181	-.115	.047	1.182	0.089	4.8	1.2	5.7	1.4	A+	A-
374	610328	6	6	725	.683	.075	.066	.683	.120	.057	.600	-.215	-.269	.600	-.238	-0.679	0.096	-3.2	0.9	-3.5	0.7	A-	A+
375	610329	6	6	725	.719	.719	.052	.079	.090	.061	.492	.492	-.156	-.301	-.097	-0.956	0.101	0.4	1.0	-0.5	1.0	A+	A-
376	610066	6	6	730	.348	.255	.348	.201	.144	.052	.378	-.085	.378	-.128	-.038	1.442	0.090	2.2	1.1	4.3	1.3	A-	B+
377	610078	6	6	730	.537	.177	.136	.093	.537	.058	.508	-.116	-.202	-.216	.508	0.347	0.088	-1.5	1.0	-1.0	0.9	A+	A-
378	609025	6	6	1453	.395	.158	.180	.395	.264	.003	.247	-.228	-.052	.247	-.023	1.175	0.059	5.9	1.1	5.6	1.2	A-	A-
379	609026	6	6	1453	.315	.315	.079	.103	.500	.003	.203	.203	-.238	-.224	.094	1.610	0.062	5.8	1.2	7.8	1.4	A-	A-
380	610310	6	6	730	.529	.529	.047	.406	.016	.003	.431	.431	-.130	-.322	-.130	0.493	0.083	0.2	1.0	0.3	1.0	B-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
381	612264	6	6	725	.641	.641	.028	.046	.284	.001	.346	.346	-.156	-.214	-.197	-0.230	0.088	3.2	1.1	2.8	1.2	A-	A-
382	610331	6	6	725	.731	.731	.066	.069	.092	.041	.563	.563	-.207	-.319	-.181	-0.949	0.099	-2.7	0.9	-2.6	0.8	B-	A-
383	612233	6	N/A	731	.323	.323	.301	.137	.227	.012	.231	.231	-.101	-.146	.039	1.547	0.088	3.0	1.1	4.8	1.4	A-	B-
384	612254	6	N/A	731	.565	.565	.120	.109	.131	.074	.539	.539	-.214	-.250	-.111	0.058	0.088	-2.2	0.9	-1.8	0.9	A+	A+
385	609271	6	6	725	.484	.259	.484	.065	.189	.003	.268	-.147	.268	-.161	-.042	0.558	0.083	5.3	1.2	4.8	1.3	A-	A-
386	609240	6	N/A	725	.247	.175	.117	.457	.247	.004	.222	-.239	-.233	.169	.222	1.866	0.095	2.7	1.1	4.6	1.5	A-	A+
387	612263	6	N/A	725	.501	.313	.501	.092	.083	.011	.396	-.141	.396	-.132	-.228	0.463	0.084	1.6	1.1	3.0	1.2	A-	A-
388	609093	6	6	730	.877	.877	.038	.030	.044	.011	.516	.516	-.246	-.244	-.246	-1.900	0.126	-2.3	0.8	-2.5	0.6	A-	B-
389	612212	6	6	730	.769	.080	.064	.769	.060	.027	.547	-.223	-.229	.547	-.257	-1.020	0.102	-2.1	0.9	-3.2	0.7	B+	A-
390	610076	6	N/A	721	.795	.078	.054	.795	.067	.007	.439	-.199	-.293	.439	-.156	-1.109	0.103	-0.6	1.0	-1.4	0.9	A-	A-
391	610077	6	6	721	.494	.494	.243	.092	.168	.004	.249	.249	-.077	-.225	-.027	0.643	0.084	7.4	1.3	6.2	1.4	A-	A+
392	610063	6	N/A	721	.603	.100	.169	.065	.603	.062	.487	-.194	-.136	-.278	.487	-0.120	0.090	-0.3	1.0	-0.8	1.0	A-	A-
393	609236	6	6	731	.486	.486	.066	.289	.149	.011	.280	.280	-.054	-.076	-.167	0.700	0.083	5.4	1.2	5.8	1.3	A-	A+
394	610069	6	6	731	.720	.056	.101	.063	.720	.060	.555	-.175	-.233	-.196	.555	-0.833	0.100	-2.1	0.9	-1.7	0.8	A+	A+
395	610139	6	N/A	729	.755	.755	.071	.129	.038	.007	.494	.494	-.308	-.253	-.209	-0.799	0.097	-1.6	0.9	-2.1	0.8	A-	A-
396	612271	6	6	722	.801	.801	.111	.043	.040	.006	.465	.465	-.264	-.195	-.221	-1.090	0.105	-1.2	0.9	-1.3	0.9	A+	A-
397	610080	6	6	724	.815	.028	.041	.815	.068	.048	.581	-.173	-.254	.581	-.335	-1.642	0.126	-2.6	0.8	-3.8	0.5	A+	A-
398	612249	6	6	7268	.498	.313	.498	.034	.129	.026	.450	-.216	.450	-.203	-.101	0.580	0.027	0.8	1.0	2.8	1.0	A+	A-
399	612259	6	6	725	.309	.015	.666	.309	.008	.001	.210	-.139	-.132	.210	-.121	1.551	0.090	5.2	1.2	5.1	1.5	A-	A-
400	610333	6	6	725	.559	.559	.121	.075	.201	.044	.487	.487	-.254	-.191	-.103	0.108	0.087	0.5	1.0	0.0	1.0	A+	A-
401	612236	6	6	731	.824	.037	.824	.101	.037	.001	.443	-.208	.443	-.296	-.177	-1.309	0.107	-1.6	0.9	-2.2	0.8	A+	A+
402	610337	6	6	730	.537	.078	.537	.104	.240	.041	.385	-.193	.385	-.223	.011	0.405	0.087	4.2	1.2	4.4	1.3	A+	A-
403	610336	6	6	730	.775	.067	.048	.064	.775	.045	.587	-.221	-.197	-.283	.587	-1.164	0.107	-3.0	0.8	-3.3	0.6	A-	A-
404	609260	6	6	730	.685	.685	.078	.188	.041	.008	.382	.382	-.131	-.189	-.212	-0.373	0.090	1.9	1.1	2.0	1.2	A-	A+
405	609094	6	6	730	.738	.062	.738	.097	.095	.008	.427	-.208	.427	-.155	-.214	-0.709	0.095	0.6	1.0	0.9	1.1	B-	A-
406	612214	6	6	730	.358	.285	.358	.199	.132	.027	.241	.005	.241	-.095	-.080	1.328	0.086	5.6	1.2	8.0	1.6	A-	A+
407	612213	6	6	730	.644	.111	.093	.123	.644	.029	.479	-.285	-.201	-.084	.479	-0.208	0.089	-0.5	1.0	0.4	1.0	A+	A+
408	612215	6	6	730	.752	.070	.752	.069	.077	.033	.561	-.201	.561	-.273	-.236	-0.933	0.100	-2.1	0.9	-3.2	0.7	A+	A-
409	609268	6	6	731	.605	.033	.323	.605	.027	.012	.385	-.109	-.209	.385	-.196	0.073	0.086	1.9	1.1	2.0	1.1	A-	A-
410	609270	6	6	731	.583	.086	.583	.186	.130	.015	.462	-.186	.462	-.135	-.242	0.187	0.085	-0.2	1.0	-0.4	1.0	A-	A-
411	610116	6	6	731	.644	.644	.092	.131	.060	.073	.550	.550	-.209	-.197	-.163	-0.381	0.093	-1.7	0.9	-2.1	0.9	A+	A-
412	610115	6	6	731	.293	.322	.293	.148	.156	.082	.207	.112	.207	-.061	-.063	1.619	0.091	5.8	1.3	7.0	1.6	A-	B-
413	610140	6	6	729	.778	.029	.066	.128	.778	.000	.419	-.217	-.209	-.258	.419	-0.923	0.099	-0.7	1.0	-0.6	0.9	A+	B-
414	610302	6	6	729	.562	.353	.033	.562	.051	.001	.244	-.019	-.278	.244	-.275	0.340	0.084	6.9	1.3	6.2	1.4	A+	A-
415	610298	6	6	1453	.516	.516	.061	.127	.294	.003	.360	.360	-.187	-.153	-.161	0.603	0.059	5.1	1.1	4.5	1.2	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
416	612273	6	6	722	.395	.152	.395	.220	.226	.007	.330	-.149	.330	-.049	-.151	1.196	0.084	1.7	1.1	2.4	1.1	A-	C+
417	612272	6	6	722	.215	.237	.206	.334	.215	.008	.179	-.012	-.173	.053	.179	2.232	0.097	2.2	1.1	3.5	1.4	A-	A-
418	607992	6	6	722	.655	.086	.073	.150	.655	.036	.494	-.149	-.196	-.219	.494	-0.263	0.091	-0.3	1.0	-1.2	0.9	A+	A+
419	612298	6	6	722	.542	.184	.136	.079	.542	.060	.464	-.027	-.268	-.189	.464	0.304	0.087	0.3	1.0	0.6	1.0	B+	A+
420	610107	6	6	724	.695	.695	.077	.112	.066	.050	.561	.561	-.180	-.273	-.249	-0.579	0.098	-2.8	0.9	-3.1	0.7	A+	C-
421	610082	6	6	724	.735	.097	.735	.046	.055	.068	.541	-.200	.541	-.246	-.282	-1.033	0.109	-2.0	0.9	-2.4	0.7	A-	A+
422	610132	6	6	7268	.660	.660	.065	.069	.190	.015	.453	.453	-.270	-.233	-.124	-0.268	0.028	0.8	1.0	-1.8	1.0	A+	A-
423	607918	6	6	7268	.790	.790	.112	.044	.044	.010	.457	.457	-.278	-.215	-.118	-1.098	0.033	-2.9	1.0	-2.9	0.9	B-	A-
424	607921	6	6	7268	.907	.036	.029	.018	.907	.011	.488	-.252	-.211	-.212	.488	-2.333	0.046	-5.1	0.8	-9.2	0.5	A+	A-
425	607927	6	6	721	.479	.316	.082	.114	.479	.010	.401	-.124	-.194	-.204	.401	0.708	0.084	2.2	1.1	1.6	1.1	C-	A-
426	607917	6	6	721	.487	.155	.085	.487	.268	.006	.280	-.116	-.160	.280	-.078	0.674	0.084	6.5	1.2	6.2	1.4	A+	B-
427	610141	6	6	721	.534	.228	.122	.093	.534	.024	.470	-.101	-.269	-.203	.470	0.392	0.085	-0.2	1.0	0.1	1.0	A-	A+
428	607911	6	6	725	.476	.139	.270	.088	.476	.026	.479	-.170	-.156	-.222	.479	0.591	0.085	-0.7	1.0	-0.1	1.0	A+	A+
429	607915	6	6	725	.812	.062	.058	.812	.040	.028	.524	-.250	-.278	.524	-.148	-1.518	0.112	-1.9	0.9	-2.6	0.7	A-	A-
430	607929	6	6	725	.548	.548	.321	.059	.037	.035	.366	.366	-.119	-.236	-.065	0.190	0.087	4.7	1.2	3.2	1.2	B-	A+
431	612231	6	6	731	.792	.052	.792	.120	.027	.008	.436	-.246	.436	-.215	-.198	-1.085	0.102	-0.7	1.0	-0.3	1.0	A-	A+
432	607928	6	6	731	.744	.096	.022	.744	.127	.011	.340	-.091	-.171	.340	-.206	-0.746	0.095	2.1	1.1	1.1	1.1	A+	B-
433	612250	6	6	731	.417	.178	.242	.417	.093	.070	.301	-.185	.116	.301	-.163	0.877	0.086	6.0	1.2	5.7	1.3	A-	A+
434	607913	6	6	730	.553	.081	.084	.553	.249	.033	.458	-.211	-.294	.458	-.038	0.338	0.087	1.4	1.1	1.0	1.1	A-	B-
435	607920	6	6	730	.908	.908	.019	.019	.021	.033	.529	.529	-.202	-.179	-.194	-2.653	0.166	-1.1	0.9	-3.1	0.4	A-	B-
436	607924	6	6	730	.556	.138	.127	.141	.556	.037	.530	-.181	-.222	-.148	.530	0.309	0.087	-2.3	0.9	-1.6	0.9	A-	A+
437	607926	6	6	730	.832	.027	.832	.052	.051	.038	.524	-.165	.524	-.246	-.177	-1.638	0.120	-1.5	0.9	-2.2	0.7	A-	A-
438	609237	6	6	725	.469	.166	.142	.469	.219	.004	.394	-.179	-.126	.394	-.180	0.636	0.083	0.4	1.0	0.4	1.0	A-	B-
439	607923	6	6	725	.463	.112	.463	.188	.221	.017	.362	-.111	.362	-.283	.007	0.640	0.084	2.9	1.1	2.6	1.1	A-	B-
440	609050	6	6	730	.753	.047	.081	.753	.116	.003	.400	-.177	-.239	.400	-.177	-0.781	0.096	0.3	1.0	-0.6	1.0	C-	A-
441	609090	6	6	730	.607	.111	.607	.159	.116	.007	.448	-.268	.448	-.169	-.170	0.070	0.086	-0.6	1.0	-0.9	1.0	A-	A-
442	607906	6	6	730	.641	.049	.114	.641	.186	.010	.327	-.208	-.208	.327	-.035	-0.118	0.087	3.6	1.2	3.8	1.3	A+	A-
443	607914	6	6	730	.514	.385	.038	.052	.514	.011	.397	-.127	-.256	-.247	.397	0.547	0.084	2.5	1.1	2.4	1.1	A-	A+
444	612256	6	6	721	.796	.796	.057	.068	.075	.004	.401	.401	-.266	-.101	-.230	-1.112	0.102	-0.2	1.0	0.2	1.0	A+	C-
445	610075	6	6	721	.746	.046	.176	.746	.029	.003	.383	-.249	-.193	.383	-.167	-0.760	0.096	0.9	1.0	0.5	1.1	A-	A-
446	608013	6	6	721	.820	.820	.058	.067	.047	.008	.496	.496	-.336	-.216	-.187	-1.337	0.108	-2.2	0.9	-2.7	0.7	A-	C-
447	610058	6	6	721	.773	.773	.069	.076	.039	.043	.597	.597	-.308	-.294	-.187	-1.173	0.106	-4.0	0.8	-4.4	0.6	A-	B+
448	610059	6	6	721	.614	.028	.614	.056	.254	.049	.471	-.194	.471	-.235	-.183	-0.122	0.090	0.5	1.0	0.1	1.0	A-	A+
449	610126	6	6	731	.851	.851	.033	.047	.067	.003	.425	.425	-.176	-.204	-.280	-1.556	0.115	-1.2	0.9	-1.9	0.8	A+	A+
450	607916	6	6	731	.852	.042	.058	.034	.852	.014	.478	-.244	-.238	-.115	.478	-1.636	0.118	-1.2	0.9	-1.2	0.8	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
451	607930	6	6	731	.900	.900	.023	.051	.012	.014	.476	.476	-.223	-.226	-.140	-2.213	0.141	-1.3	0.9	-1.5	0.7	A+	A-
452	610064	6	N/A	731	.274	.274	.123	.510	.033	.060	.173	.173	-.216	.215	-.127	1.756	0.092	6.2	1.3	7.4	1.7	A+	A-
453	607908	6	6	729	.702	.033	.702	.229	.029	.007	.366	-.179	.366	-.185	-.242	-0.453	0.091	2.3	1.1	1.8	1.1	B+	A+
454	607912	6	6	729	.366	.366	.140	.353	.133	.008	.203	.203	-.136	-.020	-.083	1.329	0.086	6.7	1.3	8.7	1.7	A-	A+
455	607919	6	6	729	.910	.910	.023	.026	.037	.004	.400	.400	-.251	-.155	-.213	-2.234	0.140	-0.9	0.9	-1.9	0.7	C-	A-
456	609049	6	6	729	.744	.744	.067	.106	.049	.034	.419	.419	-.121	-.193	-.198	-0.861	0.099	1.5	1.1	0.7	1.1	B-	A+
457	612268	6	6	722	.726	.726	.035	.103	.132	.006	.410	.410	-.293	-.183	-.159	-0.557	0.094	0.4	1.0	-0.4	1.0	A-	A-
458	607909	6	6	722	.269	.269	.194	.241	.290	.007	.251	.251	-.033	-.136	-.035	1.880	0.091	1.7	1.1	4.0	1.4	A-	A-
459	607925	6	6	722	.760	.176	.036	.760	.024	.004	.259	-.065	-.218	.259	-.184	-0.747	0.098	2.7	1.2	2.9	1.3	A+	A+
460	607991	6	6	722	.849	.033	.849	.053	.037	.028	.582	-.267	.582	-.271	-.228	-1.721	0.127	-2.2	0.8	-4.0	0.5	A+	A-
461	609185	6	6	722	.759	.097	.035	.759	.072	.037	.438	-.140	-.239	.438	-.142	-0.933	0.103	0.7	1.0	-0.1	1.0	A-	A-
462	612234	6	6	722	.824	.824	.037	.028	.060	.051	.561	.561	-.286	-.241	-.190	-1.680	0.127	-1.9	0.9	-1.9	0.7	A+	A-
463	612153	6	6	724	.902	.025	.046	.902	.021	.007	.377	-.208	-.160	.377	-.131	-2.157	0.146	-0.4	1.0	0.1	1.0	B+	A-
464	607907	6	6	724	.832	.024	.090	.044	.832	.011	.525	-.184	-.252	-.291	.525	-1.406	0.116	-1.9	0.9	-2.6	0.7	A-	C-
465	607922	6	6	724	.562	.218	.562	.087	.123	.010	.422	-.181	.422	-.223	-.112	0.398	0.086	0.3	1.0	0.9	1.1	A-	A-
466	610174	6	6	724	.617	.140	.070	.129	.617	.044	.544	-.251	-.252	-.146	.544	-0.057	0.090	-2.5	0.9	-2.2	0.9	A+	A-
467	610327	6	N/A	725	.752	.066	.088	.041	.752	.052	.557	-.251	-.252	-.146	.557	-1.156	0.105	-2.0	0.9	-2.5	0.7	A+	A-
468	610065	6	6	730	.510	.152	.189	.104	.510	.045	.419	-.152	-.080	-.149	.419	0.543	0.087	2.7	1.1	2.3	1.1	A-	A+
469	609022	6	6	1453	.729	.084	.729	.058	.127	.002	.397	-.220	.397	-.198	-.187	-0.582	0.066	0.3	1.0	-0.3	1.0	A+	C-
470	609661	7	7	5029	.650	.081	.158	.650	.103	.008	.399	-.217	-.189	.399	-.125	0.321	0.033	1.6	1.0	1.4	1.0	A+	A+
471	610325	7	7	5029	.710	.710	.145	.064	.072	.009	.484	.484	-.243	-.268	-.164	-0.025	0.034	-5.6	0.9	-4.7	0.9	A+	A+
472	610147	7	7	572	.766	.033	.098	.094	.766	.009	.369	-.176	-.175	-.130	.369	-0.522	0.109	0.3	1.0	-0.2	1.0	A-	A+
473	610148	7	N/A	572	.809	.039	.046	.809	.098	.009	.439	-.173	-.244	.439	-.161	-0.829	0.117	-1.0	0.9	-1.5	0.8	A+	A+
474	609053	7	7	554	.776	.776	.065	.069	.074	.016	.550	.550	-.246	-.268	-.226	-0.435	0.114	-2.7	0.8	-3.0	0.7	A-	C-
475	609219	7	7	554	.673	.673	.126	.076	.108	.016	.477	.477	-.240	-.219	-.142	0.220	0.101	-1.6	0.9	-1.6	0.9	A+	A-
476	609038	7	7	556	.682	.682	.034	.095	.184	.005	.387	.387	-.207	-.143	-.207	0.084	0.100	0.5	1.0	0.3	1.0	A+	A-
477	609039	7	7	556	.504	.092	.198	.200	.504	.007	.453	-.145	-.207	-.203	.453	0.972	0.093	-2.1	0.9	-2.0	0.9	A-	A+
478	608015	7	7	554	.717	.166	.087	.027	.717	.004	.308	-.121	-.187	-.131	.308	0.005	0.104	1.7	1.1	2.2	1.2	A+	A+
479	607994	7	N/A	554	.690	.143	.690	.112	.051	.005	.316	-.218	.316	-.066	-.136	0.156	0.102	2.4	1.1	2.2	1.2	A-	A-
480	609073	7	7	5029	.844	.028	.844	.046	.072	.010	.474	-.166	.474	-.250	-.244	-1.006	0.043	-4.5	0.9	-6.4	0.7	A+	A-
481	610316	7	7	554	.538	.103	.316	.538	.042	.002	.390	-.214	-.173	.390	-.219	1.036	0.096	1.0	1.0	0.7	1.0	A-	A+
482	609799	7	N/A	554	.827	.042	.114	.014	.827	.004	.445	-.217	-.307	-.170	.445	-0.724	0.123	-1.1	0.9	-2.1	0.8	A+	A-
483	607982	7	7	554	.718	.718	.070	.199	.009	.004	.367	.367	-.256	-.196	-.139	0.043	0.105	0.7	1.0	-0.1	1.0	A-	A+
484	610175	7	7	552	.732	.732	.058	.056	.138	.016	.499	.499	-.243	-.177	-.292	-0.322	0.107	-2.2	0.9	-2.6	0.8	A+	
485	610343	7	7	552	.683	.109	.683	.091	.103	.015	.459	-.328	.459	-.180	-.119	-0.020	0.102	-1.8	0.9	-1.4	0.9	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
486	610176	7	N/A	552	.563	.054	.067	.299	.563	.016	.204	-.148	-.260	.045	.204	0.616	0.096	6.7	1.3	5.0	1.3	A+	
487	609034	7	7	552	.388	.388	.045	.404	.140	.024	.392	.392	-.259	-.063	-.220	1.503	0.098	0.3	1.0	1.1	1.1	A+	
488	609044	7	7	552	.504	.190	.504	.071	.208	.027	.335	-.174	.335	-.243	-.017	0.893	0.096	2.8	1.1	2.0	1.1	A+	
489	609272	7	7	552	.649	.065	.071	.649	.188	.027	.520	-.251	-.215	.520	-.259	0.127	0.101	-3.0	0.9	-2.8	0.8	B+	
490	609033	7	7	552	.518	.170	.190	.518	.094	.027	.403	-.106	-.198	.403	-.184	0.819	0.096	0.7	1.0	0.3	1.0	B+	
491	614852	7	7	552	.882	.045	.024	.045	.882	.004	.221	-.086	-.129	-.151	.221	-1.375	0.143	0.9	1.1	0.7	1.1	A+	B-
492	614853	7	N/A	552	.741	.020	.143	.741	.096	.000	.322	-.241	-.155	.322	-.180	-0.198	0.107	1.1	1.1	1.3	1.1	A-	A-
493	609222	7	N/A	552	.772	.772	.100	.087	.038	.004	.478	.478	-.285	-.235	-.211	-0.410	0.111	-2.2	0.9	-2.2	0.8	B-	B-
494	609278	7	7	552	.768	.768	.116	.047	.067	.002	.416	.416	-.147	-.281	-.249	-0.376	0.111	-0.6	1.0	-1.0	0.9	A+	A+
495	609221	7	7	552	.806	.069	.100	.806	.024	.002	.439	-.321	-.160	.439	-.247	-0.650	0.117	-1.4	0.9	-2.0	0.8	A+	A+
496	612228	7	7	552	.462	.246	.462	.100	.172	.020	.471	-.224	.471	-.196	-.128	1.265	0.097	-1.4	1.0	-0.3	1.0	A+	A-
497	612313	7	7	566	.629	.629	.097	.210	.060	.004	.322	.322	-.160	-.118	-.212	0.528	0.097	2.9	1.1	2.3	1.2	A+	A+
498	612260	7	7	566	.530	.194	.136	.530	.136	.004	.360	-.237	-.109	.360	-.112	1.050	0.093	1.8	1.1	1.4	1.1	A-	A-
499	612314	7	7	566	.458	.484	.019	.037	.458	.002	.382	-.211	-.242	-.233	.382	1.393	0.093	1.1	1.0	1.6	1.1	B-	A+
500	609202	7	7	566	.574	.247	.117	.051	.574	.011	.500	-.284	-.184	-.185	.500	0.803	0.095	-1.8	0.9	-2.0	0.9	A+	A-
501	609201	7	7	566	.617	.094	.617	.156	.120	.014	.500	-.286	.500	-.256	-.118	0.572	0.097	-1.8	0.9	-1.5	0.9	A-	A-
502	609203	7	7	566	.479	.062	.389	.051	.479	.019	.390	-.268	-.102	-.221	.390	1.261	0.094	0.8	1.0	2.5	1.1	A+	A+
503	612207	7	7	566	.489	.288	.489	.120	.076	.027	.381	-.074	.381	-.196	-.201	1.196	0.094	1.9	1.1	1.8	1.1	A+	A+
504	612320	7	7	566	.518	.175	.518	.138	.138	.032	.424	-.234	.424	-.177	-.076	1.030	0.095	0.1	1.0	1.4	1.1	A-	A+
505	610155	7	7	570	.807	.016	.012	.161	.807	.004	.389	-.183	-.101	-.269	.389	-0.597	0.116	0.2	1.0	-0.1	1.0	A+	A-
506	610153	7	7	570	.658	.658	.054	.075	.209	.004	.419	.419	-.258	-.288	-.107	0.339	0.097	-0.7	1.0	0.2	1.0	A+	A-
507	610156	7	N/A	570	.163	.083	.019	.163	.730	.005	-.016	-.128	-.252	-.016	.216	3.071	0.121	2.7	1.2	5.9	2.0	A-	A+
508	609819	7	7	570	.639	.142	.095	.105	.639	.019	.427	-.114	-.149	-.242	.427	0.394	0.097	0.0	1.0	0.3	1.0	A-	A-
509	612239	7	7	570	.618	.054	.086	.618	.223	.019	.376	-.187	-.281	.376	-.035	0.515	0.096	1.0	1.0	1.1	1.1	A+	B-
510	612238	7	7	570	.611	.611	.156	.067	.142	.025	.391	.391	-.112	-.235	-.126	0.537	0.095	0.7	1.0	-0.2	1.0	A+	A-
511	612308	7	7	570	.698	.698	.077	.081	.118	.026	.483	.483	-.216	-.252	-.141	0.025	0.103	-1.8	0.9	-0.3	1.0	A+	A+
512	612209	7	7	570	.818	.039	.083	.818	.030	.032	.512	-.169	-.277	.512	-.220	-0.862	0.127	-1.6	0.9	-2.6	0.7	A+	A+
513	610257	7	7	572	.453	.248	.453	.185	.105	.009	.384	-.109	.384	-.134	-.183	1.167	0.093	0.5	1.0	2.3	1.1	A-	A-
514	610354	7	7	572	.708	.708	.054	.117	.108	.012	.373	.373	-.171	-.236	-.048	-0.152	0.102	0.5	1.0	-0.1	1.0	A-	A-
515	610261	7	N/A	572	.867	.082	.012	.028	.867	.011	.453	-.219	-.151	-.224	.453	-1.368	0.136	-1.1	0.9	-2.2	0.7	A-	A-
516	612244	7	N/A	572	.778	.115	.052	.778	.037	.018	.497	-.226	-.197	.497	-.196	-0.655	0.113	-1.7	0.9	-2.0	0.8	A+	A+
517	609030	7	7	572	.663	.663	.080	.079	.150	.028	.518	.518	-.222	-.238	-.159	0.060	0.099	-3.0	0.9	-3.0	0.8	A+	A+
518	609032	7	7	572	.615	.100	.136	.119	.615	.030	.549	-.177	-.282	-.155	.549	0.298	0.097	-4.0	0.9	-3.9	0.8	B+	A-
519	609028	7	N/A	572	.754	.052	.040	.124	.754	.030	.560	-.249	-.203	-.240	.560	-0.534	0.110	-3.1	0.8	-3.5	0.7	A+	A+
520	612247	7	7	572	.607	.080	.607	.128	.149	.037	.427	-.107	.427	-.185	-.138	0.332	0.097	0.2	1.0	-0.6	1.0	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
521	609176	7	7	556	.685	.070	.043	.685	.196	.005	.350	-.201	-.255	.350	-.087	0.054	0.100	1.4	1.1	0.5	1.0	A+	A+
522	609177	7	7	556	.860	.034	.032	.067	.860	.007	.528	-.256	-.252	-.258	.528	-1.200	0.133	-2.2	0.8	-2.9	0.6	B+	A+
523	609178	7	7	556	.734	.153	.734	.083	.025	.005	.443	-.176	.443	-.266	-.222	-0.230	0.105	-0.7	1.0	-1.2	0.9	A-	A+
524	609179	7	7	556	.709	.709	.068	.036	.182	.005	.345	.345	-.180	-.232	-.112	-0.079	0.102	1.6	1.1	1.6	1.1	A+	B+
525	612267	7	7	556	.649	.128	.155	.052	.649	.016	.585	-.250	-.319	-.192	.585	0.210	0.099	-4.7	0.8	-4.4	0.7	A+	A-
526	612274	7	7	556	.509	.331	.043	.509	.095	.022	.266	.016	-.194	.266	-.210	0.906	0.094	5.0	1.2	4.3	1.2	A-	A+
527	610270	7	7	556	.579	.130	.579	.189	.079	.023	.431	-.149	.431	-.208	-.155	0.548	0.096	-0.4	1.0	-0.2	1.0	A-	A-
528	610269	7	7	556	.543	.126	.543	.201	.101	.029	.197	-.051	.197	-.007	-.103	0.720	0.095	6.6	1.3	6.4	1.4	A+	A+
529	610271	7	N/A	556	.595	.201	.121	.058	.595	.025	.393	-.063	-.163	-.309	.393	0.461	0.096	0.9	1.0	1.2	1.1	A+	A-
530	612311	7	7	1109	.519	.227	.116	.519	.121	.016	.395	-.109	-.210	.395	-.184	0.949	0.067	1.2	1.0	1.5	1.1	A-	A+
531	609167	7	7	553	.801	.801	.056	.033	.109	.002	.380	.380	-.269	-.223	-.158	-0.523	0.115	-0.2	1.0	-0.7	0.9	A+	
532	609169	7	7	553	.637	.089	.179	.637	.094	.002	.458	-.240	-.240	.458	-.196	0.478	0.098	-1.0	1.0	-1.3	0.9	A-	
533	609229	7	7	553	.561	.052	.071	.561	.300	.016	.457	-.250	-.272	.457	-.153	0.839	0.096	-0.3	1.0	-0.5	1.0	A+	
534	609230	7	7	553	.633	.137	.633	.175	.038	.016	.383	-.167	.383	-.162	-.183	0.459	0.099	1.8	1.1	0.7	1.1	A+	
535	609046	7	7	553	.640	.137	.157	.042	.640	.024	.520	-.242	-.227	-.253	.520	0.391	0.100	-2.0	0.9	-2.7	0.8	A+	
536	609069	7	N/A	553	.653	.653	.060	.118	.145	.025	.511	.511	-.300	-.256	-.166	0.311	0.101	-2.3	0.9	-1.8	0.9	A-	
537	609274	7	7	553	.514	.174	.118	.165	.514	.031	.368	-.050	-.174	-.198	.368	1.035	0.096	2.4	1.1	3.0	1.2	A-	
538	614856	7	7	566	.896	.021	.896	.016	.064	.004	.368	-.296	.368	-.225	-.125	-1.436	0.151	-0.6	0.9	-0.3	0.9	A+	A-
539	614857	7	N/A	566	.922	.004	.058	.922	.012	.004	.258	-.103	-.130	.258	-.214	-1.853	0.175	0.3	1.0	0.0	1.0	A+	A-
540	609072	7	7	553	.821	.047	.087	.042	.821	.004	.465	-.239	-.249	-.239	.465	-0.686	0.120	-1.6	0.9	-2.2	0.7	A+	
541	609208	7	7	554	.783	.099	.783	.063	.045	.009	.375	-.295	.375	-.109	-.124	-0.417	0.115	0.6	1.0	0.1	1.0	A+	B-
542	609663	7	N/A	5029	.809	.080	.809	.034	.070	.007	.443	-.239	.443	-.253	-.158	-0.681	0.039	-3.0	0.9	-3.9	0.9	A-	A+
543	610149	7	7	572	.526	.434	.526	.016	.019	.005	.153	-.029	.153	-.069	-.181	0.828	0.092	8.1	1.3	7.0	1.4	A-	A-
544	610338	7	7	572	.378	.086	.145	.378	.381	.011	.314	-.258	-.190	.314	.052	1.544	0.095	2.3	1.1	2.1	1.1	A+	A+
545	609243	7	7	554	.863	.018	.052	.863	.051	.016	.474	-.199	-.236	.474	-.191	-1.185	0.139	-1.3	0.9	-1.8	0.7	A+	A+
546	609074	7	7	5029	.840	.840	.026	.087	.039	.009	.442	.442	-.230	-.203	-.213	-0.956	0.042	-2.6	0.9	-3.9	0.8	A+	A-
547	609075	7	N/A	5029	.835	.106	.016	.033	.835	.011	.410	-.192	-.185	-.223	.410	-0.928	0.042	-1.1	1.0	-2.4	0.9	A+	A-
548	610073	7	7	554	.668	.076	.139	.103	.668	.014	.476	-.286	-.142	-.199	.476	0.253	0.101	-1.6	0.9	-0.5	1.0	A-	A+
549	610119	7	N/A	554	.491	.098	.321	.491	.074	.016	.388	-.169	-.152	.388	-.131	1.170	0.095	1.1	1.0	1.4	1.1	A-	A-
550	610118	7	7	554	.894	.034	.894	.038	.018	.016	.546	-.242	.546	-.290	-.227	-1.559	0.156	-2.3	0.8	-3.9	0.4	A-	A-
551	609058	7	7	554	.565	.123	.186	.565	.108	.018	.450	-.184	-.148	.450	-.212	0.788	0.096	-0.1	1.0	-0.9	1.0	B+	A-
552	609056	7	N/A	554	.560	.123	.152	.146	.560	.020	.429	-.108	-.196	-.193	.429	0.809	0.096	0.1	1.0	-0.2	1.0	A+	A+
553	609057	7	N/A	554	.614	.043	.614	.045	.276	.022	.230	-.113	.230	-.132	-.049	0.520	0.098	5.4	1.2	5.5	1.4	A-	A+
554	609800	7	7	554	.655	.655	.170	.081	.092	.002	.379	.379	-.160	-.182	-.217	0.419	0.100	1.3	1.1	1.0	1.1	A-	A+
555	609801	7	N/A	554	.803	.074	.060	.061	.803	.002	.395	-.243	-.152	-.209	.395	-0.523	0.117	-0.3	1.0	0.3	1.0	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
556	607983	7	7	554	.937	.014	.029	.937	.018	.002	.424	-.225	-.261	.424	-.190	-2.024	0.185	-1.1	0.8	-2.9	0.4	A-	A-
557	609045	7	N/A	552	.594	.062	.134	.185	.594	.025	.406	-.179	-.188	-.160	.406	0.431	0.098	0.5	1.0	0.5	1.0	A+	
558	609042	7	N/A	552	.692	.080	.692	.083	.120	.025	.466	-.145	.466	-.264	-.224	-0.116	0.104	-1.4	0.9	-2.0	0.8	B+	
559	614854	7	N/A	552	.897	.060	.007	.897	.031	.005	.322	-.211	-.128	.322	-.185	-1.548	0.152	-0.1	1.0	-1.4	0.7	B+	A-
560	612229	7	7	552	.516	.516	.228	.136	.100	.020	.451	.451	-.292	-.108	-.116	0.985	0.096	-0.3	1.0	-0.2	1.0	A+	A-
561	612230	7	N/A	552	.429	.299	.107	.145	.429	.020	.430	-.103	-.158	-.244	.430	1.434	0.097	-0.4	1.0	0.1	1.0	A+	A-
562	609277	7	7	566	.767	.092	.095	.767	.034	.012	.507	-.319	-.196	.507	-.216	-0.302	0.111	-1.9	0.9	-2.4	0.8	A+	B-
563	609204	7	N/A	566	.647	.161	.647	.129	.048	.016	.431	-.236	.431	-.087	-.278	0.414	0.099	0.2	1.0	-0.2	1.0	A+	A-
564	612208	7	N/A	566	.664	.048	.143	.664	.120	.025	.474	-.175	-.197	.474	-.247	0.281	0.101	-0.8	1.0	-1.0	0.9	A+	A+
565	615199	7	7	570	.951	.028	.014	.004	.951	.004	.443	-.235	-.267	-.082	.443	-2.307	0.207	-1.0	0.8	-3.0	0.4	A-	A-
566	610154	7	N/A	570	.633	.175	.149	.633	.039	.004	.274	-.038	-.175	.274	-.180	0.478	0.095	3.6	1.2	3.9	1.2	A-	B+
567	609820	7	7	570	.912	.026	.912	.028	.018	.016	.537	-.232	.537	-.288	-.159	-1.849	0.175	-1.3	0.8	-3.0	0.4	A+	A+
568	609029	7	7	572	.844	.037	.056	.844	.039	.025	.553	-.199	-.246	.553	-.243	-1.273	0.134	-2.3	0.8	-3.0	0.6	B+	A-
569	609027	7	7	572	.512	.512	.189	.063	.210	.026	.445	.445	-.263	-.216	-.021	0.831	0.093	-0.8	1.0	-0.7	1.0	A+	A-
570	612310	7	7	1109	.400	.333	.172	.079	.400	.015	.325	-.074	-.196	-.106	.325	1.543	0.068	3.8	1.1	3.7	1.2	A+	A-
571	609170	7	7	553	.723	.723	.013	.224	.038	.002	.229	.229	-.145	-.122	-.185	-0.013	0.104	3.2	1.2	2.5	1.2	A-	
572	609070	7	7	553	.881	.040	.881	.036	.020	.024	.445	-.217	.445	-.221	-.207	-1.439	0.152	-1.2	0.9	-2.4	0.6	A-	
573	609071	7	N/A	553	.430	.118	.152	.430	.277	.024	.426	-.189	-.270	.426	-.047	1.474	0.096	0.4	1.0	1.0	1.1	A-	
574	614859	7	N/A	566	.822	.822	.023	.085	.069	.002	.386	.386	-.233	-.221	-.195	-0.677	0.121	-0.4	1.0	-0.1	1.0	A+	A-
575	614858	7	7	566	.758	.027	.129	.085	.758	.002	.395	-.139	-.195	-.265	.395	-0.201	0.108	0.0	1.0	-0.1	1.0	A-	A-
576	609209	7	7	554	.489	.107	.323	.489	.072	.009	.388	-.255	-.114	.388	-.184	1.267	0.096	1.5	1.1	1.7	1.1	A+	A+
577	609210	7	7	554	.646	.067	.150	.128	.646	.009	.428	-.244	-.207	-.165	.428	0.443	0.100	0.0	1.0	-0.6	1.0	A+	A-
578	609040	7	7	556	.800	.029	.800	.074	.094	.004	.480	-.141	.480	-.258	-.277	-0.669	0.115	-1.9	0.9	-1.8	0.8	A-	A-
579	607995	7	7	554	.625	.099	.625	.087	.184	.005	.334	-.209	.334	-.156	-.083	0.519	0.097	2.7	1.1	2.0	1.1	A-	A+
580	609223	7	7	552	.473	.375	.473	.098	.051	.004	.281	-.112	.281	-.148	-.147	1.249	0.096	5.0	1.2	4.5	1.3	A-	A+
581	612261	7	7	566	.156	.156	.477	.205	.159	.004	.168	.168	.029	-.051	-.131	3.259	0.126	1.3	1.1	2.7	1.5	A-	A+
582	612309	7	7	570	.419	.246	.419	.291	.025	.019	.349	-.120	.349	-.095	-.187	1.517	0.093	0.1	1.0	1.5	1.1	A-	B-
583	612210	7	7	570	.768	.768	.061	.111	.032	.028	.460	.460	-.180	-.255	-.121	-0.451	0.113	-0.7	1.0	-1.2	0.9	A+	B-
584	612316	7	7	570	.670	.112	.091	.097	.670	.030	.444	-.168	-.223	-.137	.444	0.176	0.100	-0.5	1.0	-0.5	1.0	B-	A-
585	610265	7	N/A	572	.542	.131	.542	.112	.206	.009	.347	-.126	.347	-.107	-.151	0.737	0.093	1.7	1.1	1.8	1.1	A-	A+
586	610272	7	7	556	.644	.644	.110	.148	.072	.027	.507	.507	-.260	-.202	-.179	0.197	0.099	-2.2	0.9	-2.3	0.9	A-	A+
587	609231	7	7	553	.624	.101	.624	.159	.103	.013	.351	-.257	.351	-.059	-.147	0.517	0.098	2.4	1.1	2.0	1.1	A+	
588	609232	7	7	553	.664	.215	.071	.036	.664	.015	.396	-.164	-.171	-.258	.396	0.294	0.100	0.8	1.0	1.2	1.1	C+	
589	609152	7	7	553	.588	.074	.257	.588	.076	.005	.448	-.242	-.304	.448	-.054	0.723	0.096	-0.7	1.0	-0.2	1.0	A+	
590	609041	7	7	556	.558	.558	.038	.279	.121	.005	.298	.298	-.100	-.165	-.109	0.714	0.094	2.8	1.1	2.3	1.1	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
591	610317	7	7	554	.825	.137	.825	.022	.014	.002	.402	-.346	.402	-.142	-.108	-0.693	0.122	-0.9	0.9	-1.0	0.9	A-	B-
592	607984	7	N/A	554	.545	.177	.153	.545	.121	.004	.337	-.148	-.140	.337	-.164	0.994	0.096	2.2	1.1	2.8	1.2	A-	C+
593	610157	7	7	552	.690	.690	.105	.080	.111	.015	.363	.363	-.207	-.102	-.169	-0.062	0.102	0.6	1.0	2.4	1.2	A+	
594	610177	7	7	552	.400	.230	.092	.400	.261	.016	.346	-.238	-.098	.346	-.035	1.451	0.097	2.3	1.1	2.2	1.1	A-	
595	609224	7	N/A	552	.732	.141	.065	.732	.056	.005	.370	-.215	-.210	.370	-.112	-0.152	0.106	0.6	1.0	-0.2	1.0	A-	A+
596	612315	7	N/A	566	.859	.051	.037	.051	.859	.002	.428	-.213	-.254	-.212	.428	-1.000	0.132	-0.9	0.9	-1.4	0.8	A+	A-
597	612217	7	7	566	.876	.876	.023	.035	.034	.032	.408	.408	-.124	-.239	-.201	-1.494	0.156	-0.6	0.9	-0.5	0.9	A+	A-
598	610170	7	7	570	.667	.667	.023	.105	.202	.004	.349	.349	-.208	-.193	-.133	0.292	0.097	1.1	1.1	0.7	1.0	A-	A+
599	610171	7	7	570	.712	.125	.081	.712	.075	.007	.357	-.151	-.179	.357	-.164	0.017	0.102	1.0	1.1	-0.2	1.0	A+	A-
600	610173	7	7	570	.653	.146	.140	.054	.653	.007	.414	-.111	-.239	-.238	.414	0.364	0.097	-1.0	1.0	-0.9	0.9	A-	A-
601	610172	7	7	570	.897	.058	.030	.897	.011	.005	.366	-.137	-.244	.366	-.152	-1.475	0.152	0.0	1.0	-0.5	0.9	B-	A-
602	610169	7	N/A	570	.679	.028	.679	.197	.093	.004	.411	-.125	.411	-.235	-.197	0.224	0.098	-0.2	1.0	-0.7	1.0	A+	A-
603	612240	7	7	570	.335	.146	.335	.216	.283	.021	.344	-.181	.344	-.069	-.050	1.931	0.096	-0.3	1.0	1.3	1.1	A-	A+
604	610353	7	7	572	.701	.100	.701	.046	.147	.007	.239	-.136	.239	-.169	.004	-0.106	0.101	4.3	1.2	3.0	1.3	A+	A+
605	612245	7	7	572	.904	.019	.904	.037	.025	.016	.531	-.197	.531	-.271	-.168	-1.918	0.165	-1.2	0.9	-3.3	0.4	A+	A-
606	612317	7	7	572	.892	.892	.040	.032	.021	.016	.478	.478	-.207	-.168	-.181	-1.714	0.153	-1.0	0.9	-1.7	0.7	A+	A+
607	612318	7	N/A	572	.612	.612	.089	.110	.157	.032	.380	.380	-.211	-.213	.024	0.311	0.097	1.7	1.1	1.6	1.1	B-	A+
608	612266	7	7	556	.639	.639	.137	.176	.036	.013	.441	.441	-.149	-.225	-.211	0.284	0.098	-0.9	1.0	-0.4	1.0	B+	A-
609	610273	7	7	556	.714	.056	.115	.090	.714	.025	.394	-.173	-.168	-.148	.394	-0.206	0.105	0.2	1.0	1.9	1.2	A+	A+
610	609172	7	7	553	.825	.045	.016	.825	.114	.000	.351	-.131	-.207	.351	-.252	-0.692	0.120	-0.3	1.0	-0.4	1.0	A-	
611	609171	7	7	553	.872	.052	.872	.060	.016	.000	.400	-.236	.400	-.233	-.205	-1.110	0.134	-1.2	0.9	-1.9	0.7	A-	
612	615229	7	7	553	.633	.633	.174	.130	.049	.015	.457	.457	-.208	-.242	-.146	0.463	0.099	-0.5	1.0	-0.7	1.0	A+	
613	609233	7	N/A	553	.336	.333	.213	.103	.336	.015	.374	-.036	-.207	-.154	.374	1.989	0.099	0.4	1.0	3.1	1.2	A-	
614	609658	7	7	5029	.735	.735	.102	.116	.041	.007	.443	.443	-.264	-.203	-.146	-0.165	0.035	-2.6	1.0	-3.2	0.9	A-	A-
615	610324	7	7	5029	.643	.199	.097	.643	.054	.007	.405	-.123	-.266	.405	-.186	0.361	0.033	1.5	1.0	1.7	1.0	A-	A+
616	610146	7	7	572	.909	.909	.021	.021	.042	.007	.384	.384	-.130	-.201	-.193	-1.901	0.163	-0.2	1.0	-0.7	0.8	A-	A+
617	607933	7	7	554	.661	.126	.024	.175	.661	.014	.402	-.184	-.213	-.153	.402	0.294	0.100	0.8	1.0	0.8	1.1	A+	B+
618	607936	7	7	554	.601	.051	.033	.601	.301	.014	.316	-.159	-.223	.316	-.090	0.616	0.097	3.8	1.2	3.3	1.2	B-	B+
619	609037	7	7	556	.856	.020	.086	.856	.034	.004	.349	-.228	-.201	.349	-.078	-1.134	0.130	0.1	1.0	-0.4	0.9	B-	A+
620	607939	7	7	5029	.764	.083	.764	.093	.056	.005	.419	-.218	.419	-.214	-.164	-0.346	0.036	-1.6	1.0	-2.1	0.9	A+	A+
621	607945	7	7	5029	.593	.593	.026	.231	.145	.006	.217	.217	-.186	-.020	-.140	0.629	0.032	9.9	1.2	9.9	1.3	A+	A-
622	607938	7	7	554	.731	.731	.094	.045	.114	.016	.531	.531	-.298	-.176	-.221	-0.129	0.107	-3.1	0.8	-2.9	0.8	A-	A+
623	610315	7	7	554	.841	.088	.034	.036	.841	.000	.379	-.200	-.196	-.247	.379	-0.819	0.126	-0.5	1.0	-0.9	0.9	B-	A-
624	607937	7	7	554	.928	.024	.036	.011	.928	.002	.391	-.240	-.214	-.171	.391	-1.893	0.176	-1.2	0.9	-2.3	0.5	A+	A-
625	607943	7	7	554	.709	.052	.709	.200	.034	.004	.293	-.206	.293	-.105	-.210	0.099	0.104	2.3	1.1	2.3	1.2	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
626	607949	7	7	554	.811	.047	.054	.811	.085	.004	.455	-.258	-.207	.455	-.251	-0.591	0.119	-1.1	0.9	-2.3	0.7	A+	B-
627	607932	7	7	552	.770	.053	.103	.069	.770	.005	.381	-.153	-.250	-.147	.381	-0.516	0.111	0.4	1.0	-0.5	0.9	C-	
628	607940	7	7	552	.549	.089	.313	.549	.044	.005	.352	-.159	-.187	.352	-.121	0.729	0.095	2.3	1.1	1.2	1.1	A-	
629	607941	7	7	552	.573	.304	.063	.056	.573	.004	.557	-.432	-.185	-.078	.557	0.613	0.096	-4.5	0.8	-3.6	0.8	C-	
630	610158	7	7	552	.823	.054	.074	.823	.044	.005	.419	-.178	-.279	.419	-.142	-0.901	0.121	-0.8	0.9	-1.2	0.8	A+	
631	609220	7	7	552	.723	.091	.161	.022	.723	.004	.502	-.263	-.297	-.229	.502	-0.093	0.105	-1.9	0.9	-2.6	0.8	A-	A-
632	607935	7	7	552	.652	.652	.190	.054	.098	.005	.362	.362	-.162	-.209	-.171	0.315	0.100	1.8	1.1	0.7	1.0	A+	A+
633	607946	7	7	552	.824	.085	.038	.051	.824	.002	.428	-.192	-.243	-.256	.428	-0.793	0.121	-1.0	0.9	-1.1	0.9	A+	A-
634	607953	7	7	552	.944	.013	.015	.025	.944	.004	.308	-.043	-.245	-.187	.308	-2.296	0.198	-0.4	0.9	-1.2	0.7	A-	A+
635	612312	7	7	566	.917	.046	.009	.917	.027	.002	.323	-.138	-.146	.323	-.243	-1.711	0.166	-0.3	1.0	0.1	1.0	A-	A+
636	607931	7	7	566	.403	.223	.237	.134	.403	.004	.290	-.150	-.182	.020	.290	1.675	0.094	3.6	1.1	2.5	1.2	B-	A-
637	607947	7	7	566	.564	.564	.163	.129	.138	.007	.368	.368	-.184	-.078	-.204	0.881	0.094	1.9	1.1	2.1	1.1	A-	C-
638	609205	7	7	566	.838	.018	.113	.838	.023	.009	.440	-.236	-.254	.440	-.189	-0.854	0.127	-0.4	1.0	-1.3	0.8	C+	A+
639	612206	7	7	566	.763	.763	.062	.051	.099	.025	.404	.404	-.156	-.216	-.159	-0.364	0.113	0.9	1.1	-0.1	1.0	A+	A+
640	612319	7	7	566	.848	.090	.019	.848	.014	.028	.387	-.184	-.221	.387	-.162	-1.147	0.140	-0.1	1.0	0.1	1.0	A-	A-
641	610152	7	7	570	.507	.186	.507	.081	.223	.004	.127	-.014	.127	-.151	.009	1.118	0.092	8.2	1.3	6.6	1.3	A-	A-
642	607944	7	7	570	.905	.025	.042	.905	.023	.005	.426	-.169	-.245	.426	-.161	-1.571	0.157	-0.8	0.9	-1.9	0.7	B-	A-
643	607950	7	7	570	.883	.086	.014	.012	.883	.005	.379	-.238	-.184	-.076	.379	-1.322	0.144	-0.1	1.0	-0.5	0.9	A-	A-
644	609818	7	7	570	.840	.021	.097	.028	.840	.014	.519	-.137	-.298	-.247	.519	-0.955	0.129	-1.4	0.9	-2.4	0.7	A-	A+
645	612307	7	7	570	.793	.019	.119	.053	.793	.016	.501	-.185	-.237	-.243	.501	-0.556	0.116	-1.4	0.9	-1.9	0.8	A-	A+
646	610255	7	7	572	.385	.302	.198	.385	.108	.007	.265	-.017	-.112	.265	-.134	1.531	0.095	3.6	1.1	4.7	1.3	A+	A+
647	607951	7	7	572	.729	.231	.011	.019	.729	.011	.273	-.088	-.153	-.195	.273	-0.289	0.104	2.7	1.2	3.5	1.3	A+	A-
648	607952	7	7	572	.969	.007	.011	.969	.005	.009	.451	-.125	-.184	.451	-.130	-3.427	0.307	-0.2	0.9	-2.2	0.3	A-	A+
649	609047	7	7	572	.248	.316	.248	.308	.101	.026	.273	.073	.273	-.110	-.134	2.278	0.106	1.2	1.1	3.4	1.4	A-	A+
650	612246	7	7	572	.698	.061	.156	.056	.698	.030	.391	-.156	-.110	-.155	.391	-0.169	0.103	1.1	1.1	1.0	1.1	A-	A+
651	609175	7	7	556	.351	.081	.259	.302	.351	.007	.188	-.091	-.050	-.047	.188	1.728	0.096	4.1	1.2	6.2	1.5	A+	B-
652	609174	7	7	556	.858	.059	.041	.036	.858	.005	.426	-.248	-.224	-.140	.426	-1.168	0.132	-0.8	0.9	-1.9	0.7	A+	A-
653	607934	7	7	556	.795	.144	.795	.040	.018	.004	.235	-.078	.235	-.204	-.057	-0.617	0.114	2.2	1.2	2.8	1.3	A-	A-
654	607948	7	7	556	.166	.662	.079	.088	.166	.005	.205	.056	-.219	-.082	.205	2.892	0.120	0.6	1.0	1.9	1.3	A+	B-
655	610268	7	7	556	.838	.031	.094	.838	.018	.020	.531	-.256	-.270	.531	-.250	-1.100	0.130	-2.0	0.8	-3.1	0.6	A-	A-
656	612216	7	7	1109	.748	.061	.124	.748	.050	.016	.511	-.203	-.306	.511	-.213	-0.305	0.077	-3.2	0.9	-4.1	0.7	A+	A+
657	609166	7	7	553	.687	.259	.029	.025	.687	.000	.250	-.130	-.132	-.234	.250	0.206	0.101	3.6	1.2	3.0	1.3	B-	
658	607942	7	7	553	.881	.013	.083	.881	.020	.004	.379	-.209	-.255	.379	-.138	-1.236	0.140	-0.9	0.9	-1.1	0.8	A+	
659	607954	7	7	553	.883	.029	.022	.063	.883	.004	.365	-.128	-.201	-.234	.365	-1.256	0.141	-0.5	1.0	-1.4	0.8	A-	
660	609273	7	7	553	.694	.109	.694	.103	.072	.022	.402	-.160	.402	-.286	-.062	0.088	0.104	0.6	1.0	1.0	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
661	614855	7	7	566	.982	.009	.002	.007	.982	.000	.231	-.188	-.113	-.096	.231	-3.744	0.385	-0.3	0.9	-2.3	0.2	A-	A-
662	609059	8	8	4712	.430	.107	.430	.288	.162	.013	.147	-.211	.147	.064	.020	1.449	0.032	9.9	1.3	9.9	1.4	A-	A+
663	607999	8	8	4712	.435	.097	.123	.327	.435	.018	.295	-.113	-.166	-.014	.295	1.415	0.032	8.0	1.1	9.3	1.2	A+	A-
664	609143	8	8	534	.307	.155	.212	.307	.322	.004	.120	-.128	-.057	.120	.061	2.019	0.100	3.9	1.2	3.2	1.2	A+	B+
665	609140	8	8	534	.787	.081	.064	.787	.067	.002	.409	-.152	-.264	.409	-.201	-0.416	0.112	-1.2	0.9	-1.6	0.9	A-	A-
666	609265	8	8	521	.781	.013	.163	.781	.029	.013	.433	-.224	-.158	.433	-.215	-0.487	0.117	-0.7	1.0	0.3	1.0	A-	
667	609266	8	N/A	521	.639	.144	.119	.639	.086	.012	.390	-.174	-.067	.390	-.181	0.371	0.100	0.2	1.0	0.4	1.0	A+	
668	609076	8	8	521	.726	.169	.067	.726	.033	.006	.404	-.202	-.165	.404	-.166	-0.039	0.107	-0.8	1.0	-0.1	1.0	A+	A+
669	607997	8	8	4712	.568	.568	.168	.127	.115	.023	.399	.399	-.127	-.172	-.110	0.755	0.033	0.8	1.0	0.6	1.0	A+	A+
670	610166	8	8	521	.422	.271	.422	.054	.205	.048	.262	.014	.262	-.248	.038	1.404	0.097	4.5	1.2	4.3	1.2	A-	A-
671	610186	8	8	521	.530	.111	.111	.186	.530	.061	.512	-.075	-.210	-.167	.512	0.837	0.099	-3.0	0.9	-2.7	0.9	A-	B-
672	610199	8	8	521	.599	.154	.075	.599	.109	.063	.505	-.072	-.230	.505	-.182	0.472	0.102	-2.3	0.9	-2.5	0.9	A+	B-
673	610198	8	8	521	.507	.507	.146	.104	.177	.067	.460	.460	-.081	-.232	-.069	0.942	0.099	-1.3	1.0	-1.1	1.0	A+	A-
674	610180	8	8	520	.896	.033	.039	.896	.029	.004	.485	-.254	-.259	.485	-.192	-1.452	0.154	-1.5	0.8	-3.1	0.5	B+	
675	610181	8	N/A	520	.719	.092	.719	.129	.056	.004	.483	-.184	.483	-.285	-.208	-0.036	0.106	-2.7	0.9	-2.8	0.8	A-	
676	610308	8	8	520	.348	.252	.146	.348	.248	.006	.138	-.041	-.087	.138	.013	1.822	0.099	4.8	1.2	5.7	1.4	A+	
677	610312	8	8	520	.308	.308	.252	.283	.089	.069	.293	.293	.011	-.041	-.065	1.958	0.104	1.3	1.1	2.4	1.2	A-	
678	609114	8	8	516	.337	.161	.355	.337	.101	.047	.252	-.179	.117	.252	-.152	1.806	0.102	3.1	1.1	3.3	1.3	B-	A-
679	609097	8	8	516	.514	.159	.114	.155	.514	.058	.504	-.068	-.254	-.214	.504	0.869	0.100	-2.3	0.9	-2.0	0.9	A+	B-
680	610188	8	8	516	.607	.145	.109	.607	.070	.070	.568	-.182	-.326	.568	-.170	0.326	0.105	-3.6	0.8	-3.0	0.8	A+	A-
681	609121	8	8	527	.884	.023	.044	.884	.042	.008	.460	-.161	-.197	.460	-.234	-1.292	0.148	-1.5	0.9	-2.6	0.6	A+	
682	609118	8	8	527	.666	.216	.666	.030	.078	.010	.475	-.307	.475	-.127	-.145	0.311	0.102	-2.0	0.9	-2.8	0.8	B-	
683	609122	8	8	527	.890	.890	.047	.034	.019	.010	.422	.422	-.099	-.233	-.233	-1.381	0.153	-1.0	0.9	-1.5	0.7	A+	
684	609099	8	8	527	.696	.044	.127	.696	.125	.008	.350	-.150	-.217	.350	-.074	0.142	0.104	0.3	1.0	-0.3	1.0	A+	
685	610163	8	8	527	.602	.602	.108	.154	.072	.065	.491	.491	-.222	-.120	-.235	0.452	0.103	-2.0	0.9	-1.9	0.9	A+	
686	610164	8	8	527	.550	.137	.177	.550	.072	.065	.471	-.119	-.235	.471	-.141	0.731	0.100	-1.4	1.0	-1.1	0.9	A+	
687	612283	8	N/A	529	.159	.779	.030	.027	.159	.006	-.001	.225	-.204	-.195	-.001	3.093	0.126	2.4	1.2	5.0	1.8	A+	
688	612281	8	8	529	.822	.059	.822	.042	.062	.015	.504	-.206	.504	-.142	-.236	-0.746	0.126	-1.6	0.9	-2.4	0.7	A+	
689	609062	8	8	529	.522	.151	.113	.522	.174	.040	.404	-.032	-.215	.404	-.079	0.971	0.097	0.5	1.0	0.6	1.0	A+	
690	610507	8	8	529	.677	.108	.062	.083	.677	.070	.531	-.123	-.214	-.190	.531	0.000	0.110	-1.8	0.9	-2.0	0.8	A-	
691	610506	8	8	529	.544	.544	.176	.130	.074	.076	.499	.499	-.167	-.119	-.125	0.747	0.100	-2.0	0.9	-1.3	0.9	A+	
692	610522	8	8	529	.425	.062	.320	.115	.425	.078	.370	-.194	.082	-.192	.370	1.359	0.099	1.8	1.1	2.3	1.1	A+	
693	610521	8	8	529	.499	.129	.142	.499	.142	.089	.501	-.233	-.151	.501	-.019	0.942	0.100	-2.4	0.9	-2.0	0.9	B+	
694	610537	8	8	516	.785	.074	.089	.045	.785	.008	.543	-.268	-.250	-.256	.543	-0.393	0.117	-2.8	0.8	-3.4	0.7	A-	
695	610538	8	8	516	.878	.037	.041	.878	.039	.006	.461	-.166	-.251	.461	-.229	-1.192	0.145	-1.3	0.9	-2.4	0.6	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
696	610539	8	N/A	516	.680	.010	.289	.680	.016	.006	.323	-.220	-.184	.323	-.160	0.264	0.104	2.0	1.1	1.6	1.1	A+	
697	610213	8	8	516	.620	.159	.074	.111	.620	.037	.522	-.185	-.183	-.231	.522	0.487	0.102	-2.5	0.9	-2.8	0.8	A+	
698	610341	8	8	516	.475	.196	.475	.155	.111	.064	.458	-.040	.458	-.186	-.209	1.163	0.100	-1.0	1.0	-0.6	1.0	A+	
699	610224	8	8	516	.485	.485	.200	.165	.083	.068	.486	.486	-.156	-.181	-.117	1.092	0.100	-1.9	0.9	-1.8	0.9	A-	
700	610232	8	8	516	.531	.169	.128	.097	.531	.076	.474	-.061	-.182	-.219	.474	0.841	0.101	-0.9	1.0	-1.1	0.9	A+	
701	609829	8	N/A	516	.684	.056	.684	.072	.109	.080	.585	-.186	.585	-.305	-.187	-0.065	0.114	-3.3	0.8	-3.4	0.7	A-	
702	612288	8	8	521	.488	.488	.031	.432	.042	.008	.199	.199	-.198	.004	-.156	1.117	0.095	6.0	1.2	4.8	1.3	A-	
703	612289	8	8	521	.837	.025	.837	.035	.090	.013	.412	-.117	.412	-.169	-.153	-0.928	0.131	-0.3	1.0	0.2	1.0	A+	
704	612327	8	8	521	.758	.758	.042	.058	.127	.015	.447	.447	-.242	-.202	-.105	-0.338	0.113	-0.6	1.0	-1.2	0.9	A-	
705	612285	8	8	521	.480	.140	.148	.211	.480	.021	.480	-.234	-.196	-.048	.480	1.133	0.096	-3.6	0.9	-2.8	0.9	B+	
706	612286	8	8	521	.772	.075	.058	.772	.073	.023	.508	-.185	-.211	.508	-.175	-0.470	0.117	-1.6	0.9	-2.1	0.8	B+	
707	610543	8	8	521	.561	.052	.561	.171	.192	.025	.472	-.178	.472	-.185	-.137	0.729	0.097	-2.2	0.9	-2.0	0.9	B+	
708	610544	8	8	521	.729	.125	.046	.063	.729	.037	.575	-.211	-.215	-.257	.575	-0.251	0.112	-3.3	0.8	-3.7	0.7	A+	
709	610545	8	8	521	.495	.134	.240	.495	.090	.040	.349	-.091	-.065	.349	-.133	1.012	0.097	1.6	1.1	2.9	1.2	A-	
710	612334	8	8	521	.353	.255	.267	.353	.073	.052	.257	-.010	.021	.257	-.197	1.704	0.100	3.2	1.1	3.2	1.2	A-	
711	615618	8	8	528	.856	.032	.057	.053	.856	.002	.436	-.195	-.203	-.273	.436	-0.911	0.133	-1.4	0.9	-2.2	0.7	A+	
712	615614	8	8	528	.748	.059	.070	.119	.748	.004	.523	-.279	-.244	-.253	.523	-0.100	0.110	-2.4	0.9	-3.0	0.8	A-	
713	615615	8	N/A	528	.314	.025	.314	.612	.046	.004	.068	-.123	.068	.071	-.144	2.176	0.102	6.9	1.3	6.7	1.6	A-	
714	612295	8	8	528	.852	.852	.046	.044	.055	.004	.561	.561	-.205	-.311	-.333	-0.893	0.133	-2.8	0.8	-3.9	0.5	A-	
715	612296	8	8	528	.794	.044	.097	.794	.063	.004	.456	-.202	-.311	.456	-.142	-0.411	0.117	-1.2	0.9	-1.7	0.8	A-	
716	612220	8	8	1062	.694	.082	.133	.694	.049	.042	.498	-.159	-.250	.498	-.226	0.026	0.076	-2.4	0.9	-3.2	0.8	A+	A-
717	612276	8	8	528	.542	.117	.144	.165	.542	.032	.520	-.246	-.226	-.123	.520	0.964	0.098	-2.3	0.9	-2.0	0.9	A+	
718	612275	8	8	528	.623	.100	.089	.623	.150	.038	.434	-.201	-.145	.434	-.137	0.516	0.102	0.8	1.0	0.2	1.0	A+	
719	612277	8	8	528	.580	.146	.580	.153	.078	.044	.460	-.110	.460	-.122	-.301	0.736	0.101	0.0	1.0	-0.1	1.0	A+	
720	610332	8	8	528	.703	.102	.059	.703	.083	.053	.593	-.226	-.230	.593	-.314	-0.030	0.112	-3.5	0.8	-3.9	0.7	A+	
721	610314	8	N/A	528	.705	.034	.055	.152	.705	.055	.571	-.227	-.246	-.283	.571	-0.052	0.112	-2.8	0.9	-3.6	0.7	A+	
722	612331	8	N/A	534	.828	.015	.079	.828	.073	.006	.368	-.188	-.287	.368	-.095	-0.740	0.123	-0.5	1.0	-0.8	0.9	A+	A-
723	612242	8	8	534	.781	.047	.781	.140	.024	.008	.458	-.283	.458	-.195	-.253	-0.405	0.113	-1.6	0.9	-1.7	0.9	A-	B-
724	612243	8	8	534	.661	.056	.077	.202	.661	.004	.452	-.156	-.212	-.259	.452	0.309	0.098	-2.1	0.9	-2.1	0.9	A+	A-
725	612333	8	8	534	.524	.311	.524	.111	.051	.004	.320	-.099	.320	-.146	-.232	0.971	0.093	1.7	1.1	1.5	1.1	A+	A+
726	611455	8	8	534	.710	.060	.133	.075	.710	.023	.551	-.277	-.222	-.250	.551	-0.030	0.105	-3.4	0.8	-3.8	0.7	A+	A+
727	611456	8	8	534	.517	.333	.079	.517	.047	.024	.223	.116	-.232	.223	-.279	0.956	0.094	4.9	1.2	4.4	1.2	A+	A+
728	612305	8	8	534	.581	.200	.109	.069	.581	.041	.564	-.220	-.219	-.249	.564	0.604	0.097	-5.1	0.8	-4.6	0.8	A+	A-
729	612304	8	8	534	.277	.277	.185	.305	.184	.049	.222	.222	-.117	.006	.005	2.108	0.103	1.5	1.1	4.0	1.3	A-	A-
730	612301	8	8	534	.195	.303	.358	.195	.086	.058	.240	.022	.079	.240	-.296	2.615	0.115	0.1	1.0	3.1	1.4	A+	B+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
731	612279	8	8	520	.627	.065	.173	.627	.129	.006	.334	-.114	-.105	.334	-.211	0.461	0.099	0.7	1.0	0.4	1.0	A-	
732	609245	8	8	529	.667	.023	.032	.667	.268	.010	.257	-.160	-.168	.257	-.060	0.291	0.101	3.1	1.2	3.2	1.2	A+	
733	609252	8	N/A	529	.741	.741	.034	.195	.021	.010	.319	.319	-.208	-.109	-.126	-0.140	0.109	1.0	1.1	1.5	1.1	A+	
734	608016	8	8	4712	.722	.722	.146	.052	.064	.017	.505	.505	-.222	-.260	-.163	-0.061	0.036	-6.7	0.9	-7.2	0.8	A-	C-
735	609267	8	8	521	.503	.284	.050	.148	.503	.015	.330	-.034	-.226	-.111	.330	1.035	0.096	2.0	1.1	1.8	1.1	A+	
736	609269	8	N/A	521	.513	.213	.513	.106	.156	.013	.430	-.290	.430	-.091	-.025	0.993	0.096	-1.6	1.0	-1.1	1.0	A+	
737	609153	8	N/A	521	.493	.142	.493	.140	.217	.008	.253	-.100	.253	-.154	-.004	1.149	0.095	3.3	1.1	3.3	1.2	A+	A+
738	607996	8	8	4712	.813	.104	.813	.037	.026	.020	.500	-.218	.500	-.237	-.185	-0.718	0.042	-4.4	0.9	-6.7	0.8	A+	A-
739	610167	8	8	521	.555	.555	.117	.161	.119	.048	.356	.356	-.138	-.016	-.100	0.746	0.099	1.4	1.1	1.5	1.1	A-	A+
740	610168	8	N/A	521	.660	.134	.060	.096	.660	.050	.504	-.223	-.251	-.027	.504	0.170	0.105	-2.0	0.9	-1.9	0.9	A+	A-
741	610182	8	8	520	.937	.937	.025	.017	.017	.004	.471	.471	-.248	-.225	-.199	-2.065	0.192	-1.4	0.8	-2.8	0.4	A+	
742	610183	8	N/A	520	.698	.154	.106	.037	.698	.006	.453	-.252	-.178	-.226	.453	0.078	0.104	-1.5	0.9	-2.0	0.9	A+	
743	610313	8	N/A	520	.367	.129	.194	.240	.367	.069	.305	-.067	-.023	-.030	.305	1.635	0.100	2.3	1.1	3.2	1.2	A+	
744	609212	8	8	516	.446	.446	.306	.105	.140	.004	.260	.260	-.026	-.087	-.219	1.336	0.097	3.2	1.1	4.0	1.2	A+	A+
745	609213	8	8	516	.291	.205	.384	.118	.291	.002	.210	-.109	-.025	-.088	.210	2.132	0.104	2.4	1.1	3.1	1.3	A-	A-
746	609214	8	8	516	.601	.049	.049	.300	.601	.002	.434	-.223	-.210	-.237	.434	0.585	0.098	-1.0	1.0	-1.1	0.9	A-	A+
747	609117	8	8	516	.746	.062	.093	.746	.056	.043	.566	-.254	-.231	.566	-.235	-0.421	0.117	-2.8	0.8	-3.4	0.7	A+	A-
748	609100	8	8	527	.463	.463	.177	.190	.161	.010	.336	.336	-.118	-.118	-.107	1.329	0.096	1.1	1.0	1.4	1.1	B+	
749	609180	8	8	527	.843	.843	.034	.065	.049	.010	.460	.460	-.212	-.164	-.230	-0.882	0.131	-1.6	0.9	-2.5	0.7	A+	
750	610529	8	N/A	529	.698	.096	.698	.076	.051	.079	.573	-.154	.573	-.233	-.190	-0.180	0.114	-2.5	0.9	-3.3	0.7	A+	
751	610523	8	8	529	.643	.643	.087	.106	.085	.079	.650	.650	-.182	-.234	-.264	0.176	0.107	-5.5	0.8	-5.8	0.6	A-	
752	609218	8	8	529	.448	.174	.130	.448	.146	.102	.343	-.037	-.017	.343	-.107	1.172	0.100	2.8	1.1	3.4	1.2	A+	
753	609261	8	8	529	.645	.645	.183	.044	.025	.104	.369	.369	.027	-.218	-.196	0.042	0.111	1.7	1.1	2.7	1.2	A-	
754	609217	8	8	529	.378	.310	.151	.378	.055	.106	.360	.010	-.062	.360	-.186	1.537	0.101	1.6	1.1	1.8	1.1	A-	
755	610540	8	8	516	.702	.702	.138	.047	.109	.006	.444	.444	-.186	-.317	-.148	0.143	0.106	-0.8	1.0	-1.1	0.9	A+	
756	610541	8	N/A	516	.603	.176	.056	.159	.603	.006	.416	-.106	-.176	-.265	.416	0.675	0.099	-0.8	1.0	-0.5	1.0	A+	
757	610214	8	8	516	.758	.758	.105	.045	.062	.031	.508	.508	-.243	-.180	-.179	-0.325	0.117	-1.7	0.9	-1.7	0.8	A+	
758	609832	8	8	516	.717	.132	.031	.717	.043	.078	.539	-.166	-.264	.539	-.239	-0.285	0.119	-2.1	0.9	-2.0	0.8	A-	
759	609853	8	N/A	516	.580	.070	.114	.155	.580	.081	.492	-.113	-.236	-.130	.492	0.562	0.104	-1.4	0.9	-0.8	1.0	A+	
760	610546	8	8	521	.758	.081	.100	.758	.029	.033	.583	-.266	-.294	.583	-.081	-0.427	0.116	-3.3	0.8	-3.6	0.7	A+	
761	610547	8	N/A	521	.424	.424	.271	.077	.194	.035	.304	.304	.027	-.274	-.033	1.374	0.097	3.0	1.1	1.6	1.1	A+	
762	615616	8	8	528	.314	.316	.292	.314	.072	.006	.155	-.114	.089	.155	-.154	2.175	0.102	4.8	1.2	5.6	1.5	A+	
763	615617	8	N/A	528	.769	.059	.769	.121	.047	.004	.424	-.238	.424	-.133	-.292	-0.238	0.113	-0.5	1.0	-0.6	0.9	A+	
764	612219	8	8	1062	.581	.581	.075	.215	.091	.038	.486	.486	-.189	-.251	-.125	0.671	0.070	-2.4	0.9	-3.0	0.9	A+	A-
765	612218	8	N/A	1062	.491	.164	.246	.491	.061	.039	.421	-.204	-.077	.421	-.217	1.122	0.068	-0.5	1.0	-0.3	1.0	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
766	610334	8	N/A	528	.284	.284	.123	.267	.273	.053	.171	.171	-.180	-.065	.166	2.277	0.105	4.6	1.2	5.2	1.5	A+	
767	611457	8	8	534	.545	.545	.079	.187	.167	.023	.325	.325	-.222	-.067	-.088	0.827	0.094	2.0	1.1	1.7	1.1	A+	A-
768	609254	8	8	529	.469	.299	.053	.469	.170	.010	.339	-.025	-.214	.339	-.183	1.282	0.095	1.6	1.1	1.9	1.1	A-	
769	609279	8	8	529	.677	.132	.095	.085	.677	.011	.367	-.116	-.171	-.142	.367	0.244	0.102	0.8	1.0	0.6	1.0	A-	
770	609060	8	8	4712	.700	.139	.700	.122	.026	.013	.437	-.165	.437	-.217	-.185	0.085	0.035	-2.4	1.0	-3.2	0.9	A+	A-
771	609135	8	8	534	.251	.251	.234	.461	.051	.004	.160	.160	-.125	-.026	.051	2.334	0.106	2.1	1.1	3.8	1.4	A-	A+
772	609131	8	8	534	.916	.039	.011	.032	.916	.002	.461	-.235	-.198	-.285	.461	-1.624	0.163	-1.6	0.8	-2.8	0.6	A+	A+
773	609125	8	8	527	.763	.082	.087	.059	.763	.010	.489	-.248	-.217	-.202	.489	-0.275	0.112	-2.7	0.9	-2.8	0.8	A+	
774	610165	8	8	527	.579	.116	.171	.074	.579	.061	.513	-.233	-.165	-.187	.513	0.590	0.101	-2.6	0.9	-2.3	0.9	A-	
775	612284	8	8	529	.745	.745	.142	.062	.045	.006	.444	.444	-.179	-.309	-.147	-0.152	0.109	-1.7	0.9	-1.3	0.9	B-	
776	612983	8	8	529	.828	.091	.023	.828	.053	.006	.455	-.205	-.209	.455	-.245	-0.753	0.126	-1.3	0.9	-1.2	0.9	A+	
777	610228	8	8	516	.438	.275	.167	.438	.056	.064	.387	-.034	-.124	.387	-.221	1.342	0.100	1.0	1.0	1.1	1.1	A-	
778	612328	8	8	521	.407	.025	.407	.505	.050	.013	.207	-.215	.207	.084	-.236	1.500	0.097	4.8	1.2	4.5	1.3	A-	
779	612332	8	8	528	.462	.241	.091	.203	.462	.004	.439	-.229	-.205	-.112	.439	1.421	0.096	-0.9	1.0	0.4	1.0	A+	
780	612278	8	8	528	.761	.072	.072	.059	.761	.036	.584	-.233	-.240	-.289	.584	-0.344	0.118	-2.9	0.8	-3.1	0.7	B+	
781	612302	8	8	534	.418	.049	.090	.412	.418	.032	.361	-.226	-.198	-.041	.361	1.415	0.095	0.4	1.0	1.0	1.0	A-	A-
782	610087	8	8	516	.928	.021	.033	.928	.014	.004	.362	-.159	-.194	.362	-.214	-1.882	0.184	-0.7	0.9	-2.3	0.5	A+	
783	610260	8	8	516	.888	.012	.035	.058	.888	.008	.372	-.157	-.142	-.246	.372	-1.347	0.153	-0.8	0.9	-1.0	0.8	A+	
784	610090	8	8	516	.723	.107	.723	.037	.130	.004	.338	-.198	.338	-.193	-.104	0.018	0.108	1.1	1.1	1.6	1.1	A-	
785	610089	8	8	516	.684	.684	.173	.062	.076	.006	.337	.337	-.082	-.194	-.202	0.243	0.104	1.5	1.1	1.4	1.1	A-	
786	610088	8	8	516	.543	.109	.233	.543	.109	.008	.350	-.143	-.162	.350	-.113	0.959	0.097	1.2	1.0	2.1	1.1	A-	
787	609120	8	8	534	.622	.064	.622	.090	.223	.002	.424	-.205	.424	-.216	-.197	0.511	0.096	-2.0	0.9	-1.9	0.9	A-	A-
788	607998	8	8	4712	.628	.056	.243	.052	.628	.021	.337	-.165	-.046	-.223	.337	0.449	0.033	5.7	1.1	5.9	1.1	A+	A-
789	610184	8	8	521	.401	.259	.132	.401	.140	.067	.301	.064	-.153	.301	-.056	1.476	0.099	2.3	1.1	2.5	1.1	A-	A+
790	610197	8	8	521	.518	.294	.056	.518	.061	.071	.370	-.006	-.158	.370	-.158	0.879	0.099	1.4	1.1	1.8	1.1	A+	A+
791	609112	8	N/A	516	.479	.112	.186	.171	.479	.052	.532	-.242	-.207	-.114	.532	1.062	0.099	-4.0	0.9	-3.5	0.8	A+	A-
792	609096	8	8	516	.488	.080	.488	.269	.109	.054	.336	-.274	.336	.019	-.108	1.011	0.099	2.5	1.1	3.5	1.2	A-	A+
793	610189	8	N/A	516	.459	.087	.221	.167	.459	.066	.431	-.213	-.054	-.170	.431	1.124	0.100	-0.3	1.0	0.8	1.0	B+	A+
794	609130	8	8	527	.509	.042	.287	.509	.156	.008	.126	-.086	.107	.126	-.159	1.114	0.096	7.8	1.3	8.3	1.4	A-	
795	612282	8	8	529	.501	.121	.093	.274	.501	.011	.400	-.156	-.159	-.125	.400	1.127	0.095	0.0	1.0	0.3	1.0	A+	
796	609063	8	8	529	.216	.340	.216	.217	.185	.042	.231	.068	.231	-.062	-.023	2.612	0.113	1.2	1.1	3.3	1.4	A+	
797	610223	8	8	516	.481	.064	.481	.171	.233	.052	.294	-.109	.294	-.197	.072	1.168	0.099	4.6	1.2	3.9	1.2	A+	
798	612290	8	8	521	.843	.006	.106	.040	.843	.006	.438	-.096	-.245	-.242	.438	-0.931	0.131	-0.9	0.9	-1.6	0.8	A+	
799	612287	8	8	521	.461	.261	.069	.461	.188	.021	.389	-.153	-.115	.389	-.073	1.225	0.096	-0.1	1.0	0.2	1.0	A+	
800	612292	8	N/A	521	.407	.407	.144	.138	.261	.050	.357	.357	-.178	-.204	.076	1.430	0.098	0.6	1.0	1.7	1.1	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
801	612297	8	8	528	.364	.254	.127	.364	.252	.004	.278	-.099	-.191	.278	-.023	1.914	0.099	2.6	1.1	3.7	1.3	A+	
802	612322	8	8	528	.436	.436	.258	.129	.136	.042	.398	.398	.000	-.182	-.214	1.486	0.098	1.1	1.0	1.0	1.1	A+	
803	612303	8	8	534	.790	.105	.032	.041	.790	.032	.446	-.135	-.264	-.205	.446	-0.611	0.120	-1.0	0.9	-0.3	1.0	A-	A-
804	612324	8	8	520	.598	.083	.598	.092	.219	.008	.336	-.241	.336	-.267	.014	0.604	0.098	0.6	1.0	0.9	1.1	A-	
805	612280	8	8	520	.679	.100	.679	.054	.162	.006	.451	-.115	.451	-.256	-.259	0.186	0.102	-1.7	0.9	-2.2	0.9	A+	
806	608017	8	8	4712	.755	.047	.080	.103	.755	.015	.477	-.152	-.209	-.226	.477	-0.263	0.037	-4.7	0.9	-6.2	0.8	A+	A-
807	609264	8	8	521	.856	.031	.856	.065	.033	.015	.393	-.098	.393	-.123	-.169	-1.126	0.139	0.4	1.0	-0.5	0.9	A+	
808	609136	8	8	521	.756	.052	.086	.098	.756	.008	.292	-.119	-.074	-.157	.292	-0.241	0.111	1.0	1.1	1.1	1.1	A+	A+
809	607955	8	8	4712	.362	.137	.362	.271	.216	.014	.285	-.114	.285	-.025	-.120	1.784	0.033	5.4	1.1	9.3	1.2	A-	A+
810	607973	8	8	4712	.754	.754	.028	.200	.009	.009	.319	.319	-.236	-.128	-.117	-0.233	0.037	3.4	1.1	4.7	1.2	A+	A+
811	607966	8	8	521	.797	.071	.797	.038	.052	.042	.572	-.237	.572	-.220	-.186	-0.736	0.127	-2.2	0.8	-3.2	0.7	A-	B-
812	610349	8	8	521	.791	.791	.042	.058	.052	.058	.493	.493	-.166	-.207	-.092	-0.789	0.130	-0.9	0.9	-1.2	0.8	A+	A-
813	610179	8	8	520	.300	.300	.358	.108	.227	.008	.292	.292	-.088	-.224	.000	2.073	0.103	0.4	1.0	0.6	1.1	A-	
814	607965	8	8	520	.864	.864	.054	.042	.033	.008	.467	.467	-.201	-.245	-.207	-1.115	0.138	-1.3	0.9	-2.4	0.7	A-	
815	610311	8	8	520	.698	.046	.127	.698	.060	.069	.607	-.256	-.233	.607	-.189	-0.165	0.113	-3.2	0.8	-3.7	0.7	A+	
816	607959	8	8	516	.733	.126	.039	.733	.072	.031	.404	-.213	-.193	.404	-.081	-0.269	0.113	0.4	1.0	0.5	1.1	A-	A-
817	607964	8	8	516	.754	.754	.103	.080	.033	.031	.488	.488	-.200	-.245	-.153	-0.408	0.116	-0.8	1.0	-1.0	0.9	A+	A-
818	607969	8	8	516	.785	.041	.087	.785	.056	.031	.526	-.178	-.297	.526	-.177	-0.638	0.123	-1.5	0.9	-2.0	0.8	A+	A-
819	609095	8	8	516	.678	.678	.060	.126	.095	.041	.502	.502	-.301	-.113	-.212	0.031	0.108	-1.8	0.9	-1.2	0.9	A-	B-
820	610187	8	8	516	.533	.533	.244	.097	.066	.060	.397	.397	-.011	-.143	-.333	0.761	0.100	0.6	1.0	0.1	1.0	A+	A+
821	609115	8	8	527	.909	.042	.011	.032	.909	.006	.391	-.239	-.150	-.119	.391	-1.585	0.164	-0.6	0.9	-2.0	0.6	A-	
822	607960	8	8	527	.970	.013	.004	.970	.006	.008	.398	-.141	-.092	.398	-.142	-3.127	0.307	-0.1	0.9	-1.7	0.4	A+	
823	607961	8	8	527	.662	.112	.030	.188	.662	.008	.331	-.210	-.213	-.046	.331	0.335	0.101	0.8	1.0	0.1	1.0	A+	
824	607967	8	8	527	.573	.362	.029	.029	.573	.008	.463	-.265	-.185	-.213	.463	0.795	0.097	-2.1	0.9	-2.4	0.9	A-	
825	612325	8	8	529	.847	.847	.036	.087	.017	.013	.501	.501	-.218	-.257	-.141	-0.960	0.134	-1.7	0.9	-2.5	0.7	A+	
826	607956	8	8	529	.737	.059	.100	.737	.083	.021	.397	-.072	-.180	.397	-.153	-0.157	0.110	0.6	1.0	-0.4	1.0	B-	
827	607978	8	8	529	.909	.019	.909	.032	.025	.015	.520	-.206	.520	-.214	-.159	-1.689	0.171	-1.2	0.9	-2.9	0.5	B+	
828	609061	8	8	529	.790	.790	.061	.066	.047	.036	.584	.584	-.170	-.273	-.205	-0.616	0.123	-2.6	0.8	-3.1	0.7	B+	
829	610536	8	8	516	.775	.775	.124	.070	.025	.006	.389	.389	-.250	-.124	-.141	-0.319	0.115	-0.2	1.0	-0.3	1.0	A+	
830	607972	8	8	516	.459	.190	.459	.118	.223	.010	.323	-.125	.323	-.110	-.115	1.369	0.097	2.2	1.1	1.7	1.1	A+	
831	607975	8	8	516	.771	.103	.072	.049	.771	.006	.424	-.218	-.150	-.219	.424	-0.292	0.114	-0.9	0.9	-0.6	0.9	A-	
832	610212	8	8	516	.830	.016	.016	.830	.114	.025	.461	-.111	-.189	.461	-.244	-0.861	0.133	-0.8	0.9	-1.2	0.8	A-	
833	610227	8	8	516	.673	.093	.047	.673	.143	.045	.435	-.101	-.264	.435	-.125	0.168	0.107	0.5	1.0	-0.3	1.0	A-	
834	612326	8	8	521	.799	.180	.008	.799	.008	.006	.393	-.247	-.233	.393	-.146	-0.587	0.119	-0.2	1.0	-0.2	1.0	A-	
835	607971	8	8	521	.259	.115	.313	.259	.298	.015	.244	-.135	-.044	.244	.029	2.278	0.106	0.9	1.1	2.8	1.3	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
836	607977	8	8	521	.822	.822	.054	.079	.033	.013	.543	.543	-.213	-.272	-.156	-0.796	0.126	-2.1	0.9	-2.6	0.7	A-	
837	610542	8	8	521	.850	.035	.056	.035	.850	.025	.569	-.225	-.247	-.188	.569	-1.150	0.140	-2.0	0.8	-3.3	0.6	A-	
838	612291	8	8	521	.234	.100	.499	.125	.234	.042	.228	-.032	.154	-.267	.228	2.396	0.110	1.3	1.1	2.4	1.3	A-	
839	615613	8	8	528	.860	.047	.860	.068	.023	.002	.312	-.192	.312	-.160	-.115	-0.947	0.135	0.5	1.0	0.0	1.0	A+	
840	612330	8	8	528	.864	.864	.089	.023	.021	.004	.461	.461	-.254	-.291	-.178	-1.002	0.137	-1.3	0.9	-1.5	0.8	A+	
841	607970	8	8	528	.648	.267	.648	.059	.021	.006	.473	-.288	.473	-.262	-.098	0.483	0.101	-1.0	1.0	-1.4	0.9	A+	
842	607974	8	8	528	.737	.053	.047	.737	.157	.006	.524	-.272	-.243	.524	-.263	-0.033	0.109	-2.1	0.9	-2.9	0.8	A+	
843	612321	8	8	528	.867	.867	.047	.038	.023	.025	.482	.482	-.210	-.241	-.177	-1.231	0.149	-1.1	0.9	-1.9	0.7	A+	
844	612329	8	8	534	.493	.219	.243	.493	.043	.002	.174	.060	-.162	.174	-.151	1.121	0.093	5.1	1.2	5.2	1.2	A-	A-
845	612241	8	8	534	.852	.852	.086	.043	.017	.002	.387	.387	-.263	-.180	-.121	-0.938	0.129	-0.8	0.9	-1.9	0.8	A-	A-
846	607968	8	8	534	.869	.034	.869	.062	.030	.006	.309	-.223	.309	-.139	-.077	-1.109	0.137	0.2	1.0	-0.1	1.0	A-	A-
847	607976	8	8	534	.684	.684	.077	.154	.081	.006	.311	.311	-.132	-.157	-.119	0.187	0.100	1.1	1.1	0.6	1.0	A+	A-
848	612323	8	8	534	.611	.611	.155	.152	.051	.032	.448	.448	-.120	-.201	-.229	0.480	0.098	-1.4	1.0	-1.4	0.9	A+	A-
849	607957	8	8	521	.699	.067	.699	.071	.127	.037	.440	-.162	.440	-.182	-.101	-0.011	0.108	-0.3	1.0	-1.2	0.9	A+	A-
850	607963	8	8	521	.658	.144	.083	.658	.077	.038	.413	-.027	-.188	.413	-.194	0.219	0.104	-0.3	1.0	-0.6	1.0	A-	A+
851	607958	8	8	520	.608	.106	.208	.071	.608	.008	.360	-.128	-.164	-.170	.360	0.556	0.098	1.1	1.0	0.2	1.0	B-	
852	607962	8	8	520	.781	.025	.781	.112	.075	.008	.324	-.218	.324	-.186	-.037	-0.433	0.115	0.4	1.0	1.4	1.2	A+	
853	609244	8	8	529	.556	.193	.556	.185	.061	.006	.372	-.133	.372	-.219	-.085	0.881	0.096	0.2	1.0	-0.2	1.0	B-	
854	608136	Lit	Lit	261	.782	.031	.782	.138	.042	.008	.308	-.184	.308	-.117	-.111	-0.387	0.168	1.8	1.2	0.9	1.2	A+	
855	608137	Lit	Lit	261	.728	.081	.134	.728	.042	.015	.478	-.165	-.224	.478	-.242	-0.063	0.159	-0.8	0.9	0.1	1.0	A-	
856	614030	Lit	Lit	271	.897	.055	.897	.030	.019	.000	.395	-.313	.395	-.176	-.141	-1.301	0.208	-0.9	0.9	-1.9	0.6	A+	
857	614031	Lit	Lit	271	.565	.144	.218	.565	.074	.000	.131	-.138	.038	.131	-.123	0.893	0.135	4.5	1.3	4.8	1.4	A-	
858	610092	Lit	Lit	263	.677	.053	.171	.099	.677	.000	.529	-.182	-.295	-.320	.529	0.264	0.147	-2.1	0.9	-2.3	0.8	A-	
859	610091	Lit	Lit	263	.635	.255	.027	.635	.080	.004	.146	.081	-.142	.146	-.262	0.507	0.143	4.6	1.3	4.7	1.5	A+	
860	612498	Lit	Lit	262	.359	.294	.359	.218	.122	.008	.310	.080	.310	-.187	-.225	1.935	0.140	1.1	1.1	1.8	1.2	A+	
861	612548	Lit	Lit	262	.622	.076	.168	.622	.126	.008	.356	-.170	-.130	.356	-.136	0.634	0.141	1.1	1.1	0.9	1.1	A+	
862	612496	Lit	Lit	262	.687	.687	.092	.115	.099	.008	.390	.390	-.212	-.174	-.101	0.303	0.147	0.2	1.0	0.0	1.0	A+	
863	616077	Lit	Lit	3947	.768	.768	.089	.067	.053	.022	.555	.555	-.277	-.228	-.183	-0.375	0.043	-6.9	0.9	-8.6	0.7	A+	A+
864	610282	Lit	Lit	3947	.688	.061	.688	.136	.090	.025	.561	-.243	.561	-.243	-.201	0.132	0.039	-8.3	0.9	-9.3	0.8	A+	A+
865	612495	Lit	Lit	258	.655	.655	.081	.136	.101	.027	.527	.527	-.131	-.246	-.276	0.275	0.150	-1.2	0.9	-0.6	0.9	A-	
866	612560	Lit	Lit	258	.465	.190	.465	.194	.120	.031	.352	-.115	.352	-.078	-.157	1.285	0.143	2.6	1.2	2.3	1.2	A+	
867	612561	Lit	Lit	258	.516	.202	.078	.516	.178	.027	.281	-.087	-.106	.281	-.077	1.037	0.143	4.4	1.3	3.9	1.4	A-	
868	612559	Lit	Lit	258	.678	.093	.062	.678	.124	.043	.520	-.191	-.268	.520	-.210	0.061	0.155	-1.4	0.9	-1.5	0.8	A+	
869	610229	Lit	Lit	258	.488	.229	.112	.488	.120	.050	.351	.091	-.288	.351	-.191	1.114	0.145	2.4	1.1	2.6	1.2	A+	
870	610307	Lit	Lit	258	.283	.283	.244	.221	.198	.054	.394	.394	-.151	-.090	-.028	2.288	0.158	0.7	1.1	0.7	1.1	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
871	610253	Lit	Lit	525	.446	.213	.215	.101	.446	.025	.361	-.045	-.090	-.242	.361	1.487	0.099	2.1	1.1	3.4	1.2	B-	
872	612530	Lit	Lit	263	.608	.103	.164	.091	.608	.034	.680	-.298	-.326	-.159	.680	0.619	0.145	-4.4	0.8	-4.1	0.7	A-	
873	612573	Lit	Lit	262	.595	.130	.595	.118	.149	.008	.434	-.069	.434	-.297	-.229	0.759	0.141	-1.4	0.9	-1.3	0.9	B-	
874	612574	Lit	Lit	262	.695	.095	.076	.695	.126	.008	.553	-.258	-.385	.553	-.183	0.196	0.151	-1.6	0.9	-1.8	0.8	A-	
875	612576	Lit	Lit	262	.790	.076	.061	.069	.790	.004	.599	-.337	-.304	-.273	.599	-0.421	0.169	-2.3	0.8	-2.7	0.6	B-	
876	612558	Lit	Lit	262	.489	.336	.027	.134	.489	.015	.368	-.170	-.215	-.079	.368	1.276	0.138	1.6	1.1	2.2	1.2	B-	
877	616076	Lit	Lit	262	.481	.126	.481	.122	.206	.065	.419	-.096	.419	-.252	.002	1.224	0.141	0.5	1.0	0.4	1.0	A+	
878	610233	Lit	Lit	523	.390	.044	.317	.390	.191	.057	.302	-.202	.041	.302	-.069	1.735	0.102	4.5	1.2	6.2	1.5	A-	
879	610234	Lit	Lit	523	.480	.134	.191	.136	.480	.059	.466	-.198	-.092	-.091	.466	1.246	0.101	0.3	1.0	1.1	1.1	A+	
880	608134	Lit	Lit	264	.447	.466	.027	.057	.447	.004	.210	-.002	-.208	-.219	.210	1.357	0.137	4.0	1.2	3.8	1.3	B+	
881	609098	Lit	Lit	264	.424	.201	.140	.224	.424	.011	.430	.017	-.279	-.219	.430	1.459	0.138	-0.4	1.0	0.4	1.0	A-	
882	616073	Lit	Lit	264	.602	.250	.602	.061	.068	.019	.363	-.030	.363	-.301	-.243	0.544	0.141	1.3	1.1	0.8	1.1	A-	
883	616075	Lit	Lit	264	.530	.083	.197	.530	.159	.030	.505	-.296	-.249	.505	-.051	0.884	0.139	-1.5	0.9	-1.4	0.9	A+	
884	610218	Lit	Lit	264	.511	.163	.511	.144	.140	.042	.548	-.127	.548	-.254	-.218	0.956	0.139	-2.6	0.9	-2.2	0.9	A-	
885	610215	Lit	Lit	264	.583	.125	.133	.117	.583	.042	.611	-.265	-.266	-.192	.611	0.581	0.142	-3.8	0.8	-3.6	0.7	A+	
886	610247	Lit	Lit	264	.428	.428	.265	.110	.148	.049	.419	.419	-.062	-.294	-.090	1.353	0.140	0.2	1.0	0.2	1.0	A+	
887	616066	Lit	Lit	261	.705	.077	.142	.065	.705	.012	.531	-.286	-.228	-.175	.531	0.105	0.155	-2.2	0.8	-1.1	0.9	A-	
888	610296	Lit	Lit	261	.625	.058	.107	.625	.199	.012	.367	-.165	-.222	.367	-.067	0.581	0.147	2.1	1.1	1.5	1.2	A+	
889	610295	Lit	Lit	261	.755	.146	.050	.038	.755	.012	.537	-.216	-.290	-.251	.537	-0.222	0.163	-1.9	0.9	-1.4	0.8	A-	
890	608131	Lit	Lit	261	.444	.444	.061	.268	.207	.019	.444	.444	-.307	-.050	-.161	1.534	0.143	1.0	1.1	1.3	1.1	A-	
891	616068	Lit	Lit	261	.529	.268	.529	.088	.073	.042	.428	-.077	.428	-.203	-.110	1.038	0.145	2.0	1.1	2.0	1.2	A-	
892	610120	Lit	Lit	261	.659	.103	.659	.073	.111	.054	.575	-.145	.575	-.227	-.245	0.220	0.156	-1.7	0.9	-1.6	0.8	A-	
893	609253	Lit	Lit	263	.639	.224	.639	.088	.042	.008	.284	-.177	.284	-.054	-.097	0.511	0.140	0.9	1.1	0.9	1.1	A-	
894	609109	Lit	Lit	263	.179	.281	.240	.179	.293	.008	.056	-.040	.025	.056	.054	2.923	0.168	1.6	1.2	3.5	1.7	A-	
895	609107	Lit	Lit	263	.559	.068	.281	.080	.559	.011	.359	-.145	-.062	-.256	.359	0.893	0.135	0.5	1.0	0.1	1.0	A+	
896	609105	Lit	Lit	263	.578	.023	.300	.088	.578	.011	.341	-.222	-.118	-.129	.341	0.801	0.136	0.8	1.0	0.6	1.0	A+	
897	612487	Lit	Lit	263	.654	.654	.156	.129	.049	.011	.412	.412	-.187	-.208	-.063	0.418	0.141	-0.5	1.0	-0.5	1.0	B-	
898	612488	Lit	Lit	263	.681	.122	.681	.095	.084	.019	.447	-.150	.447	-.127	-.267	0.242	0.145	-1.2	0.9	-1.0	0.9	A-	
899	612503	Lit	Lit	263	.327	.145	.327	.395	.118	.015	.248	-.115	.248	.060	-.168	2.010	0.141	1.7	1.1	1.6	1.1	A-	
900	612502	Lit	Lit	263	.761	.129	.042	.761	.057	.011	.467	-.222	-.184	.467	-.187	-0.201	0.157	-1.3	0.9	-1.4	0.8	A+	
901	609113	Lit	Lit	263	.369	.300	.221	.084	.369	.027	.299	.119	-.239	-.150	.299	1.774	0.138	1.0	1.1	1.3	1.1	B+	
902	609156	Lit	Lit	263	.384	.183	.384	.175	.232	.027	.345	-.094	.345	-.146	-.036	1.693	0.137	0.6	1.0	0.5	1.0	B-	
903	609158	Lit	Lit	263	.586	.095	.167	.126	.586	.027	.589	-.223	-.265	-.197	.589	0.711	0.138	-4.2	0.8	-3.7	0.8	A+	
904	616072	Lit	Lit	263	.551	.179	.095	.551	.145	.030	.399	-.103	-.213	.399	-.092	0.873	0.137	0.2	1.0	0.2	1.0	A-	
905	609160	Lit	Lit	263	.422	.422	.209	.141	.194	.034	.368	.368	-.205	-.064	-.025	1.495	0.136	0.2	1.0	0.8	1.1	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
906	612568	Lit	Lit	263	.506	.506	.099	.179	.183	.034	.453	.453	-.140	-.187	-.121	1.088	0.136	-1.3	0.9	-1.2	0.9	C-	
907	612546	Lit	Lit	262	.863	.038	.027	.069	.863	.004	.535	-.217	-.287	-.295	.535	-1.001	0.198	-1.2	0.9	-2.0	0.6	A-	
908	612492	Lit	Lit	262	.882	.019	.882	.084	.012	.004	.408	-.181	.408	-.247	-.158	-1.166	0.209	-0.6	0.9	-0.6	0.9	A+	
909	612493	Lit	Lit	262	.649	.073	.137	.134	.649	.008	.477	-.362	-.105	-.187	.477	0.513	0.143	-1.2	0.9	-1.4	0.9	A-	
910	612545	Lit	Lit	262	.935	.004	.042	.935	.012	.008	.514	-.100	-.311	.514	-.227	-2.034	0.285	-0.8	0.8	-2.1	0.4	A-	
911	612549	Lit	Lit	262	.584	.157	.145	.103	.584	.012	.466	-.167	-.269	-.115	.466	0.824	0.139	-1.1	0.9	-1.1	0.9	A-	
912	612527	Lit	Lit	262	.282	.099	.282	.221	.370	.027	.230	-.106	.230	-.060	.006	2.342	0.149	1.3	1.1	1.9	1.2	A+	
913	612565	Lit	Lit	262	.435	.088	.435	.321	.122	.034	.383	-.265	.383	-.073	-.084	1.486	0.138	0.2	1.0	0.7	1.1	A-	
914	609141	Lit	Lit	271	.343	.092	.421	.133	.343	.011	.257	-.198	.060	-.190	.257	1.980	0.140	2.3	1.1	2.3	1.2	B+	
915	612489	Lit	Lit	271	.605	.173	.605	.100	.096	.026	.545	-.288	.545	-.244	-.116	0.621	0.139	-2.1	0.9	-2.2	0.8	A+	
916	616070	Lit	Lit	271	.561	.214	.074	.122	.561	.030	.503	-.094	-.192	-.337	.503	0.839	0.137	-1.3	0.9	-1.1	0.9	A-	
917	612501	Lit	Lit	271	.491	.103	.188	.188	.491	.030	.600	-.213	-.230	-.233	.600	1.196	0.136	-3.7	0.8	-3.4	0.8	C+	
918	612556	Lit	Lit	271	.572	.114	.572	.137	.144	.033	.553	-.162	.553	-.246	-.229	0.778	0.138	-2.3	0.9	-2.0	0.9	A-	
919	616074	Lit	Lit	263	.787	.057	.057	.095	.787	.004	.594	-.338	-.263	-.314	.594	-0.451	0.167	-2.7	0.8	-2.9	0.6	A+	
920	616069	Lit	Lit	263	.753	.091	.753	.084	.049	.023	.535	-.163	.535	-.327	-.248	-0.309	0.164	-1.1	0.9	-1.8	0.8	A-	
921	612529	Lit	Lit	263	.551	.152	.088	.551	.183	.027	.371	-.180	-.195	.371	-.048	0.872	0.141	2.0	1.1	2.1	1.2	B+	
922	612528	Lit	Lit	263	.654	.122	.654	.145	.053	.027	.585	-.316	.585	-.210	-.243	0.309	0.148	-2.3	0.9	-2.0	0.8	A+	
923	612486	Lit	Lit	263	.529	.049	.243	.152	.529	.027	.524	-.176	-.229	-.218	.524	0.991	0.140	-1.3	0.9	-1.2	0.9	A-	
924	610608	Lit	Lit	263	.821	.068	.821	.042	.042	.027	.550	-.242	.550	-.266	-.247	-0.808	0.185	-1.8	0.8	-2.0	0.6	C+	
925	610201	Lit	Lit	263	.475	.084	.156	.247	.475	.038	.429	-.193	-.290	-.020	.429	1.231	0.140	0.7	1.0	1.0	1.1	A-	
926	610351	Lit	Lit	263	.426	.183	.426	.126	.228	.038	.390	-.242	.390	-.212	.044	1.509	0.141	1.0	1.1	1.5	1.1	A-	
927	610200	Lit	Lit	263	.574	.186	.103	.574	.099	.038	.447	-.069	-.219	.447	-.268	0.709	0.143	0.7	1.0	0.1	1.0	A-	
928	614018	Lit	Lit	262	.607	.179	.607	.107	.107	.000	.438	-.252	.438	-.299	-.081	0.640	0.140	-0.5	1.0	-0.6	1.0	A-	
929	614021	Lit	Lit	262	.290	.141	.225	.290	.340	.004	.126	-.137	-.135	.126	.103	2.245	0.148	3.4	1.2	4.2	1.6	A-	
930	614020	Lit	Lit	262	.622	.233	.118	.622	.027	.000	.289	-.178	-.160	.289	-.081	0.562	0.141	2.2	1.1	2.2	1.2	B-	
931	616067	Lit	Lit	262	.657	.241	.657	.042	.061	.000	.430	-.128	.430	-.312	-.363	0.380	0.143	-0.1	1.0	-0.6	0.9	A+	
932	609181	Lit	Lit	262	.626	.115	.176	.626	.080	.004	.426	-.160	-.329	.426	-.080	0.538	0.141	0.0	1.0	-0.5	1.0	A+	
933	610251	Lit	Lit	262	.492	.095	.286	.111	.492	.015	.412	-.225	-.054	-.327	.412	1.168	0.138	0.5	1.0	1.0	1.1	A+	
934	610250	Lit	Lit	262	.641	.061	.641	.225	.053	.019	.364	-.197	.364	-.125	-.270	0.386	0.144	1.1	1.1	1.0	1.1	A+	
935	609078	Lit	Lit	523	.686	.048	.149	.092	.686	.025	.595	-.222	-.251	-.351	.595	0.162	0.106	-4.6	0.8	-4.2	0.7	B+	
936	610290	Lit	Lit	262	.439	.439	.386	.084	.065	.027	.460	.460	-.153	-.304	-.223	1.400	0.139	-0.4	1.0	-0.9	0.9	A+	
937	610289	Lit	Lit	262	.622	.622	.076	.172	.103	.027	.631	.631	-.320	-.318	-.285	0.457	0.144	-4.0	0.8	-3.9	0.7	B+	
938	610099	Lit	Lit	261	.575	.172	.575	.088	.157	.008	.289	-.103	.289	-.175	-.096	0.857	0.137	2.1	1.1	1.4	1.1	A-	
939	610101	Lit	Lit	261	.502	.502	.330	.069	.092	.008	.240	.240	-.038	-.082	-.213	1.211	0.136	2.9	1.2	2.7	1.2	A+	
940	610191	Lit	Lit	261	.368	.261	.172	.188	.368	.012	.510	-.134	-.132	-.242	.510	1.871	0.140	-2.5	0.9	-2.5	0.8	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
941	610205	Lit	Lit	261	.422	.100	.399	.061	.422	.019	.363	-.272	.006	-.194	.363	1.589	0.138	1.0	1.1	0.8	1.1	A+	
942	610264	Lit	Lit	261	.594	.126	.138	.100	.594	.042	.565	-.268	-.175	-.197	.565	0.672	0.142	-3.0	0.8	-2.8	0.8	B+	
943	609241	Lit	Lit	261	.720	.088	.096	.720	.084	.012	.386	-.229	-.142	.386	-.116	-0.089	0.154	-0.4	1.0	-0.9	0.9	A+	
944	609054	Lit	Lit	261	.318	.364	.180	.123	.318	.015	.347	-.020	-.084	-.181	.347	2.005	0.146	0.5	1.0	1.0	1.1	A+	
945	609052	Lit	Lit	261	.399	.399	.092	.238	.249	.023	.368	.368	-.146	-.037	-.089	1.557	0.140	0.1	1.0	0.2	1.0	A-	
946	616633	Lit	Lit	261	.659	.188	.659	.058	.073	.023	.451	-.152	.451	-.151	-.137	0.222	0.146	-0.3	1.0	-0.5	1.0	A-	
947	609051	Lit	Lit	261	.625	.138	.138	.077	.625	.023	.528	-.090	-.201	-.271	.528	0.411	0.143	-1.9	0.9	-2.0	0.8	A+	
948	610237	Lit	Lit	261	.571	.571	.264	.061	.077	.027	.468	.468	-.165	-.127	-.133	0.681	0.140	-0.9	1.0	-1.2	0.9	A-	
949	610245	Lit	Lit	261	.548	.548	.169	.119	.138	.027	.487	.487	-.108	-.237	-.094	0.798	0.139	-2.1	0.9	-1.5	0.9	A-	
950	610246	Lit	Lit	261	.648	.648	.188	.073	.061	.031	.546	.546	-.155	-.233	-.176	0.265	0.146	-2.4	0.9	-2.4	0.8	A+	
951	609077	Lit	Lit	261	.188	.180	.188	.211	.356	.065	.188	.074	.188	-.018	.047	2.743	0.171	1.1	1.1	3.8	1.8	A-	
952	609206	Lit	Lit	261	.391	.391	.211	.230	.100	.069	.362	.362	-.018	-.104	-.028	1.495	0.143	1.5	1.1	1.0	1.1	A-	
953	609248	Lit	Lit	269	.621	.621	.294	.030	.052	.004	.260	.260	-.104	-.127	-.171	0.536	0.139	3.0	1.2	2.2	1.2	A+	
954	609247	Lit	Lit	269	.792	.052	.093	.792	.060	.004	.376	-.159	-.172	.376	-.203	-0.483	0.164	0.0	1.0	-0.7	0.9	A+	
955	609246	Lit	Lit	269	.409	.409	.041	.134	.409	.007	.295	-.184	-.036	-.075	.295	1.585	0.137	2.5	1.1	2.7	1.2	B-	
956	610279	Lit	Lit	269	.643	.052	.093	.205	.643	.007	.513	-.244	-.163	-.278	.513	0.410	0.141	-2.2	0.9	-1.3	0.9	A-	
957	610277	Lit	Lit	269	.357	.357	.227	.164	.245	.007	.173	.173	-.051	-.119	.035	1.853	0.139	3.6	1.2	4.0	1.4	A+	
958	610276	Lit	Lit	269	.520	.223	.089	.520	.156	.011	.487	-.150	-.263	.487	-.184	1.040	0.135	-2.0	0.9	-1.8	0.9	A-	
959	610278	Lit	Lit	269	.632	.141	.078	.632	.134	.015	.560	-.212	-.305	.560	-.220	0.440	0.141	-2.9	0.8	-2.9	0.8	A+	
960	614123	Lit	Lit	269	.528	.253	.528	.138	.052	.030	.362	.025	.362	-.236	-.241	0.938	0.137	1.7	1.1	2.0	1.1	A+	
961	612510	Lit	Lit	269	.487	.312	.145	.026	.487	.030	.410	-.125	-.168	-.197	.410	1.144	0.137	0.6	1.0	0.8	1.1	A+	
962	612490	Lit	Lit	269	.465	.119	.152	.465	.231	.034	.444	-.122	-.188	.444	-.139	1.246	0.137	-0.2	1.0	-0.3	1.0	A-	
963	609133	Lit	Lit	262	.710	.710	.088	.126	.073	.004	.503	.503	-.251	-.253	-.210	-0.021	0.151	-2.7	0.8	-2.4	0.8	B+	
964	609138	Lit	Lit	262	.225	.168	.225	.176	.428	.004	.141	-.202	.141	-.162	.196	2.587	0.160	0.9	1.1	2.7	1.5	A+	
965	609137	Lit	Lit	262	.679	.061	.176	.076	.679	.008	.501	-.217	-.220	-.259	.501	0.135	0.147	-1.3	0.9	-1.8	0.8	A+	
966	609132	Lit	Lit	262	.645	.168	.645	.118	.053	.015	.389	-.105	.389	-.174	-.172	0.319	0.144	0.5	1.0	0.5	1.0	A+	
967	610284	Lit	Lit	262	.389	.309	.179	.389	.099	.023	.186	.168	-.125	.186	-.169	1.612	0.140	4.6	1.3	4.3	1.4	A-	
968	610283	Lit	Lit	262	.637	.637	.053	.202	.080	.027	.476	.476	-.268	-.155	-.113	0.310	0.145	-0.8	1.0	-0.9	0.9	B+	
969	612484	Lit	Lit	262	.576	.206	.092	.576	.095	.031	.399	.043	-.211	.399	-.210	0.638	0.141	1.1	1.1	1.7	1.1	B-	
970	612540	Lit	Lit	262	.622	.050	.622	.092	.202	.034	.422	-.151	.422	-.163	-.090	0.376	0.145	0.8	1.1	0.4	1.0	A-	
971	614024	Lit	Lit	527	.899	.032	.899	.017	.017	.034	.576	-.236	.576	-.197	-.119	-1.933	0.186	-1.1	0.8	-2.2	0.5	A+	
972	609192	Lit	Lit	262	.481	.481	.218	.111	.137	.053	.408	.408	-.152	-.096	-.040	1.079	0.140	0.1	1.0	1.1	1.1	A-	
973	612551	Lit	Lit	265	.457	.049	.128	.457	.355	.011	.279	-.250	-.107	.279	.006	1.402	0.137	3.5	1.2	2.8	1.2	A+	
974	612552	Lit	Lit	265	.551	.551	.117	.166	.155	.011	.382	.382	-.239	.015	-.183	0.931	0.138	0.6	1.0	0.8	1.1	B-	
975	616071	Lit	Lit	265	.694	.694	.079	.053	.151	.023	.429	.429	-.193	-.249	-.024	0.127	0.151	0.3	1.0	-0.1	1.0	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
976	609104	Lit	Lit	265	.528	.249	.106	.528	.098	.019	.336	.000	-.196	.336	-.111	1.035	0.138	2.5	1.1	2.0	1.2	A+	
977	612507	Lit	Lit	265	.438	.276	.438	.109	.121	.057	.364	.031	.364	-.206	-.084	1.409	0.140	1.9	1.1	1.4	1.1	A-	
978	612508	Lit	Lit	265	.472	.159	.472	.106	.208	.057	.378	-.048	.378	-.238	.012	1.232	0.140	1.6	1.1	1.6	1.1	A+	
979	610603	Lit	Lit	265	.574	.072	.109	.574	.185	.060	.469	-.181	-.148	.469	-.086	0.682	0.144	-0.1	1.0	-0.4	1.0	A+	
980	608138	Lit	Lit	261	.720	.054	.077	.720	.142	.008	.429	-.213	-.235	.429	-.141	0.033	0.156	0.2	1.0	0.4	1.1	A+	
981	614032	Lit	Lit	271	.661	.033	.661	.218	.089	.000	.355	-.237	.355	-.121	-.267	0.406	0.140	1.3	1.1	1.1	1.1	A-	
982	614033	Lit	Lit	271	.849	.044	.081	.849	.026	.000	.401	-.232	-.216	.401	-.233	-0.819	0.179	-1.3	0.9	-1.2	0.8	B+	
983	614034	Lit	Lit	271	.292	.292	.299	.218	.192	.000	.332	.332	-.187	-.085	-.077	2.277	0.145	0.6	1.0	1.9	1.2	A+	
984	610352	Lit	Lit	263	.152	.152	.160	.278	.411	.000	.027	.027	-.124	-.079	.145	3.313	0.186	1.8	1.2	3.6	2.0	A-	
985	610094	Lit	Lit	263	.608	.608	.186	.084	.118	.004	.490	.490	-.103	-.276	-.343	0.629	0.141	-1.0	0.9	-1.0	0.9	A+	
986	610095	Lit	Lit	263	.703	.205	.703	.053	.030	.008	.486	-.261	.486	-.318	-.185	0.106	0.151	-1.2	0.9	-1.5	0.8	A+	
987	610093	Lit	Lit	263	.285	.118	.285	.434	.160	.004	.206	-.230	.206	.107	-.164	2.336	0.150	2.2	1.2	2.8	1.4	A-	
988	610239	Lit	Lit	258	.861	.039	.861	.089	.012	.000	.128	-.109	.128	-.052	-.077	-1.144	0.197	1.1	1.1	1.4	1.4	A-	
989	610240	Lit	Lit	258	.694	.694	.089	.120	.097	.000	.539	.539	-.262	-.357	-.195	0.129	0.150	-2.5	0.8	-2.5	0.7	A-	
990	610242	Lit	Lit	258	.477	.205	.477	.295	.023	.000	.430	-.132	.430	-.299	-.167	1.285	0.141	0.7	1.0	1.0	1.1	B-	
991	610258	Lit	Lit	3947	.354	.036	.241	.352	.354	.017	.334	-.162	-.151	-.028	.334	1.898	0.037	4.5	1.1	7.8	1.2	A+	A-
992	610259	Lit	Lit	3947	.663	.131	.663	.114	.073	.020	.416	-.087	.416	-.225	-.156	0.301	0.038	1.9	1.0	0.7	1.0	A+	A+
993	610262	Lit	Lit	3947	.723	.085	.723	.084	.087	.021	.534	-.185	.534	-.237	-.230	-0.067	0.040	-7.0	0.9	-6.0	0.8	A+	A+
994	612563	Lit	Lit	258	.760	.109	.760	.081	.023	.027	.548	-.346	.548	-.177	-.203	-0.394	0.167	-1.9	0.8	-2.3	0.7	A+	
995	612562	Lit	Lit	258	.667	.078	.105	.112	.667	.039	.553	-.209	-.237	-.252	.553	0.155	0.153	-2.5	0.8	-1.9	0.8	A+	
996	610230	Lit	Lit	258	.574	.574	.151	.078	.147	.050	.388	.388	-.221	-.227	.025	0.648	0.147	1.6	1.1	1.5	1.2	A-	
997	610231	Lit	Lit	258	.395	.109	.163	.283	.395	.050	.453	-.177	-.138	-.122	.453	1.623	0.147	0.3	1.0	0.4	1.0	B-	
998	610226	Lit	Lit	258	.295	.205	.229	.295	.221	.050	.285	-.106	-.140	.285	.078	2.217	0.156	2.6	1.2	4.0	1.6	A+	
999	610300	Lit	Lit	263	.354	.236	.354	.137	.270	.004	.225	.041	.225	-.266	-.035	2.015	0.143	3.1	1.2	2.8	1.3	A+	
1000	610299	Lit	Lit	263	.806	.806	.072	.076	.038	.008	.547	.547	-.266	-.274	-.233	-0.565	0.173	-2.5	0.8	-3.0	0.5	A+	
1001	610256	Lit	Lit	525	.770	.770	.095	.053	.051	.031	.556	.556	-.252	-.253	-.181	-0.405	0.121	-2.1	0.9	-2.0	0.8	C+	
1002	610208	Lit	Lit	527	.687	.093	.173	.687	.040	.008	.360	-.153	-.161	.360	-.192	0.176	0.105	1.3	1.1	0.7	1.1	A-	
1003	612571	Lit	Lit	262	.305	.305	.282	.157	.256	.000	.130	.130	-.141	.016	-.006	2.233	0.146	3.7	1.3	5.0	1.8	A-	
1004	612572	Lit	Lit	262	.653	.653	.061	.042	.237	.008	.415	.415	-.235	-.197	-.203	0.454	0.145	0.1	1.0	-0.4	1.0	A+	
1005	610192	Lit	Lit	262	.351	.351	.149	.286	.149	.065	.447	.447	-.236	-.002	-.092	1.894	0.144	-1.0	0.9	0.4	1.0	A-	
1006	610235	Lit	Lit	523	.447	.218	.447	.187	.086	.061	.412	-.076	.412	-.061	-.186	1.415	0.101	2.4	1.1	2.1	1.1	B+	
1007	608135	Lit	Lit	264	.689	.080	.689	.091	.136	.004	.477	-.147	.477	-.398	-.137	0.124	0.146	-1.3	0.9	-0.7	0.9	A-	
1008	609064	Lit	Lit	264	.663	.144	.663	.095	.091	.008	.485	-.211	.485	-.262	-.174	0.258	0.144	-1.1	0.9	-1.5	0.9	A-	
1009	610306	Lit	Lit	264	.667	.667	.091	.114	.095	.034	.485	.485	-.170	-.171	-.243	0.139	0.148	-1.2	0.9	-0.4	1.0	A-	
1010	610221	Lit	Lit	264	.307	.186	.265	.208	.307	.034	.403	-.203	-.102	-.019	.403	2.038	0.147	-0.2	1.0	0.1	1.0	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1011	610342	Lit	Lit	264	.421	.318	.068	.421	.152	.042	.449	-.215	-.165	.449	-.050	1.420	0.139	-0.6	1.0	0.2	1.0	A+	
1012	610263	Lit	Lit	264	.477	.133	.477	.216	.133	.042	.410	-.262	.410	-.054	-.094	1.130	0.139	0.8	1.0	0.6	1.0	A-	
1013	610297	Lit	Lit	261	.368	.368	.211	.299	.111	.012	.247	.247	-.065	-.040	-.096	1.962	0.146	3.6	1.2	4.4	1.6	A-	
1014	608132	Lit	Lit	261	.571	.130	.571	.103	.176	.019	.424	-.066	.424	-.267	-.123	0.856	0.144	1.0	1.1	1.6	1.2	A-	
1015	609065	Lit	Lit	261	.709	.077	.084	.088	.709	.042	.638	-.280	-.234	-.199	.638	-0.043	0.161	-3.2	0.8	-2.3	0.7	A-	
1016	609066	Lit	Lit	261	.590	.590	.234	.031	.103	.042	.469	.469	-.033	-.106	-.345	0.694	0.148	0.9	1.1	0.6	1.1	A-	
1017	609067	Lit	Lit	261	.310	.088	.092	.467	.310	.042	.366	-.227	-.270	.134	.366	2.262	0.152	1.6	1.1	2.1	1.3	A-	
1018	609108	Lit	Lit	263	.350	.171	.350	.434	.038	.008	.208	-.043	.208	-.010	-.207	1.903	0.139	2.9	1.2	2.5	1.2	A-	
1019	609111	Lit	Lit	263	.327	.327	.281	.232	.133	.027	.130	.130	.043	.062	-.125	1.995	0.141	3.8	1.2	3.9	1.4	A-	
1020	609110	Lit	Lit	263	.521	.236	.129	.521	.095	.019	.361	-.073	-.153	.361	-.153	1.052	0.135	0.8	1.0	0.6	1.0	A-	
1021	609159	Lit	Lit	263	.297	.145	.221	.312	.297	.027	.208	-.142	.043	-.004	.208	2.149	0.145	1.9	1.1	2.7	1.3	A+	
1022	612569	Lit	Lit	263	.491	.114	.491	.186	.175	.034	.303	-.116	.303	-.187	.064	1.162	0.136	2.1	1.1	2.2	1.1	B+	
1023	612570	Lit	Lit	263	.548	.133	.145	.548	.137	.038	.381	-.123	-.141	.381	-.095	0.871	0.137	0.5	1.0	0.2	1.0	A+	
1024	612550	Lit	Lit	262	.779	.779	.099	.038	.069	.015	.583	.583	-.308	-.289	-.204	-0.327	0.167	-2.1	0.8	-2.5	0.7	A+	
1025	609255	Lit	Lit	262	.424	.424	.256	.145	.157	.019	.305	.305	-.009	-.232	-.050	1.594	0.137	2.0	1.1	1.9	1.2	A+	
1026	609256	Lit	Lit	262	.687	.141	.687	.092	.065	.015	.340	-.155	.340	-.090	-.135	0.255	0.149	1.4	1.1	2.0	1.2	A+	
1027	609257	Lit	Lit	262	.275	.275	.038	.435	.237	.015	.227	.227	-.261	.063	-.089	2.361	0.148	1.5	1.1	1.9	1.2	A+	
1028	612566	Lit	Lit	262	.275	.130	.332	.275	.225	.038	.274	-.080	-.103	.274	.016	2.350	0.150	0.6	1.0	1.0	1.1	B+	
1029	612567	Lit	Lit	262	.305	.164	.305	.187	.305	.038	.206	-.099	.135	-.170	.206	2.197	0.146	2.5	1.2	1.8	1.2	B+	
1030	609144	Lit	Lit	271	.365	.365	.081	.170	.380	.004	.232	.232	-.252	-.188	.079	1.870	0.138	3.2	1.2	3.0	1.3	A+	
1031	609259	Lit	Lit	271	.568	.568	.214	.092	.103	.022	.366	.366	-.046	-.202	-.192	0.820	0.137	1.8	1.1	1.3	1.1	A-	
1032	609276	Lit	Lit	271	.620	.074	.122	.620	.159	.026	.431	-.227	-.215	.431	-.080	0.543	0.140	0.5	1.0	-0.3	1.0	A-	
1033	609258	Lit	Lit	271	.579	.214	.579	.103	.078	.026	.438	-.131	.438	-.276	-.107	0.755	0.138	0.2	1.0	-0.3	1.0	A+	
1034	612521	Lit	Lit	271	.535	.185	.535	.140	.107	.033	.490	-.092	.490	-.195	-.271	0.967	0.137	-0.9	1.0	-0.6	1.0	B-	
1035	612557	Lit	Lit	271	.410	.410	.210	.148	.203	.030	.359	.359	-.041	-.243	-.050	1.606	0.137	1.7	1.1	1.5	1.1	A+	
1036	612499	Lit	Lit	263	.373	.373	.357	.183	.084	.004	.348	.348	-.125	-.147	-.146	1.830	0.141	1.4	1.1	2.9	1.3	A-	
1037	610609	Lit	Lit	263	.821	.019	.061	.072	.821	.027	.511	-.192	-.304	-.194	.511	-0.843	0.186	-0.9	0.9	-1.6	0.7	A+	
1038	610610	Lit	Lit	263	.521	.198	.122	.521	.129	.030	.472	-.082	-.224	.472	-.242	1.022	0.140	-0.1	1.0	0.1	1.0	A+	
1039	614022	Lit	Lit	262	.599	.599	.149	.164	.084	.004	.366	.366	-.195	-.234	-.063	0.674	0.140	0.8	1.1	0.5	1.0	A-	
1040	614023	Lit	Lit	262	.649	.057	.168	.122	.649	.004	.343	-.191	-.156	-.180	.343	0.407	0.143	1.0	1.1	1.2	1.1	A-	
1041	615185	Lit	Lit	262	.210	.282	.340	.164	.210	.004	.064	.226	-.066	-.264	.064	2.745	0.162	2.6	1.2	3.3	1.6	A-	
1042	609102	Lit	Lit	262	.573	.573	.294	.053	.080	.000	.233	.233	.012	-.295	-.199	0.814	0.138	3.5	1.2	3.4	1.3	A-	
1043	609079	Lit	Lit	523	.551	.142	.551	.109	.178	.021	.441	-.097	.441	-.141	-.275	0.903	0.098	0.0	1.0	-0.5	1.0	C-	
1044	609080	Lit	Lit	523	.555	.126	.207	.555	.086	.027	.432	-.097	-.227	.432	-.184	0.866	0.098	0.0	1.0	-0.1	1.0	A+	
1045	610291	Lit	Lit	262	.473	.115	.199	.187	.473	.027	.568	-.121	-.342	-.243	.568	1.226	0.139	-3.0	0.8	-2.5	0.8	B+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1046	610097	Lit	Lit	261	.425	.425	.073	.299	.199	.004	.171	.171	-.191	.002	-.038	1.592	0.137	4.6	1.3	4.6	1.4	A+	
1047	610096	Lit	Lit	261	.644	.103	.088	.644	.161	.004	.368	-.049	-.157	.368	-.263	0.523	0.141	0.0	1.0	-0.2	1.0	A+	
1048	610098	Lit	Lit	261	.755	.058	.161	.755	.019	.008	.413	-.243	-.200	.413	-.206	-0.126	0.156	-0.6	1.0	-0.8	0.9	A+	
1049	610185	Lit	Lit	261	.651	.192	.058	.651	.092	.008	.297	-.060	-.277	.297	-.075	0.470	0.142	1.7	1.1	1.5	1.2	A+	
1050	610190	Lit	Lit	261	.383	.138	.383	.142	.330	.008	.197	-.215	.197	-.240	.200	1.796	0.139	3.7	1.2	3.3	1.3	B-	
1051	610206	Lit	Lit	261	.414	.138	.126	.414	.303	.019	.410	-.259	-.206	.410	.023	1.627	0.138	-0.1	1.0	0.1	1.0	B-	
1052	610266	Lit	Lit	261	.494	.096	.494	.153	.215	.042	.485	-.098	.485	-.100	-.265	1.181	0.139	-1.3	0.9	-1.4	0.9	A-	
1053	610267	Lit	Lit	261	.245	.245	.295	.249	.169	.042	.199	.199	.194	-.131	-.129	2.529	0.156	2.3	1.2	2.5	1.4	A-	
1054	609055	Lit	Lit	261	.341	.096	.341	.088	.452	.023	.208	-.138	.208	-.242	.190	1.858	0.143	3.4	1.2	3.5	1.4	B-	
1055	612519	Lit	Lit	261	.701	.701	.134	.081	.038	.046	.580	.580	-.223	-.171	-.185	-0.132	0.156	-2.4	0.8	-2.5	0.7	B+	
1056	609068	Lit	Lit	261	.510	.249	.103	.510	.084	.054	.359	.040	-.166	.359	-.138	0.907	0.141	2.2	1.1	1.3	1.1	A+	
1057	609182	Lit	Lit	261	.395	.238	.395	.226	.081	.061	.312	-.115	.312	.082	-.088	1.489	0.142	2.4	1.1	2.8	1.2	A-	
1058	609207	Lit	Lit	261	.617	.103	.103	.107	.617	.069	.602	-.232	-.193	-.148	.602	0.283	0.149	-3.4	0.8	-3.3	0.7	B+	
1059	609183	Lit	Lit	261	.594	.054	.192	.594	.092	.069	.495	-.041	-.140	.495	-.213	0.415	0.147	-0.8	1.0	-1.2	0.9	A+	
1060	609211	Lit	Lit	261	.506	.100	.142	.506	.176	.077	.436	-.024	-.220	.436	-.038	0.873	0.143	0.5	1.0	-0.3	1.0	A-	
1061	609249	Lit	Lit	269	.558	.558	.115	.271	.048	.007	.338	.338	-.217	-.051	-.236	0.853	0.136	1.4	1.1	0.9	1.1	A-	
1062	609250	Lit	Lit	269	.219	.015	.100	.219	.662	.004	.078	-.164	-.141	.078	.105	2.680	0.159	2.3	1.2	4.1	1.7	B-	
1063	609251	Lit	Lit	269	.565	.238	.565	.074	.119	.004	.436	-.118	.436	-.265	-.238	0.820	0.136	-0.4	1.0	-0.5	1.0	A+	
1064	610274	Lit	Lit	269	.744	.744	.063	.093	.089	.011	.409	.409	-.271	-.239	-.026	-0.185	0.155	-0.2	1.0	-0.1	1.0	B+	
1065	610275	Lit	Lit	269	.472	.268	.472	.060	.193	.007	.397	-.156	.397	-.279	-.079	1.291	0.135	0.5	1.0	0.5	1.0	A+	
1066	612542	Lit	Lit	269	.387	.138	.260	.197	.387	.019	.279	-.342	-.015	.085	.279	1.670	0.138	2.9	1.2	2.2	1.2	A+	
1067	612544	Lit	Lit	269	.446	.301	.446	.067	.167	.019	.330	-.055	.330	-.306	-.046	1.369	0.136	2.0	1.1	2.1	1.2	C-	
1068	612543	Lit	Lit	269	.595	.048	.245	.093	.595	.019	.498	-.303	-.230	-.122	.498	0.621	0.139	-1.2	0.9	-1.1	0.9	A-	
1069	614028	Lit	Lit	269	.480	.480	.164	.264	.067	.026	.461	.461	-.142	-.114	-.310	1.185	0.136	-0.5	1.0	-0.7	1.0	A+	
1070	614027	Lit	Lit	269	.617	.078	.115	.617	.160	.030	.484	-.280	-.201	.484	-.108	0.472	0.142	-0.7	1.0	-0.9	0.9	B-	
1071	612515	Lit	Lit	269	.558	.171	.558	.145	.097	.030	.398	-.117	.398	-.095	-.216	0.785	0.138	1.2	1.1	0.6	1.1	A+	
1072	612511	Lit	Lit	269	.684	.108	.684	.115	.060	.034	.589	-.231	.589	-.261	-.265	0.075	0.149	-2.6	0.8	-3.1	0.7	B-	
1073	609139	Lit	Lit	262	.450	.378	.103	.450	.065	.004	.252	.077	-.271	.252	-.250	1.329	0.137	2.7	1.1	3.2	1.3	A+	
1074	610285	Lit	Lit	262	.263	.263	.378	.179	.157	.023	.258	.258	.028	-.064	-.098	2.301	0.152	0.6	1.0	2.2	1.3	A-	
1075	612541	Lit	Lit	262	.603	.603	.134	.164	.073	.027	.545	.545	-.208	-.148	-.223	0.521	0.142	-2.5	0.9	-2.8	0.8	A-	
1076	614026	Lit	Lit	527	.526	.288	.080	.070	.526	.036	.366	.054	-.224	-.200	.366	0.947	0.099	2.7	1.1	2.3	1.1	B+	
1077	614025	Lit	Lit	527	.801	.030	.070	.801	.063	.036	.559	-.092	-.167	.559	-.285	-0.759	0.128	-1.7	0.9	-1.8	0.8	A+	
1078	609191	Lit	Lit	262	.699	.088	.065	.095	.699	.053	.541	-.168	-.169	-.210	.541	-0.138	0.158	-1.4	0.9	-2.0	0.8	A-	
1079	612564	Lit	Lit	265	.377	.109	.174	.332	.377	.008	.345	-.122	-.122	-.102	.345	1.803	0.140	0.8	1.0	2.1	1.2	A+	
1080	612553	Lit	Lit	265	.626	.125	.626	.193	.045	.011	.411	-.100	.411	-.225	-.122	0.538	0.142	0.1	1.0	0.0	1.0	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1081	612554	Lit	Lit	265	.732	.732	.125	.079	.053	.011	.518	.518	-.235	-.290	-.096	-0.075	0.155	-1.4	0.9	-2.0	0.8	A+	
1082	612555	Lit	Lit	265	.664	.083	.117	.125	.664	.011	.567	-.232	-.139	-.323	.567	0.331	0.146	-3.3	0.8	-3.1	0.7	A-	
1083	609101	Lit	Lit	265	.362	.045	.362	.298	.276	.019	.265	-.182	.265	-.147	.088	1.868	0.141	2.2	1.1	3.7	1.4	A-	
1084	612512	Lit	Lit	265	.506	.170	.147	.121	.506	.057	.479	-.184	-.081	-.119	.479	1.054	0.141	-0.9	1.0	-0.7	0.9	A-	
1085	612509	Lit	Lit	265	.445	.091	.287	.121	.445	.057	.324	-.173	.115	-.186	.324	1.370	0.140	2.7	1.2	3.2	1.3	C-	
1086	610606	Lit	Lit	265	.543	.079	.272	.049	.543	.057	.563	-.242	-.190	-.129	.563	0.853	0.142	-3.0	0.8	-2.6	0.8	A+	
1087	610604	Lit	Lit	265	.611	.611	.128	.117	.083	.060	.467	.467	-.073	-.251	-.061	0.469	0.147	0.2	1.0	-0.2	1.0	A-	
1088	610281	Lit	Lit	3947	.474	.214	.069	.220	.474	.024	.441	-.122	-.237	-.122	.441	1.275	0.036	-1.2	1.0	0.5	1.0	A+	A-
1089	610210	Lit	Lit	527	.435	.435	.123	.366	.065	.011	.324	.324	-.140	-.037	-.239	1.486	0.098	2.6	1.1	2.5	1.2	A+	
1090	612531	Lit	Lit	263	.502	.502	.160	.186	.122	.030	.525	.525	-.106	-.209	-.226	1.190	0.140	-2.0	0.9	-1.5	0.9	A+	
1091	612534	Lit	Lit	262	.500	.027	.500	.279	.179	.015	.187	-.112	.187	-.139	.041	1.209	0.138	5.0	1.3	4.1	1.4	A+	
1092	612535	Lit	Lit	262	.817	.817	.050	.099	.027	.008	.550	.550	-.290	-.287	-.238	-0.651	0.179	-2.0	0.8	-2.0	0.7	A-	
1093	610196	Lit	Lit	262	.454	.199	.149	.454	.149	.050	.439	-.175	-.119	.439	-.038	1.389	0.140	0.3	1.0	0.5	1.0	B-	
1094	610193	Lit	Lit	262	.679	.679	.080	.111	.080	.050	.539	.539	-.131	-.342	-.057	0.146	0.155	-0.7	1.0	-1.2	0.9	A-	
1095	610194	Lit	Lit	262	.664	.088	.664	.153	.046	.050	.550	-.263	.550	-.159	-.169	0.242	0.153	-1.2	0.9	-1.0	0.9	A+	
1096	610195	Lit	Lit	262	.637	.111	.115	.637	.073	.065	.613	-.177	-.255	.613	-.240	0.334	0.152	-2.6	0.8	-2.5	0.8	A-	
1097	610304	Lit	Lit	264	.640	.189	.640	.087	.057	.027	.442	-.107	.442	-.279	-.164	0.326	0.144	-0.2	1.0	0.0	1.0	A-	
1098	610249	Lit	Lit	264	.519	.106	.133	.197	.519	.046	.426	-.185	-.191	-.078	.426	0.902	0.140	0.3	1.0	0.7	1.1	A-	
1099	610248	Lit	Lit	264	.265	.265	.261	.220	.205	.049	.201	.201	.009	-.037	-.052	2.253	0.153	2.3	1.2	3.8	1.5	A+	
1100	610122	Lit	Lit	261	.659	.188	.659	.065	.042	.046	.561	-.201	.561	-.215	-.207	0.260	0.155	-1.1	0.9	-1.5	0.8	A+	
1101	612504	Lit	Lit	263	.776	.776	.065	.042	.107	.011	.490	.490	-.220	-.195	-.215	-0.296	0.160	-1.3	0.9	-2.1	0.7	A-	
1102	612505	Lit	Lit	263	.776	.107	.068	.776	.034	.015	.492	-.265	-.183	.492	-.146	-0.318	0.161	-1.2	0.9	-2.0	0.8	A+	
1103	612523	Lit	Lit	262	.611	.092	.145	.126	.611	.027	.561	-.215	-.174	-.303	.561	0.654	0.142	-3.1	0.8	-3.2	0.8	A-	
1104	612526	Lit	Lit	262	.405	.080	.141	.347	.405	.027	.374	-.196	-.365	.098	.374	1.670	0.138	0.8	1.0	-0.3	1.0	A+	
1105	609148	Lit	Lit	271	.801	.801	.044	.048	.103	.004	.502	.502	-.240	-.213	-.313	-0.464	0.164	-1.9	0.8	-2.4	0.7	A+	
1106	609147	Lit	Lit	271	.454	.162	.240	.140	.454	.004	.559	-.111	-.309	-.273	.559	1.425	0.134	-3.2	0.9	-2.7	0.8	A-	
1107	609146	Lit	Lit	271	.332	.539	.332	.070	.048	.011	.187	-.013	.187	-.196	-.053	2.038	0.141	3.4	1.2	4.3	1.5	A-	
1108	610350	Lit	Lit	263	.532	.107	.532	.221	.107	.034	.382	-.210	.382	-.126	-.085	0.965	0.141	1.8	1.1	1.4	1.1	A+	
1109	610203	Lit	Lit	263	.479	.110	.266	.479	.110	.034	.395	-.149	-.012	.395	-.313	1.262	0.140	0.9	1.1	0.9	1.1	A+	
1110	610294	Lit	Lit	262	.527	.160	.527	.256	.027	.031	.520	-.264	.520	-.275	-.162	0.945	0.140	-1.7	0.9	-1.5	0.9	A-	
1111	610178	Lit	Lit	261	.904	.023	.904	.035	.031	.008	.448	-.149	.448	-.259	-.173	-1.431	0.227	-0.7	0.9	-1.3	0.7	A+	
1112	610207	Lit	Lit	261	.728	.728	.107	.092	.054	.019	.514	.514	-.161	-.247	-.237	-0.003	0.154	-1.8	0.9	-1.5	0.8	A+	
1113	610340	Lit	Lit	261	.257	.387	.149	.257	.165	.042	.313	-.038	-.186	.313	.046	2.457	0.154	0.6	1.0	1.5	1.2	A-	
1114	610243	Lit	Lit	261	.594	.081	.594	.119	.180	.027	.451	-.185	.451	-.217	-.021	0.561	0.142	-0.7	1.0	0.1	1.0	A+	
1115	610238	Lit	Lit	261	.494	.376	.065	.494	.038	.027	.278	.083	-.203	.278	-.189	1.068	0.138	3.6	1.2	3.1	1.2	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1116	612520	Lit	Lit	261	.732	.732	.069	.096	.061	.042	.630	.630	-.246	-.214	-.195	-0.313	0.162	-3.0	0.8	-3.4	0.6	A+	
1117	609216	Lit	Lit	261	.249	.184	.249	.238	.253	.077	.168	-.034	.168	-.093	.230	2.300	0.157	3.0	1.2	3.6	1.5	A-	
1118	612491	Lit	Lit	269	.610	.086	.104	.171	.610	.030	.403	-.142	-.212	-.095	.403	0.512	0.141	0.9	1.1	0.7	1.1	A+	
1119	610288	Lit	Lit	262	.725	.099	.725	.095	.065	.015	.468	-.186	.468	-.159	-.195	-0.156	0.155	-0.5	1.0	-0.6	0.9	A-	
1120	609195	Lit	Lit	262	.279	.134	.168	.366	.279	.053	.173	-.004	-.131	.146	.173	2.143	0.150	3.0	1.2	3.7	1.5	A-	
1121	609103	Lit	Lit	265	.762	.151	.762	.034	.038	.015	.388	-.109	.388	-.144	-.180	-0.280	0.161	1.0	1.1	0.5	1.1	A+	
1122	612513	Lit	Lit	265	.547	.547	.151	.109	.151	.042	.430	.430	-.190	-.113	-.035	0.882	0.141	0.7	1.0	0.4	1.0	A-	
1123	612514	Lit	Lit	265	.577	.577	.094	.170	.109	.049	.577	.577	-.194	-.213	-.149	0.698	0.143	-3.1	0.8	-3.0	0.8	A+	
1124	610280	Lit	Lit	3947	.473	.171	.128	.473	.205	.024	.329	-.080	-.116	.329	-.085	1.278	0.036	9.0	1.1	9.2	1.2	A+	A+
1125	610301	Lit	Lit	263	.532	.532	.319	.114	.030	.004	.275	.275	-.142	-.142	-.045	1.093	0.139	2.9	1.2	3.8	1.3	A+	
1126	610209	Lit	Lit	527	.455	.177	.288	.455	.070	.010	.269	-.177	.074	.269	-.242	1.386	0.097	4.9	1.2	4.1	1.2	A-	
1127	618407	Lit	Lit	527	.839	.059	.055	.839	.038	.010	.502	-.227	-.249	.502	-.190	-0.882	0.130	-2.1	0.8	-2.2	0.7	A+	
1128	612532	Lit	Lit	263	.730	.068	.068	.103	.730	.030	.589	-.290	-.233	-.201	.589	-0.115	0.160	-2.3	0.8	-2.7	0.7	A+	
1129	612516	Lit	Lit	262	.744	.141	.076	.031	.744	.008	.360	-.137	-.171	-.223	.360	-0.112	0.159	0.6	1.1	1.0	1.1	A-	
1130	612517	Lit	Lit	262	.710	.069	.710	.126	.088	.008	.412	-.180	.412	-.231	-.139	0.107	0.153	0.2	1.0	0.2	1.0	A+	
1131	610121	Lit	Lit	261	.529	.092	.077	.529	.257	.046	.401	-.133	-.172	.401	-.053	1.021	0.146	2.3	1.2	2.9	1.3	A-	
1132	610123	Lit	Lit	261	.728	.728	.096	.073	.050	.054	.557	.557	-.297	-.190	-.086	-0.251	0.168	-1.1	0.9	-1.7	0.7	A+	
1133	610125	Lit	Lit	261	.674	.061	.674	.138	.073	.054	.584	-.228	.584	-.151	-.287	0.121	0.158	-1.8	0.9	-1.7	0.8	B+	
1134	610124	Lit	Lit	261	.690	.690	.081	.146	.031	.054	.560	.560	-.235	-.208	-.169	0.019	0.161	-1.6	0.9	-0.7	0.9	A+	
1135	609157	Lit	Lit	263	.631	.631	.118	.133	.091	.027	.515	.515	-.163	-.188	-.247	0.478	0.141	-2.1	0.9	-1.9	0.9	A+	
1136	612485	Lit	Lit	262	.588	.588	.351	.042	.015	.004	.305	.305	-.154	-.150	-.203	0.829	0.138	1.8	1.1	1.4	1.1	A-	
1137	612494	Lit	Lit	262	.756	.756	.099	.057	.084	.004	.334	.334	-.181	-.189	-.087	-0.113	0.158	0.9	1.1	0.3	1.0	A-	
1138	612525	Lit	Lit	262	.542	.168	.202	.542	.061	.027	.326	-.128	.017	.326	-.299	0.988	0.138	2.0	1.1	2.5	1.2	A+	
1139	612539	Lit	Lit	271	.458	.055	.343	.458	.114	.030	.461	-.206	-.136	.461	-.203	1.363	0.136	-0.6	1.0	0.3	1.0	A-	
1140	612538	Lit	Lit	271	.620	.092	.166	.620	.092	.030	.556	-.262	-.251	.556	-.162	0.533	0.141	-2.2	0.9	-2.4	0.8	A-	
1141	612500	Lit	Lit	263	.878	.878	.049	.038	.030	.004	.524	.524	-.306	-.274	-.237	-1.270	0.208	-1.3	0.8	-2.3	0.5	A+	
1142	610202	Lit	Lit	263	.544	.544	.126	.068	.228	.034	.462	.462	-.206	-.237	-.129	0.905	0.141	0.0	1.0	0.0	1.0	A+	
1143	610252	Lit	Lit	262	.576	.576	.225	.115	.057	.027	.521	.521	-.270	-.239	-.204	0.710	0.141	-1.7	0.9	-1.1	0.9	A+	
1144	610292	Lit	Lit	262	.603	.061	.199	.603	.107	.031	.520	-.276	-.278	.520	-.202	0.547	0.143	-1.7	0.9	-1.4	0.9	B+	
1145	610293	Lit	Lit	262	.359	.157	.359	.218	.241	.027	.235	-.146	.235	-.186	.073	1.815	0.142	3.3	1.2	2.9	1.3	A+	
1146	610211	Lit	Lit	261	.674	.084	.674	.088	.142	.012	.340	-.164	.340	-.114	-.111	0.338	0.145	0.6	1.0	2.2	1.2	A-	
1147	610241	Lit	Lit	261	.395	.395	.272	.157	.134	.042	.406	.406	-.120	-.168	-.044	1.685	0.140	0.1	1.0	0.7	1.1	A-	
1148	610244	Lit	Lit	261	.506	.318	.069	.077	.506	.031	.255	.118	-.159	-.181	.255	1.004	0.139	4.3	1.2	3.3	1.3	A+	
1149	609215	Lit	Lit	261	.356	.153	.176	.356	.238	.077	.250	-.021	-.083	.250	.092	1.668	0.145	3.3	1.2	3.9	1.4	A-	
1150	610287	Lit	Lit	262	.382	.038	.050	.512	.382	.019	.185	-.181	-.211	.116	.185	1.635	0.140	4.5	1.3	4.7	1.5	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1151	610286	Lit	Lit	262	.550	.103	.118	.550	.206	.023	.474	-.210	-.171	.474	-.097	0.789	0.139	-0.8	1.0	-0.9	0.9	A-	
1152	609193	Lit	Lit	262	.714	.065	.714	.092	.076	.053	.550	-.140	.550	-.214	-.207	-0.266	0.162	-1.4	0.9	-1.5	0.8	A-	
1153	609194	Lit	Lit	262	.626	.626	.095	.157	.069	.053	.531	.531	-.202	-.136	-.201	0.281	0.148	-1.6	0.9	-1.4	0.9	B-	
1154	614029	Lit	Lit	271	.801	.801	.177	.022	.000	.000	.345	.345	-.324	-.097	.000	-0.442	0.162	-0.3	1.0	-0.8	0.9	A-	
1155	608118	Lit	Lit	269	.866	.866	.056	.026	.041	.011	.517	.517	-.312	-.225	-.148	-1.177	0.198	-1.0	0.9	-2.1	0.6	A+	
1156	612547	Lit	Lit	262	.668	.141	.668	.130	.053	.008	.491	-.109	.491	-.335	-.206	0.389	0.145	-1.4	0.9	-1.4	0.9	A-	
1157	608112	Lit	Lit	3947	.819	.075	.045	.819	.047	.014	.456	-.202	-.172	.456	-.193	-0.715	0.046	-1.9	1.0	-4.2	0.8	A-	A-
1158	608115	Lit	Lit	3947	.932	.932	.023	.018	.014	.013	.494	.494	-.200	-.197	-.193	-2.115	0.073	-2.8	0.8	-7.9	0.4	A+	A-
1159	608121	Lit	Lit	3947	.798	.071	.052	.066	.798	.013	.417	-.157	-.195	-.158	.417	-0.550	0.044	-1.1	1.0	-0.2	1.0	A+	A-
1160	610225	Lit	Lit	258	.705	.078	.093	.074	.705	.050	.585	-.243	-.269	-.240	.585	-0.146	0.161	-2.6	0.8	-2.6	0.7	A-	
1161	610254	Lit	Lit	525	.867	.059	.034	.867	.015	.025	.529	-.251	-.261	.529	-.175	-1.292	0.152	-1.5	0.9	-2.6	0.6	A+	
1162	608113	Lit	Lit	263	.399	.399	.475	.080	.030	.015	.233	.233	.012	-.144	-.150	1.747	0.141	4.0	1.2	3.4	1.3	A-	
1163	608122	Lit	Lit	263	.586	.137	.586	.247	.015	.015	.321	-.051	.321	-.148	-.177	0.788	0.142	2.4	1.2	1.6	1.1	A-	
1164	612575	Lit	Lit	262	.691	.092	.084	.134	.691	.000	.303	-.167	-.227	-.085	.303	0.253	0.149	1.5	1.1	2.2	1.3	A+	
1165	612533	Lit	Lit	262	.908	.023	.038	.908	.023	.008	.520	-.216	-.287	.520	-.248	-1.666	0.242	-1.0	0.8	-2.1	0.4	A+	
1166	608105	Lit	Lit	262	.752	.752	.046	.153	.034	.015	.408	.408	-.183	-.265	-.072	-0.209	0.162	0.6	1.1	0.0	1.0	A+	
1167	608133	Lit	Lit	264	.682	.682	.083	.144	.083	.008	.400	.400	-.294	-.103	-.180	0.151	0.146	0.0	1.0	0.7	1.1	A+	
1168	609242	Lit	Lit	264	.318	.242	.239	.193	.318	.008	.323	-.029	.011	-.314	.323	2.014	0.144	0.7	1.0	2.0	1.2	A-	
1169	608100	Lit	Lit	264	.606	.023	.299	.606	.061	.011	.356	-.185	-.156	.356	-.183	0.548	0.140	1.4	1.1	1.3	1.1	A-	
1170	608114	Lit	Lit	264	.546	.068	.546	.231	.136	.019	.308	-.174	.308	-.088	-.113	0.832	0.138	2.7	1.2	2.2	1.2	A+	
1171	610222	Lit	Lit	264	.436	.436	.091	.227	.212	.034	.321	.321	-.212	-.053	-.054	1.353	0.139	2.3	1.1	2.3	1.2	A-	
1172	608130	Lit	Lit	261	.847	.847	.042	.081	.019	.012	.398	.398	-.234	-.110	-.164	-0.963	0.192	-0.3	1.0	0.4	1.1	A-	
1173	608110	Lit	Lit	261	.801	.046	.801	.058	.073	.023	.532	-.276	.532	-.189	-.163	-0.630	0.178	-1.0	0.9	-0.3	0.9	A-	
1174	608111	Lit	Lit	261	.824	.054	.042	.824	.054	.027	.511	-.200	-.165	.511	-.175	-0.852	0.189	-0.8	0.9	-0.9	0.8	A+	
1175	609106	Lit	Lit	263	.517	.517	.042	.331	.107	.004	.272	.272	-.225	-.178	.047	1.098	0.134	2.5	1.1	2.3	1.1	B-	
1176	608120	Lit	Lit	525	.756	.069	.149	.756	.023	.004	.389	-.152	-.234	.389	-.175	-0.177	0.110	-0.5	1.0	-0.3	1.0	C-	
1177	608116	Lit	Lit	262	.470	.237	.157	.470	.126	.012	.305	-.161	-.050	.305	-.068	1.369	0.136	2.3	1.1	1.7	1.1	A-	
1178	612522	Lit	Lit	262	.573	.573	.084	.267	.046	.031	.427	.427	-.225	-.153	-.140	0.825	0.140	0.1	1.0	-0.1	1.0	A-	
1179	612524	Lit	Lit	262	.618	.095	.618	.134	.122	.031	.465	-.341	.465	-.074	-.158	0.578	0.143	-0.6	1.0	-1.1	0.9	A+	
1180	609142	Lit	Lit	271	.550	.126	.052	.269	.550	.004	.230	-.010	-.078	-.188	.230	0.956	0.134	3.7	1.2	3.3	1.3	A+	
1181	608117	Lit	Lit	271	.472	.092	.472	.033	.391	.011	.277	-.032	.277	-.247	-.113	1.324	0.135	3.4	1.2	3.3	1.2	B-	
1182	612536	Lit	Lit	271	.734	.734	.118	.055	.063	.030	.542	.542	-.220	-.247	-.282	-0.144	0.155	-2.1	0.9	-2.3	0.7	A+	
1183	612497	Lit	Lit	263	.521	.030	.205	.521	.232	.011	.235	-.197	-.155	.235	-.002	1.068	0.139	4.0	1.2	4.0	1.3	C-	
1184	608101	Lit	Lit	263	.734	.030	.734	.103	.129	.004	.466	-.227	.466	-.266	-.222	-0.064	0.155	-0.6	1.0	-1.4	0.8	A-	
1185	608106	Lit	Lit	263	.692	.114	.141	.049	.692	.004	.452	-.258	-.206	-.199	.452	0.166	0.149	0.0	1.0	-1.0	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1186	614019	Lit	Lit	262	.699	.130	.699	.103	.069	.000	.325	-.167	.325	-.252	-.066	0.148	0.148	1.3	1.1	0.6	1.1	A-	
1187	608102	Lit	Lit	262	.382	.206	.176	.237	.382	.000	.512	-.134	-.262	-.223	.512	1.759	0.139	-1.8	0.9	-1.4	0.9	A-	
1188	608103	Lit	Lit	262	.897	.897	.027	.034	.042	.000	.419	.419	-.210	-.214	-.273	-1.380	0.213	-0.7	0.9	-2.1	0.5	A+	
1189	610100	Lit	Lit	261	.330	.027	.088	.552	.330	.004	.370	-.030	.002	-.299	.370	2.081	0.143	-0.8	1.0	0.4	1.0	A-	
1190	610204	Lit	Lit	261	.812	.812	.100	.042	.038	.008	.488	.488	-.321	-.173	-.143	-0.524	0.171	-1.3	0.9	-2.0	0.7	A-	
1191	608104	Lit	Lit	261	.625	.084	.100	.625	.176	.015	.399	-.126	-.332	.399	-.030	0.595	0.141	0.3	1.0	-0.1	1.0	A+	
1192	610339	Lit	Lit	261	.540	.195	.042	.184	.540	.038	.419	-.207	-.120	-.095	.419	0.957	0.139	0.4	1.0	-0.2	1.0	B-	
1193	608123	Lit	Lit	261	.854	.854	.031	.023	.069	.023	.457	.457	-.072	-.116	-.178	-1.189	0.200	-0.1	1.0	-0.4	0.9	A-	
1194	612518	Lit	Lit	261	.724	.031	.111	.092	.724	.042	.542	-.139	-.196	-.172	.542	-0.261	0.160	-1.4	0.9	-1.5	0.8	A-	
1195	612506	Lit	Lit	269	.788	.788	.071	.056	.056	.030	.595	.595	-.323	-.214	-.239	-0.612	0.171	-2.3	0.8	-2.9	0.6	B-	
1196	609134	Lit	Lit	262	.313	.439	.210	.034	.313	.004	.302	-.155	-.054	-.123	.302	2.015	0.145	0.2	1.0	0.5	1.1	A+	
1197	608119	Lit	Lit	262	.821	.004	.034	.821	.118	.023	.446	-.085	-.276	.446	-.117	-0.909	0.185	0.2	1.0	0.3	1.1	A-	
1198	609190	Lit	Lit	262	.756	.061	.756	.080	.057	.046	.494	-.228	.494	-.176	-.066	-0.526	0.170	-0.3	1.0	-0.7	0.9	A-	
1199	608107	Lit	Lit	265	.506	.200	.170	.506	.094	.030	.304	.034	-.222	.304	-.020	1.118	0.138	3.4	1.2	3.1	1.3	A+	
1200	608108	Lit	Lit	265	.521	.253	.098	.106	.521	.023	.404	-.146	-.080	-.118	.404	1.069	0.138	1.0	1.1	0.6	1.1	A-	
1201	608109	Lit	Lit	265	.830	.045	.830	.026	.076	.023	.594	-.182	.594	-.202	-.282	-0.863	0.187	-1.7	0.8	-2.6	0.5	A-	
1202	661545	6	6	251	.845	.064	.845	.048	.044	.000	.503	-.402	.503	-.181	-.222	-1.482	0.191	-1.4	0.8	-1.9	0.7	A-	
1203	661546	6	6	606	.828	.053	.828	.053	.066	.000	.426	-.348	.426	-.253	-.106	-1.388	0.119	-0.6	1.0	-0.8	0.9	A+	
1204	661549	6	6	261	.801	.801	.058	.100	.042	.000	.435	.435	-.380	-.184	-.151	-1.207	0.174	-0.2	1.0	-0.8	0.9	A-	
1205	661550	6	6	577	.820	.094	.820	.045	.042	.000	.458	-.282	.458	-.255	-.205	-1.403	0.120	-0.7	1.0	-2.4	0.7	A+	
1206	661553	6	6	294	.721	.099	.143	.037	.721	.000	.459	-.207	-.262	-.277	.459	-0.557	0.145	-0.8	0.9	-1.3	0.9	A+	
1207	661555	6	6	595	.892	.061	.892	.022	.025	.000	.282	-.078	.282	-.241	-.214	-2.013	0.143	0.1	1.0	2.1	1.4	B+	A+
1208	661557	6	6	252	.734	.111	.734	.123	.032	.000	.453	-.274	.453	-.237	-.206	-0.704	0.160	-0.3	1.0	-0.7	0.9	A+	
1209	661558	6	6	618	.835	.078	.835	.044	.044	.000	.497	-.333	.497	-.246	-.220	-1.508	0.119	-1.8	0.9	-3.0	0.7	A-	
1210	661560	6	6	243	.901	.901	.041	.033	.025	.000	.362	.362	-.263	-.123	-.217	-1.938	0.228	-0.3	0.9	-1.1	0.7	A+	
1211	661562	6	6	637	.799	.038	.082	.082	.799	.000	.586	-.268	-.361	-.309	.586	-1.216	0.110	-3.8	0.8	-4.6	0.6	A+	
1212	661564	6	6	237	.317	.190	.317	.236	.257	.000	.196	-.119	.196	-.046	-.056	1.509	0.151	1.4	1.1	4.1	1.6	A-	
1213	661566	6	6	597	.496	.164	.214	.496	.126	.000	.190	-.212	.034	.190	-.092	0.538	0.091	5.9	1.2	5.9	1.3	A-	
1214	663048	6	6	265	.577	.143	.177	.102	.577	.000	.460	-.202	-.193	-.274	.460	0.095	0.141	-0.4	1.0	-0.4	1.0	A-	
1215	663049	6	6	263	.673	.084	.152	.673	.091	.000	.413	-.299	-.108	.413	-.251	-0.389	0.148	0.4	1.0	-0.3	1.0	A-	
1216	663050	6	6	281	.534	.263	.534	.100	.103	.000	.376	-.205	.376	-.120	-.201	0.346	0.135	0.9	1.1	1.1	1.1	A+	
1217	663051	6	6	269	.420	.420	.164	.316	.100	.000	.207	.207	-.221	.030	-.114	0.907	0.138	3.9	1.2	4.2	1.4	A-	
1218	663052	6	6	834	.622	.175	.090	.622	.113	.000	.468	-.191	-.361	.468	-.161	-0.083	0.080	-1.9	0.9	-1.9	0.9	A+	A-
1219	663053	6	6	796	.300	.181	.300	.114	.405	.000	-.003	-.177	-.003	-.132	.228	1.547	0.084	8.1	1.3	9.9	2.0	A+	A+
1220	663054	6	6	784	.429	.329	.107	.429	.135	.000	.186	.030	-.192	.186	-.137	0.880	0.080	5.8	1.2	8.5	1.5	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1221	663055	6	6	776	.769	.077	.084	.769	.070	.000	.508	-.213	-.281	.508	-.311	-0.986	0.095	-2.4	0.9	-2.9	0.8	A+	B-
1222	663061	6	6	294	.452	.452	.184	.214	.150	.000	.293	.293	-.095	-.061	-.236	0.713	0.132	2.7	1.2	3.2	1.3	A-	
1223	663062	6	6	302	.636	.636	.129	.103	.133	.000	.442	.442	-.274	-.191	-.186	-0.232	0.136	0.1	1.0	-0.2	1.0	A-	
1224	663063	6	6	302	.354	.437	.354	.073	.136	.000	.146	.057	.146	-.242	-.103	1.224	0.133	3.5	1.2	7.2	1.9	B-	
1225	663064	6	6	294	.364	.160	.364	.303	.174	.000	.155	-.076	.155	-.070	-.039	1.177	0.135	4.7	1.3	4.4	1.5	B+	
1226	663065	6	6	198	.697	.697	.116	.091	.096	.000	.571	.571	-.268	-.346	-.262	-0.523	0.176	-1.9	0.8	-1.9	0.8	A+	
1227	663066	6	6	192	.651	.094	.172	.083	.651	.000	.344	-.087	-.261	-.146	.344	-0.232	0.172	1.2	1.1	1.8	1.2	A+	
1228	663067	6	6	201	.617	.134	.139	.110	.617	.000	.478	-.149	-.177	-.384	.478	-0.059	0.165	-1.0	0.9	0.1	1.0	A-	
1229	663068	6	6	804	.746	.746	.180	.037	.036	.000	.316	.316	-.151	-.240	-.182	-0.812	0.090	1.6	1.1	3.3	1.3	A+	
1230	663069	6	6	815	.703	.102	.080	.115	.703	.000	.509	-.281	-.250	-.251	.509	-0.538	0.086	-2.7	0.9	-3.4	0.8	A+	
1231	663070	6	6	849	.481	.200	.124	.196	.481	.000	.361	-.109	-.276	-.116	.361	0.644	0.076	0.7	1.0	1.8	1.1	A+	
1232	663071	6	6	803	.496	.169	.196	.496	.140	.000	.171	-.136	-.010	.171	-.087	0.562	0.079	7.6	1.2	8.1	1.4	B+	
1233	663105	6	6	369	.542	.206	.542	.152	.100	.000	.483	-.221	.483	-.274	-.176	0.354	0.118	-2.0	0.9	-0.8	1.0	A+	
1234	663106	6	6	415	.718	.718	.084	.130	.068	.000	.465	.465	-.270	-.240	-.213	-0.582	0.123	-0.5	1.0	-1.7	0.8	A-	
1235	663107	6	6	389	.283	.283	.278	.368	.072	.000	.185	.185	-.034	.005	-.273	1.713	0.122	2.3	1.1	4.2	1.6	A+	
1236	663108	6	6	387	.762	.762	.109	.090	.039	.000	.516	.516	-.354	-.246	-.202	-0.911	0.134	-1.7	0.9	-1.7	0.8	A-	
1237	663109	6	6	372	.430	.430	.137	.277	.156	.000	.307	.307	-.284	.042	-.201	0.922	0.116	2.1	1.1	2.0	1.2	A-	
1238	663110	6	6	383	.381	.261	.243	.381	.115	.000	.227	.071	-.166	.227	-.219	1.182	0.116	2.8	1.1	4.7	1.5	A-	
1239	663119	6	6	1105	.386	.179	.337	.386	.098	.000	.148	-.057	.067	.148	-.277	1.169	0.068	7.1	1.2	9.9	1.5	A-	A+
1240	663120	6	6	1085	.499	.499	.181	.273	.048	.000	.391	.391	-.282	-.099	-.200	0.607	0.067	-0.6	1.0	1.8	1.1	A-	A-
1241	663121	6	6	1233	.628	.163	.108	.101	.628	.000	.503	-.289	-.275	-.170	.503	-0.026	0.065	-4.4	0.9	-4.4	0.8	A+	A-
1242	663122	6	6	1152	.214	.409	.175	.203	.214	.000	-.038	.159	-.077	-.083	-.038	2.159	0.077	5.6	1.2	9.9	2.5	A+	A-
1243	663123	6	6	1128	.520	.145	.520	.200	.136	.000	.287	-.193	.287	-.144	-.052	0.514	0.066	3.9	1.1	4.6	1.2	A-	B-
1244	663124	6	6	1114	.469	.183	.172	.177	.469	.000	.342	-.156	-.129	-.162	.342	0.758	0.066	0.7	1.0	4.2	1.2	A+	A+
1245	663149	6	6	797	.511	.348	.511	.072	.070	.000	.311	-.071	.311	-.281	-.193	0.491	0.079	3.1	1.1	3.9	1.2	A+	
1246	663150	6	6	804	.619	.619	.167	.086	.128	.000	.437	.437	-.102	-.305	-.266	-0.059	0.082	-0.7	1.0	-0.7	1.0	A+	
1247	663151	6	6	835	.356	.267	.163	.214	.356	.000	.423	-.217	-.276	-.011	.423	1.292	0.079	-2.4	0.9	-1.3	0.9	A+	A-
1248	663152	6	6	790	.603	.187	.141	.070	.603	.000	.350	-.068	-.168	-.340	.350	0.027	0.082	2.1	1.1	2.1	1.1	B+	
1249	663190	6	6	356	.565	.267	.155	.565	.014	.000	.385	-.258	-.169	.385	-.135	0.239	0.120	0.8	1.0	1.1	1.1	A+	
1250	663191	6	6	346	.503	.055	.165	.278	.503	.000	.262	-.142	-.196	-.058	.262	0.580	0.119	2.6	1.1	4.3	1.3	A-	
1251	663192	6	6	343	.781	.082	.781	.096	.041	.000	.497	-.363	.497	-.206	-.229	-1.057	0.147	-0.9	0.9	-1.8	0.8	A-	
1252	663193	6	6	344	.433	.151	.204	.212	.433	.000	.198	-.122	.077	-.209	.198	0.884	0.121	4.3	1.2	5.3	1.5	A+	
1253	663194	6	6	335	.367	.131	.367	.173	.328	.000	.168	-.162	.168	-.271	.163	1.233	0.124	4.3	1.2	4.5	1.5	B-	
1254	663249	6	6	245	.535	.257	.535	.082	.127	.000	.208	-.090	.208	-.234	-.001	0.378	0.143	3.6	1.2	4.5	1.4	A+	
1255	663250	6	6	256	.836	.074	.836	.055	.035	.000	.521	-.264	.521	-.291	-.312	-1.453	0.187	-1.3	0.9	-2.1	0.6	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1256	663251	6	6	246	.504	.171	.504	.232	.094	.000	.316	-.052	.316	-.078	-.362	0.538	0.141	1.8	1.1	1.6	1.1	A+	
1257	663252	6	6	242	.806	.806	.008	.062	.124	.000	.549	.549	-.151	-.340	-.368	-1.251	0.181	-2.0	0.8	-1.6	0.7	A-	
1258	661568	7	7	821	.735	.124	.735	.102	.039	.000	.541	-.321	.541	-.340	-.155	-0.630	0.088	-3.4	0.9	-4.1	0.7	A+	A-
1259	661570	7	7	665	.668	.150	.084	.668	.098	.000	.393	-.214	-.295	.393	-.091	-0.122	0.094	1.5	1.1	1.1	1.1	B-	A-
1260	661600	7	7	705	.678	.095	.180	.047	.678	.000	.480	-.327	-.211	-.224	.480	-0.139	0.092	-1.0	1.0	-1.1	0.9	A-	A-
1261	661601	7	7	829	.865	.041	.059	.035	.865	.000	.503	-.295	-.314	-.214	.503	-1.704	0.111	-2.6	0.8	-3.0	0.7	A+	A-
1262	661602	7	7	672	.362	.423	.362	.080	.135	.000	.177	-.069	.177	-.172	-.013	1.475	0.088	4.8	1.2	7.6	1.6	A-	
1263	661603	7	7	909	.567	.099	.567	.114	.220	.000	.334	-.360	.334	-.142	-.031	0.309	0.075	2.6	1.1	2.7	1.1	A-	B-
1264	661604	7	7	715	.768	.768	.120	.085	.027	.000	.374	.374	-.230	-.211	-.150	-0.752	0.099	0.7	1.0	0.1	1.0	A+	A-
1265	661605	7	7	848	.789	.076	.120	.789	.015	.000	.443	-.293	-.276	.443	-.110	-1.012	0.093	-1.2	0.9	-1.4	0.9	B+	A-
1266	661606	7	7	694	.735	.735	.065	.180	.020	.000	.387	.387	-.354	-.147	-.192	-0.455	0.097	1.0	1.1	-0.2	1.0	A+	
1267	661607	7	7	858	.731	.731	.107	.085	.077	.000	.359	.359	-.124	-.291	-.149	-0.595	0.086	1.3	1.1	1.3	1.1	A+	A-
1268	661608	7	7	674	.576	.576	.061	.043	.321	.000	.233	.233	-.325	-.204	.008	0.392	0.087	5.3	1.2	4.9	1.3	B-	A+
1269	661621	7	7	797	.745	.745	.107	.088	.060	.000	.527	.527	-.396	-.258	-.145	-0.766	0.092	-2.3	0.9	-3.4	0.8	A+	A-
1270	663139	7	7	901	.424	.424	.177	.219	.181	.000	.391	.391	-.310	-.174	-.008	1.176	0.075	-0.7	1.0	1.3	1.1	A-	
1271	663140	7	7	866	.599	.167	.140	.599	.094	.000	.421	-.171	-.133	.421	-.332	0.281	0.078	-0.2	1.0	0.3	1.0	A+	
1272	663141	7	7	856	.457	.280	.152	.457	.111	.000	.226	-.038	-.151	.226	-.132	1.001	0.077	5.6	1.2	8.2	1.4	A+	
1273	663142	7	7	844	.520	.237	.111	.132	.520	.000	.337	-.051	-.242	-.209	.337	0.683	0.077	2.4	1.1	3.8	1.2	B-	
1274	663145	7	7	796	.563	.153	.563	.122	.162	.000	.387	-.269	.387	-.219	-.065	0.368	0.080	0.4	1.0	0.4	1.0	A-	A-
1275	663146	7	7	740	.469	.469	.181	.160	.191	.000	.332	.332	-.166	-.171	-.100	0.813	0.082	1.7	1.1	2.6	1.1	A+	
1276	663147	7	7	731	.425	.213	.200	.425	.161	.000	.205	.075	-.153	.205	-.193	1.024	0.083	5.1	1.2	6.5	1.4	A+	
1277	663148	7	7	725	.290	.457	.290	.117	.137	.000	.037	.287	.037	-.228	-.250	1.741	0.089	6.7	1.3	8.4	1.8	A-	
1278	663165	7	7	847	.508	.156	.174	.163	.508	.000	.411	-.050	-.187	-.317	.411	0.615	0.077	-0.2	1.0	0.5	1.0	B+	A+
1279	663166	7	7	791	.602	.152	.132	.602	.115	.000	.446	-.125	-.286	.446	-.240	0.119	0.082	-0.7	1.0	-0.2	1.0	B+	A-
1280	663167	7	7	806	.458	.458	.143	.101	.299	.000	.243	.243	-.235	-.245	.076	0.861	0.079	6.1	1.2	5.4	1.3	A+	A+
1281	663168	7	7	800	.693	.693	.103	.105	.100	.000	.466	.466	-.227	-.275	-.207	-0.397	0.087	-1.0	1.0	-1.8	0.9	C+	A-
1282	663169	7	7	915	.368	.368	.145	.209	.278	.000	.211	.211	-.222	-.109	.047	1.447	0.075	4.5	1.1	8.5	1.5	A-	A-
1283	663170	7	7	899	.437	.162	.263	.437	.138	.000	.123	-.053	.006	.123	-.127	1.099	0.075	9.8	1.3	9.9	1.6	A+	A-
1284	663171	7	7	876	.691	.111	.081	.118	.691	.000	.488	-.256	-.247	-.243	.488	-0.240	0.083	-1.5	0.9	-2.0	0.9	A+	A-
1285	663172	7	7	961	.486	.214	.486	.200	.100	.000	.398	-.010	.398	-.285	-.269	0.855	0.072	0.2	1.0	0.8	1.0	A+	A-
1286	663180	7	7	774	.470	.470	.101	.190	.239	.000	.405	.405	-.234	-.250	-.078	0.779	0.080	-0.7	1.0	1.0	1.1	A-	A-
1287	663181	7	7	823	.525	.186	.186	.103	.525	.000	.525	-.255	-.275	-.184	.525	0.525	0.078	-5.1	0.9	-4.3	0.8	A-	A-
1288	663182	7	7	795	.584	.225	.068	.123	.584	.000	.319	-.038	-.189	-.285	.319	0.225	0.080	2.8	1.1	2.9	1.1	A-	A+
1289	663183	7	7	784	.383	.383	.255	.218	.144	.000	.253	.253	-.053	-.052	-.224	1.220	0.081	3.4	1.1	5.0	1.3	A+	B+
1290	663199	7	7	900	.321	.314	.321	.218	.147	.000	.014	.193	.014	-.167	-.077	1.719	0.078	9.2	1.3	9.9	1.9	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1291	663200	7	7	887	.384	.127	.200	.289	.384	.000	.162	-.178	-.039	-.009	.162	1.388	0.076	6.7	1.2	8.0	1.5	A+	A-
1292	663201	7	7	963	.440	.333	.440	.112	.114	.000	.301	-.052	.301	-.247	-.147	1.126	0.072	2.6	1.1	5.1	1.2	A-	A+
1293	663202	7	7	923	.403	.143	.281	.173	.403	.000	.139	-.153	.100	-.157	.139	1.310	0.074	6.8	1.2	9.9	1.7	A+	A+
1294	663242	7	7	712	.383	.188	.236	.383	.192	.000	.300	-.122	-.089	.300	-.154	1.271	0.086	1.8	1.1	5.6	1.4	A-	A-
1295	663243	7	7	710	.717	.137	.717	.103	.044	.000	.484	-.257	.484	-.253	-.260	-0.512	0.094	-1.2	0.9	-2.2	0.8	A+	A-
1296	663244	7	7	773	.679	.155	.128	.679	.038	.000	.555	-.361	-.306	.555	-.137	-0.252	0.087	-3.5	0.9	-4.2	0.8	A-	A-
1297	663245	7	7	723	.658	.078	.126	.138	.658	.000	.473	-.187	-.246	-.269	.473	-0.156	0.089	-1.2	1.0	-1.2	0.9	A-	A-
1298	663290	7	7	1294	.295	.295	.314	.277	.114	.000	.254	.254	.036	-.118	-.250	1.867	0.066	2.2	1.1	5.9	1.4	A-	A-
1299	663291	7	7	1330	.825	.825	.058	.068	.050	.000	.508	.508	-.302	-.251	-.274	-1.142	0.080	-3.0	0.9	-4.1	0.7	A+	B-
1300	663292	7	7	1379	.604	.212	.604	.116	.068	.000	.362	-.137	.362	-.206	-.220	0.291	0.062	2.4	1.1	2.7	1.1	A-	A-
1301	663293	7	7	1312	.541	.148	.165	.541	.146	.000	.302	-.157	-.125	.302	-.137	0.601	0.062	4.6	1.1	5.7	1.2	A+	A-
1302	663294	7	7	1279	.513	.513	.176	.169	.142	.000	.412	.412	-.267	-.195	-.090	0.735	0.063	-0.3	1.0	1.1	1.0	A+	A-
1303	663295	7	7	1256	.373	.373	.303	.198	.126	.000	.190	.190	-.100	-.093	-.026	1.435	0.064	7.6	1.2	8.4	1.5	A-	A-
1304	663309	7	7	1114	.672	.672	.163	.099	.066	.000	.521	.521	-.255	-.271	-.280	-0.258	0.072	-3.6	0.9	-4.1	0.8	A-	A-
1305	663310	7	7	1107	.651	.103	.155	.090	.651	.000	.566	-.318	-.226	-.318	.566	-0.127	0.071	-5.7	0.8	-5.7	0.8	A-	A-
1306	663311	7	7	1196	.477	.477	.166	.130	.226	.000	.209	.209	-.232	-.071	.014	0.776	0.064	8.1	1.2	7.5	1.3	A+	A+
1307	663312	7	7	1135	.471	.127	.283	.119	.471	.000	.436	-.221	-.099	-.308	.436	0.794	0.066	-2.5	0.9	0.7	1.0	A-	A+
1308	663313	7	7	1098	.416	.175	.416	.248	.161	.000	.117	-.069	.117	-.096	.028	1.066	0.068	9.9	1.3	9.9	1.6	A+	A-
1309	663314	7	7	1081	.333	.184	.333	.347	.136	.000	.030	-.093	.030	.051	-.008	1.495	0.070	9.9	1.3	9.9	1.8	A-	A+
1310	663315	7	7	1099	.746	.104	.089	.746	.061	.000	.518	-.233	-.329	.518	-.255	-0.805	0.077	-3.2	0.9	-4.2	0.8	B+	B-
1311	663316	7	7	1183	.543	.543	.269	.145	.044	.000	.371	.371	-.207	-.177	-.150	0.360	0.065	1.2	1.0	2.4	1.1	A+	A-
1312	663317	7	7	1045	.226	.231	.226	.344	.200	.000	-.154	-.027	-.154	.060	.117	2.024	0.080	9.2	1.4	9.9	2.9	A+	A+
1313	663318	7	7	1071	.379	.379	.194	.252	.175	.000	.320	.320	-.204	-.126	-.052	1.146	0.069	2.4	1.1	2.4	1.1	A+	A-
1314	663319	7	7	1106	.754	.102	.109	.754	.035	.000	.368	-.205	-.152	.368	-.267	-0.849	0.078	1.0	1.0	0.0	1.0	A+	A-
1315	663320	7	7	1085	.634	.176	.083	.634	.107	.000	.507	-.384	-.222	.507	-.119	-0.152	0.071	-3.4	0.9	-3.7	0.8	A+	A-
1316	661609	8	8	5077	.711	.711	.122	.090	.076	.000	.491	.491	-.319	-.263	-.160	-0.041	0.035	-3.7	0.9	-6.1	0.8	A-	A-
1317	661610	8	8	3461	.410	.246	.112	.410	.233	.000	.316	-.206	-.238	.316	.019	1.583	0.038	2.5	1.0	9.8	1.3	A-	A-
1318	661611	8	8	4980	.756	.756	.083	.090	.071	.000	.478	.478	-.349	-.238	-.159	-0.313	0.037	-2.8	0.9	-5.5	0.8	A-	A-
1319	661612	8	8	3536	.381	.195	.381	.265	.159	.000	.129	-.084	.129	.017	-.100	1.734	0.038	9.9	1.2	9.9	1.6	A+	A-
1320	661613	8	8	4975	.604	.604	.144	.225	.027	.000	.223	.223	-.184	-.058	-.123	0.549	0.033	9.9	1.2	9.9	1.4	A+	A-
1321	661614	8	8	3457	.528	.166	.268	.528	.038	.000	.320	-.185	-.144	.320	-.143	1.001	0.038	6.7	1.1	8.1	1.2	A-	C-
1322	661615	8	8	4949	.809	.809	.067	.046	.078	.000	.506	.506	-.355	-.252	-.214	-0.717	0.040	-4.8	0.9	-8.3	0.7	A+	B-
1323	661616	8	8	3400	.905	.044	.905	.036	.014	.000	.503	-.317	.503	-.318	-.191	-1.635	0.064	-4.3	0.8	-7.7	0.5	A+	A+
1324	661617	8	8	4939	.873	.873	.051	.052	.024	.000	.376	.376	-.248	-.230	-.128	-1.329	0.047	-0.2	1.0	-0.7	1.0	B+	A-
1325	661618	8	8	3478	.928	.025	.030	.928	.017	.000	.379	-.217	-.222	.379	-.203	-1.979	0.070	-1.6	0.9	-3.0	0.7	A+	B-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1326	661619	8	8	4964	.505	.093	.340	.063	.505	.000	.337	-.316	-.035	-.250	.337	1.074	0.032	5.8	1.1	8.5	1.2	A+	A-
1327	661620	8	8	3368	.555	.140	.067	.238	.555	.000	.247	-.186	-.163	-.041	.247	0.891	0.039	9.9	1.2	9.9	1.3	A-	A+
1328	663187	8	8	3610	.621	.085	.621	.211	.083	.000	.445	-.232	.445	-.195	-.260	0.495	0.039	-1.7	1.0	-2.1	1.0	A+	A-
1329	663188	8	8	3566	.434	.434	.353	.164	.050	.000	.144	.144	.091	-.151	-.271	1.449	0.037	9.9	1.3	9.9	1.5	A+	A-
1330	663189	8	8	3729	.838	.838	.073	.058	.031	.000	.522	.522	-.348	-.313	-.164	-0.938	0.049	-5.6	0.8	-8.1	0.6	B+	A-
1331	663195	8	8	4829	.637	.117	.139	.108	.637	.000	.525	-.264	-.289	-.219	.525	0.389	0.034	-7.9	0.9	-8.0	0.8	A+	A-
1332	663196	8	8	4914	.492	.159	.492	.147	.202	.000	.211	-.047	.211	-.221	-.025	1.141	0.032	9.9	1.2	9.9	1.4	A-	A+
1333	663197	8	8	4782	.631	.631	.138	.122	.109	.000	.506	.506	-.215	-.325	-.205	0.423	0.034	-6.7	0.9	-5.9	0.9	A+	A-
1334	663198	8	8	5251	.561	.259	.134	.561	.046	.000	.309	-.013	-.275	.309	-.260	0.805	0.031	8.7	1.1	9.9	1.2	A+	A-
1335	663208	8	8	4561	.621	.104	.200	.621	.075	.000	.333	-.154	-.090	.333	-.298	0.567	0.034	5.6	1.1	7.0	1.2	A+	A-
1336	663209	8	8	4489	.528	.101	.528	.265	.106	.000	.325	-.252	.325	-.072	-.177	1.039	0.033	5.6	1.1	9.0	1.2	A+	A-
1337	663210	8	8	4433	.569	.108	.168	.569	.156	.000	.410	-.233	-.178	.410	-.177	0.829	0.034	-0.7	1.0	1.6	1.0	A+	A-
1338	663211	8	8	4845	.506	.138	.154	.203	.506	.000	.444	-.169	-.266	-.169	.444	1.162	0.032	-6.8	0.9	-0.8	1.0	A+	A+
1339	663212	8	8	7150	.475	.475	.329	.138	.058	.000	.214	.214	.091	-.259	-.259	1.217	0.026	9.9	1.2	9.9	1.4	A-	A-
1340	663213	8	8	7677	.624	.146	.624	.103	.127	.000	.401	-.244	.401	-.226	-.118	0.459	0.026	2.1	1.0	1.1	1.0	A+	A-
1341	663214	8	8	7249	.821	.055	.056	.821	.068	.000	.477	-.257	-.312	.477	-.209	-0.832	0.034	-4.7	0.9	-5.3	0.8	A-	A-
1342	663215	8	8	6977	.476	.476	.253	.188	.083	.000	.361	.361	-.090	-.239	-.173	1.193	0.027	2.7	1.0	9.5	1.2	A-	A-
1343	663216	8	8	7109	.454	.143	.193	.210	.454	.000	.406	-.195	-.167	-.167	.406	1.320	0.026	-3.1	1.0	3.9	1.1	A+	A-
1344	663217	8	8	6902	.295	.144	.178	.295	.384	.000	.008	-.106	-.045	.008	.104	2.135	0.029	9.9	1.3	9.9	2.0	A+	A+
1345	663218	8	8	4439	.441	.441	.227	.131	.201	.000	.302	.302	-.048	-.226	-.134	1.435	0.033	6.0	1.1	9.9	1.2	A+	A+
1346	663219	8	8	4494	.610	.140	.610	.126	.124	.000	.513	-.231	.513	-.269	-.245	0.586	0.034	-8.4	0.9	-7.3	0.9	A+	A-
1347	663220	8	8	4662	.409	.133	.210	.248	.409	.000	.398	-.122	-.225	-.145	.398	1.617	0.033	-4.8	0.9	3.3	1.1	A+	A-
1348	663221	8	8	4819	.477	.138	.183	.477	.202	.000	.302	-.141	-.179	.302	-.083	1.278	0.032	6.3	1.1	9.9	1.3	B-	A-
1349	663235	8	8	4952	.597	.118	.597	.134	.152	.000	.308	-.242	.308	-.078	-.129	0.618	0.033	9.3	1.1	9.3	1.2	A-	B-
1350	663236	8	8	4881	.483	.213	.109	.483	.196	.000	.251	-.017	-.266	.251	-.090	1.197	0.032	9.9	1.2	9.9	1.3	A+	A-
1351	663237	8	8	4794	.523	.523	.187	.187	.104	.000	.400	.400	-.182	-.193	-.175	0.986	0.032	0.3	1.0	4.0	1.1	A+	A+
1352	663238	8	8	5227	.438	.127	.244	.438	.192	.000	.160	-.174	-.087	.160	.041	1.426	0.031	9.9	1.2	9.9	1.5	A+	A+
1353	663270	8	8	6662	.328	.328	.279	.257	.136	.000	.241	.241	-.068	-.090	-.128	1.951	0.029	7.8	1.1	9.9	1.5	A-	A+
1354	663271	8	8	7065	.517	.167	.517	.103	.213	.000	.447	-.149	.447	-.297	-.190	0.998	0.027	-4.6	1.0	-0.6	1.0	A-	A-
1355	663272	8	8	6999	.514	.139	.193	.155	.514	.000	.453	-.290	-.147	-.188	.453	1.018	0.027	-5.3	1.0	-2.9	1.0	A-	A-
1356	663273	8	8	6911	.488	.108	.488	.126	.278	.000	.350	-.198	.350	-.277	-.049	1.141	0.027	4.7	1.1	9.3	1.2	A-	A-
1357	663274	8	8	7456	.763	.111	.092	.763	.034	.000	.513	-.241	-.364	.513	-.204	-0.394	0.031	-7.7	0.9	-5.6	0.9	A+	A-
1358	663275	8	8	6770	.379	.379	.302	.197	.122	.000	.185	.185	.037	-.207	-.075	1.692	0.028	9.9	1.2	9.9	1.4	A+	A-
1359	663284	8	8	6777	.737	.055	.121	.737	.088	.000	.435	-.245	-.241	.435	-.202	-0.134	0.031	-1.3	1.0	-2.5	0.9	A-	B-
1360	663285	8	8	7068	.795	.056	.112	.795	.037	.000	.501	-.296	-.300	.501	-.209	-0.529	0.033	-5.8	0.9	-9.1	0.7	A-	B-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1361	663286	8	8	6761	.560	.081	.251	.108	.560	.000	.246	-.281	-.085	-.028	.246	0.849	0.027	9.9	1.2	9.9	1.3	A-	A-
1362	663287	8	8	6672	.662	.126	.662	.148	.065	.000	.413	-.137	.413	-.295	-.184	0.310	0.029	1.1	1.0	-2.1	1.0	A+	A+
1363	663288	8	8	6548	.405	.221	.127	.405	.248	.000	.170	-.131	-.278	.170	.147	1.615	0.028	9.9	1.2	9.9	1.6	A-	A+
1364	663289	8	8	6445	.731	.149	.731	.067	.053	.000	.423	-.113	.423	-.315	-.305	-0.116	0.032	-1.0	1.0	0.4	1.0	A+	A-
1365	663296	8	8	4976	.314	.142	.500	.314	.045	.000	.205	-.162	.038	.205	-.279	2.069	0.033	8.6	1.1	9.9	1.6	A-	A-
1366	663297	8	8	4911	.490	.186	.490	.226	.099	.000	.306	-.133	.306	-.134	-.152	1.161	0.032	8.3	1.1	9.9	1.3	A+	A-
1367	663298	8	8	4848	.814	.814	.058	.079	.049	.000	.590	.590	-.279	-.343	-.333	-0.767	0.041	-9.7	0.8	-9.9	0.6	A+	A-
1368	663299	8	8	5236	.465	.166	.197	.172	.465	.000	.469	-.236	-.277	-.095	.469	1.291	0.031	-8.2	0.9	-3.4	0.9	A+	A-
1369	663301	8	8	4633	.449	.285	.076	.190	.449	.000	.310	-.140	-.198	-.099	.310	1.410	0.033	5.6	1.1	9.9	1.2	A-	A-
1370	663302	8	8	4566	.644	.179	.131	.644	.046	.000	.438	-.141	-.314	.438	-.238	0.412	0.035	-1.1	1.0	-2.2	1.0	A+	A+
1371	663303	8	8	4869	.706	.078	.706	.138	.079	.000	.445	-.242	.445	-.184	-.277	0.076	0.035	-1.8	1.0	-3.2	0.9	A+	A-
1372	663304	8	8	4504	.601	.601	.098	.137	.165	.000	.289	.289	-.241	-.214	.009	0.638	0.034	9.3	1.1	9.9	1.2	A+	A+
1373	682472	K	K	452	.936	.022	.031	.936	.009	.002	.430	-.248	-.318	.430	-.173	-4.352	0.203	-1.0	0.9	-1.5	0.6	B-	
1374	686495	K	K	452	.898	.035	.020	.898	.046	.000	.375	-.250	-.162	.375	-.212	-3.777	0.168	-0.1	1.0	-0.8	0.8	A+	
1375	683139	K	K	452	.631	.069	.179	.119	.631	.002	.424	-.194	-.180	-.258	.424	-1.756	0.110	1.0	1.1	0.8	1.1	A-	
1376	683140	K	K	452	.920	.920	.020	.022	.035	.002	.480	.480	-.238	-.274	-.280	-4.088	0.185	-1.2	0.8	-2.7	0.4	A-	
1377	683063	K	K	452	.626	.064	.626	.204	.102	.004	.360	-.149	.360	-.145	-.239	-1.732	0.110	2.5	1.1	1.8	1.1	A+	
1378	683062	K	K	452	.900	.027	.027	.038	.900	.009	.501	-.276	-.212	-.330	.501	-3.806	0.169	-1.4	0.8	-2.5	0.5	A-	
1379	683061	K	K	452	.717	.035	.053	.188	.717	.007	.506	-.144	-.329	-.300	.506	-2.256	0.117	-1.1	0.9	-1.0	0.9	B-	
1380	682473	K	K	447	.866	.866	.045	.049	.040	.000	.431	.431	-.298	-.211	-.201	-3.437	0.150	-0.7	0.9	-1.9	0.7	A+	A+
1381	686535	K	K	447	.483	.483	.264	.089	.159	.004	.340	.340	-.203	-.202	-.060	-1.065	0.107	3.2	1.1	3.3	1.2	A-	A+
1382	683135	K	K	447	.629	.235	.072	.629	.065	.000	.346	-.140	-.225	.346	-.203	-1.814	0.110	2.5	1.1	2.2	1.2	A-	A-
1383	683136	K	K	447	.483	.170	.483	.237	.105	.004	.416	-.273	.416	-.108	-.175	-1.065	0.107	1.0	1.0	1.3	1.1	A+	A+
1384	683138	K	K	447	.678	.136	.045	.678	.139	.002	.533	-.375	-.223	.533	-.219	-2.086	0.113	-2.2	0.9	-2.3	0.8	A-	A+
1385	683125	K	K	447	.770	.098	.027	.105	.770	.000	.489	-.323	-.256	-.224	.489	-2.654	0.124	-1.7	0.9	-0.9	0.9	A+	A-
1386	686541	K	K	447	.801	.801	.043	.141	.009	.007	.426	.426	-.117	-.393	-.045	-2.879	0.130	-0.5	1.0	-1.0	0.9	A-	A-
1387	683126	K	K	447	.758	.034	.094	.758	.110	.004	.436	-.264	-.214	.436	-.232	-2.579	0.122	-0.6	1.0	-0.4	1.0	A+	A-
1388	682474	K	K	453	.843	.020	.093	.042	.843	.002	.431	-.195	-.231	-.304	.431	-3.233	0.137	-1.5	0.9	-1.5	0.8	A+	B-
1389	686537	K	K	453	.671	.671	.166	.099	.060	.004	.328	.328	-.308	-.084	-.065	-2.118	0.108	1.1	1.1	0.9	1.1	A+	A+
1390	683078	K	K	453	.764	.084	.764	.126	.026	.000	.383	-.207	.383	-.215	-.211	-2.654	0.119	-0.4	1.0	-0.8	0.9	A+	A-
1391	683077	K	K	453	.620	.102	.238	.038	.620	.002	.407	-.109	-.257	-.271	.407	-1.856	0.105	-0.3	1.0	-0.5	1.0	A-	A+
1392	683076	K	K	453	.687	.687	.033	.247	.031	.002	.335	.335	-.143	-.204	-.250	-2.201	0.110	0.9	1.0	1.2	1.1	A+	A+
1393	683069	K	K	453	.647	.040	.146	.647	.166	.002	.468	-.168	-.204	.468	-.316	-1.991	0.107	-1.7	0.9	-1.5	0.9	A+	A-
1394	683081	K	K	453	.892	.049	.040	.892	.013	.007	.387	-.160	-.285	.387	-.195	-3.705	0.158	-1.1	0.9	-1.3	0.8	B+	B-
1395	683080	K	K	453	.534	.278	.077	.534	.104	.007	.382	-.211	-.217	.382	-.098	-1.435	0.103	0.6	1.0	0.5	1.0	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1396	683079	K	K	453	.468	.468	.166	.172	.192	.002	.419	.419	-.109	-.272	-.156	-1.118	0.103	-0.3	1.0	-0.8	1.0	A+	A-
1397	682475	K	K	459	.815	.046	.074	.815	.065	.000	.376	-.253	-.169	.376	-.199	-3.007	0.132	0.1	1.0	0.6	1.1	A+	
1398	686512	K	K	459	.309	.244	.346	.309	.098	.002	.347	-.192	-.080	.347	-.139	-0.009	0.117	2.4	1.1	3.5	1.4	A-	
1399	683112	K	K	459	.852	.035	.852	.031	.078	.004	.412	-.256	.412	-.244	-.203	-3.326	0.142	-0.8	0.9	-0.8	0.8	A+	
1400	683282	K	K	459	.876	.092	.022	.007	.876	.004	.485	-.406	-.228	-.141	.485	-3.564	0.152	-1.9	0.8	-1.8	0.6	C+	
1401	683110	K	K	459	.662	.190	.068	.076	.662	.004	.471	-.200	-.268	-.298	.471	-1.989	0.113	0.3	1.0	-0.1	1.0	C+	
1402	683161	K	K	459	.695	.139	.695	.100	.063	.002	.430	-.259	.430	-.181	-.219	-2.184	0.115	1.1	1.1	0.0	1.0	A+	
1403	683162	K	K	459	.726	.725	.024	.037	.207	.007	.324	.324	-.173	-.304	-.157	-2.374	0.118	2.7	1.2	3.2	1.4	A+	
1404	683142	K	K	459	.791	.102	.039	.791	.063	.004	.536	-.395	-.182	.536	-.264	-2.822	0.127	-2.3	0.9	-1.8	0.7	B+	
1405	682476	K	K	447	.922	.031	.922	.011	.036	.000	.487	-.285	.487	-.197	-.326	-4.183	0.189	-1.5	0.8	-2.7	0.4	A+	
1406	686539	K	K	447	.859	.058	.859	.043	.040	.000	.479	-.323	.479	-.239	-.218	-3.407	0.149	-1.2	0.9	-1.8	0.7	A-	
1407	683156	K	K	447	.653	.038	.282	.022	.653	.004	.391	-.244	-.252	-.182	.391	-1.942	0.113	1.9	1.1	1.8	1.2	A-	
1408	683155	K	K	447	.669	.043	.244	.669	.038	.007	.445	-.227	-.276	.445	-.244	-2.031	0.114	0.5	1.0	0.5	1.0	A+	
1409	683160	K	K	447	.911	.022	.034	.029	.911	.004	.482	-.160	-.318	-.338	.482	-4.014	0.178	-1.7	0.8	-1.4	0.7	A-	
1410	683159	K	K	447	.770	.034	.034	.159	.770	.004	.479	-.254	-.326	-.266	.479	-2.668	0.126	-0.9	0.9	-0.6	0.9	A+	
1411	683158	K	K	447	.852	.067	.852	.029	.049	.002	.390	-.139	.390	-.315	-.221	-3.342	0.146	-0.2	1.0	0.2	1.0	A+	
1412	683157	K	K	447	.680	.192	.036	.680	.092	.000	.334	-.149	-.197	.334	-.209	-2.096	0.115	2.7	1.2	3.8	1.4	A+	
1413	682477	K	K	449	.933	.038	.022	.933	.007	.000	.412	-.330	-.226	.412	-.080	-4.309	0.198	-1.1	0.8	-1.5	0.6	A+	
1414	683058	K	K	449	.793	.056	.111	.793	.038	.002	.597	-.296	-.383	.597	-.285	-2.827	0.127	-3.6	0.8	-3.7	0.6	A+	
1415	683060	K	K	449	.860	.040	.051	.860	.045	.004	.426	-.190	-.225	.426	-.257	-3.380	0.146	-1.2	0.9	0.7	1.1	A+	
1416	683059	K	K	449	.775	.089	.775	.078	.053	.004	.470	-.205	.470	-.300	-.248	-2.700	0.124	-1.0	0.9	-1.8	0.8	A-	
1417	683168	K	K	449	.844	.844	.016	.091	.045	.004	.407	.407	-.156	-.218	-.284	-3.236	0.140	-0.4	1.0	-1.1	0.8	B+	
1418	686542	K	K	449	.555	.227	.555	.073	.143	.002	.452	-.289	.452	-.215	-.127	-1.442	0.107	0.1	1.0	-0.3	1.0	A+	
1419	683165	K	K	449	.512	.225	.143	.118	.512	.002	.311	-.150	-.192	-.071	.311	-1.228	0.106	3.8	1.2	3.1	1.2	A+	
1420	684830	K	K	443	.795	.043	.795	.059	.102	.002	.355	-.231	.355	-.194	-.152	-2.933	0.130	0.6	1.0	0.5	1.1	A+	
1421	683153	K	K	443	.826	.068	.059	.826	.047	.000	.482	-.255	-.300	.482	-.226	-3.182	0.137	-1.7	0.9	-1.9	0.7	B+	
1422	683151	K	K	443	.849	.849	.059	.016	.070	.007	.519	.519	-.335	-.209	-.285	-3.380	0.144	-2.2	0.8	-2.7	0.5	A+	
1423	683169	K	K	443	.865	.063	.029	.034	.865	.009	.404	-.269	-.156	-.235	.404	-3.531	0.150	-0.9	0.9	-0.6	0.9	A+	
1424	683064	K	K	443	.431	.269	.144	.431	.151	.005	.405	-.240	-.134	.405	-.123	-0.855	0.110	2.1	1.1	2.5	1.2	A+	
1425	683067	K	K	443	.885	.034	.068	.011	.885	.002	.499	-.288	-.346	-.157	.499	-3.746	0.160	-2.2	0.8	-2.7	0.5	A+	
1426	683065	K	K	443	.571	.059	.219	.149	.571	.002	.483	-.233	-.253	-.214	.483	-1.588	0.109	-0.3	1.0	-0.2	1.0	A+	
1427	683066	K	K	443	.632	.147	.632	.070	.147	.005	.478	-.315	.478	-.185	-.182	-1.917	0.112	-0.2	1.0	-0.7	0.9	A-	
1428	684832	K	K	453	.746	.038	.029	.188	.746	.000	.419	-.303	-.289	-.196	.419	-2.552	0.121	0.5	1.0	0.8	1.1	A+	
1429	683074	K	K	453	.808	.053	.102	.808	.035	.002	.412	-.291	-.188	.412	-.208	-3.000	0.132	-0.2	1.0	1.0	1.1	A+	
1430	683073	K	K	453	.669	.068	.139	.121	.669	.002	.475	-.270	-.250	-.202	.475	-2.071	0.113	0.1	1.0	-0.5	1.0	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1431	683071	K	K	453	.885	.885	.035	.031	.049	.000	.481	.481	-.289	-.222	-.286	-3.729	0.159	-1.3	0.9	-2.1	0.6	A+	
1432	683072	K	K	453	.810	.051	.051	.084	.810	.004	.553	-.281	-.293	-.305	.553	-3.018	0.133	-2.1	0.9	-2.6	0.7	B+	
1433	684833	K	K	460	.609	.211	.083	.609	.096	.002	.329	-.320	-.093	.329	-.011	-1.778	0.104	1.5	1.1	2.1	1.1	A-	
1434	683130	K	K	460	.494	.143	.293	.070	.493	.000	.404	-.328	-.097	-.168	.404	-1.219	0.102	0.0	1.0	-0.3	1.0	A+	
1435	686540	K	K	460	.774	.122	.048	.054	.774	.002	.425	-.282	-.205	-.176	.425	-2.707	0.120	-0.7	1.0	-1.4	0.9	A+	
1436	683129	K	K	460	.811	.113	.022	.052	.811	.002	.400	-.230	-.193	-.249	.400	-2.967	0.128	-0.5	1.0	-1.2	0.9	B+	
1437	684838	K	K	447	.779	.186	.020	.016	.779	.000	.383	-.279	-.210	-.168	.383	-2.691	0.127	0.7	1.1	0.7	1.1	A+	
1438	683145	K	K	447	.819	.078	.027	.076	.819	.000	.441	-.303	-.176	-.227	.441	-3.000	0.136	-0.6	1.0	-0.5	0.9	A+	
1439	683146	K	K	447	.667	.667	.145	.076	.105	.007	.416	.416	-.140	-.282	-.222	-1.974	0.114	1.5	1.1	0.8	1.1	A-	
1440	683148	K	K	447	.477	.477	.065	.136	.322	.000	.215	.215	-.228	-.115	-.025	-0.940	0.109	7.2	1.4	6.4	1.5	A-	
1441	686443	K	K	444	.800	.119	.800	.016	.065	.000	.377	-.259	.377	-.127	-.207	-2.955	0.130	0.3	1.0	-0.4	1.0	A-	A+
1442	683150	K	K	444	.768	.768	.052	.088	.090	.002	.512	.512	-.190	-.250	-.356	-2.729	0.124	-1.7	0.9	-1.8	0.8	A+	A-
1443	683127	K	K	444	.779	.086	.068	.779	.063	.005	.560	-.341	-.275	.560	-.241	-2.808	0.126	-2.8	0.8	-2.2	0.8	A+	A+
1444	683149	K	K	444	.743	.083	.090	.743	.081	.002	.564	-.335	-.290	.564	-.255	-2.565	0.120	-2.7	0.8	-2.8	0.7	A+	B-
1445	683128	K	K	444	.604	.126	.065	.604	.200	.005	.311	-.221	-.314	.311	.008	-1.763	0.109	3.4	1.2	3.3	1.2	A+	A-
1446	686455	K	K	450	.851	.851	.020	.049	.080	.000	.330	.330	-.176	-.287	-.114	-3.260	0.141	-0.1	1.0	0.0	1.0	B+	
1447	683123	K	K	450	.660	.660	.102	.102	.136	.000	.417	.417	-.276	-.217	-.141	-2.015	0.108	-0.7	1.0	-1.0	0.9	A+	
1448	683121	K	K	450	.878	.053	.033	.878	.031	.004	.359	-.092	-.263	.359	-.238	-3.516	0.152	-0.6	0.9	-1.0	0.8	A+	
1449	686468	K	K	440	.534	.168	.091	.534	.202	.005	.386	-.242	-.234	.386	-.089	-1.362	0.106	1.3	1.1	1.1	1.1	A+	
1450	686471	K	K	440	.446	.359	.136	.059	.445	.000	.364	-.266	-.047	-.156	.364	-0.924	0.106	1.6	1.1	2.6	1.2	A+	
1451	683164	K	K	440	.689	.052	.109	.689	.148	.002	.430	-.152	-.288	.430	-.208	-2.165	0.113	-0.4	1.0	-0.5	1.0	A+	
1452	683274	K	K	440	.921	.018	.039	.020	.920	.002	.411	-.212	-.290	-.208	.411	-4.058	0.183	-0.9	0.9	-2.3	0.5	B+	
1453	683163	K	K	440	.836	.045	.836	.032	.084	.002	.476	-.256	.476	-.204	-.310	-3.150	0.138	-1.4	0.9	-2.7	0.6	B+	
1454	683132	K	K	453	.863	.062	.863	.046	.029	.000	.452	-.281	.452	-.280	-.173	-3.472	0.146	-1.2	0.9	-2.3	0.7	A-	
1455	683134	K	K	453	.907	.029	.031	.033	.907	.000	.440	-.198	-.258	-.279	.440	-3.964	0.171	-1.3	0.9	-2.6	0.5	A-	
1456	683131	K	K	453	.647	.647	.095	.066	.188	.004	.443	.443	-.202	-.319	-.163	-2.018	0.108	-0.7	1.0	-1.0	0.9	A-	
1457	682464	1	1	452	.750	.750	.049	.055	.144	.002	.367	.367	-.300	-.254	-.090	-2.469	0.122	1.2	1.1	2.1	1.2	A+	
1458	683503	1	1	452	.737	.126	.035	.097	.737	.004	.447	-.211	-.287	-.222	.447	-2.382	0.120	0.1	1.0	-0.4	1.0	C+	
1459	683505	1	1	452	.378	.088	.378	.188	.330	.015	.267	-.272	.267	-.127	.043	-0.457	0.108	3.8	1.2	4.0	1.4	A+	
1460	683504	1	1	452	.274	.476	.104	.274	.128	.018	.326	.086	-.237	.326	-.265	0.125	0.116	-0.1	1.0	3.3	1.4	A+	
1461	683506	1	1	452	.666	.086	.115	.117	.666	.015	.570	-.288	-.300	-.201	.570	-1.953	0.112	-2.7	0.9	-1.8	0.9	A-	
1462	683070	1	1	447	.902	.902	.058	.027	.013	.000	.428	.428	-.355	-.160	-.159	-3.840	0.169	-1.1	0.9	-1.8	0.6	A-	A-
1463	683231	1	1	447	.875	.875	.049	.027	.047	.002	.466	.466	-.337	-.126	-.293	-3.529	0.154	-1.4	0.9	-2.2	0.6	A+	A-
1464	683068	1	1	447	.503	.215	.503	.163	.110	.009	.394	-.164	.394	-.116	-.235	-1.167	0.106	1.5	1.1	2.5	1.2	A-	A-
1465	682465	1	1	453	.464	.106	.020	.464	.408	.002	.405	-.350	-.103	.405	-.153	-1.097	0.103	0.0	1.0	0.2	1.0	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1466	682466	1	1	453	.470	.470	.351	.097	.075	.007	.406	.406	-.280	-.149	-.055	-1.129	0.103	-0.1	1.0	0.0	1.0	B-	A-
1467	685910	1	1	453	.413	.351	.413	.106	.119	.011	.363	-.006	.363	-.207	-.293	-0.850	0.104	1.0	1.0	0.9	1.1	A-	A+
1468	685912	1	1	453	.444	.051	.433	.444	.066	.007	.345	-.236	-.104	.345	-.231	-1.001	0.103	1.3	1.1	1.6	1.1	A+	A-
1469	685909	1	1	453	.402	.402	.307	.148	.137	.007	.466	.466	-.136	-.109	-.339	-0.796	0.105	-1.7	0.9	-1.4	0.9	A+	A+
1470	685911	1	1	453	.384	.274	.132	.384	.201	.009	.438	-.058	-.249	.438	-.222	-0.707	0.105	-1.3	1.0	-0.9	1.0	A+	A-
1471	683382	1	1	459	.739	.179	.739	.028	.048	.007	.600	-.407	.600	-.262	-.275	-2.459	0.119	-3.5	0.8	-2.9	0.7	A+	
1472	683387	1	1	459	.767	.133	.767	.059	.035	.007	.623	-.417	.623	-.295	-.227	-2.650	0.123	-4.1	0.8	-3.4	0.6	B+	
1473	683385	1	1	459	.139	.205	.294	.139	.355	.007	.104	-.070	.125	.104	-.112	1.312	0.152	2.9	1.3	5.7	2.8	A+	
1474	683383	1	1	459	.527	.292	.046	.126	.527	.009	.446	-.208	-.174	-.236	.446	-1.238	0.109	1.7	1.1	0.8	1.1	A+	
1475	682468	1	1	447	.931	.025	.931	.022	.022	.000	.447	-.286	.447	-.264	-.205	-4.334	0.199	-1.1	0.9	-1.9	0.5	A+	
1476	682467	1	1	447	.835	.089	.834	.047	.029	.000	.478	-.274	.478	-.296	-.221	-3.177	0.140	-1.1	0.9	-1.5	0.8	B-	
1477	683086	1	1	447	.819	.819	.074	.043	.060	.004	.443	.443	-.188	-.232	-.277	-3.043	0.136	-0.3	1.0	-1.0	0.8	A-	
1478	683088	1	1	447	.472	.101	.139	.472	.284	.004	.494	-.143	-.306	.494	-.195	-0.979	0.108	-1.3	1.0	-0.3	1.0	A+	
1479	683087	1	1	447	.418	.291	.116	.172	.418	.002	.445	-.175	-.334	-.069	.445	-0.699	0.109	-0.2	1.0	1.6	1.1	A+	
1480	683089	1	1	447	.468	.468	.313	.098	.119	.002	.399	.399	-.201	-.104	-.208	-0.956	0.108	1.6	1.1	3.1	1.3	A-	
1481	682469	1	1	449	.924	.027	.031	.018	.924	.000	.415	-.229	-.268	-.200	.415	-4.160	0.188	-1.1	0.9	-1.3	0.7	A+	
1482	683377	1	1	449	.568	.143	.236	.053	.568	.000	.492	-.261	-.215	-.271	.492	-1.510	0.107	-1.1	1.0	-0.8	0.9	A+	
1483	683379	1	1	449	.806	.109	.036	.045	.806	.004	.500	-.304	-.242	-.248	.500	-2.926	0.130	-1.9	0.9	-1.9	0.8	A+	
1484	683378	1	1	449	.278	.278	.038	.655	.024	.004	.223	.223	-.244	-.018	-.253	0.024	0.117	3.0	1.2	4.4	1.5	A-	
1485	683372	1	1	449	.510	.131	.276	.510	.076	.007	.546	-.350	-.242	.546	-.143	-1.217	0.106	-2.9	0.9	-2.3	0.9	A-	
1486	683381	1	1	449	.423	.339	.423	.163	.067	.009	.279	-.171	.279	-.032	-.142	-0.776	0.107	3.8	1.2	4.2	1.3	A+	
1487	683384	1	1	449	.579	.147	.065	.198	.579	.011	.484	-.241	-.234	-.218	.484	-1.568	0.107	-0.9	1.0	-1.0	0.9	A-	
1488	683373	1	1	449	.588	.082	.089	.227	.588	.013	.472	-.252	-.274	-.168	.472	-1.614	0.107	-0.6	1.0	-0.8	0.9	A-	
1489	684088	1	1	443	.546	.352	.546	.038	.059	.005	.299	-.086	.299	-.228	-.238	-1.458	0.109	4.8	1.2	4.8	1.4	A+	
1490	684087	1	1	443	.670	.670	.070	.129	.126	.005	.524	.524	-.276	-.262	-.242	-2.133	0.114	-1.8	0.9	-1.4	0.9	A+	
1491	684089	1	1	443	.494	.208	.494	.160	.129	.009	.496	-.140	.496	-.220	-.291	-1.187	0.108	-0.5	1.0	-0.1	1.0	A-	
1492	684090	1	1	443	.438	.124	.111	.316	.438	.011	.453	-.189	-.272	-.135	.453	-0.891	0.109	0.8	1.0	0.2	1.0	A-	
1493	682471	1	1	453	.951	.022	.951	.015	.011	.000	.386	-.260	.386	-.228	-.160	-4.780	0.228	-0.7	0.9	-2.2	0.4	A-	
1494	682470	1	1	453	.510	.225	.214	.510	.049	.002	.471	-.237	-.236	.471	-.190	-1.209	0.107	-0.5	1.0	0.8	1.1	A+	
1495	684091	1	1	453	.768	.768	.071	.102	.055	.004	.569	.569	-.320	-.298	-.261	-2.703	0.125	-2.5	0.8	-1.9	0.8	A+	
1496	684092	1	1	453	.709	.104	.709	.119	.062	.007	.564	-.174	.564	-.412	-.249	-2.310	0.117	-2.1	0.9	-2.5	0.8	A+	
1497	684093	1	1	453	.530	.530	.075	.225	.163	.007	.446	.446	-.292	.013	-.376	-1.313	0.107	0.9	1.0	0.0	1.0	A-	
1498	684094	1	1	453	.333	.190	.117	.333	.349	.011	.215	-.215	-.219	.215	.140	-0.273	0.112	4.4	1.2	5.6	1.6	A-	
1499	683102	1	1	453	.570	.570	.073	.121	.227	.009	.385	.385	-.151	-.322	-.074	-1.522	0.108	2.6	1.1	2.5	1.2	A+	
1500	683103	1	1	453	.607	.607	.126	.139	.117	.011	.529	.529	-.235	-.145	-.357	-1.724	0.110	-1.2	0.9	-1.7	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1501	683277	1	1	453	.784	.082	.073	.784	.049	.013	.609	-.338	-.298	.609	-.309	-2.815	0.127	-3.2	0.8	-3.5	0.6	A+	
1502	683104	1	1	453	.740	.049	.113	.084	.740	.015	.581	-.284	-.356	-.218	.581	-2.508	0.121	-2.5	0.9	-2.8	0.7	A+	
1503	683386	1	1	460	.157	.211	.074	.557	.157	.002	.086	-.187	-.188	.193	.086	0.710	0.136	1.5	1.1	4.8	1.9	A+	
1504	683376	1	1	460	.667	.139	.137	.057	.667	.000	.514	-.332	-.234	-.203	.514	-2.080	0.108	-2.5	0.9	-2.7	0.8	A+	
1505	683375	1	1	460	.365	.083	.087	.365	.463	.002	.313	-.209	-.206	.313	-.066	-0.593	0.105	1.3	1.1	2.4	1.2	A-	
1506	683374	1	1	460	.313	.313	.226	.276	.178	.007	.034	.034	-.100	.066	-.019	-0.319	0.109	6.0	1.3	6.3	1.6	A-	
1507	683084	1	1	460	.448	.309	.448	.117	.124	.002	.349	-.160	.349	-.199	-.091	-1.000	0.102	1.2	1.0	1.2	1.1	A-	
1508	683082	1	1	460	.641	.141	.109	.641	.102	.007	.379	-.184	-.261	.379	-.088	-1.943	0.106	0.4	1.0	0.2	1.0	A+	
1509	683085	1	1	460	.746	.746	.091	.072	.089	.002	.556	.556	-.296	-.291	-.265	-2.526	0.116	-3.2	0.8	-3.6	0.7	A-	
1510	683083	1	1	460	.635	.174	.635	.111	.072	.009	.452	-.337	.452	.018	-.310	-1.910	0.106	-1.3	0.9	-1.3	0.9	A-	
1511	683492	1	1	447	.718	.718	.058	.179	.045	.000	.589	.589	-.307	-.394	-.204	-2.285	0.119	-3.0	0.8	-3.0	0.7	B+	
1512	683491	1	1	447	.515	.192	.515	.201	.083	.009	.525	-.211	.525	-.238	-.285	-1.141	0.109	-1.1	1.0	-0.7	1.0	A+	
1513	683493	1	1	447	.468	.161	.047	.322	.468	.002	.416	-.315	-.268	-.068	.416	-0.892	0.109	2.2	1.1	2.1	1.2	A-	
1514	683494	1	1	447	.711	.074	.143	.711	.067	.004	.572	-.252	-.346	.572	-.271	-2.243	0.118	-2.5	0.9	-2.7	0.7	A+	
1515	683499	1	1	447	.640	.132	.130	.640	.092	.007	.541	-.316	-.157	.541	-.317	-1.820	0.113	-1.7	0.9	-1.0	0.9	A+	
1516	683500	1	1	447	.828	.047	.049	.828	.069	.007	.536	-.252	-.259	.536	-.322	-3.075	0.138	-2.1	0.8	-2.4	0.6	A+	
1517	683502	1	1	447	.752	.060	.752	.110	.067	.011	.538	-.335	.538	-.250	-.234	-2.504	0.123	-2.0	0.9	-1.9	0.8	A+	
1518	683501	1	1	447	.188	.497	.145	.188	.157	.013	.164	-.051	-.089	.164	.038	0.831	0.135	2.6	1.2	5.3	2.1	A+	
1519	683509	1	1	444	.484	.070	.041	.484	.403	.002	.251	-.275	-.194	.251	-.036	-1.153	0.107	5.1	1.2	5.2	1.3	A+	A+
1520	683513	1	1	444	.658	.137	.658	.110	.095	.000	.480	-.277	.480	-.298	-.134	-2.055	0.112	-0.7	1.0	-1.1	0.9	A+	A+
1521	683489	1	1	444	.613	.613	.104	.164	.117	.002	.391	.391	-.143	-.166	-.254	-1.810	0.109	1.5	1.1	1.0	1.1	B-	A-
1522	683490	1	1	444	.617	.137	.617	.146	.092	.007	.509	-.257	.509	-.238	-.226	-1.834	0.110	-1.4	0.9	-1.6	0.9	A+	A-
1523	683488	1	1	444	.649	.135	.124	.088	.649	.005	.487	-.228	-.312	-.154	.487	-2.005	0.111	-0.9	1.0	-0.5	1.0	A+	A+
1524	683108	1	1	444	.658	.077	.074	.658	.180	.011	.496	-.235	-.183	.496	-.275	-2.055	0.112	-1.1	1.0	-1.1	0.9	B+	A+
1525	683107	1	1	444	.712	.191	.712	.038	.045	.014	.580	-.364	.580	-.239	-.245	-2.368	0.117	-3.1	0.8	-3.2	0.7	A+	A+
1526	683109	1	1	444	.588	.135	.072	.191	.588	.014	.477	-.278	-.282	-.111	.477	-1.680	0.108	-0.5	1.0	-0.9	0.9	A+	A-
1527	683106	1	1	444	.682	.137	.065	.099	.682	.016	.555	-.267	-.288	-.243	.555	-2.196	0.114	-2.5	0.9	-2.4	0.8	A+	A-
1528	683276	1	1	450	.769	.769	.062	.069	.100	.000	.449	.449	-.204	-.298	-.216	-2.642	0.120	-1.4	0.9	-1.5	0.9	B+	
1529	683100	1	1	450	.676	.153	.093	.076	.676	.002	.430	-.229	-.177	-.231	.430	-2.097	0.109	-1.0	1.0	-1.0	0.9	A+	
1530	683101	1	1	450	.327	.216	.327	.216	.242	.000	.180	-.121	.180	-.153	.066	-0.386	0.108	3.3	1.2	2.9	1.2	A+	
1531	683099	1	1	450	.596	.596	.136	.129	.129	.011	.470	.470	-.198	-.238	-.198	-1.690	0.104	-2.0	0.9	-1.8	0.9	A+	
1532	683498	1	1	450	.653	.653	.093	.202	.044	.007	.390	.390	-.228	-.171	-.178	-1.980	0.107	-0.1	1.0	-0.1	1.0	A+	
1533	683495	1	1	450	.591	.089	.171	.591	.144	.004	.331	-.144	-.056	.331	-.263	-1.668	0.104	1.4	1.1	1.4	1.1	A+	
1534	683496	1	1	450	.302	.302	.249	.127	.313	.009	.228	.228	.032	-.237	-.058	-0.254	0.110	2.3	1.1	2.3	1.2	A+	
1535	683497	1	1	450	.549	.549	.096	.144	.202	.009	.259	.259	-.274	-.123	.022	-1.465	0.103	3.3	1.1	3.1	1.2	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1536	683301	1	1	440	.627	.100	.205	.627	.061	.007	.507	-.269	-.217	.507	-.294	-1.833	0.109	-2.0	0.9	-1.9	0.9	A-	
1537	683300	1	1	440	.752	.752	.064	.061	.111	.011	.491	.491	-.224	-.282	-.262	-2.544	0.120	-2.0	0.9	-1.5	0.8	A-	
1538	683293	1	1	440	.698	.102	.152	.698	.043	.005	.483	-.198	-.309	.483	-.222	-2.216	0.114	-1.4	0.9	-1.9	0.8	A+	
1539	683302	1	1	440	.684	.684	.095	.105	.109	.007	.316	.316	-.169	-.172	-.112	-2.139	0.113	1.8	1.1	1.9	1.2	A+	
1540	683292	1	1	440	.191	.289	.295	.218	.191	.007	-.025	.079	.058	-.103	-.025	0.554	0.131	4.3	1.4	6.2	2.1	A-	
1541	684101	1	1	440	.621	.216	.061	.095	.620	.007	.417	-.185	-.217	-.211	.417	-1.798	0.109	0.3	1.0	-0.6	1.0	B+	
1542	684100	1	1	440	.418	.418	.105	.205	.259	.014	.432	.432	-.138	-.143	-.218	-0.787	0.107	-0.7	1.0	0.3	1.0	A-	
1543	684085	1	1	440	.591	.086	.591	.216	.091	.016	.441	-.135	.441	-.113	-.371	-1.646	0.107	-0.2	1.0	-0.6	1.0	A-	
1544	684102	1	1	440	.414	.120	.268	.180	.414	.018	.453	-.204	-.134	-.194	.453	-0.764	0.107	-1.0	1.0	-0.7	1.0	A-	
1545	684086	1	1	440	.523	.093	.300	.523	.068	.016	.367	-.240	-.127	.367	-.124	-1.306	0.106	1.8	1.1	2.0	1.1	A+	
1546	683510	1	1	453	.684	.684	.084	.075	.157	.000	.419	.419	-.339	-.175	-.151	-2.221	0.111	-0.2	1.0	-0.7	0.9	A-	
1547	683512	1	1	453	.254	.227	.313	.254	.203	.002	.329	-.049	-.151	.329	-.131	-0.007	0.116	0.3	1.0	0.6	1.1	A-	
1548	683508	1	1	453	.322	.320	.322	.172	.179	.007	.241	.003	.241	-.082	-.203	-0.399	0.109	2.3	1.1	3.9	1.3	A+	
1549	683511	1	1	453	.819	.819	.044	.071	.060	.007	.438	.438	-.176	-.299	-.211	-3.091	0.132	-0.8	0.9	-1.5	0.8	A+	
1550	684095	1	1	453	.885	.885	.007	.031	.071	.007	.334	.334	-.143	-.216	-.184	-3.699	0.156	-0.1	1.0	-0.9	0.8	A+	
1551	684097	1	1	453	.717	.084	.717	.121	.071	.007	.500	-.143	.500	-.302	-.289	-2.410	0.114	-2.0	0.9	-2.1	0.8	B+	
1552	684099	1	1	453	.600	.196	.600	.108	.082	.013	.510	-.203	.510	-.245	-.257	-1.779	0.105	-2.5	0.9	-2.0	0.9	A+	
1553	684096	1	1	453	.327	.355	.327	.068	.236	.013	.284	.006	.284	-.227	-.136	-0.423	0.109	2.1	1.1	1.7	1.1	A-	
1554	684098	1	1	453	.214	.214	.139	.276	.355	.015	.088	.088	-.058	.092	-.066	0.249	0.123	3.1	1.2	4.2	1.6	A+	
1555	682480	2	2	452	.403	.403	.279	.181	.117	.020	.260	.260	.027	-.148	-.150	-0.584	0.107	4.3	1.2	4.3	1.4	A+	
1556	683114	2	2	452	.719	.046	.075	.135	.719	.024	.489	-.238	-.284	-.163	.489	-2.269	0.117	-0.9	1.0	-0.1	1.0	A-	
1557	683113	2	2	452	.794	.060	.794	.046	.071	.029	.603	-.229	.603	-.298	-.336	-2.783	0.129	-3.0	0.8	-3.2	0.6	A+	
1558	683278	2	2	452	.449	.117	.449	.197	.210	.027	.380	-.079	.380	-.182	-.123	-0.821	0.106	1.7	1.1	1.3	1.1	A-	
1559	683298	2	2	452	.547	.111	.100	.208	.546	.035	.498	-.153	-.238	-.220	.498	-1.314	0.106	-1.3	1.0	-1.3	0.9	B-	
1560	683370	2	2	452	.673	.162	.080	.673	.055	.031	.563	-.159	-.333	.563	-.343	-1.991	0.113	-2.5	0.9	-1.5	0.9	C-	
1561	683297	2	2	452	.797	.796	.040	.073	.060	.031	.614	.614	-.233	-.340	-.321	-2.800	0.130	-3.5	0.8	-2.4	0.7	A-	
1562	683299	2	2	452	.449	.290	.449	.122	.104	.035	.354	-.064	.354	-.186	-.167	-0.821	0.106	2.3	1.1	2.2	1.2	A-	
1563	682481	2	2	447	.904	.036	.904	.013	.034	.013	.483	-.311	.483	-.159	-.266	-3.869	0.171	-1.5	0.8	-2.8	0.4	A-	A-
1564	683280	2	2	447	.392	.391	.282	.128	.177	.022	.418	.418	-.182	-.116	-.138	-0.591	0.109	0.5	1.0	1.8	1.1	A+	A+
1565	683119	2	2	447	.682	.078	.116	.101	.682	.022	.508	-.216	-.204	-.274	.508	-2.111	0.113	-1.6	0.9	-1.8	0.9	A-	A-
1566	683120	2	2	447	.445	.242	.150	.445	.139	.025	.468	-.112	-.185	.468	-.251	-0.871	0.107	-0.7	1.0	-0.4	1.0	A+	A-
1567	683118	2	2	447	.597	.597	.145	.072	.163	.022	.433	.433	-.234	-.205	-.123	-1.648	0.108	0.5	1.0	0.2	1.0	A+	A+
1568	685008	2	2	447	.414	.150	.414	.230	.183	.022	.459	-.172	.459	-.198	-.144	-0.709	0.108	-0.6	1.0	0.2	1.0	A+	A+
1569	685009	2	2	447	.459	.262	.114	.141	.459	.025	.492	-.082	-.175	-.355	.492	-0.940	0.107	-1.2	1.0	-0.8	1.0	A+	A-
1570	685010	2	2	447	.407	.139	.255	.177	.407	.022	.371	-.210	-.070	-.141	.371	-0.674	0.108	1.5	1.1	3.3	1.3	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1571	685011	2	2	447	.354	.362	.353	.107	.152	.025	.351	.038	.351	-.262	-.219	-0.385	0.111	1.9	1.1	2.3	1.2	A-	A-
1572	682482	2	2	453	.768	.064	.084	.768	.068	.015	.533	-.207	-.318	.533	-.263	-2.683	0.119	-2.8	0.8	-3.2	0.7	A+	A-
1573	683096	2	2	453	.585	.104	.585	.221	.071	.020	.458	-.213	.458	-.156	-.293	-1.681	0.104	-1.5	0.9	-1.6	0.9	A-	A+
1574	683097	2	2	453	.289	.327	.203	.163	.289	.018	.279	.058	-.160	-.186	.279	-0.200	0.113	1.3	1.1	2.8	1.3	A-	A+
1575	683098	2	2	453	.422	.422	.210	.159	.190	.020	.414	.414	-.194	-.106	-.171	-0.894	0.104	-0.4	1.0	-0.9	1.0	A+	B-
1576	683095	2	2	453	.442	.307	.115	.442	.117	.020	.310	-.019	-.244	.310	-.148	-0.991	0.103	2.5	1.1	2.6	1.2	A-	A-
1577	685004	2	2	459	.573	.214	.124	.573	.076	.013	.488	-.248	-.232	.488	-.181	-1.487	0.109	0.3	1.0	0.3	1.0	A-	
1578	685005	2	2	459	.588	.168	.111	.588	.120	.013	.533	-.271	-.267	.533	-.194	-1.570	0.110	-1.0	1.0	0.0	1.0	A-	
1579	685006	2	2	459	.730	.089	.076	.089	.730	.015	.636	-.341	-.298	-.320	.636	-2.402	0.118	-4.4	0.8	-3.6	0.6	A+	
1580	685007	2	2	459	.730	.730	.129	.081	.046	.015	.538	.538	-.252	-.285	-.284	-2.402	0.118	-1.9	0.9	-1.1	0.9	A+	
1581	685395	2	2	459	.377	.314	.124	.377	.170	.015	.341	-.010	-.282	.341	-.140	-0.412	0.112	3.5	1.2	3.5	1.3	A+	
1582	685394	2	2	459	.612	.612	.166	.098	.107	.017	.513	.513	-.237	-.274	-.220	-1.703	0.110	-0.5	1.0	-0.1	1.0	A+	
1583	685393	2	2	459	.477	.131	.214	.157	.477	.022	.584	-.255	-.201	-.302	.584	-0.967	0.109	-2.7	0.9	-2.4	0.8	A-	
1584	685392	2	2	459	.608	.170	.089	.115	.608	.017	.541	-.304	-.202	-.262	.541	-1.679	0.110	-1.3	0.9	-1.6	0.9	A+	
1585	682484	2	2	447	.694	.123	.083	.694	.087	.013	.608	-.339	-.323	.608	-.227	-2.176	0.116	-3.5	0.8	-3.3	0.7	A+	
1586	682483	2	2	447	.850	.067	.038	.031	.850	.013	.552	-.350	-.277	-.235	.552	-3.320	0.146	-2.3	0.8	-2.3	0.6	A+	
1587	686427	2	2	447	.300	.116	.242	.315	.300	.027	.249	-.205	.000	-.049	.249	-0.035	0.116	2.9	1.2	5.9	1.8	A-	
1588	686428	2	2	447	.336	.365	.336	.143	.134	.022	.376	-.168	.376	-.007	-.204	-0.245	0.113	1.1	1.1	2.9	1.3	A-	
1589	686426	2	2	447	.483	.246	.116	.483	.130	.025	.442	-.128	-.248	.442	-.183	-1.037	0.108	0.3	1.0	0.7	1.1	A+	
1590	686429	2	2	447	.481	.150	.105	.481	.230	.034	.470	-.143	-.275	.470	-.162	-1.026	0.108	-0.5	1.0	0.4	1.0	A-	
1591	682485	2	2	449	.813	.813	.049	.047	.076	.016	.551	.551	-.325	-.283	-.275	-2.977	0.132	-2.6	0.8	-3.1	0.6	A+	
1592	686173	2	2	449	.488	.163	.488	.131	.196	.022	.478	-.291	.478	-.233	-.093	-1.104	0.106	-1.2	1.0	-0.2	1.0	A+	
1593	686174	2	2	449	.515	.165	.122	.514	.169	.029	.440	-.255	-.167	.440	-.139	-1.239	0.106	0.1	1.0	0.2	1.0	B-	
1594	686176	2	2	449	.552	.552	.105	.060	.254	.029	.498	.498	-.107	-.239	-.326	-1.431	0.106	-1.3	0.9	-1.3	0.9	A+	
1595	686175	2	2	449	.481	.209	.140	.140	.481	.029	.524	-.202	-.234	-.223	.524	-1.070	0.106	-2.5	0.9	-0.9	0.9	A+	
1596	686456	2	2	443	.431	.431	.363	.093	.090	.023	.510	.510	-.134	-.287	-.260	-0.855	0.110	-1.1	1.0	-0.8	0.9	A+	
1597	686458	2	2	443	.499	.178	.097	.499	.194	.032	.463	-.173	-.299	.463	-.109	-1.210	0.108	0.4	1.0	0.2	1.0	A+	
1598	686459	2	2	443	.542	.176	.169	.086	.542	.027	.566	-.198	-.321	-.199	.566	-1.434	0.109	-2.6	0.9	-2.2	0.8	A-	
1599	686457	2	2	443	.540	.122	.540	.237	.065	.036	.561	-.217	.561	-.253	-.268	-1.422	0.109	-2.4	0.9	-1.0	0.9	A+	
1600	687261	2	2	443	.321	.262	.192	.192	.321	.034	.478	-.181	-.018	-.262	.478	-0.238	0.116	-0.8	1.0	0.6	1.1	A-	
1601	687259	2	2	443	.289	.321	.289	.260	.093	.038	.289	-.070	.289	-.059	-.177	-0.045	0.119	2.9	1.2	4.8	1.6	A+	
1602	687254	2	2	443	.526	.526	.169	.140	.124	.041	.520	.520	-.232	-.145	-.282	-1.351	0.109	-1.1	1.0	-1.4	0.9	A-	
1603	687260	2	2	443	.205	.271	.284	.205	.199	.041	.227	-.062	.044	.227	-.127	0.533	0.132	2.6	1.2	3.6	1.6	A+	
1604	682479	2	2	453	.702	.057	.702	.166	.053	.022	.474	-.201	.474	-.259	-.216	-2.269	0.116	-0.1	1.0	-0.6	0.9	A+	
1605	686460	2	2	453	.600	.106	.600	.126	.146	.022	.513	-.129	.513	-.274	-.274	-1.688	0.109	-0.9	1.0	0.3	1.0	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1606	686461	2	2	453	.495	.494	.238	.124	.119	.024	.422	.422	-.005	-.343	-.224	-1.129	0.107	1.3	1.1	2.1	1.1	A-	
1607	686462	2	2	453	.311	.285	.203	.170	.311	.031	.325	.037	-.132	-.230	.325	-0.146	0.113	1.7	1.1	2.7	1.3	A-	
1608	686463	2	2	453	.483	.093	.163	.227	.483	.033	.488	-.248	-.166	-.194	.488	-1.072	0.107	-0.6	1.0	-1.0	0.9	A+	
1609	686536	2	2	460	.724	.724	.087	.078	.096	.015	.528	.528	-.340	-.246	-.182	-2.396	0.113	-2.9	0.9	-2.7	0.8	A-	
1610	686524	2	2	460	.344	.320	.087	.343	.233	.017	.352	-.136	-.139	.352	-.102	-0.481	0.106	0.3	1.0	1.6	1.1	A-	
1611	686523	2	2	460	.583	.117	.583	.083	.200	.017	.512	-.234	.512	-.204	-.248	-1.648	0.103	-2.8	0.9	-3.0	0.8	A+	
1612	686525	2	2	460	.554	.130	.554	.067	.228	.020	.543	-.328	.543	-.207	-.198	-1.511	0.103	-3.8	0.9	-3.3	0.8	A+	
1613	684021	2	2	460	.663	.663	.130	.122	.059	.026	.437	.437	-.207	-.133	-.278	-2.057	0.107	-1.1	1.0	-0.8	1.0	A+	
1614	684018	2	2	460	.391	.159	.120	.391	.302	.028	.325	-.258	-.259	.325	.098	-0.724	0.104	1.6	1.1	2.0	1.1	A-	
1615	684019	2	2	460	.441	.191	.441	.174	.157	.037	.400	-.229	.400	-.070	-.166	-0.969	0.102	0.0	1.0	-0.3	1.0	A+	
1616	684020	2	2	460	.294	.267	.228	.293	.174	.037	.274	-.133	-.035	.274	-.075	-0.211	0.110	1.2	1.1	2.2	1.2	A+	
1617	684032	2	2	447	.461	.237	.461	.139	.139	.025	.551	-.279	.551	-.122	-.235	-0.856	0.109	-1.9	0.9	-1.8	0.9	A-	
1618	684030	2	2	447	.465	.210	.465	.121	.177	.027	.478	-.055	.478	-.291	-.230	-0.880	0.109	0.0	1.0	1.2	1.1	A+	
1619	684031	2	2	447	.732	.732	.058	.076	.105	.029	.620	.620	-.239	-.320	-.327	-2.371	0.120	-3.7	0.8	-3.7	0.6	A-	
1620	683093	2	2	447	.557	.557	.186	.101	.128	.029	.584	.584	-.165	-.306	-.302	-1.367	0.109	-2.7	0.9	-2.0	0.9	B+	
1621	683091	2	2	447	.407	.407	.230	.150	.181	.031	.346	.346	.001	-.212	-.153	-0.568	0.110	3.5	1.2	2.7	1.2	A+	
1622	683092	2	2	447	.606	.094	.606	.132	.139	.029	.534	-.280	.534	-.222	-.210	-1.633	0.111	-1.2	0.9	-1.8	0.9	A+	
1623	683090	2	2	447	.588	.208	.588	.096	.072	.036	.549	-.291	.549	-.222	-.220	-1.535	0.110	-1.6	0.9	-2.2	0.8	A-	
1624	683094	2	2	447	.396	.280	.396	.128	.168	.029	.347	-.200	.347	-.165	.018	-0.506	0.111	3.0	1.2	3.1	1.3	A+	
1625	682478	2	2	444	.399	.399	.137	.113	.327	.025	.316	.316	-.180	-.311	.081	-0.717	0.108	2.8	1.1	2.8	1.2	A-	A-
1626	671417	2	2	444	.282	.282	.164	.106	.414	.034	.223	.223	-.218	-.230	.166	-0.072	0.116	3.3	1.2	3.8	1.4	A-	A-
1627	671414	2	2	444	.653	.144	.653	.088	.088	.027	.621	-.277	.621	-.231	-.356	-2.030	0.112	-4.2	0.8	-4.1	0.7	B+	B-
1628	671418	2	2	444	.480	.205	.104	.480	.180	.032	.464	-.025	-.264	.464	-.275	-1.130	0.107	-0.7	1.0	-0.3	1.0	A-	A-
1629	671416	2	2	444	.383	.383	.196	.173	.214	.034	.290	.290	-.083	-.057	-.118	-0.635	0.109	3.1	1.1	3.5	1.3	A-	A-
1630	671415	2	2	444	.228	.279	.252	.227	.209	.032	.177	-.089	.095	.177	-.098	0.270	0.123	2.3	1.2	4.7	1.7	B+	A-
1631	683295	2	2	450	.667	.667	.067	.067	.176	.024	.432	.432	-.145	-.229	-.206	-2.050	0.108	-1.1	1.0	-1.1	0.9	A+	
1632	683303	2	2	450	.571	.571	.133	.082	.187	.027	.472	.472	-.273	-.248	-.099	-1.571	0.103	-2.1	0.9	-2.0	0.9	A+	
1633	683294	2	2	450	.413	.100	.413	.031	.427	.029	.437	-.129	.437	-.312	-.172	-0.821	0.104	-1.5	1.0	-1.5	0.9	A-	
1634	683296	2	2	450	.209	.209	.191	.209	.367	.024	.162	-.127	-.072	.162	.099	0.311	0.123	1.4	1.1	3.4	1.4	A+	
1635	685396	2	2	450	.458	.189	.167	.458	.156	.031	.350	-.155	-.128	.350	-.078	-1.034	0.103	0.9	1.0	1.4	1.1	A-	
1636	685413	2	2	450	.487	.140	.487	.153	.187	.033	.439	-.143	.439	-.247	-.109	-1.170	0.102	-1.3	1.0	-1.3	0.9	A-	
1637	685397	2	2	450	.362	.229	.220	.158	.362	.031	.382	-.260	-.020	-.072	.382	-0.569	0.106	-0.9	1.0	1.0	1.1	A+	
1638	685399	2	2	450	.673	.673	.104	.104	.084	.033	.617	.617	-.223	-.313	-.291	-2.085	0.109	-5.1	0.8	-4.7	0.7	A+	
1639	685398	2	2	450	.536	.536	.098	.171	.153	.042	.456	.456	-.159	-.130	-.234	-1.401	0.103	-1.8	0.9	-1.2	0.9	B-	
1640	684025	2	2	440	.782	.077	.782	.050	.061	.030	.533	-.211	.533	-.312	-.282	-2.739	0.125	-2.6	0.8	-2.8	0.7	B-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1641	684026	2	2	440	.655	.105	.655	.141	.070	.030	.441	-.221	.441	-.122	-.278	-1.978	0.111	-0.4	1.0	-0.6	1.0	A-	
1642	684027	2	2	440	.525	.107	.525	.120	.220	.027	.505	-.257	.505	-.293	-.128	-1.317	0.106	-2.0	0.9	-1.5	0.9	A-	
1643	684029	2	2	440	.530	.145	.530	.111	.182	.032	.512	-.172	.512	-.227	-.251	-1.340	0.106	-2.2	0.9	-2.2	0.9	A+	
1644	684028	2	2	440	.289	.289	.105	.273	.302	.032	.140	.140	-.063	-.043	.003	-0.090	0.115	4.1	1.2	5.0	1.5	A-	
1645	684023	2	2	453	.225	.194	.309	.225	.245	.026	.169	-.009	.009	.169	-.066	0.175	0.121	2.3	1.2	3.1	1.4	A-	
1646	684033	2	2	453	.583	.049	.313	.583	.026	.029	.437	-.242	-.189	.437	-.203	-1.691	0.105	-0.5	1.0	-0.6	1.0	A+	
1647	684024	2	2	453	.576	.576	.084	.221	.088	.031	.503	.503	-.252	-.179	-.222	-1.658	0.105	-2.2	0.9	-2.4	0.9	A-	
1648	684022	2	2	453	.336	.263	.236	.130	.336	.035	.343	-.068	-.106	-.138	.343	-0.470	0.108	0.4	1.0	2.3	1.2	A+	
1649	683279	2	2	453	.532	.532	.062	.311	.060	.035	.504	.504	-.211	-.235	-.224	-1.442	0.104	-2.5	0.9	-2.0	0.9	A-	
1650	683115	2	2	453	.419	.419	.256	.181	.106	.038	.462	.462	-.085	-.148	-.304	-0.896	0.104	-1.6	0.9	-1.4	0.9	A+	
1651	683117	2	2	453	.263	.214	.221	.263	.263	.040	.286	-.084	-.080	.286	-.052	-0.061	0.115	1.0	1.1	2.1	1.2	A-	
1652	683116	2	2	453	.249	.252	.291	.163	.249	.044	.186	.044	-.136	.010	.186	0.020	0.117	2.3	1.1	4.2	1.5	A-	
1653	682517	3	3	665	.802	.128	.062	.802	.009	.000	.482	-.392	-.202	.482	-.134	-2.076	0.106	-1.6	0.9	-2.1	0.8	A+	A+
1654	682511	3	3	665	.608	.281	.608	.072	.036	.003	.471	-.304	.471	-.209	-.182	-0.912	0.088	-0.6	1.0	-1.0	0.9	A-	A+
1655	671475	3	3	665	.571	.167	.129	.571	.129	.003	.463	-.240	-.254	.463	-.158	-0.728	0.087	0.1	1.0	-0.5	1.0	A-	A-
1656	671481	3	3	665	.758	.140	.080	.758	.020	.003	.412	-.170	-.317	.412	-.217	-1.772	0.099	0.0	1.0	-0.5	1.0	A+	A-
1657	671477	3	3	665	.779	.081	.050	.089	.779	.002	.502	-.281	-.243	-.266	.502	-1.914	0.102	-1.9	0.9	-2.8	0.8	B+	A+
1658	686588	3	3	665	.490	.220	.490	.209	.080	.002	.471	-.326	.471	-.115	-.201	-0.324	0.086	-1.4	1.0	-0.8	1.0	A+	A-
1659	671478	3	3	665	.528	.317	.528	.078	.074	.003	.391	-.096	.391	-.315	-.244	-0.510	0.086	1.9	1.1	1.2	1.1	A+	A+
1660	682505	3	3	665	.865	.062	.045	.029	.865	.000	.496	-.245	-.316	-.271	.496	-2.615	0.122	-2.4	0.8	-2.2	0.7	A+	A+
1661	682498	3	3	665	.838	.051	.026	.086	.838	.000	.483	-.265	-.277	-.272	.483	-2.366	0.114	-2.0	0.9	-2.4	0.7	A-	A-
1662	686501	3	3	665	.562	.180	.182	.071	.562	.005	.460	-.238	-.176	-.243	.460	-0.682	0.087	-0.2	1.0	-0.1	1.0	A+	A+
1663	686500	3	3	665	.250	.251	.400	.250	.092	.008	.218	-.223	.101	.218	-.120	0.967	0.098	2.9	1.2	5.7	1.6	A-	A-
1664	686502	3	3	665	.483	.483	.071	.078	.359	.009	.252	.252	-.133	-.234	-.038	-0.287	0.086	6.0	1.2	5.8	1.3	C+	B-
1665	686498	3	3	665	.495	.307	.126	.059	.495	.014	.488	-.210	-.197	-.286	.488	-0.346	0.086	-1.5	1.0	-0.6	1.0	B-	A-
1666	686499	3	3	665	.379	.274	.379	.167	.162	.018	.243	-.111	.243	-.137	-.005	0.236	0.088	5.3	1.2	5.9	1.4	A-	A-
1667	682492	3	3	665	.883	.071	.021	.017	.883	.009	.547	-.428	-.193	-.217	.547	-2.804	0.129	-2.9	0.8	-4.4	0.4	A-	A-
1668	686552	3	3	665	.381	.355	.170	.078	.380	.017	.461	-.133	-.201	-.255	.461	0.228	0.088	-1.4	1.0	-0.5	1.0	A-	B-
1669	686546	3	3	665	.582	.582	.152	.141	.105	.020	.505	.505	-.233	-.274	-.176	-0.781	0.087	-2.4	0.9	-2.2	0.9	C-	A-
1670	686545	3	3	665	.614	.152	.072	.614	.146	.017	.528	-.318	-.304	.528	-.132	-0.943	0.088	-2.6	0.9	-2.9	0.9	A+	A-
1671	686544	3	3	665	.278	.194	.278	.340	.167	.021	.202	-.182	.202	-.051	.058	0.792	0.095	3.7	1.2	6.2	1.6	A-	A+
1672	686543	3	3	665	.200	.541	.146	.089	.200	.024	.147	.212	-.206	-.246	.147	1.303	0.105	3.8	1.2	4.3	1.6	B+	A-
1673	682510	3	3	697	.818	.093	.069	.818	.019	.001	.486	-.303	-.299	.486	-.168	-2.432	0.105	-2.6	0.9	-2.9	0.7	A+	A-
1674	671530	3	3	697	.412	.412	.297	.135	.156	.000	.404	.404	-.180	-.167	-.164	-0.233	0.084	0.1	1.0	0.5	1.0	A-	A-
1675	671528	3	3	697	.759	.052	.143	.759	.040	.006	.554	-.240	-.372	.554	-.250	-2.023	0.096	-3.9	0.8	-4.7	0.7	C+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1676	671532	3	3	697	.585	.253	.585	.088	.072	.003	.507	-.267	.507	-.233	-.243	-1.074	0.084	-2.7	0.9	-2.7	0.9	A+	A-
1677	686585	3	3	697	.199	.143	.248	.406	.199	.003	.199	-.180	.032	-.060	.199	0.977	0.101	1.6	1.1	6.9	1.8	A+	B-
1678	686586	3	3	697	.475	.283	.098	.475	.145	.000	.366	-.052	-.225	.366	-.262	-0.540	0.083	2.2	1.1	1.8	1.1	B+	A-
1679	686587	3	3	697	.119	.683	.119	.122	.075	.001	.014	.203	.014	-.116	-.225	1.664	0.123	2.2	1.2	7.2	2.4	A-	A+
1680	682504	3	3	697	.531	.327	.531	.060	.080	.001	.431	-.168	.431	-.245	-.273	-0.808	0.083	-0.4	1.0	0.6	1.0	A+	B-
1681	682497	3	3	697	.760	.129	.082	.760	.024	.004	.485	-.272	-.251	.485	-.242	-2.032	0.096	-2.4	0.9	-3.1	0.8	A+	A+
1682	671553	3	3	697	.445	.306	.103	.445	.138	.009	.460	-.297	-.181	.460	-.057	-0.394	0.083	-1.5	1.0	-1.3	0.9	A-	A+
1683	671567	3	3	697	.799	.057	.070	.063	.799	.010	.533	-.242	-.293	-.261	.533	-2.294	0.101	-3.4	0.8	-4.1	0.7	B-	A-
1684	671563	3	3	697	.426	.244	.426	.090	.227	.013	.393	-.071	.393	-.264	-.164	-0.303	0.084	0.9	1.0	1.0	1.1	A-	A+
1685	671561	3	3	697	.551	.551	.222	.102	.110	.014	.399	.399	-.188	-.187	-.137	-0.906	0.083	0.5	1.0	0.3	1.0	A+	A-
1686	671555	3	3	697	.294	.172	.225	.294	.293	.016	.348	.003	-.199	.348	-.120	0.382	0.090	0.4	1.0	2.5	1.2	A+	A+
1687	682491	3	3	697	.818	.818	.055	.060	.052	.016	.503	.503	-.284	-.286	-.165	-2.432	0.105	-2.7	0.8	-3.6	0.7	A-	B-
1688	686577	3	3	697	.235	.419	.189	.235	.138	.019	.181	.124	-.172	.181	-.124	0.735	0.096	2.9	1.2	4.4	1.4	A-	B+
1689	686576	3	3	697	.286	.320	.286	.129	.242	.023	.299	.015	.299	-.156	-.142	0.431	0.091	1.6	1.1	3.1	1.2	A+	A-
1690	686579	3	3	697	.466	.132	.247	.466	.135	.020	.417	-.128	-.161	.417	-.200	-0.498	0.083	-0.1	1.0	0.5	1.0	A+	A-
1691	686578	3	3	697	.416	.416	.171	.260	.132	.022	.536	.536	-.165	-.252	-.186	-0.254	0.084	-4.6	0.9	-3.7	0.8	A-	A+
1692	686575	3	3	697	.254	.244	.300	.254	.181	.022	.200	-.013	-.066	.200	-.059	0.618	0.094	3.4	1.2	3.7	1.3	A-	A+
1693	682515	3	3	686	.876	.054	.039	.031	.876	.000	.492	-.282	-.292	-.242	.492	-2.882	0.125	-1.8	0.9	-3.2	0.6	B+	A+
1694	686589	3	3	686	.483	.219	.169	.483	.130	.000	.459	-.269	-.202	.459	-.126	-0.399	0.085	-1.0	1.0	0.7	1.0	A+	A-
1695	671544	3	3	686	.434	.292	.092	.434	.178	.004	.370	-.151	-.311	.370	-.055	-0.158	0.086	1.9	1.1	2.0	1.1	A+	A-
1696	671550	3	3	686	.388	.232	.388	.157	.220	.003	.296	-.150	.296	-.102	-.105	0.080	0.087	4.0	1.1	5.3	1.4	A+	A-
1697	671547	3	3	686	.889	.026	.051	.031	.889	.003	.482	-.217	-.282	-.313	.482	-3.030	0.131	-1.6	0.9	-3.1	0.6	A+	A+
1698	686590	3	3	686	.729	.729	.111	.087	.073	.000	.477	.477	-.228	-.239	-.281	-1.718	0.095	-1.1	1.0	-1.6	0.9	A+	A+
1699	686591	3	3	686	.657	.105	.089	.657	.147	.001	.460	-.265	-.169	.460	-.240	-1.300	0.090	-0.6	1.0	0.0	1.0	A+	A+
1700	682509	3	3	686	.557	.080	.286	.557	.074	.003	.445	-.237	-.214	.445	-.200	-0.771	0.086	0.1	1.0	0.0	1.0	A-	B+
1701	686447	3	3	686	.783	.099	.783	.067	.045	.006	.526	-.258	.526	-.333	-.209	-2.077	0.102	-2.5	0.9	-2.8	0.7	A+	A-
1702	686448	3	3	686	.563	.563	.048	.163	.217	.009	.418	.418	-.248	-.232	-.126	-0.801	0.086	1.0	1.0	0.9	1.1	A+	A-
1703	686451	3	3	686	.410	.410	.156	.306	.120	.009	.214	.214	-.177	.121	-.249	-0.032	0.086	6.5	1.2	5.7	1.4	A-	A+
1704	686450	3	3	686	.270	.098	.356	.267	.270	.010	.105	-.248	.036	.067	.105	0.736	0.094	5.6	1.3	6.9	1.8	A-	A+
1705	686449	3	3	686	.356	.223	.356	.168	.245	.009	.231	-.053	.231	-.161	-.024	0.249	0.088	4.7	1.2	6.2	1.5	B-	A-
1706	682503	3	3	686	.831	.831	.077	.055	.028	.009	.511	.511	-.315	-.249	-.199	-2.451	0.111	-2.1	0.9	-2.5	0.7	A+	A-
1707	682496	3	3	686	.653	.090	.653	.207	.038	.012	.480	-.243	.480	-.233	-.233	-1.276	0.090	-1.0	1.0	-1.5	0.9	A+	B-
1708	686567	3	3	686	.416	.232	.134	.201	.415	.017	.379	-.161	-.138	-.118	.379	-0.062	0.086	1.2	1.0	1.6	1.1	A-	A-
1709	686566	3	3	686	.462	.214	.211	.090	.462	.022	.513	-.218	-.193	-.197	.513	-0.297	0.085	-3.3	0.9	-1.4	0.9	A-	B-
1710	686568	3	3	686	.867	.035	.867	.052	.029	.016	.522	-.249	.522	-.325	-.203	-2.790	0.122	-2.4	0.8	-3.1	0.6	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1711	686571	3	3	686	.313	.222	.138	.313	.310	.016	.323	-.239	-.125	.323	.038	0.481	0.091	1.1	1.0	3.4	1.3	A+	A-
1712	686572	3	3	686	.376	.197	.146	.376	.261	.020	.397	-.183	-.159	.397	-.085	0.141	0.087	0.5	1.0	1.1	1.1	A-	B-
1713	682514	3	3	692	.436	.214	.275	.436	.069	.006	.400	-.302	-.087	.400	-.125	0.032	0.086	1.5	1.1	1.9	1.1	B-	A-
1714	686509	3	3	692	.646	.132	.646	.084	.139	.000	.454	-.111	.454	-.281	-.294	-1.044	0.089	0.1	1.0	-0.9	1.0	A+	A-
1715	686508	3	3	692	.634	.634	.088	.149	.129	.000	.436	.436	-.276	-.236	-.142	-0.981	0.088	0.3	1.0	-0.2	1.0	A-	A-
1716	686510	3	3	692	.298	.377	.173	.149	.298	.003	.222	.080	-.143	-.228	.222	0.777	0.092	4.7	1.2	5.9	1.5	A+	A-
1717	686511	3	3	692	.718	.081	.101	.718	.097	.003	.590	-.322	-.355	.590	-.226	-1.459	0.094	-4.4	0.8	-4.7	0.7	A+	A-
1718	686472	3	3	692	.529	.529	.173	.191	.107	.000	.485	.485	-.268	-.150	-.264	-0.434	0.085	-1.0	1.0	-0.7	1.0	A-	A+
1719	682508	3	3	692	.895	.039	.035	.895	.032	.000	.481	-.324	-.263	.481	-.209	-2.895	0.133	-1.9	0.8	-3.2	0.5	A+	A+
1720	686515	3	3	692	.526	.092	.171	.204	.526	.007	.500	-.271	-.139	-.250	.500	-0.420	0.085	-1.0	1.0	-1.6	0.9	A-	A-
1721	686516	3	3	692	.698	.111	.698	.069	.113	.009	.601	-.329	.601	-.279	-.262	-1.338	0.092	-4.7	0.8	-4.3	0.7	A+	A+
1722	686514	3	3	692	.778	.072	.098	.777	.043	.009	.514	-.304	-.258	.514	-.188	-1.845	0.101	-2.0	0.9	-2.8	0.7	A-	A+
1723	686530	3	3	692	.634	.634	.059	.267	.027	.012	.382	.382	-.264	-.160	-.187	-0.981	0.088	2.4	1.1	2.0	1.1	B-	B-
1724	686517	3	3	692	.256	.185	.256	.249	.298	.013	.236	-.126	.236	-.076	.008	1.032	0.096	2.9	1.1	5.3	1.6	A+	A-
1725	682502	3	3	692	.857	.039	.062	.030	.857	.012	.511	-.338	-.240	-.186	.511	-2.490	0.118	-2.5	0.8	-2.9	0.6	A-	A-
1726	682495	3	3	692	.733	.124	.058	.071	.733	.014	.532	-.302	-.177	-.273	.532	-1.548	0.095	-2.1	0.9	-2.2	0.8	A+	A+
1727	686570	3	3	692	.786	.064	.074	.053	.786	.023	.600	-.273	-.354	-.247	.600	-1.907	0.102	-3.9	0.8	-4.3	0.6	B-	A-
1728	686562	3	3	692	.621	.118	.088	.155	.621	.017	.519	-.170	-.267	-.267	.519	-0.911	0.088	-1.5	0.9	-2.1	0.9	A+	A+
1729	686563	3	3	692	.314	.334	.314	.146	.185	.022	.208	-.016	.208	-.133	-.037	0.686	0.091	5.4	1.2	7.0	1.6	A+	A-
1730	686565	3	3	692	.455	.455	.199	.095	.231	.019	.361	.361	-.132	-.203	-.103	-0.063	0.085	2.8	1.1	2.4	1.1	A-	A+
1731	686592	3	3	692	.166	.474	.166	.169	.171	.020	.148	.125	.148	-.209	-.040	1.678	0.110	2.1	1.1	6.1	2.0	A+	B+
1732	686564	3	3	692	.413	.186	.139	.413	.237	.025	.230	-.199	-.072	.230	.035	0.150	0.086	7.1	1.3	7.2	1.5	A-	A-
1733	682516	3	3	688	.455	.227	.231	.087	.455	.000	.535	-.216	-.331	-.129	.535	-0.392	0.084	-4.6	0.9	-4.0	0.8	A-	
1734	686503	3	3	688	.718	.718	.128	.070	.084	.000	.424	.424	-.292	-.187	-.164	-1.711	0.091	-0.9	1.0	-0.8	0.9	A-	
1735	686507	3	3	688	.849	.849	.067	.057	.026	.001	.448	.448	-.242	-.275	-.208	-2.612	0.112	-2.0	0.9	-2.6	0.7	A+	
1736	686506	3	3	688	.320	.182	.368	.131	.320	.000	.237	-.154	.030	-.193	.237	0.289	0.089	3.5	1.1	4.7	1.3	A-	
1737	686505	3	3	688	.267	.350	.179	.267	.203	.000	.198	.077	-.199	.198	-.119	0.585	0.093	3.2	1.2	4.2	1.3	A-	
1738	686504	3	3	688	.545	.182	.124	.545	.150	.000	.406	-.194	-.299	.406	-.081	-0.822	0.083	0.3	1.0	0.3	1.0	A+	
1739	682513	3	3	688	.942	.942	.029	.020	.007	.001	.410	.410	-.264	-.247	-.184	-3.762	0.167	-1.0	0.9	-3.2	0.4	A-	
1740	682507	3	3	688	.821	.041	.128	.010	.821	.000	.202	-.123	-.099	-.202	.202	-2.387	0.106	1.4	1.1	3.4	1.4	A+	
1741	686513	3	3	688	.478	.182	.144	.192	.478	.004	.383	-.160	-.181	-.154	.383	-0.503	0.083	0.5	1.0	0.7	1.0	A+	
1742	686527	3	3	688	.641	.163	.089	.641	.103	.004	.576	-.335	-.237	.576	-.263	-1.295	0.086	-5.6	0.8	-5.3	0.7	A-	
1743	686528	3	3	688	.640	.640	.132	.121	.102	.006	.515	.515	-.213	-.288	-.240	-1.287	0.086	-3.2	0.9	-3.0	0.9	A+	
1744	686526	3	3	688	.608	.113	.608	.166	.108	.006	.468	-.276	.468	-.239	-.147	-1.126	0.085	-2.2	0.9	-1.3	0.9	A+	
1745	686529	3	3	688	.326	.092	.304	.273	.326	.006	.359	-.201	-.160	-.065	.359	0.258	0.088	-0.1	1.0	1.7	1.1	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1746	682500	3	3	688	.664	.160	.664	.065	.105	.006	.390	-.136	.390	-.204	-.249	-1.416	0.087	0.1	1.0	0.0	1.0	A+	
1747	682494	3	3	688	.545	.073	.102	.273	.545	.007	.343	-.278	-.321	.012	.343	-0.822	0.083	2.2	1.1	2.7	1.1	A-	
1748	687070	3	3	688	.295	.295	.358	.195	.142	.010	.246	.246	-.243	.063	-.038	0.425	0.091	3.5	1.2	2.7	1.2	A-	
1749	687071	3	3	688	.640	.090	.094	.640	.164	.012	.421	-.216	-.321	.421	-.100	-1.287	0.086	-1.2	1.0	-0.6	1.0	B-	
1750	687068	3	3	688	.448	.448	.090	.177	.273	.012	.351	.351	-.261	-.216	-.017	-0.357	0.084	2.1	1.1	1.6	1.1	A-	
1751	687067	3	3	688	.265	.331	.160	.233	.265	.012	.331	.051	-.267	-.151	.331	0.602	0.093	0.6	1.0	1.9	1.1	A+	
1752	687069	3	3	688	.355	.169	.355	.260	.203	.013	.358	-.095	.358	-.114	-.185	0.105	0.087	0.6	1.0	1.3	1.1	A-	
1753	682512	3	3	681	.796	.097	.090	.016	.796	.001	.412	-.325	-.172	-.133	.412	-2.159	0.103	-0.8	1.0	-1.3	0.9	A-	A-
1754	686483	3	3	681	.652	.122	.652	.182	.043	.001	.488	-.326	.488	-.251	-.139	-1.288	0.088	-2.0	0.9	-2.1	0.9	A-	A-
1755	686479	3	3	681	.609	.167	.609	.132	.091	.000	.414	-.188	.414	-.224	-.194	-1.066	0.086	0.3	1.0	-1.0	1.0	B+	A-
1756	686478	3	3	681	.256	.201	.200	.342	.256	.001	.303	-.219	-.223	.098	.303	0.762	0.095	0.8	1.0	3.5	1.3	A-	A+
1757	686480	3	3	681	.256	.280	.184	.256	.276	.004	.182	-.050	-.118	.182	-.023	0.762	0.095	3.1	1.2	4.6	1.4	A-	A+
1758	686481	3	3	681	.673	.075	.117	.126	.673	.009	.469	-.233	-.344	-.129	.469	-1.399	0.090	-1.7	0.9	-1.2	0.9	C+	A+
1759	686482	3	3	681	.554	.554	.148	.195	.103	.000	.421	.421	-.210	-.199	-.185	-0.787	0.085	0.1	1.0	-0.7	1.0	B+	A+
1760	682506	3	3	681	.759	.759	.090	.047	.104	.000	.384	.384	-.240	-.207	-.170	-1.910	0.097	0.0	1.0	-0.5	1.0	A+	A-
1761	686518	3	3	681	.442	.123	.332	.090	.442	.013	.357	-.262	.017	-.269	.357	-0.242	0.085	2.2	1.1	1.5	1.1	A-	A-
1762	686519	3	3	681	.413	.107	.282	.413	.185	.013	.410	-.189	-.135	.410	-.162	-0.096	0.086	0.0	1.0	0.4	1.0	A-	A+
1763	686522	3	3	681	.536	.088	.189	.170	.536	.016	.500	-.290	-.117	-.261	.500	-0.701	0.085	-2.7	0.9	-2.8	0.9	A-	A+
1764	686521	3	3	681	.373	.373	.189	.313	.104	.021	.255	.255	-.167	.066	-.193	0.105	0.087	4.2	1.2	4.6	1.3	A+	A+
1765	686520	3	3	681	.319	.267	.261	.319	.134	.019	.211	.040	-.100	.211	-.137	0.395	0.090	3.8	1.2	5.6	1.4	A+	A+
1766	682499	3	3	681	.847	.847	.041	.066	.029	.016	.558	.558	-.301	-.318	-.210	-2.568	0.114	-3.4	0.8	-4.4	0.5	A-	A+
1767	682493	3	3	681	.797	.044	.797	.032	.109	.018	.401	-.232	.401	-.164	-.191	-2.170	0.103	-0.8	1.0	-0.4	1.0	A-	A-
1768	686584	3	3	681	.676	.072	.675	.094	.134	.025	.528	-.271	.528	-.297	-.178	-1.415	0.090	-3.4	0.9	-3.0	0.8	A+	A+
1769	686580	3	3	681	.466	.465	.078	.283	.148	.025	.413	.413	-.217	-.110	-.201	-0.357	0.085	0.3	1.0	0.4	1.0	A-	A+
1770	686583	3	3	681	.269	.166	.269	.140	.402	.023	.141	-.267	.141	-.188	.263	0.681	0.094	4.5	1.2	7.6	1.8	A+	A-
1771	686581	3	3	681	.361	.110	.294	.361	.209	.026	.228	-.138	.061	.228	-.166	0.166	0.088	4.5	1.2	5.1	1.3	A-	A+
1772	686582	3	3	681	.637	.637	.062	.179	.097	.025	.432	.432	-.147	-.253	-.159	-1.210	0.088	-0.3	1.0	-1.3	0.9	A-	B-
1773	661504	3	3	691	.949	.949	.026	.014	.010	.000	.303	.303	-.261	-.110	-.119	-3.820	0.181	-0.3	1.0	-1.9	0.6	A-	A-
1774	661505	3	3	691	.501	.333	.501	.098	.067	.001	.443	-.244	.443	-.177	-.219	-0.367	0.085	0.3	1.0	-0.1	1.0	B-	A-
1775	661506	3	3	691	.874	.055	.019	.874	.052	.000	.406	-.304	-.111	.406	-.227	-2.712	0.123	-0.9	0.9	-1.1	0.8	A+	A+
1776	661507	3	3	691	.973	.014	.004	.007	.973	.001	.259	-.188	-.095	-.151	.259	-4.500	0.240	-0.5	0.9	-1.9	0.5	A+	A-
1777	663040	3	3	691	.262	.327	.262	.068	.340	.003	.276	-.169	.276	-.236	.042	0.920	0.095	2.5	1.1	5.8	1.6	A+	A+
1778	663039	3	3	691	.385	.135	.260	.385	.217	.003	.343	-.119	-.216	.343	-.065	0.222	0.087	2.6	1.1	3.7	1.2	A-	A-
1779	663042	3	3	691	.408	.201	.207	.408	.182	.001	.322	-.157	-.162	.322	-.070	0.102	0.086	4.5	1.2	4.4	1.3	A-	A+
1780	663041	3	3	691	.544	.544	.075	.120	.255	.006	.417	.417	-.265	-.202	-.154	-0.585	0.085	1.1	1.0	1.3	1.1	A-	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1781	663038	3	3	691	.605	.181	.605	.116	.093	.006	.450	-.244	.450	-.211	-.172	-0.896	0.087	0.2	1.0	0.4	1.0	A-	A-
1782	662754	3	3	691	.664	.664	.078	.191	.056	.010	.458	.458	-.165	-.302	-.164	-1.213	0.090	-0.8	1.0	-0.9	0.9	A+	A-
1783	662755	3	3	691	.421	.323	.162	.080	.421	.014	.492	-.217	-.160	-.218	.492	0.035	0.086	-1.8	0.9	-0.8	1.0	A-	A-
1784	662756	3	3	691	.360	.298	.234	.360	.094	.013	.331	-.025	-.137	.331	-.224	0.353	0.088	3.6	1.1	4.0	1.3	A+	A-
1785	662751	3	3	691	.606	.606	.116	.110	.151	.017	.430	.430	-.148	-.240	-.174	-0.903	0.087	0.9	1.0	0.4	1.0	A+	A+
1786	662752	3	3	691	.575	.142	.575	.182	.087	.014	.554	-.264	.554	-.254	-.217	-0.739	0.086	-3.3	0.9	-3.1	0.8	A-	B-
1787	662438	3	3	691	.439	.085	.149	.307	.438	.020	.470	-.177	-.274	-.139	.470	-0.054	0.086	-0.7	1.0	-0.4	1.0	A-	A-
1788	662435	3	3	691	.540	.540	.151	.136	.156	.017	.478	.478	-.209	-.196	-.192	-0.563	0.085	-0.4	1.0	-0.5	1.0	A-	A-
1789	662436	3	3	691	.371	.236	.370	.181	.192	.020	.257	-.066	.257	-.127	-.062	0.299	0.088	5.4	1.2	5.7	1.4	A+	A+
1790	662437	3	3	691	.731	.111	.059	.731	.077	.022	.527	-.264	-.266	.527	-.217	-1.601	0.095	-2.3	0.9	-3.0	0.8	A+	A-
1791	661526	3	3	1370	.642	.112	.125	.109	.642	.011	.519	-.230	-.211	-.286	.519	-1.160	0.062	-4.5	0.9	-4.4	0.8	B+	A-
1792	661508	3	3	1370	.491	.041	.491	.429	.028	.012	.328	-.265	.328	-.136	-.162	-0.398	0.060	5.7	1.1	4.8	1.2	A+	A+
1793	661502	3	3	679	.844	.844	.072	.027	.054	.003	.159	.159	-.013	-.218	-.073	-2.498	0.112	1.6	1.1	3.1	1.4	A+	
1794	661522	3	3	679	.795	.060	.050	.795	.090	.004	.415	-.242	-.305	.415	-.134	-2.124	0.102	-1.2	0.9	-1.8	0.8	A+	
1795	663060	3	3	679	.757	.071	.100	.072	.757	.000	.446	-.251	-.212	-.244	.446	-1.870	0.096	-1.4	0.9	-2.2	0.8	A+	
1796	663056	3	3	679	.529	.122	.529	.159	.187	.003	.390	-.181	.390	-.214	-.148	-0.663	0.084	0.6	1.0	0.6	1.0	A-	
1797	663057	3	3	679	.555	.152	.221	.555	.072	.000	.401	-.200	-.175	.401	-.212	-0.791	0.085	0.4	1.0	-0.3	1.0	A+	
1798	663058	3	3	679	.597	.069	.080	.255	.596	.000	.450	-.278	-.260	-.183	.450	-0.993	0.085	-0.9	1.0	-0.9	1.0	B-	
1799	663059	3	3	679	.866	.866	.044	.049	.040	.001	.471	.471	-.205	-.293	-.268	-2.697	0.119	-2.0	0.9	-3.5	0.6	A+	
1800	662914	3	3	679	.542	.133	.542	.169	.144	.012	.443	-.110	.443	-.302	-.155	-0.727	0.084	-0.8	1.0	-0.8	1.0	A+	
1801	662915	3	3	679	.321	.165	.370	.131	.321	.013	.334	-.141	-.035	-.206	.334	0.373	0.090	1.0	1.0	2.6	1.2	A-	
1802	662913	3	3	679	.548	.548	.053	.271	.113	.015	.445	.445	-.114	-.273	-.185	-0.755	0.084	-0.9	1.0	-0.6	1.0	A-	
1803	662912	3	3	679	.526	.146	.526	.109	.200	.019	.456	-.261	.456	-.182	-.130	-0.648	0.084	-1.3	1.0	-1.6	0.9	A+	
1804	662916	3	3	679	.482	.482	.222	.174	.099	.024	.288	.288	-.020	-.153	-.176	-0.436	0.084	4.1	1.1	4.2	1.2	A-	
1805	662745	3	3	679	.563	.563	.216	.093	.103	.025	.462	.462	-.244	-.236	-.107	-0.826	0.085	-1.3	1.0	-1.0	1.0	A-	
1806	662746	3	3	679	.546	.277	.072	.546	.078	.027	.487	-.262	-.208	.487	-.154	-0.748	0.084	-2.2	0.9	-1.4	0.9	A+	
1807	662750	3	3	679	.476	.476	.253	.143	.102	.027	.570	.570	-.271	-.233	-.182	-0.408	0.084	-5.4	0.8	-4.7	0.8	A+	
1808	662749	3	3	679	.695	.090	.695	.081	.108	.027	.508	-.172	.508	-.209	-.314	-1.506	0.090	-3.0	0.9	-2.7	0.8	A+	
1809	662748	3	3	679	.437	.215	.178	.143	.437	.027	.386	-.118	-.205	-.099	.386	-0.222	0.085	1.1	1.0	1.6	1.1	A-	
1810	662747	3	3	679	.196	.196	.262	.196	.315	.031	.076	-.141	.046	.076	.069	1.151	0.104	3.6	1.2	6.6	1.8	A-	
1811	661523	3	3	691	.659	.084	.221	.658	.036	.000	.492	-.338	-.255	.492	-.182	-1.348	0.089	-1.9	0.9	-1.5	0.9	B-	A-
1812	661524	3	3	691	.933	.032	.933	.022	.013	.000	.368	-.270	.368	-.199	-.137	-3.653	0.160	-1.1	0.9	-2.4	0.5	A+	C-
1813	661525	3	3	691	.902	.902	.035	.043	.016	.004	.392	.392	-.264	-.186	-.196	-3.183	0.135	-1.1	0.9	-1.5	0.7	A+	A-
1814	661503	3	3	691	.685	.051	.161	.685	.103	.001	.552	-.212	-.297	.552	-.324	-1.493	0.091	-3.5	0.9	-3.9	0.7	B+	A-
1815	662981	3	3	691	.672	.097	.048	.182	.671	.001	.477	-.304	-.204	-.237	.477	-1.420	0.090	-1.5	0.9	-1.4	0.9	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1816	662982	3	3	691	.329	.156	.318	.329	.191	.006	.259	-.108	-.054	.259	-.140	0.360	0.090	3.9	1.2	5.5	1.4	A-	A+
1817	662983	3	3	691	.514	.185	.155	.514	.145	.001	.365	-.182	-.139	.365	-.166	-0.600	0.085	2.8	1.1	2.5	1.1	A-	A+
1818	662985	3	3	691	.417	.263	.187	.129	.417	.004	.444	-.119	-.217	-.222	.444	-0.111	0.086	-0.4	1.0	0.1	1.0	A+	A-
1819	662984	3	3	691	.399	.201	.399	.321	.074	.004	.392	-.188	.392	-.133	-.197	-0.021	0.087	1.5	1.1	1.7	1.1	A+	A-
1820	662763	3	3	691	.375	.200	.276	.375	.137	.012	.437	-.249	-.042	.437	-.228	0.108	0.088	-0.4	1.0	0.2	1.0	A+	A+
1821	662762	3	3	691	.441	.185	.201	.155	.441	.017	.456	-.149	-.205	-.194	.456	-0.236	0.086	-0.7	1.0	0.2	1.0	A+	B+
1822	662766	3	3	691	.708	.088	.041	.149	.708	.014	.526	-.272	-.219	-.285	.526	-1.627	0.092	-2.8	0.9	-2.8	0.8	A-	A+
1823	662765	3	3	691	.401	.182	.401	.217	.179	.020	.303	-.114	.303	-.165	-.046	-0.028	0.087	3.8	1.1	4.2	1.3	A+	B+
1824	662764	3	3	691	.538	.538	.171	.148	.122	.022	.521	.521	-.284	-.203	-.179	-0.723	0.085	-2.6	0.9	-2.8	0.9	A+	A+
1825	662446	3	3	691	.269	.421	.269	.181	.101	.027	.265	.038	.265	-.196	-.116	0.709	0.095	2.7	1.1	3.8	1.3	A-	A+
1826	662445	3	3	691	.344	.214	.344	.307	.107	.027	.181	-.204	.181	.152	-.134	0.272	0.089	6.5	1.3	7.5	1.6	A-	A-
1827	662444	3	3	691	.447	.269	.168	.447	.081	.035	.383	-.140	-.146	.383	-.162	-0.266	0.086	1.9	1.1	3.1	1.2	A-	A-
1828	662443	3	3	691	.505	.139	.139	.185	.505	.032	.504	-.176	-.199	-.243	.504	-0.556	0.085	-2.2	0.9	-0.6	1.0	A-	A-
1829	662448	3	3	691	.207	.253	.221	.284	.207	.035	.092	-.157	.056	.084	.092	1.124	0.102	4.8	1.3	6.1	1.8	A+	A+
1830	662447	3	3	691	.566	.566	.146	.149	.104	.035	.551	.551	-.273	-.226	-.224	-0.862	0.086	-3.6	0.9	-3.5	0.8	A-	A-
1831	682524	4	4	629	.715	.202	.041	.715	.041	.000	.285	-.156	-.187	.285	-.145	-1.014	0.100	4.6	1.2	2.8	1.3	A+	A-
1832	686493	4	4	629	.876	.033	.041	.048	.876	.002	.489	-.230	-.280	-.301	.489	-2.282	0.130	-2.0	0.8	-3.0	0.5	A+	B-
1833	686497	4	4	629	.795	.060	.795	.040	.103	.002	.507	-.260	.507	-.249	-.300	-1.561	0.110	-1.7	0.9	-2.1	0.7	A+	A-
1834	686494	4	4	629	.801	.092	.075	.032	.801	.000	.477	-.318	-.203	-.255	.477	-1.610	0.111	-1.4	0.9	-1.1	0.8	A+	A-
1835	686599	4	4	629	.188	.353	.188	.134	.321	.005	.119	-.038	.119	-.125	.049	2.147	0.115	3.9	1.3	8.2	2.7	A-	A+
1836	686496	4	4	629	.522	.335	.056	.521	.087	.000	.529	-.248	-.246	.529	-.321	0.095	0.093	-1.0	1.0	-0.4	1.0	A-	A-
1837	682530	4	4	629	.615	.024	.121	.615	.237	.003	.511	-.157	-.365	.511	-.234	-0.420	0.095	-0.3	1.0	-0.5	1.0	A+	A+
1838	682537	4	4	629	.785	.081	.785	.054	.075	.005	.574	-.296	.574	-.294	-.302	-1.490	0.108	-3.6	0.8	-3.1	0.6	A-	A+
1839	687450	4	4	629	.795	.072	.070	.795	.051	.013	.500	-.196	-.280	.500	-.272	-1.561	0.110	-1.9	0.9	-1.6	0.8	A-	B-
1840	687444	4	4	629	.518	.049	.518	.145	.275	.013	.510	-.181	.510	-.295	-.208	0.112	0.093	-0.1	1.0	-0.1	1.0	A+	A+
1841	687443	4	4	629	.483	.059	.382	.062	.483	.014	.481	-.285	-.182	-.250	.481	0.302	0.093	0.7	1.0	1.5	1.1	A+	A+
1842	687448	4	4	629	.688	.688	.111	.086	.102	.013	.616	.616	-.281	-.260	-.338	-0.847	0.098	-4.3	0.8	-3.0	0.7	A-	A-
1843	687445	4	4	629	.421	.151	.213	.196	.421	.019	.475	-.214	-.077	-.255	.475	0.641	0.094	0.7	1.0	0.5	1.0	A+	A-
1844	687447	4	4	629	.545	.215	.545	.127	.095	.017	.598	-.215	.598	-.247	-.341	-0.034	0.093	-3.3	0.9	-2.6	0.8	A+	A-
1845	682543	4	4	629	.800	.070	.079	.800	.035	.016	.545	-.282	-.255	.545	-.279	-1.598	0.111	-3.0	0.8	-2.4	0.7	A-	A+
1846	686551	4	4	629	.606	.183	.606	.103	.089	.019	.581	-.345	.581	-.222	-.202	-0.367	0.094	-2.7	0.9	-2.7	0.8	A-	A-
1847	686548	4	4	629	.579	.186	.126	.092	.579	.017	.577	-.297	-.191	-.279	.577	-0.217	0.094	-2.5	0.9	-2.6	0.8	A+	A-
1848	686547	4	4	629	.599	.095	.599	.073	.213	.019	.526	-.269	.526	-.196	-.250	-0.331	0.094	-0.8	1.0	-0.8	0.9	A-	A-
1849	686550	4	4	629	.542	.137	.542	.130	.172	.019	.473	-.256	.473	-.344	-.017	-0.017	0.093	1.2	1.1	0.4	1.0	A+	A+
1850	686549	4	4	629	.552	.552	.116	.116	.197	.019	.418	.418	-.123	-.227	-.175	-0.069	0.093	2.9	1.1	2.5	1.2	A+	A+

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1851	682519	4	4	622	.614	.050	.614	.228	.106	.002	.356	-.206	.356	-.219	-.119	-0.116	0.093	2.9	1.1	1.9	1.1	A-	A-
1852	686435	4	4	622	.847	.847	.071	.037	.045	.000	.464	.464	-.319	-.210	-.220	-1.648	0.121	-1.2	0.9	-2.0	0.7	B+	A-
1853	686432	4	4	622	.667	.058	.039	.236	.667	.000	.450	-.226	-.235	-.268	.450	-0.406	0.095	0.0	1.0	-0.2	1.0	A+	A-
1854	686430	4	4	622	.804	.061	.804	.103	.032	.000	.499	-.275	.499	-.324	-.192	-1.287	0.111	-1.7	0.9	-1.7	0.8	A+	A-
1855	686434	4	4	622	.470	.257	.087	.183	.469	.003	.245	-.074	-.241	-.045	.245	0.631	0.091	6.5	1.3	6.6	1.4	A+	A-
1856	686431	4	4	622	.521	.280	.130	.521	.069	.000	.441	-.205	-.164	.441	-.287	0.368	0.091	0.3	1.0	0.6	1.0	A+	A+
1857	682525	4	4	622	.752	.137	.752	.082	.029	.000	.435	-.272	.435	-.215	-.211	-0.923	0.103	-0.2	1.0	-0.3	1.0	A+	A-
1858	682532	4	4	622	.915	.035	.915	.027	.023	.000	.442	-.286	.442	-.234	-.219	-2.409	0.152	-1.4	0.9	-1.2	0.7	B-	A-
1859	673190	4	4	622	.826	.109	.826	.032	.027	.005	.417	-.225	.417	-.232	-.234	-1.466	0.116	-0.5	1.0	-0.4	0.9	A-	A+
1860	686413	4	4	622	.727	.056	.116	.727	.096	.005	.545	-.248	-.303	.545	-.278	-0.758	0.100	-2.5	0.9	-3.2	0.7	A+	B-
1861	686411	4	4	622	.883	.883	.047	.040	.027	.003	.507	.507	-.272	-.289	-.267	-2.003	0.134	-2.0	0.8	-2.5	0.6	A-	A+
1862	686453	4	4	622	.744	.043	.744	.084	.125	.003	.515	-.239	.515	-.353	-.219	-0.871	0.102	-1.9	0.9	-1.9	0.8	A-	A-
1863	686412	4	4	622	.613	.613	.151	.051	.182	.003	.375	.375	-.218	-.272	-.101	-0.107	0.093	2.4	1.1	1.9	1.1	A-	A-
1864	682538	4	4	622	.547	.166	.100	.183	.547	.005	.589	-.285	-.299	-.231	.589	0.237	0.091	-4.5	0.8	-4.3	0.8	A-	A+
1865	686418	4	4	622	.539	.106	.109	.539	.243	.003	.488	-.144	-.388	.488	-.168	0.278	0.091	-1.4	1.0	-0.6	1.0	A-	A-
1866	686417	4	4	622	.502	.132	.502	.138	.220	.008	.428	-.201	.428	-.349	-.043	0.467	0.090	0.7	1.0	0.7	1.0	A+	A-
1867	686486	4	4	622	.526	.137	.241	.088	.526	.008	.495	-.115	-.288	-.264	.495	0.344	0.091	-1.7	0.9	-1.7	0.9	A-	A-
1868	686531	4	4	622	.238	.238	.109	.518	.127	.008	.275	.275	-.118	-.079	-.104	1.939	0.104	1.9	1.1	3.4	1.4	A-	A-
1869	686415	4	4	622	.510	.510	.220	.138	.124	.008	.242	.242	-.128	-.184	.006	0.426	0.091	6.9	1.3	6.3	1.4	A+	A-
1870	686416	4	4	622	.283	.127	.185	.397	.283	.008	.247	-.138	-.121	-.020	.247	1.649	0.099	2.8	1.1	5.2	1.5	A+	A+
1871	682520	4	4	625	.821	.821	.114	.035	.030	.000	.424	.424	-.237	-.262	-.229	-1.630	0.113	-0.6	1.0	-1.1	0.9	A-	
1872	685404	4	4	625	.734	.734	.019	.077	.170	.000	.435	.435	-.242	-.274	-.229	-1.023	0.100	-0.5	1.0	0.3	1.0	A+	
1873	685400	4	4	625	.725	.038	.090	.725	.147	.000	.407	-.204	-.204	.407	-.238	-0.964	0.099	0.6	1.0	-0.2	1.0	A+	
1874	685402	4	4	625	.706	.094	.091	.109	.706	.000	.434	-.212	-.259	-.197	.434	-0.848	0.097	0.0	1.0	-1.0	0.9	A+	
1875	685401	4	4	625	.682	.163	.109	.682	.045	.002	.447	-.262	-.202	.447	-.237	-0.709	0.095	-0.3	1.0	-0.5	1.0	B+	
1876	685403	4	4	625	.416	.416	.141	.146	.298	.000	.236	.236	-.136	-.119	-.059	0.660	0.090	4.9	1.2	6.3	1.4	A-	
1877	682526	4	4	625	.902	.032	.030	.902	.035	.000	.499	-.318	-.303	.499	-.218	-2.443	0.143	-2.1	0.8	-2.5	0.6	A+	
1878	685921	4	4	625	.589	.118	.165	.120	.589	.008	.511	-.334	-.195	-.171	.511	-0.210	0.091	-2.2	0.9	-1.5	0.9	A-	
1879	685922	4	4	625	.709	.709	.085	.046	.152	.008	.460	.460	-.352	-.150	-.177	-0.867	0.097	-0.9	1.0	-1.0	0.9	A-	
1880	673227	4	4	625	.459	.326	.459	.096	.110	.008	.475	-.161	.475	-.324	-.161	0.442	0.090	-1.5	1.0	-1.2	0.9	A+	
1881	685919	4	4	625	.344	.210	.344	.275	.160	.011	.323	-.085	.323	-.125	-.117	1.038	0.093	1.7	1.1	3.9	1.3	A-	
1882	685920	4	4	625	.622	.134	.141	.622	.093	.010	.561	-.310	-.211	.561	-.257	-0.385	0.092	-3.6	0.9	-3.9	0.8	B-	
1883	682533	4	4	625	.638	.638	.125	.054	.173	.010	.453	.453	-.179	-.263	-.214	-0.471	0.093	-0.4	1.0	-0.5	1.0	A+	
1884	682539	4	4	625	.926	.021	.926	.018	.022	.013	.450	-.216	.450	-.217	-.260	-2.788	0.161	-1.4	0.8	-2.8	0.5	A-	
1885	686489	4	4	625	.622	.192	.622	.088	.083	.014	.560	-.247	.560	-.283	-.274	-0.385	0.092	-3.5	0.9	-3.7	0.8	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1886	686492	4	4	625	.286	.226	.245	.286	.227	.016	.210	-.075	-.116	.210	.024	1.363	0.097	4.4	1.2	4.0	1.4	A-	
1887	686574	4	4	625	.515	.216	.058	.195	.515	.016	.305	-.017	-.184	-.200	.305	0.162	0.089	4.3	1.2	4.1	1.2	A-	
1888	686491	4	4	625	.536	.170	.072	.536	.206	.016	.437	-.263	-.233	.437	-.088	0.058	0.090	0.0	1.0	0.1	1.0	A-	
1889	686573	4	4	625	.478	.166	.218	.478	.125	.013	.506	-.150	-.220	.506	-.259	0.346	0.089	-2.5	0.9	-2.3	0.9	A+	
1890	686490	4	4	625	.395	.395	.221	.296	.072	.016	.116	.116	-.112	.174	-.258	0.767	0.091	8.8	1.4	8.2	1.6	A-	
1891	682521	4	4	630	.722	.048	.106	.124	.722	.000	.366	-.234	-.179	-.178	.366	-0.932	0.097	0.6	1.0	0.4	1.0	A+	B-
1892	682518	4	4	630	.779	.130	.779	.073	.017	.000	.525	-.360	.525	-.286	-.169	-1.294	0.104	-2.9	0.9	-3.5	0.7	A+	B-
1893	685406	4	4	630	.773	.103	.044	.076	.773	.003	.454	-.183	-.272	-.293	.454	-1.251	0.103	-1.5	0.9	-1.2	0.9	A+	A+
1894	685405	4	4	630	.570	.570	.054	.051	.322	.003	.459	.459	-.276	-.135	-.284	-0.117	0.089	-1.1	1.0	-0.4	1.0	A+	A+
1895	685409	4	4	630	.579	.184	.043	.579	.190	.003	.392	-.271	-.180	.392	-.126	-0.165	0.089	1.0	1.0	0.5	1.0	A+	A-
1896	685407	4	4	630	.333	.198	.333	.184	.281	.003	.312	-.160	.312	-.052	-.140	1.073	0.093	2.0	1.1	2.6	1.2	A-	A+
1897	685408	4	4	630	.554	.179	.160	.102	.554	.005	.527	-.332	-.119	-.281	.527	-0.038	0.089	-3.3	0.9	-3.2	0.9	A+	A+
1898	682527	4	4	630	.695	.695	.041	.176	.086	.002	.297	.297	-.185	-.085	-.228	-0.776	0.095	2.4	1.1	2.0	1.2	A+	A-
1899	682534	4	4	630	.967	.019	.967	.006	.006	.002	.307	-.200	.307	-.136	-.167	-3.608	0.227	-0.5	0.9	-2.3	0.4	B+	A-
1900	673234	4	4	630	.491	.490	.221	.075	.208	.006	.227	.227	-.308	-.204	.190	0.274	0.088	6.1	1.2	7.3	1.4	A-	A-
1901	673236	4	4	630	.779	.097	.038	.779	.081	.005	.312	-.041	-.294	.312	-.190	-1.294	0.104	0.7	1.0	1.3	1.1	B+	A-
1902	673235	4	4	630	.605	.168	.070	.605	.151	.006	.478	-.159	-.268	.478	-.265	-0.293	0.090	-1.7	0.9	-1.4	0.9	A-	A-
1903	673232	4	4	630	.686	.686	.073	.114	.119	.008	.460	.460	-.254	-.236	-.185	-0.722	0.094	-1.4	0.9	-1.5	0.9	A+	A-
1904	686553	4	4	630	.644	.095	.217	.035	.644	.008	.481	-.317	-.231	-.161	.481	-0.499	0.092	-1.9	0.9	-1.6	0.9	A-	A-
1905	682540	4	4	630	.716	.716	.087	.075	.113	.010	.346	.346	-.188	-.123	-.178	-0.895	0.096	1.3	1.1	0.5	1.0	A-	A+
1906	686557	4	4	630	.632	.632	.178	.078	.095	.017	.407	.407	-.216	-.169	-.171	-0.432	0.091	0.3	1.0	0.3	1.0	A+	A-
1907	686561	4	4	630	.479	.151	.210	.479	.143	.017	.403	-.111	-.226	.403	-.132	0.328	0.088	0.4	1.0	1.4	1.1	A-	A-
1908	686560	4	4	630	.532	.181	.532	.130	.140	.017	.429	-.209	.429	-.204	-.126	0.071	0.088	-0.2	1.0	-0.5	1.0	A+	A+
1909	686558	4	4	630	.335	.229	.335	.224	.194	.019	.344	-.086	.344	-.119	-.134	1.065	0.093	1.1	1.0	2.2	1.2	A-	A-
1910	686559	4	4	630	.376	.249	.162	.192	.376	.021	.471	-.173	-.194	-.150	.471	0.846	0.091	-2.2	0.9	-0.9	1.0	A+	A+
1911	682522	4	4	641	.902	.041	.017	.902	.041	.000	.300	-.216	-.135	.300	-.148	-2.215	0.141	-0.1	1.0	0.0	1.0	B+	A-
1912	685918	4	4	641	.805	.023	.805	.092	.080	.000	.443	-.192	.443	-.254	-.269	-1.291	0.109	-0.9	1.0	-1.2	0.9	B+	A+
1913	685917	4	4	641	.389	.388	.119	.189	.303	.002	.316	.316	-.333	-.137	.019	1.030	0.091	3.7	1.1	3.1	1.2	A+	A-
1914	685913	4	4	641	.651	.651	.250	.056	.042	.002	.389	.389	-.231	-.210	-.196	-0.321	0.092	1.5	1.1	1.3	1.1	A+	A+
1915	685916	4	4	641	.658	.658	.139	.147	.056	.000	.408	.408	-.207	-.172	-.265	-0.364	0.093	0.9	1.0	0.5	1.0	A-	A-
1916	685914	4	4	641	.342	.289	.254	.342	.112	.003	.244	-.048	-.125	.244	-.118	1.283	0.093	4.2	1.2	5.0	1.4	A-	A+
1917	685915	4	4	641	.711	.090	.119	.080	.711	.000	.499	-.244	-.287	-.234	.499	-0.668	0.097	-1.9	0.9	-1.5	0.9	A+	A+
1918	682528	4	4	641	.613	.042	.114	.613	.231	.000	.439	-.281	-.233	.439	-.198	-0.120	0.091	0.4	1.0	-0.3	1.0	A-	A+
1919	673243	4	4	641	.652	.042	.204	.100	.652	.002	.634	-.268	-.401	-.280	.634	-0.329	0.093	-5.8	0.8	-5.2	0.7	A-	A+
1920	686410	4	4	641	.626	.626	.103	.114	.151	.006	.448	.448	-.275	-.270	-.109	-0.186	0.091	0.0	1.0	-0.4	1.0	A-	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1921	686409	4	4	641	.376	.376	.243	.109	.267	.005	.279	.279	-.159	-.240	.031	1.096	0.091	4.6	1.2	3.9	1.3	A-	A-
1922	686442	4	4	641	.304	.069	.491	.128	.304	.008	.289	-.285	.045	-.228	.289	1.495	0.095	2.8	1.1	2.9	1.3	A-	A-
1923	686408	4	4	641	.481	.223	.480	.162	.123	.011	.419	-.188	.419	-.233	-.099	0.558	0.089	0.8	1.0	1.5	1.1	A+	A+
1924	682535	4	4	641	.819	.070	.070	.819	.031	.009	.515	-.327	-.342	.515	-.120	-1.400	0.112	-2.3	0.9	-3.1	0.7	B+	B-
1925	682541	4	4	641	.680	.089	.045	.173	.680	.012	.499	-.303	-.228	-.234	.499	-0.486	0.094	-1.8	0.9	-1.5	0.9	A+	C-
1926	686473	4	4	641	.282	.282	.204	.354	.147	.012	.358	.358	-.127	-.108	-.132	1.624	0.097	0.7	1.0	1.6	1.1	A+	A-
1927	686533	4	4	641	.435	.134	.122	.292	.435	.017	.366	-.217	-.253	-.014	.366	0.787	0.089	2.5	1.1	2.4	1.1	A+	A-
1928	686477	4	4	641	.495	.095	.175	.495	.223	.012	.400	-.222	-.260	.400	-.060	0.487	0.089	1.4	1.1	2.6	1.1	A-	A+
1929	686475	4	4	641	.506	.172	.142	.168	.505	.012	.507	-.120	-.274	-.272	.507	0.432	0.089	-2.1	0.9	-1.7	0.9	A+	A+
1930	686474	4	4	641	.529	.126	.179	.150	.529	.016	.534	-.209	-.208	-.299	.534	0.313	0.089	-2.9	0.9	-1.9	0.9	A+	A+
1931	682523	4	4	627	.759	.759	.048	.080	.113	.000	.490	.490	-.204	-.193	-.360	-1.237	0.102	-1.7	0.9	-2.5	0.8	A-	C-
1932	671734	4	4	627	.557	.077	.557	.309	.057	.000	.438	-.276	.438	-.308	-.007	-0.111	0.089	0.1	1.0	-0.2	1.0	A+	A-
1933	671735	4	4	627	.507	.158	.293	.507	.040	.002	.502	-.296	-.236	.502	-.167	0.136	0.089	-2.2	0.9	-2.2	0.9	A+	B+
1934	686421	4	4	627	.494	.059	.290	.155	.494	.002	.384	-.218	-.087	-.270	.384	0.199	0.089	1.8	1.1	1.4	1.1	A+	A+
1935	686422	4	4	627	.494	.494	.137	.238	.131	.000	.456	.456	-.283	-.180	-.161	0.199	0.089	-0.6	1.0	-0.2	1.0	A+	A-
1936	686424	4	4	627	.793	.793	.064	.081	.062	.000	.505	.505	-.287	-.246	-.279	-1.466	0.107	-2.4	0.9	-1.6	0.8	A+	A-
1937	686423	4	4	627	.501	.207	.501	.113	.177	.002	.360	-.184	.360	-.231	-.076	0.167	0.089	2.5	1.1	1.9	1.1	A-	A+
1938	682529	4	4	627	.700	.700	.123	.121	.054	.002	.357	.357	-.269	-.049	-.248	-0.874	0.096	1.4	1.1	1.2	1.1	A-	A+
1939	686446	4	4	627	.657	.166	.657	.120	.054	.003	.424	-.250	.424	-.189	-.184	-0.633	0.093	0.3	1.0	-0.2	1.0	A+	A+
1940	686452	4	4	627	.327	.056	.233	.327	.380	.005	.227	-.174	-.146	.227	.007	1.060	0.094	4.1	1.2	5.0	1.4	A-	A+
1941	673239	4	4	627	.252	.370	.220	.153	.252	.005	.261	.055	-.272	-.055	.261	1.501	0.100	2.0	1.1	3.4	1.3	A+	A-
1942	686445	4	4	627	.442	.442	.349	.054	.152	.003	.340	.340	-.016	-.257	-.273	0.461	0.089	2.7	1.1	2.1	1.1	A-	A+
1943	686444	4	4	627	.252	.204	.343	.193	.252	.008	.305	-.105	-.035	-.163	.305	1.501	0.100	1.7	1.1	1.0	1.1	A-	B+
1944	682536	4	4	627	.923	.032	.923	.018	.019	.008	.352	-.176	.352	-.207	-.197	-2.774	0.157	-0.5	0.9	-2.0	0.6	A-	A-
1945	682542	4	4	627	.700	.043	.053	.195	.700	.010	.478	-.240	-.214	-.283	.478	-0.874	0.096	-1.4	0.9	-1.5	0.9	A-	A-
1946	685411	4	4	627	.333	.343	.333	.228	.085	.011	.180	.020	.180	-.091	-.164	1.025	0.093	5.2	1.2	6.4	1.5	A-	A-
1947	686180	4	4	627	.491	.204	.491	.112	.182	.011	.461	-.179	.461	-.159	-.253	0.215	0.089	-0.9	1.0	-0.6	1.0	B-	B-
1948	685410	4	4	627	.546	.172	.128	.144	.545	.011	.479	-.173	-.232	-.243	.479	-0.055	0.089	-1.3	1.0	-1.2	0.9	A+	A+
1949	686181	4	4	627	.533	.203	.155	.533	.096	.014	.447	-.135	-.216	.447	-.271	0.009	0.089	-0.3	1.0	-0.3	1.0	B+	A+
1950	685412	4	4	627	.608	.070	.069	.239	.608	.014	.562	-.215	-.260	-.336	.562	-0.371	0.091	-3.9	0.9	-3.6	0.8	A+	A-
1951	661514	4	4	640	.839	.134	.839	.009	.017	.000	.462	-.399	.462	-.138	-.157	-1.867	0.116	-1.8	0.9	-3.1	0.7	A-	
1952	661516	4	4	640	.852	.852	.017	.091	.041	.000	.377	.377	-.146	-.209	-.279	-1.977	0.119	-0.7	0.9	-1.3	0.8	A-	
1953	661517	4	4	640	.942	.016	.025	.016	.942	.002	.310	-.164	-.192	-.179	.310	-3.141	0.177	-0.5	0.9	-1.9	0.6	A+	
1954	662801	4	4	640	.617	.617	.097	.094	.192	.000	.488	.488	-.235	-.287	-.213	-0.470	0.090	-2.0	0.9	-1.8	0.9	A+	
1955	662805	4	4	640	.683	.145	.059	.683	.113	.000	.537	-.230	-.290	.537	-.317	-0.821	0.093	-3.7	0.9	-3.2	0.8	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1956	662803	4	4	640	.728	.130	.067	.728	.070	.005	.504	-.298	-.263	.504	-.213	-1.084	0.097	-2.7	0.9	-2.4	0.8	A+	
1957	662804	4	4	640	.161	.161	.114	.641	.083	.002	.082	.082	-.141	.133	-.167	2.089	0.115	2.6	1.2	5.3	1.9	A-	
1958	662802	4	4	640	.372	.250	.248	.128	.372	.002	.418	-.101	-.179	-.232	.418	0.757	0.090	-0.1	1.0	0.1	1.0	A+	
1959	662794	4	4	640	.445	.339	.445	.063	.145	.008	.375	-.089	.375	-.248	-.211	0.385	0.088	1.6	1.1	1.8	1.1	A-	
1960	662792	4	4	640	.206	.506	.136	.142	.206	.009	.385	-.004	-.193	-.217	.385	1.739	0.105	-0.9	1.0	0.9	1.1	A-	
1961	662795	4	4	640	.539	.539	.170	.173	.105	.013	.471	.471	-.132	-.215	-.287	-0.077	0.088	-1.6	1.0	-1.4	0.9	A-	
1962	662797	4	4	640	.323	.289	.209	.323	.166	.013	.307	-.024	-.147	.307	-.158	1.016	0.093	2.2	1.1	5.1	1.4	A+	
1963	662793	4	4	640	.364	.364	.319	.214	.088	.016	.299	.299	.042	-.227	-.200	0.798	0.091	3.3	1.1	2.6	1.2	A-	
1964	662796	4	4	640	.403	.188	.403	.166	.225	.019	.414	-.102	.414	-.131	-.236	0.596	0.089	0.0	1.0	1.1	1.1	A-	
1965	662432	4	4	1271	.497	.109	.247	.124	.496	.024	.485	-.209	-.249	-.149	.485	0.126	0.062	-2.6	0.9	-2.3	0.9	A+	
1966	662434	4	4	1271	.230	.230	.107	.429	.208	.027	.069	.069	-.078	.048	-.011	1.581	0.072	7.3	1.3	9.3	1.8	B-	
1967	662433	4	4	1271	.639	.044	.256	.035	.639	.025	.471	-.235	-.253	-.242	.471	-0.593	0.065	-2.4	0.9	-2.3	0.9	A+	
1968	662504	4	4	1264	.131	.399	.131	.404	.047	.020	.111	.028	.111	.056	-.288	2.464	0.089	2.4	1.1	7.3	2.0	A+	
1969	662503	4	4	1264	.347	.172	.317	.146	.347	.019	.409	-.134	-.112	-.213	.409	0.967	0.065	-0.3	1.0	1.4	1.1	A-	
1970	662505	4	4	1264	.290	.335	.165	.189	.290	.021	.383	-.070	-.115	-.200	.383	1.282	0.068	-0.5	1.0	2.5	1.2	A-	
1971	661518	4	4	624	.950	.034	.950	.014	.000	.002	.240	-.221	.240	-.082	.000	-3.165	0.191	-0.1	1.0	-0.7	0.8	A+	
1972	661519	4	4	624	.923	.923	.043	.014	.019	.000	.395	.395	-.269	-.225	-.173	-2.660	0.157	-1.2	0.9	-2.3	0.6	B+	
1973	661520	4	4	624	.724	.079	.171	.724	.026	.000	.395	-.238	-.238	.395	-.145	-0.919	0.098	0.3	1.0	-0.3	1.0	A-	
1974	662811	4	4	624	.370	.168	.204	.255	.370	.003	.409	-.162	-.103	-.209	.409	0.919	0.092	0.1	1.0	0.8	1.1	A+	
1975	662809	4	4	624	.716	.716	.077	.095	.111	.002	.510	.510	-.261	-.207	-.313	-0.871	0.097	-2.6	0.9	-2.1	0.8	A-	
1976	662810	4	4	624	.244	.300	.346	.111	.244	.000	.322	-.172	.051	-.267	.322	1.655	0.102	1.1	1.1	1.8	1.2	A-	
1977	662807	4	4	624	.708	.130	.708	.107	.054	.000	.478	-.295	.478	-.212	-.231	-0.824	0.097	-1.8	0.9	-1.9	0.9	A-	
1978	662808	4	4	624	.487	.325	.072	.487	.111	.005	.303	-.043	-.233	.303	-.205	0.326	0.089	4.2	1.2	3.3	1.2	A+	
1979	662481	4	4	624	.364	.213	.252	.167	.364	.005	.332	-.149	-.063	-.174	.332	0.953	0.092	2.8	1.1	2.2	1.1	A-	
1980	662480	4	4	624	.651	.651	.098	.128	.112	.011	.497	.497	-.243	-.210	-.267	-0.502	0.093	-2.3	0.9	-1.4	0.9	A-	
1981	662482	4	4	624	.521	.521	.114	.082	.277	.006	.365	.365	-.258	-.179	-.092	0.159	0.089	2.3	1.1	2.6	1.1	A-	
1982	662479	4	4	624	.633	.106	.633	.144	.111	.006	.547	-.259	.547	-.260	-.264	-0.409	0.092	-3.6	0.9	-3.3	0.8	A-	
1983	662770	4	4	624	.596	.072	.596	.268	.054	.010	.410	-.233	.410	-.197	-.190	-0.218	0.090	0.7	1.0	0.2	1.0	A+	
1984	662769	4	4	624	.551	.090	.074	.551	.274	.011	.319	-.250	-.270	.319	-.013	0.008	0.089	3.6	1.1	3.7	1.2	A-	
1985	662768	4	4	624	.561	.123	.199	.106	.561	.011	.488	-.292	-.197	-.177	.488	-0.040	0.090	-1.8	0.9	-1.0	1.0	A+	
1986	662767	4	4	624	.285	.170	.192	.285	.338	.014	.279	-.135	-.219	.279	.057	1.394	0.098	1.9	1.1	3.4	1.3	A+	
1987	661511	4	4	1257	.593	.308	.070	.593	.023	.006	.446	-.259	-.254	.446	-.182	-0.278	0.064	0.8	1.0	0.5	1.0	A-	A-
1988	661509	4	4	633	.670	.240	.670	.024	.065	.002	.499	-.391	.499	-.169	-.169	-0.779	0.095	-1.1	1.0	-2.0	0.9	B+	
1989	661510	4	4	633	.777	.777	.065	.136	.021	.002	.324	.324	-.109	-.248	-.168	-1.451	0.105	1.5	1.1	2.0	1.2	A+	
1990	662740	4	4	633	.727	.103	.066	.727	.104	.000	.486	-.275	-.301	.486	-.191	-1.117	0.099	-1.3	0.9	-0.7	0.9	A+	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1991	662742	4	4	633	.749	.055	.749	.038	.156	.002	.452	-.214	.452	-.237	-.281	-1.258	0.102	-0.7	1.0	-0.7	0.9	B-	
1992	662744	4	4	633	.314	.314	.166	.267	.251	.002	.171	.171	-.145	-.013	-.044	1.122	0.096	6.2	1.3	6.8	1.7	A+	
1993	662743	4	4	633	.264	.156	.447	.133	.264	.000	.253	-.203	.095	-.251	.253	1.433	0.101	3.6	1.2	4.8	1.5	A+	
1994	662741	4	4	633	.649	.649	.123	.087	.139	.002	.545	.545	-.188	-.311	-.310	-0.664	0.094	-2.6	0.9	-2.8	0.8	A+	
1995	662772	4	4	633	.714	.130	.062	.714	.088	.006	.534	-.242	-.324	.534	-.254	-1.039	0.098	-2.5	0.9	-2.5	0.8	A-	
1996	662771	4	4	633	.871	.039	.870	.044	.039	.006	.504	-.280	.504	-.303	-.217	-2.229	0.127	-2.2	0.8	-3.1	0.6	A+	
1997	662773	4	4	633	.386	.185	.385	.275	.148	.006	.283	-.054	.283	-.103	-.170	0.723	0.092	4.5	1.2	4.7	1.3	A-	
1998	662774	4	4	633	.559	.270	.096	.068	.559	.006	.545	-.245	-.230	-.333	.545	-0.182	0.091	-2.7	0.9	-2.7	0.9	A+	
1999	662451	4	4	633	.621	.196	.621	.103	.070	.011	.568	-.191	.568	-.366	-.290	-0.508	0.092	-3.4	0.9	-3.3	0.8	A-	
2000	662450	4	4	633	.346	.120	.390	.126	.346	.017	.343	-.207	.036	-.273	.343	0.940	0.094	2.7	1.1	2.9	1.2	A+	
2001	662449	4	4	633	.792	.791	.052	.066	.070	.021	.571	.571	-.265	-.263	-.335	-1.553	0.108	-3.5	0.8	-3.7	0.6	A-	
2002	662452	4	4	633	.461	.163	.182	.175	.461	.019	.410	-.176	-.134	-.182	.410	0.323	0.090	1.6	1.1	1.6	1.1	A+	
2003	662760	4	4	1264	.650	.169	.089	.650	.075	.016	.498	-.209	-.254	.498	-.263	-0.667	0.066	-3.2	0.9	-3.6	0.8	A+	A+
2004	662759	4	4	1264	.703	.160	.052	.703	.070	.015	.548	-.268	-.283	.548	-.276	-0.967	0.068	-5.4	0.8	-5.3	0.7	A+	A-
2005	662757	4	4	1264	.184	.184	.280	.193	.327	.016	.252	.252	-.032	-.117	-.042	1.957	0.079	1.3	1.1	4.7	1.5	A+	A+
2006	662758	4	4	1264	.343	.188	.343	.213	.237	.019	.379	-.168	.379	-.141	-.084	0.934	0.066	1.0	1.0	3.0	1.2	A-	A-
2007	661512	4	4	631	.891	.014	.041	.054	.891	.000	.355	-.147	-.114	-.313	.355	-2.396	0.135	-0.9	0.9	-0.2	1.0	A+	
2008	661513	4	4	631	.900	.900	.024	.041	.035	.000	.385	.385	-.219	-.196	-.234	-2.509	0.140	-1.0	0.9	-2.3	0.6	A+	
2009	661515	4	4	631	.712	.074	.712	.122	.089	.003	.330	-.101	.330	-.193	-.199	-1.009	0.097	1.7	1.1	1.8	1.1	A+	
2010	662999	4	4	631	.675	.675	.135	.157	.032	.002	.365	.365	-.183	-.217	-.159	-0.801	0.094	1.5	1.1	1.1	1.1	A-	
2011	663001	4	4	631	.296	.114	.433	.154	.296	.003	.298	-.240	.015	-.180	.298	1.168	0.096	2.2	1.1	3.3	1.3	A+	
2012	663002	4	4	631	.506	.506	.122	.208	.162	.003	.443	.443	-.140	-.240	-.200	0.074	0.089	-0.1	1.0	-0.1	1.0	A+	
2013	662997	4	4	631	.328	.151	.260	.328	.257	.005	.419	-.113	-.243	.419	-.093	0.988	0.094	-0.5	1.0	0.8	1.1	A+	
2014	663000	4	4	631	.217	.181	.217	.222	.379	.002	.180	-.164	.180	-.289	.232	1.670	0.105	2.9	1.2	4.8	1.6	B+	
2015	662998	4	4	631	.399	.255	.399	.211	.132	.003	.409	-.137	.409	-.238	-.111	0.608	0.090	0.6	1.0	1.1	1.1	B-	
2016	662492	4	4	631	.643	.179	.643	.106	.051	.021	.562	-.283	.562	-.311	-.191	-0.628	0.092	-4.1	0.9	-3.6	0.8	B+	
2017	662494	4	4	631	.645	.645	.078	.187	.068	.022	.587	.587	-.219	-.324	-.279	-0.637	0.092	-4.8	0.8	-4.6	0.7	A-	
2018	662491	4	4	631	.715	.060	.715	.146	.054	.025	.523	-.249	.523	-.268	-.253	-1.028	0.097	-3.0	0.9	-2.9	0.8	A+	
2019	662493	4	4	631	.346	.295	.158	.345	.177	.024	.259	.046	-.247	.259	-.073	0.893	0.093	3.9	1.2	4.7	1.3	A+	
2020	661521	5	5	440	.825	.089	.825	.070	.016	.000	.503	-.310	.503	-.320	-.170	-1.622	0.137	-2.0	0.9	-2.7	0.6	A-	
2021	661535	5	5	403	.913	.060	.913	.010	.017	.000	.385	-.302	.385	-.164	-.159	-2.461	0.185	-0.9	0.9	-2.3	0.5	A+	
2022	661539	5	5	407	.700	.076	.059	.165	.700	.000	.464	-.283	-.342	-.154	.464	-0.777	0.120	-1.5	0.9	-1.6	0.9	A+	
2023	661543	5	5	415	.841	.046	.841	.027	.087	.000	.272	-.219	.272	-.231	-.058	-1.572	0.145	0.7	1.1	0.5	1.1	B+	
2024	661574	5	5	408	.753	.752	.071	.105	.071	.000	.434	.434	-.319	-.218	-.149	-1.012	0.126	-0.9	0.9	-1.2	0.9	A+	
2025	661578	5	5	416	.808	.149	.808	.031	.012	.000	.422	-.334	.422	-.197	-.119	-1.340	0.135	-0.9	0.9	-1.3	0.8	A-	

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2026	661537	5	5	368	.840	.840	.087	.035	.038	.000	.384	.384	-.242	-.298	-.093	-1.625	0.154	-0.5	1.0	-1.0	0.8	A-	
2027	661541	5	5	409	.804	.042	.804	.134	.020	.000	.310	-.258	.310	-.122	-.215	-1.434	0.135	0.5	1.0	0.6	1.1	A+	
2028	661544	5	5	406	.803	.803	.108	.079	.010	.000	.436	.436	-.291	-.287	-.061	-1.398	0.136	-0.9	0.9	-1.7	0.8	A+	
2029	661572	5	5	414	.742	.742	.053	.041	.164	.000	.429	.429	-.327	-.147	-.230	-1.021	0.124	-0.5	1.0	-0.9	0.9	A-	
2030	661576	5	5	430	.909	.044	.909	.028	.019	.000	.434	-.295	.434	-.260	-.157	-2.377	0.177	-1.2	0.9	-2.6	0.5	A-	A-
2031	661580	5	5	441	.635	.082	.086	.197	.635	.000	.526	-.152	-.405	-.246	.526	-0.327	0.111	-2.8	0.9	-2.6	0.8	A+	
2032	673452	5	5	1067	.306	.149	.374	.172	.306	.000	.194	-.236	.123	-.172	.194	1.396	0.072	4.3	1.1	5.5	1.3	A+	A+
2033	673466	5	5	1017	.563	.186	.151	.563	.099	.000	.307	-.029	-.196	.307	-.236	0.104	0.070	3.2	1.1	2.6	1.1	A+	A-
2034	673479	5	5	1899	.530	.273	.530	.127	.071	.000	.326	-.098	.326	-.201	-.204	0.229	0.051	2.8	1.1	3.2	1.1	A+	A-
2035	673493	5	5	1019	.604	.604	.191	.108	.097	.000	.449	.449	-.162	-.304	-.208	-0.106	0.071	-2.2	0.9	-2.3	0.9	A+	A+
2036	673506	5	5	1080	.673	.168	.673	.106	.053	.000	.471	-.215	.471	-.239	-.298	-0.507	0.072	-3.1	0.9	-2.1	0.9	A-	A+
2037	673516	5	5	1044	.313	.090	.195	.313	.401	.000	.077	-.208	-.168	.077	.184	1.314	0.072	7.3	1.2	9.3	1.6	A+	A-
2038	673518	5	5	2004	.641	.216	.058	.641	.084	.000	.429	-.248	-.167	.429	-.233	-0.333	0.051	-1.6	1.0	-2.5	0.9	A+	A-
2039	673519	5	5	1173	.582	.109	.219	.090	.582	.000	.474	-.249	-.147	-.334	.474	-0.075	0.066	-3.7	0.9	-3.6	0.9	A+	A-
2040	673520	5	5	2249	.557	.217	.130	.097	.557	.000	.508	-.267	-.252	-.195	.508	0.065	0.047	-6.8	0.9	-6.6	0.9	A+	A-
2041	673521	5	5	1099	.514	.514	.180	.209	.096	.000	.329	.329	-.164	-.068	-.251	0.238	0.067	2.4	1.1	2.4	1.1	A+	A-
2042	673522	5	5	2253	.768	.075	.110	.768	.046	.000	.497	-.303	-.282	.497	-.198	-1.131	0.055	-4.4	0.9	-6.3	0.7	B+	A-
2043	673523	5	5	1151	.374	.374	.119	.119	.388	.000	.321	.321	-.277	-.167	-.024	0.967	0.067	1.8	1.1	3.1	1.1	A+	A-
2044	673524	5	5	1138	.384	.326	.178	.384	.112	.000	.247	.040	-.141	.247	-.270	0.925	0.067	4.5	1.1	6.5	1.3	A+	A+
2045	673533	5	5	1130	.410	.158	.224	.208	.410	.000	.364	-.161	-.087	-.206	.364	0.804	0.067	0.2	1.0	3.0	1.1	A+	A-
2046	673544	5	5	1129	.502	.185	.161	.502	.151	.000	.402	-.172	-.231	.402	-.137	0.331	0.066	0.2	1.0	0.8	1.0	A+	A+
2047	673557	5	5	1223	.697	.697	.182	.085	.037	.000	.449	.449	-.241	-.292	-.172	-0.686	0.069	-1.8	0.9	-2.2	0.9	A+	A-
2048	673583	5	5	1073	.693	.693	.092	.144	.070	.000	.387	.387	-.327	-.085	-.212	-0.611	0.073	-0.6	1.0	0.1	1.0	A+	
2049	673609	5	5	1175	.504	.129	.214	.153	.504	.000	.392	-.190	-.139	-.208	.392	0.325	0.065	0.2	1.0	1.6	1.1	A+	A+
2050	673635	5	5	1144	.555	.555	.216	.068	.161	.000	.270	.270	.012	-.274	-.190	0.074	0.067	5.1	1.1	6.1	1.2	A+	A-
2051	673646	5	5	1150	.707	.090	.707	.060	.143	.000	.417	-.163	.417	-.240	-.246	-0.782	0.072	-0.9	1.0	-1.0	1.0	A-	A-
2052	673672	5	5	1067	.346	.205	.346	.199	.250	.000	.096	.084	.096	-.253	.049	1.139	0.070	8.1	1.2	8.5	1.5	A-	A+
2053	673681	5	5	1159	.566	.235	.566	.108	.091	.000	.349	-.056	.349	-.304	-.191	0.055	0.066	1.4	1.0	2.2	1.1	A-	A-
2054	673684	5	5	1917	.599	.131	.104	.599	.166	.000	.396	-.092	-.268	.396	-.218	-0.153	0.052	0.3	1.0	0.1	1.0	A-	A-
2055	673688	5	5	1120	.315	.264	.279	.315	.141	.000	.174	.008	-.033	.174	-.200	1.329	0.070	4.3	1.1	8.2	1.5	A+	
2056	673689	5	5	1031	.681	.062	.123	.134	.681	.000	.439	-.180	-.207	-.273	.439	-0.571	0.074	-1.6	1.0	-1.9	0.9	A-	C-
2057	673690	5	5	1125	.466	.193	.172	.170	.466	.000	.384	-.113	-.206	-.184	.384	0.534	0.066	-0.8	1.0	0.7	1.0	A-	A-
2058	673692	5	5	1070	.456	.293	.456	.156	.095	.000	.323	-.114	.323	-.222	-.096	0.577	0.068	1.8	1.0	2.8	1.1	A+	A+
2059	673693	5	5	1944	.452	.056	.452	.059	.433	.000	.107	-.237	.107	-.307	.149	0.591	0.050	9.9	1.3	9.9	1.4	A-	A-
2060	673694	5	5	1090	.673	.106	.673	.144	.076	.000	.469	-.208	.469	-.279	-.217	-0.465	0.071	-2.7	0.9	-3.8	0.8	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2061	673695	5	5	1062	.590	.150	.590	.159	.101	.000	.379	-.133	.379	-.176	-.247	-0.041	0.069	0.6	1.0	-0.3	1.0	A-	A-
2062	673696	5	5	1990	.504	.357	.082	.504	.056	.000	.310	-.090	-.246	.310	-.191	0.379	0.050	4.2	1.1	4.1	1.1	A-	A-
2063	673730	5	5	1199	.394	.355	.167	.084	.394	.000	.381	.003	-.365	-.186	.381	0.855	0.065	-1.0	1.0	0.5	1.0	A+	A-
2064	673732	5	5	1142	.436	.146	.207	.436	.211	.000	.219	-.221	.002	.219	-.077	0.636	0.066	6.0	1.2	6.6	1.3	A+	A-
2065	682544	5	5	429	.312	.420	.121	.312	.147	.000	.186	-.104	-.140	.186	.030	1.325	0.113	2.7	1.1	3.7	1.3	A-	
2066	682545	5	5	423	.274	.426	.180	.274	.121	.000	.182	-.028	-.125	.182	-.060	1.514	0.118	2.3	1.1	4.6	1.5	C-	
2067	682546	5	5	415	.800	.080	.800	.055	.065	.000	.447	-.349	.447	-.242	-.118	-1.401	0.134	-1.4	0.9	-1.4	0.8	A-	
2068	682547	5	5	414	.565	.188	.121	.126	.565	.000	.487	-.246	-.241	-.202	.487	0.008	0.112	-1.5	0.9	-2.0	0.9	C-	
2069	682548	5	5	421	.468	.401	.062	.069	.468	.000	.382	-.169	-.209	-.227	.382	0.561	0.108	0.0	1.0	0.6	1.0	A-	
2070	682549	5	5	389	.329	.329	.437	.152	.082	.000	.121	.121	.016	-.233	.069	1.194	0.118	4.2	1.2	4.9	1.5	B-	
2071	682550	5	5	403	.936	.035	.935	.017	.012	.000	.399	-.262	.399	-.239	-.169	-2.749	0.211	-0.9	0.9	-2.5	0.4	A+	
2072	682551	5	5	431	.469	.390	.056	.469	.086	.000	.305	-.130	-.289	.305	-.080	0.567	0.106	2.1	1.1	2.3	1.1	A-	A-
2073	682552	5	5	424	.821	.821	.050	.021	.108	.000	.481	.481	-.351	-.222	-.246	-1.441	0.137	-1.7	0.9	-2.9	0.7	A+	
2074	682553	5	5	405	.746	.052	.156	.047	.746	.000	.358	-.253	-.132	-.246	.358	-0.900	0.124	0.1	1.0	0.0	1.0	B-	A-
2075	682554	5	5	416	.490	.190	.139	.490	.180	.000	.391	-.243	-.172	.391	-.106	0.351	0.110	0.5	1.0	0.7	1.0	A-	
2076	682555	5	5	392	.617	.617	.110	.143	.130	.000	.266	.266	-.211	-.170	-.012	-0.374	0.116	3.5	1.2	2.9	1.2	A-	
2077	682556	5	5	415	.684	.219	.684	.051	.046	.000	.359	-.243	.359	-.185	-.125	-0.575	0.117	0.9	1.1	0.1	1.0	A-	
2078	682557	5	5	381	.738	.738	.076	.171	.016	.000	.459	.459	-.271	-.287	-.178	-0.852	0.129	-1.3	0.9	-0.9	0.9	A-	
2079	682558	5	5	390	.636	.636	.292	.041	.031	.000	.349	.349	-.177	-.281	-.184	-0.312	0.117	1.1	1.1	0.5	1.0	B+	
2080	682559	5	5	406	.805	.106	.805	.064	.025	.000	.406	-.246	.406	-.267	-.128	-1.459	0.138	-0.4	1.0	-1.2	0.8	A+	
2081	682560	5	5	427	.773	.773	.108	.059	.061	.000	.406	.406	-.326	-.179	-.112	-1.177	0.126	-0.7	1.0	-1.2	0.9	A-	
2082	682561	5	5	395	.879	.066	.878	.043	.013	.000	.283	-.191	.283	-.137	-.155	-2.055	0.164	0.0	1.0	0.6	1.1	A-	
2083	682562	5	5	440	.821	.820	.107	.039	.034	.000	.404	.404	-.280	-.166	-.201	-1.552	0.134	-1.0	0.9	-1.3	0.8	A+	
2084	682563	5	5	451	.674	.197	.674	.098	.031	.000	.568	-.420	.568	-.237	-.166	-0.518	0.111	-3.7	0.8	-4.2	0.7	A+	
2085	682564	5	5	410	.620	.046	.112	.222	.620	.000	.493	-.209	-.262	-.271	.493	-0.260	0.113	-2.2	0.9	-2.4	0.9	B+	
2086	682565	5	5	420	.743	.169	.076	.743	.012	.000	.373	-.250	-.231	.373	-.074	-0.968	0.123	0.3	1.0	-0.2	1.0	A+	
2087	682566	5	5	389	.846	.846	.026	.041	.087	.000	.333	.333	-.258	-.343	-.040	-1.689	0.152	-0.2	1.0	0.3	1.0	A-	
2088	682567	5	5	410	.551	.112	.180	.551	.156	.000	.236	-.186	-.058	.236	-.100	0.034	0.109	3.0	1.1	2.6	1.1	A-	
2089	682568	5	5	397	.665	.239	.040	.055	.665	.000	.478	-.236	-.301	-.288	.478	-0.513	0.118	-1.6	0.9	-2.0	0.9	A-	
2090	682569	5	5	433	.889	.889	.051	.028	.032	.000	.419	.419	-.252	-.267	-.183	-2.084	0.164	-1.0	0.9	-2.0	0.7	B+	
2091	686596	5	5	997	.351	.351	.249	.234	.166	.000	.262	.262	-.034	-.160	-.116	1.140	0.072	2.7	1.1	4.4	1.2	A-	A-
2092	686608	5	5	1022	.635	.144	.134	.087	.635	.000	.614	-.300	-.301	-.311	.614	-0.338	0.073	-7.9	0.8	-8.0	0.7	B+	A-
2093	686609	5	5	995	.511	.511	.115	.134	.241	.000	.444	.444	-.308	-.277	-.069	0.285	0.071	-1.6	1.0	-1.8	0.9	A-	A-
2094	686610	5	5	961	.574	.574	.165	.125	.135	.000	.486	.486	-.157	-.267	-.274	-0.037	0.073	-3.3	0.9	-3.3	0.9	A+	C-
2095	686611	5	5	941	.521	.213	.057	.209	.521	.000	.349	-.188	-.288	-.075	.349	0.232	0.073	2.2	1.1	2.4	1.1	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2096	686612	5	5	939	.544	.544	.201	.131	.124	.000	.420	.420	-.129	-.244	-.229	0.113	0.073	-0.5	1.0	-0.3	1.0	A+	A-
2097	686614	5	5	1086	.588	.588	.194	.113	.104	.000	.491	.491	-.206	-.257	-.258	-0.076	0.068	-3.9	0.9	-4.4	0.8	A+	
2098	686615	5	5	1071	.400	.290	.400	.157	.153	.000	.257	.022	.257	-.174	-.202	0.870	0.069	3.6	1.1	5.8	1.3	A-	
2099	686616	5	5	1074	.460	.169	.305	.460	.065	.000	.426	-.227	-.165	.426	-.209	0.570	0.068	-2.3	0.9	-1.1	1.0	A-	
2100	686617	5	5	1056	.601	.112	.078	.209	.601	.000	.436	-.072	-.312	-.264	.436	-0.133	0.070	-1.4	1.0	-1.8	0.9	A-	
2101	686618	5	5	1214	.547	.110	.547	.214	.129	.000	.368	-.158	.368	-.247	-.097	0.175	0.064	1.3	1.0	1.4	1.1	A+	A-
2102	686619	5	5	1154	.300	.282	.300	.256	.162	.000	.140	-.031	.140	-.099	-.018	1.426	0.070	6.0	1.2	7.6	1.5	A-	A+
2103	686620	5	5	1145	.440	.177	.440	.192	.190	.000	.294	-.095	.294	-.112	-.167	0.675	0.066	3.6	1.1	4.4	1.2	A-	A+
2104	686621	5	5	1113	.669	.668	.101	.118	.113	.000	.571	.571	-.304	-.322	-.233	-0.477	0.071	-6.4	0.8	-6.2	0.7	A+	B-
2105	686622	5	5	1103	.375	.306	.375	.084	.235	.000	.253	-.038	.253	-.288	-.058	0.999	0.068	3.5	1.1	5.6	1.3	A+	A+
2106	686623	5	5	2238	.681	.681	.101	.129	.088	.000	.487	.487	-.254	-.223	-.266	-0.590	0.050	-4.5	0.9	-5.0	0.8	A-	B-
2107	687039	5	5	1066	.637	.163	.131	.637	.068	.000	.467	-.237	-.270	.467	-.182	-0.376	0.071	-1.8	0.9	-2.8	0.9	A+	A+
2108	687040	5	5	1011	.481	.481	.102	.150	.267	.000	.382	.382	-.223	-.245	-.081	0.407	0.071	1.3	1.0	1.2	1.1	A+	B-
2109	687042	5	5	1019	.221	.274	.333	.173	.221	.000	.196	-.040	.010	-.180	.196	1.860	0.081	1.9	1.1	4.0	1.3	A+	
2110	687043	5	5	997	.463	.244	.121	.172	.463	.000	.188	.122	-.301	-.127	.188	0.547	0.070	7.0	1.2	7.1	1.3	A+	
2111	687044	5	5	990	.516	.516	.251	.166	.068	.000	.383	.383	-.111	-.198	-.278	0.289	0.070	0.3	1.0	0.2	1.0	A+	
2112	687045	5	5	1003	.401	.401	.113	.161	.326	.000	.251	.251	-.273	-.191	.071	0.812	0.072	5.8	1.2	4.9	1.2	A-	A+
2113	687046	5	5	990	.568	.568	.144	.145	.142	.000	.475	.475	-.184	-.299	-.188	-0.036	0.072	-2.3	0.9	-1.8	0.9	A-	A+
2114	687047	5	5	973	.617	.103	.617	.137	.144	.000	.475	-.243	.475	-.239	-.215	-0.287	0.074	-1.9	0.9	-2.3	0.9	A+	A-
2115	687048	5	5	1114	.583	.583	.191	.112	.114	.000	.422	.422	-.132	-.277	-.217	-0.093	0.068	-0.2	1.0	-0.3	1.0	A+	A-
2116	687049	5	5	1068	.435	.144	.199	.434	.223	.000	.232	-.256	-.218	.232	.149	0.646	0.069	6.1	1.2	6.8	1.3	A-	
2117	687050	5	5	1013	.336	.336	.152	.253	.260	.000	.238	.238	-.141	-.035	-.106	1.148	0.073	4.2	1.1	4.4	1.3	A-	
2118	687051	5	5	972	.433	.193	.153	.220	.433	.000	.285	-.109	-.183	-.077	.285	0.617	0.072	3.9	1.1	4.8	1.2	A-	
2119	687052	5	5	973	.515	.242	.515	.144	.100	.000	.406	-.150	.406	-.208	-.218	0.208	0.072	0.1	1.0	-0.3	1.0	A+	
2120	687053	5	5	960	.463	.156	.179	.202	.463	.000	.463	-.146	-.234	-.219	.463	0.459	0.072	-3.1	0.9	-1.1	1.0	A+	
2121	687054	5	5	1868	.659	.659	.074	.191	.076	.000	.343	.343	-.242	-.074	-.264	-0.441	0.054	1.9	1.1	2.2	1.1	A-	B-
2122	687058	5	5	1101	.499	.159	.499	.096	.246	.000	.414	-.167	.414	-.311	-.126	0.317	0.067	-1.3	1.0	-0.5	1.0	A-	A+
2123	687059	5	5	1067	.425	.333	.140	.425	.103	.000	.261	.045	-.221	.261	-.240	0.672	0.068	4.2	1.1	4.6	1.2	A+	A-
2124	687060	5	5	1081	.597	.597	.084	.116	.204	.000	.298	.298	-.306	-.244	.042	-0.181	0.069	2.7	1.1	5.0	1.2	A+	A-
2125	687062	5	5	1084	.608	.608	.121	.163	.108	.000	.572	.572	-.312	-.297	-.219	-0.291	0.069	-6.8	0.8	-6.9	0.7	A+	A-
2126	687063	5	5	1008	.450	.176	.205	.169	.450	.000	.432	-.164	-.161	-.234	.432	0.512	0.071	-1.7	1.0	0.1	1.0	A+	A+
2127	687064	5	5	989	.637	.109	.126	.637	.127	.000	.493	-.183	-.295	.493	-.247	-0.464	0.074	-3.3	0.9	-3.5	0.8	A+	A-
2128	687065	5	5	1901	.718	.139	.718	.097	.046	.000	.477	-.272	.477	-.250	-.224	-0.846	0.056	-3.7	0.9	-5.1	0.8	A-	A-
2129	687066	5	5	968	.457	.213	.161	.169	.457	.000	.309	-.095	-.049	-.259	.309	0.466	0.072	3.1	1.1	4.4	1.2	A+	A-
2130	687250	5	5	1131	.679	.679	.117	.100	.104	.000	.527	.527	-.313	-.284	-.197	-0.609	0.071	-4.4	0.9	-5.0	0.8	A+	A-

Table B–3 (continued). Reading/Literature Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2131	687252	5	5	2188	.741	.095	.741	.105	.059	.000	.492	-.278	.492	-.276	-.210	-0.958	0.054	-4.4	0.9	-5.3	0.8	A+	A-
2132	687432	5	5	1015	.752	.752	.122	.072	.054	.000	.561	.561	-.284	-.288	-.331	-0.980	0.080	-5.3	0.8	-5.5	0.7	A-	B-
2133	687433	5	5	1009	.387	.387	.193	.114	.306	.000	.232	.232	-.115	-.226	.009	0.928	0.071	4.1	1.1	5.9	1.3	A-	A+
2134	687434	5	5	1042	.222	.381	.306	.091	.222	.000	.222	.126	-.136	-.316	.222	1.912	0.080	0.8	1.0	5.3	1.5	A+	A-
2135	687435	5	5	1113	.219	.179	.504	.219	.098	.000	.031	-.092	.210	.031	-.277	1.825	0.077	4.9	1.2	9.6	1.9	A-	A+
2136	687436	5	5	1113	.516	.516	.111	.276	.097	.000	.302	.302	-.224	-.072	-.164	0.235	0.066	3.4	1.1	4.4	1.2	A+	A-
2137	687437	5	5	1105	.400	.234	.164	.202	.400	.000	.355	-.092	-.176	-.174	.355	0.802	0.067	-0.2	1.0	2.8	1.1	A+	A-
2138	687440	5	5	1094	.475	.152	.475	.156	.217	.000	.183	-.164	.183	-.144	.047	0.436	0.067	7.8	1.2	7.8	1.3	A-	A-
2139	687441	5	5	1031	.519	.519	.177	.193	.112	.000	.315	.315	-.234	-.107	-.084	0.255	0.069	2.6	1.1	2.8	1.1	A+	A-
2140	687442	5	5	1033	.492	.197	.148	.164	.492	.000	.411	-.156	-.233	-.164	.411	0.379	0.069	-1.8	1.0	-0.3	1.0	A+	A-
2141	687453	5	5	1069	.374	.514	.062	.374	.050	.000	.234	.005	-.315	.234	-.183	1.001	0.069	3.8	1.1	5.8	1.3	A+	B+
2142	687454	5	5	1046	.508	.508	.173	.089	.230	.000	.242	.242	-.163	-.306	.066	0.340	0.068	5.8	1.2	5.2	1.2	A+	A-
2143	687455	5	5	1018	.656	.155	.656	.103	.085	.000	.510	-.151	.510	-.314	-.330	-0.421	0.073	-3.9	0.9	-4.3	0.8	A+	A+
2144	687456	5	5	1016	.681	.094	.096	.128	.681	.000	.480	-.262	-.261	-.210	.480	-0.565	0.074	-3.1	0.9	-3.0	0.9	A+	A+
2145	687457	5	5	1922	.365	.543	.067	.365	.025	.000	.168	.039	-.285	.168	-.185	1.053	0.052	8.2	1.2	9.9	1.4	A+	B-
2146	687458	5	5	1025	.669	.087	.162	.669	.082	.000	.423	-.212	-.178	.423	-.269	-0.499	0.073	-1.0	1.0	-1.7	0.9	A+	A+
2147	687459	5	5	1015	.614	.189	.614	.100	.098	.000	.376	-.109	.376	-.247	-.223	-0.210	0.071	0.5	1.0	0.4	1.0	A+	A-
2148	687460	5	5	1043	.458	.255	.129	.458	.157	.000	.392	-.056	-.284	.392	-.208	0.613	0.069	-1.1	1.0	0.8	1.0	A+	A-
2149	687898	5	5	1078	.498	.498	.289	.141	.071	.000	.358	.358	-.164	-.229	-.097	0.407	0.068	1.8	1.1	2.2	1.1	A+	A+
2150	687899	5	5	1013	.396	.281	.182	.396	.141	.000	.319	-.113	-.216	.319	-.062	0.915	0.071	1.8	1.1	4.4	1.2	A+	A+
2151	687900	5	5	1004	.423	.112	.423	.259	.206	.000	.291	-.245	.291	-.028	-.135	0.768	0.071	3.9	1.1	4.3	1.2	A-	A-
2152	687901	5	5	986	.229	.181	.276	.314	.229	.000	.151	-.172	-.029	.034	.151	1.859	0.082	3.1	1.1	7.3	1.7	A+	A-
2153	687902	5	5	1854	.587	.172	.159	.587	.083	.000	.495	-.239	-.252	.495	-.222	-0.099	0.053	-4.1	0.9	-4.0	0.9	A+	A-

Items with reference line numbers 1-1201 were field tested during the stand-alone field test administered in fall 2010. Items with reference line numbers 1202-1372 were field tested during the embedded field test administered in spring 2013. Items with reference line numbers 1372-2153 were field tested during the field test administered in fall 2013.

SCIENCE MULTIPLE-CHOICE ITEMS

Table B–4. Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1	615336	3	5599	.828	.828	.039	.055	.076	.002	.359	.359	-.203	-.261	-.100	-2.713	0.039	0.9	1.0	-0.1	1.0	A-	A-
2	615326	3	816	.814	.038	.814	.092	.056	.000	.320	-.136	.320	-.207	-.169	-2.533	0.099	1.3	1.1	1.0	1.1	A+	
3	615352	3	5599	.531	.127	.531	.254	.085	.003	.306	-.151	.306	-.080	-.202	-0.933	0.030	9.9	1.1	9.9	1.2	A-	A-
4	615346	3	797	.816	.132	.816	.021	.025	.006	.456	-.260	.456	-.234	-.197	-2.724	0.103	-1.0	0.9	-1.6	0.8	A-	C-
5	615328	3	797	.812	.812	.038	.083	.062	.006	.391	.391	-.185	-.201	-.152	-2.703	0.103	0.5	1.0	-0.8	0.9	A+	A-
6	615337	3	794	.752	.121	.752	.039	.086	.003	.399	-.250	.399	-.132	-.183	-2.151	0.090	0.5	1.0	-0.7	1.0	A-	C-
7	615343	3	794	.833	.038	.115	.011	.833	.004	.427	-.183	-.287	-.142	.427	-2.730	0.103	-0.7	1.0	-1.7	0.8	A+	A+
8	615344	3	794	.767	.767	.033	.136	.062	.003	.444	.444	-.231	-.247	-.200	-2.235	0.092	-1.2	0.9	-1.5	0.9	A+	A-
9	615338	3	802	.880	.880	.072	.018	.025	.005	.427	.427	-.231	-.205	-.218	-3.177	0.118	-0.8	0.9	-1.7	0.8	A-	
10	615353	3	802	.480	.125	.299	.092	.480	.004	.348	-.136	-.121	-.197	.348	-0.634	0.078	3.2	1.1	3.1	1.1	A-	
11	615329	3	802	.801	.029	.046	.801	.121	.004	.239	-.115	-.138	.239	-.095	-2.442	0.097	3.2	1.2	3.9	1.4	A+	
12	615340	3	800	.571	.265	.046	.116	.571	.001	.442	-.238	-.161	-.226	.442	-1.125	0.079	-0.5	1.0	-0.9	1.0	A+	A-
13	615330	3	800	.739	.124	.739	.080	.054	.004	.443	-.303	.443	-.244	-.070	-2.065	0.089	-0.9	1.0	-1.1	0.9	A-	B-
14	615348	3	800	.695	.695	.090	.043	.166	.006	.542	.542	-.254	-.258	-.299	-1.795	0.085	-4.3	0.8	-4.1	0.8	A+	B+
15	615341	3	796	.250	.112	.250	.421	.217	.000	.173	-.151	.173	-.013	-.051	0.480	0.088	2.9	1.1	5.1	1.5	A+	
16	615349	3	796	.480	.108	.335	.077	.480	.000	.411	-.281	-.178	-.129	.411	-0.756	0.077	0.0	1.0	0.5	1.0	A-	
17	615350	3	796	.472	.226	.116	.185	.472	.001	.426	-.230	-.227	-.109	.426	-0.716	0.077	-0.8	1.0	0.2	1.0	A+	
18	615332	3	796	.633	.067	.104	.195	.633	.001	.417	-.350	-.185	-.140	.417	-1.513	0.080	-0.4	1.0	-0.4	1.0	A+	
19	615342	3	794	.893	.052	.032	.021	.893	.003	.338	-.197	-.146	-.180	.338	-3.365	0.126	-0.2	1.0	-0.6	0.9	A+	A-
20	615335	3	794	.664	.059	.074	.664	.199	.004	.426	-.192	-.248	.426	-.199	-1.699	0.082	-0.9	1.0	-0.9	1.0	B-	A-
21	615351	3	794	.533	.123	.533	.131	.209	.004	.455	-.247	.455	-.235	-.135	-1.021	0.077	-3.3	0.9	-3.1	0.9	A+	A-
22	615333	3	794	.358	.238	.244	.151	.358	.009	.315	-.063	-.141	-.123	.315	-0.164	0.080	0.5	1.0	1.7	1.1	A+	B+
23	615331	3	794	.754	.754	.087	.092	.057	.010	.453	.453	-.213	-.201	-.238	-2.183	0.091	-1.4	0.9	-1.0	0.9	A+	A-
24	615347	3	802	.739	.739	.084	.126	.047	.004	.459	.459	-.233	-.267	-.151	-2.019	0.089	-0.8	1.0	-1.7	0.9	A+	
25	615339	3	800	.594	.594	.131	.195	.075	.005	.378	.378	-.159	-.205	-.154	-1.257	0.080	1.4	1.0	1.6	1.1	A+	A+
26	615325	3	794	.621	.621	.141	.049	.185	.004	.263	.263	-.096	-.134	-.150	-1.436	0.079	3.2	1.1	3.2	1.2	A+	A+
27	615327	3	794	.863	.863	.029	.064	.040	.004	.273	.273	-.130	-.101	-.157	-3.029	0.112	1.5	1.1	1.8	1.3	B+	A-
28	615334	3	802	.626	.160	.133	.626	.075	.006	.458	-.185	-.227	.458	-.221	-1.376	0.081	-0.8	1.0	-1.1	0.9	A+	
29	615405	3	816	.950	.950	.023	.011	.015	.001	.212	.212	-.177	-.074	-.108	-4.701	0.204	-0.1	1.0	-1.4	0.6	A+	
30	615377	3	5599	.851	.049	.851	.054	.044	.002	.441	-.266	.441	-.227	-.185	-2.918	0.041	-3.2	0.9	-5.3	0.8	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
31	615391	3	5599	.895	.018	.895	.061	.022	.004	.382	-.221	.382	-.191	-.192	-3.441	0.048	-1.4	1.0	-2.1	0.9	A-	A-
32	615389	3	816	.344	.363	.199	.092	.344	.003	.380	-.170	-.132	-.147	.380	0.224	0.086	0.4	1.0	0.4	1.0	A+	
33	615403	3	797	.484	.139	.272	.484	.102	.003	.346	-.302	-.013	.346	-.162	-0.662	0.081	2.3	1.1	2.6	1.1	A-	A+
34	615393	3	794	.679	.679	.045	.242	.032	.003	.457	.457	-.243	-.271	-.189	-1.712	0.083	-1.1	1.0	-1.7	0.9	A-	A+
35	615386	3	794	.356	.218	.175	.246	.356	.005	.304	-.121	-.135	-.070	.304	-0.083	0.081	2.3	1.1	3.7	1.2	A+	A-
36	615398	3	794	.623	.241	.066	.623	.064	.006	.443	-.231	-.309	.443	-.078	-1.422	0.081	-0.5	1.0	-1.0	1.0	A+	A+
37	615394	3	802	.450	.335	.128	.084	.450	.003	.424	-.204	-.105	-.236	.424	-0.491	0.078	-0.2	1.0	0.0	1.0	A-	
38	615387	3	802	.544	.137	.106	.544	.211	.003	.259	-.176	-.122	.259	-.042	-0.939	0.078	6.2	1.2	5.9	1.3	A-	
39	615375	3	802	.758	.120	.091	.025	.758	.006	.385	-.248	-.147	-.147	.385	-2.152	0.091	0.9	1.0	1.1	1.1	A-	
40	615399	3	802	.854	.047	.854	.036	.055	.008	.487	-.239	.487	-.232	-.263	-2.931	0.110	-2.2	0.9	-2.4	0.7	A-	
41	615396	3	800	.315	.291	.244	.149	.315	.001	.283	-.094	-.121	-.083	.283	0.187	0.083	2.8	1.1	3.5	1.2	A-	A+
42	615388	3	800	.450	.223	.216	.450	.110	.001	.355	-.143	-.127	.355	-.183	-0.527	0.078	2.3	1.1	2.1	1.1	A+	A+
43	615402	3	800	.971	.014	.971	.001	.009	.005	.292	-.130	.292	-.038	-.183	-5.319	0.281	-0.1	1.0	-1.6	0.5	A+	B-
44	617120	3	796	.851	.036	.025	.851	.087	.001	.363	-.145	-.249	.363	-.215	-2.929	0.107	-0.2	1.0	-0.9	0.9	A-	
45	615390	3	796	.602	.602	.114	.155	.129	.000	.433	.433	-.153	-.211	-.258	-1.330	0.079	-1.2	1.0	-0.9	1.0	A-	
46	615378	3	796	.241	.281	.168	.241	.308	.001	.287	.013	-.114	.287	-.183	0.534	0.089	0.3	1.0	2.7	1.2	A-	
47	615401	3	796	.499	.204	.133	.499	.161	.004	.410	-.254	-.203	.410	-.082	-0.848	0.077	-0.2	1.0	0.4	1.0	A-	
48	615397	3	794	.855	.086	.033	.025	.855	.001	.470	-.300	-.231	-.209	.470	-2.989	0.111	-1.7	0.9	-2.3	0.8	A-	A-
49	615392	3	794	.490	.490	.331	.061	.117	.001	.328	.328	-.084	-.254	-.175	-0.837	0.077	2.0	1.1	2.1	1.1	B-	A-
50	615379	3	796	.255	.060	.338	.255	.347	.000	.284	-.242	-.145	.284	.005	0.425	0.087	1.3	1.1	2.6	1.2	A-	
51	615395	3	802	.519	.061	.246	.172	.519	.003	.333	-.129	-.078	-.233	.333	-0.816	0.078	3.4	1.1	3.4	1.2	A-	
52	615385	3	794	.408	.076	.438	.408	.071	.008	.327	-.179	-.093	.327	-.192	-0.441	0.078	1.2	1.0	2.6	1.1	A-	A+
53	615400	3	794	.227	.227	.105	.419	.241	.009	.244	.244	-.225	.121	-.168	0.554	0.091	1.3	1.1	3.4	1.3	A+	A+
54	615376	3	800	.616	.158	.148	.616	.074	.005	.418	-.115	-.288	.418	-.169	-1.350	0.080	0.4	1.0	0.2	1.0	A+	A+
55	615316	3	5599	.654	.094	.169	.081	.654	.003	.510	-.256	-.261	-.219	.510	-1.576	0.031	-8.5	0.9	-7.8	0.8	A+	A-
56	615310	3	5599	.882	.882	.038	.039	.038	.003	.480	.480	-.262	-.257	-.220	-3.270	0.046	-4.6	0.9	-8.0	0.6	A+	A-
57	615321	3	5599	.918	.037	.013	.027	.918	.005	.477	-.295	-.206	-.229	.477	-3.799	0.055	-4.2	0.8	-9.1	0.5	A+	B-
58	615320	3	1594	.636	.636	.170	.100	.092	.002	.300	.300	-.164	-.206	-.036	-1.456	0.057	5.4	1.1	5.1	1.2	A+	A+
59	617273	3	1590	.736	.736	.116	.062	.084	.003	.448	.448	-.278	-.183	-.202	-2.056	0.062	-1.7	1.0	-2.6	0.9	A+	A+
60	615317	3	802	.914	.008	.069	.006	.914	.004	.368	-.133	-.249	-.170	.368	-3.605	0.136	-0.2	1.0	-1.2	0.8	A-	
61	615318	3	800	.546	.093	.086	.273	.546	.003	.439	-.264	-.236	-.147	.439	-0.985	0.078	-1.2	1.0	-0.4	1.0	A-	A-
62	615309	3	800	.761	.761	.046	.104	.085	.004	.505	.505	-.283	-.269	-.221	-2.186	0.091	-2.9	0.9	-2.8	0.8	A-	A-
63	615323	3	800	.656	.281	.656	.009	.051	.003	.267	-.180	.267	-.125	-.107	-1.557	0.082	4.5	1.2	4.1	1.3	A-	A+
64	615311	3	796	.694	.098	.118	.694	.089	.001	.449	-.302	-.309	.449	-.061	-1.825	0.084	-1.4	1.0	-1.6	0.9	A+	
65	615313	3	794	.719	.074	.150	.055	.719	.001	.304	-.201	-.098	-.180	.304	-1.989	0.086	1.9	1.1	2.0	1.1	A-	A+

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
66	615312	3	794	.733	.073	.151	.037	.733	.006	.486	-.276	-.239	-.217	.486	-2.104	0.088	-2.8	0.9	-2.8	0.8	A+	A-
67	615315	3	796	.310	.111	.446	.310	.131	.003	.205	-.080	-.036	.205	-.144	0.097	0.083	4.8	1.2	4.6	1.3	A-	
68	615314	3	802	.641	.143	.168	.641	.044	.004	.405	-.230	-.184	.405	-.142	-1.446	0.081	0.8	1.0	0.9	1.1	A-	
69	615324	3	794	.455	.455	.214	.204	.122	.005	.280	.280	-.162	-.079	-.080	-0.572	0.078	4.5	1.1	5.7	1.3	A-	A+
70	615319	3	816	.590	.590	.165	.098	.143	.004	.506	.506	-.218	-.211	-.293	-1.137	0.082	-3.0	0.9	-2.2	0.9	A-	
71	617274	3	802	.526	.340	.074	.056	.526	.004	.336	-.119	-.181	-.207	.336	-0.855	0.078	3.6	1.1	3.3	1.2	A+	
72	615322	3	1593	.374	.186	.232	.374	.206	.002	.363	-.148	-.098	.363	-.163	-0.156	0.058	1.0	1.0	1.6	1.1	A-	A-
73	615358	3	5599	.953	.029	.006	.011	.953	.002	.381	-.252	-.150	-.174	.381	-4.489	0.072	-2.0	0.9	-6.6	0.5	A+	B-
74	615360	3	5599	.332	.087	.264	.314	.332	.003	.360	-.102	-.232	-.060	.360	0.090	0.031	1.2	1.0	3.8	1.1	A+	A-
75	615374	3	816	.925	.025	.016	.925	.034	.000	.245	-.213	-.131	.245	-.084	-3.846	0.147	-0.4	1.0	-0.8	0.8	A+	
76	615373	3	5599	.683	.075	.683	.089	.147	.006	.395	-.145	.395	-.185	-.220	-1.740	0.032	1.4	1.0	0.2	1.0	A+	A+
77	615355	3	797	.753	.084	.053	.103	.753	.008	.450	-.184	-.191	-.245	.450	-2.259	0.093	-0.6	1.0	-0.4	1.0	A+	A-
78	615357	3	794	.455	.306	.042	.455	.194	.004	.428	-.236	-.167	.428	-.149	-0.590	0.078	-1.2	1.0	0.2	1.0	A-	A-
79	615366	3	794	.902	.902	.026	.049	.020	.003	.391	.391	-.253	-.170	-.177	-3.468	0.129	-0.6	0.9	-1.6	0.8	A+	A+
80	615372	3	794	.840	.048	.054	.840	.053	.005	.464	-.198	-.256	.464	-.222	-2.828	0.106	-1.7	0.9	-1.4	0.8	A-	C-
81	615356	3	794	.271	.271	.233	.183	.309	.005	.194	.194	-.199	-.134	.145	0.394	0.087	4.3	1.2	3.8	1.3	A-	A-
82	615359	3	802	.560	.560	.201	.039	.197	.004	.403	.403	-.269	-.192	-.097	-1.021	0.079	1.0	1.0	1.0	1.0	A+	
83	615381	3	802	.907	.032	.032	.026	.907	.003	.442	-.212	-.250	-.206	.442	-3.482	0.130	-1.5	0.9	-1.8	0.7	A-	
84	615367	3	800	.809	.809	.025	.029	.136	.001	.445	.445	-.253	-.269	-.243	-2.535	0.098	-1.5	0.9	-1.9	0.8	A+	A-
85	615354	3	800	.735	.163	.026	.073	.735	.004	.412	-.212	-.215	-.217	.412	-2.010	0.088	-0.2	1.0	-0.1	1.0	A-	A-
86	615364	3	796	.511	.511	.173	.212	.103	.000	.271	.271	-.178	-.036	-.177	-0.895	0.077	4.8	1.1	4.9	1.2	A+	
87	615369	3	796	.682	.106	.188	.682	.023	.001	.360	-.266	-.201	.360	-.048	-1.769	0.083	1.2	1.1	1.0	1.1	A+	
88	615365	3	794	.802	.105	.802	.049	.042	.003	.353	-.311	.353	-.051	-.134	-2.536	0.097	0.2	1.0	-0.2	1.0	A-	A-
89	615371	3	794	.791	.791	.030	.160	.018	.001	.240	.240	-.126	-.106	-.226	-2.426	0.094	2.3	1.1	1.6	1.1	A-	A-
90	615363	3	1594	.256	.359	.136	.256	.245	.004	.215	-.086	-.155	.215	.030	0.484	0.062	2.6	1.1	5.6	1.3	A+	A+
91	615368	3	794	.199	.325	.161	.199	.310	.005	.062	.121	-.154	.062	-.020	0.813	0.096	3.0	1.2	4.6	1.5	A+	A+
92	617095	4	1114	.686	.199	.065	.686	.046	.005	.359	-.245	-.158	.359	-.103	-1.357	0.070	0.1	1.0	-0.3	1.0	A-	A+
93	617099	4	541	.638	.153	.638	.109	.096	.004	.413	-.276	.413	-.174	-.079	-1.123	0.097	-0.9	1.0	-1.1	0.9	C+	
94	617084	4	541	.442	.442	.098	.375	.080	.006	.286	.286	-.209	-.056	-.131	-0.299	0.093	2.2	1.1	1.8	1.1	A+	
95	617096	4	1103	.638	.099	.075	.638	.181	.006	.433	-.276	-.156	.433	-.197	-1.136	0.067	-3.3	0.9	-2.2	0.9	A-	B-
96	617101	4	544	.371	.156	.257	.211	.371	.004	.350	-.122	-.073	-.179	.350	0.085	0.095	-0.2	1.0	0.4	1.0	A-	B+
97	617091	4	541	.671	.091	.671	.085	.148	.006	.462	-.304	.462	-.180	-.180	-1.340	0.102	-1.6	0.9	-1.7	0.9	C+	
98	617105	4	541	.778	.778	.072	.054	.092	.004	.448	.448	-.213	-.209	-.232	-1.980	0.114	-1.0	0.9	-1.8	0.8	A+	
99	617085	4	5980	.922	.022	.020	.922	.034	.003	.351	-.189	-.173	.351	-.159	-3.399	0.052	-1.4	0.9	-4.8	0.7	A-	A-
100	617093	4	5980	.768	.768	.021	.090	.117	.004	.463	.463	-.174	-.250	-.255	-1.911	0.033	-6.0	0.9	-7.2	0.8	A-	B-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
101	617106	4	541	.824	.089	.009	.824	.074	.004	.389	-.268	-.153	.389	-.157	-2.379	0.125	-0.7	1.0	-0.9	0.9	A+	
102	617094	4	1080	.465	.044	.431	.465	.055	.006	.442	-.212	-.227	.442	-.204	-0.320	0.067	-2.6	0.9	-2.3	0.9	A-	B-
103	617107	4	539	.520	.520	.152	.067	.262	.000	.323	.323	-.167	-.259	-.083	-0.587	0.095	2.3	1.1	1.9	1.1	A+	
104	617108	4	552	.654	.140	.654	.098	.105	.004	.367	-.144	.367	-.201	-.159	-1.262	0.099	0.1	1.0	0.2	1.0	A+	
105	617083	4	562	.790	.790	.027	.037	.146	.000	.329	.329	-.203	-.216	-.171	-1.889	0.110	0.0	1.0	0.1	1.0	A-	A-
106	617109	4	562	.973	.007	.973	.013	.007	.000	.235	-.087	.235	-.181	-.126	-4.453	0.282	-0.1	1.0	-1.4	0.5	A+	A-
107	617097	4	541	.630	.630	.024	.292	.052	.002	.395	.395	-.076	-.272	-.195	-1.161	0.095	-1.6	0.9	-0.7	1.0	C+	
108	617110	4	541	.634	.081	.189	.634	.089	.007	.395	-.172	-.274	.395	-.064	-1.217	0.095	-1.1	1.0	-1.3	0.9	A-	
109	617086	4	541	.882	.882	.041	.026	.046	.006	.453	.453	-.203	-.241	-.197	-2.807	0.142	-1.3	0.9	-2.0	0.7	A+	
110	617111	4	541	.828	.031	.828	.085	.048	.007	.412	-.222	.412	-.157	-.184	-2.311	0.122	-0.9	0.9	-0.7	0.9	A+	
111	617100	4	539	.915	.032	.039	.915	.011	.004	.333	-.213	-.118	.333	-.170	-3.294	0.163	-0.3	1.0	-0.9	0.8	A-	
112	617104	4	539	.338	.338	.213	.260	.187	.002	.152	.152	-.184	.021	.016	0.251	0.098	4.5	1.2	5.1	1.4	A+	
113	617087	4	539	.922	.011	.052	.922	.011	.004	.305	-.117	-.138	.305	-.210	-3.469	0.173	-0.3	1.0	-0.6	0.9	A+	
114	617119	4	539	.714	.714	.186	.028	.065	.007	.467	.467	-.241	-.222	-.258	-1.653	0.104	-1.7	0.9	-1.6	0.9	A+	
115	617088	4	544	.478	.478	.066	.085	.368	.004	.311	.311	-.207	-.097	-.118	-0.433	0.092	2.0	1.1	1.9	1.1	A-	A-
116	617113	4	544	.460	.221	.460	.215	.101	.004	.463	-.316	.463	-.110	-.116	-0.347	0.092	-3.0	0.9	-2.4	0.9	A-	A-
117	617118	4	544	.210	.131	.327	.320	.210	.013	.108	-.164	-.020	.076	.108	0.966	0.111	2.3	1.1	3.6	1.4	A+	A-
118	617117	4	541	.634	.139	.634	.087	.139	.002	.429	-.157	.429	-.270	-.218	-1.150	0.096	-1.2	1.0	-1.5	0.9	A+	
119	617114	4	541	.771	.100	.056	.074	.771	.000	.446	-.253	-.255	-.204	.446	-1.903	0.109	-1.8	0.9	-2.6	0.8	A+	
120	617103	4	539	.679	.056	.679	.200	.059	.006	.402	-.201	.402	-.195	-.142	-1.420	0.101	0.2	1.0	-0.2	1.0	A+	
121	617090	4	539	.518	.045	.161	.518	.269	.007	.397	-.216	-.151	.397	-.131	-0.611	0.094	-0.2	1.0	-0.1	1.0	A-	
122	617115	4	539	.570	.323	.052	.048	.570	.007	.338	-.113	-.153	-.189	.338	-0.863	0.095	2.0	1.1	2.7	1.1	A-	
123	617116	4	539	.629	.629	.095	.080	.187	.009	.518	.518	-.223	-.244	-.193	-1.165	0.098	-3.2	0.9	-3.3	0.8	A+	
124	617092	4	541	.719	.070	.061	.719	.144	.006	.352	-.173	-.178	.352	-.159	-1.614	0.106	0.8	1.0	-0.3	1.0	B+	
125	617102	4	541	.142	.083	.340	.433	.142	.002	.176	-.235	.078	-.067	.176	1.663	0.134	1.0	1.1	1.6	1.2	B-	
126	617112	4	539	.442	.130	.317	.108	.442	.004	.412	-.209	-.111	-.213	.412	-0.268	0.094	-1.0	1.0	0.2	1.0	A-	
127	617089	4	541	.595	.028	.336	.039	.595	.002	.238	-.111	-.118	-.219	.238	-0.949	0.095	4.0	1.1	3.5	1.2	A+	
128	617244	4	562	.383	.383	.151	.306	.157	.004	.311	.311	-.190	-.078	-.121	0.186	0.093	1.7	1.1	2.1	1.1	A-	A+
129	617249	4	544	.465	.090	.210	.465	.230	.006	.382	-.148	-.256	.382	-.057	-0.378	0.092	-0.3	1.0	0.1	1.0	A-	A+
130	617245	4	541	.364	.344	.063	.224	.364	.006	.310	-.217	-.032	-.054	.310	0.073	0.095	0.6	1.0	1.4	1.1	A-	
131	617255	4	541	.573	.255	.573	.056	.111	.006	.289	-.138	.289	-.163	-.076	-0.810	0.094	2.8	1.1	2.1	1.1	A-	
132	617253	4	562	.399	.183	.399	.167	.249	.002	.174	-.100	.174	-.140	.016	0.119	0.093	4.7	1.2	5.9	1.3	A+	A+
133	617258	4	541	.704	.061	.192	.704	.041	.002	.430	-.213	-.234	.430	-.211	-1.503	0.104	-0.9	1.0	-1.4	0.9	A-	
134	617248	4	5980	.437	.229	.030	.300	.437	.004	.416	-.191	-.198	-.172	.416	-0.180	0.028	-3.6	1.0	-3.1	1.0	A+	A-
135	617250	4	5980	.899	.899	.019	.039	.040	.004	.296	.296	-.146	-.127	-.144	-3.065	0.046	0.4	1.0	-1.0	0.9	A-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
136	617269	4	541	.418	.366	.083	.129	.418	.004	.364	-.062	-.234	-.204	.364	-0.011	0.097	0.3	1.0	0.4	1.0	A-	
137	617262	4	541	.246	.373	.237	.246	.137	.007	.204	-.087	-.055	.204	-.004	0.969	0.111	2.5	1.2	2.2	1.3	A+	
138	617264	4	541	.826	.019	.826	.076	.070	.009	.375	-.148	.375	-.216	-.156	-2.436	0.127	-0.2	1.0	0.4	1.1	A-	
139	617270	4	541	.531	.177	.203	.531	.080	.009	.398	-.221	-.171	.398	-.074	-0.614	0.097	0.5	1.0	0.8	1.0	A-	
140	617265	4	539	.366	.087	.260	.366	.280	.007	.201	-.164	.027	.201	-.136	0.151	0.098	4.1	1.2	5.2	1.4	A+	
141	617261	4	552	.286	.496	.286	.067	.147	.004	.296	-.043	.296	-.148	-.183	0.721	0.106	1.4	1.1	1.8	1.2	A+	
142	617266	4	552	.788	.788	.071	.118	.020	.004	.390	.390	-.175	-.242	-.146	-2.093	0.114	-0.8	1.0	-1.5	0.8	A-	
143	617272	4	552	.404	.147	.228	.404	.216	.005	.435	-.188	-.189	.435	-.122	0.045	0.098	-1.0	1.0	-0.5	1.0	B-	
144	617275	4	562	.548	.548	.146	.061	.244	.002	.395	.395	-.248	-.177	-.150	-0.593	0.091	-0.9	1.0	-0.7	1.0	A+	A+
145	617254	4	541	.887	.046	.037	.887	.024	.006	.362	-.176	-.214	.362	-.135	-2.928	0.145	-0.7	0.9	-1.5	0.8	A+	
146	617276	4	541	.381	.324	.141	.381	.146	.009	.234	.022	-.198	.234	-.104	-0.025	0.095	3.1	1.1	3.5	1.2	A-	
147	617277	4	541	.632	.098	.632	.076	.185	.009	.309	-.083	.309	-.079	-.178	-1.110	0.097	2.1	1.1	2.2	1.1	A+	
148	617256	4	539	.674	.059	.674	.232	.033	.002	.326	-.182	.326	-.131	-.238	-1.420	0.100	1.4	1.1	1.2	1.1	A-	
149	617247	4	539	.887	.035	.887	.041	.033	.004	.307	-.221	.307	-.133	-.075	-2.966	0.145	0.4	1.0	-0.3	0.9	A+	
150	617267	4	541	.930	.030	.930	.026	.015	.000	.272	-.152	.272	-.172	-.137	-3.383	0.173	-0.2	1.0	-1.6	0.7	A+	
151	617251	4	541	.762	.113	.762	.094	.031	.000	.326	-.169	.326	-.205	-.146	-1.855	0.108	0.4	1.0	-0.1	1.0	B+	
152	617268	4	539	.687	.015	.687	.130	.161	.007	.411	-.155	.411	-.146	-.225	-1.451	0.101	-0.1	1.0	-1.0	0.9	A-	
153	617252	4	539	.729	.063	.126	.074	.729	.007	.390	-.213	-.087	-.201	.390	-1.722	0.106	0.3	1.0	0.7	1.1	B+	
154	617246	4	541	.433	.102	.213	.433	.246	.007	.439	-.087	-.323	.439	-.060	-0.143	0.094	-2.0	0.9	-1.6	0.9	A-	
155	617259	4	541	.410	.144	.211	.410	.229	.006	.285	-.179	-.171	.285	.012	0.012	0.098	3.1	1.1	4.0	1.3	A+	
156	617257	4	544	.579	.254	.053	.107	.579	.007	.421	-.146	-.176	-.274	.421	-0.911	0.094	-1.5	1.0	-1.0	1.0	A+	A+
157	617271	4	539	.518	.308	.518	.108	.067	.000	.393	-.137	.393	-.233	-.246	-0.577	0.095	-0.4	1.0	-0.5	1.0	B-	
158	617260	4	539	.245	.097	.213	.442	.245	.004	.133	-.172	-.154	.122	.133	0.845	0.108	2.2	1.1	2.1	1.2	A-	
159	617061	4	1101	.606	.606	.232	.116	.041	.006	.334	.334	-.117	-.161	-.192	-0.968	0.067	2.1	1.1	2.0	1.1	B+	A-
160	615621	4	1080	.184	.184	.038	.326	.446	.006	.155	.155	-.189	-.101	.106	1.197	0.084	1.8	1.1	4.2	1.4	A+	A+
161	615625	4	544	.708	.029	.066	.708	.191	.006	.373	-.207	-.222	.373	-.149	-1.575	0.102	0.1	1.0	-0.2	1.0	A-	A-
162	615632	4	539	.610	.121	.147	.121	.610	.002	.463	-.212	-.230	-.195	.463	-1.075	0.096	-1.9	0.9	-2.1	0.9	A+	
163	615627	4	539	.289	.468	.030	.206	.289	.007	.203	.003	-.063	-.106	.203	0.537	0.102	2.8	1.1	3.5	1.3	A+	
164	617071	4	539	.356	.215	.098	.323	.356	.007	.208	-.215	.009	.007	.208	0.134	0.097	4.0	1.2	4.0	1.3	B+	
165	615630	4	5980	.437	.399	.027	.437	.134	.004	.264	-.080	-.161	.264	-.153	-0.181	0.028	9.9	1.1	9.8	1.2	A+	A-
166	615624	4	5980	.884	.009	.064	.040	.884	.005	.290	-.102	-.198	-.089	.290	-2.909	0.044	0.4	1.0	0.0	1.0	A-	A-
167	615636	4	5980	.363	.363	.138	.335	.157	.008	.305	.305	-.212	-.091	-.034	0.178	0.029	4.9	1.1	5.3	1.1	A+	A+
168	615628	4	562	.875	.023	.091	.011	.875	.000	.338	-.204	-.230	-.145	.338	-2.586	0.134	-0.5	1.0	-1.1	0.8	B+	A-
169	615620	4	562	.781	.781	.135	.032	.052	.000	.291	.291	-.120	-.203	-.196	-1.829	0.108	0.7	1.0	0.3	1.0	A+	A-
170	617067	4	562	.648	.046	.648	.265	.041	.000	.338	-.232	.338	-.165	-.202	-1.071	0.094	0.5	1.0	0.5	1.0	A-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
171	615629	4	541	.747	.013	.747	.229	.009	.002	.229	-.136	.229	-.151	-.093	-1.789	0.104	1.6	1.1	1.2	1.1	A+	
172	617063	4	541	.551	.081	.551	.244	.118	.006	.381	-.181	.381	-.167	-.157	-0.813	0.092	-0.7	1.0	-0.8	1.0	A+	
173	617076	4	541	.407	.181	.124	.281	.407	.007	.356	-.174	-.218	-.041	.356	-0.148	0.094	0.3	1.0	-0.3	1.0	A+	
174	615631	4	541	.348	.081	.129	.348	.438	.004	.224	-.153	-.219	.224	.062	0.281	0.097	3.6	1.1	3.8	1.3	A-	
175	615622	4	541	.677	.137	.044	.677	.133	.009	.345	-.149	-.264	.345	-.093	-1.345	0.100	0.5	1.0	1.3	1.1	A-	
176	617064	4	541	.848	.046	.848	.037	.061	.007	.456	-.175	.456	-.214	-.220	-2.485	0.128	-1.2	0.9	-2.3	0.7	A-	
177	617077	4	541	.423	.320	.423	.068	.181	.007	.335	-.046	.335	-.233	-.133	-0.099	0.094	1.1	1.0	1.9	1.1	A-	
178	615623	4	539	.920	.030	.920	.020	.028	.002	.444	-.196	.444	-.193	-.291	-3.382	0.168	-1.2	0.9	-2.7	0.5	A+	
179	615635	4	539	.677	.206	.050	.063	.677	.004	.365	-.132	-.231	-.206	.365	-1.428	0.100	0.6	1.0	0.7	1.0	A+	
180	615633	4	544	.728	.048	.728	.136	.086	.002	.367	-.162	.367	-.081	-.319	-1.674	0.103	-0.3	1.0	0.0	1.0	A+	A-
181	615637	4	544	.621	.074	.621	.204	.097	.004	.368	-.152	.368	-.110	-.251	-1.124	0.095	0.2	1.0	0.4	1.0	A+	A-
182	617065	4	544	.737	.175	.737	.033	.052	.004	.431	-.276	.431	-.220	-.117	-1.739	0.105	-1.1	0.9	-1.4	0.9	A-	A-
183	617081	4	544	.410	.153	.410	.204	.228	.006	.260	-.161	.260	-.268	.140	-0.125	0.093	2.7	1.1	3.3	1.2	A+	B-
184	615634	4	541	.734	.734	.142	.081	.043	.000	.325	.325	-.169	-.210	-.134	-1.664	0.104	0.3	1.0	-0.3	1.0	A-	
185	615626	4	541	.793	.011	.141	.056	.793	.000	.299	-.097	-.180	-.211	.299	-2.038	0.112	0.2	1.0	0.4	1.0	A-	
186	615638	4	541	.484	.139	.484	.257	.118	.002	.349	-.198	.349	-.164	-.103	-0.436	0.093	1.3	1.0	1.2	1.1	A-	
187	617073	4	541	.732	.732	.107	.068	.092	.000	.423	.423	-.230	-.181	-.244	-1.664	0.104	-1.6	0.9	-1.6	0.9	A-	
188	617082	4	541	.329	.248	.329	.113	.309	.002	.299	-.117	.299	-.142	-.095	0.353	0.099	1.8	1.1	2.3	1.2	A-	
189	617098	4	541	.612	.612	.129	.026	.233	.000	.405	.405	-.236	-.230	-.193	-1.034	0.095	-0.7	1.0	-0.3	1.0	C-	
190	617066	4	539	.763	.117	.058	.763	.054	.009	.434	-.211	-.179	.434	-.149	-1.931	0.111	-0.6	1.0	-0.7	0.9	A-	
191	617060	4	539	.534	.134	.534	.195	.132	.006	.368	-.201	.368	-.052	-.218	-0.686	0.094	0.8	1.0	1.2	1.1	A+	
192	617074	4	539	.625	.223	.035	.110	.625	.007	.455	-.207	-.179	-.196	.455	-1.143	0.097	-1.3	1.0	-1.2	0.9	A+	
193	617068	4	541	.614	.035	.614	.301	.044	.006	.321	-.218	.321	-.166	-.115	-1.111	0.094	0.8	1.0	0.8	1.0	A+	
194	617075	4	562	.514	.514	.134	.253	.094	.005	.348	.348	-.243	-.125	-.105	-0.441	0.091	0.9	1.0	1.5	1.1	A-	A-
195	617072	4	544	.472	.158	.193	.472	.171	.006	.406	-.242	-.218	.406	-.021	-0.412	0.092	-1.1	1.0	-0.8	1.0	A-	A+
196	617080	4	539	.234	.058	.520	.234	.186	.004	.015	-.207	.118	.015	-.001	0.829	0.108	3.9	1.2	7.0	1.8	A-	
197	617070	4	541	.702	.129	.085	.702	.076	.007	.444	-.257	-.145	.444	-.161	-1.478	0.102	-1.3	0.9	-1.5	0.9	A-	
198	617229	4	541	.760	.022	.142	.760	.070	.006	.453	-.165	-.269	.453	-.216	-1.818	0.108	-1.7	0.9	-2.4	0.8	A+	
199	617239	4	1083	.457	.147	.236	.457	.156	.004	.502	-.233	-.187	.502	-.192	-0.334	0.066	-5.9	0.9	-4.4	0.9	B-	A+
200	617233	4	541	.710	.037	.080	.174	.710	.000	.443	-.207	-.174	-.303	.443	-1.557	0.102	-1.9	0.9	-2.1	0.8	A+	
201	617238	4	5980	.325	.357	.221	.325	.093	.004	.437	-.194	-.173	.437	-.083	0.390	0.030	-6.3	0.9	-3.2	0.9	B-	A-
202	617243	4	5980	.943	.019	.019	.943	.016	.004	.369	-.153	-.187	.369	-.181	-3.849	0.062	-1.9	0.9	-6.4	0.5	A+	A-
203	617232	4	5980	.723	.134	.723	.108	.030	.006	.408	-.288	.408	-.108	-.191	-1.643	0.031	-2.4	1.0	-2.2	1.0	A+	A+
204	617227	4	1101	.800	.023	.096	.078	.800	.003	.406	-.171	-.264	-.186	.406	-2.085	0.081	-1.5	0.9	-1.4	0.9	A+	B-
205	617235	4	1103	.776	.174	.038	.776	.012	.000	.374	-.304	-.174	.374	-.068	-1.866	0.077	-1.0	1.0	-1.4	0.9	A-	C-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
206	617228	4	1082	.534	.016	.214	.534	.230	.006	.256	-.199	-.162	.256	-.028	-0.677	0.066	5.5	1.1	4.5	1.2	A-	A+
207	617236	4	541	.501	.501	.170	.155	.170	.004	.261	.261	-.175	-.103	-.037	-0.569	0.092	2.7	1.1	2.4	1.1	A+	
208	617230	4	1080	.442	.166	.442	.291	.098	.004	.329	-.156	.329	-.100	-.152	-0.286	0.066	1.4	1.0	1.1	1.0	A-	A+
209	617241	4	1080	.806	.806	.074	.107	.011	.003	.252	.252	-.222	-.052	-.092	-2.184	0.083	1.7	1.1	2.7	1.2	A-	A+
210	617242	4	539	.777	.777	.117	.084	.015	.007	.445	.445	-.236	-.223	-.065	-2.025	0.113	-0.9	0.9	-1.3	0.9	A-	
211	617231	4	1106	.756	.097	.082	.756	.062	.003	.370	-.168	-.226	.370	-.149	-1.764	0.075	-0.6	1.0	-0.2	1.0	A+	A-
212	617237	4	541	.529	.529	.111	.307	.048	.006	.416	.416	-.118	-.265	-.101	-0.598	0.093	-1.0	1.0	-0.7	1.0	A+	
213	617240	4	544	.410	.092	.360	.410	.134	.004	.281	-.188	-.083	.281	-.071	-0.112	0.093	2.5	1.1	2.4	1.1	A-	A+
214	617234	4	539	.531	.097	.286	.078	.531	.009	.404	-.054	-.189	-.212	.404	-0.675	0.094	-0.4	1.0	-0.4	1.0	A+	
215	617311	5	614	.660	.660	.067	.081	.181	.011	.407	.407	-.190	-.163	-.181	-1.224	0.092	-0.7	1.0	-0.9	1.0	A-	A+
216	615950	5	619	.659	.105	.659	.126	.105	.005	.439	-.246	.439	-.216	-.177	-1.224	0.090	-2.1	0.9	-2.0	0.9	C+	
217	617504	5	633	.254	.562	.254	.070	.109	.005	.247	.019	.247	-.185	-.195	0.793	0.095	0.5	1.0	0.9	1.1	A+	
218	615943	5	633	.570	.046	.218	.570	.156	.010	.418	-.201	-.255	.418	-.110	-0.713	0.085	-2.3	0.9	-2.8	0.9	A-	
219	617502	5	619	.446	.084	.357	.446	.108	.005	.396	-.152	-.211	.396	-.151	-0.215	0.086	-0.9	1.0	-0.7	1.0	A-	
220	615948	5	5562	.254	.313	.080	.350	.254	.004	.170	.047	-.181	-.083	.170	0.839	0.033	6.8	1.1	8.2	1.2	A-	A-
221	617322	5	609	.348	.348	.174	.191	.286	.002	.289	.289	-.155	-.181	-.010	0.350	0.092	0.7	1.0	0.5	1.0	A-	
222	617314	5	5562	.305	.305	.389	.154	.147	.006	.360	.360	-.178	-.119	-.066	0.543	0.031	-2.0	1.0	-0.5	1.0	A-	A+
223	616318	5	608	.806	.806	.082	.059	.049	.003	.463	.463	-.348	-.216	-.123	-2.147	0.112	-1.0	0.9	-1.7	0.8	A-	B-
224	617503	5	615	.740	.036	.132	.091	.740	.002	.447	-.194	-.285	-.221	.447	-1.662	0.098	-1.3	0.9	-1.9	0.9	B+	A-
225	615951	5	615	.688	.688	.138	.098	.067	.010	.374	.374	-.216	-.158	-.133	-1.385	0.094	-0.7	1.0	0.5	1.0	A+	A-
226	617313	5	614	.476	.145	.181	.476	.189	.010	.442	-.104	-.202	.442	-.202	-0.323	0.087	-2.3	0.9	-2.0	0.9	B+	A+
227	615954	5	614	.684	.054	.068	.187	.684	.007	.545	-.223	-.300	-.258	.545	-1.337	0.093	-4.2	0.8	-4.5	0.8	A+	B-
228	617505	5	614	.604	.604	.160	.121	.104	.011	.431	.431	-.261	-.142	-.109	-0.938	0.089	-1.3	1.0	-1.4	0.9	A+	A-
229	617730	5	619	.250	.247	.330	.171	.250	.002	.247	-.088	-.093	-.066	.247	0.796	0.098	1.1	1.1	2.0	1.2	B-	
230	617315	5	619	.606	.606	.110	.081	.200	.003	.415	.415	-.169	-.271	-.172	-0.954	0.088	-1.3	1.0	-1.9	0.9	A+	
231	615955	5	619	.448	.448	.131	.187	.229	.005	.343	.343	-.135	-.172	-.119	-0.221	0.086	0.8	1.0	0.8	1.0	A-	
232	615944	5	619	.475	.475	.102	.372	.049	.003	.457	.457	-.233	-.251	-.138	-0.345	0.086	-2.9	0.9	-2.8	0.9	A+	
233	617316	5	633	.313	.313	.182	.297	.205	.003	.343	.343	-.105	-.171	-.100	0.484	0.089	-1.3	1.0	-0.9	1.0	A+	
234	617727	5	633	.743	.030	.163	.062	.743	.003	.428	-.176	-.224	-.277	.428	-1.560	0.095	-2.1	0.9	-2.3	0.9	A-	
235	615945	5	633	.706	.706	.134	.049	.106	.005	.357	.357	-.157	-.277	-.131	-1.366	0.091	-0.9	1.0	-0.6	1.0	A+	
236	617320	5	611	.339	.339	.519	.041	.102	.000	.424	.424	-.326	-.099	-.060	0.354	0.090	-2.2	0.9	-1.8	0.9	A+	B-
237	615952	5	611	.705	.705	.113	.105	.074	.003	.429	.429	-.171	-.272	-.197	-1.387	0.093	-2.3	0.9	-1.7	0.9	B+	A-
238	617317	5	638	.408	.268	.408	.216	.107	.002	.302	-.080	.302	-.211	-.079	0.075	0.085	1.4	1.0	2.0	1.1	A-	B+
239	615953	5	638	.484	.135	.176	.484	.204	.002	.393	-.226	-.087	.393	-.211	-0.279	0.084	-1.2	1.0	-1.3	1.0	B-	A-
240	617321	5	638	.690	.114	.690	.082	.113	.002	.459	-.232	.459	-.267	-.198	-1.254	0.090	-2.9	0.9	-2.9	0.8	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
241	615949	5	633	.218	.384	.193	.218	.199	.006	.125	.099	-.155	.125	-.056	1.012	0.099	1.7	1.1	3.3	1.3	A-	
242	615946	5	619	.338	.136	.338	.207	.317	.003	.320	-.196	.320	-.187	-.003	0.313	0.090	0.8	1.0	0.8	1.0	A-	
243	617318	5	633	.352	.346	.352	.120	.175	.006	.217	-.165	.217	-.099	.025	0.282	0.087	1.8	1.1	2.6	1.1	A-	
244	617729	5	1225	.331	.189	.311	.165	.331	.005	.331	-.260	-.036	-.053	.331	0.389	0.064	0.3	1.0	1.0	1.0	A+	B-
245	617312	5	638	.397	.193	.232	.172	.397	.006	.274	-.094	-.181	-.043	.274	0.119	0.086	2.2	1.1	2.1	1.1	A-	A+
246	615962	5	609	.726	.138	.726	.062	.071	.003	.421	-.213	.421	-.267	-.174	-1.545	0.098	-1.4	0.9	-0.7	0.9	A+	
247	617330	5	638	.495	.113	.248	.141	.495	.003	.532	-.180	-.371	-.138	.532	-0.334	0.084	-6.1	0.8	-5.3	0.8	A+	A-
248	617338	5	619	.624	.134	.079	.624	.160	.003	.449	-.142	-.244	.449	-.267	-1.037	0.088	-2.6	0.9	-2.6	0.9	A-	
249	615965	5	614	.412	.108	.083	.412	.393	.005	.441	-.039	-.217	.441	-.246	-0.006	0.088	-2.5	0.9	-2.2	0.9	A-	A-
250	615964	5	609	.332	.123	.243	.332	.294	.008	.287	-.168	-.131	.287	-.037	0.437	0.093	0.9	1.0	2.0	1.1	A-	
251	616322	5	5562	.505	.505	.127	.278	.087	.003	.373	.373	-.216	-.141	-.148	-0.424	0.029	-1.6	1.0	-2.0	1.0	A-	A-
252	615961	5	5562	.463	.463	.277	.126	.130	.005	.402	.402	-.113	-.198	-.213	-0.231	0.029	-3.4	1.0	-1.5	1.0	C-	A-
253	617341	5	609	.215	.126	.264	.384	.215	.010	.167	-.176	-.138	.135	.167	1.119	0.105	2.1	1.1	2.7	1.3	A+	
254	617343	5	608	.173	.173	.229	.240	.352	.007	.202	.202	-.047	-.160	.053	1.461	0.115	0.7	1.0	0.8	1.1	A-	A-
255	617336	5	614	.611	.121	.611	.101	.161	.007	.392	-.190	.392	-.067	-.232	-0.961	0.089	-0.5	1.0	-0.8	1.0	A-	A-
256	617337	5	619	.485	.141	.147	.485	.225	.003	.322	-.172	-.109	.322	-.133	-0.390	0.086	1.7	1.1	1.3	1.1	A+	
257	617731	5	633	.570	.182	.570	.155	.085	.008	.392	-.187	.392	-.228	-.081	-0.711	0.084	-1.6	1.0	-2.1	0.9	A-	
258	617331	5	611	.540	.540	.228	.090	.138	.005	.491	.491	-.220	-.292	-.170	-0.588	0.086	-4.5	0.9	-4.2	0.9	A+	A-
259	617333	5	611	.709	.098	.709	.046	.141	.007	.359	-.137	.359	-.230	-.191	-1.418	0.094	-0.7	1.0	-0.7	1.0	A-	A+
260	617335	5	638	.477	.135	.149	.477	.238	.002	.349	-.168	-.080	.349	-.205	-0.243	0.084	0.5	1.0	-0.1	1.0	A+	A+
261	617340	5	638	.335	.249	.323	.335	.091	.002	.161	-.087	-.007	.161	-.116	0.426	0.089	4.3	1.2	3.6	1.2	A+	A+
262	617332	5	638	.698	.096	.698	.143	.060	.005	.386	-.166	.386	-.243	-.160	-1.308	0.091	-1.3	1.0	-0.5	1.0	A+	A-
263	615963	5	619	.312	.194	.205	.312	.286	.003	.299	.038	-.153	.299	-.187	0.448	0.092	1.0	1.0	1.6	1.1	A-	
264	617339	5	614	.226	.244	.204	.311	.226	.015	.282	-.093	-.123	.017	.282	0.973	0.102	0.4	1.0	1.9	1.2	A-	A+
265	617342	5	619	.280	.280	.263	.359	.094	.005	.285	.285	-.131	-.066	-.107	0.622	0.095	1.2	1.1	1.5	1.1	A+	
266	616317	5	611	.548	.034	.097	.548	.319	.002	.250	-.072	-.211	.250	-.098	-0.618	0.086	2.7	1.1	2.5	1.1	A+	A+
267	617304	5	608	.380	.262	.176	.380	.176	.007	.357	-.111	-.240	.357	-.056	0.164	0.091	0.7	1.0	1.7	1.1	A-	A-
268	615936	5	633	.713	.035	.191	.713	.062	.000	.447	-.245	-.267	.447	-.219	-1.381	0.092	-2.7	0.9	-2.8	0.9	B+	
269	617307	5	638	.430	.155	.249	.161	.430	.005	.392	-.148	-.113	-.233	.392	-0.033	0.085	-0.9	1.0	-1.1	1.0	A-	A-
270	615939	5	615	.563	.117	.563	.236	.078	.007	.532	-.226	.532	-.250	-.256	-0.740	0.088	-5.0	0.9	-4.5	0.8	A+	A+
271	617499	5	615	.524	.263	.524	.101	.111	.002	.339	-.080	.339	-.285	-.124	-0.452	0.087	0.0	1.0	0.8	1.0	A-	A+
272	615942	5	614	.896	.018	.059	.023	.896	.005	.364	-.181	-.172	-.146	.364	-2.899	0.141	-0.5	0.9	-1.3	0.8	A+	A+
273	615940	5	1220	.471	.109	.049	.471	.367	.004	.374	-.230	-.199	.374	-.137	-0.263	0.061	-1.0	1.0	-0.1	1.0	A+	A+
274	615937	5	5562	.561	.170	.106	.160	.561	.004	.464	-.213	-.204	-.214	.464	-0.686	0.029	-9.9	0.9	-8.4	0.9	A+	A-
275	615941	5	5562	.475	.241	.475	.122	.155	.007	.263	-.204	.263	-.105	.014	-0.293	0.029	8.5	1.1	8.6	1.1	A-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
276	615947	5	615	.870	.024	.080	.024	.870	.002	.363	-.155	-.232	-.169	.363	-2.506	0.125	-0.7	0.9	-2.0	0.7	A-	A+
277	617500	5	615	.615	.083	.140	.615	.161	.002	.376	-.195	-.212	.376	-.127	-0.886	0.089	-0.1	1.0	-0.4	1.0	A+	A+
278	617724	5	614	.446	.209	.217	.446	.121	.008	.406	-.076	-.192	.406	-.205	-0.177	0.087	-1.2	1.0	-1.1	1.0	A+	A-
279	617726	5	619	.701	.183	.032	.082	.701	.002	.501	-.336	-.160	-.257	.501	-1.431	0.093	-3.5	0.9	-3.0	0.8	A+	
280	617319	5	633	.403	.453	.403	.038	.103	.003	.268	-.063	.268	-.191	-.197	0.051	0.085	1.1	1.0	1.6	1.1	A+	
281	617308	5	611	.881	.087	.026	.881	.007	.000	.291	-.194	-.209	.291	-.080	-2.582	0.128	-0.5	1.0	-1.2	0.8	A-	A-
282	617306	5	638	.633	.221	.063	.082	.633	.002	.412	-.241	-.167	-.198	.412	-0.967	0.087	-2.0	0.9	-1.1	1.0	A+	A-
283	617309	5	638	.580	.241	.071	.580	.103	.005	.414	-.209	-.211	.414	-.184	-0.724	0.085	-1.8	1.0	-1.9	0.9	A-	A-
284	615938	5	611	.493	.077	.493	.144	.283	.003	.264	-.173	.264	-.210	-.012	-0.371	0.086	2.5	1.1	2.7	1.1	A+	A-
285	617725	5	614	.138	.207	.192	.138	.448	.015	-.027	-.111	-.109	-.027	.269	1.683	0.123	2.2	1.2	5.3	1.9	A+	A+
286	617501	5	614	.340	.340	.204	.178	.270	.008	.281	.281	-.160	-.129	.023	0.335	0.091	2.1	1.1	2.1	1.1	A-	A-
287	617310	5	633	.531	.289	.531	.057	.115	.008	.281	-.083	.281	-.236	-.096	-0.533	0.084	1.6	1.0	1.1	1.0	A+	
288	617305	5	619	.246	.283	.250	.246	.218	.003	.311	-.116	-.122	.311	-.052	0.823	0.099	0.1	1.0	1.4	1.1	A-	
289	617328	5	611	.668	.668	.136	.088	.108	.000	.497	.497	-.215	-.265	-.273	-1.181	0.090	-4.1	0.9	-3.8	0.8	A-	A+
290	615958	5	633	.608	.608	.081	.122	.183	.006	.310	.310	-.127	-.304	-.021	-0.882	0.086	0.3	1.0	0.4	1.0	A+	
291	616969	5	638	.666	.078	.666	.136	.118	.002	.300	-.204	.300	-.145	-.110	-1.134	0.089	0.9	1.0	0.8	1.0	A-	A+
292	617507	5	611	.408	.349	.088	.151	.408	.005	.194	.028	-.221	-.106	.194	0.018	0.087	4.3	1.1	3.6	1.2	A+	A+
293	616320	5	5562	.831	.831	.081	.071	.016	.001	.381	.381	-.255	-.172	-.190	-2.216	0.038	-3.2	0.9	-4.9	0.8	A-	A-
294	616971	5	5562	.527	.081	.271	.527	.117	.005	.338	-.246	-.164	.338	-.057	-0.529	0.029	1.8	1.0	1.3	1.0	A-	A-
295	615956	5	5562	.399	.067	.491	.039	.399	.005	.298	-.193	-.104	-.169	.298	0.069	0.029	4.8	1.1	4.2	1.1	A+	A+
296	615959	5	5562	.630	.169	.122	.630	.072	.007	.421	-.184	-.191	.421	-.220	-1.028	0.030	-5.0	0.9	-5.0	0.9	A+	A-
297	615957	5	608	.145	.169	.329	.145	.352	.005	.264	-.211	.062	.264	-.066	1.676	0.123	0.1	1.0	-0.1	1.0	A-	A-
298	616973	5	608	.549	.258	.091	.095	.549	.007	.410	-.195	-.211	-.147	.410	-0.672	0.089	-0.3	1.0	-0.9	1.0	C+	A-
299	616974	5	615	.395	.208	.218	.395	.177	.002	.222	-.083	-.163	.222	.005	0.157	0.089	2.6	1.1	1.6	1.1	A+	A+
300	615960	5	615	.607	.607	.278	.070	.042	.003	.340	.340	-.123	-.233	-.206	-0.853	0.089	0.4	1.0	0.5	1.0	A+	A+
301	616975	5	615	.468	.468	.156	.148	.223	.005	.302	.302	-.158	-.115	-.114	-0.298	0.087	2.0	1.1	1.4	1.1	A-	A-
302	616321	5	614	.710	.098	.147	.710	.041	.005	.516	-.187	-.337	.516	-.174	-1.473	0.095	-3.3	0.9	-3.9	0.8	A+	A-
303	617324	5	614	.446	.287	.098	.156	.446	.013	.466	-.194	-.156	-.172	.466	-0.192	0.087	-2.8	0.9	-2.9	0.9	A+	A-
304	617325	5	619	.399	.399	.176	.131	.291	.003	.409	.409	-.257	-.098	-.151	0.011	0.088	-1.5	1.0	-1.8	0.9	A-	
305	617506	5	619	.407	.176	.407	.247	.166	.003	.133	-.224	.133	-.099	.176	-0.029	0.087	6.2	1.2	5.8	1.3	A+	
306	617329	5	633	.223	.477	.103	.223	.193	.005	.028	.152	-.195	.028	-.048	0.983	0.099	2.8	1.2	5.1	1.4	A-	
307	616976	5	633	.273	.273	.261	.256	.201	.010	.114	.114	-.109	-.061	.104	0.683	0.093	2.8	1.1	3.1	1.2	A-	
308	616977	5	611	.224	.360	.131	.224	.282	.003	.203	-.170	-.031	.203	.033	0.998	0.102	1.0	1.1	2.3	1.2	A-	A+
309	616972	5	611	.146	.624	.144	.146	.079	.008	.042	.155	-.083	.042	-.190	1.572	0.119	1.6	1.1	3.9	1.5	A+	B+
310	617334	5	614	.266	.238	.223	.264	.266	.010	.185	-.115	-.107	.098	.185	0.741	0.097	2.9	1.1	3.7	1.3	A+	A+

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
311	616968	5	611	.306	.409	.069	.213	.306	.003	.289	-.190	-.165	.022	.289	0.518	0.092	1.0	1.0	0.6	1.0	A-	A-
312	616319	5	638	.488	.213	.193	.105	.488	.002	.307	-.190	-.039	-.188	.307	-0.293	0.084	1.5	1.0	2.0	1.1	A+	A-
313	616970	5	638	.641	.102	.641	.194	.061	.002	.219	-.143	.219	-.024	-.211	-1.009	0.087	3.1	1.1	2.5	1.1	A+	A+
314	617326	5	638	.301	.334	.320	.301	.042	.003	.349	-.134	-.123	.349	-.174	0.604	0.091	-0.3	1.0	0.4	1.0	A+	B+
315	617323	5	1226	.362	.075	.362	.479	.080	.004	.330	-.117	.330	-.194	-.078	0.226	0.063	0.2	1.0	1.5	1.1	A-	A-
316	617327	5	633	.209	.164	.218	.403	.209	.006	.056	-.120	-.081	.137	.056	1.072	0.101	2.4	1.1	3.5	1.3	A+	
317	617741	6	627	.729	.104	.729	.091	.059	.018	.563	-.281	.563	-.278	-.242	-1.338	0.097	-3.9	0.8	-4.4	0.7	A+	
318	615554	6	626	.534	.243	.083	.141	.534	.000	.375	-.138	-.150	-.249	.375	-0.250	0.085	-1.2	1.0	-1.0	1.0	A-	
319	615532	6	626	.864	.037	.864	.061	.034	.005	.450	-.231	.450	-.187	-.262	-2.265	0.125	-1.4	0.9	-2.7	0.7	A+	
320	615540	6	625	.635	.195	.123	.635	.045	.002	.471	-.217	-.295	.471	-.212	-0.729	0.088	-3.4	0.9	-3.5	0.9	A+	
321	617508	6	626	.582	.582	.235	.107	.075	.002	.344	.344	-.127	-.192	-.176	-0.292	0.086	-0.2	1.0	-0.3	1.0	A-	
322	615539	6	5636	.817	.817	.061	.086	.032	.004	.335	.335	-.146	-.231	-.060	-1.778	0.036	-1.4	1.0	-0.7	1.0	A-	A+
323	619628	6	627	.533	.034	.533	.260	.168	.006	.306	-.027	.306	-.123	-.159	-0.244	0.086	1.8	1.1	1.5	1.1	B-	
324	619307	6	1252	.427	.336	.102	.121	.427	.014	.339	-.025	-.176	-.230	.339	0.221	0.061	0.0	1.0	0.3	1.0	A+	A-
325	619124	6	5636	.546	.546	.098	.247	.103	.007	.437	.437	-.239	-.175	-.149	-0.290	0.029	-8.9	0.9	-8.6	0.9	A-	A-
326	619308	6	627	.526	.199	.182	.526	.093	.000	.448	-.221	-.192	.448	-.212	-0.219	0.085	-3.3	0.9	-3.1	0.9	A-	
327	617510	6	627	.266	.279	.247	.206	.266	.002	.267	-.022	-.118	-.148	.267	1.045	0.095	0.1	1.0	0.9	1.1	A-	
328	619305	6	627	.397	.294	.204	.397	.077	.029	.297	-.121	-.136	.297	-.108	0.314	0.088	0.6	1.0	0.8	1.0	A-	
329	619306	6	623	.178	.225	.178	.416	.173	.008	.254	-.082	.254	.034	-.108	1.655	0.109	-0.2	1.0	-0.3	1.0	A-	
330	619309	6	623	.273	.101	.273	.527	.092	.008	.115	-.144	.115	.105	-.076	1.051	0.095	2.2	1.1	3.3	1.2	A-	
331	617511	6	623	.368	.262	.177	.170	.368	.024	.413	.026	-.179	-.211	.413	0.539	0.088	-2.5	0.9	-2.2	0.9	A+	
332	619310	6	629	.547	.323	.547	.099	.027	.005	.361	-.155	.361	-.200	-.159	-0.239	0.086	-0.1	1.0	-0.4	1.0	A-	
333	619128	6	626	.709	.709	.042	.131	.113	.005	.354	.354	-.226	-.087	-.242	-1.119	0.093	-0.6	1.0	-0.9	1.0	A-	
334	615527	6	626	.447	.328	.097	.123	.447	.005	.380	-.103	-.179	-.222	.380	0.136	0.085	-1.3	1.0	-0.9	1.0	A-	
335	615541	6	626	.505	.105	.241	.505	.136	.013	.241	-.277	-.003	.241	-.010	-0.142	0.085	3.5	1.1	3.6	1.1	A+	
336	619129	6	627	.349	.239	.164	.244	.349	.003	.196	.018	-.069	-.170	.196	0.560	0.089	2.9	1.1	3.5	1.2	A+	
337	615528	6	627	.585	.155	.072	.585	.187	.002	.219	-.093	-.037	.219	-.154	-0.537	0.087	3.6	1.1	3.5	1.2	A+	
338	615542	6	627	.612	.120	.139	.612	.102	.027	.493	-.184	-.296	.493	-.143	-0.738	0.089	-2.9	0.9	-2.9	0.9	A+	
339	619125	6	626	.296	.296	.113	.185	.403	.003	.203	.203	-.114	-.081	-.008	1.067	0.092	1.2	1.1	2.5	1.2	A-	
340	615529	6	626	.374	.374	.113	.141	.345	.027	.251	.251	-.265	-.115	.108	0.621	0.088	2.2	1.1	2.3	1.1	A-	
341	619130	6	626	.214	.264	.307	.214	.185	.030	.059	-.027	-.077	.059	.191	1.538	0.103	2.3	1.1	4.2	1.4	B-	
342	619126	6	626	.615	.086	.131	.157	.615	.011	.443	-.207	-.148	-.209	.443	-0.688	0.088	-2.2	0.9	-2.3	0.9	B+	
343	615553	6	626	.695	.062	.695	.125	.109	.010	.424	-.179	.424	-.171	-.205	-1.096	0.093	-1.7	0.9	-1.7	0.9	C+	
344	617753	6	626	.613	.115	.113	.136	.613	.022	.476	-.169	-.237	-.183	.476	-0.717	0.089	-3.3	0.9	-2.7	0.9	A+	
345	619304	6	626	.324	.145	.351	.153	.324	.026	.366	-.166	.022	-.234	.366	0.671	0.091	-1.1	1.0	-0.7	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
346	619127	6	625	.674	.136	.674	.149	.042	.000	.372	-.284	.372	-.151	-.115	-0.914	0.090	-1.2	1.0	-0.5	1.0	A+	
347	617509	6	625	.586	.586	.088	.078	.246	.002	.363	.363	-.135	-.130	-.247	-0.494	0.086	-0.7	1.0	-0.4	1.0	A+	
348	615536	6	625	.347	.054	.080	.347	.510	.008	.194	-.224	-.118	.194	.001	0.599	0.089	2.8	1.1	3.4	1.2	A-	
349	615530	6	1253	.715	.050	.715	.152	.069	.015	.354	-.188	.354	-.160	-.095	-1.189	0.067	-0.4	1.0	0.0	1.0	A+	A+
350	615531	6	1253	.333	.144	.133	.373	.333	.018	.203	-.104	-.125	.038	.203	0.739	0.064	4.1	1.1	4.4	1.2	A-	A+
351	617533	6	1253	.194	.360	.049	.394	.194	.003	.171	-.012	-.202	-.014	.171	1.472	0.074	1.5	1.1	3.9	1.3	A+	B+
352	615594	6	626	.490	.169	.149	.189	.490	.003	.260	-.161	-.135	-.025	.260	-0.060	0.085	2.3	1.1	1.9	1.1	A+	
353	615603	6	627	.384	.043	.330	.225	.384	.018	.333	-.206	-.066	-.148	.333	0.367	0.088	0.6	1.0	0.7	1.0	A-	
354	615601	6	626	.727	.727	.168	.038	.059	.008	.336	.336	-.168	-.258	-.058	-1.059	0.096	0.0	1.0	0.1	1.0	A-	
355	619365	6	626	.842	.842	.066	.042	.042	.010	.454	.454	-.265	-.272	-.084	-2.086	0.118	-1.6	0.9	-1.9	0.8	A+	
356	615599	6	5636	.605	.222	.092	.605	.077	.005	.305	-.121	-.165	.305	-.121	-0.557	0.029	2.3	1.0	1.9	1.0	A-	A+
357	615590	6	627	.324	.239	.163	.324	.268	.006	.096	.031	-.049	.096	-.013	0.755	0.091	4.9	1.2	4.5	1.3	A-	
358	615600	6	1252	.682	.682	.068	.129	.115	.006	.342	.342	-.173	-.153	-.128	-0.973	0.065	-0.2	1.0	0.4	1.0	A-	A-
359	615602	6	627	.372	.420	.094	.372	.101	.014	.388	-.117	-.154	.388	-.126	0.497	0.089	-1.9	0.9	-1.2	0.9	A-	
360	615589	6	5636	.184	.189	.349	.265	.184	.014	.177	.015	-.068	-.021	.177	1.590	0.036	3.2	1.1	5.9	1.2	A+	A+
361	615591	6	627	.512	.112	.270	.107	.512	.000	.367	-.241	-.209	-.048	.367	-0.154	0.085	-0.1	1.0	0.0	1.0	A+	
362	619139	6	627	.330	.112	.386	.330	.147	.026	.204	-.205	.035	.204	-.116	0.656	0.091	3.0	1.1	4.1	1.2	A+	
363	619364	6	623	.154	.154	.361	.096	.380	.008	.008	.008	.025	-.005	.050	1.844	0.115	1.9	1.2	3.3	1.4	A-	
364	615592	6	623	.509	.509	.170	.117	.193	.011	.324	.324	-.108	-.199	-.027	-0.104	0.086	-0.4	1.0	-0.5	1.0	A-	
365	619142	6	623	.271	.271	.197	.241	.276	.014	.189	.189	-.080	-.124	.122	1.056	0.095	1.5	1.1	2.8	1.2	A-	
366	619363	6	629	.479	.479	.229	.162	.124	.006	.293	.293	-.084	-.165	-.089	0.074	0.086	2.4	1.1	2.5	1.1	A+	
367	615593	6	629	.448	.272	.448	.172	.100	.008	.257	.052	.257	-.175	-.200	0.216	0.086	3.3	1.1	3.1	1.1	A+	
368	619143	6	629	.580	.146	.124	.142	.580	.008	.456	-.244	-.209	-.129	.456	-0.406	0.087	-3.2	0.9	-3.1	0.9	A+	
369	619617	6	626	.264	.029	.264	.086	.620	.002	.142	-.190	.142	.036	-.063	1.054	0.095	2.2	1.1	3.3	1.2	A+	
370	619623	6	626	.374	.155	.090	.374	.372	.010	.151	-.027	-.212	.151	.053	0.472	0.087	4.4	1.2	5.1	1.2	A-	
371	619618	6	627	.426	.426	.201	.263	.109	.002	.220	.220	-.096	-.040	-.171	0.200	0.086	4.2	1.1	3.6	1.2	A-	
372	619625	6	627	.767	.030	.062	.139	.767	.002	.423	-.220	-.258	-.213	.423	-1.501	0.100	-1.7	0.9	-1.4	0.9	A+	
373	615595	6	627	.260	.169	.380	.177	.260	.014	.281	-.031	-.045	-.168	.281	1.022	0.096	0.7	1.0	0.9	1.1	A-	
374	615596	6	626	.808	.006	.011	.808	.169	.005	.335	-.128	-.110	.335	-.211	-1.555	0.108	-0.1	1.0	-0.7	0.9	A-	
375	619619	6	626	.318	.131	.395	.318	.142	.014	.123	-.070	.016	.123	.004	0.920	0.091	4.0	1.2	4.7	1.3	A+	
376	619626	6	626	.711	.711	.091	.136	.046	.016	.394	.394	-.177	-.178	-.106	-0.976	0.095	-0.9	1.0	-1.1	0.9	B-	
377	620237	6	626	.492	.232	.126	.492	.137	.013	.325	.016	-.215	.325	-.193	-0.097	0.086	0.7	1.0	0.7	1.0	A-	
378	619136	6	626	.308	.321	.308	.105	.259	.006	.246	-.013	.246	-.212	-.021	0.793	0.092	1.6	1.1	2.7	1.2	A+	
379	619622	6	626	.577	.198	.577	.097	.113	.014	.378	-.178	.378	-.203	-.054	-0.510	0.087	-0.4	1.0	-0.3	1.0	A-	
380	615588	6	626	.305	.134	.222	.305	.321	.018	.051	-.026	.081	.051	-.018	0.807	0.092	5.3	1.2	6.0	1.4	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
381	619137	6	625	.285	.190	.090	.434	.285	.002	.270	-.150	-.173	-.028	.270	0.927	0.093	0.7	1.0	0.7	1.0	A+	
382	619150	6	625	.507	.155	.242	.091	.507	.005	.407	-.217	-.132	-.214	.407	-0.141	0.085	-1.8	1.0	-2.0	0.9	A-	
383	620236	6	625	.261	.443	.141	.261	.147	.008	.265	.051	-.283	.265	-.093	1.055	0.095	0.4	1.0	1.5	1.1	A-	
384	619141	6	626	.500	.500	.120	.300	.072	.008	.244	.244	-.018	-.080	-.203	0.073	0.085	3.2	1.1	3.1	1.1	A+	
385	619624	6	627	.812	.064	.064	.061	.812	.000	.384	-.210	-.212	-.197	.384	-1.742	0.107	-1.5	0.9	-2.1	0.8	A-	
386	615518	6	627	.788	.788	.032	.161	.016	.003	.375	.375	-.182	-.232	-.215	-1.642	0.103	-0.8	1.0	-1.6	0.9	C-	
387	615520	6	626	.845	.053	.054	.845	.045	.003	.333	-.164	-.148	.333	-.143	-1.861	0.118	0.0	1.0	-0.6	0.9	A+	
388	615514	6	626	.808	.030	.040	.118	.808	.003	.353	-.153	-.209	-.185	.353	-1.722	0.107	-0.6	1.0	-0.9	0.9	B-	
389	618591	6	625	.869	.042	.869	.038	.051	.000	.211	-.089	.211	-.155	-.107	-2.191	0.122	0.3	1.0	0.7	1.1	A+	
390	619296	6	626	.829	.043	.053	.829	.074	.002	.454	-.216	-.247	.454	-.235	-1.867	0.111	-1.9	0.9	-2.9	0.7	A+	
391	615526	6	626	.708	.083	.708	.069	.134	.006	.424	-.177	.424	-.173	-.208	-1.153	0.094	-1.5	0.9	-1.9	0.9	A+	
392	618594	6	627	.783	.094	.783	.048	.065	.010	.373	-.191	.373	-.120	-.136	-1.579	0.104	-0.9	1.0	-1.3	0.9	A-	
393	618593	6	1253	.646	.120	.646	.131	.093	.011	.487	-.237	.487	-.242	-.128	-0.820	0.064	-5.2	0.9	-4.8	0.8	A+	
394	615509	6	5636	.869	.869	.066	.036	.024	.005	.466	.466	-.269	-.223	-.184	-2.223	0.042	-5.1	0.9	-9.3	0.7	A+	A-
395	619303	6	627	.447	.368	.447	.091	.085	.010	.387	-.174	.387	-.101	-.132	0.150	0.086	-2.1	0.9	-2.0	0.9	A-	
396	618790	6	5636	.414	.287	.047	.414	.243	.009	.348	-.085	-.194	.348	-.146	0.319	0.029	-1.2	1.0	1.3	1.0	A+	B-
397	620217	6	627	.499	.161	.089	.233	.499	.018	.479	-.224	-.228	-.108	.479	-0.114	0.086	-4.1	0.9	-4.0	0.9	A-	
398	619121	6	5636	.460	.085	.242	.191	.460	.022	.369	-.191	-.040	-.201	.369	0.072	0.029	-1.9	1.0	-1.6	1.0	A+	A-
399	618792	6	1253	.707	.116	.062	.707	.109	.006	.364	-.144	-.204	.364	-.162	-1.027	0.066	-1.1	1.0	-1.4	0.9	A+	A+
400	620358	6	627	.447	.177	.021	.356	.447	.000	.342	-.076	-.187	-.239	.342	0.146	0.086	-0.1	1.0	-0.3	1.0	B-	
401	619293	6	627	.416	.132	.121	.329	.416	.002	.373	-.196	-.212	-.098	.373	0.283	0.086	-1.0	1.0	-1.0	1.0	A-	
402	619120	6	623	.779	.043	.103	.779	.067	.008	.295	-.149	-.087	.295	-.108	-1.493	0.103	0.8	1.1	0.7	1.1	A+	
403	619616	6	623	.469	.469	.039	.112	.372	.008	.341	.341	-.156	-.144	-.111	0.089	0.086	-0.5	1.0	-0.3	1.0	A-	
404	619295	6	623	.344	.509	.344	.079	.056	.013	.187	.108	.187	-.210	-.147	0.678	0.089	2.9	1.1	2.2	1.1	A+	
405	615523	6	623	.502	.059	.257	.151	.502	.031	.442	-.157	-.095	-.218	.442	-0.114	0.086	-3.9	0.9	-3.7	0.9	A+	
406	619122	6	629	.614	.614	.183	.051	.148	.005	.283	.283	-.157	-.126	-.078	-0.557	0.088	2.1	1.1	1.3	1.1	A+	
407	619298	6	629	.822	.043	.024	.822	.102	.010	.325	-.192	-.181	.325	-.101	-1.822	0.112	-0.3	1.0	-0.6	0.9	A+	
408	615524	6	629	.661	.076	.200	.048	.661	.014	.430	-.261	-.142	-.225	.430	-0.830	0.091	-2.0	0.9	-1.8	0.9	A+	
409	615525	6	626	.669	.090	.171	.059	.669	.011	.474	-.117	-.261	-.276	.474	-0.927	0.091	-3.1	0.9	-3.0	0.9	A+	
410	619301	6	626	.752	.070	.102	.066	.752	.010	.545	-.254	-.254	-.263	.545	-1.383	0.099	-3.7	0.8	-4.4	0.7	B+	
411	619123	6	626	.296	.181	.296	.318	.197	.010	.070	.082	.070	-.067	-.010	0.868	0.092	4.4	1.2	5.8	1.4	A+	
412	619299	6	626	.824	.824	.038	.094	.034	.010	.524	.524	-.204	-.304	-.242	-1.878	0.112	-2.5	0.8	-4.0	0.6	A-	
413	615513	6	627	.622	.622	.190	.093	.093	.003	.401	.401	-.122	-.275	-.200	-0.714	0.088	-0.9	1.0	-0.4	1.0	A+	
414	617740	6	627	.608	.209	.070	.112	.608	.002	.530	-.213	-.282	-.303	.530	-0.643	0.087	-5.1	0.8	-5.1	0.8	A+	
415	619300	6	627	.727	.048	.166	.046	.727	.013	.424	-.207	-.192	-.231	.424	-1.303	0.096	-1.2	0.9	-0.9	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
416	615534	6	1253	.880	.880	.032	.042	.036	.010	.484	.484	-.200	-.259	-.219	-2.347	0.094	-2.2	0.9	-4.5	0.6	A+	A-
417	619134	6	627	.558	.558	.169	.180	.078	.014	.508	.508	-.201	-.253	-.200	-0.442	0.087	-4.1	0.9	-3.8	0.9	A-	
418	616333	6	626	.768	.029	.768	.109	.086	.008	.480	-.137	.480	-.253	-.235	-1.298	0.101	-2.4	0.9	-3.5	0.8	A+	
419	615522	6	626	.102	.021	.839	.029	.102	.010	-.106	-.116	.321	-.184	-.106	2.546	0.139	1.3	1.1	4.5	1.8	A+	
420	619302	6	626	.494	.189	.133	.173	.494	.013	.336	.034	-.248	-.149	.336	0.093	0.085	0.2	1.0	-0.1	1.0	A+	
421	618592	6	1251	.595	.106	.595	.126	.166	.007	.380	-.176	.380	-.189	-.129	-0.461	0.061	-1.2	1.0	-1.1	1.0	A+	A-
422	615516	6	626	.246	.030	.024	.246	.693	.006	.089	-.120	-.165	.089	.088	1.160	0.098	3.0	1.2	4.6	1.4	A-	
423	618789	6	626	.748	.748	.077	.037	.133	.006	.283	.283	-.159	-.203	-.028	-1.384	0.098	1.3	1.1	1.1	1.1	A-	
424	615511	6	1251	.440	.401	.440	.122	.032	.005	.297	-.199	.297	-.021	-.130	0.156	0.061	2.1	1.0	1.8	1.1	A-	A+
425	615612	6	626	.385	.486	.385	.085	.032	.013	.176	.049	.176	-.136	-.192	0.397	0.088	4.6	1.2	4.7	1.2	A+	
426	615519	6	625	.550	.333	.061	.056	.550	.000	.286	-.106	-.192	-.203	.286	-0.328	0.085	1.7	1.1	1.4	1.1	A-	
427	619313	6	625	.434	.434	.264	.211	.082	.010	.316	.316	-.109	-.183	-.084	0.186	0.086	0.9	1.0	0.6	1.0	A-	
428	615535	6	1253	.652	.077	.652	.093	.176	.002	.428	-.230	.428	-.261	-.135	-0.832	0.063	-3.2	0.9	-3.2	0.9	A+	
429	615510	6	1256	.678	.206	.047	.067	.678	.002	.295	-.111	-.182	-.178	.295	-0.935	0.064	1.2	1.0	1.3	1.1	A+	
430	618590	6	1251	.333	.270	.333	.213	.177	.006	.265	-.131	.265	-.086	-.047	0.672	0.063	1.6	1.0	2.1	1.1	A+	A-
431	615512	6	1253	.625	.073	.625	.098	.192	.012	.340	-.181	.340	-.143	-.104	-0.616	0.063	0.2	1.0	0.4	1.0	A-	A-
432	618791	6	1255	.583	.070	.583	.148	.186	.014	.394	-.220	.394	-.182	-.105	-0.483	0.062	-1.3	1.0	-1.4	1.0	A+	
433	616332	6	1248	.678	.678	.091	.118	.097	.016	.403	.403	-.170	-.161	-.173	-0.961	0.065	-1.7	1.0	-2.1	0.9	A+	A-
434	615517	6	1251	.689	.054	.162	.090	.689	.005	.571	-.243	-.363	-.224	.571	-1.008	0.065	-7.5	0.8	-7.6	0.7	A-	A-
435	615560	6	627	.353	.064	.353	.507	.070	.006	.240	-.167	.240	-.016	-.235	0.540	0.089	2.3	1.1	2.6	1.1	A+	
436	619132	6	626	.746	.046	.070	.746	.131	.006	.408	-.181	-.230	.408	-.142	-1.150	0.098	-1.4	0.9	-1.8	0.9	B-	
437	615557	6	626	.754	.072	.754	.104	.061	.010	.515	-.247	.515	-.255	-.217	-1.393	0.099	-3.0	0.9	-3.8	0.7	A-	
438	615574	6	626	.792	.077	.792	.054	.070	.006	.451	-.135	.451	-.244	-.230	-1.675	0.105	-1.8	0.9	-1.8	0.9	A-	
439	617512	6	625	.203	.243	.400	.154	.203	.000	.248	-.134	-.028	-.080	.248	1.418	0.103	0.1	1.0	1.0	1.1	A-	
440	615566	6	627	.376	.416	.376	.112	.088	.008	.301	-.099	.301	-.104	-.094	0.489	0.088	0.6	1.0	1.0	1.0	A+	
441	615578	6	5636	.241	.203	.405	.241	.146	.005	.087	-.052	.073	.087	-.093	1.226	0.033	9.0	1.2	9.9	1.4	A-	A+
442	615583	6	627	.585	.585	.109	.136	.158	.013	.273	.273	-.123	-.001	-.139	-0.506	0.087	2.7	1.1	2.0	1.1	A-	
443	618600	6	5636	.584	.584	.175	.121	.111	.009	.397	.397	-.142	-.193	-.158	-0.473	0.029	-4.1	1.0	-3.9	1.0	A+	A+
444	615571	6	627	.294	.510	.147	.294	.035	.014	.266	-.006	-.141	.266	-.133	0.903	0.093	0.7	1.0	2.7	1.2	A-	
445	615549	6	5636	.426	.130	.112	.314	.426	.018	.391	-.171	-.194	-.088	.391	0.240	0.029	-4.1	1.0	-3.1	1.0	A+	A+
446	615584	6	627	.397	.195	.265	.397	.139	.005	.119	-.160	-.043	.119	.074	0.367	0.087	5.2	1.2	4.6	1.2	A+	
447	615568	6	627	.388	.392	.093	.124	.388	.003	.352	-.101	-.220	-.167	.352	0.417	0.087	0.0	1.0	0.0	1.0	A+	
448	619361	6	627	.410	.410	.231	.262	.088	.010	.299	.299	-.113	-.087	-.192	0.297	0.087	0.9	1.0	1.6	1.1	A-	
449	619360	6	627	.424	.424	.222	.295	.046	.013	.445	.445	-.161	-.238	-.182	0.221	0.086	-2.7	0.9	-2.5	0.9	A-	
450	615581	6	627	.322	.152	.383	.322	.124	.019	.164	-.062	-.048	.164	-.070	0.711	0.091	3.4	1.1	3.6	1.2	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
451	615582	6	623	.268	.151	.323	.268	.250	.008	.145	.001	.058	.145	-.123	1.078	0.095	2.4	1.1	2.5	1.2	A-	
452	615585	6	623	.435	.432	.435	.043	.077	.013	.229	.023	.229	-.222	-.121	0.231	0.086	3.3	1.1	3.1	1.1	A-	
453	615569	6	623	.677	.202	.050	.677	.059	.011	.436	-.241	-.194	.436	-.065	-0.912	0.092	-1.8	0.9	-1.8	0.9	B+	
454	615544	6	623	.191	.397	.303	.090	.191	.019	.243	.082	-.023	-.223	.243	1.556	0.106	-0.3	1.0	0.6	1.1	A+	
455	615586	6	629	.351	.046	.351	.526	.068	.008	.323	-.142	.323	-.116	-.160	0.687	0.089	-0.3	1.0	0.3	1.0	A-	
456	619362	6	629	.262	.288	.390	.053	.262	.008	.224	-.180	.103	-.195	.224	1.168	0.096	1.8	1.1	2.5	1.2	A-	
457	615545	6	629	.277	.262	.313	.143	.277	.005	.367	-.147	-.114	-.076	.367	1.091	0.095	-1.2	1.0	0.3	1.0	A-	
458	615543	6	629	.490	.127	.154	.490	.219	.010	.330	-.157	-.158	.330	-.075	0.013	0.086	0.8	1.0	0.6	1.0	A-	
459	615570	6	629	.673	.156	.073	.673	.089	.010	.459	-.185	-.273	.459	-.175	-0.871	0.091	-2.7	0.9	-2.9	0.8	A-	
460	615546	6	626	.300	.377	.213	.300	.107	.003	.266	-.047	-.218	.266	.018	0.853	0.092	0.6	1.0	1.6	1.1	A+	
461	615552	6	626	.227	.166	.227	.490	.115	.002	.101	-.040	.101	.028	-.099	1.273	0.100	2.1	1.1	4.6	1.4	A-	
462	618795	6	626	.283	.283	.391	.090	.232	.005	.206	.206	-.012	-.155	-.060	0.944	0.093	1.9	1.1	2.3	1.2	A-	
463	615550	6	626	.425	.235	.304	.425	.027	.010	.252	-.038	-.137	.252	-.107	0.231	0.086	2.6	1.1	2.8	1.1	B+	
464	617742	6	626	.340	.230	.401	.340	.018	.011	.274	-.191	-.005	.274	-.130	0.635	0.089	1.2	1.0	1.6	1.1	A-	
465	618805	6	626	.414	.230	.190	.150	.414	.016	.340	-.018	-.093	-.250	.340	0.274	0.086	0.2	1.0	0.2	1.0	A+	
466	615565	6	627	.236	.112	.633	.236	.018	.002	.187	-.244	.045	.187	-.172	1.184	0.098	0.8	1.0	3.3	1.3	A+	
467	617743	6	627	.499	.354	.030	.115	.499	.002	.380	-.216	-.221	-.139	.380	-0.138	0.085	-0.6	1.0	-1.0	1.0	A-	
468	615597	6	627	.510	.199	.510	.156	.129	.005	.224	-.103	.224	-.122	-.058	-0.199	0.085	4.0	1.1	4.2	1.2	A+	
469	615558	6	627	.494	.262	.494	.120	.112	.013	.346	-.073	.346	-.138	-.225	-0.138	0.086	0.8	1.0	0.7	1.0	A-	
470	618595	6	627	.627	.099	.152	.105	.627	.018	.475	-.259	-.143	-.239	.475	-0.784	0.089	-2.4	0.9	-2.8	0.9	A+	
471	615547	6	627	.418	.132	.418	.201	.220	.029	.328	-.140	.328	-.189	-.008	0.189	0.087	1.1	1.0	1.6	1.1	A-	
472	615573	6	626	.514	.401	.027	.514	.054	.003	.405	-.224	-.145	.405	-.215	0.009	0.085	-2.2	0.9	-2.4	0.9	A+	
473	619135	6	626	.275	.302	.176	.243	.275	.005	.110	.003	-.020	-.027	.110	1.181	0.094	2.7	1.1	4.5	1.3	A+	
474	615559	6	626	.733	.091	.035	.733	.133	.008	.516	-.300	-.216	.516	-.195	-1.083	0.097	-3.4	0.8	-4.3	0.7	A-	
475	618596	6	626	.626	.190	.104	.626	.061	.019	.496	-.159	-.270	.496	-.204	-0.547	0.089	-4.0	0.9	-4.1	0.8	A-	
476	615548	6	626	.324	.273	.259	.324	.117	.027	.330	-.150	-.023	.330	-.090	0.893	0.091	-0.9	1.0	-0.3	1.0	A+	
477	615575	6	626	.645	.058	.645	.070	.222	.005	.439	-.173	.439	-.212	-.209	-0.818	0.089	-2.2	0.9	-2.2	0.9	A-	
478	619358	6	626	.439	.171	.439	.153	.227	.010	.334	-.126	.334	-.206	-.024	0.144	0.086	0.5	1.0	0.6	1.0	A-	
479	615563	6	626	.553	.553	.077	.305	.056	.010	.379	.379	-.178	-.141	-.177	-0.381	0.086	-0.7	1.0	-0.6	1.0	A-	
480	618597	6	626	.503	.503	.353	.080	.045	.019	.459	.459	-.221	-.247	-.080	-0.177	0.086	-3.4	0.9	-3.1	0.9	C-	
481	615579	6	626	.203	.355	.241	.203	.179	.022	.072	.105	-.049	.072	-.048	1.410	0.105	2.2	1.1	5.2	1.5	A+	
482	618599	6	625	.506	.157	.139	.197	.506	.002	.425	-.095	-.138	-.320	.425	-0.127	0.085	-2.6	0.9	-2.6	0.9	A-	
483	618598	6	625	.490	.219	.490	.061	.230	.000	.408	-.246	.408	-.226	-.115	-0.053	0.085	-2.2	0.9	-1.7	0.9	A-	
484	615564	6	625	.378	.168	.200	.378	.250	.005	.313	-.080	-.199	.313	-.082	0.455	0.087	0.3	1.0	0.8	1.0	A+	
485	617513	6	625	.259	.408	.224	.101	.259	.008	.265	.095	-.205	-.222	.265	1.064	0.096	0.5	1.0	1.2	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
486	619359	6	625	.344	.382	.182	.344	.078	.013	.196	.093	-.267	.196	-.085	0.607	0.089	3.0	1.1	2.8	1.1	A+	
487	615562	6	626	.527	.141	.527	.069	.254	.010	.393	-.279	.393	-.245	-.021	-0.238	0.085	-1.3	1.0	-1.2	1.0	A-	
488	618609	6	625	.701	.085	.115	.701	.099	.000	.367	-.252	-.212	.367	-.101	-1.055	0.092	-0.5	1.0	-1.3	0.9	A-	
489	615576	6	627	.443	.271	.102	.174	.443	.010	.396	-.294	.025	-.136	.396	0.106	0.086	-1.2	1.0	-1.2	1.0	B-	
490	615551	6	629	.523	.523	.126	.245	.095	.011	.397	.397	-.160	-.099	-.248	-0.142	0.086	-1.2	1.0	-1.3	1.0	A-	
491	615577	6	626	.190	.190	.377	.147	.278	.008	.124	.124	.131	-.148	-.056	1.501	0.106	1.6	1.1	2.9	1.3	A-	
492	619149	6	627	.317	.262	.317	.225	.182	.014	.160	-.044	.160	-.044	.024	0.775	0.092	3.1	1.1	4.2	1.3	A+	
493	618794	6	625	.674	.674	.067	.141	.117	.002	.287	.287	-.235	-.061	-.160	-0.918	0.090	0.5	1.0	1.7	1.1	A-	
494	615567	6	626	.649	.078	.113	.649	.152	.008	.389	-.222	-.194	.389	-.080	-0.627	0.089	-1.2	1.0	-1.4	0.9	A+	
495	615235	7	430	.707	.161	.067	.707	.065	.000	.399	-.212	-.225	.399	-.193	-1.035	0.112	-1.1	0.9	-1.4	0.9	A-	A-
496	615275	7	876	.539	.185	.175	.096	.539	.006	.415	-.012	-.280	-.258	.415	-0.223	0.072	-3.5	0.9	-3.1	0.9	A+	A-
497	615238	7	428	.895	.054	.895	.023	.028	.000	.339	-.261	.339	-.189	-.100	-2.432	0.163	-0.4	0.9	-1.5	0.8	A+	
498	615252	7	445	.636	.036	.148	.180	.636	.000	.533	-.126	-.314	-.317	.533	-0.684	0.104	-4.2	0.8	-4.4	0.8	C-	
499	615234	7	428	.386	.269	.140	.203	.386	.002	.448	-.204	-.238	-.116	.448	0.498	0.105	-2.6	0.9	-2.3	0.9	A+	
500	615253	7	428	.610	.063	.124	.610	.203	.000	.474	-.182	-.233	.474	-.273	-0.530	0.105	-3.2	0.9	-3.2	0.9	A+	
501	615230	7	6496	.598	.206	.085	.598	.108	.004	.357	-.194	-.178	.357	-.096	-0.504	0.027	-2.2	1.0	-2.3	1.0	A-	A+
502	615258	7	428	.477	.477	.133	.182	.201	.007	.500	.500	-.238	-.286	-.100	0.076	0.103	-3.9	0.9	-3.2	0.9	A-	
503	615232	7	428	.577	.129	.152	.136	.577	.007	.474	-.209	-.203	-.210	.474	-0.386	0.104	-3.4	0.9	-3.3	0.9	A+	
504	615268	7	428	.533	.241	.094	.124	.533	.009	.461	-.196	-.200	-.206	.461	-0.189	0.103	-2.8	0.9	-2.8	0.9	A-	
505	618857	7	6496	.286	.285	.201	.286	.219	.009	.254	-.100	-.141	.254	.028	0.966	0.029	2.1	1.0	5.5	1.1	A-	A+
506	618799	7	428	.299	.467	.154	.299	.068	.012	.186	.069	-.222	.186	-.073	0.922	0.112	1.5	1.1	1.9	1.1	A-	
507	616023	7	1286	.450	.143	.229	.167	.450	.011	.345	-.206	-.015	-.211	.345	0.134	0.060	-0.2	1.0	-0.5	1.0	A+	A+
508	615254	7	431	.292	.091	.415	.292	.195	.007	.286	-.100	-.068	.286	-.065	0.972	0.111	-0.4	1.0	0.2	1.0	A+	A-
509	615605	7	431	.478	.478	.153	.123	.239	.007	.291	.291	-.240	.001	-.039	0.079	0.102	0.2	1.0	0.9	1.0	A-	A-
510	616350	7	431	.381	.116	.381	.327	.169	.007	.280	-.279	.280	.079	-.111	0.529	0.105	-0.2	1.0	-0.1	1.0	A-	A+
511	615997	7	431	.446	.149	.446	.320	.077	.009	.196	-.132	.196	.047	-.101	0.221	0.103	2.5	1.1	2.8	1.1	A+	A+
512	615244	7	431	.397	.160	.116	.316	.397	.012	.274	-.082	-.109	-.041	.274	0.444	0.104	1.2	1.0	1.3	1.1	A-	A-
513	615269	7	431	.522	.211	.522	.070	.183	.014	.425	-.223	.425	-.192	-.056	-0.135	0.103	-2.8	0.9	-2.6	0.9	A-	A+
514	615273	7	859	.552	.232	.552	.134	.069	.014	.367	-.093	.367	-.218	-.110	-0.302	0.073	-1.2	1.0	-1.4	1.0	A-	A-
515	616009	7	450	.711	.193	.042	.053	.711	.000	.379	-.338	-.064	-.114	.379	-1.063	0.110	-1.7	0.9	-1.4	0.9	A+	
516	616351	7	450	.247	.098	.247	.387	.260	.009	.149	-.116	.149	.051	-.062	1.168	0.114	0.5	1.0	2.2	1.2	A+	
517	615606	7	450	.307	.344	.164	.176	.307	.009	.259	.036	-.183	-.098	.259	0.829	0.107	0.1	1.0	0.3	1.0	A+	
518	615237	7	450	.298	.220	.311	.298	.164	.007	.196	-.077	-.182	.196	.153	0.889	0.108	0.4	1.0	0.3	1.0	A+	
519	618793	7	450	.553	.264	.124	.051	.553	.007	.412	-.119	-.257	-.170	.412	-0.316	0.100	-2.2	0.9	-2.3	0.9	B-	
520	615245	7	450	.804	.804	.062	.053	.071	.009	.410	.410	-.250	-.131	-.166	-1.672	0.127	-0.6	1.0	-1.3	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
521	615274	7	878	.751	.051	.088	.751	.101	.009	.423	-.223	-.189	.423	-.174	-1.343	0.083	-1.8	0.9	-2.5	0.9	A+	A-
522	615609	7	434	.412	.412	.242	.251	.095	.000	.353	.353	-.151	-.186	-.097	0.435	0.104	-0.6	1.0	-0.3	1.0	A-	
523	615607	7	434	.498	.076	.281	.145	.498	.000	.387	-.213	-.200	-.133	.387	0.050	0.103	-1.5	1.0	-1.5	0.9	A-	
524	615239	7	434	.770	.060	.023	.148	.770	.000	.452	-.254	-.081	-.333	.452	-1.346	0.120	-1.7	0.9	-2.0	0.8	A-	
525	615264	7	434	.606	.606	.159	.108	.124	.002	.414	.414	-.242	-.247	-.097	-0.469	0.105	-1.8	0.9	-1.9	0.9	A-	
526	616017	7	434	.705	.088	.705	.088	.115	.005	.418	-.213	.418	-.263	-.151	-0.981	0.112	-1.3	0.9	-1.7	0.9	A+	
527	616004	7	434	.889	.058	.039	.009	.889	.005	.366	-.158	-.293	-.157	.366	-2.390	0.164	-1.0	0.9	-1.8	0.7	B+	
528	617514	7	879	.537	.224	.135	.537	.101	.002	.304	-.025	-.275	.304	-.145	-0.190	0.072	1.0	1.0	1.2	1.0	A+	A-
529	616349	7	430	.649	.649	.107	.121	.119	.005	.465	.465	-.293	-.191	-.139	-0.779	0.107	-3.3	0.9	-3.2	0.8	B+	A+
530	618797	7	430	.454	.274	.067	.454	.200	.005	.254	-.075	-.204	.254	-.037	0.122	0.102	1.2	1.0	1.1	1.0	A-	A-
531	617517	7	430	.591	.074	.193	.591	.130	.012	.470	-.149	-.246	.470	-.144	-0.513	0.104	-3.6	0.9	-3.2	0.9	B-	B-
532	617515	7	861	.283	.378	.196	.135	.283	.008	.322	-.030	-.161	-.086	.322	0.963	0.079	-0.9	1.0	-1.0	1.0	A-	B-
533	616018	7	430	.212	.158	.212	.579	.042	.009	.166	-.011	.166	.018	-.144	1.373	0.123	0.7	1.0	3.0	1.3	B-	A+
534	615267	7	430	.319	.319	.479	.084	.107	.012	.243	.243	.088	-.210	-.186	0.749	0.109	1.0	1.0	1.5	1.1	A-	A+
535	616006	7	430	.393	.063	.144	.386	.393	.014	.369	-.214	-.116	-.096	.369	0.379	0.104	-1.3	1.0	-1.4	0.9	A+	A+
536	616345	7	430	.440	.072	.221	.440	.265	.002	.375	-.100	-.123	.375	-.216	0.247	0.103	-0.8	1.0	-0.5	1.0	A-	
537	616010	7	430	.605	.151	.226	.605	.016	.002	.137	-.145	.024	.137	-.087	-0.509	0.105	4.1	1.2	4.9	1.3	A+	
538	615282	7	430	.540	.198	.172	.086	.540	.005	.477	-.159	-.279	-.192	.477	-0.213	0.103	-3.7	0.9	-3.4	0.9	A-	
539	620004	7	858	.442	.240	.442	.099	.215	.005	.347	-.154	.347	-.253	-.055	0.162	0.073	-0.5	1.0	-0.3	1.0	A-	A+
540	617749	7	430	.558	.558	.070	.237	.123	.012	.444	.444	-.151	-.167	-.263	-0.318	0.104	-2.5	0.9	-2.5	0.9	A-	
541	616019	7	430	.526	.342	.077	.526	.049	.007	.432	-.279	-.122	.432	-.140	-0.158	0.103	-2.4	0.9	-2.1	0.9	A-	
542	615246	7	430	.277	.091	.128	.495	.277	.009	.198	-.038	-.225	.042	.198	1.048	0.114	1.9	1.1	2.1	1.2	A+	
543	615256	7	434	.636	.636	.159	.134	.067	.005	.513	.513	-.264	-.266	-.156	-0.740	0.106	-3.8	0.9	-3.7	0.8	A-	
544	615608	7	434	.311	.237	.092	.311	.357	.002	.312	-.071	-.138	.312	-.127	0.808	0.110	0.1	1.0	0.7	1.1	A-	
545	616026	7	862	.580	.067	.580	.210	.139	.004	.374	-.139	.374	-.138	-.231	-0.462	0.073	-1.2	1.0	-1.8	1.0	A-	A-
546	617516	7	434	.539	.099	.168	.539	.191	.002	.468	-.202	-.208	.468	-.207	-0.278	0.103	-3.3	0.9	-2.9	0.9	B-	
547	615270	7	434	.311	.249	.196	.233	.311	.012	.148	-.036	-.108	.068	.148	0.804	0.110	3.3	1.2	3.4	1.2	A+	
548	616005	7	434	.493	.191	.120	.187	.493	.009	.458	-.166	-.194	-.169	.458	-0.072	0.103	-2.9	0.9	-2.6	0.9	A+	
549	615247	7	434	.740	.118	.069	.062	.740	.012	.583	-.256	-.276	-.283	.583	-1.314	0.117	-4.0	0.8	-4.7	0.7	A+	
550	615240	7	427	.712	.712	.138	.080	.070	.000	.366	.366	-.278	-.103	-.166	-1.020	0.112	-1.1	0.9	-1.3	0.9	A+	A-
551	615265	7	427	.300	.049	.300	.515	.134	.002	-.009	-.155	-.009	.191	-.171	0.936	0.111	4.4	1.2	5.4	1.4	A-	B-
552	616021	7	855	.371	.112	.233	.371	.278	.006	.150	-.004	-.096	.150	-.044	0.499	0.075	4.4	1.1	4.5	1.2	A+	B+
553	615276	7	427	.398	.127	.398	.152	.321	.002	.391	-.079	.391	-.194	-.190	0.449	0.105	-1.3	1.0	-0.9	1.0	A-	B-
554	617750	7	427	.440	.440	.267	.141	.150	.002	.303	.303	-.226	-.075	-.050	0.254	0.103	0.7	1.0	0.5	1.0	A-	A+
555	615259	7	427	.410	.410	.098	.429	.052	.012	.591	.591	-.290	-.306	-.147	0.382	0.105	-6.0	0.8	-5.7	0.8	A-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
556	618800	7	427	.719	.719	.122	.075	.070	.014	.518	.518	-.351	-.196	-.181	-1.114	0.115	-3.0	0.9	-3.1	0.8	B+	A-
557	615241	7	442	.396	.396	.088	.222	.292	.002	.425	.425	-.230	-.272	-.037	0.470	0.104	-1.7	0.9	-1.3	0.9	A-	
558	615266	7	442	.450	.095	.305	.145	.450	.005	.452	-.163	-.171	-.233	.452	0.210	0.103	-2.3	0.9	-2.2	0.9	A+	
559	616020	7	873	.560	.181	.136	.111	.560	.012	.462	-.150	-.211	-.217	.462	-0.320	0.073	-4.3	0.9	-4.4	0.9	A+	A-
560	615277	7	442	.572	.572	.274	.091	.059	.005	.398	.398	-.077	-.289	-.265	-0.365	0.104	-0.6	1.0	-1.0	1.0	A+	
561	615281	7	442	.321	.321	.324	.249	.102	.005	.220	.220	-.036	-.096	-.091	0.839	0.109	2.2	1.1	2.9	1.2	A+	
562	615260	7	442	.649	.054	.199	.091	.649	.007	.546	-.261	-.274	-.251	.546	-0.749	0.107	-4.1	0.8	-4.0	0.8	A+	
563	616347	7	442	.661	.079	.152	.102	.661	.007	.573	-.245	-.215	-.357	.573	-0.807	0.108	-4.7	0.8	-4.5	0.7	A+	
564	615248	7	430	.467	.088	.221	.223	.467	.000	.289	.004	-.337	-.013	.289	0.104	0.102	1.1	1.0	1.2	1.1	B-	A-
565	617518	7	430	.437	.037	.470	.056	.437	.000	.224	-.122	-.088	-.192	.224	0.241	0.103	2.5	1.1	2.3	1.1	A-	A-
566	615272	7	875	.709	.709	.094	.149	.047	.002	.508	.508	-.244	-.294	-.256	-1.057	0.079	-4.1	0.9	-4.7	0.8	A-	A-
567	616355	7	430	.437	.112	.165	.279	.437	.007	.314	-.083	-.183	-.123	.314	0.230	0.103	0.4	1.0	0.5	1.0	A+	B-
568	615278	7	430	.616	.133	.098	.151	.616	.002	.416	-.175	-.160	-.268	.416	-0.585	0.105	-1.6	0.9	-1.7	0.9	A-	B-
569	616352	7	430	.137	.137	.316	.126	.419	.002	.170	.170	-.050	-.177	.046	1.969	0.144	0.3	1.0	1.1	1.2	A-	A-
570	615257	7	430	.265	.458	.265	.216	.061	.000	.085	.189	.085	-.181	-.242	1.092	0.114	2.5	1.1	3.4	1.3	A-	A+
571	615242	7	430	.519	.170	.519	.088	.221	.002	.416	-.186	.416	-.280	-.139	-0.133	0.102	-1.8	0.9	-2.0	0.9	A+	A+
572	615250	7	428	.346	.103	.458	.091	.346	.002	.438	-.212	-.177	-.190	.438	0.644	0.108	-2.6	0.9	-2.1	0.9	A+	
573	620005	7	428	.201	.217	.463	.201	.115	.005	-.002	-.198	.285	-.002	-.131	1.471	0.126	2.9	1.2	3.5	1.4	A-	
574	615271	7	856	.471	.471	.320	.050	.153	.006	.359	.359	-.076	-.209	-.230	0.038	0.073	-1.1	1.0	-0.7	1.0	B-	B-
575	617751	7	428	.675	.675	.129	.131	.061	.005	.373	.373	-.216	-.083	-.227	-0.899	0.109	-1.3	0.9	0.0	1.0	A-	
576	616025	7	428	.451	.355	.068	.451	.122	.005	.281	-.119	-.095	.281	-.118	0.149	0.103	1.5	1.1	1.5	1.1	A+	
577	616353	7	428	.470	.189	.206	.129	.470	.007	.413	-.176	-.097	-.218	.413	0.061	0.103	-1.9	0.9	-2.1	0.9	A-	
578	616001	7	428	.549	.115	.208	.549	.115	.014	.423	-.153	-.214	.423	-.133	-0.317	0.104	-2.0	0.9	-2.2	0.9	A+	
579	615262	7	428	.530	.079	.171	.530	.208	.012	.347	-.211	-.276	.347	.046	-0.225	0.103	-0.1	1.0	-0.1	1.0	A-	
580	616008	7	428	.542	.072	.061	.542	.325	.000	.257	-.272	-.137	.257	-.053	-0.270	0.102	0.7	1.0	0.9	1.0	A-	
581	615236	7	428	.591	.297	.591	.082	.028	.002	.255	-.125	.255	-.163	-.081	-0.515	0.104	1.5	1.1	1.2	1.1	B+	
582	620002	7	428	.280	.269	.259	.280	.189	.002	.237	.056	-.156	.237	-.135	0.955	0.113	0.6	1.0	0.9	1.1	B-	
583	617748	7	428	.131	.098	.416	.131	.348	.007	-.057	-.150	.185	-.057	-.025	1.984	0.148	1.4	1.2	3.6	1.6	A-	
584	616002	7	428	.115	.115	.374	.273	.229	.009	.024	.024	.059	-.034	-.008	2.196	0.160	0.5	1.1	2.6	1.5	B+	
585	615251	7	445	.099	.710	.067	.099	.121	.002	-.151	.345	-.158	-.151	-.217	2.360	0.164	1.2	1.2	4.0	1.8	B+	
586	620003	7	445	.362	.265	.362	.198	.175	.000	.231	-.169	.231	-.028	-.066	0.573	0.104	1.4	1.1	2.0	1.1	A+	
587	616011	7	445	.400	.148	.142	.400	.308	.002	.217	-.077	-.281	.217	.048	0.390	0.102	2.1	1.1	2.2	1.1	A+	
588	615255	7	445	.614	.112	.121	.614	.142	.011	.612	-.342	-.288	.612	-.277	-0.615	0.104	-6.4	0.8	-6.3	0.7	A+	
589	617747	7	431	.452	.452	.158	.218	.165	.007	.413	.413	-.175	-.174	-.103	0.169	0.102	-3.1	0.9	-2.7	0.9	B-	A+
590	616354	7	431	.622	.186	.622	.139	.046	.007	.422	-.197	.422	-.181	-.153	-0.598	0.105	-2.4	0.9	-2.3	0.9	B+	A+

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
591	616013	7	431	.381	.070	.309	.225	.381	.016	.265	-.236	-.033	-.021	.265	0.484	0.104	0.8	1.0	0.8	1.0	A+	A+
592	618798	7	431	.336	.172	.239	.234	.336	.019	.342	-.048	-.080	-.149	.342	0.693	0.107	-1.0	1.0	-0.7	1.0	A-	A+
593	615996	7	428	.255	.570	.147	.255	.028	.000	.293	-.325	.105	.293	-.023	1.033	0.116	0.0	1.0	0.2	1.0	A-	
594	617752	7	428	.215	.453	.215	.122	.210	.000	.228	.025	.228	-.275	-.040	1.274	0.122	0.4	1.0	1.0	1.1	B-	
595	615261	7	428	.486	.089	.486	.327	.096	.002	.404	-.242	.404	-.111	-.236	-0.095	0.102	-1.9	0.9	-1.9	0.9	A-	
596	615263	7	428	.353	.117	.166	.355	.353	.009	.412	-.140	-.196	-.120	.412	0.505	0.107	-2.0	0.9	-1.5	0.9	A+	
597	616346	7	428	.430	.164	.178	.430	.220	.009	.454	-.190	-.298	.454	-.046	0.143	0.103	-3.0	0.9	-3.2	0.9	A-	
598	615249	7	430	.377	.167	.340	.377	.105	.012	.260	-.166	-.037	.260	-.071	0.525	0.106	1.8	1.1	1.8	1.1	A-	
599	615999	7	430	.644	.644	.147	.107	.086	.016	.414	.414	-.191	-.169	-.140	-0.793	0.107	-2.1	0.9	-1.8	0.9	B+	A+
600	616348	7	442	.618	.231	.618	.036	.106	.009	.230	-.014	.230	-.150	-.186	-0.596	0.106	3.1	1.1	3.1	1.2	A+	
601	616014	7	427	.548	.187	.127	.548	.119	.019	.372	-.097	-.229	.372	-.143	-0.269	0.104	-0.5	1.0	-0.6	1.0	A+	B+
602	616007	7	434	.198	.198	.230	.426	.134	.012	-.008	-.008	-.040	.145	-.049	1.477	0.127	2.7	1.2	5.4	1.7	B-	
603	616616	7	430	.484	.340	.063	.109	.484	.005	.265	.055	-.281	-.270	.265	0.023	0.102	1.8	1.1	1.5	1.1	B+	A-
604	618806	7	428	.729	.117	.079	.729	.072	.002	.448	-.218	-.235	.448	-.194	-1.177	0.114	-2.3	0.9	-2.4	0.8	A+	
605	617531	7	428	.266	.016	.266	.086	.629	.002	.067	-.177	.067	-.224	.137	1.020	0.114	2.7	1.2	3.5	1.3	A-	
606	616626	7	445	.474	.474	.389	.047	.088	.002	.454	.454	-.214	-.210	-.273	0.052	0.100	-3.2	0.9	-3.1	0.9	B-	
607	618607	7	428	.554	.150	.047	.554	.250	.000	.229	-.166	-.191	.229	-.033	-0.268	0.103	1.9	1.1	1.8	1.1	A-	
608	616984	7	6496	.662	.065	.022	.248	.662	.003	.368	-.204	-.082	-.222	.368	-0.811	0.028	-3.0	1.0	-3.2	1.0	A-	B-
609	616991	7	856	.329	.195	.134	.335	.329	.006	.254	-.062	-.196	-.027	.254	0.740	0.077	1.1	1.0	1.3	1.1	A-	A+
610	620012	7	428	.551	.133	.182	.551	.126	.007	.384	-.253	-.116	.384	-.124	-0.266	0.104	-1.3	1.0	-1.4	0.9	A-	
611	618604	7	6496	.583	.583	.299	.051	.060	.007	.212	.212	-.019	-.162	-.160	-0.442	0.027	9.9	1.1	9.7	1.1	A-	A+
612	616978	7	428	.414	.115	.414	.112	.351	.009	.049	-.178	.049	-.147	.206	0.359	0.104	5.9	1.2	5.2	1.3	A-	
613	618608	7	431	.896	.028	.042	.896	.028	.007	.535	-.237	-.288	.535	-.151	-2.434	0.167	-1.3	0.8	-3.1	0.5	A-	B-
614	616992	7	876	.384	.086	.384	.239	.289	.003	.150	-.045	.150	-.013	-.072	0.492	0.073	4.4	1.1	5.0	1.2	A+	B-
615	616981	7	431	.627	.088	.116	.160	.627	.009	.553	-.235	-.226	-.227	.553	-0.615	0.106	-5.1	0.8	-4.6	0.8	B+	A-
616	616979	7	431	.473	.473	.278	.107	.125	.016	.314	.314	-.135	-.165	.011	0.078	0.103	-0.2	1.0	0.7	1.0	A-	A+
617	617001	7	450	.820	.060	.820	.027	.084	.009	.313	-.001	.313	-.142	-.220	-1.803	0.132	0.2	1.0	-0.1	1.0	A-	
618	618804	7	881	.329	.329	.182	.207	.271	.011	.191	.191	.036	-.113	-.048	0.725	0.075	2.5	1.1	3.1	1.1	A-	B-
619	616982	7	450	.596	.280	.044	.071	.596	.009	.308	-.172	-.136	-.062	.308	-0.497	0.102	-0.4	1.0	-0.3	1.0	A-	
620	616980	7	450	.138	.478	.216	.156	.138	.013	-.012	.295	-.124	-.153	-.012	1.964	0.143	1.2	1.1	2.4	1.4	A+	
621	617002	7	434	.440	.440	.122	.353	.085	.000	.326	.326	-.130	-.166	-.143	0.305	0.103	0.3	1.0	0.7	1.0	A+	
622	616993	7	862	.565	.565	.142	.122	.169	.002	.079	.079	-.036	-.110	.043	-0.365	0.073	7.5	1.2	7.0	1.2	A-	A+
623	616983	7	434	.818	.108	.046	.023	.818	.005	.515	-.336	-.246	-.245	.515	-1.705	0.132	-2.0	0.9	-2.9	0.7	A-	
624	618892	7	434	.173	.288	.173	.311	.224	.005	.092	-.193	.092	.013	.126	1.812	0.134	1.3	1.1	2.5	1.3	A-	
625	617003	7	430	.512	.512	.230	.049	.205	.005	.414	.414	-.149	-.234	-.164	-0.140	0.102	-2.5	0.9	-2.3	0.9	B-	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
626	616985	7	430	.542	.093	.174	.181	.542	.009	.370	-.142	-.169	-.091	.370	-0.284	0.103	-1.0	1.0	-1.3	1.0	A+	B-
627	616623	7	430	.381	.130	.233	.381	.242	.014	.212	-.149	-.039	.212	.010	0.434	0.105	2.3	1.1	2.3	1.1	A+	B-
628	616631	7	430	.256	.481	.102	.158	.256	.002	.426	-.117	-.113	-.217	.426	1.179	0.117	-1.8	0.9	-1.9	0.9	C-	
629	617532	7	430	.607	.198	.044	.149	.607	.002	.360	-.296	-.209	-.003	.360	-0.520	0.105	-0.7	1.0	-0.3	1.0	A-	
630	616624	7	430	.507	.142	.507	.177	.158	.016	.424	-.260	.424	-.126	-.127	-0.093	0.103	-2.0	0.9	-1.8	0.9	A-	
631	616995	7	434	.369	.217	.369	.205	.207	.002	.214	-.181	.214	-.026	-.011	0.516	0.106	2.6	1.1	3.2	1.2	A-	
632	616617	7	434	.378	.357	.378	.228	.025	.012	.349	-.137	.349	-.090	-.195	0.462	0.106	-0.1	1.0	0.1	1.0	A-	
633	616996	7	427	.637	.192	.082	.637	.089	.000	.434	-.227	-.199	.434	-.228	-0.640	0.106	-1.9	0.9	-2.5	0.9	C-	A+
634	616618	7	427	.347	.187	.347	.281	.169	.016	.188	-.077	.188	-.122	.043	0.675	0.108	2.4	1.1	3.3	1.2	A+	A-
635	618610	7	442	.817	.817	.086	.048	.041	.009	.320	.320	-.176	-.165	-.125	-1.778	0.132	0.0	1.0	-0.6	0.9	A-	
636	618861	7	442	.274	.274	.192	.267	.258	.009	.120	.120	-.156	.085	-.020	1.094	0.114	3.3	1.2	4.2	1.4	B-	
637	616997	7	430	.286	.288	.212	.286	.214	.000	.306	-.020	-.167	.306	-.148	0.977	0.112	-0.3	1.0	0.2	1.0	B-	A-
638	616987	7	430	.593	.049	.174	.593	.172	.012	.408	-.161	-.236	.408	-.203	-0.505	0.105	-1.6	0.9	-1.5	0.9	A+	A+
639	616998	7	428	.294	.294	.334	.227	.140	.005	.282	.282	-.047	-.136	-.138	0.905	0.112	0.4	1.0	1.0	1.1	B-	
640	616988	7	428	.271	.072	.505	.271	.133	.019	.118	-.129	.148	.118	-.165	1.022	0.115	2.8	1.2	3.2	1.3	A-	
641	616627	7	428	.605	.154	.147	.091	.605	.002	.315	-.067	-.253	-.104	.315	-0.580	0.104	0.2	1.0	-0.2	1.0	A-	
642	616989	7	428	.252	.150	.402	.187	.252	.009	.217	-.070	-.025	-.100	.217	1.091	0.116	0.9	1.1	1.1	1.1	A-	
643	616625	7	445	.578	.079	.148	.578	.196	.000	.287	-.245	-.239	.287	.023	-0.409	0.101	1.1	1.0	1.0	1.0	A+	
644	616990	7	445	.339	.333	.339	.178	.142	.009	.132	.070	.132	-.194	-.063	0.662	0.105	2.9	1.1	3.6	1.2	A+	
645	616994	7	431	.325	.207	.325	.327	.137	.005	.087	-.077	.087	.067	-.031	0.770	0.108	3.3	1.2	3.9	1.2	B+	A+
646	618862	7	431	.404	.232	.060	.299	.404	.005	.048	-.125	-.152	.210	.048	0.394	0.103	5.7	1.2	5.1	1.2	A+	A+
647	616615	7	431	.582	.111	.582	.220	.081	.005	.365	-.022	.365	-.260	-.128	-0.409	0.103	-1.8	0.9	-1.2	1.0	A-	A+
648	616999	7	431	.297	.297	.320	.269	.097	.016	.166	.166	-.014	-.015	-.061	0.898	0.110	1.6	1.1	2.7	1.2	A+	A-
649	618606	7	428	.332	.530	.332	.089	.049	.000	.335	-.196	.335	-.104	-.141	0.622	0.108	-0.8	1.0	-0.3	1.0	B-	
650	618860	7	428	.610	.115	.096	.610	.178	.002	.317	-.162	-.244	.317	-.051	-0.654	0.104	-0.2	1.0	0.0	1.0	A+	
651	616620	7	428	.231	.171	.442	.231	.152	.005	.036	-.113	.111	.036	-.042	1.168	0.119	2.3	1.2	3.6	1.3	A+	
652	616619	7	430	.265	.265	.219	.223	.284	.009	.190	.190	.023	-.055	-.058	1.047	0.115	1.4	1.1	2.0	1.2	B-	A-
653	616622	7	430	.386	.242	.188	.177	.386	.007	.367	-.154	-.097	-.143	.367	0.488	0.105	-0.3	1.0	-1.0	1.0	A-	
654	618803	7	434	.459	.099	.459	.240	.198	.005	.156	-.082	.156	-.111	.028	0.090	0.103	5.0	1.2	4.3	1.2	A-	
655	616621	7	427	.089	.183	.319	.408	.089	.002	.046	-.193	.005	.134	.046	2.532	0.174	0.6	1.1	2.6	1.6	A-	A+
656	617000	7	442	.468	.224	.468	.208	.097	.002	.309	-.038	.309	-.237	-.099	0.128	0.102	1.6	1.1	2.1	1.1	A-	
657	617184	7	428	.194	.493	.194	.061	.243	.009	.269	-.053	.269	-.213	-.026	1.513	0.128	-0.2	1.0	1.5	1.2	A+	
658	615974	7	445	.596	.252	.079	.072	.596	.002	.298	-.121	-.191	-.153	.298	-0.497	0.102	0.7	1.0	0.7	1.0	A+	
659	615973	7	428	.794	.044	.794	.096	.063	.002	.424	-.166	.424	-.211	-.266	-1.609	0.126	-1.4	0.9	-1.5	0.9	A-	
660	616339	7	434	.866	.025	.866	.046	.060	.002	.207	-.171	.207	-.199	.013	-2.091	0.148	0.3	1.0	0.7	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
661	615970	7	431	.550	.051	.088	.306	.550	.005	.356	-.227	-.096	-.151	.356	-0.262	0.102	-1.2	1.0	-1.1	1.0	B+	A+
662	617195	7	450	.831	.058	.069	.831	.036	.007	.485	-.219	-.243	.485	-.232	-1.881	0.134	-1.4	0.9	-2.5	0.7	A-	
663	619627	7	428	.657	.657	.243	.058	.042	.000	.358	.358	-.175	-.213	-.222	-0.873	0.107	-1.2	1.0	-1.3	0.9	A+	
664	617189	7	6496	.647	.087	.161	.647	.101	.005	.420	-.175	-.245	.420	-.159	-0.743	0.028	-7.6	0.9	-7.9	0.9	A+	A-
665	616022	7	428	.572	.572	.030	.285	.112	.000	.381	.381	-.123	-.159	-.303	-0.354	0.104	-1.2	1.0	-1.3	0.9	A-	
666	617183	7	6496	.718	.718	.080	.066	.131	.005	.399	.399	-.260	-.242	-.087	-1.114	0.029	-5.2	0.9	-4.1	0.9	B+	A-
667	615980	7	6496	.825	.025	.077	.063	.825	.010	.411	-.159	-.195	-.224	.411	-1.829	0.035	-4.0	0.9	-6.4	0.8	A+	A-
668	615994	7	431	.568	.167	.097	.165	.568	.002	.501	-.245	-.186	-.236	.501	-0.333	0.103	-4.8	0.9	-4.3	0.8	A+	A+
669	615979	7	430	.633	.633	.067	.119	.177	.005	.331	.331	-.247	-.191	-.023	-0.697	0.106	-0.4	1.0	2.5	1.1	A-	A-
670	617200	7	430	.602	.063	.158	.602	.167	.009	.192	-.189	-.119	.192	.104	-0.563	0.104	3.0	1.1	3.2	1.2	A+	A+
671	617187	7	430	.402	.235	.233	.119	.402	.012	.458	-.128	-.123	-.222	.458	0.348	0.104	-3.6	0.9	-3.2	0.9	A+	A+
672	615610	7	430	.393	.226	.174	.198	.393	.009	.272	.038	-.165	-.106	.272	0.394	0.104	1.1	1.0	0.8	1.0	A+	A-
673	615982	7	430	.537	.114	.537	.084	.256	.009	.270	-.055	.270	-.176	-.057	-0.263	0.103	1.8	1.1	1.3	1.1	A+	A+
674	619311	7	430	.244	.244	.405	.174	.165	.012	.146	.146	-.026	.015	-.033	1.163	0.118	1.6	1.1	2.4	1.2	A+	A+
675	619148	7	430	.502	.074	.216	.198	.502	.009	.348	-.130	-.090	-.149	.348	-0.105	0.102	-0.6	1.0	-0.7	1.0	A+	A+
676	617204	7	430	.437	.158	.181	.437	.209	.014	.272	-.113	-.179	.272	.040	0.174	0.103	1.4	1.0	0.9	1.0	A+	A-
677	618008	7	430	.533	.172	.533	.163	.128	.005	.418	-.180	.418	-.184	-.171	-0.181	0.103	-2.4	0.9	-2.2	0.9	A+	
678	617212	7	430	.574	.240	.574	.112	.072	.002	.459	-.285	.459	-.156	-.162	-0.368	0.104	-2.9	0.9	-3.0	0.9	A+	
679	617218	7	430	.379	.367	.065	.379	.181	.007	.352	-.116	-.166	.352	-.145	0.522	0.106	-0.4	1.0	0.0	1.0	A-	
680	616340	7	430	.426	.084	.426	.121	.363	.007	.317	-.111	.317	-.158	-.116	0.300	0.104	0.4	1.0	1.1	1.1	A+	
681	616337	7	430	.493	.147	.181	.172	.493	.007	.388	-.217	-.104	-.149	.388	-0.009	0.103	-1.0	1.0	-1.5	0.9	B+	
682	619147	7	430	.488	.191	.488	.112	.200	.009	.363	-.132	.363	-.178	-.130	0.006	0.103	-0.4	1.0	-0.3	1.0	A-	
683	617188	7	430	.814	.065	.814	.054	.056	.012	.456	-.222	.456	-.223	-.209	-1.732	0.132	-1.6	0.9	-2.7	0.7	A+	
684	615975	7	430	.261	.230	.261	.344	.156	.009	.280	-.075	.280	.039	-.238	1.142	0.116	0.4	1.0	1.0	1.1	A-	
685	618009	7	434	.652	.652	.214	.042	.085	.007	.472	.472	-.320	-.187	-.173	-0.833	0.108	-3.4	0.9	-2.9	0.8	A-	
686	617213	7	434	.548	.076	.189	.184	.548	.002	.383	-.158	-.138	-.209	.383	-0.321	0.103	-0.9	1.0	-0.4	1.0	A+	
687	617190	7	434	.691	.120	.088	.099	.691	.002	.468	-.242	-.200	-.226	.468	-1.018	0.110	-2.6	0.9	-2.4	0.8	B+	
688	616341	7	434	.482	.037	.071	.482	.403	.007	.299	-.141	-.233	.299	-.074	-0.019	0.103	1.3	1.0	1.9	1.1	A-	
689	616338	7	434	.790	.042	.120	.790	.039	.009	.461	-.212	-.265	.461	-.126	-1.623	0.125	-1.8	0.9	-2.2	0.8	B+	
690	617222	7	434	.777	.044	.777	.122	.048	.009	.468	-.129	.468	-.238	-.258	-1.531	0.122	-2.0	0.9	-2.1	0.8	B-	
691	617219	7	434	.399	.150	.113	.330	.399	.009	.545	-.223	-.238	-.164	.545	0.368	0.105	-5.4	0.8	-4.5	0.8	B-	
692	616334	7	434	.523	.088	.205	.523	.173	.012	.460	-.197	-.201	.460	-.153	-0.218	0.103	-2.9	0.9	-2.7	0.9	A-	
693	618010	7	427	.665	.665	.171	.089	.075	.000	.342	.342	-.162	-.207	-.158	-0.778	0.108	-0.3	1.0	-0.1	1.0	A-	A+
694	617215	7	427	.508	.508	.297	.075	.117	.002	.369	.369	-.270	-.166	-.033	-0.053	0.103	-0.7	1.0	-1.0	1.0	B+	A-
695	615987	7	427	.511	.176	.169	.143	.511	.002	.439	-.116	-.193	-.276	.439	-0.064	0.103	-2.7	0.9	-2.7	0.9	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
696	617191	7	427	.838	.030	.838	.082	.045	.005	.431	-.165	.431	-.285	-.223	-1.861	0.138	-1.4	0.9	-2.7	0.7	A-	A-
697	615991	7	427	.424	.333	.119	.424	.122	.002	.200	-.023	-.027	.200	-.222	0.329	0.104	3.0	1.1	2.7	1.1	B-	A-
698	615984	7	427	.824	.033	.061	.077	.824	.005	.522	-.271	-.313	-.240	.522	-1.745	0.133	-2.2	0.8	-3.7	0.6	A+	A-
699	617223	7	427	.302	.112	.234	.302	.342	.009	.062	-.198	-.172	.062	.265	0.917	0.111	3.6	1.2	4.6	1.3	A-	A+
700	616335	7	427	.550	.070	.171	.192	.550	.016	.557	-.228	-.270	-.246	.557	-0.277	0.104	-5.5	0.8	-4.6	0.8	A+	A+
701	618856	7	442	.581	.222	.075	.120	.581	.002	.439	-.162	-.167	-.284	.439	-0.401	0.104	-1.7	0.9	-1.7	0.9	A-	
702	615988	7	442	.244	.134	.403	.215	.244	.005	.140	-.079	.141	-.207	.140	1.272	0.117	2.7	1.2	2.8	1.3	A+	
703	615972	7	442	.550	.333	.077	.550	.034	.007	.337	-.096	-.249	.337	-.192	-0.260	0.103	1.0	1.0	0.8	1.0	A-	
704	617211	7	442	.423	.235	.204	.134	.423	.005	.448	-.111	-.225	-.196	.448	0.335	0.103	-2.3	0.9	-1.9	0.9	A+	
705	617205	7	442	.796	.072	.796	.050	.075	.007	.380	-.191	.380	-.165	-.176	-1.610	0.126	-0.5	1.0	-1.0	0.9	A-	
706	615992	7	442	.622	.077	.622	.167	.129	.005	.451	-.302	.451	-.250	-.082	-0.606	0.106	-2.0	0.9	-1.8	0.9	A+	
707	615995	7	442	.697	.697	.102	.118	.079	.005	.468	.468	-.186	-.186	-.302	-0.992	0.111	-2.3	0.9	-1.8	0.9	A+	
708	615976	7	442	.342	.222	.100	.342	.328	.009	.132	-.136	-.187	.132	.150	0.728	0.107	4.2	1.2	5.4	1.4	B+	
709	615989	7	430	.488	.133	.488	.167	.209	.002	.399	-.199	.399	-.176	-.168	0.003	0.102	-1.7	1.0	-1.3	1.0	A-	A-
710	617186	7	858	.671	.100	.671	.110	.114	.005	.457	-.162	.457	-.254	-.239	-0.912	0.077	-3.3	0.9	-3.8	0.9	B+	A-
711	616344	7	430	.142	.712	.142	.037	.109	.000	.079	.094	.079	-.174	-.120	1.932	0.142	0.7	1.1	3.2	1.5	B-	A+
712	617207	7	430	.779	.119	.779	.049	.054	.000	.463	-.210	.463	-.258	-.304	-1.457	0.122	-1.9	0.9	-2.2	0.8	A-	A+
713	617201	7	430	.716	.716	.147	.077	.061	.000	.502	.502	-.285	-.271	-.224	-1.085	0.113	-2.9	0.9	-2.8	0.8	A+	A-
714	618796	7	430	.584	.081	.216	.119	.584	.000	.454	-.091	-.223	-.332	.454	-0.424	0.104	-2.6	0.9	-2.6	0.9	A-	A+
715	615977	7	430	.507	.086	.147	.507	.258	.002	.377	-.238	-.222	.377	-.097	-0.080	0.102	-0.9	1.0	-0.9	1.0	A+	A-
716	616342	7	428	.708	.708	.124	.089	.075	.005	.385	.385	-.125	-.230	-.201	-1.071	0.112	-1.3	0.9	-1.6	0.9	A-	
717	617203	7	428	.456	.159	.187	.189	.456	.009	.288	-.153	-.118	-.044	.288	0.120	0.103	1.2	1.0	1.0	1.0	A-	
718	615968	7	428	.645	.194	.105	.047	.645	.009	.476	-.202	-.283	-.182	.476	-0.762	0.107	-3.0	0.9	-3.0	0.8	B+	
719	617208	7	428	.624	.058	.624	.168	.143	.007	.384	-.208	.384	-.166	-.143	-0.650	0.106	-1.1	1.0	-1.2	0.9	A-	
720	617202	7	428	.797	.035	.065	.797	.094	.009	.412	-.234	-.261	.412	-.109	-1.630	0.127	-1.4	0.9	-1.3	0.9	A+	
721	615604	7	428	.526	.117	.217	.126	.526	.014	.415	-.196	-.171	-.125	.415	-0.210	0.103	-2.0	0.9	-1.4	0.9	A+	
722	615978	7	428	.472	.175	.287	.051	.472	.014	.259	-.061	-.095	-.142	.259	0.036	0.103	2.1	1.1	2.4	1.1	B-	
723	616343	7	428	.575	.575	.098	.065	.262	.000	.332	.332	-.282	-.091	-.131	-0.429	0.103	-0.6	1.0	-0.7	1.0	A-	
724	615993	7	428	.808	.068	.054	.808	.068	.002	.419	-.160	-.306	.419	-.181	-1.707	0.129	-1.2	0.9	-1.7	0.8	A+	
725	617744	7	428	.678	.678	.173	.070	.077	.002	.371	.371	-.181	-.250	-.116	-0.932	0.109	-1.1	1.0	-0.7	1.0	B+	
726	617192	7	428	.439	.439	.124	.348	.084	.005	.441	.441	-.211	-.168	-.206	0.185	0.103	-3.5	0.9	-3.3	0.9	A+	
727	617209	7	428	.456	.336	.456	.124	.077	.007	.471	-.283	.471	-.129	-.168	0.097	0.103	-4.2	0.9	-3.3	0.9	A+	
728	619145	7	428	.108	.108	.329	.495	.061	.007	.070	.070	-.090	.175	-.216	2.223	0.161	0.5	1.1	2.1	1.4	B-	
729	617197	7	428	.451	.182	.294	.451	.063	.009	.358	-.111	-.174	.358	-.157	0.105	0.103	-0.8	1.0	-0.5	1.0	B-	
730	615990	7	445	.205	.416	.103	.205	.272	.005	.052	-.001	.075	.052	-.088	1.432	0.122	1.9	1.1	3.0	1.3	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
731	617745	7	445	.737	.130	.737	.079	.052	.002	.463	-.229	.463	-.277	-.215	-1.216	0.113	-2.0	0.9	-2.7	0.8	B+	
732	617193	7	445	.874	.034	.072	.874	.020	.000	.448	-.245	-.294	.448	-.201	-2.203	0.148	-1.3	0.9	-2.6	0.7	A-	
733	617220	7	445	.533	.128	.533	.205	.133	.002	.462	-.166	.462	-.208	-.259	-0.210	0.101	-3.2	0.9	-3.2	0.9	A+	
734	617210	7	445	.539	.294	.539	.099	.067	.000	.328	-.120	.328	-.231	-.159	-0.226	0.100	-0.2	1.0	-0.2	1.0	A+	
735	619146	7	445	.690	.205	.049	.690	.056	.000	.277	.001	-.251	.277	-.320	-0.954	0.108	0.5	1.0	1.1	1.1	A+	
736	616336	7	445	.721	.047	.721	.155	.072	.005	.401	-.140	.401	-.204	-.288	-1.142	0.112	-1.2	0.9	-1.3	0.9	B+	
737	617216	7	431	.348	.186	.348	.246	.216	.005	.220	-.052	.220	-.100	-.027	0.656	0.106	1.2	1.1	1.4	1.1	A-	A+
738	619366	7	431	.900	.900	.046	.030	.012	.012	.325	.325	-.178	-.140	-.023	-2.531	0.173	-0.3	1.0	-0.6	0.9	A+	A-
739	617221	7	431	.527	.072	.527	.149	.246	.007	.375	-.125	.375	-.161	-.144	-0.161	0.102	-1.7	1.0	-1.7	0.9	A+	A-
740	615985	7	431	.668	.668	.125	.072	.128	.007	.417	.417	-.232	-.258	-.061	-0.826	0.108	-2.1	0.9	-1.8	0.9	A+	B-
741	617746	7	431	.406	.074	.355	.153	.406	.012	.401	-.105	-.185	-.117	.401	0.372	0.103	-2.3	0.9	-2.2	0.9	A+	A+
742	617224	7	431	.552	.039	.299	.552	.100	.009	.255	-.116	-.109	.255	-.056	-0.282	0.102	1.6	1.1	1.6	1.1	A-	A+
743	618854	7	431	.578	.072	.165	.169	.578	.016	.428	-.195	-.205	-.107	.428	-0.416	0.104	-2.5	0.9	-2.5	0.9	A-	A-
744	617217	7	428	.360	.234	.248	.157	.360	.002	.147	-.046	-.127	.043	.147	0.484	0.106	3.1	1.1	2.8	1.2	A+	
745	617194	7	428	.509	.108	.278	.509	.103	.002	.298	-.236	-.023	.298	-.177	-0.199	0.102	0.4	1.0	0.5	1.0	A+	
746	617199	7	428	.773	.054	.145	.773	.023	.005	.497	-.243	-.346	.497	-.113	-1.525	0.121	-2.5	0.9	-3.1	0.8	A+	
747	617225	7	428	.598	.154	.145	.598	.094	.009	.426	-.150	-.188	.426	-.228	-0.620	0.104	-2.3	0.9	-2.1	0.9	B+	
748	615986	7	428	.262	.140	.145	.442	.262	.012	.156	-.137	-.238	.175	.156	0.979	0.115	1.6	1.1	2.5	1.2	A-	
749	617226	7	428	.682	.110	.108	.682	.091	.009	.487	-.130	-.349	.487	-.196	-1.030	0.110	-3.1	0.9	-2.9	0.8	A-	
750	617198	7	434	.479	.191	.131	.479	.191	.007	.383	-.250	-.200	.383	-.008	-0.010	0.103	-0.6	1.0	-0.6	1.0	A+	
751	615969	7	430	.356	.091	.358	.188	.356	.007	.370	-.183	-.057	-.152	.370	0.576	0.106	-1.2	1.0	-1.4	0.9	C-	A-
752	615971	7	430	.505	.270	.133	.091	.505	.002	.296	-.114	-.194	-.060	.296	-0.050	0.103	1.1	1.0	0.9	1.0	C+	
753	618855	7	430	.670	.147	.670	.100	.084	.000	.349	-.215	.349	-.178	-.126	-0.840	0.108	-0.2	1.0	-0.5	1.0	B-	A-
754	618853	7	427	.419	.300	.197	.080	.419	.005	.296	-.117	-.104	-.178	.296	0.343	0.104	0.8	1.0	0.4	1.0	A+	A-
755	617196	7	442	.491	.050	.201	.491	.256	.002	.419	-.219	-.212	.419	-.146	0.023	0.102	-1.7	0.9	-1.2	1.0	A+	
756	618603	7	442	.613	.192	.613	.104	.084	.007	.564	-.298	.564	-.310	-.155	-0.567	0.105	-5.0	0.8	-4.5	0.8	A-	
757	618802	7	430	.833	.833	.063	.049	.056	.000	.514	.514	-.370	-.219	-.240	-1.833	0.134	-2.1	0.8	-3.3	0.7	B+	A-
758	617526	7	428	.432	.432	.416	.084	.054	.014	.402	.402	-.123	-.219	-.201	0.219	0.104	-1.6	1.0	-1.4	0.9	A+	
759	616039	7	428	.764	.764	.049	.143	.042	.002	.344	.344	-.223	-.147	-.180	-1.413	0.120	-0.6	1.0	-0.8	0.9	A-	
760	616028	7	428	.238	.108	.586	.238	.065	.002	.129	-.106	-.010	.129	-.047	1.280	0.119	1.6	1.1	2.1	1.2	A-	
761	615289	7	6496	.377	.122	.377	.329	.166	.006	.133	-.019	.133	-.020	-.086	0.508	0.027	9.9	1.1	9.9	1.2	A-	A+
762	617521	7	428	.575	.194	.575	.072	.154	.005	.405	-.120	.405	-.214	-.230	-0.372	0.104	-1.1	1.0	-1.6	0.9	A-	
763	617519	7	6496	.524	.156	.261	.524	.053	.006	.289	-.157	-.076	.289	-.141	-0.169	0.026	4.8	1.0	4.4	1.1	A-	A+
764	615290	7	428	.409	.255	.241	.409	.084	.012	.196	-.034	-.116	.196	-.038	0.377	0.105	2.9	1.1	2.7	1.1	A+	
765	616316	7	6496	.384	.222	.327	.384	.055	.013	.213	.039	-.118	.213	-.169	0.460	0.027	9.3	1.1	9.2	1.1	A+	A-

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
766	615284	7	431	.186	.246	.186	.420	.139	.009	.145	-.098	.145	.018	.068	1.625	0.129	0.6	1.1	2.0	1.2	A-	A-
767	620006	7	431	.383	.137	.383	.049	.425	.007	.170	-.123	.170	-.141	.065	0.518	0.105	2.3	1.1	1.9	1.1	A-	A+
768	616033	7	431	.299	.343	.186	.299	.158	.014	.235	-.104	-.076	.235	.058	0.924	0.111	0.6	1.0	0.8	1.1	C+	A+
769	615285	7	450	.162	.511	.256	.162	.067	.004	-.054	.072	.025	-.054	-.050	1.767	0.133	1.7	1.2	3.4	1.5	A-	
770	617522	7	450	.393	.393	.313	.242	.042	.009	.334	.334	-.119	-.105	-.166	0.404	0.102	-0.5	1.0	0.1	1.0	A-	
771	615291	7	450	.256	.182	.173	.376	.256	.013	.324	-.118	-.195	.031	.324	1.112	0.113	-1.3	0.9	-0.8	0.9	A+	
772	617520	7	434	.664	.228	.067	.664	.042	.000	.363	-.184	-.321	.363	-.071	-0.750	0.108	-0.9	1.0	-0.9	0.9	A+	
773	615286	7	434	.339	.339	.279	.120	.260	.002	.192	.192	-.050	-.199	-.008	0.802	0.108	1.9	1.1	3.1	1.2	A-	
774	615292	7	434	.392	.392	.099	.145	.359	.005	.365	.365	-.246	-.172	-.079	0.513	0.105	-0.9	1.0	0.2	1.0	A-	
775	615287	7	430	.623	.077	.623	.156	.133	.012	.322	-.104	.322	-.158	-.087	-0.667	0.106	0.5	1.0	-0.4	1.0	A+	A+
776	615302	7	430	.437	.172	.437	.102	.279	.009	.292	-.121	.292	-.143	-.027	0.190	0.103	0.8	1.0	0.7	1.0	A-	A-
777	615294	7	430	.633	.633	.140	.119	.100	.009	.412	.412	-.130	-.193	-.158	-0.707	0.106	-1.8	0.9	-2.0	0.9	A-	A-
778	616030	7	430	.342	.172	.202	.342	.281	.002	.182	-.196	-.116	.182	.108	0.714	0.108	2.6	1.1	2.5	1.2	B+	
779	615303	7	430	.426	.400	.426	.088	.077	.009	.261	-.042	.261	-.196	-.122	0.297	0.104	1.7	1.1	2.2	1.1	A+	
780	617527	7	430	.402	.074	.200	.402	.316	.007	.318	-.173	-.102	.318	-.106	0.410	0.105	0.5	1.0	1.0	1.1	A-	
781	616031	7	434	.507	.221	.507	.074	.194	.005	.219	-.076	.219	-.141	-.069	-0.137	0.103	3.3	1.1	3.5	1.2	A+	
782	615304	7	434	.463	.194	.166	.463	.168	.009	.322	-.087	-.119	.322	-.168	0.056	0.103	0.6	1.0	0.3	1.0	A-	
783	615307	7	434	.369	.182	.283	.369	.157	.009	.293	-.111	-.039	.293	-.127	0.513	0.106	1.2	1.1	1.3	1.1	A+	
784	615295	7	434	.373	.373	.118	.120	.380	.009	.354	.354	-.238	-.201	.012	0.490	0.106	0.0	1.0	-0.3	1.0	A-	
785	615288	7	427	.693	.119	.693	.094	.091	.002	.393	-.203	.393	-.163	-.213	-0.931	0.111	-1.2	1.0	-1.8	0.9	A-	A-
786	615305	7	427	.478	.356	.478	.063	.096	.007	.342	-.169	.342	-.226	-.084	0.076	0.103	-0.1	1.0	-0.1	1.0	A-	A+
787	620011	7	427	.157	.169	.361	.307	.157	.007	.194	-.070	-.029	-.036	.194	1.843	0.138	0.3	1.0	1.4	1.2	A-	A-
788	615296	7	427	.391	.391	.384	.110	.105	.009	.359	.359	-.117	-.198	-.123	0.474	0.105	-0.6	1.0	0.0	1.0	A-	A-
789	615293	7	442	.477	.477	.260	.149	.109	.005	.448	.448	-.133	-.236	-.222	0.080	0.103	-2.6	0.9	-2.2	0.9	A-	
790	615306	7	442	.432	.432	.109	.315	.140	.005	.373	.373	-.189	-.030	-.273	0.292	0.103	-0.1	1.0	-0.3	1.0	A-	
791	616614	7	442	.509	.170	.509	.163	.154	.005	.404	-.152	.404	-.203	-.147	-0.068	0.102	-1.0	1.0	-0.7	1.0	A+	
792	616036	7	442	.403	.127	.113	.403	.351	.007	.284	-.164	-.302	.284	.065	0.429	0.104	1.9	1.1	2.1	1.1	A-	
793	617523	7	430	.554	.554	.095	.058	.288	.005	.228	.228	-.183	-.193	-.029	-0.297	0.103	2.6	1.1	2.4	1.1	B+	A+
794	618859	7	430	.242	.242	.300	.249	.205	.005	.069	.069	-.076	-.031	.049	1.218	0.118	2.4	1.1	3.6	1.4	A+	A+
795	616037	7	430	.407	.230	.147	.216	.407	.000	.197	.129	-.118	-.265	.197	0.380	0.104	2.8	1.1	2.5	1.1	A+	A-
796	617524	7	428	.734	.147	.734	.047	.065	.007	.348	-.215	.348	-.183	-.084	-1.221	0.116	-0.8	1.0	-0.1	1.0	A+	
797	618601	7	428	.294	.372	.192	.294	.133	.009	.275	-.001	-.235	.275	-.030	0.902	0.112	0.4	1.0	1.1	1.1	A-	
798	618858	7	428	.547	.119	.145	.547	.182	.007	.306	-.106	-.208	.306	-.050	-0.290	0.103	0.8	1.0	0.7	1.0	A-	
799	618602	7	428	.423	.180	.154	.241	.423	.002	.310	-.051	-.210	-.112	.310	0.266	0.103	-0.1	1.0	-0.3	1.0	A+	
800	620010	7	428	.528	.112	.178	.528	.180	.002	.328	-.154	-.105	.328	-.168	-0.228	0.102	-0.1	1.0	-0.2	1.0	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
801	617530	7	428	.285	.329	.077	.285	.301	.007	.280	-.117	-.260	.280	.030	0.911	0.112	0.2	1.0	0.4	1.0	A+	
802	620007	7	428	.451	.224	.451	.136	.182	.007	.195	.011	.195	-.114	-.122	0.129	0.103	2.7	1.1	2.7	1.1	A+	
803	615297	7	445	.173	.301	.173	.173	.353	.000	.101	.036	.101	-.173	.023	1.673	0.130	0.6	1.1	3.4	1.4	A-	
804	617528	7	445	.467	.119	.467	.236	.175	.002	.251	-.080	.251	-.075	-.175	0.092	0.100	1.5	1.1	1.4	1.1	A+	
805	615283	7	445	.400	.285	.175	.400	.139	.000	.367	-.151	-.219	.367	-.082	0.394	0.102	-1.1	1.0	-0.9	1.0	A-	
806	616314	7	445	.562	.128	.562	.223	.085	.002	.340	-.070	.340	-.247	-.155	-0.334	0.101	-0.5	1.0	-0.6	1.0	B-	
807	620008	7	445	.344	.344	.178	.198	.279	.002	.254	.254	-.106	-.047	-.131	0.658	0.105	0.9	1.0	1.4	1.1	A-	
808	615299	7	431	.139	.336	.274	.241	.139	.009	.140	.011	-.012	-.041	.140	1.940	0.143	0.4	1.0	1.1	1.1	A-	A-
809	615279	7	431	.446	.195	.446	.142	.214	.005	.348	-.109	.348	-.162	-.105	0.204	0.102	-1.0	1.0	-0.7	1.0	A+	A+
810	620009	7	431	.450	.339	.118	.450	.088	.005	.216	-.012	-.167	.216	-.061	0.183	0.102	2.6	1.1	2.3	1.1	A-	A+
811	617529	7	431	.548	.548	.227	.151	.067	.007	.426	.426	-.196	-.145	-.181	-0.258	0.102	-3.1	0.9	-3.0	0.9	A-	B-
812	615298	7	431	.241	.028	.160	.559	.241	.012	.058	-.107	-.169	.191	.058	1.214	0.117	2.3	1.1	3.6	1.3	A-	A+
813	615233	7	428	.332	.276	.332	.297	.094	.002	.161	.011	.161	-.158	.012	0.621	0.108	2.3	1.1	2.6	1.2	A-	
814	615301	7	428	.407	.126	.407	.327	.138	.002	.203	-.234	.203	.061	-.113	0.264	0.104	2.2	1.1	2.2	1.1	B-	
815	615280	7	428	.402	.150	.341	.103	.402	.005	.384	-.101	-.168	-.192	.384	0.279	0.104	-1.6	1.0	-1.3	1.0	A-	
816	617525	7	428	.327	.143	.231	.294	.327	.005	.344	.012	-.157	-.186	.344	0.638	0.108	-0.6	1.0	-0.5	1.0	A+	
817	615300	7	428	.577	.577	.203	.150	.061	.009	.457	.457	-.261	-.180	-.146	-0.522	0.103	-3.1	0.9	-3.2	0.9	A+	
818	616038	7	430	.363	.154	.195	.274	.363	.014	.311	-.053	-.055	-.152	.311	0.523	0.106	-0.1	1.0	0.3	1.0	A+	A+
819	618801	7	430	.116	.051	.347	.479	.116	.007	.062	-.253	.058	.057	.062	2.227	0.156	1.0	1.1	3.1	1.6	A+	
820	615308	7	427	.450	.148	.450	.262	.129	.012	.350	-.044	.350	-.215	-.129	0.197	0.104	-0.2	1.0	0.4	1.0	A-	A+
821	616313	7	434	.311	.249	.152	.311	.279	.009	.357	-.105	-.126	.357	-.089	0.805	0.110	-0.8	1.0	0.6	1.0	A-	
822	615784	8	264	.784	.008	.186	.023	.784	.000	.362	-.049	-.322	-.129	.362	-1.327	0.158	-0.7	0.9	-1.5	0.8	B-	
823	615776	8	263	.897	.023	.897	.034	.027	.019	.314	-.042	.314	-.059	-.092	-2.589	0.241	0.5	1.1	0.6	1.2	A+	
824	617289	8	260	.100	.100	.081	.650	.162	.008	.066	.066	.036	-.158	.145	2.722	0.220	0.2	1.0	1.6	1.4	A-	
825	617279	8	260	.858	.039	.058	.858	.039	.008	.452	-.191	-.196	.452	-.204	-2.003	0.191	-0.6	0.9	-1.6	0.7	A-	
826	620400	8	263	.764	.061	.076	.080	.764	.019	.585	-.165	-.313	-.230	.585	-1.277	0.164	-2.4	0.8	-3.0	0.6	A+	
827	615850	8	260	.415	.223	.135	.415	.215	.012	.280	.022	-.180	.280	-.089	0.540	0.139	1.9	1.1	1.9	1.2	A+	
828	620416	8	260	.308	.250	.308	.165	.265	.012	.123	-.016	.123	-.163	.156	1.109	0.147	4.1	1.3	3.9	1.5	A+	
829	620411	8	260	.235	.162	.208	.385	.235	.012	.442	-.108	-.166	-.046	.442	1.554	0.160	-2.1	0.8	-2.0	0.7	B-	
830	617280	8	5825	.823	.090	.823	.029	.052	.006	.422	-.259	.422	-.198	-.121	-1.660	0.037	-4.1	0.9	-4.6	0.8	A+	A-
831	620636	8	260	.369	.312	.108	.196	.369	.015	.241	.094	-.169	-.107	.241	0.773	0.141	2.8	1.2	2.1	1.2	A-	
832	617282	8	5825	.412	.412	.359	.133	.089	.008	.318	.318	.043	-.253	-.215	0.591	0.029	5.9	1.1	4.5	1.1	A+	A-
833	615845	8	260	.619	.073	.212	.619	.077	.019	.427	-.310	-.133	.427	-.026	-0.499	0.142	-1.0	0.9	-0.3	1.0	A-	
834	620412	8	259	.772	.772	.073	.073	.077	.004	.409	.409	-.291	-.138	-.138	-1.362	0.164	-0.6	1.0	-1.2	0.8	A+	
835	620638	8	259	.618	.127	.618	.073	.174	.008	.354	-.006	.354	-.310	-.172	-0.474	0.143	1.0	1.1	0.7	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
836	620428	8	259	.548	.193	.162	.548	.085	.012	.325	-.039	-.059	.325	-.283	-0.109	0.139	2.1	1.1	1.5	1.1	A-	
837	620417	8	259	.622	.077	.239	.622	.046	.015	.375	-.302	-.055	.375	-.112	-0.472	0.143	0.6	1.0	-0.1	1.0	A+	
838	617300	8	259	.193	.286	.324	.182	.193	.015	.269	.003	-.069	-.053	.269	1.860	0.170	0.4	1.0	0.2	1.0	B+	
839	620429	8	259	.653	.031	.212	.100	.653	.004	.374	-.093	-.242	-.184	.374	-0.633	0.143	0.0	1.0	0.3	1.0	A-	
840	620639	8	259	.448	.112	.170	.448	.259	.012	.410	-.117	-.270	.410	-.133	0.380	0.138	-0.4	1.0	-0.7	1.0	B-	
841	617301	8	259	.378	.293	.378	.139	.189	.000	.188	.040	.188	-.217	-.087	0.731	0.140	3.7	1.2	3.8	1.3	B+	
842	620031	8	259	.660	.143	.660	.116	.077	.004	.288	-.037	.288	-.229	-.168	-0.663	0.144	1.2	1.1	1.9	1.2	A+	
843	620398	8	265	.423	.196	.423	.272	.109	.000	.274	-.174	.274	-.120	-.040	0.553	0.135	1.9	1.1	1.5	1.1	A+	
844	617302	8	265	.626	.034	.117	.626	.223	.000	.364	-.163	-.198	.364	-.199	-0.431	0.139	-0.3	1.0	-0.2	1.0	A-	
845	615903	8	265	.457	.181	.457	.279	.083	.000	.230	-.266	.230	.070	-.157	0.408	0.134	2.0	1.1	2.9	1.2	A-	
846	620033	8	265	.676	.676	.083	.125	.117	.000	.437	.437	-.122	-.292	-.233	-0.668	0.143	-1.2	0.9	-1.5	0.9	A+	
847	620399	8	262	.489	.489	.179	.225	.092	.015	.346	.346	-.233	-.095	.026	0.199	0.138	1.4	1.1	1.1	1.1	B+	
848	617303	8	262	.580	.118	.122	.580	.164	.015	.283	-.317	-.147	.283	.195	-0.254	0.140	2.2	1.1	3.1	1.3	A+	
849	615904	8	262	.672	.057	.092	.168	.672	.012	.485	-.177	-.164	-.230	.485	-0.741	0.146	-1.6	0.9	-1.6	0.8	A+	
850	620402	8	262	.611	.324	.611	.019	.038	.008	.236	-.049	.236	-.212	-.086	-0.235	0.139	2.2	1.1	1.2	1.1	B-	
851	620418	8	288	.271	.198	.424	.271	.104	.004	.378	-.154	-.050	.378	-.191	1.458	0.140	-1.1	0.9	-0.7	0.9	B-	
852	620384	8	263	.635	.635	.213	.076	.072	.004	.541	.541	-.389	-.216	-.082	-0.442	0.139	-3.5	0.8	-3.4	0.8	A-	
853	620423	8	263	.323	.270	.080	.323	.323	.004	.314	-.051	-.256	.314	-.069	1.083	0.142	0.8	1.1	1.6	1.2	B-	
854	620419	8	263	.578	.126	.099	.190	.578	.008	.554	-.186	-.257	-.283	.554	-0.173	0.136	-4.2	0.8	-3.5	0.8	A-	
855	615779	8	263	.434	.190	.171	.434	.186	.019	.296	-.110	-.051	.296	-.142	0.498	0.136	1.9	1.1	1.9	1.1	A+	
856	620420	8	263	.677	.099	.677	.183	.034	.008	.328	-.084	.328	-.154	-.161	-0.648	0.146	1.6	1.1	0.6	1.1	A-	
857	617283	8	263	.662	.662	.065	.088	.179	.008	.503	.503	-.223	-.294	-.157	-0.584	0.145	-1.6	0.9	-1.6	0.9	A+	
858	615896	8	263	.548	.107	.221	.548	.114	.011	.392	-.265	-.007	.392	-.192	0.013	0.139	0.4	1.0	0.4	1.0	A-	
859	620424	8	263	.574	.080	.574	.228	.099	.019	.438	-.084	.438	-.185	-.176	-0.157	0.140	0.1	1.0	-0.1	1.0	A-	
860	620421	8	264	.375	.375	.129	.231	.258	.008	.309	.309	-.160	-.195	.039	0.727	0.137	0.8	1.0	1.0	1.1	A-	
861	615897	8	264	.477	.239	.110	.163	.477	.011	.412	-.104	-.174	-.196	.412	0.226	0.134	-1.0	1.0	-0.5	1.0	A-	
862	620403	8	264	.424	.246	.216	.424	.106	.008	.331	.003	-.198	.331	-.169	0.486	0.135	1.2	1.1	0.8	1.1	A+	
863	620394	8	264	.466	.102	.311	.466	.110	.011	.448	-.054	-.265	.448	-.159	0.280	0.134	-1.4	0.9	-1.2	0.9	B-	
864	615782	8	264	.742	.042	.742	.083	.121	.011	.282	.012	.282	-.222	-.090	-1.129	0.152	1.0	1.1	1.0	1.1	A-	
865	620425	8	264	.436	.197	.436	.246	.110	.011	.437	-.222	.437	-.108	-.151	0.424	0.135	-1.2	0.9	-0.5	1.0	A-	
866	617286	8	264	.591	.068	.136	.193	.591	.011	.503	-.176	-.233	-.224	.503	-0.317	0.136	-2.7	0.9	-2.2	0.9	B+	
867	617285	8	269	.829	.829	.063	.019	.082	.007	.447	.447	-.216	-.200	-.172	-1.634	0.175	-1.2	0.9	-1.3	0.8	A+	
868	620395	8	269	.729	.130	.729	.063	.071	.007	.488	-.200	.488	-.300	-.138	-0.946	0.148	-1.9	0.9	-2.1	0.8	A+	
869	620404	8	269	.714	.714	.108	.134	.034	.011	.482	.482	-.205	-.236	-.168	-0.854	0.146	-2.1	0.9	-2.1	0.8	A-	
870	620397	8	259	.568	.189	.147	.089	.568	.008	.330	-.073	-.146	-.154	.330	-0.099	0.139	1.3	1.1	1.8	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
871	620405	8	259	.317	.127	.394	.154	.317	.008	.388	-.091	-.058	-.228	.388	1.164	0.146	-0.7	1.0	-0.8	0.9	A-	
872	617287	8	259	.537	.170	.537	.104	.178	.012	.436	-.179	.436	-.129	-.171	0.047	0.138	-0.2	1.0	-0.4	1.0	A+	
873	617278	8	259	.614	.143	.147	.073	.614	.023	.458	-.104	-.281	-.125	.458	-0.386	0.143	-0.7	1.0	-1.2	0.9	A-	
874	615793	8	260	.158	.227	.446	.162	.158	.008	.220	-.049	.025	-.149	.220	2.174	0.181	0.1	1.0	0.8	1.2	A-	
875	620640	8	260	.842	.081	.015	.842	.058	.004	.313	-.171	-.115	.313	-.179	-1.797	0.184	0.2	1.0	-0.3	0.9	A+	
876	617281	8	260	.619	.139	.619	.142	.092	.008	.444	-.265	.444	-.232	-.090	-0.396	0.140	-1.1	0.9	-1.4	0.9	A+	
877	620406	8	260	.496	.496	.162	.142	.189	.012	.498	.498	-.247	-.295	-.093	0.200	0.136	-2.5	0.9	-2.4	0.9	A+	
878	620641	8	273	.377	.282	.377	.227	.114	.000	.431	-.168	.431	-.211	-.143	0.711	0.134	-1.7	0.9	-2.0	0.9	A-	
879	620407	8	273	.513	.205	.128	.150	.513	.004	.481	-.129	-.210	-.268	.481	0.074	0.130	-2.7	0.9	-2.2	0.9	A-	
880	615794	8	273	.381	.213	.128	.381	.271	.007	.274	-.136	-.205	.274	.039	0.691	0.133	0.9	1.0	1.6	1.1	A-	
881	615795	8	262	.615	.615	.050	.107	.221	.008	.551	.551	-.240	-.329	-.216	-0.543	0.139	-3.3	0.8	-3.1	0.8	B-	
882	620642	8	262	.527	.176	.130	.157	.527	.012	.519	-.205	-.174	-.247	.519	-0.125	0.136	-2.5	0.9	-2.4	0.9	A+	
883	615796	8	262	.657	.061	.195	.657	.073	.015	.533	-.190	-.225	.533	-.312	-0.813	0.144	-1.9	0.9	-2.4	0.8	A-	
884	615772	8	262	.313	.313	.160	.302	.206	.019	.371	.371	-.113	-.180	-.022	0.926	0.145	-0.3	1.0	1.3	1.1	B-	
885	615797	8	260	.539	.242	.042	.173	.539	.004	.436	-.268	-.118	-.149	.436	-0.110	0.135	-1.2	0.9	-1.7	0.9	A-	
886	615775	8	260	.727	.727	.050	.085	.135	.004	.326	.326	-.100	-.145	-.178	-1.080	0.150	0.3	1.0	-0.2	1.0	A+	
887	620643	8	260	.515	.208	.123	.515	.150	.004	.384	-.168	-.363	.384	.050	0.000	0.135	-0.2	1.0	-0.2	1.0	A-	
888	615898	8	260	.500	.096	.165	.235	.500	.004	.408	-.198	-.186	-.127	.408	0.073	0.135	-0.1	1.0	-0.4	1.0	B+	
889	620644	8	259	.676	.178	.039	.676	.100	.008	.540	-.332	-.227	.540	-.187	-0.705	0.144	-3.5	0.8	-3.4	0.7	A-	
890	615799	8	259	.425	.297	.425	.135	.139	.004	.337	-.175	.337	-.089	-.101	0.535	0.137	0.5	1.0	0.7	1.0	A-	
891	615846	8	289	.401	.197	.173	.225	.401	.004	.396	-.149	-.129	-.206	.396	0.596	0.130	-0.3	1.0	-0.3	1.0	A-	
892	615783	8	289	.716	.222	.042	.716	.017	.004	.346	-.232	-.192	.346	-.097	-0.958	0.140	0.2	1.0	0.2	1.0	A-	
893	615800	8	289	.796	.125	.796	.055	.024	.000	.395	-.185	.395	-.344	-.128	-1.448	0.155	-0.7	0.9	-0.7	0.9	A+	
894	615786	8	260	.369	.131	.127	.369	.365	.008	.183	-.008	-.064	.183	-.059	0.752	0.139	2.9	1.2	3.0	1.3	A+	
895	620408	8	260	.608	.096	.204	.608	.081	.012	.405	-.153	-.139	.405	-.187	-0.417	0.139	-0.4	1.0	-0.2	1.0	A-	
896	615847	8	260	.596	.096	.115	.596	.181	.012	.508	-.224	-.232	.508	-.164	-0.359	0.138	-2.2	0.9	-2.2	0.8	A-	
897	615801	8	260	.350	.350	.127	.481	.031	.012	.345	.345	-.277	-.025	-.082	0.845	0.141	0.2	1.0	0.9	1.1	A-	
898	620413	8	260	.385	.092	.385	.285	.223	.015	.334	-.098	.334	-.033	-.180	0.661	0.139	0.7	1.0	0.5	1.0	A+	
899	620414	8	260	.508	.039	.408	.042	.508	.004	.233	-.161	-.075	-.195	.233	0.129	0.134	2.6	1.1	2.8	1.2	B+	
900	615902	8	260	.865	.069	.031	.035	.865	.000	.339	-.260	-.184	-.099	.339	-1.973	0.194	-0.3	1.0	-0.9	0.8	A-	
901	617288	8	260	.654	.050	.654	.196	.100	.000	.429	-.193	.429	-.187	-.292	-0.562	0.141	-1.5	0.9	-1.8	0.9	A+	
902	615848	8	260	.196	.146	.365	.196	.289	.004	.118	-.294	-.031	.118	.162	1.806	0.165	0.9	1.1	2.9	1.5	A-	
903	620383	8	260	.577	.212	.100	.577	.112	.000	.395	-.158	-.214	.395	-.212	-0.199	0.136	-0.2	1.0	-0.1	1.0	B+	
904	620409	8	260	.339	.173	.204	.339	.285	.000	.299	-.158	-.213	.299	.010	0.945	0.140	0.5	1.0	1.0	1.1	A+	
905	615787	8	260	.508	.146	.150	.185	.508	.012	.438	-.132	-.282	-.161	.438	0.102	0.135	-0.9	1.0	-1.1	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
906	617290	8	261	.556	.556	.088	.184	.169	.004	.305	.305	-.111	-.116	-.145	-0.191	0.136	1.6	1.1	1.9	1.1	A+	
907	615849	8	261	.571	.571	.111	.138	.176	.004	.438	.438	-.157	-.173	-.228	-0.265	0.137	-0.5	1.0	-0.6	1.0	A-	
908	620410	8	261	.617	.142	.061	.617	.176	.004	.465	-.344	-.267	.465	-.055	-0.493	0.139	-1.4	0.9	-1.9	0.9	B+	
909	620415	8	261	.487	.084	.295	.487	.130	.004	.417	-.183	-.175	.417	-.169	0.140	0.135	-0.7	1.0	-0.5	1.0	B-	
910	620635	8	261	.245	.146	.245	.360	.241	.008	.162	-.182	.162	-.051	.095	1.396	0.154	2.0	1.2	2.7	1.4	A-	
911	620382	8	261	.621	.157	.153	.621	.061	.008	.339	-.119	-.187	.339	-.121	-0.525	0.140	0.6	1.0	1.1	1.1	A-	
912	620381	8	261	.264	.264	.295	.261	.172	.008	.235	.235	-.092	.075	-.183	1.278	0.151	1.4	1.1	1.2	1.1	A+	
913	615777	8	264	.288	.250	.296	.155	.288	.011	.065	-.124	.034	.121	.065	1.181	0.146	4.0	1.3	4.1	1.5	A-	
914	615790	8	260	.439	.439	.219	.239	.104	.000	.351	.351	-.107	-.235	-.099	0.500	0.136	1.0	1.1	0.6	1.0	B-	
915	615789	8	259	.583	.147	.135	.583	.127	.008	.386	-.186	-.310	.386	.064	-0.177	0.139	0.4	1.0	1.1	1.1	A-	
916	617059	8	269	.093	.216	.123	.093	.561	.007	.117	-.074	-.097	.117	.141	2.810	0.222	0.2	1.0	1.5	1.4	A-	
917	615791	8	536	.334	.274	.216	.168	.334	.008	.331	-.049	-.049	-.219	.331	1.011	0.100	0.6	1.0	0.6	1.0	A+	
918	617284	8	260	.619	.181	.065	.619	.131	.004	.457	-.243	-.293	.457	-.099	-0.503	0.138	-1.6	0.9	-1.4	0.9	A+	
919	620396	8	259	.425	.127	.151	.425	.293	.004	.185	-.121	-.275	.185	.115	0.492	0.138	3.7	1.2	3.4	1.3	A-	
920	617292	8	260	.335	.242	.335	.258	.158	.008	.330	-.091	.330	-.152	-.115	0.972	0.141	0.2	1.0	0.6	1.1	A+	
921	620637	8	265	.438	.094	.113	.351	.438	.004	.380	-.127	-.244	-.149	.380	0.494	0.135	0.1	1.0	0.3	1.0	A+	
922	620401	8	262	.710	.088	.710	.095	.095	.012	.392	-.148	.392	-.112	-.168	-0.963	0.151	0.0	1.0	0.0	1.0	A-	
923	620426	8	259	.421	.270	.421	.220	.077	.012	.288	-.060	.288	-.016	-.228	0.528	0.139	2.0	1.1	1.6	1.1	A+	
924	620427	8	288	.403	.257	.247	.403	.090	.004	.298	-.028	-.165	.298	-.137	0.785	0.128	0.8	1.0	0.6	1.0	A+	
925	620362	8	273	.502	.502	.051	.081	.359	.007	.429	.429	-.041	-.177	-.280	0.113	0.130	-1.6	0.9	-1.7	0.9	A+	
926	617484	8	260	.900	.015	.035	.046	.900	.004	.318	-.131	-.126	-.212	.318	-2.408	0.223	0.0	1.0	-0.3	0.9	A+	
927	618896	8	273	.714	.714	.051	.048	.183	.004	.323	.323	-.164	-.198	-.118	-0.918	0.143	-0.1	1.0	0.6	1.1	A+	
928	617294	8	263	.380	.179	.205	.232	.380	.004	.312	-.180	-.117	-.030	.312	0.789	0.138	1.1	1.1	0.6	1.0	A+	
929	617293	8	288	.701	.024	.108	.160	.701	.007	.341	-.074	-.174	-.171	.341	-0.640	0.137	-0.2	1.0	0.0	1.0	A+	
930	617485	8	5825	.783	.066	.114	.783	.032	.006	.513	-.220	-.309	.513	-.189	-1.354	0.034	-9.0	0.8	-9.9	0.7	A-	A-
931	617577	8	5825	.527	.527	.197	.163	.105	.008	.452	.452	-.215	-.198	-.120	0.034	0.029	-6.8	0.9	-6.3	0.9	A+	A-
932	617585	8	5825	.443	.092	.242	.443	.212	.011	.301	-.138	-.211	.301	.035	0.436	0.029	7.5	1.1	7.0	1.1	A+	A+
933	615834	8	259	.583	.220	.583	.116	.081	.000	.380	-.210	.380	-.139	-.205	-0.273	0.138	0.1	1.0	0.3	1.0	A-	
934	615835	8	265	.347	.555	.072	.347	.026	.000	.012	.089	-.152	.012	-.066	0.946	0.139	4.8	1.3	5.0	1.5	A+	
935	615836	8	262	.550	.061	.122	.550	.252	.015	.392	-.107	-.242	.392	-.085	-0.107	0.139	0.6	1.0	0.2	1.0	A+	
936	620041	8	262	.305	.305	.046	.534	.107	.008	.096	.096	-.082	-.014	.086	1.306	0.147	4.3	1.3	4.6	1.6	A-	
937	615838	8	262	.523	.523	.115	.279	.076	.008	.405	.405	-.203	-.094	-.186	0.200	0.136	-0.6	1.0	-0.9	0.9	A-	
938	617579	8	268	.369	.369	.306	.168	.157	.000	.353	.353	-.222	-.069	-.117	0.906	0.138	0.7	1.0	0.8	1.1	A+	
939	617595	8	268	.668	.078	.668	.179	.075	.000	.346	-.096	.346	-.340	-.026	-0.563	0.141	0.4	1.0	0.7	1.1	A-	
940	617488	8	268	.795	.795	.060	.075	.067	.004	.493	.493	-.176	-.320	-.276	-1.342	0.162	-1.6	0.9	-1.9	0.7	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
941	615839	8	268	.761	.086	.082	.067	.761	.004	.584	-.223	-.354	-.335	.584	-1.121	0.154	-3.1	0.8	-2.7	0.7	A+	
942	618893	8	268	.698	.698	.127	.116	.052	.008	.392	.392	-.205	-.137	-.252	-0.752	0.145	-0.3	1.0	0.4	1.0	A+	
943	618549	8	268	.414	.414	.164	.280	.138	.004	.325	.325	-.075	-.203	-.104	0.672	0.135	1.2	1.1	0.7	1.1	A-	
944	618550	8	288	.688	.021	.038	.250	.688	.004	.478	-.187	-.166	-.322	.478	-0.557	0.135	-2.5	0.9	-2.5	0.8	A+	
945	617581	8	288	.375	.254	.129	.375	.240	.004	.147	-.137	-.009	.147	.035	0.918	0.129	2.8	1.1	3.3	1.2	B-	
946	618897	8	288	.389	.115	.212	.389	.281	.004	.204	-.188	-.120	.204	.073	0.851	0.129	1.6	1.1	1.8	1.1	A+	
947	615851	8	288	.458	.125	.344	.069	.458	.004	.503	-.230	-.254	-.118	.503	0.527	0.126	-4.0	0.8	-3.4	0.8	C-	
948	617597	8	288	.847	.847	.014	.090	.045	.004	.110	.110	-.056	.044	-.105	-1.584	0.171	0.9	1.1	2.9	1.5	A+	
949	617582	8	263	.319	.376	.186	.319	.110	.008	.226	-.095	-.204	.226	.127	1.089	0.143	2.1	1.1	2.1	1.2	A-	
950	615831	8	263	.369	.369	.308	.198	.107	.019	.386	.386	-.090	-.191	-.153	0.808	0.139	-0.7	1.0	-0.8	0.9	A+	
951	615852	8	263	.434	.213	.088	.243	.434	.023	.337	-.025	-.206	-.166	.337	0.484	0.136	1.0	1.1	0.4	1.0	A-	
952	618964	8	263	.319	.373	.319	.202	.084	.023	.171	.042	.171	-.115	-.092	1.072	0.144	3.1	1.2	2.4	1.2	A-	
953	615853	8	263	.453	.323	.148	.453	.068	.008	.340	-.193	-.107	.340	-.005	0.495	0.138	1.8	1.1	1.7	1.1	A-	
954	617295	8	263	.095	.095	.285	.266	.342	.011	.054	.054	.085	-.165	.143	2.907	0.222	0.7	1.1	2.5	1.9	C-	
955	615855	8	264	.216	.273	.205	.296	.216	.011	.329	-.051	-.152	-.036	.329	1.622	0.159	-0.5	1.0	0.5	1.1	A-	
956	615856	8	269	.219	.294	.216	.219	.264	.007	.195	-.099	-.063	.195	.072	1.678	0.156	0.8	1.1	1.7	1.2	A-	
957	618966	8	269	.617	.617	.089	.171	.108	.015	.453	.453	-.198	-.202	-.115	-0.365	0.136	-2.1	0.9	-1.7	0.9	A+	
958	618969	8	259	.282	.282	.135	.154	.417	.012	.228	.228	-.122	-.241	.139	1.358	0.150	2.2	1.2	2.8	1.4	A-	
959	615858	8	259	.432	.127	.139	.432	.282	.019	.154	-.076	-.074	.154	.064	0.542	0.139	5.2	1.3	5.0	1.4	A+	
960	615859	8	260	.292	.292	.162	.377	.169	.000	.309	.309	-.109	-.060	-.191	1.247	0.147	0.7	1.1	0.5	1.1	A+	
961	617592	8	260	.181	.242	.154	.419	.181	.004	-.018	-.021	-.134	.155	-.018	1.958	0.171	2.5	1.3	4.4	2.0	A+	
962	618970	8	260	.696	.058	.096	.696	.142	.008	.436	-.178	-.276	.436	-.174	-0.809	0.148	-0.5	1.0	-0.7	0.9	A+	
963	617594	8	273	.147	.377	.147	.202	.267	.007	-.062	.064	-.062	.008	.021	2.120	0.178	1.9	1.2	3.7	1.8	A-	
964	615860	8	273	.319	.491	.073	.319	.110	.007	.245	.069	-.328	.245	-.128	0.997	0.139	1.2	1.1	1.7	1.2	B-	
965	619020	8	273	.209	.454	.271	.209	.055	.011	.081	.062	-.028	.081	-.134	1.636	0.157	1.8	1.2	2.6	1.4	A-	
966	620037	8	262	.756	.107	.107	.027	.756	.004	.374	-.123	-.240	-.180	.374	-1.348	0.156	-0.4	1.0	0.6	1.1	A-	
967	620361	8	262	.454	.324	.454	.065	.153	.004	.151	.151	.151	-.251	-.179	0.228	0.136	4.4	1.2	3.9	1.3	A+	
968	619021	8	262	.798	.050	.798	.095	.053	.004	.487	-.230	.487	-.300	-.170	-1.632	0.166	-1.6	0.9	-2.2	0.7	A+	
969	620036	8	262	.359	.149	.244	.233	.359	.015	.361	-.260	-.045	-.059	.361	0.684	0.141	0.2	1.0	0.4	1.0	A-	
970	620038	8	260	.673	.031	.150	.142	.673	.004	.382	-.164	-.194	-.171	.382	-0.781	0.143	-0.1	1.0	0.0	1.0	A+	
971	617583	8	260	.569	.062	.281	.569	.077	.012	.378	-.156	-.121	.378	-.252	-0.275	0.137	-0.4	1.0	-0.3	1.0	B-	
972	617584	8	259	.297	.154	.479	.066	.297	.004	.403	-.117	-.171	-.142	.403	1.212	0.147	-0.7	1.0	-0.7	0.9	A-	
973	620039	8	259	.479	.479	.178	.182	.154	.008	.433	.433	-.344	-.011	-.140	0.270	0.136	-1.0	1.0	-0.7	1.0	A-	
974	615864	8	289	.325	.197	.325	.266	.208	.004	.173	.061	.173	-.184	-.059	0.982	0.135	3.0	1.2	3.3	1.3	A-	
975	617586	8	289	.488	.177	.488	.142	.194	.000	.209	-.070	.209	-.251	.026	0.189	0.128	3.9	1.2	3.3	1.2	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
976	620040	8	289	.294	.540	.100	.066	.294	.000	.369	-.153	-.199	-.129	.369	1.156	0.139	-0.5	1.0	1.1	1.1	A-	
977	615865	8	260	.439	.092	.373	.439	.092	.004	.388	-.163	-.122	.388	-.226	0.411	0.136	-0.6	1.0	-0.3	1.0	A-	
978	617587	8	260	.204	.104	.327	.204	.346	.019	.111	-.043	-.082	.111	.102	1.689	0.164	1.2	1.1	4.6	1.8	B-	
979	617574	8	260	.269	.339	.077	.269	.300	.015	.204	.121	-.236	.204	-.087	1.281	0.150	1.7	1.1	2.3	1.3	B-	
980	617575	8	260	.242	.292	.242	.169	.296	.000	.111	-.046	.111	.122	-.158	1.480	0.153	1.8	1.1	3.2	1.4	B-	
981	615866	8	260	.319	.142	.308	.319	.223	.008	.049	-.124	.034	.049	.035	1.040	0.142	4.0	1.3	4.2	1.4	A-	
982	620365	8	260	.377	.300	.192	.131	.377	.000	.362	-.064	-.281	-.105	.362	0.752	0.137	0.1	1.0	0.0	1.0	A+	
983	617486	8	261	.433	.433	.058	.276	.226	.008	.164	.164	-.230	.154	-.175	0.392	0.136	4.4	1.2	5.2	1.4	B-	
984	617578	8	261	.513	.119	.084	.280	.513	.004	.306	-.147	-.139	-.101	.306	0.012	0.135	1.3	1.1	0.9	1.1	A-	
985	620364	8	260	.350	.131	.300	.350	.204	.015	.145	-.080	-.011	.145	.015	0.836	0.141	3.7	1.2	3.4	1.3	A+	
986	618548	8	261	.548	.138	.195	.115	.548	.004	.323	-.090	-.106	-.208	.323	-0.154	0.136	1.9	1.1	1.6	1.1	A+	
987	615833	8	269	.245	.294	.294	.245	.156	.011	.252	.008	-.142	.252	-.019	1.485	0.150	0.6	1.0	0.9	1.1	A-	
988	615857	8	268	.310	.403	.183	.310	.101	.004	.144	.118	-.179	.144	-.164	1.211	0.143	2.8	1.2	4.6	1.5	A-	
989	615771	8	263	.734	.734	.190	.042	.030	.004	.460	.460	-.306	-.169	-.157	-0.979	0.150	-1.3	0.9	-1.6	0.8	A+	
990	618535	8	268	.840	.011	.840	.078	.067	.004	.449	-.071	.449	-.292	-.293	-1.692	0.177	-1.0	0.9	-1.8	0.7	A-	
991	617735	8	288	.743	.174	.042	.038	.743	.004	.258	-.170	-.078	-.046	.258	-0.864	0.142	0.6	1.0	0.4	1.0	A-	
992	620027	8	289	.630	.177	.121	.630	.073	.000	.501	-.275	-.240	.501	-.226	-0.493	0.132	-2.4	0.9	-2.3	0.8	A-	
993	617962	8	260	.662	.135	.065	.135	.662	.004	.404	-.267	-.149	-.120	.404	-0.720	0.142	-0.1	1.0	-0.5	1.0	A-	
994	620020	8	259	.228	.259	.328	.228	.182	.004	.173	-.038	-.058	.173	-.019	1.609	0.159	1.3	1.1	3.1	1.5	C-	
995	615702	8	5825	.394	.119	.245	.236	.394	.005	.370	-.184	-.133	-.098	.370	0.689	0.029	-0.3	1.0	0.5	1.0	A+	A+
996	617961	8	5825	.794	.027	.794	.081	.092	.007	.422	-.186	.422	-.228	-.175	-1.442	0.035	-3.2	0.9	-4.6	0.9	A+	A-
997	615886	8	260	.769	.069	.073	.769	.065	.023	.525	-.240	-.228	.525	-.118	-1.410	0.166	-1.4	0.9	-1.8	0.7	A+	
998	615871	8	260	.642	.104	.642	.131	.096	.027	.566	-.228	.566	-.245	-.159	-0.638	0.145	-3.5	0.8	-3.0	0.7	A+	
999	615704	8	5825	.565	.165	.565	.133	.126	.012	.468	-.161	.468	-.189	-.225	-0.156	0.029	-8.0	0.9	-7.7	0.9	A+	A+
1000	615750	8	260	.258	.585	.258	.065	.062	.031	.228	.015	.228	-.076	-.037	1.402	0.156	1.4	1.1	3.1	1.5	B-	
1001	615872	8	259	.073	.162	.097	.664	.073	.004	.198	-.234	-.210	.254	.198	3.309	0.269	-0.2	0.9	-1.2	0.6	B-	
1002	615888	8	259	.776	.066	.776	.131	.015	.012	.434	-.242	.434	-.185	-.118	-1.431	0.168	-0.1	1.0	-0.5	0.9	A+	
1003	615751	8	259	.672	.151	.672	.089	.070	.019	.568	-.295	.568	-.184	-.204	-0.785	0.149	-3.1	0.8	-2.9	0.7	A+	
1004	615889	8	259	.765	.205	.012	.765	.019	.000	.356	-.283	-.102	.356	-.189	-1.280	0.159	-0.2	1.0	-0.7	0.9	A-	
1005	615873	8	259	.668	.085	.154	.093	.668	.000	.569	-.332	-.281	-.257	.569	-0.690	0.144	-3.3	0.8	-3.2	0.7	A+	
1006	615752	8	259	.166	.154	.166	.166	.514	.000	.157	-.074	-.205	.157	.089	2.111	0.182	0.5	1.1	1.6	1.3	A+	
1007	615890	8	265	.917	.049	.011	.023	.917	.000	.317	-.175	-.122	-.247	.317	-2.654	0.241	-0.2	1.0	-1.2	0.7	A+	
1008	615874	8	265	.570	.109	.238	.570	.083	.000	.474	-.215	-.308	.474	-.134	-0.132	0.135	-2.1	0.9	-1.3	0.9	A-	
1009	615722	8	265	.366	.366	.094	.113	.426	.000	.070	.070	-.222	-.320	.267	0.831	0.137	3.9	1.2	4.9	1.5	A+	
1010	615891	8	262	.538	.134	.157	.538	.160	.012	.335	-.035	-.066	.335	-.212	-0.037	0.139	2.3	1.1	1.6	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1011	615725	8	262	.485	.485	.168	.202	.134	.012	.456	.456	-.082	-.269	-.105	0.232	0.138	-0.8	1.0	-0.8	0.9	A+	
1012	615731	8	262	.267	.431	.107	.183	.267	.012	.344	.098	-.192	-.227	.344	1.404	0.154	0.5	1.0	0.6	1.1	A-	
1013	615726	8	262	.435	.099	.263	.435	.195	.008	.358	-.288	-.060	.358	-.047	0.628	0.137	0.8	1.0	0.3	1.0	A-	
1014	615892	8	262	.534	.015	.095	.534	.344	.012	.461	-.065	-.266	.461	-.192	0.140	0.137	-2.3	0.9	-2.3	0.9	A+	
1015	615732	8	262	.756	.057	.756	.130	.042	.015	.416	-.216	.416	-.145	-.130	-1.079	0.158	-0.6	1.0	-1.4	0.8	A+	
1016	620026	8	268	.522	.075	.522	.179	.216	.008	.378	-.170	.378	-.232	-.122	0.145	0.134	0.4	1.0	1.4	1.1	A+	
1017	615893	8	268	.526	.063	.526	.138	.272	.000	.308	-.015	.308	-.173	-.203	0.143	0.134	1.5	1.1	1.4	1.1	A-	
1018	615729	8	268	.418	.418	.276	.123	.175	.008	.518	.518	-.217	-.324	-.112	0.648	0.135	-2.3	0.9	-2.2	0.9	A-	
1019	615733	8	268	.388	.261	.153	.194	.388	.004	.314	-.159	-.171	-.041	.314	0.801	0.137	1.7	1.1	1.5	1.1	B+	
1020	615894	8	288	.882	.063	.882	.038	.014	.004	.274	-.084	.274	-.136	-.156	-1.909	0.191	-0.1	1.0	0.0	1.0	B+	
1021	615734	8	561	.392	.210	.392	.201	.189	.007	.344	-.018	.344	-.212	-.128	0.734	0.092	-0.3	1.0	0.9	1.0	B-	
1022	617706	8	288	.295	.545	.295	.104	.049	.007	.010	.277	.010	-.255	-.180	1.320	0.137	4.0	1.3	4.1	1.4	A-	
1023	617707	8	263	.753	.095	.095	.753	.053	.004	.352	-.131	-.180	.352	-.169	-1.094	0.153	-0.4	1.0	0.4	1.1	A+	
1024	615753	8	263	.487	.376	.068	.487	.057	.011	.269	-.126	-.211	.269	.008	0.256	0.135	2.5	1.1	2.3	1.2	B+	
1025	615895	8	263	.643	.643	.179	.114	.061	.004	.459	.459	-.180	-.243	-.215	-0.481	0.139	-1.7	0.9	-1.8	0.9	A-	
1026	615735	8	263	.247	.247	.247	.240	.247	.019	.080	-.049	.080	-.026	.066	1.498	0.154	3.1	1.3	4.4	1.6	A+	
1027	615876	8	263	.673	.673	.049	.209	.061	.008	.502	.502	-.172	-.265	-.212	-0.670	0.147	-1.7	0.9	-2.1	0.8	B-	
1028	615705	8	263	.662	.034	.076	.213	.662	.015	.532	-.142	-.278	-.254	.532	-0.631	0.147	-1.9	0.9	-2.1	0.8	A+	
1029	615764	8	263	.555	.167	.167	.099	.555	.011	.597	-.188	-.257	-.272	.597	-0.045	0.139	-4.4	0.8	-3.3	0.8	B+	
1030	615710	8	263	.449	.449	.080	.262	.190	.019	.437	.437	-.184	-.196	-.045	0.501	0.139	-0.6	1.0	-0.1	1.0	B-	
1031	615756	8	263	.323	.099	.126	.434	.323	.019	.159	-.007	-.115	.058	.159	1.142	0.145	3.9	1.3	4.4	1.5	B+	
1032	617296	8	264	.318	.155	.254	.318	.269	.004	.083	-.155	-.161	.083	.238	1.040	0.143	3.6	1.2	3.7	1.4	A-	
1033	615765	8	264	.148	.148	.402	.292	.152	.008	.148	.148	.025	-.134	.077	2.145	0.182	0.8	1.1	2.9	1.6	A+	
1034	615877	8	264	.686	.030	.686	.076	.197	.011	.322	-.079	.322	-.252	-.102	-0.806	0.143	0.6	1.0	0.4	1.0	A-	
1035	615757	8	264	.152	.136	.242	.462	.152	.008	.096	-.160	-.185	.263	.096	2.112	0.180	1.5	1.2	1.8	1.3	A+	
1036	615706	8	264	.837	.837	.046	.076	.034	.008	.510	.510	-.189	-.286	-.231	-1.776	0.178	-1.8	0.8	-2.7	0.6	A-	
1037	615711	8	264	.489	.201	.212	.489	.091	.008	.389	-.131	-.182	.389	-.127	0.180	0.133	-0.3	1.0	0.2	1.0	A+	
1038	618681	8	264	.606	.133	.121	.133	.606	.008	.391	-.105	-.237	-.138	.391	-0.380	0.136	-0.7	1.0	-0.5	1.0	B+	
1039	618682	8	269	.290	.097	.290	.193	.413	.007	.157	-.141	.157	-.083	.091	1.233	0.143	2.3	1.2	2.9	1.3	A+	
1040	615713	8	529	.677	.677	.132	.144	.044	.004	.400	.400	-.152	-.227	-.161	-0.659	0.100	-1.2	1.0	-1.3	0.9	A-	A+
1041	617297	8	269	.691	.123	.078	.100	.692	.007	.441	-.228	-.151	-.156	.441	-0.736	0.142	-1.4	0.9	-1.5	0.9	B+	
1042	615758	8	269	.439	.030	.439	.428	.097	.007	-.003	-.031	-.003	.093	.006	0.490	0.132	7.1	1.3	6.2	1.5	A-	
1043	615878	8	269	.435	.286	.074	.197	.435	.007	.445	-.116	-.201	-.187	.445	0.507	0.132	-2.1	0.9	-1.4	0.9	A+	
1044	615767	8	269	.201	.201	.145	.082	.565	.007	.115	.115	-.138	-.136	.164	1.779	0.160	1.4	1.1	2.2	1.3	A-	
1045	615700	8	269	.231	.231	.205	.454	.100	.011	.197	.197	-.031	-.034	-.036	1.579	0.153	0.8	1.1	2.6	1.3	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1046	615743	8	269	.294	.182	.294	.294	.223	.007	.249	-.073	-.141	.249	.049	1.213	0.142	0.9	1.1	1.8	1.2	A-	
1047	620422	8	269	.591	.078	.145	.591	.175	.011	.391	-.163	-.231	.391	-.057	-0.229	0.134	-0.9	1.0	-0.7	1.0	A+	
1048	615707	8	269	.257	.045	.257	.539	.145	.015	.188	-.019	.188	.062	-.163	1.418	0.148	1.6	1.1	2.9	1.4	A-	
1049	617733	8	269	.219	.160	.041	.565	.219	.015	.275	-.025	-.152	-.046	.275	1.649	0.156	0.0	1.0	1.0	1.1	A+	
1050	615768	8	259	.738	.108	.027	.738	.120	.008	.346	-.189	-.081	.346	-.127	-1.026	0.155	1.0	1.1	0.7	1.1	A+	
1051	615701	8	259	.301	.054	.301	.498	.139	.008	.117	-.183	.117	.172	-.171	1.251	0.148	3.4	1.2	3.5	1.4	A+	
1052	615708	8	259	.807	.043	.077	.062	.807	.012	.476	-.189	-.222	-.199	.476	-1.526	0.173	-1.1	0.9	-1.8	0.7	A-	
1053	618683	8	259	.591	.591	.112	.251	.035	.012	.390	.390	-.273	-.085	-.128	-0.224	0.140	0.3	1.0	0.2	1.0	A+	
1054	617298	8	259	.653	.104	.653	.205	.027	.012	.322	-.213	.322	-.094	-.074	-0.553	0.144	1.6	1.1	0.7	1.1	A+	
1055	618536	8	259	.799	.031	.799	.100	.050	.019	.547	-.117	.547	-.300	-.248	-1.514	0.173	-1.8	0.8	-2.3	0.6	A+	
1056	615908	8	259	.456	.085	.332	.456	.108	.019	.397	-.174	-.076	.397	-.190	0.427	0.138	0.4	1.0	1.0	1.1	A-	
1057	615714	8	259	.452	.201	.151	.178	.452	.019	.414	-.168	-.123	-.121	.414	0.438	0.138	-0.3	1.0	-0.6	1.0	C-	
1058	615744	8	259	.695	.046	.147	.695	.093	.019	.389	-.145	-.109	.389	-.213	-0.825	0.150	0.4	1.0	0.7	1.1	B+	
1059	615716	8	259	.490	.108	.174	.205	.490	.023	.519	-.074	-.135	-.325	.519	0.241	0.138	-2.7	0.9	-2.5	0.8	A+	
1060	615879	8	259	.548	.143	.120	.548	.162	.027	.376	-.201	-.165	.376	-.014	-0.053	0.140	1.0	1.1	0.7	1.1	B-	
1061	618538	8	260	.889	.035	.065	.889	.012	.000	.418	-.297	-.241	.418	-.166	-2.180	0.207	-1.1	0.8	-2.0	0.6	A-	
1062	615745	8	260	.781	.131	.062	.781	.019	.008	.328	-.143	-.138	.328	-.273	-1.335	0.164	0.5	1.0	0.6	1.1	A+	
1063	615703	8	260	.512	.073	.135	.273	.512	.008	.513	-.127	-.390	-.164	.513	0.137	0.136	-2.2	0.9	-2.0	0.9	A+	
1064	615717	8	260	.419	.419	.115	.196	.258	.012	.421	.421	-.117	-.153	-.222	0.589	0.137	-1.4	0.9	-0.4	1.0	A-	
1065	615909	8	260	.627	.031	.031	.627	.308	.004	.291	-.200	-.123	.291	-.158	-0.425	0.140	2.2	1.1	2.0	1.2	A+	
1066	617964	8	260	.600	.119	.600	.127	.150	.004	.517	-.284	.517	-.168	-.261	-0.289	0.138	-1.9	0.9	-2.0	0.9	A-	
1067	615715	8	260	.385	.189	.181	.385	.242	.004	.333	-.189	-.214	.333	.015	0.755	0.138	1.1	1.1	0.8	1.1	B+	
1068	615709	8	260	.385	.131	.342	.385	.135	.008	.197	-.209	-.115	.197	.136	0.770	0.139	3.0	1.2	3.0	1.3	A-	
1069	615769	8	260	.804	.069	.058	.062	.804	.008	.380	-.223	-.157	-.171	.380	-1.508	0.171	-0.3	1.0	-0.5	0.9	A+	
1070	615880	8	260	.392	.392	.435	.104	.062	.008	.231	.231	.083	-.325	-.158	0.712	0.138	3.2	1.2	2.6	1.2	A-	
1071	615719	8	273	.216	.114	.582	.216	.088	.000	-.041	-.181	.234	-.041	-.145	1.603	0.155	3.0	1.3	4.7	1.7	A+	
1072	617958	8	273	.575	.176	.095	.150	.575	.004	.369	-.216	-.193	-.061	.369	-0.216	0.131	-0.4	1.0	-0.4	1.0	B+	
1073	615966	8	273	.667	.180	.667	.110	.040	.004	.389	-.115	.389	-.294	-.127	-0.664	0.137	-0.8	1.0	-1.1	0.9	A+	
1074	615746	8	273	.696	.242	.022	.696	.037	.004	.413	-.266	-.120	.413	-.194	-0.818	0.140	-1.0	0.9	-1.4	0.9	A+	
1075	617055	8	273	.711	.084	.092	.711	.106	.007	.459	-.198	-.234	.459	-.179	-0.905	0.143	-1.3	0.9	-1.5	0.9	A+	
1076	618541	8	273	.648	.077	.103	.648	.169	.004	.512	-.198	-.260	.512	-.242	-0.571	0.136	-3.0	0.9	-3.0	0.8	C+	
1077	615910	8	273	.202	.392	.154	.249	.202	.004	.148	.261	-.247	-.175	.148	1.701	0.159	1.4	1.1	1.9	1.3	A-	
1078	615736	8	273	.169	.169	.260	.447	.117	.007	.204	.204	-.030	-.068	-.019	1.934	0.169	0.3	1.0	2.3	1.4	B-	
1079	615912	8	262	.298	.099	.095	.500	.298	.008	.399	-.090	-.183	-.155	.399	1.029	0.146	-0.1	1.0	-0.1	1.0	A+	
1080	615861	8	262	.221	.248	.221	.229	.294	.008	-.074	.172	-.074	-.080	.036	1.487	0.159	4.1	1.4	5.5	2.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1081	615747	8	262	.359	.359	.172	.294	.164	.012	.298	.298	-.224	-.061	.002	0.691	0.141	1.7	1.1	0.8	1.1	A-	
1082	615721	8	262	.748	.050	.088	.748	.107	.008	.510	-.191	-.225	.510	-.292	-1.320	0.155	-1.8	0.9	-1.9	0.8	A-	
1083	617738	8	262	.531	.126	.126	.531	.202	.015	.452	-.194	-.273	.452	-.082	-0.168	0.137	-0.6	1.0	-0.5	1.0	B-	
1084	620022	8	262	.622	.157	.115	.092	.622	.015	.565	-.237	-.280	-.212	.565	-0.630	0.141	-3.1	0.8	-2.3	0.8	A+	
1085	617959	8	262	.496	.107	.218	.164	.496	.015	.418	-.106	-.261	-.084	.418	0.000	0.136	0.0	1.0	-0.2	1.0	A+	
1086	615738	8	262	.267	.225	.248	.244	.267	.015	.228	.092	-.243	.008	.228	1.216	0.151	1.5	1.1	1.5	1.2	A-	
1087	617056	8	262	.431	.229	.103	.221	.431	.015	.366	-.024	-.119	-.237	.366	0.317	0.137	0.9	1.0	0.9	1.1	B+	
1088	615739	8	260	.312	.292	.246	.312	.131	.019	.167	.013	-.098	.167	-.015	0.998	0.146	2.9	1.2	3.9	1.4	A-	
1089	615841	8	260	.535	.265	.089	.104	.535	.008	.368	-.126	-.217	-.133	.368	-0.101	0.136	0.5	1.0	1.0	1.1	A+	
1090	620014	8	260	.542	.077	.542	.162	.212	.008	.313	-.129	.313	-.212	-.044	-0.138	0.136	1.4	1.1	1.0	1.1	B+	
1091	618788	8	260	.704	.027	.169	.089	.704	.012	.357	-.158	-.136	-.198	.357	-0.975	0.148	0.1	1.0	-0.3	1.0	C+	
1092	617496	8	260	.462	.327	.462	.089	.115	.008	.237	.001	.237	-.158	-.146	0.252	0.136	3.1	1.2	3.4	1.3	A-	
1093	620024	8	260	.285	.189	.408	.285	.115	.004	-.008	.000	.012	-.008	.062	1.164	0.149	4.4	1.3	6.0	1.8	A+	
1094	615862	8	260	.554	.381	.554	.039	.023	.004	.337	-.196	.337	-.165	-.125	-0.184	0.136	0.7	1.0	1.1	1.1	A-	
1095	617963	8	260	.696	.108	.696	.069	.123	.004	.446	-.247	.446	-.182	-.182	-0.906	0.145	-1.4	0.9	-1.6	0.8	A+	
1096	615913	8	260	.508	.508	.162	.219	.108	.004	.463	.463	-.222	-.242	-.088	0.036	0.135	-1.1	1.0	-0.7	1.0	A-	
1097	617057	8	260	.558	.215	.558	.112	.104	.012	.426	-.156	.426	-.273	-.110	-0.219	0.137	-0.8	1.0	-0.9	0.9	A-	
1098	618849	8	259	.641	.066	.205	.641	.085	.004	.361	-.178	-.192	.361	-.109	-0.512	0.141	0.3	1.0	-0.4	1.0	A-	
1099	615759	8	259	.197	.548	.127	.124	.197	.004	.314	-.055	-.175	-.054	.314	1.821	0.167	-0.5	1.0	-0.1	1.0	A-	
1100	617497	8	259	.537	.066	.112	.537	.282	.004	.371	-.229	-.279	.371	-.043	0.000	0.136	0.4	1.0	0.6	1.0	A+	
1101	618532	8	259	.587	.112	.104	.587	.193	.004	.508	-.274	-.216	.508	-.193	-0.242	0.137	-2.9	0.9	-2.7	0.8	A+	
1102	615863	8	259	.745	.170	.050	.745	.027	.008	.293	-.061	-.221	.293	-.162	-1.130	0.155	0.2	1.0	0.8	1.1	B+	
1103	617058	8	259	.514	.189	.514	.135	.154	.008	.194	-.019	.194	-.117	-.055	0.104	0.136	4.3	1.2	4.3	1.3	A+	
1104	615740	8	259	.263	.216	.313	.263	.201	.008	.289	-.116	-.052	.289	-.063	1.388	0.152	0.6	1.0	2.4	1.3	A-	
1105	615842	8	259	.614	.139	.614	.143	.097	.008	.396	-.133	.396	-.140	-.229	-0.384	0.139	0.3	1.0	-0.2	1.0	A+	
1106	620017	8	259	.599	.599	.189	.097	.108	.008	.458	.458	-.154	-.307	-.141	-0.307	0.138	-1.8	0.9	-1.2	0.9	B+	
1107	618850	8	289	.716	.152	.028	.100	.716	.004	.422	-.231	-.141	-.249	.422	-0.958	0.140	-1.1	0.9	-1.0	0.9	C+	
1108	615741	8	289	.609	.609	.080	.190	.121	.000	.218	.218	-.234	.014	-.149	-0.390	0.130	2.4	1.1	3.4	1.3	A+	
1109	615843	8	289	.751	.751	.021	.190	.038	.000	.416	.416	-.153	-.285	-.241	-1.156	0.145	-1.4	0.9	-1.1	0.9	A+	
1110	620018	8	289	.568	.228	.132	.073	.568	.000	.408	-.272	-.087	-.226	.408	-0.188	0.129	-1.0	1.0	-0.9	0.9	B+	
1111	615760	8	289	.401	.173	.215	.208	.401	.004	.311	-.112	-.051	-.226	.311	0.593	0.130	1.1	1.1	1.0	1.1	A+	
1112	618533	8	289	.609	.166	.111	.609	.114	.000	.429	-.103	-.212	.429	-.329	-0.390	0.130	-0.8	1.0	-1.5	0.9	A+	
1113	615761	8	260	.323	.450	.323	.096	.123	.008	.099	.093	.099	-.210	.017	0.991	0.143	4.2	1.3	4.0	1.4	A-	
1114	615881	8	260	.762	.039	.115	.077	.762	.008	.530	-.154	-.322	-.213	.530	-1.264	0.157	-2.6	0.8	-2.5	0.7	A-	
1115	615844	8	260	.646	.054	.162	.646	.127	.012	.507	-.184	-.303	.507	-.131	-0.615	0.142	-2.2	0.9	-2.1	0.8	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1116	618534	8	260	.523	.200	.154	.112	.523	.012	.467	-.135	-.095	-.315	.467	-0.002	0.136	-1.7	0.9	-1.1	0.9	B+	
1117	618851	8	260	.458	.085	.285	.458	.162	.012	.453	-.205	-.130	.453	-.174	0.312	0.136	-1.8	0.9	-1.4	0.9	A-	
1118	620019	8	260	.581	.581	.092	.112	.204	.012	.436	.436	-.283	-.111	-.130	-0.283	0.138	-0.7	1.0	-0.8	0.9	A+	
1119	615762	8	260	.158	.158	.200	.319	.319	.004	.098	.098	.009	-.024	-.065	2.100	0.179	0.7	1.1	1.9	1.4	A+	
1120	615882	8	260	.277	.289	.277	.319	.108	.008	-.052	.064	-.052	.074	-.105	1.287	0.148	3.9	1.3	5.5	1.7	A-	
1121	615748	8	261	.330	.172	.241	.330	.249	.008	.368	-.202	-.118	.368	-.052	0.915	0.143	-0.3	1.0	1.4	1.1	A-	
1122	615763	8	261	.429	.061	.207	.299	.429	.004	.379	-.205	-.219	-.062	.379	0.416	0.136	-0.4	1.0	0.5	1.0	A-	
1123	615885	8	261	.740	.046	.138	.740	.073	.004	.468	-.223	-.220	.468	-.236	-1.164	0.153	-1.1	0.9	-1.4	0.8	A-	
1124	618852	8	261	.617	.081	.153	.138	.617	.012	.559	-.193	-.341	-.187	.559	-0.510	0.140	-3.6	0.8	-3.1	0.8	A+	
1125	615868	8	261	.402	.184	.402	.249	.157	.008	.365	-.182	.365	-.157	-.043	0.540	0.138	0.1	1.0	1.3	1.1	A-	
1126	617739	8	289	.661	.170	.104	.661	.062	.004	.540	-.428	-.206	.540	-.110	-0.658	0.134	-2.8	0.9	-2.8	0.8	A-	
1127	618786	8	262	.401	.088	.191	.401	.305	.015	.230	-.119	-.179	.230	.063	0.471	0.138	3.2	1.2	2.8	1.2	A+	
1128	620015	8	259	.517	.143	.517	.127	.209	.004	.092	-.018	.092	.032	-.067	0.106	0.138	4.8	1.3	4.3	1.4	B+	
1129	617737	8	260	.489	.300	.108	.489	.077	.027	.230	-.023	-.177	.230	.086	0.149	0.138	3.3	1.2	3.0	1.2	A+	
1130	618540	8	262	.332	.332	.168	.370	.118	.012	.339	.339	-.172	.015	-.153	1.156	0.144	-0.1	1.0	0.2	1.0	A-	
1131	620029	8	528	.434	.112	.434	.203	.242	.010	.168	-.063	.168	-.113	.043	0.513	0.096	5.9	1.2	7.2	1.4	A-	
1132	620025	8	263	.525	.110	.243	.114	.525	.008	.359	-.174	-.058	-.188	.359	0.113	0.138	1.3	1.1	1.1	1.1	A-	
1133	620021	8	263	.840	.065	.053	.840	.038	.004	.399	-.246	-.271	.399	-.012	-1.718	0.179	-0.8	0.9	-1.1	0.8	A+	
1134	615749	8	260	.781	.035	.150	.781	.035	.000	.360	-.123	-.302	.360	-.103	-1.271	0.161	-0.6	1.0	-0.6	0.9	A+	
1135	615723	8	273	.414	.117	.154	.304	.414	.011	.281	-.271	-.109	.032	.281	0.519	0.132	1.1	1.1	1.1	1.1	A+	
1136	615884	8	259	.610	.151	.131	.610	.085	.023	.373	-.054	-.206	.373	-.139	-0.365	0.142	0.7	1.0	0.9	1.1	A+	
1137	620030	8	263	.818	.049	.072	.818	.053	.008	.481	-.262	-.200	.481	-.167	-1.636	0.177	-1.0	0.9	-2.0	0.7	A+	
1138	615927	8	269	.442	.186	.126	.238	.442	.007	.258	-.043	-.123	-.069	.258	0.472	0.132	1.9	1.1	1.8	1.1	A+	
1139	620023	8	264	.136	.136	.254	.349	.254	.008	.137	.137	-.037	.020	-.020	2.248	0.188	0.8	1.1	1.6	1.3	A+	
1140	617489	8	259	.772	.772	.120	.035	.066	.008	.420	.420	-.195	-.198	-.151	-1.252	0.162	-0.4	1.0	-1.0	0.9	B-	
1141	618543	8	269	.766	.045	.082	.766	.093	.015	.417	-.233	-.174	.417	-.100	-1.202	0.157	-0.7	0.9	-0.9	0.9	A+	
1142	618544	8	261	.322	.035	.464	.322	.176	.004	.284	-.229	-.185	.284	.060	0.959	0.143	1.5	1.1	1.5	1.2	A+	
1143	615810	8	268	.821	.041	.821	.060	.075	.004	.271	-.172	.271	-.186	-.077	-1.541	0.170	0.5	1.0	0.6	1.1	A-	
1144	618542	8	5825	.479	.086	.245	.185	.479	.006	.494	-.193	-.288	-.112	.494	0.274	0.029	-9.9	0.9	-9.9	0.9	C-	C-
1145	615914	8	260	.815	.815	.069	.046	.058	.012	.528	.528	-.233	-.243	-.157	-1.696	0.177	-2.0	0.8	-1.5	0.7	B+	
1146	620360	8	5825	.475	.288	.475	.129	.098	.010	.423	-.186	.423	-.186	-.107	0.288	0.029	-4.5	1.0	-3.0	1.0	A-	A-
1147	615916	8	259	.869	.869	.031	.066	.031	.004	.415	.415	-.220	-.160	-.226	-2.191	0.205	-0.5	0.9	-1.2	0.7	A+	
1148	615917	8	259	.618	.618	.108	.251	.023	.000	.410	.410	-.234	-.265	-.078	-0.448	0.140	0.1	1.0	-0.4	1.0	A-	
1149	615918	8	265	.374	.260	.117	.374	.249	.000	.313	-.087	-.215	.313	-.102	0.812	0.137	0.4	1.0	0.5	1.0	A+	
1150	620034	8	262	.679	.065	.679	.092	.153	.012	.353	-.230	.353	-.120	-.055	-0.784	0.147	0.9	1.1	1.4	1.2	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1151	615921	8	262	.668	.084	.668	.179	.053	.015	.447	-.195	.447	-.188	-.122	-0.731	0.147	-0.9	0.9	0.2	1.0	A+	
1152	620035	8	262	.370	.095	.370	.370	.157	.008	.349	-.255	.349	-.039	-.078	0.956	0.140	0.6	1.0	0.5	1.0	A-	
1153	615922	8	262	.782	.782	.015	.153	.042	.008	.184	.184	-.037	-.041	-.050	-1.225	0.162	2.0	1.2	3.0	1.5	A+	
1154	615905	8	262	.718	.042	.149	.080	.718	.012	.517	-.180	-.225	-.235	.517	-0.823	0.150	-2.1	0.9	-2.4	0.7	A+	
1155	615923	8	268	.567	.287	.056	.090	.567	.000	.444	-.245	-.167	-.248	.444	-0.054	0.134	-1.0	1.0	-0.8	0.9	A-	
1156	617493	8	268	.452	.220	.142	.452	.187	.000	.391	-.108	-.250	.391	-.161	0.501	0.134	-0.1	1.0	0.8	1.1	A-	
1157	615906	8	268	.780	.780	.090	.049	.078	.004	.254	.254	-.178	-.075	-.150	-1.243	0.159	0.9	1.1	0.5	1.1	A+	
1158	615829	8	268	.403	.187	.403	.164	.243	.004	.323	-.098	.323	-.269	-.035	0.727	0.136	1.2	1.1	0.9	1.1	B-	
1159	618545	8	268	.545	.235	.545	.105	.112	.004	.329	-.162	.329	-.286	-.006	0.041	0.134	1.1	1.1	0.9	1.1	A-	
1160	615805	8	268	.481	.090	.336	.090	.481	.004	.463	-.234	-.183	-.254	.463	0.346	0.134	-1.7	0.9	-1.0	0.9	A-	
1161	615806	8	288	.583	.038	.583	.056	.316	.007	.222	-.173	.222	-.159	-.027	-0.052	0.128	2.3	1.1	2.0	1.1	A+	
1162	615816	8	288	.424	.424	.038	.451	.080	.007	.328	.328	-.225	-.109	-.130	0.684	0.127	-0.1	1.0	-0.1	1.0	A-	
1163	617494	8	288	.420	.281	.420	.087	.208	.004	.277	-.079	.277	-.289	.010	0.704	0.127	1.2	1.1	0.6	1.0	B+	
1164	615924	8	288	.313	.125	.177	.382	.313	.004	.261	-.139	-.170	.027	.261	1.231	0.135	0.7	1.0	1.6	1.1	A+	
1165	615907	8	288	.715	.069	.715	.174	.038	.004	.426	-.208	.426	-.209	-.190	-0.706	0.138	-1.6	0.9	-1.9	0.8	A-	
1166	618546	8	288	.684	.038	.684	.146	.129	.004	.367	-.156	.367	-.116	-.227	-0.539	0.134	-0.8	1.0	-0.4	1.0	A-	
1167	615830	8	288	.611	.611	.212	.115	.059	.004	.291	.291	-.154	-.118	-.076	-0.177	0.129	0.8	1.0	1.0	1.1	A-	
1168	615818	8	263	.852	.852	.019	.057	.068	.004	.293	.293	-.063	-.160	-.143	-1.817	0.184	0.2	1.0	0.3	1.1	A+	
1169	615925	8	263	.589	.084	.126	.198	.589	.004	.472	-.184	-.245	-.194	.472	-0.216	0.136	-2.2	0.9	-2.3	0.8	A-	
1170	617495	8	263	.247	.247	.095	.468	.186	.004	.140	.140	-.213	.255	-.263	1.517	0.153	2.7	1.2	2.6	1.4	A-	
1171	618552	8	263	.422	.418	.422	.038	.114	.008	.340	-.212	.340	-.070	-.086	0.576	0.136	0.7	1.0	1.9	1.1	B-	
1172	618553	8	263	.601	.601	.076	.221	.095	.008	.415	.415	-.187	-.077	-.278	-0.256	0.141	-0.1	1.0	0.0	1.0	B+	
1173	615820	8	263	.582	.167	.099	.582	.145	.008	.455	-.236	-.106	.455	-.184	-0.158	0.140	-1.0	0.9	-1.3	0.9	B-	
1174	615808	8	263	.152	.388	.156	.152	.297	.008	.000	-.014	-.096	.000	.179	2.304	0.183	2.0	1.2	4.1	2.1	A-	
1175	617709	8	263	.312	.107	.179	.392	.312	.011	.156	-.100	.085	-.051	.156	1.235	0.147	3.7	1.3	3.2	1.4	A+	
1176	617732	8	525	.250	.250	.259	.320	.164	.008	.281	.281	-.216	-.013	.020	1.390	0.108	0.9	1.1	1.6	1.1	A-	
1177	620359	8	273	.476	.278	.476	.169	.073	.004	.405	-.211	.405	-.186	-.062	0.244	0.130	-1.0	1.0	-0.8	1.0	A-	
1178	615821	8	262	.317	.382	.317	.195	.099	.008	.240	.146	.240	-.209	-.252	0.923	0.144	2.2	1.1	1.8	1.2	A+	
1179	615823	8	260	.469	.231	.100	.469	.189	.012	.288	-.086	-.193	.288	-.056	0.205	0.136	1.8	1.1	1.4	1.1	A-	
1180	615899	8	259	.541	.131	.116	.541	.209	.004	.213	-.240	-.037	.213	.020	-0.018	0.136	3.3	1.2	3.2	1.2	A-	
1181	615824	8	259	.386	.209	.151	.386	.247	.008	.371	-.187	-.118	.371	-.075	0.720	0.139	0.1	1.0	-0.3	1.0	A+	
1182	615900	8	289	.301	.145	.301	.246	.301	.007	.317	-.009	.317	-.118	-.195	1.110	0.138	0.2	1.0	1.3	1.1	A+	
1183	617498	8	289	.433	.235	.433	.183	.145	.004	.076	-.011	.076	.018	-.087	0.450	0.129	5.4	1.3	5.6	1.4	A+	
1184	615825	8	289	.190	.052	.329	.190	.429	.000	.060	-.183	.034	.060	.002	1.808	0.159	1.7	1.2	4.9	1.9	B-	
1185	615812	8	289	.381	.125	.381	.080	.415	.000	.368	-.006	.368	-.230	-.232	0.704	0.131	0.1	1.0	0.0	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1186	615901	8	260	.312	.185	.312	.423	.077	.004	.001	-.097	.001	.121	-.006	1.053	0.144	4.9	1.3	5.4	1.6	A-	
1187	615813	8	260	.115	.096	.292	.115	.485	.012	.289	-.129	-.100	.289	.074	2.455	0.203	-0.4	0.9	-0.1	1.0	A-	
1188	615815	8	260	.300	.062	.289	.300	.346	.004	.440	-.121	-.273	.440	-.110	1.138	0.144	-1.5	0.9	-1.4	0.9	A-	
1189	618547	8	260	.323	.139	.208	.331	.323	.000	.467	-.184	-.327	-.048	.467	1.025	0.142	-1.6	0.9	-1.1	0.9	A-	
1190	617490	8	260	.685	.062	.158	.685	.089	.008	.410	-.251	-.227	.410	-.140	-0.775	0.146	-0.5	1.0	-0.5	1.0	A-	
1191	617491	8	261	.387	.387	.372	.153	.081	.008	.462	.462	-.211	-.198	-.097	0.617	0.138	-1.7	0.9	-1.6	0.9	A-	
1192	615817	8	524	.347	.168	.384	.099	.347	.002	.260	-.220	.044	-.172	.260	0.953	0.099	1.8	1.1	2.6	1.2	A+	
1193	615822	8	547	.309	.146	.227	.309	.313	.006	.285	-.157	-.230	.285	.077	1.188	0.100	0.4	1.0	1.2	1.1	A-	
1194	615819	8	264	.371	.371	.167	.133	.318	.011	.246	.246	-.074	-.290	.089	0.740	0.138	2.2	1.1	1.7	1.1	A-	
1195	615809	8	521	.123	.184	.438	.242	.123	.013	.103	-.084	.067	-.015	.103	2.401	0.142	1.1	1.1	2.8	1.5	A+	A+
1196	615919	8	262	.584	.584	.103	.034	.271	.008	.317	.317	-.227	-.123	-.042	-0.100	0.138	0.2	1.0	0.5	1.0	A-	
1197	615826	8	263	.468	.061	.179	.468	.289	.004	.334	-.143	-.219	.334	-.057	0.365	0.134	0.5	1.0	1.2	1.1	A+	
1198	615804	8	262	.473	.271	.199	.473	.050	.008	.452	-.157	-.228	.452	-.111	0.308	0.138	-1.3	0.9	-1.1	0.9	A-	
1199	617694	11	260	.177	.108	.150	.177	.546	.019	.115	-.078	-.179	.115	.232	1.924	0.174	1.1	1.1	3.9	1.8	A-	
1200	617693	11	260	.646	.115	.123	.100	.646	.015	.433	-.067	-.140	-.250	.433	-0.589	0.142	-1.0	0.9	-1.0	0.9	B-	
1201	617701	11	259	.259	.236	.290	.259	.205	.012	.041	.256	-.118	.041	-.072	1.383	0.153	3.1	1.2	4.5	1.6	A+	
1202	617702	11	259	.355	.390	.174	.355	.077	.004	.357	.005	-.368	.357	-.122	0.832	0.141	-0.2	1.0	0.2	1.0	A-	
1203	617704	11	265	.223	.155	.449	.223	.174	.000	.087	-.163	.072	.087	-.034	1.594	0.155	1.6	1.1	2.5	1.3	A-	
1204	617705	11	262	.275	.164	.374	.168	.275	.019	.209	-.113	.136	-.160	.209	1.300	0.150	2.1	1.2	1.8	1.2	A-	
1205	620380	11	262	.260	.218	.195	.321	.260	.008	.193	-.052	.046	-.075	.193	1.523	0.151	1.4	1.1	1.1	1.1	A+	
1206	617674	11	263	.137	.243	.369	.243	.137	.008	-.141	-.244	.330	.031	-.141	2.287	0.188	2.1	1.3	4.8	2.2	A+	
1207	617676	11	263	.437	.164	.160	.437	.232	.008	.118	.076	-.027	.118	-.089	0.513	0.136	5.5	1.3	4.9	1.4	A-	
1208	617677	11	264	.519	.250	.519	.117	.106	.008	.138	.016	.138	-.115	-.025	0.045	0.132	4.2	1.2	4.2	1.2	A-	
1209	617678	11	269	.290	.346	.201	.290	.156	.007	.332	-.141	-.129	.332	.027	1.228	0.143	-0.6	1.0	0.2	1.0	A-	
1210	617679	11	259	.533	.533	.043	.058	.359	.008	.110	.110	-.018	-.094	.022	0.063	0.136	5.7	1.3	5.1	1.4	A+	
1211	617680	11	260	.462	.169	.135	.462	.227	.008	.294	-.206	-.280	.294	.103	0.359	0.135	1.7	1.1	2.1	1.1	B-	
1212	617681	11	273	.330	.051	.330	.081	.535	.004	.293	-.263	.293	-.187	-.014	0.942	0.136	0.6	1.0	0.3	1.0	B-	
1213	617682	11	262	.183	.275	.199	.336	.183	.008	.242	-.248	.000	.089	.242	1.758	0.169	0.6	1.1	0.9	1.2	A-	
1214	617683	11	260	.515	.069	.135	.515	.277	.004	.259	-.043	-.024	.259	-.196	-0.016	0.133	2.0	1.1	1.5	1.1	A-	
1215	617695	11	260	.192	.192	.496	.219	.081	.012	.073	.073	.247	-.200	-.149	1.678	0.166	1.8	1.2	2.7	1.4	A+	
1216	617696	11	259	.313	.282	.282	.313	.120	.004	.353	-.072	-.137	.353	-.149	1.103	0.145	0.0	1.0	0.6	1.1	A-	
1217	617684	11	259	.533	.093	.533	.158	.209	.008	.416	-.211	.416	-.140	-.161	0.018	0.135	-0.7	1.0	-0.8	1.0	A+	
1218	617685	11	289	.727	.048	.727	.138	.083	.004	.556	-.245	.556	-.383	-.210	-1.003	0.141	-3.1	0.8	-3.0	0.7	A-	
1219	617697	11	289	.225	.332	.225	.208	.235	.000	.068	.084	.068	-.252	.081	1.541	0.149	2.3	1.2	3.0	1.4	A+	
1220	617689	11	289	.599	.170	.128	.599	.104	.000	.169	-.023	-.177	.169	-.048	-0.333	0.129	3.3	1.2	3.2	1.2	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1221	617686	11	260	.423	.423	.365	.073	.131	.008	.326	.326	-.034	-.113	-.275	0.496	0.136	0.0	1.0	0.6	1.0	A+	
1222	617698	11	260	.189	.189	.519	.173	.108	.012	.073	.073	.064	-.022	-.034	1.791	0.167	1.7	1.2	2.8	1.5	A-	
1223	617690	11	260	.408	.408	.258	.173	.150	.012	.306	.306	-.203	-.092	.053	0.552	0.136	1.3	1.1	0.7	1.1	A-	
1224	617699	11	260	.127	.227	.127	.481	.165	.000	.001	-.139	.001	.177	-.082	2.339	0.194	0.8	1.1	2.1	1.4	A-	
1225	617687	11	260	.173	.054	.173	.685	.089	.000	-.108	-.265	-.108	.265	-.079	1.941	0.171	1.9	1.2	3.6	1.6	A+	
1226	617691	11	260	.346	.127	.419	.346	.108	.000	.274	-.101	-.222	.274	.041	0.890	0.138	0.6	1.0	1.3	1.1	A+	
1227	617688	11	261	.452	.138	.452	.291	.111	.008	.146	-.023	.146	.003	-.144	0.291	0.134	4.3	1.2	3.8	1.2	A+	
1228	617692	11	261	.280	.126	.280	.479	.111	.004	.241	-.214	.241	.048	-.126	1.162	0.146	0.9	1.1	1.7	1.2	A-	
1229	617700	11	261	.559	.119	.153	.157	.559	.012	.537	-.249	-.202	-.224	.537	-0.215	0.135	-3.3	0.9	-3.5	0.8	A-	
1230	617613	11	260	.431	.239	.065	.254	.431	.012	.292	-.226	-.049	.050	.292	0.453	0.137	1.8	1.1	2.4	1.2	A+	
1231	617634	11	260	.242	.204	.242	.335	.192	.027	.145	.000	.145	.095	-.087	1.444	0.156	2.2	1.2	2.7	1.4	A+	
1232	617636	11	259	.313	.158	.313	.232	.293	.004	.195	-.114	.195	-.102	.038	1.075	0.145	2.5	1.2	3.2	1.3	A-	
1233	617614	11	259	.359	.359	.158	.185	.282	.015	.305	.305	-.081	-.129	-.027	0.826	0.141	0.1	1.0	0.5	1.0	A-	
1234	620645	11	259	.521	.201	.081	.521	.182	.015	.352	-.040	-.232	.352	-.109	0.012	0.137	1.2	1.1	1.1	1.1	A-	
1235	617615	11	259	.772	.043	.050	.772	.127	.008	.317	-.262	-.185	.317	-.080	-1.296	0.160	-0.1	1.0	-0.4	0.9	A-	
1236	617598	11	259	.270	.278	.209	.243	.270	.000	.215	-.109	.032	-.140	.215	1.304	0.151	1.3	1.1	1.4	1.2	A+	
1237	617637	11	259	.224	.166	.340	.266	.224	.004	.252	.092	-.198	-.091	.252	1.589	0.160	1.0	1.1	1.3	1.2	B+	
1238	617601	11	265	.491	.102	.491	.287	.121	.000	.200	-.109	.200	.005	-.212	0.240	0.132	2.3	1.1	2.0	1.1	A-	
1239	617617	11	265	.268	.268	.200	.287	.245	.000	.242	.242	-.129	-.075	-.051	1.322	0.146	0.3	1.0	1.3	1.1	A+	
1240	617638	11	265	.408	.140	.260	.408	.193	.000	.224	-.246	-.059	.224	.002	0.609	0.134	2.2	1.1	2.5	1.2	A+	
1241	617640	11	262	.206	.359	.206	.302	.122	.012	.061	.094	.061	-.056	.029	1.749	0.163	2.5	1.2	4.0	1.8	B-	
1242	617602	11	262	.389	.172	.122	.305	.389	.012	.485	-.145	-.227	-.117	.485	0.690	0.139	-2.5	0.9	-2.1	0.8	C-	
1243	617618	11	262	.454	.191	.225	.454	.118	.012	.254	.009	-.205	.254	.028	0.367	0.137	2.8	1.2	2.0	1.2	A+	
1244	617627	11	262	.695	.038	.221	.695	.034	.012	.252	-.081	-.076	.252	-.106	-0.674	0.146	1.4	1.1	2.6	1.3	A+	
1245	617603	11	262	.412	.149	.229	.195	.412	.015	.226	-.003	.004	-.140	.226	0.711	0.136	2.3	1.1	1.9	1.1	A-	
1246	617626	11	262	.248	.248	.103	.588	.050	.012	.133	.133	-.116	.095	-.075	1.590	0.153	2.1	1.2	2.8	1.4	A+	
1247	617604	11	268	.466	.105	.190	.239	.466	.000	.295	-.036	-.144	-.187	.295	0.417	0.133	1.5	1.1	1.6	1.1	A+	
1248	617628	11	268	.560	.157	.560	.164	.116	.004	.462	-.109	.462	-.311	-.217	-0.035	0.134	-1.4	0.9	-1.7	0.9	A-	
1249	617642	11	268	.231	.231	.332	.336	.097	.004	.115	.115	.013	.014	-.188	1.642	0.154	2.2	1.2	2.8	1.4	A+	
1250	617629	11	288	.306	.306	.281	.264	.142	.007	.044	.044	.055	-.006	-.032	1.255	0.135	3.1	1.2	4.0	1.3	A+	
1251	617605	11	288	.431	.250	.167	.431	.149	.004	.194	.003	.004	.194	-.210	0.652	0.126	2.4	1.1	2.4	1.1	A+	
1252	617643	11	288	.292	.417	.191	.097	.292	.004	.277	-.010	-.110	-.183	.277	1.330	0.136	0.2	1.0	0.3	1.0	A+	
1253	617646	11	263	.354	.297	.354	.110	.232	.008	.257	-.091	.257	-.130	-.051	0.894	0.138	1.4	1.1	2.0	1.2	A-	
1254	617606	11	263	.703	.019	.224	.703	.049	.004	.175	-.081	.009	.175	-.230	-0.784	0.144	2.4	1.2	1.7	1.2	B-	
1255	617633	11	263	.270	.236	.270	.350	.126	.019	.198	.081	.198	-.095	-.157	1.325	0.149	1.4	1.1	2.1	1.2	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1256	617607	11	263	.525	.160	.217	.525	.088	.011	.276	-.211	-.022	.276	-.040	0.117	0.136	2.3	1.1	2.7	1.2	A-	
1257	617647	11	263	.331	.126	.331	.376	.156	.011	.313	-.123	.313	.050	-.225	1.087	0.142	0.6	1.0	1.1	1.1	A-	
1258	617635	11	263	.278	.202	.278	.186	.316	.019	.127	-.023	.127	-.153	.163	1.377	0.149	2.3	1.2	3.5	1.4	A+	
1259	617608	11	264	.224	.163	.224	.538	.068	.008	.175	-.074	.175	-.051	.044	1.549	0.156	1.1	1.1	2.0	1.3	A-	
1260	617710	11	264	.375	.280	.375	.224	.114	.008	.164	.017	.164	-.071	-.082	0.718	0.136	3.0	1.2	3.1	1.2	A-	
1261	617639	11	264	.500	.110	.292	.500	.087	.011	.233	-.175	-.001	.233	-.093	0.123	0.132	2.7	1.1	2.3	1.1	A+	
1262	617641	11	269	.599	.130	.108	.599	.156	.007	.481	-.128	-.214	.481	-.234	-0.251	0.133	-2.9	0.9	-2.8	0.8	A+	
1263	620377	11	269	.126	.138	.476	.253	.126	.007	.071	-.052	.155	-.095	.071	2.377	0.191	0.9	1.1	2.6	1.6	B-	
1264	617609	11	269	.353	.149	.305	.353	.178	.015	.256	-.199	-.066	.256	.080	0.891	0.136	1.2	1.1	1.4	1.1	A+	
1265	620379	11	259	.359	.359	.205	.286	.139	.012	.355	.355	-.204	-.163	.090	0.905	0.141	0.2	1.0	0.3	1.0	A-	
1266	617644	11	259	.452	.452	.112	.270	.147	.019	.287	.287	-.110	.008	-.161	0.428	0.137	2.2	1.1	2.2	1.2	A+	
1267	617616	11	259	.375	.239	.236	.131	.375	.019	.407	-.131	-.133	-.089	.407	0.810	0.140	-0.7	1.0	-0.2	1.0	A-	
1268	617645	11	260	.442	.096	.442	.235	.223	.004	.274	-.155	.274	-.167	-.019	0.456	0.135	2.2	1.1	1.9	1.1	A+	
1269	617619	11	260	.669	.119	.669	.081	.127	.004	.257	.001	.257	-.093	-.253	-0.643	0.143	1.7	1.1	1.6	1.2	C-	
1270	617648	11	273	.143	.077	.143	.473	.300	.007	.109	-.065	.109	-.105	.125	2.132	0.179	0.6	1.1	2.0	1.4	A-	
1271	617620	11	273	.352	.352	.385	.106	.150	.007	.342	.342	-.094	-.104	-.174	0.822	0.135	-0.3	1.0	-0.5	1.0	A+	
1272	617621	11	262	.397	.168	.206	.214	.397	.015	.469	-.191	-.047	-.247	.469	0.487	0.139	-1.4	0.9	-1.2	0.9	A+	
1273	620376	11	262	.542	.153	.130	.157	.542	.019	.554	-.211	-.126	-.320	.554	-0.215	0.137	-3.4	0.8	-2.8	0.8	B+	
1274	617622	11	260	.339	.169	.265	.223	.339	.004	.320	-.164	-.045	-.115	.320	0.824	0.140	0.1	1.0	0.9	1.1	A+	
1275	620378	11	260	.350	.350	.219	.165	.254	.012	.344	.344	-.281	-.037	-.012	0.756	0.139	0.2	1.0	-0.4	1.0	A-	
1276	617623	11	259	.888	.888	.043	.035	.031	.004	.376	.376	-.199	-.148	-.172	-2.216	0.210	-0.4	0.9	-1.1	0.7	A+	
1277	617599	11	259	.409	.409	.189	.263	.131	.008	.324	.324	-.117	-.081	-.141	0.607	0.137	1.3	1.1	0.7	1.0	A+	
1278	617600	11	289	.315	.249	.315	.197	.235	.004	.217	-.046	.217	-.204	.001	1.016	0.135	1.6	1.1	2.4	1.2	A+	
1279	617624	11	289	.699	.699	.121	.031	.145	.004	.232	.232	-.250	-.169	.027	-0.848	0.137	1.3	1.1	2.5	1.2	B-	
1280	617610	11	260	.542	.250	.077	.542	.115	.015	.329	-.037	-.212	.329	-.152	-0.101	0.136	1.1	1.1	0.9	1.1	A+	
1281	617625	11	260	.192	.381	.235	.192	.173	.019	.095	.005	.031	.095	-.029	1.745	0.166	1.3	1.1	3.8	1.7	A-	
1282	617630	11	260	.523	.131	.215	.523	.131	.000	.377	-.181	-.246	.377	-.078	0.066	0.133	-0.5	1.0	-0.4	1.0	A-	
1283	617611	11	260	.239	.146	.292	.312	.239	.012	.046	-.165	.058	.048	.046	1.460	0.153	2.2	1.2	3.0	1.4	A-	
1284	617612	11	261	.364	.364	.226	.176	.230	.004	.318	.318	-.104	-.144	-.080	0.721	0.138	0.5	1.0	0.6	1.0	A+	
1285	617631	11	261	.322	.272	.322	.253	.146	.008	.199	.055	.199	-.071	-.175	0.929	0.142	2.0	1.1	2.4	1.2	A+	
1286	617675	11	268	.313	.164	.082	.440	.313	.000	.120	-.078	-.212	.063	.120	1.174	0.141	3.4	1.2	3.4	1.3	A+	
1287	619999	11	268	.224	.343	.224	.187	.243	.004	.299	-.155	.299	-.162	.041	1.691	0.156	0.3	1.0	0.7	1.1	A+	
1288	617649	11	288	.149	.743	.063	.149	.042	.004	.125	.077	-.062	.125	-.198	2.260	0.171	0.5	1.1	2.1	1.4	A-	
1289	620001	11	288	.740	.066	.108	.740	.083	.004	.402	-.135	-.222	.402	-.182	-0.827	0.141	-1.1	0.9	-1.6	0.9	A+	
1290	617650	11	263	.354	.354	.145	.297	.198	.008	.405	.405	-.089	-.137	-.202	0.894	0.138	-1.1	0.9	-1.2	0.9	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1291	617651	11	263	.449	.080	.126	.338	.449	.008	.185	-.104	-.247	.122	.185	0.476	0.136	4.1	1.2	3.1	1.2	B+	
1292	617652	11	264	.311	.367	.239	.072	.311	.011	.313	-.083	-.046	-.195	.313	1.041	0.142	0.3	1.0	0.2	1.0	A-	
1293	617653	11	269	.245	.175	.245	.257	.316	.007	.068	-.086	.068	.167	-.060	1.506	0.151	2.3	1.2	3.3	1.4	A-	
1294	617654	11	259	.135	.104	.170	.568	.135	.023	.082	-.047	-.167	.209	.082	2.340	0.191	1.1	1.1	2.9	1.7	A-	
1295	617655	11	260	.204	.523	.204	.069	.204	.000	.212	-.025	-.075	-.169	.212	1.765	0.163	0.1	1.0	2.8	1.5	B-	
1296	617670	11	260	.165	.189	.627	.165	.012	.008	.185	-.059	-.014	.185	-.207	2.039	0.176	0.5	1.1	2.3	1.4	B-	
1297	617671	11	273	.443	.125	.245	.183	.443	.004	.249	-.153	.028	-.163	.249	0.398	0.130	1.7	1.1	1.5	1.1	A+	
1298	617656	11	273	.260	.231	.260	.256	.245	.007	.112	-.047	.112	-.062	.048	1.309	0.146	2.0	1.1	2.8	1.3	A-	
1299	617663	11	262	.248	.248	.195	.126	.420	.012	.161	.161	-.242	-.282	.306	1.308	0.154	2.4	1.2	2.5	1.3	A-	
1300	617672	11	262	.699	.061	.699	.157	.073	.012	.412	-.104	.412	-.183	-.251	-1.015	0.148	-0.3	1.0	-0.7	0.9	A-	
1301	617673	11	260	.162	.162	.500	.131	.204	.004	-.093	-.093	.175	-.129	.030	1.918	0.177	2.1	1.2	5.0	2.1	A-	
1302	617664	11	260	.165	.108	.165	.223	.500	.004	-.119	-.117	-.119	-.078	.270	1.887	0.175	2.4	1.3	4.8	2.0	A-	
1303	617665	11	259	.390	.220	.108	.278	.390	.004	.212	-.093	-.174	.024	.212	0.724	0.138	2.7	1.2	2.8	1.2	A-	
1304	620000	11	259	.390	.058	.127	.417	.390	.008	.333	-.176	-.185	-.060	.333	0.721	0.138	0.5	1.0	0.7	1.1	C+	
1305	617657	11	259	.730	.054	.116	.093	.730	.008	.473	-.200	-.242	-.198	.473	-0.973	0.151	-1.8	0.9	-1.8	0.8	A-	
1306	617658	11	289	.412	.170	.412	.173	.246	.000	.422	-.086	.422	-.272	-.169	0.541	0.128	-1.4	0.9	-0.8	1.0	B-	
1307	617666	11	289	.495	.170	.159	.495	.177	.000	.255	-.233	-.157	.255	.046	0.153	0.127	2.1	1.1	2.4	1.1	A-	
1308	617659	11	260	.546	.131	.546	.204	.104	.015	.417	-.088	.417	-.321	-.020	-0.119	0.136	-0.8	1.0	-0.8	1.0	A-	
1309	617667	11	260	.696	.181	.696	.073	.035	.015	.453	-.269	.453	-.196	-.033	-0.878	0.147	-1.2	0.9	-0.9	0.9	A+	
1310	617668	11	260	.212	.008	.212	.273	.508	.000	.068	-.200	.068	-.071	.043	1.668	0.159	1.3	1.1	2.7	1.4	A-	
1311	617660	11	260	.396	.169	.215	.212	.396	.008	.426	-.168	-.125	-.211	.426	0.637	0.135	-1.4	0.9	-1.6	0.9	A+	
1312	617661	11	261	.211	.153	.192	.211	.441	.004	-.039	-.101	-.125	-.039	.247	1.581	0.160	2.7	1.3	4.4	1.7	B+	
1313	617669	11	261	.410	.341	.410	.126	.115	.008	.226	.067	.226	-.166	-.198	0.491	0.135	2.5	1.1	2.4	1.2	B-	
1314	616111	Bio	307	.730	.730	.088	.098	.072	.013	.422	.422	-.179	-.254	-.152	-0.558	0.137	-1.2	0.9	-2.0	0.8	A-	
1315	617013	Bio	311	.318	.203	.318	.405	.074	.000	.333	-.175	.333	-.072	-.189	1.482	0.128	-0.3	1.0	-0.4	1.0	A-	
1316	616112	Bio	307	.547	.547	.261	.101	.085	.007	.461	.461	-.245	-.140	-.203	0.269	0.122	-3.0	0.9	-3.0	0.9	C-	
1317	617004	Bio	4897	.391	.266	.083	.256	.391	.004	.350	-.077	-.123	-.196	.350	1.056	0.031	-3.0	1.0	-3.4	1.0	A+	A+
1318	616118	Bio	4897	.165	.467	.228	.135	.165	.005	.181	.198	-.165	-.218	.181	2.361	0.040	1.8	1.1	4.2	1.2	A+	A-
1319	617775	Bio	307	.202	.202	.427	.186	.179	.007	.079	.079	.121	-.147	-.019	2.040	0.150	1.5	1.1	1.9	1.3	A-	
1320	617776	Bio	300	.347	.490	.347	.080	.077	.007	.337	-.138	.337	-.124	-.083	1.351	0.129	0.1	1.0	0.0	1.0	A-	
1321	616126	Bio	312	.356	.154	.208	.279	.356	.003	.351	-.187	-.151	-.083	.351	1.179	0.124	-0.8	1.0	-1.0	1.0	A-	
1322	617016	Bio	312	.381	.160	.381	.231	.224	.003	.343	-.080	.343	-.134	-.190	1.058	0.122	-0.8	1.0	-0.7	1.0	A-	
1323	617014	Bio	312	.401	.266	.401	.247	.087	.000	.297	-.097	.297	-.122	-.178	0.974	0.121	0.0	1.0	0.0	1.0	A+	
1324	617570	Bio	312	.462	.045	.112	.462	.381	.000	.288	-.179	-.110	.288	-.148	0.703	0.119	0.1	1.0	0.2	1.0	A-	
1325	617777	Bio	312	.279	.279	.330	.337	.055	.000	.311	.311	-.134	-.041	-.250	1.571	0.131	-0.3	1.0	-0.3	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1326	617792	Bio	312	.324	.186	.324	.385	.103	.003	.150	-.055	.150	.012	-.172	1.335	0.126	1.6	1.1	2.2	1.2	A-	
1327	616113	Bio	306	.464	.154	.464	.226	.150	.007	.470	-.136	.470	-.183	-.201	0.730	0.121	-4.2	0.9	-4.0	0.8	A+	
1328	617778	Bio	306	.382	.304	.105	.199	.382	.010	.339	-.110	-.106	-.087	.339	1.100	0.124	-0.7	1.0	-0.8	1.0	A+	
1329	617015	Bio	306	.268	.144	.268	.324	.255	.010	.068	-.097	.068	-.075	.198	1.679	0.135	2.3	1.2	3.1	1.3	B-	
1330	617783	Bio	306	.340	.327	.144	.180	.340	.010	.455	-.097	-.084	-.244	.455	1.304	0.127	-2.7	0.9	-2.8	0.8	A+	
1331	617793	Bio	306	.363	.340	.167	.363	.118	.013	.191	.098	-.109	.191	-.147	1.190	0.125	1.7	1.1	2.7	1.2	A+	
1332	617571	Bio	306	.768	.768	.023	.085	.108	.016	.408	.408	-.096	-.209	-.146	-0.791	0.144	-0.9	0.9	-1.2	0.9	A+	
1333	617779	Bio	301	.352	.253	.352	.136	.256	.003	.215	-.186	.215	-.160	.108	1.247	0.128	1.8	1.1	1.9	1.1	B+	
1334	616114	Bio	301	.535	.153	.086	.535	.223	.003	.412	-.145	-.164	.412	-.225	0.404	0.122	-1.7	0.9	-2.0	0.9	A+	
1335	617800	Bio	301	.738	.073	.073	.738	.113	.003	.285	-.068	-.216	.285	-.118	-0.593	0.138	0.2	1.0	0.1	1.0	C+	
1336	617794	Bio	301	.282	.239	.332	.282	.143	.003	.178	-.131	.034	.178	-.076	1.609	0.135	1.5	1.1	2.7	1.2	A-	
1337	617572	Bio	301	.402	.402	.183	.206	.196	.013	.379	.379	-.196	-.144	-.074	0.990	0.125	-1.0	1.0	-0.4	1.0	A-	
1338	616128	Bio	301	.269	.080	.455	.186	.269	.010	.090	-.093	.078	-.078	.090	1.676	0.137	2.6	1.2	3.2	1.3	A-	
1339	617780	Bio	297	.512	.108	.155	.219	.512	.007	.379	-.174	-.272	-.044	.379	0.435	0.122	-1.4	1.0	-1.3	0.9	A+	
1340	617795	Bio	297	.391	.071	.330	.202	.391	.007	.340	-.145	-.072	-.198	.340	0.980	0.125	-0.5	1.0	-0.5	1.0	A-	
1341	617017	Bio	297	.300	.300	.229	.189	.280	.003	.168	.168	-.094	-.111	.057	1.438	0.133	1.6	1.1	2.1	1.2	A+	
1342	617765	Bio	297	.330	.222	.104	.333	.330	.010	.412	-.094	-.195	-.145	.412	1.271	0.130	-1.6	0.9	-1.5	0.9	A-	
1343	616115	Bio	297	.562	.098	.179	.152	.562	.010	.433	-.128	-.258	-.145	.433	0.202	0.123	-2.5	0.9	-2.6	0.9	A+	
1344	616129	Bio	297	.411	.323	.189	.411	.067	.010	.358	-.143	-.170	.358	-.065	0.884	0.124	-0.9	1.0	-0.8	1.0	A+	
1345	617781	Bio	308	.244	.149	.383	.244	.218	.007	.447	-.159	-.174	.447	-.066	1.696	0.138	-1.9	0.9	-2.3	0.8	A-	
1346	616130	Bio	308	.490	.490	.276	.094	.133	.007	.209	.209	-.034	-.075	-.146	0.494	0.119	1.8	1.1	1.7	1.1	A+	
1347	616116	Bio	308	.474	.205	.130	.474	.188	.003	.369	-.185	-.184	.369	-.069	0.590	0.119	-1.8	0.9	-1.6	0.9	A-	
1348	617018	Bio	308	.299	.224	.162	.299	.312	.003	.216	-.014	-.155	.216	-.034	1.395	0.130	0.7	1.0	0.9	1.1	A+	
1349	617766	Bio	308	.429	.318	.429	.097	.153	.003	.326	-.158	.326	-.137	-.074	0.777	0.120	-0.7	1.0	-0.5	1.0	A+	
1350	617797	Bio	308	.273	.114	.406	.201	.273	.007	.333	-.046	-.108	-.142	.333	1.530	0.133	-0.7	1.0	-0.8	0.9	A+	
1351	617006	Bio	311	.508	.360	.026	.106	.508	.000	.187	-.068	-.161	-.114	.187	0.568	0.119	2.9	1.1	2.0	1.1	B+	
1352	620046	Bio	311	.424	.196	.424	.145	.235	.000	.327	-.121	.327	-.219	-.086	0.941	0.121	-0.3	1.0	-0.2	1.0	A+	
1353	617344	Bio	311	.605	.084	.167	.145	.605	.000	.362	-.165	-.195	-.167	.362	0.136	0.121	-1.2	1.0	-0.7	1.0	A+	
1354	616117	Bio	311	.463	.228	.225	.084	.463	.000	.363	-.149	-.231	-.080	.363	0.768	0.120	-0.9	1.0	-1.0	1.0	A+	
1355	617798	Bio	311	.161	.389	.318	.129	.161	.003	.285	.018	-.195	-.070	.285	2.421	0.161	-0.4	1.0	0.8	1.1	A-	
1356	617782	Bio	311	.232	.093	.405	.264	.232	.006	.221	-.175	.094	-.187	.221	1.922	0.141	0.8	1.1	0.5	1.1	A+	
1357	617812	Bio	311	.399	.399	.132	.097	.367	.006	.276	.276	-.160	-.283	.019	1.047	0.122	0.9	1.0	0.7	1.0	A-	
1358	617799	Bio	307	.160	.111	.160	.505	.222	.003	.326	-.077	.326	-.081	-.131	2.462	0.163	-0.3	1.0	-0.1	1.0	A-	
1359	620042	Bio	307	.332	.332	.287	.248	.130	.003	.340	.340	-.238	-.172	.076	1.384	0.129	0.2	1.0	0.2	1.0	A-	
1360	617345	Bio	307	.580	.114	.160	.580	.147	.000	.391	-.163	-.212	.391	-.179	0.230	0.123	-1.1	1.0	-1.4	0.9	A-	

Appendix B: Field Test Item Statistics

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1361	617768	Bio	307	.450	.192	.450	.166	.192	.000	.486	-.137	.486	-.261	-.229	0.824	0.122	-3.0	0.9	-3.0	0.9	A-	
1362	617005	Bio	307	.518	.189	.518	.176	.108	.010	.373	-.220	.373	-.093	-.173	0.491	0.122	-0.6	1.0	-0.6	1.0	A+	
1363	620043	Bio	298	.534	.141	.171	.151	.534	.003	.385	-.139	-.147	-.190	.385	0.414	0.122	-1.9	0.9	-1.5	0.9	B+	
1364	617007	Bio	298	.473	.168	.473	.148	.208	.003	.299	-.155	.299	-.099	-.088	0.681	0.122	0.3	1.0	-0.1	1.0	A-	
1365	616119	Bio	298	.352	.352	.094	.208	.342	.003	.338	.338	-.185	-.173	-.036	1.234	0.127	-0.8	1.0	-0.5	1.0	A-	
1366	617769	Bio	298	.443	.443	.248	.104	.201	.003	.361	.361	-.137	-.188	-.106	0.815	0.122	-1.2	1.0	-1.1	1.0	A+	
1367	617346	Bio	298	.349	.379	.185	.349	.081	.007	.269	.029	-.239	.269	-.110	1.241	0.128	0.5	1.0	0.4	1.0	A-	
1368	617784	Bio	298	.487	.198	.138	.171	.487	.007	.465	-.212	-.102	-.247	.465	0.611	0.122	-3.8	0.9	-3.6	0.9	A+	
1369	617770	Bio	313	.805	.070	.029	.805	.090	.006	.426	-.228	-.179	.426	-.165	-0.989	0.149	-1.1	0.9	-1.9	0.8	A-	
1370	617347	Bio	313	.697	.150	.697	.080	.064	.010	.290	-.090	.290	-.194	-.065	-0.356	0.130	0.0	1.0	1.1	1.1	A+	
1371	617801	Bio	313	.348	.185	.329	.131	.348	.006	.291	-.140	-.053	-.076	.291	1.280	0.125	0.2	1.0	0.3	1.0	B+	
1372	617008	Bio	313	.240	.182	.284	.240	.281	.013	.282	.003	-.085	.282	-.100	1.851	0.138	-0.2	1.0	0.3	1.0	A+	
1373	617785	Bio	313	.220	.371	.166	.230	.220	.013	.224	.099	-.184	-.080	.224	1.969	0.142	0.4	1.0	0.8	1.1	A+	
1374	620044	Bio	313	.316	.307	.316	.265	.102	.010	.165	-.134	.165	.055	-.002	1.437	0.128	2.1	1.1	2.0	1.1	A-	
1375	616120	Bio	313	.157	.173	.508	.150	.157	.013	.091	-.065	.156	-.135	.091	2.425	0.161	0.9	1.1	2.0	1.3	A-	
1376	617802	Bio	317	.653	.085	.164	.653	.098	.000	.432	-.136	-.296	.432	-.197	-0.203	0.126	-1.5	0.9	-1.7	0.9	A-	
1377	617786	Bio	317	.060	.524	.060	.221	.186	.010	.120	.146	.120	-.162	-.026	3.731	0.261	-0.1	1.0	0.5	1.1	A-	
1378	617348	Bio	317	.448	.249	.180	.114	.448	.010	.362	-.016	-.233	-.176	.362	0.772	0.121	-0.7	1.0	2.3	1.1	A-	
1379	620045	Bio	317	.786	.786	.028	.142	.035	.010	.315	.315	-.079	-.198	-.096	-0.971	0.147	0.2	1.0	0.3	1.0	B+	
1380	616121	Bio	317	.820	.820	.025	.110	.038	.006	.471	.471	-.164	-.305	-.181	-1.238	0.158	-1.3	0.9	-1.7	0.8	A-	
1381	617009	Bio	317	.177	.151	.177	.416	.246	.010	.088	-.180	.088	.092	.021	2.269	0.155	1.2	1.1	2.5	1.4	A-	
1382	617771	Bio	317	.754	.044	.754	.073	.120	.010	.511	-.132	.511	-.273	-.303	-0.771	0.140	-2.2	0.9	-2.8	0.7	A+	
1383	616122	Bio	311	.312	.161	.161	.312	.360	.006	.162	-.054	.079	.162	-.098	1.424	0.128	1.6	1.1	2.4	1.2	A+	
1384	617787	Bio	311	.106	.453	.106	.119	.315	.006	.086	.222	.086	-.096	-.148	2.873	0.190	0.5	1.1	1.9	1.4	A+	
1385	617803	Bio	311	.457	.209	.190	.457	.138	.006	.473	-.179	-.234	.473	-.098	0.742	0.120	-4.1	0.9	-3.8	0.8	A-	
1386	617010	Bio	311	.306	.248	.306	.167	.273	.006	.157	.068	.157	-.243	.060	1.457	0.129	2.0	1.1	1.5	1.1	A-	
1387	617772	Bio	311	.640	.640	.100	.084	.170	.006	.382	.382	-.071	-.182	-.197	-0.090	0.124	-1.4	0.9	-1.1	0.9	A-	
1388	617011	Bio	300	.183	.297	.400	.113	.183	.007	.075	-.030	.059	-.026	.075	2.270	0.156	1.4	1.1	2.5	1.4	A-	
1389	617788	Bio	300	.137	.280	.273	.137	.300	.010	.028	-.205	.054	.028	.206	2.646	0.174	1.2	1.1	2.9	1.6	A-	
1390	617773	Bio	300	.280	.067	.417	.230	.280	.007	.254	-.066	-.150	.031	.254	1.662	0.136	0.8	1.1	0.7	1.1	A-	
1391	616123	Bio	300	.473	.473	.377	.063	.077	.010	.384	.384	-.120	-.216	-.128	0.714	0.123	-1.4	1.0	-0.5	1.0	C-	
1392	617804	Bio	300	.140	.140	.387	.310	.153	.010	-.048	-.048	.097	.065	-.038	2.618	0.173	1.8	1.2	3.2	1.6	B-	
1393	616124	Bio	298	.342	.369	.232	.342	.054	.003	.321	-.117	-.118	.321	-.167	1.292	0.129	-0.4	1.0	-0.1	1.0	B+	
1394	617790	Bio	298	.312	.312	.309	.245	.131	.003	.344	.344	-.255	-.071	-.008	1.444	0.132	-0.5	1.0	0.3	1.0	A-	
1395	617012	Bio	298	.309	.185	.064	.309	.436	.007	.302	-.157	-.110	.302	-.071	1.456	0.132	0.0	1.0	1.0	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1396	617568	Bio	298	.802	.030	.094	.802	.067	.007	.398	-.180	-.192	.398	-.218	-0.991	0.152	-1.0	0.9	-1.4	0.8	A+	
1397	617774	Bio	298	.309	.309	.547	.060	.077	.007	.194	.194	-.033	-.076	-.143	1.456	0.132	1.6	1.1	1.6	1.1	A+	
1398	617791	Bio	311	.219	.219	.177	.306	.299	.000	.146	.146	-.091	.017	-.073	2.045	0.143	1.2	1.1	1.7	1.2	B+	
1399	616125	Bio	311	.289	.206	.154	.351	.289	.000	.092	-.059	-.036	-.011	.092	1.633	0.131	2.3	1.1	3.0	1.3	A+	
1400	617569	Bio	311	.679	.064	.051	.679	.203	.003	.390	-.252	-.066	.390	-.251	-0.200	0.127	-1.2	0.9	-1.0	0.9	A-	
1401	617789	Bio	311	.605	.605	.209	.145	.035	.006	.421	.421	-.304	-.166	-.099	0.148	0.122	-2.0	0.9	-1.8	0.9	A-	
1402	617377	Bio	307	.775	.775	.062	.114	.042	.007	.357	.357	-.222	-.156	-.115	-0.918	0.145	-0.2	1.0	-0.5	0.9	A+	
1403	617839	Bio	301	.734	.040	.130	.734	.093	.003	.405	-.212	-.193	.405	-.202	-0.574	0.137	-1.3	0.9	-1.6	0.9	A-	
1404	617349	Bio	311	.688	.119	.035	.688	.151	.006	.389	-.223	-.113	.389	-.139	-0.329	0.129	-1.3	0.9	-1.2	0.9	A+	
1405	617836	Bio	307	.492	.085	.267	.150	.492	.007	.444	-.196	-.203	-.147	.444	0.524	0.122	-3.9	0.9	-3.3	0.8	A+	
1406	617464	Bio	307	.300	.300	.368	.186	.140	.007	.228	.228	.004	-.141	-.099	1.444	0.132	1.3	1.1	1.0	1.1	A+	
1407	617361	Bio	4897	.204	.095	.396	.204	.298	.008	.179	-.154	-.006	.179	.000	2.067	0.037	2.8	1.1	5.8	1.2	A-	A+
1408	617465	Bio	300	.277	.277	.053	.203	.460	.007	.135	.135	-.068	-.006	-.013	1.723	0.137	2.1	1.1	2.7	1.3	A-	
1409	617368	Bio	312	.253	.135	.295	.317	.253	.000	.146	-.225	.027	.002	.146	1.714	0.135	1.4	1.1	1.0	1.1	B+	
1410	617353	Bio	312	.561	.561	.180	.144	.112	.003	.304	.304	-.199	-.161	-.048	0.261	0.119	-0.3	1.0	-0.5	1.0	A+	
1411	617807	Bio	312	.494	.180	.189	.494	.138	.000	.327	-.159	-.180	.327	-.092	0.562	0.118	-0.6	1.0	-0.9	1.0	A+	
1412	617837	Bio	312	.760	.016	.760	.064	.160	.000	.242	-.096	.242	-.197	-.118	-0.707	0.136	-0.2	1.0	0.8	1.1	A+	
1413	620062	Bio	312	.359	.391	.160	.359	.090	.000	.276	-.093	-.110	.276	-.164	1.168	0.123	0.3	1.0	0.2	1.0	A-	
1414	617822	Bio	312	.481	.109	.481	.250	.160	.000	.337	-.092	.337	-.265	-.068	0.618	0.118	-0.8	1.0	-1.1	1.0	A-	
1415	617369	Bio	306	.333	.150	.147	.363	.333	.007	.229	-.005	-.088	-.080	.229	1.338	0.127	1.1	1.1	0.8	1.1	A-	
1416	620063	Bio	306	.343	.088	.343	.386	.177	.007	.387	-.157	.387	-.125	-.110	1.290	0.126	-1.6	0.9	-1.4	0.9	B-	
1417	617838	Bio	306	.637	.170	.062	.118	.637	.013	.413	-.107	-.168	-.213	.413	-0.069	0.126	-1.7	0.9	-1.8	0.9	A+	
1418	617808	Bio	306	.438	.438	.190	.137	.226	.010	.365	.365	-.197	-.134	-.026	0.844	0.121	-1.3	1.0	-1.0	1.0	A-	
1419	617823	Bio	306	.425	.206	.425	.203	.157	.010	.446	-.114	.446	-.250	-.075	0.904	0.122	-3.0	0.9	-3.0	0.9	A+	
1420	617354	Bio	306	.350	.134	.252	.255	.350	.010	.304	-.037	-.052	-.144	.304	1.256	0.126	-0.1	1.0	-0.1	1.0	A-	
1421	617355	Bio	301	.332	.143	.332	.269	.256	.000	.146	.072	.146	-.087	-.127	1.349	0.129	2.4	1.1	3.2	1.2	A-	
1422	620367	Bio	301	.568	.568	.156	.166	.110	.000	.418	.418	-.281	-.203	-.095	0.258	0.123	-2.5	0.9	-2.0	0.9	A-	
1423	617370	Bio	301	.495	.136	.156	.209	.495	.003	.494	-.170	-.161	-.287	.494	0.584	0.122	-3.6	0.9	-3.3	0.8	A+	
1424	617809	Bio	301	.372	.372	.203	.106	.312	.007	.188	.188	-.079	-.188	.040	1.146	0.126	2.7	1.1	2.1	1.1	A+	
1425	617825	Bio	301	.395	.106	.395	.269	.219	.010	.431	-.145	.431	-.184	-.148	1.029	0.125	-1.9	0.9	-1.7	0.9	A-	
1426	617810	Bio	297	.461	.259	.461	.165	.111	.003	.327	-.141	.327	-.097	-.145	0.668	0.123	-0.3	1.0	-0.6	1.0	A+	
1427	617840	Bio	297	.317	.175	.283	.317	.222	.003	.102	.037	-.138	.102	.049	1.350	0.131	2.7	1.2	2.6	1.2	C-	
1428	617815	Bio	297	.519	.519	.077	.155	.246	.003	.408	.408	-.241	-.155	-.147	0.414	0.122	-2.2	0.9	-2.3	0.9	A+	
1429	617371	Bio	297	.280	.253	.185	.280	.280	.003	.106	.075	-.236	.106	.071	1.546	0.136	2.2	1.1	2.5	1.2	A-	
1430	617826	Bio	297	.340	.242	.340	.306	.104	.007	.261	-.085	.261	-.123	-.035	1.223	0.129	0.5	1.0	1.1	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1431	620369	Bio	297	.471	.148	.313	.471	.061	.007	.386	-.172	-.194	.386	-.090	0.613	0.123	-1.5	1.0	-1.7	0.9	A-	
1432	620370	Bio	308	.494	.120	.341	.494	.042	.003	.228	-.031	-.143	.228	-.078	0.504	0.119	1.2	1.0	1.4	1.1	A-	
1433	617811	Bio	308	.536	.169	.114	.179	.536	.003	.376	-.215	-.104	-.139	.376	0.304	0.120	-1.7	0.9	-1.7	0.9	A-	
1434	617357	Bio	308	.354	.354	.146	.146	.347	.007	.393	.393	-.138	-.190	-.106	1.116	0.124	-1.7	0.9	-1.7	0.9	A-	
1435	617841	Bio	308	.838	.049	.055	.838	.055	.003	.332	-.203	-.097	.332	-.158	-1.331	0.161	-0.4	1.0	-0.8	0.9	A+	
1436	617827	Bio	308	.195	.367	.195	.208	.227	.003	.044	.004	.044	-.076	.078	2.005	0.149	1.5	1.1	1.8	1.2	A-	
1437	617832	Bio	308	.253	.042	.253	.584	.117	.003	.167	-.136	.167	-.059	.014	1.642	0.136	0.9	1.1	1.3	1.1	B-	
1438	617358	Bio	311	.209	.125	.151	.515	.209	.000	.105	-.073	.069	-.087	.105	2.075	0.146	1.5	1.1	2.1	1.2	A+	
1439	618573	Bio	311	.248	.145	.042	.566	.248	.000	.121	-.071	-.182	.019	.121	1.834	0.138	1.7	1.1	2.1	1.2	A+	
1440	617372	Bio	311	.177	.219	.177	.129	.476	.000	.152	-.020	.152	-.082	-.045	2.301	0.155	0.5	1.0	2.5	1.4	A-	
1441	620371	Bio	311	.756	.756	.061	.061	.122	.000	.396	.396	-.171	-.202	-.247	-0.631	0.137	-1.4	0.9	-1.2	0.9	B-	
1442	617828	Bio	311	.334	.222	.138	.334	.299	.006	.265	-.058	-.157	.265	-.088	1.356	0.127	0.6	1.0	1.1	1.1	A+	
1443	617373	Bio	311	.354	.122	.347	.354	.170	.006	.338	-.132	-.129	.338	-.135	1.261	0.125	-0.3	1.0	-0.4	1.0	A+	
1444	617813	Bio	307	.391	.163	.117	.329	.391	.000	.415	-.242	-.067	-.195	.415	1.098	0.125	-1.1	1.0	-1.2	0.9	A+	
1445	617359	Bio	307	.121	.186	.257	.437	.121	.000	.174	.120	-.082	-.137	.174	2.822	0.182	0.4	1.0	1.7	1.3	A-	
1446	617374	Bio	307	.287	.287	.316	.195	.195	.007	.284	.284	-.041	-.170	-.072	1.623	0.134	0.8	1.1	0.6	1.1	A-	
1447	617829	Bio	307	.518	.173	.209	.518	.095	.007	.443	-.246	-.220	.443	-.088	0.502	0.122	-2.1	0.9	-1.7	0.9	B-	
1448	617830	Bio	298	.611	.611	.218	.104	.057	.010	.301	.301	-.094	-.177	-.115	0.052	0.125	0.1	1.0	-0.1	1.0	A+	
1449	617375	Bio	298	.178	.178	.027	.178	.611	.007	.268	.268	-.137	-.194	.028	2.237	0.158	-0.2	1.0	0.4	1.1	B-	
1450	617360	Bio	298	.440	.188	.175	.440	.191	.007	.107	-.145	-.054	.107	.111	0.820	0.123	3.8	1.1	4.1	1.2	A+	
1451	617814	Bio	298	.329	.178	.218	.329	.265	.010	.171	-.018	-.119	.171	-.018	1.332	0.129	1.7	1.1	1.7	1.1	A-	
1452	617362	Bio	313	.326	.329	.326	.029	.310	.006	.187	-.101	.187	-.042	-.033	1.383	0.127	1.4	1.1	2.5	1.2	A-	
1453	617376	Bio	313	.451	.451	.192	.300	.054	.003	.204	.204	-.228	.089	-.147	0.807	0.120	2.2	1.1	2.3	1.1	A+	
1454	617831	Bio	313	.575	.115	.575	.144	.160	.006	.375	-.239	.375	-.229	.012	0.245	0.121	-1.3	1.0	-1.1	0.9	A+	
1455	620060	Bio	317	.423	.082	.300	.423	.186	.010	.278	-.159	-.144	.278	-.015	0.869	0.122	1.5	1.1	1.6	1.1	A-	
1456	617816	Bio	317	.659	.155	.659	.095	.082	.010	.424	-.164	.424	-.291	-.122	-0.238	0.127	-1.3	0.9	-1.5	0.9	A-	
1457	617463	Bio	317	.543	.044	.290	.543	.117	.006	.394	-.183	-.138	.394	-.222	0.354	0.121	-1.3	1.0	-1.1	0.9	A-	
1458	617363	Bio	317	.476	.177	.476	.202	.136	.010	.412	-.142	.412	-.166	-.178	0.637	0.121	-1.6	0.9	-1.0	1.0	C+	
1459	617817	Bio	311	.457	.457	.199	.183	.154	.006	.381	.381	-.139	-.089	-.172	0.742	0.120	-1.8	0.9	-1.8	0.9	A-	
1460	617833	Bio	311	.232	.232	.566	.093	.103	.006	.223	.223	.131	-.184	-.225	1.871	0.140	0.4	1.0	0.7	1.1	A+	
1461	617364	Bio	311	.228	.338	.315	.228	.113	.006	.260	-.083	-.089	.260	.028	1.891	0.141	0.1	1.0	0.1	1.0	A+	
1462	617466	Bio	311	.235	.135	.232	.392	.235	.006	.213	-.084	-.037	-.018	.213	1.851	0.139	0.5	1.0	1.2	1.1	A-	
1463	617834	Bio	300	.200	.213	.287	.200	.293	.007	.261	.070	-.210	.261	-.004	2.152	0.151	-0.1	1.0	0.5	1.1	A-	
1464	617467	Bio	300	.370	.080	.057	.370	.483	.010	.218	.020	-.108	.218	-.078	1.196	0.127	1.8	1.1	2.1	1.1	A-	
1465	617350	Bio	300	.290	.380	.057	.260	.290	.013	.395	-.140	-.212	-.043	.395	1.597	0.135	-1.3	0.9	-1.1	0.9	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1466	617365	Bio	300	.413	.170	.310	.413	.097	.010	.238	-.149	.053	.238	-.132	0.990	0.125	1.7	1.1	2.6	1.2	A-	
1467	617819	Bio	300	.630	.043	.200	.630	.117	.010	.361	-.057	-.193	.361	-.120	-0.012	0.127	-0.3	1.0	-0.8	1.0	A+	
1468	620059	Bio	300	.370	.233	.370	.200	.180	.017	.361	-.177	.361	-.098	-.035	1.180	0.127	-0.8	1.0	-0.3	1.0	A+	
1469	617366	Bio	298	.252	.302	.235	.252	.211	.000	.194	-.260	-.055	.194	.142	1.796	0.141	0.8	1.1	1.3	1.1	A-	
1470	617835	Bio	298	.426	.151	.339	.426	.081	.003	.387	-.169	-.189	.387	-.121	0.904	0.124	-1.5	0.9	-1.6	0.9	A-	
1471	617805	Bio	298	.305	.305	.235	.225	.232	.003	.363	.363	-.134	-.150	-.093	1.479	0.132	-0.5	1.0	-0.9	0.9	A-	
1472	617820	Bio	298	.557	.228	.557	.151	.057	.007	.340	-.093	.340	-.200	-.179	0.301	0.123	-0.3	1.0	-0.6	1.0	A-	
1473	617351	Bio	298	.386	.175	.232	.201	.386	.007	.492	-.209	-.148	-.201	.492	1.075	0.126	-3.0	0.9	-3.1	0.8	B-	
1474	617367	Bio	311	.293	.293	.370	.203	.135	.000	.110	.110	.099	-.180	-.076	1.616	0.131	2.4	1.1	2.3	1.2	A-	
1475	617806	Bio	311	.659	.659	.055	.209	.077	.000	.440	.440	-.213	-.296	-.150	-0.095	0.125	-2.2	0.9	-2.4	0.9	A-	
1476	617352	Bio	311	.637	.035	.228	.100	.637	.000	.354	-.231	-.118	-.260	.354	0.013	0.124	-0.8	1.0	-0.8	1.0	A-	
1477	620061	Bio	311	.486	.486	.154	.248	.109	.003	.323	.323	-.080	-.254	-.057	0.695	0.120	0.0	1.0	0.1	1.0	B+	
1478	617821	Bio	311	.264	.264	.306	.164	.261	.006	.202	.202	-.029	-.047	-.125	1.767	0.135	0.9	1.1	1.7	1.2	A+	
1479	617401	Bio	4897	.507	.141	.266	.507	.082	.004	.414	-.129	-.259	.414	-.104	0.526	0.030	-8.6	0.9	-8.1	0.9	A+	A+
1480	617395	Bio	313	.329	.329	.278	.284	.099	.010	.204	.204	.004	-.170	.060	1.372	0.126	1.3	1.1	1.7	1.1	B-	
1481	617394	Bio	298	.554	.104	.178	.158	.554	.007	.335	-.102	-.161	-.149	.335	0.313	0.122	-0.8	1.0	-1.0	1.0	B+	
1482	617414	Bio	301	.452	.060	.452	.233	.253	.003	.121	-.192	.121	-.128	.123	0.779	0.123	4.4	1.2	3.7	1.2	A+	
1483	617880	Bio	307	.538	.538	.179	.143	.134	.007	.352	.352	-.130	-.247	-.077	0.412	0.122	-0.1	1.0	-0.3	1.0	A-	
1484	617418	Bio	307	.218	.218	.293	.127	.352	.010	.208	.208	-.065	-.079	-.018	1.920	0.146	0.5	1.0	0.6	1.1	A-	
1485	617890	Bio	307	.238	.176	.306	.277	.238	.003	.327	-.043	-.177	-.049	.327	1.808	0.141	-0.8	0.9	-0.5	1.0	A-	
1486	617885	Bio	4897	.282	.222	.311	.179	.282	.007	.268	-.058	-.029	-.156	.268	1.596	0.033	1.6	1.0	2.0	1.0	A+	A-
1487	617873	Bio	307	.570	.081	.222	.570	.121	.007	.399	-.064	-.284	.399	-.121	0.164	0.123	-1.6	0.9	-1.2	0.9	B+	
1488	617386	Bio	4897	.246	.370	.127	.249	.246	.009	.333	-.108	-.093	-.082	.333	1.802	0.035	-2.2	1.0	-1.0	1.0	A+	A-
1489	617403	Bio	300	.520	.080	.520	.273	.120	.007	.388	-.196	.388	-.142	-.126	0.535	0.123	-1.2	1.0	-0.9	1.0	A+	
1490	617397	Bio	300	.377	.217	.263	.137	.377	.007	.402	-.120	-.131	-.150	.402	1.202	0.127	-1.7	0.9	-1.8	0.9	B+	
1491	617419	Bio	300	.183	.150	.183	.300	.357	.010	-.048	-.132	-.048	.080	.134	2.316	0.157	2.8	1.3	2.8	1.4	A-	
1492	617384	Bio	300	.300	.197	.300	.283	.213	.007	.286	-.054	.286	-.123	-.044	1.594	0.134	0.4	1.0	1.8	1.2	A-	
1493	617402	Bio	300	.393	.060	.183	.393	.353	.010	.202	-.138	-.041	.202	-.019	1.121	0.126	2.2	1.1	1.8	1.1	A-	
1494	617874	Bio	300	.203	.283	.193	.313	.203	.007	.306	.046	-.152	-.103	.306	2.178	0.151	-0.1	1.0	-0.2	1.0	A+	
1495	617856	Bio	300	.293	.210	.293	.380	.110	.007	.225	.000	.225	-.005	-.203	1.630	0.135	0.9	1.1	1.2	1.1	A-	
1496	617420	Bio	312	.571	.074	.571	.192	.157	.006	.357	-.123	.357	-.327	-.051	0.206	0.120	-1.5	1.0	-1.5	0.9	A+	
1497	617387	Bio	312	.542	.112	.170	.542	.176	.000	.388	-.239	-.178	.388	-.134	0.352	0.118	-2.0	0.9	-2.2	0.9	A-	
1498	617892	Bio	312	.305	.147	.317	.231	.305	.000	.411	-.141	-.131	-.186	.411	1.436	0.128	-1.4	0.9	-1.8	0.9	A-	
1499	617859	Bio	312	.462	.462	.039	.263	.234	.003	.139	.139	-.066	-.130	-.004	0.694	0.119	2.9	1.1	3.0	1.1	B+	
1500	617413	Bio	312	.301	.218	.301	.324	.154	.003	.135	-.009	.135	-.090	-.030	1.451	0.129	1.8	1.1	1.8	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1501	617404	Bio	312	.590	.061	.115	.590	.234	.000	.223	-.139	-.229	.223	-.008	0.140	0.120	1.0	1.0	1.2	1.1	A-	
1502	617875	Bio	312	.183	.231	.183	.442	.144	.000	.119	-.051	.119	.003	-.074	2.164	0.152	0.8	1.1	1.7	1.2	A-	
1503	617388	Bio	306	.340	.193	.183	.340	.278	.007	.100	-.104	-.134	.100	.184	1.306	0.127	2.8	1.1	2.8	1.2	A-	
1504	617860	Bio	306	.614	.239	.092	.614	.049	.007	.347	-.140	-.208	.347	-.059	0.054	0.123	-0.6	1.0	-0.7	1.0	B+	
1505	617842	Bio	306	.431	.154	.320	.431	.082	.013	.094	.047	.010	.094	-.071	0.869	0.122	4.5	1.2	4.1	1.2	A-	
1506	617405	Bio	306	.216	.141	.242	.389	.216	.013	.281	-.021	-.054	-.074	.281	1.988	0.145	-0.3	1.0	0.0	1.0	A-	
1507	617845	Bio	306	.235	.180	.294	.281	.235	.010	.088	-.071	.024	.058	.088	1.869	0.140	1.9	1.2	1.9	1.2	A-	
1508	617421	Bio	306	.088	.196	.477	.226	.088	.013	.032	-.111	.217	-.051	.032	3.102	0.206	0.6	1.1	1.6	1.4	A-	
1509	617876	Bio	306	.350	.343	.118	.350	.177	.013	.132	.141	-.204	.132	-.032	1.253	0.126	2.8	1.1	2.6	1.2	A+	
1510	617861	Bio	301	.362	.150	.160	.329	.362	.000	.402	-.160	-.182	-.149	.402	1.201	0.127	-1.5	0.9	-1.3	0.9	A+	
1511	617422	Bio	301	.419	.419	.216	.239	.120	.007	.322	.322	-.181	-.099	-.070	0.926	0.124	0.5	1.0	0.1	1.0	A+	
1512	617843	Bio	301	.332	.455	.080	.130	.332	.003	.324	-.204	.054	-.154	.324	1.347	0.129	-0.2	1.0	0.4	1.0	A-	
1513	617389	Bio	301	.365	.249	.123	.253	.365	.010	.389	-.137	-.130	-.142	.389	1.173	0.127	-0.9	1.0	-0.9	1.0	A-	
1514	617406	Bio	301	.356	.163	.166	.306	.356	.010	.393	-.156	-.131	-.128	.393	1.221	0.128	-0.9	1.0	-1.2	0.9	A+	
1515	617390	Bio	297	.306	.091	.205	.394	.306	.003	.270	-.170	-.106	-.027	.270	1.403	0.132	0.3	1.0	0.9	1.1	A-	
1516	617844	Bio	297	.343	.185	.414	.343	.054	.003	.284	-.023	-.181	.284	-.074	1.216	0.128	0.4	1.0	0.5	1.0	B-	
1517	617878	Bio	297	.468	.094	.162	.468	.269	.007	.383	-.224	-.211	.383	-.051	0.635	0.123	-1.6	1.0	-1.4	0.9	A-	
1518	617851	Bio	297	.253	.239	.263	.239	.253	.007	.344	-.197	.035	-.143	.344	1.690	0.140	-0.6	1.0	-0.7	0.9	A+	
1519	617407	Bio	297	.482	.182	.236	.482	.091	.010	.262	.014	-.154	.262	-.154	0.564	0.123	1.2	1.0	1.3	1.1	B+	
1520	617423	Bio	297	.407	.229	.407	.148	.205	.010	.244	.026	.244	-.146	-.130	0.900	0.125	1.3	1.1	1.4	1.1	A-	
1521	617863	Bio	308	.221	.062	.630	.084	.221	.003	.104	-.136	.098	-.133	.104	1.856	0.143	1.2	1.1	1.4	1.2	A-	
1522	617408	Bio	308	.143	.127	.458	.266	.143	.007	.145	.040	.110	-.225	.145	2.426	0.169	0.2	1.0	1.0	1.2	A-	
1523	617391	Bio	308	.552	.110	.552	.273	.062	.003	.169	-.099	.169	-.041	-.058	0.232	0.120	2.4	1.1	2.7	1.1	A-	
1524	617864	Bio	308	.234	.289	.331	.234	.143	.003	.259	-.113	-.076	.259	-.005	1.776	0.140	-0.2	1.0	0.3	1.0	A-	
1525	617879	Bio	308	.175	.296	.149	.377	.175	.003	.233	-.013	-.108	-.048	.233	2.143	0.154	0.0	1.0	0.1	1.0	A-	
1526	617424	Bio	308	.370	.065	.205	.357	.370	.003	.312	-.090	-.104	-.137	.312	1.044	0.123	-0.3	1.0	-0.5	1.0	A-	
1527	617426	Bio	311	.489	.148	.042	.489	.322	.000	.247	-.123	-.184	.247	-.092	0.653	0.119	1.5	1.1	0.8	1.0	A-	
1528	617392	Bio	311	.457	.103	.457	.251	.187	.003	.349	-.148	.349	-.338	.052	0.789	0.120	-0.7	1.0	-0.8	1.0	A-	
1529	617846	Bio	311	.177	.518	.177	.154	.145	.006	.185	-.004	.185	-.190	.018	2.293	0.155	0.8	1.1	1.0	1.1	A-	
1530	617409	Bio	311	.322	.135	.373	.164	.322	.006	.289	-.286	.056	-.157	.289	1.421	0.128	0.5	1.0	0.2	1.0	A+	
1531	617862	Bio	311	.463	.135	.113	.283	.463	.006	.350	-.180	-.258	-.057	.350	0.754	0.120	-0.7	1.0	-0.4	1.0	A+	
1532	617865	Bio	307	.599	.599	.143	.143	.114	.000	.236	.236	-.149	-.095	-.094	0.139	0.123	1.4	1.1	2.4	1.2	A-	
1533	617393	Bio	307	.404	.147	.404	.235	.215	.000	.371	-.081	.371	-.208	-.159	1.036	0.124	-0.6	1.0	-0.6	1.0	A-	
1534	617881	Bio	307	.502	.502	.147	.287	.062	.003	.408	.408	-.118	-.266	-.159	0.582	0.122	-1.4	1.0	-1.3	0.9	A+	
1535	617379	Bio	307	.303	.225	.202	.270	.303	.000	.233	-.308	.029	.022	.233	1.540	0.132	1.6	1.1	1.0	1.1	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1536	617425	Bio	307	.642	.104	.137	.642	.114	.003	.421	-.202	-.274	.421	-.131	-0.073	0.126	-1.5	0.9	-1.9	0.9	A+	
1537	617847	Bio	307	.375	.169	.309	.143	.375	.003	.470	-.249	-.160	-.159	.470	1.170	0.126	-2.1	0.9	-2.2	0.9	A+	
1538	617410	Bio	307	.349	.251	.186	.349	.205	.010	.051	.084	-.128	.051	.001	1.289	0.128	4.5	1.3	4.3	1.3	A-	
1539	617852	Bio	307	.472	.104	.218	.472	.199	.007	.246	-.140	-.135	.246	-.028	0.710	0.122	2.3	1.1	2.2	1.1	A+	
1540	617848	Bio	298	.279	.299	.222	.279	.198	.003	.216	.091	-.124	.216	-.166	1.611	0.135	0.9	1.1	1.0	1.1	A-	
1541	620372	Bio	298	.138	.171	.560	.138	.128	.003	.134	.200	-.184	.134	-.029	2.574	0.174	0.4	1.0	2.2	1.4	A-	
1542	617866	Bio	298	.386	.121	.222	.269	.386	.003	.268	-.072	-.073	-.127	.268	1.075	0.125	0.7	1.0	0.7	1.0	A-	
1543	617380	Bio	298	.322	.124	.322	.326	.225	.003	.178	.056	.178	-.152	-.024	1.383	0.130	1.7	1.1	1.7	1.1	A-	
1544	617882	Bio	298	.349	.383	.131	.131	.349	.007	.319	-.043	-.124	-.197	.319	1.246	0.128	-0.3	1.0	-0.5	1.0	A+	
1545	617411	Bio	298	.329	.269	.245	.329	.154	.003	.202	.069	-.172	.202	-.086	1.349	0.129	1.4	1.1	1.3	1.1	B+	
1546	617427	Bio	298	.540	.104	.225	.540	.128	.003	.387	-.203	-.108	.387	-.196	0.384	0.122	-1.9	0.9	-1.9	0.9	A+	
1547	617883	Bio	298	.366	.168	.215	.248	.366	.003	.403	-.087	-.246	-.094	.403	1.169	0.126	-1.9	0.9	-1.7	0.9	A-	
1548	617849	Bio	313	.393	.393	.137	.304	.157	.010	.347	.347	-.134	-.153	-.080	1.056	0.122	-0.7	1.0	-0.9	1.0	A+	
1549	617877	Bio	313	.540	.214	.090	.150	.540	.006	.422	-.193	-.212	-.147	.422	0.396	0.120	-2.4	0.9	-2.6	0.9	A+	
1550	620373	Bio	313	.157	.157	.077	.476	.281	.010	.114	.114	-.159	.311	-.271	2.427	0.161	0.8	1.1	2.0	1.3	A-	
1551	617867	Bio	313	.543	.035	.265	.543	.150	.006	.331	-.122	-.275	.331	.035	0.390	0.120	-0.3	1.0	-0.4	1.0	A+	
1552	617381	Bio	313	.377	.208	.377	.243	.163	.010	.275	-.068	.275	-.096	-.087	1.132	0.123	0.5	1.0	0.8	1.0	A-	
1553	617412	Bio	313	.313	.313	.294	.217	.166	.010	.166	.166	.016	-.128	.003	1.447	0.128	1.9	1.1	2.0	1.2	A+	
1554	617891	Bio	313	.348	.195	.348	.348	.102	.006	.216	-.045	.216	-.032	-.119	1.280	0.125	1.5	1.1	1.3	1.1	B-	
1555	617468	Bio	313	.342	.105	.304	.342	.236	.013	.255	-.162	.056	.255	-.139	1.299	0.125	1.0	1.1	0.4	1.0	A-	
1556	620374	Bio	317	.278	.164	.278	.114	.439	.006	-.025	-.011	-.025	-.220	.191	1.621	0.133	3.7	1.3	4.0	1.4	A+	
1557	617884	Bio	317	.549	.549	.237	.082	.123	.010	.396	.396	-.180	-.238	-.097	0.300	0.121	-1.1	1.0	-1.1	0.9	A+	
1558	617382	Bio	317	.347	.155	.347	.297	.189	.013	.257	-.161	.257	-.012	-.071	1.238	0.126	1.3	1.1	1.4	1.1	A-	
1559	617850	Bio	317	.420	.262	.420	.145	.164	.010	.102	.024	.102	-.118	.013	0.914	0.122	4.5	1.2	4.1	1.3	A-	
1560	617396	Bio	317	.256	.129	.202	.256	.401	.013	.188	-.035	-.149	.188	.027	1.740	0.137	1.3	1.1	1.7	1.2	A-	
1561	617886	Bio	311	.203	.203	.334	.232	.225	.006	.110	.110	.071	-.134	.039	2.056	0.147	1.2	1.1	2.1	1.3	A+	
1562	620375	Bio	311	.267	.261	.351	.267	.116	.006	.062	.056	-.029	.062	-.003	1.664	0.134	2.4	1.2	3.0	1.3	A+	
1563	617383	Bio	311	.351	.170	.254	.219	.351	.006	.254	-.078	-.061	-.067	.254	1.232	0.125	0.8	1.0	0.5	1.0	A+	
1564	617869	Bio	311	.251	.228	.244	.270	.251	.006	.373	-.136	.000	-.151	.373	1.756	0.137	-1.0	0.9	-1.7	0.9	A+	
1565	617398	Bio	300	.477	.477	.073	.070	.370	.010	.437	.437	-.207	-.226	-.125	0.699	0.123	-2.3	0.9	-2.5	0.9	A+	
1566	617870	Bio	300	.423	.120	.207	.423	.240	.010	.192	-.074	.078	.192	-.131	0.944	0.124	2.9	1.1	3.0	1.2	A+	
1567	617887	Bio	300	.157	.157	.103	.227	.497	.017	.273	.273	-.179	-.161	.139	2.462	0.166	-0.2	1.0	-0.1	1.0	A+	
1568	617415	Bio	300	.383	.207	.150	.243	.383	.017	.326	-.014	-.165	-.111	.326	1.115	0.126	0.0	1.0	0.2	1.0	B+	
1569	617888	Bio	298	.289	.134	.466	.104	.289	.007	.239	.008	-.095	-.205	.239	1.577	0.135	0.5	1.0	1.0	1.1	C-	
1570	620385	Bio	298	.349	.242	.104	.349	.299	.007	.399	-.136	-.198	.399	-.120	1.253	0.128	-1.1	1.0	-1.5	0.9	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1571	617385	Bio	298	.295	.295	.386	.161	.151	.007	.245	.245	-.019	-.109	-.128	1.527	0.134	0.7	1.0	1.2	1.1	A-	
1572	617853	Bio	298	.406	.178	.238	.406	.171	.007	.269	-.098	-.063	.269	-.135	0.981	0.124	1.0	1.0	1.1	1.1	A-	
1573	617416	Bio	298	.295	.295	.289	.118	.292	.007	.146	.146	.140	-.099	-.178	1.527	0.134	1.9	1.1	2.5	1.2	A+	
1574	617399	Bio	298	.285	.285	.349	.175	.185	.007	.206	.206	-.152	-.243	.229	1.581	0.135	1.3	1.1	1.2	1.1	A+	
1575	617871	Bio	298	.322	.211	.309	.322	.151	.007	.241	-.112	-.191	.241	.106	1.387	0.131	0.9	1.1	1.4	1.1	B-	
1576	617872	Bio	311	.560	.238	.132	.560	.071	.000	.273	-.262	-.062	.273	-.012	0.370	0.120	0.9	1.0	0.9	1.0	A-	
1577	617854	Bio	311	.248	.341	.174	.248	.238	.000	.188	-.002	-.171	.188	-.037	1.867	0.137	0.9	1.1	1.7	1.2	A-	
1578	617889	Bio	311	.254	.064	.122	.560	.254	.000	.250	-.233	-.065	-.061	.250	1.830	0.136	0.5	1.0	0.4	1.0	A+	
1579	617417	Bio	311	.550	.550	.212	.125	.113	.000	.362	.362	-.162	-.170	-.182	0.413	0.120	-0.9	1.0	-1.0	1.0	A+	
1580	617400	Bio	311	.325	.138	.148	.386	.325	.003	.288	-.031	-.166	-.125	.288	1.446	0.127	0.3	1.0	0.5	1.0	A+	
1581	617565	Bio	311	.698	.698	.215	.048	.039	.000	.519	.519	-.369	-.245	-.178	-0.290	0.129	-3.1	0.8	-3.4	0.8	C-	
1582	617430	Bio	311	.637	.039	.190	.129	.637	.006	.397	-.099	-.133	-.247	.397	-0.074	0.124	-1.6	0.9	-1.6	0.9	A-	
1583	617444	Bio	313	.773	.112	.773	.045	.064	.006	.461	-.277	.461	-.182	-.141	-0.778	0.141	-1.6	0.9	-2.2	0.8	B+	
1584	617458	Bio	297	.451	.162	.229	.152	.451	.007	.410	-.158	-.230	-.067	.410	0.710	0.123	-2.1	0.9	-2.0	0.9	A-	
1585	617449	Bio	311	.572	.174	.572	.097	.158	.000	.368	-.093	.368	-.170	-.265	0.312	0.121	-1.0	1.0	-0.7	1.0	A+	
1586	617462	Bio	298	.812	.024	.812	.034	.128	.003	.359	-.123	.359	-.203	-.194	-1.033	0.153	-0.7	0.9	-1.4	0.8	A+	
1587	617457	Bio	4897	.485	.485	.387	.063	.060	.006	.409	.409	-.219	-.145	-.165	0.625	0.030	-8.2	0.9	-7.6	0.9	A-	A+
1588	617454	Bio	311	.537	.537	.116	.180	.164	.003	.365	.365	-.197	-.217	-.083	0.465	0.120	-0.8	1.0	-1.0	1.0	A+	
1589	617451	Bio	300	.577	.577	.110	.273	.033	.007	.402	.402	-.140	-.179	-.218	0.274	0.125	-1.2	1.0	-0.9	1.0	A+	
1590	620393	Bio	307	.264	.368	.264	.319	.033	.016	.167	-.051	.167	-.026	-.067	1.635	0.137	1.0	1.1	1.4	1.1	A+	
1591	617925	Bio	307	.397	.134	.397	.231	.231	.007	.231	-.053	.231	-.141	-.043	0.954	0.124	1.8	1.1	1.2	1.1	A-	
1592	617550	Bio	307	.391	.222	.274	.111	.391	.003	.408	-.210	-.058	-.212	.408	0.996	0.124	-2.5	0.9	-1.6	0.9	A-	
1593	617453	Bio	307	.355	.355	.163	.166	.313	.003	.233	.233	-.089	.004	-.131	1.170	0.127	1.9	1.1	1.8	1.1	A-	
1594	617549	Bio	4897	.353	.066	.234	.344	.353	.004	.380	-.187	-.199	-.062	.380	1.239	0.032	-4.9	0.9	-4.3	0.9	A+	A-
1595	617450	Bio	307	.270	.095	.134	.270	.495	.007	.233	-.020	-.210	.233	-.003	1.613	0.136	1.2	1.1	1.3	1.1	A-	
1596	617893	Bio	4897	.288	.122	.288	.317	.268	.005	.308	-.190	.308	-.090	-.029	1.570	0.033	-0.6	1.0	0.4	1.0	A+	A-
1597	617434	Bio	307	.678	.678	.095	.189	.036	.003	.276	.276	-.282	.009	-.164	-0.349	0.129	0.7	1.0	2.2	1.2	A+	
1598	617566	Bio	307	.466	.130	.466	.244	.153	.007	.317	-.087	.317	-.165	-.097	0.642	0.122	0.6	1.0	0.6	1.0	A+	
1599	617898	Bio	4897	.489	.051	.050	.489	.402	.008	.292	-.166	-.173	.292	-.095	0.599	0.030	2.9	1.0	2.7	1.0	A-	A-
1600	620048	Bio	300	.160	.340	.160	.380	.103	.017	.089	-.087	.089	.174	-.084	2.500	0.165	1.3	1.1	1.5	1.2	B-	
1601	617435	Bio	300	.313	.467	.150	.313	.063	.007	.280	-.221	.038	.280	.012	1.522	0.132	0.4	1.0	0.6	1.1	A-	
1602	617567	Bio	300	.703	.023	.113	.153	.703	.007	.408	-.170	-.170	-.197	.408	-0.355	0.134	-1.4	0.9	-1.0	0.9	A-	
1603	617910	Bio	300	.590	.590	.083	.237	.083	.007	.242	.242	-.063	-.112	-.065	0.211	0.125	1.8	1.1	1.5	1.1	A+	
1604	617551	Bio	300	.610	.610	.147	.080	.157	.007	.462	.462	-.254	-.193	-.130	0.116	0.126	-2.4	0.9	-2.6	0.8	A+	
1605	617452	Bio	312	.212	.202	.067	.212	.519	.000	.285	-.038	-.245	.285	-.079	1.967	0.144	-0.2	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1606	617927	Bio	312	.135	.042	.692	.128	.135	.003	.133	-.143	.100	-.180	.133	2.549	0.171	0.5	1.1	1.1	1.2	A-	
1607	617573	Bio	312	.289	.250	.208	.253	.289	.000	.159	-.184	-.040	.055	.159	1.520	0.130	1.5	1.1	1.3	1.1	A+	
1608	617436	Bio	312	.734	.064	.103	.099	.734	.000	.463	-.158	-.233	-.318	.463	-0.562	0.132	-2.2	0.9	-2.7	0.8	A+	
1609	617552	Bio	312	.821	.821	.071	.051	.058	.000	.333	.333	-.177	-.201	-.164	-1.097	0.151	-0.6	0.9	-1.6	0.8	A+	
1610	620049	Bio	312	.308	.446	.308	.189	.058	.000	.168	-.015	.168	-.152	-.046	1.420	0.128	1.2	1.1	2.0	1.1	A-	
1611	617437	Bio	306	.516	.212	.124	.141	.516	.007	.369	-.072	-.236	-.115	.369	0.498	0.120	-1.3	1.0	-1.4	0.9	A+	
1612	618554	Bio	306	.565	.062	.311	.565	.056	.007	.338	-.243	-.100	.338	-.113	0.279	0.121	-0.6	1.0	-0.5	1.0	A+	
1613	617455	Bio	306	.480	.180	.209	.121	.480	.010	.253	.003	-.029	-.211	.253	0.654	0.121	1.3	1.1	1.1	1.1	A+	
1614	620050	Bio	306	.350	.350	.141	.177	.324	.010	.272	.272	.002	-.143	-.061	1.256	0.126	0.2	1.0	0.8	1.1	A+	
1615	617912	Bio	306	.428	.128	.428	.304	.124	.016	.422	-.172	.422	-.143	-.094	0.880	0.122	-2.6	0.9	-2.1	0.9	A-	
1616	617553	Bio	306	.526	.180	.526	.114	.163	.016	.411	-.147	.411	-.195	-.087	0.439	0.121	-2.2	0.9	-2.2	0.9	A+	
1617	617554	Bio	301	.492	.053	.163	.289	.492	.003	.339	-.151	-.203	-.126	.339	0.597	0.122	-0.3	1.0	0.2	1.0	A+	
1618	620051	Bio	301	.249	.249	.169	.452	.123	.007	.326	.326	-.067	-.162	-.049	1.796	0.140	-0.2	1.0	0.0	1.0	A-	
1619	617438	Bio	301	.419	.213	.419	.256	.103	.010	.252	-.108	.252	-.057	-.106	0.920	0.124	1.8	1.1	1.7	1.1	A+	
1620	617895	Bio	301	.296	.226	.103	.365	.296	.010	.177	.047	-.116	-.088	.177	1.529	0.134	1.9	1.1	2.4	1.2	A-	
1621	618555	Bio	301	.711	.070	.096	.110	.711	.013	.418	-.158	-.291	-.132	.418	-0.486	0.135	-1.5	0.9	-1.4	0.9	A+	
1622	617913	Bio	301	.708	.708	.120	.100	.063	.010	.412	.412	-.137	-.251	-.184	-0.453	0.134	-1.5	0.9	-0.9	0.9	A+	
1623	617456	Bio	301	.199	.080	.216	.495	.199	.010	.269	-.056	.030	-.163	.269	2.111	0.152	0.1	1.0	0.8	1.1	B-	
1624	618556	Bio	297	.428	.108	.428	.323	.138	.003	.204	-.046	.204	-.110	-.045	0.820	0.123	2.0	1.1	2.1	1.1	A+	
1625	620053	Bio	297	.306	.451	.111	.128	.306	.003	.251	-.073	-.092	-.091	.251	1.403	0.132	0.9	1.1	0.4	1.0	A-	
1626	617914	Bio	297	.596	.596	.162	.091	.148	.003	.284	.284	-.119	-.237	-.021	0.065	0.124	0.3	1.0	0.6	1.0	A+	
1627	617896	Bio	297	.300	.306	.300	.145	.246	.003	.235	-.110	.235	-.111	.004	1.438	0.133	0.7	1.0	1.1	1.1	A-	
1628	617555	Bio	297	.822	.094	.034	.822	.047	.003	.371	-.239	-.143	.371	-.124	-1.177	0.157	-0.7	0.9	-1.6	0.8	A+	
1629	617439	Bio	297	.286	.286	.212	.330	.162	.010	.306	.306	-.146	-.100	-.014	1.499	0.135	-0.3	1.0	0.4	1.0	A-	
1630	617915	Bio	308	.425	.062	.425	.481	.029	.003	.387	-.079	.387	-.272	-.092	0.792	0.121	-2.0	0.9	-1.8	0.9	B-	
1631	617899	Bio	308	.620	.114	.033	.227	.620	.007	.213	-.102	-.180	-.038	.213	-0.084	0.123	1.3	1.1	1.4	1.1	A+	
1632	617459	Bio	308	.296	.198	.244	.257	.296	.007	.197	-.007	-.115	-.036	.197	1.408	0.130	1.0	1.1	0.8	1.1	A+	
1633	618557	Bio	308	.062	.494	.308	.133	.062	.003	-.016	.084	.012	-.069	-.016	3.431	0.246	0.4	1.1	1.3	1.4	A+	
1634	617556	Bio	308	.224	.224	.273	.338	.159	.007	.150	.150	-.057	.035	-.087	1.812	0.142	1.0	1.1	1.0	1.1	A-	
1635	620054	Bio	308	.477	.153	.214	.477	.153	.003	.358	-.070	-.231	.358	-.106	0.561	0.119	-1.3	1.0	-1.4	1.0	A-	
1636	617440	Bio	308	.412	.412	.149	.169	.263	.007	.342	.342	-.154	-.159	-.072	0.844	0.121	-1.0	1.0	-0.7	1.0	A+	
1637	618558	Bio	311	.704	.174	.045	.704	.077	.000	.318	-.135	-.276	.318	-.138	-0.348	0.129	-0.8	1.0	-0.2	1.0	C-	
1638	617460	Bio	311	.752	.113	.084	.752	.051	.000	.351	-.209	-.194	.351	-.144	-0.612	0.136	-1.0	0.9	-1.1	0.9	A-	
1639	617443	Bio	311	.601	.167	.601	.154	.077	.000	.407	-.179	.407	-.219	-.199	0.150	0.121	-2.1	0.9	-1.9	0.9	A-	
1640	617916	Bio	311	.463	.064	.212	.261	.463	.000	.444	-.167	-.074	-.342	.444	0.768	0.120	-2.6	0.9	-2.6	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1641	617441	Bio	311	.408	.106	.408	.338	.148	.000	.367	-.175	.367	-.190	-.104	1.014	0.121	-1.1	1.0	-0.8	1.0	B-	
1642	620055	Bio	311	.289	.145	.261	.302	.289	.003	.198	.049	-.150	-.085	.198	1.593	0.131	1.5	1.1	1.0	1.1	A-	
1643	620646	Bio	311	.283	.196	.283	.219	.293	.010	.197	.016	.197	-.137	-.063	1.622	0.132	1.2	1.1	1.8	1.1	A+	
1644	617901	Bio	307	.655	.166	.052	.655	.124	.003	.156	-.051	-.116	.156	-.087	-0.137	0.127	2.2	1.1	2.9	1.2	A+	
1645	617442	Bio	307	.485	.485	.104	.121	.290	.000	.423	.423	-.167	-.237	-.183	0.660	0.121	-1.7	0.9	-1.3	0.9	A+	
1646	618559	Bio	307	.306	.169	.306	.482	.042	.000	.321	-.091	.321	-.201	-.066	1.523	0.132	0.2	1.0	0.6	1.1	A-	
1647	620056	Bio	307	.235	.235	.345	.290	.124	.007	.152	.152	-.059	.030	-.145	1.922	0.143	1.5	1.1	2.7	1.3	B-	
1648	617558	Bio	307	.407	.104	.326	.407	.156	.007	.218	-.204	.066	.218	-.172	1.012	0.124	2.7	1.1	2.1	1.1	A+	
1649	617917	Bio	307	.508	.104	.508	.199	.182	.007	.506	-.206	.506	-.341	-.106	0.546	0.122	-3.6	0.9	-3.3	0.8	A-	
1650	618560	Bio	298	.258	.013	.027	.258	.698	.003	-.067	-.034	-.083	-.067	.146	1.724	0.138	3.5	1.3	4.1	1.4	A-	
1651	617564	Bio	298	.322	.352	.258	.322	.064	.003	.241	-.054	-.082	.241	-.125	1.383	0.130	0.8	1.0	1.0	1.1	A+	
1652	617902	Bio	298	.571	.205	.571	.104	.118	.003	.398	-.214	.398	-.190	-.101	0.249	0.123	-2.3	0.9	-1.6	0.9	A+	
1653	617918	Bio	298	.473	.074	.289	.161	.473	.003	.318	-.046	-.149	-.160	.318	0.681	0.122	-0.5	1.0	-0.2	1.0	A+	
1654	617559	Bio	298	.591	.144	.591	.161	.101	.003	.399	-.207	.399	-.143	-.168	0.159	0.123	-2.1	0.9	-2.0	0.9	A-	
1655	617919	Bio	313	.470	.067	.147	.470	.310	.006	.383	-.068	-.219	.383	-.166	0.715	0.120	-1.6	0.9	-1.4	0.9	B-	
1656	617561	Bio	313	.412	.067	.169	.345	.412	.006	.432	-.151	-.100	-.219	.432	0.979	0.121	-2.6	0.9	-2.4	0.9	A-	
1657	617548	Bio	313	.661	.661	.090	.141	.099	.010	.372	.372	-.075	-.202	-.151	-0.171	0.126	-0.9	1.0	-1.1	0.9	A+	
1658	618561	Bio	313	.703	.048	.176	.064	.703	.010	.387	-.163	-.185	-.134	.387	-0.384	0.130	-0.9	1.0	-1.4	0.9	A-	
1659	617903	Bio	313	.566	.115	.224	.566	.086	.010	.459	-.179	-.190	.459	-.184	0.283	0.120	-3.1	0.9	-3.0	0.9	A-	
1660	617900	Bio	317	.483	.057	.483	.284	.177	.000	.441	-.228	.441	-.093	-.329	0.618	0.120	-2.7	0.9	-2.6	0.9	B+	
1661	617560	Bio	317	.492	.492	.237	.114	.158	.000	.430	.430	-.205	-.261	-.123	0.575	0.120	-2.1	0.9	-1.9	0.9	A-	
1662	617894	Bio	317	.073	.678	.060	.186	.073	.003	-.024	.178	-.224	-.033	-.024	3.434	0.231	0.6	1.1	2.1	1.6	A-	
1663	617445	Bio	317	.622	.076	.085	.622	.205	.013	.387	-.058	-.321	.387	-.142	-0.055	0.125	-0.8	1.0	-0.5	1.0	A+	
1664	617920	Bio	317	.685	.057	.129	.123	.685	.006	.442	-.052	-.132	-.379	.442	-0.373	0.130	-1.7	0.9	-1.0	0.9	A+	
1665	618563	Bio	317	.634	.054	.233	.073	.634	.006	.398	-.152	-.228	-.140	.398	-0.113	0.125	-0.7	1.0	-0.6	1.0	A-	
1666	617429	Bio	317	.483	.189	.211	.107	.483	.010	.441	-.182	-.181	-.172	.441	0.591	0.121	-2.1	0.9	-2.1	0.9	A+	
1667	617904	Bio	317	.416	.142	.183	.416	.249	.010	.422	-.157	-.226	.422	-.097	0.914	0.122	-2.2	0.9	-1.1	0.9	A-	
1668	617544	Bio	317	.618	.114	.110	.148	.618	.010	.506	-.206	-.216	-.251	.506	-0.048	0.124	-3.3	0.9	-2.7	0.8	A+	
1669	617905	Bio	311	.534	.151	.219	.534	.090	.006	.344	-.095	-.148	.344	-.135	0.398	0.120	-0.8	1.0	-0.9	1.0	B+	
1670	617911	Bio	311	.550	.055	.113	.550	.277	.006	.345	-.134	-.132	.345	-.139	0.326	0.120	-0.8	1.0	-0.7	1.0	B-	
1671	618564	Bio	311	.740	.093	.103	.058	.740	.006	.324	-.074	-.087	-.243	.324	-0.608	0.136	-0.4	1.0	0.0	1.0	A-	
1672	617909	Bio	311	.219	.363	.238	.174	.219	.006	.227	.012	-.143	-.004	.227	1.951	0.143	0.3	1.0	0.8	1.1	A-	
1673	617545	Bio	311	.762	.097	.077	.058	.762	.006	.351	-.119	-.164	-.142	.351	-0.741	0.140	-0.4	1.0	-1.0	0.9	A-	
1674	617446	Bio	311	.611	.611	.151	.125	.106	.006	.446	.446	-.194	-.226	-.116	0.048	0.122	-3.0	0.9	-2.2	0.9	A+	
1675	617557	Bio	311	.560	.058	.232	.560	.145	.006	.253	-.161	-.106	.253	-.018	0.283	0.120	1.1	1.0	2.0	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1676	617921	Bio	311	.457	.097	.129	.457	.312	.006	.064	-.055	-.071	.064	.098	0.742	0.120	5.1	1.2	5.9	1.3	A-	
1677	617562	Bio	311	.656	.119	.109	.656	.109	.006	.418	-.129	-.207	.418	-.176	-0.168	0.125	-1.9	0.9	-2.0	0.9	A+	
1678	620389	Bio	311	.183	.183	.286	.302	.222	.006	.158	.158	-.134	-.010	.100	2.190	0.152	0.5	1.0	2.0	1.3	A-	
1679	620392	Bio	300	.737	.060	.090	.737	.107	.007	.245	-.059	-.138	.245	-.059	-0.564	0.138	0.5	1.0	1.9	1.2	A-	
1680	618565	Bio	300	.647	.647	.083	.190	.073	.007	.459	.459	-.186	-.228	-.162	-0.087	0.128	-2.5	0.9	-2.8	0.8	A-	
1681	617563	Bio	300	.643	.110	.157	.643	.083	.007	.400	-.190	-.058	.400	-.271	-0.071	0.128	-1.2	0.9	-1.4	0.9	A-	
1682	620386	Bio	300	.670	.147	.100	.670	.073	.010	.466	-.260	-.175	.466	-.108	-0.212	0.130	-2.2	0.9	-2.2	0.8	A+	
1683	617546	Bio	300	.600	.113	.600	.083	.193	.010	.365	-.113	.365	-.061	-.201	0.132	0.125	-0.5	1.0	-0.5	1.0	A+	
1684	617906	Bio	300	.567	.567	.147	.150	.127	.010	.444	.444	-.141	-.254	-.098	0.287	0.124	-2.4	0.9	-2.0	0.9	A+	
1685	617447	Bio	300	.783	.783	.053	.057	.093	.013	.477	.477	-.205	-.264	-.152	-0.883	0.149	-1.8	0.9	-1.6	0.8	A+	
1686	617922	Bio	300	.667	.123	.077	.667	.117	.017	.484	-.181	-.197	.484	-.217	-0.221	0.131	-2.6	0.9	-2.6	0.8	B-	
1687	617431	Bio	300	.170	.360	.217	.237	.170	.017	.050	.118	-.095	.024	.050	2.355	0.160	1.5	1.2	2.9	1.5	B-	
1688	617428	Bio	300	.397	.153	.263	.170	.397	.017	.424	-.051	-.169	-.179	.424	1.052	0.126	-2.1	0.9	-1.7	0.9	A+	
1689	617448	Bio	298	.128	.292	.466	.128	.111	.003	.081	-.214	.112	.081	.074	2.686	0.180	0.9	1.1	2.0	1.4	A-	
1690	617547	Bio	298	.366	.228	.091	.309	.366	.007	.455	-.109	-.168	-.234	.455	1.171	0.127	-2.3	0.9	-2.0	0.9	B-	
1691	618566	Bio	298	.430	.185	.201	.178	.430	.007	.425	-.131	-.165	-.199	.425	0.873	0.123	-2.0	0.9	-1.9	0.9	A-	
1692	617432	Bio	298	.352	.346	.121	.352	.175	.007	.307	-.115	-.207	.307	-.020	1.236	0.128	0.3	1.0	0.0	1.0	A-	
1693	617923	Bio	298	.362	.185	.218	.228	.362	.007	.237	-.150	.000	-.092	.237	1.187	0.127	1.3	1.1	1.5	1.1	A-	
1694	617926	Bio	298	.493	.151	.097	.493	.252	.007	.391	-.107	-.182	.391	-.198	0.586	0.122	-1.5	1.0	-1.2	1.0	A+	
1695	617907	Bio	298	.493	.299	.101	.493	.101	.007	.085	-.033	.002	.085	-.036	0.586	0.122	4.8	1.2	5.0	1.3	A+	
1696	620391	Bio	298	.205	.205	.305	.242	.242	.007	.323	.323	.084	-.220	-.135	2.066	0.150	-0.3	1.0	-0.2	1.0	A-	
1697	617924	Bio	311	.556	.238	.080	.556	.122	.003	.390	-.335	-.033	.390	-.108	0.381	0.120	-1.4	1.0	-1.2	0.9	A-	
1698	618568	Bio	311	.617	.228	.071	.080	.617	.003	.214	.004	-.178	-.197	.214	0.100	0.123	1.7	1.1	1.8	1.1	A+	
1699	620047	Bio	311	.479	.379	.100	.479	.042	.000	.383	-.180	-.238	.383	-.162	0.729	0.120	-1.2	1.0	-1.2	1.0	A-	
1700	620388	Bio	311	.740	.039	.740	.100	.122	.000	.420	-.236	.420	-.191	-.249	-0.516	0.135	-1.6	0.9	-1.7	0.9	A-	
1701	617908	Bio	311	.682	.682	.029	.055	.235	.000	.437	.437	-.165	-.290	-.260	-0.207	0.127	-2.0	0.9	-2.2	0.9	A-	
1702	620390	Bio	311	.338	.232	.322	.106	.338	.003	.348	-.251	.006	-.184	.348	1.382	0.126	-0.5	1.0	-0.5	1.0	A-	
1703	617433	Bio	311	.183	.463	.183	.254	.097	.003	.198	.068	.198	-.223	-.029	2.282	0.152	0.4	1.0	1.2	1.2	A-	
1704	616406	Chem	307	.482	.166	.182	.482	.163	.007	.389	-.078	-.181	.389	-.173	0.658	0.119	-2.5	0.9	-2.6	0.9	A-	
1705	616376	Chem	307	.505	.072	.098	.505	.316	.010	.324	-.065	-.086	.324	-.190	0.549	0.119	-1.1	1.0	-0.9	1.0	A+	
1706	616533	Chem	307	.485	.485	.388	.091	.033	.003	.345	.345	-.179	-.185	-.126	0.706	0.120	-1.4	1.0	-1.4	0.9	A-	
1707	616409	Chem	4315	.434	.137	.215	.434	.205	.009	.367	-.136	-.128	.367	-.161	0.870	0.032	-6.6	0.9	-6.3	0.9	A+	A-
1708	616503	Chem	309	.240	.291	.240	.278	.181	.010	.118	-.123	.118	-.002	.086	1.800	0.139	1.3	1.1	1.6	1.2	A-	
1709	616372	Chem	4315	.324	.273	.130	.262	.325	.010	.374	-.117	-.160	-.106	.374	1.378	0.034	-5.0	0.9	-4.3	0.9	A-	A-
1710	616532	Chem	309	.256	.107	.249	.382	.256	.007	.309	-.146	-.089	-.056	.309	1.710	0.136	-0.8	1.0	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1711	618721	Chem	309	.288	.152	.447	.288	.107	.007	.089	.073	-.055	.089	-.050	1.532	0.131	2.0	1.1	1.9	1.2	A-	
1712	618751	Chem	309	.207	.207	.269	.295	.217	.013	.180	.180	.022	-.129	.002	1.996	0.146	0.6	1.1	0.8	1.1	A+	
1713	616514	Chem	307	.485	.235	.485	.176	.101	.003	.315	-.114	.315	-.114	-.187	0.706	0.120	-1.0	1.0	-0.8	1.0	B-	
1714	616566	Chem	307	.446	.179	.192	.446	.179	.003	.363	-.191	-.089	.363	-.163	0.879	0.120	-1.5	1.0	-1.6	0.9	A+	
1715	618752	Chem	307	.199	.199	.235	.371	.179	.016	.128	.128	-.139	.068	-.052	2.139	0.149	1.0	1.1	0.8	1.1	A+	
1716	618717	Chem	616	.333	.333	.395	.221	.047	.005	.313	.313	-.096	-.181	-.097	1.378	0.089	-1.1	1.0	-0.9	1.0	A-	
1717	620454	Chem	308	.308	.198	.325	.162	.308	.007	.257	-.072	-.120	-.037	.257	1.478	0.128	0.1	1.0	0.3	1.0	A-	
1718	616534	Chem	308	.283	.166	.370	.283	.166	.016	.296	-.010	-.108	.296	-.127	1.600	0.131	-0.5	1.0	0.3	1.0	A-	
1719	616567	Chem	308	.292	.156	.224	.312	.292	.016	.304	-.106	-.071	-.083	.304	1.552	0.130	-0.5	1.0	-0.1	1.0	A+	
1720	620455	Chem	309	.259	.359	.288	.259	.087	.007	.281	-.056	-.148	.281	-.075	1.709	0.135	-0.3	1.0	-0.1	1.0	A-	
1721	618684	Chem	309	.340	.178	.333	.142	.340	.007	.235	.037	-.145	-.139	.235	1.293	0.125	0.7	1.0	1.7	1.1	A-	
1722	616568	Chem	309	.372	.372	.136	.301	.168	.023	.404	.404	-.211	-.131	-.131	1.101	0.124	-1.8	0.9	-1.6	0.9	A-	
1723	616535	Chem	309	.437	.142	.437	.230	.168	.023	.232	-.055	.232	-.268	.059	0.797	0.120	0.8	1.0	1.3	1.1	A-	
1724	616371	Chem	309	.427	.185	.178	.191	.427	.019	.373	-.098	-.204	-.138	.373	0.853	0.121	-1.4	1.0	-1.3	0.9	A+	
1725	616430	Chem	309	.450	.133	.320	.450	.078	.019	.370	-.142	-.176	.370	-.148	0.752	0.120	-1.5	1.0	-1.3	1.0	A-	
1726	616565	Chem	309	.188	.188	.223	.375	.191	.023	.105	.105	.013	.000	-.084	2.129	0.151	0.9	1.1	1.6	1.2	A-	
1727	616536	Chem	308	.208	.240	.250	.299	.208	.003	.242	-.071	-.148	-.010	.242	1.969	0.145	-0.4	1.0	-0.6	0.9	A+	
1728	616373	Chem	616	.183	.183	.188	.481	.136	.011	.108	.108	-.149	.131	-.042	2.139	0.108	1.1	1.1	1.9	1.2	A+	
1729	620456	Chem	308	.250	.234	.250	.328	.175	.013	.002	.040	.002	.110	-.073	1.690	0.136	2.0	1.1	2.7	1.2	B+	
1730	616374	Chem	318	.280	.255	.280	.333	.132	.000	.252	.026	.252	-.247	-.022	1.670	0.130	0.3	1.0	0.3	1.0	B-	
1731	619959	Chem	318	.491	.085	.236	.186	.491	.003	.387	-.125	-.169	-.220	.387	0.679	0.117	-2.3	0.9	-1.9	0.9	A-	
1732	620457	Chem	318	.248	.286	.293	.248	.167	.006	.127	.032	-.057	.127	-.111	1.827	0.135	1.4	1.1	1.4	1.1	B+	
1733	616537	Chem	318	.346	.173	.151	.327	.346	.003	.350	-.090	-.154	-.157	.350	1.328	0.123	-1.0	1.0	-1.1	0.9	A-	
1734	619929	Chem	306	.471	.163	.471	.144	.222	.000	.398	-.127	.398	-.220	-.179	0.718	0.119	-2.4	0.9	-2.3	0.9	A-	
1735	619960	Chem	306	.281	.190	.121	.281	.405	.003	.164	-.130	-.132	.164	.040	1.597	0.132	0.4	1.0	1.2	1.1	A-	
1736	616375	Chem	306	.144	.144	.196	.405	.245	.010	.176	.176	-.038	.023	-.087	2.488	0.167	0.3	1.0	0.2	1.0	A+	
1737	616403	Chem	613	.406	.113	.194	.406	.277	.010	.153	-.051	-.119	.153	.004	0.973	0.086	3.2	1.1	3.2	1.1	A-	B+
1738	620458	Chem	306	.369	.177	.369	.294	.150	.010	.382	-.129	.382	-.141	-.133	1.151	0.123	-1.9	0.9	-1.7	0.9	A+	
1739	618757	Chem	307	.332	.332	.222	.371	.065	.010	.237	.237	-.003	-.199	.024	1.331	0.126	0.2	1.0	1.0	1.1	A-	
1740	618714	Chem	307	.283	.244	.251	.205	.283	.016	.126	.014	-.059	-.015	.126	1.570	0.132	1.5	1.1	1.6	1.1	A+	
1741	619930	Chem	307	.518	.192	.104	.518	.179	.007	.304	-.148	-.163	.304	-.032	0.502	0.119	-0.8	1.0	-0.3	1.0	B+	
1742	619961	Chem	307	.378	.160	.378	.313	.124	.026	.367	-.091	.367	-.193	-.026	1.087	0.123	-1.5	0.9	-1.3	0.9	A-	
1743	619931	Chem	305	.328	.144	.328	.357	.148	.023	.161	-.060	.161	.095	-.220	1.265	0.127	1.2	1.1	0.9	1.1	A+	
1744	618715	Chem	305	.249	.321	.184	.230	.249	.016	.275	-.065	-.085	-.056	.275	1.698	0.137	-0.3	1.0	0.2	1.0	A-	
1745	616377	Chem	305	.213	.285	.256	.213	.233	.013	.099	-.078	.054	.099	-.009	1.921	0.144	1.4	1.1	1.3	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1746	619962	Chem	305	.377	.259	.138	.377	.223	.003	.286	-.101	.012	.286	-.221	1.075	0.122	-0.7	1.0	-0.4	1.0	A-	
1747	616497	Chem	305	.292	.184	.292	.341	.157	.026	.073	.054	.073	.020	-.093	1.437	0.131	2.1	1.1	2.3	1.2	A-	
1748	618685	Chem	305	.216	.216	.207	.367	.180	.030	.128	.128	.059	.022	-.148	1.863	0.144	0.9	1.1	1.5	1.2	A-	
1749	616407	Chem	305	.239	.285	.239	.325	.112	.039	.223	-.058	.223	-.016	-.122	1.700	0.139	0.2	1.0	0.7	1.1	B-	
1750	618746	Chem	308	.396	.396	.107	.234	.260	.003	.267	.267	-.148	-.158	-.041	1.093	0.121	-0.1	1.0	-0.2	1.0	A+	
1751	616380	Chem	308	.234	.218	.247	.234	.292	.010	.193	-.034	-.022	.193	-.085	1.924	0.140	0.6	1.1	0.8	1.1	A+	
1752	618716	Chem	308	.458	.104	.458	.283	.146	.010	.424	-.144	.424	-.205	-.172	0.809	0.119	-3.0	0.9	-2.9	0.9	A+	
1753	619932	Chem	308	.591	.292	.091	.591	.020	.007	.256	-.190	-.034	.256	-.104	0.237	0.121	0.0	1.0	1.4	1.1	B-	
1754	618686	Chem	308	.318	.367	.188	.318	.114	.013	.102	.061	-.212	.102	.097	1.457	0.128	2.5	1.1	2.7	1.2	A-	
1755	616498	Chem	308	.169	.143	.205	.468	.169	.016	.364	-.068	-.224	.006	.364	2.356	0.158	-0.8	0.9	-0.6	0.9	B-	
1756	619963	Chem	308	.240	.234	.276	.224	.240	.026	.247	-.078	-.086	-.013	.247	1.853	0.139	0.3	1.0	0.3	1.0	A-	
1757	616408	Chem	308	.279	.279	.218	.211	.273	.020	.231	.231	-.057	-.032	-.108	1.640	0.132	0.4	1.0	0.5	1.0	A+	
1758	618747	Chem	308	.682	.013	.075	.682	.231	.000	.410	-.095	-.179	.410	-.316	-0.199	0.127	-1.7	0.9	-1.9	0.9	A-	
1759	619964	Chem	308	.266	.266	.273	.289	.162	.010	.244	.244	-.147	-.088	.037	1.725	0.134	0.4	1.0	0.5	1.0	A-	
1760	616499	Chem	308	.396	.305	.179	.396	.117	.003	.224	.033	-.202	.224	-.130	1.083	0.122	1.3	1.1	1.2	1.1	A-	
1761	619933	Chem	308	.331	.331	.156	.386	.123	.003	.295	.295	-.102	-.081	-.172	1.391	0.126	-0.2	1.0	0.4	1.0	A+	
1762	618687	Chem	308	.357	.146	.247	.357	.244	.007	.196	-.116	-.104	.196	.013	1.263	0.124	1.5	1.1	1.5	1.1	A-	
1763	616410	Chem	308	.296	.104	.344	.296	.250	.007	.069	-.112	-.034	.069	.076	1.570	0.130	2.5	1.2	2.6	1.2	A-	
1764	618748	Chem	308	.198	.198	.442	.283	.058	.020	.238	.238	-.011	-.115	-.009	2.049	0.149	0.5	1.0	0.1	1.0	B+	
1765	616411	Chem	308	.117	.136	.117	.130	.597	.020	.149	-.080	.149	-.078	.091	2.721	0.183	0.5	1.1	0.9	1.2	B-	
1766	618718	Chem	308	.334	.244	.257	.146	.334	.020	.419	-.073	-.204	-.102	.419	1.270	0.127	-2.0	0.9	-1.8	0.9	A+	
1767	619965	Chem	308	.205	.205	.338	.302	.127	.029	.226	.226	-.009	-.075	-.058	1.970	0.147	0.3	1.0	0.4	1.0	A-	
1768	620451	Chem	308	.273	.273	.247	.279	.179	.023	.276	.276	.009	-.107	-.113	1.574	0.134	0.3	1.0	0.1	1.0	A+	
1769	619926	Chem	308	.299	.299	.318	.247	.117	.020	.163	.163	.044	-.136	-.030	1.437	0.130	1.5	1.1	1.5	1.1	A-	
1770	616500	Chem	308	.364	.172	.211	.224	.364	.029	.345	-.040	-.036	-.247	.345	1.096	0.125	-0.8	1.0	-0.9	1.0	A-	
1771	620452	Chem	307	.313	.300	.166	.313	.215	.007	.082	-.054	-.155	.082	.164	1.532	0.127	1.8	1.1	1.9	1.1	A-	
1772	618719	Chem	307	.345	.088	.267	.293	.345	.007	.174	-.058	-.031	-.050	.174	1.379	0.123	0.8	1.0	0.8	1.0	A+	
1773	619966	Chem	307	.280	.235	.280	.264	.218	.003	.140	.004	.140	-.097	.003	1.704	0.130	0.8	1.1	0.6	1.0	A-	
1774	618749	Chem	307	.407	.104	.407	.355	.130	.003	.170	-.033	.170	-.020	-.120	1.101	0.120	1.3	1.0	1.4	1.1	B+	
1775	616530	Chem	307	.189	.209	.238	.358	.189	.007	.151	-.057	-.125	.088	.151	2.238	0.149	0.2	1.0	0.2	1.0	A-	
1776	619927	Chem	307	.339	.218	.251	.182	.339	.010	.353	-.192	-.071	-.091	.353	1.396	0.124	-1.6	0.9	-1.8	0.9	A-	
1777	616501	Chem	307	.238	.179	.238	.397	.173	.013	.176	.029	.176	-.016	-.144	1.917	0.137	0.4	1.0	0.2	1.0	A-	
1778	618750	Chem	307	.674	.163	.055	.674	.104	.003	.355	-.175	-.112	.355	-.247	-0.227	0.126	-1.6	0.9	-1.3	0.9	A+	
1779	618720	Chem	307	.424	.424	.195	.156	.218	.007	.360	.360	-.183	-.150	-.115	0.890	0.120	-1.5	1.0	-1.6	0.9	A+	
1780	620066	Chem	307	.254	.153	.267	.316	.254	.010	.295	-.137	-.113	-.043	.295	1.724	0.136	-0.2	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1781	616531	Chem	307	.202	.202	.228	.309	.241	.020	.093	.093	-.023	-.131	.101	2.029	0.148	1.3	1.1	1.8	1.2	A+	
1782	620453	Chem	307	.205	.127	.336	.323	.205	.010	.206	-.060	-.082	-.033	.206	2.022	0.147	0.3	1.0	1.1	1.1	A-	
1783	616502	Chem	307	.117	.117	.209	.108	.557	.010	.274	.274	-.062	.024	-.132	2.728	0.183	-0.1	1.0	-0.6	0.9	B+	
1784	618699	Chem	307	.414	.127	.195	.248	.414	.016	.348	-.104	-.079	-.142	.348	0.942	0.121	-1.4	1.0	-0.9	1.0	A+	
1785	618734	Chem	308	.503	.175	.503	.208	.110	.003	.382	-.151	.382	-.164	-.199	0.610	0.119	-2.0	0.9	-1.9	0.9	A-	
1786	616518	Chem	306	.572	.059	.572	.190	.173	.007	.310	-.116	.310	-.175	-.093	0.263	0.120	-0.8	1.0	-0.2	1.0	A+	
1787	616516	Chem	308	.471	.338	.123	.471	.062	.007	.373	-.105	-.213	.373	-.125	0.646	0.118	-2.5	0.9	-2.5	0.9	A+	
1788	618733	Chem	308	.471	.234	.208	.471	.084	.003	.407	-.174	-.180	.407	-.160	0.768	0.119	-2.6	0.9	-2.5	0.9	A+	
1789	620468	Chem	318	.418	.214	.245	.418	.113	.009	.393	-.203	-.125	.393	-.150	0.985	0.119	-2.0	0.9	-2.1	0.9	A+	
1790	618698	Chem	306	.781	.036	.065	.105	.781	.013	.280	-.033	-.140	-.157	.280	-0.839	0.146	-0.2	1.0	0.3	1.0	A+	
1791	619946	Chem	309	.430	.152	.204	.207	.430	.007	.383	-.161	-.094	-.166	.383	0.853	0.121	-1.7	0.9	-1.4	0.9	A+	
1792	618695	Chem	4315	.436	.436	.255	.186	.117	.006	.270	.270	-.089	-.092	-.142	0.866	0.032	0.6	1.0	0.7	1.0	A-	A+
1793	620435	Chem	309	.204	.214	.243	.324	.204	.016	.308	-.010	-.178	-.023	.308	2.017	0.146	-0.8	0.9	-0.9	0.9	A-	
1794	616519	Chem	4315	.235	.248	.447	.235	.057	.013	.185	-.067	-.017	.185	-.082	1.858	0.037	2.0	1.0	3.1	1.1	A-	A+
1795	616553	Chem	4315	.288	.549	.288	.084	.071	.009	.058	.121	.058	-.126	-.124	1.567	0.035	8.4	1.1	8.9	1.2	A+	B+
1796	616424	Chem	4315	.391	.189	.239	.391	.165	.016	.318	-.085	-.144	.318	-.097	1.048	0.033	-3.0	1.0	-2.8	1.0	A-	A+
1797	618701	Chem	4315	.304	.235	.341	.304	.100	.020	.219	-.036	-.101	.219	-.048	1.461	0.035	1.9	1.0	2.2	1.0	A-	A+
1798	620469	Chem	309	.353	.168	.353	.265	.197	.016	.284	.025	.284	-.115	-.170	1.191	0.125	-0.8	1.0	0.1	1.0	A+	
1799	620436	Chem	307	.365	.251	.365	.192	.189	.003	.291	-.118	.291	-.187	-.029	1.246	0.124	-0.3	1.0	-0.6	1.0	A+	
1800	620470	Chem	307	.388	.222	.388	.202	.182	.007	.372	-.161	.372	-.147	-.130	1.132	0.123	-1.9	0.9	-2.1	0.9	A-	
1801	619947	Chem	307	.319	.319	.228	.267	.179	.007	.213	.213	-.153	-.049	.000	1.465	0.128	1.3	1.1	0.9	1.1	A+	
1802	620471	Chem	308	.097	.049	.097	.776	.075	.003	.186	-.080	.186	.040	-.161	3.002	0.197	0.2	1.0	0.1	1.0	A-	
1803	618755	Chem	308	.474	.296	.474	.149	.071	.010	.249	-.029	.249	-.185	-.097	0.709	0.119	0.5	1.0	0.2	1.0	A+	
1804	619948	Chem	308	.315	.231	.386	.315	.055	.013	.140	-.034	-.086	.140	.025	1.427	0.127	1.5	1.1	1.6	1.1	A+	
1805	616513	Chem	308	.351	.153	.296	.351	.188	.013	.281	-.079	-.127	.281	-.081	1.255	0.124	-0.1	1.0	-0.2	1.0	A+	
1806	616423	Chem	308	.649	.071	.649	.195	.078	.007	.349	-.165	.349	-.164	-.146	-0.060	0.124	-1.2	1.0	-1.6	0.9	A-	
1807	620437	Chem	308	.305	.201	.273	.205	.305	.016	.337	-.146	-.042	-.147	.337	1.472	0.128	-0.9	1.0	-0.9	0.9	A+	
1808	620438	Chem	309	.346	.146	.430	.346	.074	.003	.363	-.057	-.252	.363	-.095	1.264	0.125	-1.3	0.9	-1.3	0.9	A+	
1809	620472	Chem	309	.440	.252	.139	.168	.440	.000	.517	-.248	-.192	-.221	.517	0.840	0.119	-4.7	0.9	-4.3	0.8	A+	
1810	616515	Chem	309	.388	.152	.337	.388	.117	.007	.255	-.100	-.166	.255	-.027	1.057	0.122	0.6	1.0	0.5	1.0	A-	
1811	616425	Chem	308	.227	.360	.276	.227	.123	.013	.239	-.001	-.052	.239	-.113	1.821	0.140	0.0	1.0	-0.1	1.0	A+	
1812	618696	Chem	308	.344	.140	.344	.299	.201	.016	.161	-.099	.161	-.108	.115	1.194	0.124	1.3	1.1	1.5	1.1	A-	
1813	616548	Chem	308	.386	.240	.386	.244	.114	.016	.237	-.116	.237	-.078	.031	1.000	0.122	0.4	1.0	0.4	1.0	A+	
1814	620439	Chem	308	.679	.049	.156	.679	.104	.013	.244	-.102	-.219	.244	.089	-0.308	0.127	0.1	1.0	0.6	1.0	A+	
1815	620473	Chem	308	.214	.156	.338	.283	.214	.010	.068	-.018	.050	-.012	.068	1.908	0.143	1.2	1.1	1.6	1.2	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1816	620440	Chem	318	.522	.094	.522	.308	.072	.003	.256	-.086	.256	-.162	-.104	0.541	0.117	0.3	1.0	-0.1	1.0	A-	
1817	616549	Chem	318	.280	.192	.315	.211	.280	.003	.359	-.062	-.169	-.135	.359	1.664	0.130	-0.9	1.0	-1.1	0.9	C+	
1818	616426	Chem	318	.217	.217	.346	.245	.179	.013	.175	.175	-.014	-.204	.069	2.011	0.141	0.8	1.1	0.8	1.1	A+	
1819	620474	Chem	318	.264	.264	.333	.267	.123	.013	.340	.340	-.188	-.023	-.135	1.731	0.132	-0.6	1.0	-0.7	0.9	A-	
1820	616517	Chem	318	.255	.217	.236	.283	.255	.009	.139	-.132	-.007	.004	.139	1.788	0.134	1.2	1.1	2.0	1.2	A-	
1821	618697	Chem	318	.252	.252	.274	.308	.151	.016	.189	.189	-.138	-.081	.038	1.789	0.134	0.6	1.0	1.2	1.1	A+	
1822	616550	Chem	306	.284	.150	.317	.239	.284	.010	.188	-.199	-.044	.072	.188	1.570	0.131	0.9	1.1	0.8	1.1	A+	
1823	616551	Chem	307	.743	.114	.088	.743	.046	.010	.391	-.215	-.165	.391	-.115	-0.583	0.136	-1.2	0.9	-1.2	0.9	A+	
1824	616386	Chem	307	.511	.140	.511	.212	.130	.007	.347	-.168	.347	-.094	-.134	0.531	0.119	-1.8	1.0	-1.7	0.9	A-	
1825	618731	Chem	307	.241	.176	.241	.407	.156	.020	.208	-.099	.208	.056	-.091	1.808	0.139	0.5	1.0	0.7	1.1	A-	
1826	619912	Chem	307	.225	.202	.277	.274	.225	.023	.194	-.084	-.022	.020	.194	1.900	0.142	0.6	1.1	0.7	1.1	A+	
1827	616552	Chem	305	.315	.203	.197	.275	.315	.010	.323	-.039	-.043	-.241	.323	1.357	0.128	-1.2	0.9	-0.9	0.9	A+	
1828	616539	Chem	305	.433	.433	.226	.256	.069	.016	.328	.328	-.194	-.141	.015	0.794	0.120	-1.5	1.0	-1.5	0.9	A+	
1829	618732	Chem	305	.403	.249	.403	.177	.151	.020	.311	.006	.311	-.197	-.122	0.926	0.122	-0.5	1.0	-0.7	1.0	A-	
1830	619911	Chem	305	.246	.246	.269	.331	.138	.016	.351	.351	-.101	-.104	-.082	1.715	0.138	-0.8	0.9	-0.7	0.9	A-	
1831	618700	Chem	305	.364	.134	.364	.371	.112	.020	.195	-.058	.195	-.103	-.025	1.097	0.124	1.1	1.1	1.1	1.1	A-	
1832	616387	Chem	305	.371	.154	.371	.295	.144	.036	.229	-.116	.229	-.040	-.046	1.034	0.124	0.8	1.0	0.4	1.0	A-	
1833	619913	Chem	308	.526	.127	.107	.234	.526	.007	.298	-.159	-.097	-.137	.298	0.529	0.119	-0.8	1.0	-1.1	1.0	A-	
1834	616554	Chem	308	.367	.283	.244	.367	.094	.013	.392	-.046	-.283	.392	-.089	1.216	0.124	-1.7	0.9	-1.6	0.9	A-	
1835	616388	Chem	308	.250	.149	.351	.250	.231	.020	.238	-.003	.065	.238	-.274	1.800	0.137	0.3	1.0	0.5	1.0	A-	
1836	619914	Chem	308	.614	.091	.192	.614	.104	.000	.439	-.168	-.312	.439	-.141	0.125	0.122	-2.7	0.9	-2.7	0.9	A+	
1837	618688	Chem	308	.231	.127	.234	.406	.231	.003	.370	-.216	-.068	-.101	.370	1.937	0.141	-0.9	0.9	-0.7	0.9	A+	
1838	616389	Chem	308	.412	.088	.412	.354	.140	.007	.381	-.196	.381	-.201	-.063	1.007	0.121	-1.4	1.0	-1.4	0.9	C-	
1839	619942	Chem	308	.159	.286	.315	.234	.159	.007	.089	.121	-.091	-.073	.089	2.431	0.161	0.9	1.1	1.5	1.2	A-	
1840	618735	Chem	308	.240	.201	.240	.338	.205	.016	.164	-.153	.164	-.011	.068	1.784	0.139	1.1	1.1	1.9	1.2	A-	
1841	619943	Chem	308	.321	.321	.471	.140	.042	.026	.323	.323	-.066	-.199	-.045	1.316	0.128	-0.6	1.0	-0.3	1.0	B-	
1842	616390	Chem	308	.546	.127	.546	.224	.084	.020	.386	-.118	.386	-.218	-.071	0.298	0.121	-1.9	0.9	-1.7	0.9	A+	
1843	616420	Chem	308	.308	.185	.312	.308	.162	.033	.175	-.125	.047	.175	-.043	1.362	0.130	1.5	1.1	1.6	1.1	A-	
1844	619915	Chem	308	.406	.162	.169	.237	.406	.026	.444	-.175	-.105	-.180	.444	0.905	0.122	-3.1	0.9	-2.1	0.9	A+	
1845	619944	Chem	307	.511	.182	.511	.160	.134	.013	.301	-.146	.301	-.102	-.090	0.628	0.118	-1.2	1.0	-1.3	1.0	A+	
1846	618736	Chem	307	.261	.261	.508	.173	.046	.013	.254	.254	-.046	-.110	-.116	1.787	0.133	-0.4	1.0	-0.1	1.0	A+	
1847	619916	Chem	307	.313	.212	.313	.209	.251	.016	.146	-.044	.146	-.062	.012	1.514	0.127	0.9	1.0	1.0	1.1	B-	
1848	616391	Chem	307	.254	.153	.176	.410	.254	.007	.272	-.043	-.164	-.021	.272	1.842	0.134	-0.5	1.0	-0.7	0.9	A-	
1849	616421	Chem	307	.134	.130	.313	.414	.134	.010	.135	-.052	.060	-.060	.135	2.665	0.171	0.0	1.0	0.8	1.1	A+	
1850	620434	Chem	307	.186	.127	.388	.283	.186	.016	.275	-.047	.036	-.222	.275	2.147	0.152	-0.1	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1851	619917	Chem	307	.257	.218	.241	.270	.257	.013	.251	-.057	-.073	-.130	.251	1.692	0.136	0.3	1.0	0.3	1.0	B+	
1852	619945	Chem	307	.502	.101	.195	.195	.502	.007	.433	-.158	-.204	-.201	.433	0.549	0.119	-3.3	0.9	-3.1	0.9	A+	
1853	616422	Chem	307	.489	.124	.218	.489	.163	.007	.354	-.112	-.218	.354	-.138	0.603	0.119	-1.7	1.0	-1.7	0.9	A-	
1854	616392	Chem	307	.163	.202	.326	.287	.163	.023	.260	-.093	-.068	-.054	.260	2.297	0.160	-0.1	1.0	0.0	1.0	A-	
1855	616511	Chem	305	.712	.712	.089	.102	.079	.020	.379	.379	-.237	-.176	-.101	-0.505	0.133	-1.4	0.9	-1.7	0.9	A+	
1856	619910	Chem	308	.331	.419	.331	.166	.078	.007	.320	-.070	.320	-.176	-.122	1.402	0.126	-0.4	1.0	-0.5	1.0	A+	
1857	618726	Chem	309	.343	.188	.311	.159	.343	.000	.233	-.126	-.073	-.075	.233	1.286	0.125	0.7	1.0	0.8	1.1	A+	
1858	616505	Chem	4315	.610	.075	.201	.610	.108	.007	.332	-.136	-.173	.332	-.139	0.101	0.032	-4.3	1.0	-4.3	0.9	A+	A-
1859	616543	Chem	4315	.506	.506	.171	.168	.149	.007	.417	.417	-.166	-.200	-.148	0.562	0.032	-9.9	0.9	-9.9	0.9	A+	A+
1860	620467	Chem	309	.210	.110	.275	.210	.398	.007	.115	-.206	-.087	.115	.164	1.985	0.145	1.1	1.1	1.2	1.1	A+	
1861	618728	Chem	4315	.217	.147	.290	.325	.217	.021	.307	-.112	-.094	-.042	.307	1.955	0.038	-1.9	1.0	-1.9	1.0	A+	A-
1862	616379	Chem	309	.282	.201	.282	.256	.246	.016	.187	-.098	.187	.032	-.059	1.552	0.132	0.2	1.0	0.4	1.0	A+	
1863	616381	Chem	307	.391	.153	.391	.231	.209	.016	.238	-.010	.238	-.147	-.086	1.097	0.123	1.1	1.0	0.7	1.0	A+	
1864	616404	Chem	308	.364	.364	.221	.101	.305	.010	.289	.289	-.147	-.144	-.022	1.207	0.123	-0.2	1.0	-0.1	1.0	A-	
1865	618725	Chem	308	.370	.104	.136	.383	.370	.007	.405	-.084	-.185	-.177	.405	1.180	0.123	-2.0	0.9	-2.1	0.9	A+	
1866	616378	Chem	308	.481	.120	.244	.481	.143	.013	.228	-.090	-.171	.228	.002	0.667	0.119	0.7	1.0	0.8	1.0	A+	
1867	618693	Chem	308	.338	.286	.127	.240	.338	.010	.312	-.128	-.054	-.107	.312	1.331	0.125	-0.4	1.0	0.2	1.0	A-	
1868	619934	Chem	308	.328	.156	.328	.406	.094	.016	.108	-.059	.108	.031	-.093	1.357	0.126	1.9	1.1	2.1	1.1	A-	
1869	616546	Chem	308	.539	.208	.117	.539	.123	.013	.379	-.179	-.150	.379	-.143	0.418	0.119	-2.4	0.9	-2.3	0.9	A-	
1870	616382	Chem	309	.269	.126	.269	.453	.146	.007	.198	-.013	.198	-.087	-.101	1.656	0.133	0.7	1.1	0.9	1.1	A+	
1871	619935	Chem	309	.385	.240	.256	.385	.107	.013	.373	-.104	-.227	.373	-.097	1.059	0.122	-1.3	1.0	-1.4	0.9	A-	
1872	616547	Chem	309	.311	.311	.388	.110	.181	.010	.341	.341	-.176	-.048	-.129	1.429	0.128	-0.7	1.0	-0.7	1.0	A+	
1873	618758	Chem	309	.243	.227	.084	.447	.243	.000	.227	-.018	-.201	-.068	.227	1.814	0.138	0.4	1.0	0.3	1.0	B+	
1874	618694	Chem	309	.450	.450	.087	.307	.152	.003	.236	.236	-.171	-.006	-.167	0.792	0.119	1.1	1.0	1.0	1.0	B+	
1875	616405	Chem	309	.418	.418	.207	.298	.062	.016	.208	.208	.017	-.153	-.108	0.906	0.121	1.7	1.1	1.6	1.1	A+	
1876	619967	Chem	309	.291	.188	.291	.333	.159	.029	.180	-.071	.180	-.085	-.014	1.487	0.131	1.0	1.1	1.4	1.1	A-	
1877	619905	Chem	308	.562	.562	.146	.227	.058	.007	.329	.329	-.089	-.083	-.256	0.253	0.119	-1.2	1.0	-1.1	1.0	A+	
1878	619936	Chem	308	.432	.143	.240	.179	.432	.007	.222	-.107	.022	-.117	.222	0.816	0.119	0.9	1.0	0.6	1.0	A-	
1879	618727	Chem	308	.247	.257	.247	.328	.156	.013	.294	.062	.294	-.109	-.163	1.709	0.136	-0.6	1.0	-0.4	1.0	A+	
1880	616412	Chem	308	.438	.257	.195	.438	.104	.007	.333	-.149	-.151	.333	-.011	0.787	0.119	-1.6	1.0	-1.3	1.0	A-	
1881	616383	Chem	308	.318	.318	.149	.344	.175	.013	.210	.210	-.037	-.055	-.042	1.331	0.127	0.5	1.0	0.7	1.0	A-	
1882	619968	Chem	308	.520	.104	.149	.520	.214	.013	.243	-.079	-.034	.243	-.128	0.418	0.119	0.5	1.0	0.2	1.0	A-	
1883	616384	Chem	318	.519	.085	.519	.302	.091	.003	.403	-.144	.403	-.249	-.160	0.555	0.117	-2.6	0.9	-2.5	0.9	A-	
1884	618729	Chem	318	.274	.274	.270	.248	.198	.009	.236	.236	-.177	-.085	.035	1.682	0.131	0.4	1.0	0.9	1.1	A+	
1885	619906	Chem	318	.179	.201	.267	.346	.179	.006	.182	-.077	.050	-.123	.182	2.275	0.151	0.6	1.1	0.6	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1886	619969	Chem	318	.223	.223	.352	.264	.151	.009	.194	.194	-.026	-.079	-.100	1.968	0.140	0.4	1.0	1.0	1.1	A+	
1887	616413	Chem	318	.154	.154	.085	.503	.248	.009	.327	.327	-.168	-.187	.046	2.460	0.160	-0.5	1.0	-0.7	0.9	B-	
1888	619937	Chem	318	.377	.233	.280	.377	.101	.009	.384	-.141	-.153	.384	-.201	1.158	0.121	-1.7	0.9	-1.8	0.9	A+	
1889	616385	Chem	306	.232	.023	.105	.641	.232	.000	.258	-.010	-.121	-.147	.258	1.879	0.140	-0.6	1.0	-0.1	1.0	A+	
1890	618730	Chem	306	.428	.075	.389	.105	.428	.003	.265	-.093	-.207	-.007	.265	0.900	0.120	0.2	1.0	0.5	1.0	A+	
1891	620647	Chem	306	.278	.147	.474	.278	.095	.007	.286	-.110	-.135	.286	-.053	1.606	0.132	-0.3	1.0	-0.4	1.0	A-	
1892	616431	Chem	306	.392	.167	.327	.111	.392	.003	.218	-.193	-.041	-.027	.218	1.055	0.122	1.0	1.0	1.0	1.1	A-	
1893	619907	Chem	306	.265	.271	.317	.134	.265	.013	.172	-.005	-.076	-.068	.172	1.666	0.134	1.0	1.1	0.7	1.1	A-	
1894	619970	Chem	306	.343	.170	.248	.226	.343	.013	.328	-.062	-.165	-.092	.328	1.268	0.125	-0.9	1.0	-0.9	1.0	A-	
1895	616414	Chem	306	.242	.173	.438	.242	.137	.010	.177	-.112	.077	.177	-.142	1.805	0.138	0.6	1.0	1.3	1.1	A-	
1896	620459	Chem	306	.258	.167	.409	.258	.150	.016	.162	-.220	.077	.162	-.010	1.700	0.135	1.0	1.1	0.9	1.1	A-	
1897	619938	Chem	306	.409	.206	.409	.255	.118	.013	.308	-.206	.308	-.061	-.055	0.964	0.121	-0.4	1.0	-0.7	1.0	A+	
1898	619971	Chem	307	.713	.085	.078	.713	.121	.003	.320	-.218	-.172	.320	-.055	-0.402	0.131	-0.4	1.0	-0.6	1.0	A+	
1899	616538	Chem	307	.303	.147	.394	.303	.137	.020	.127	-.049	.016	.127	-.050	1.462	0.130	1.9	1.1	1.9	1.1	A-	
1900	618753	Chem	307	.251	.140	.469	.251	.130	.010	.137	-.177	.125	.137	-.089	1.762	0.137	1.4	1.1	1.3	1.1	A+	
1901	616415	Chem	307	.215	.117	.215	.241	.420	.007	.250	-.193	.250	-.078	.049	1.985	0.144	0.0	1.0	0.3	1.0	A-	
1902	616504	Chem	307	.222	.296	.251	.212	.222	.020	.204	-.035	.033	-.095	.204	1.925	0.143	0.5	1.0	0.5	1.1	A+	
1903	620460	Chem	307	.254	.417	.205	.254	.111	.013	.336	-.079	-.060	.336	-.130	1.740	0.136	-0.8	0.9	-0.8	0.9	A-	
1904	619908	Chem	307	.267	.267	.296	.267	.153	.016	.289	.289	-.030	-.104	-.064	1.663	0.134	-0.4	1.0	0.1	1.0	C-	
1905	619939	Chem	307	.189	.205	.254	.332	.189	.020	.269	-.163	-.024	.035	.269	2.142	0.151	-0.1	1.0	-0.4	1.0	A-	
1906	616512	Chem	305	.213	.400	.223	.213	.157	.007	.125	-.013	-.146	.125	.067	1.931	0.144	1.0	1.1	1.1	1.1	A-	
1907	620071	Chem	305	.161	.161	.236	.236	.354	.013	.198	.198	.046	-.223	.056	2.295	0.161	0.3	1.0	0.3	1.0	A+	
1908	619940	Chem	305	.161	.226	.305	.302	.161	.007	.156	.019	.002	-.107	.156	2.303	0.160	0.4	1.0	1.3	1.2	A+	
1909	620461	Chem	305	.528	.062	.528	.236	.161	.013	.365	-.082	.365	-.236	-.136	0.387	0.119	-2.6	0.9	-2.4	0.9	A+	
1910	616416	Chem	305	.338	.272	.338	.148	.223	.020	.349	-.140	.349	-.139	-.088	1.219	0.126	-1.1	1.0	-0.7	1.0	A-	
1911	620462	Chem	308	.367	.149	.218	.367	.257	.010	.182	-.065	-.120	.182	.008	1.224	0.123	1.4	1.1	2.0	1.1	A+	
1912	616506	Chem	308	.224	.133	.224	.484	.149	.010	.146	-.198	.146	.098	-.069	1.984	0.142	1.0	1.1	1.8	1.2	A-	
1913	618706	Chem	308	.549	.088	.263	.549	.094	.007	.414	-.130	-.228	.414	-.174	0.423	0.119	-3.3	0.9	-2.7	0.9	B-	
1914	619941	Chem	308	.240	.533	.097	.114	.240	.016	.096	.046	-.086	-.043	.096	1.876	0.139	1.6	1.1	2.2	1.2	A+	
1915	616540	Chem	308	.565	.565	.198	.110	.114	.013	.331	.331	-.168	-.105	-.134	0.333	0.120	-1.0	1.0	-1.2	0.9	A+	
1916	620430	Chem	308	.321	.153	.260	.321	.247	.020	.321	-.188	-.058	.321	-.093	1.419	0.127	-0.5	1.0	-0.6	1.0	B-	
1917	616418	Chem	308	.312	.169	.312	.321	.175	.023	.155	-.017	.155	-.139	.066	1.467	0.128	1.6	1.1	1.8	1.1	A-	
1918	616541	Chem	308	.234	.231	.234	.321	.214	.000	-.032	.023	-.032	-.141	.169	1.922	0.140	2.5	1.2	3.0	1.3	A-	
1919	616419	Chem	308	.458	.458	.114	.367	.058	.003	.273	.273	-.111	-.131	-.136	0.806	0.120	0.5	1.0	0.7	1.0	A+	
1920	620463	Chem	308	.565	.149	.081	.201	.565	.003	.393	-.228	-.209	-.127	.393	0.335	0.120	-2.2	0.9	-1.4	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1921	618707	Chem	308	.286	.312	.286	.201	.195	.007	.292	-.119	.292	-.181	.025	1.622	0.131	-0.1	1.0	0.1	1.0	A+	
1922	616507	Chem	308	.575	.169	.575	.185	.062	.010	.301	-.075	.301	-.163	-.161	0.282	0.121	0.0	1.0	-0.3	1.0	A+	
1923	620431	Chem	308	.198	.166	.260	.360	.198	.016	.177	.063	-.029	-.159	.177	2.123	0.148	0.6	1.1	0.8	1.1	A-	
1924	620464	Chem	308	.334	.104	.461	.334	.065	.036	.103	.055	-.095	.103	-.013	1.223	0.127	2.2	1.1	2.2	1.1	A-	
1925	618722	Chem	308	.318	.133	.318	.162	.367	.020	.273	.036	.273	-.122	-.136	1.345	0.128	0.4	1.0	0.4	1.0	A+	
1926	616508	Chem	308	.312	.312	.101	.123	.451	.013	.317	.317	-.157	-.185	-.019	1.396	0.129	-0.4	1.0	-0.4	1.0	A-	
1927	618689	Chem	308	.289	.289	.195	.357	.140	.020	.067	.067	.221	-.050	-.168	1.501	0.132	2.7	1.2	2.5	1.2	A+	
1928	616542	Chem	308	.412	.412	.169	.279	.114	.026	.468	.468	-.094	-.233	-.157	0.878	0.122	-3.6	0.9	-3.4	0.9	A+	
1929	620432	Chem	308	.084	.227	.370	.286	.084	.033	.182	-.003	.039	-.067	.182	3.064	0.210	0.0	1.0	0.4	1.1	A-	
1930	620465	Chem	307	.147	.306	.290	.241	.147	.016	.269	.079	-.109	-.131	.269	2.541	0.164	-0.4	1.0	-0.6	0.9	A-	
1931	618723	Chem	307	.290	.280	.290	.261	.163	.007	.125	.078	.125	-.087	-.064	1.651	0.129	1.2	1.1	1.2	1.1	A-	
1932	620433	Chem	307	.231	.231	.251	.231	.277	.010	.124	-.111	-.046	.124	.091	1.964	0.139	0.6	1.0	1.2	1.1	A+	
1933	616509	Chem	307	.241	.287	.241	.283	.173	.016	.128	.114	.128	-.112	-.075	1.896	0.137	0.7	1.1	1.0	1.1	B-	
1934	616544	Chem	307	.303	.277	.303	.264	.150	.007	.232	-.006	.232	-.122	-.071	1.581	0.128	0.0	1.0	-0.1	1.0	A+	
1935	618691	Chem	307	.371	.225	.371	.261	.134	.010	.270	-.027	.270	-.115	-.138	1.245	0.122	-0.7	1.0	-0.8	1.0	A+	
1936	618754	Chem	307	.492	.179	.492	.160	.153	.016	.236	-.129	.236	-.137	-.046	0.565	0.120	1.0	1.0	0.5	1.0	A-	
1937	616545	Chem	307	.212	.212	.156	.290	.329	.013	.260	.260	-.199	-.082	.024	1.974	0.145	0.0	1.0	0.2	1.0	B-	
1938	618692	Chem	307	.345	.332	.345	.222	.091	.010	.234	-.073	.234	-.123	-.070	1.246	0.125	0.7	1.0	1.3	1.1	A-	
1939	618724	Chem	307	.375	.140	.332	.147	.375	.007	.324	-.223	-.013	-.183	.324	1.116	0.123	-0.5	1.0	-0.5	1.0	B-	
1940	620466	Chem	307	.772	.062	.104	.062	.772	.000	.364	-.275	-.139	-.182	.364	-0.738	0.140	-1.3	0.9	-1.6	0.9	A-	
1941	616510	Chem	307	.241	.205	.355	.192	.241	.007	.175	-.088	-.012	-.068	.175	1.804	0.139	1.0	1.1	0.9	1.1	A+	
1942	616362	Chem	305	.702	.141	.092	.702	.059	.007	.356	-.241	-.138	.356	-.153	-0.395	0.130	-1.2	0.9	-1.4	0.9	A-	
1943	616367	Chem	615	.670	.096	.114	.120	.670	.000	.332	-.118	-.225	-.154	.332	-0.167	0.089	-1.7	1.0	-0.7	1.0	A+	
1944	616559	Chem	308	.610	.610	.133	.114	.133	.010	.407	.407	-.164	-.145	-.217	0.141	0.122	-2.3	0.9	-2.1	0.9	C+	
1945	616494	Chem	307	.831	.055	.055	.831	.052	.007	.328	-.142	-.157	.328	-.195	-1.101	0.158	-0.6	0.9	-1.5	0.8	B+	
1946	616427	Chem	307	.694	.209	.039	.694	.055	.003	.207	-.086	-.079	.207	-.095	-0.169	0.127	0.3	1.0	1.0	1.1	A+	
1947	616365	Chem	308	.581	.143	.581	.117	.136	.023	.361	-.202	.361	-.138	-.084	0.122	0.122	-1.1	1.0	-1.3	0.9	B+	
1948	616561	Chem	308	.695	.046	.123	.133	.695	.003	.399	-.149	-.192	-.208	.399	-0.355	0.129	-1.5	0.9	-1.7	0.9	A+	
1949	616397	Chem	309	.295	.295	.168	.227	.307	.003	.359	.359	-.126	-.141	-.077	1.512	0.130	-1.3	0.9	-1.5	0.9	A+	
1950	616492	Chem	617	.449	.191	.449	.214	.130	.016	.300	-.179	.300	-.073	-.064	0.777	0.085	-0.7	1.0	-1.0	1.0	A+	A+
1951	618705	Chem	309	.262	.181	.262	.392	.155	.010	.259	.006	.259	-.130	-.075	1.671	0.135	0.0	1.0	-0.1	1.0	A+	
1952	616564	Chem	309	.246	.117	.220	.411	.246	.007	.229	.008	.099	-.238	.229	1.777	0.137	0.4	1.0	-0.3	1.0	A-	
1953	619953	Chem	309	.191	.191	.450	.168	.185	.007	.302	.302	-.085	-.090	-.049	2.115	0.150	-0.7	0.9	-0.8	0.9	A+	
1954	616368	Chem	309	.204	.165	.440	.181	.204	.010	.090	-.142	.134	-.059	.090	2.024	0.146	1.1	1.1	1.5	1.2	A+	
1955	618708	Chem	307	.267	.134	.182	.417	.267	.000	.406	-.234	-.165	-.074	.406	1.755	0.135	-1.6	0.9	-1.5	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1956	619954	Chem	307	.202	.202	.241	.358	.182	.016	.101	.101	-.083	.039	-.065	2.121	0.149	1.3	1.1	1.9	1.2	A-	
1957	618737	Chem	307	.336	.251	.195	.209	.336	.010	.296	-.055	-.112	-.138	.296	1.378	0.127	0.1	1.0	-0.1	1.0	B+	
1958	616369	Chem	307	.257	.257	.257	.326	.150	.010	.350	.350	-.167	-.119	-.033	1.790	0.137	-0.7	1.0	-0.2	1.0	A-	
1959	616398	Chem	307	.228	.440	.205	.228	.124	.003	-.150	.080	-.046	-.150	.155	1.982	0.142	3.1	1.3	4.3	1.5	A-	
1960	620441	Chem	307	.443	.443	.248	.199	.101	.010	.260	.260	-.046	-.113	-.171	0.874	0.121	0.4	1.0	0.3	1.0	A+	
1961	616429	Chem	308	.276	.536	.149	.276	.036	.003	.099	-.149	.152	.099	-.096	1.655	0.132	1.7	1.1	1.9	1.2	A+	
1962	618738	Chem	308	.351	.156	.435	.351	.058	.000	.305	-.208	-.068	.305	-.155	1.281	0.124	-0.7	1.0	-1.0	1.0	A-	
1963	620442	Chem	308	.279	.279	.338	.237	.143	.003	.266	.266	-.270	.036	.015	1.639	0.132	0.3	1.0	0.2	1.0	A+	
1964	616520	Chem	308	.607	.127	.195	.607	.068	.003	.120	-.056	-.010	.120	-.095	0.147	0.121	2.2	1.1	2.4	1.1	A+	
1965	616370	Chem	308	.354	.143	.354	.153	.341	.010	.194	-.191	.194	-.025	-.014	1.260	0.124	0.8	1.0	0.5	1.0	A+	
1966	616399	Chem	308	.250	.558	.088	.094	.250	.010	.281	-.156	-.100	.030	.281	1.790	0.136	0.1	1.0	-0.5	1.0	A+	
1967	619955	Chem	308	.390	.146	.390	.257	.195	.013	.263	-.128	.263	-.151	.016	1.078	0.122	0.3	1.0	0.3	1.0	A-	
1968	618709	Chem	308	.208	.110	.331	.331	.208	.020	.140	-.152	.041	-.009	.140	2.029	0.145	0.9	1.1	1.0	1.1	A-	
1969	616400	Chem	309	.372	.379	.172	.372	.078	.000	.220	.020	-.207	.220	-.142	1.148	0.123	0.8	1.0	0.6	1.0	A-	
1970	618739	Chem	309	.262	.191	.165	.379	.262	.003	.206	.028	-.173	-.074	.206	1.695	0.134	0.8	1.1	0.7	1.1	B-	
1971	619957	Chem	309	.252	.252	.256	.414	.074	.003	.259	.259	-.101	-.068	-.127	1.749	0.136	0.2	1.0	0.0	1.0	A-	
1972	619918	Chem	309	.502	.185	.120	.502	.194	.000	.374	-.199	-.163	.374	-.143	0.571	0.119	-2.1	0.9	-2.2	0.9	A-	
1973	620443	Chem	309	.476	.476	.175	.133	.217	.000	.283	.283	-.205	-.103	-.070	0.684	0.119	0.0	1.0	0.0	1.0	A-	
1974	618710	Chem	309	.288	.288	.188	.327	.188	.010	.122	.122	-.060	.062	-.135	1.546	0.131	1.8	1.1	1.8	1.1	A+	
1975	616521	Chem	309	.505	.175	.217	.505	.087	.016	.433	-.171	-.242	.433	-.140	0.518	0.120	-3.1	0.9	-3.0	0.9	A-	
1976	616522	Chem	308	.292	.250	.292	.257	.188	.013	.220	.017	.220	-.166	.013	1.458	0.130	0.3	1.0	0.6	1.0	A+	
1977	618711	Chem	308	.627	.188	.068	.107	.627	.010	.388	-.210	-.070	-.154	.388	-0.046	0.122	-2.1	0.9	-1.5	0.9	A+	
1978	618740	Chem	308	.231	.231	.205	.354	.201	.010	.179	.179	-.049	.011	-.060	1.805	0.139	0.3	1.0	0.7	1.1	A+	
1979	616401	Chem	308	.481	.231	.117	.481	.166	.007	.355	-.131	-.195	.355	-.061	0.604	0.118	-1.9	1.0	-1.8	0.9	B-	
1980	616490	Chem	308	.487	.071	.159	.270	.487	.013	.272	-.139	-.186	.010	.272	0.560	0.118	-0.6	1.0	0.6	1.0	A+	
1981	619958	Chem	308	.321	.321	.253	.244	.172	.010	.174	.174	-.042	-.062	.010	1.318	0.126	1.1	1.1	0.8	1.1	A+	
1982	620444	Chem	308	.260	.260	.201	.302	.231	.007	.256	.256	-.118	-.080	.021	1.644	0.134	-0.1	1.0	0.2	1.0	A+	
1983	619919	Chem	308	.162	.153	.305	.370	.162	.010	.078	.076	.104	-.132	.078	2.268	0.158	0.7	1.1	1.6	1.2	A-	
1984	618745	Chem	308	.377	.253	.377	.179	.179	.013	.254	-.059	.254	-.070	-.071	1.052	0.122	0.0	1.0	0.4	1.0	A+	
1985	618569	Chem	308	.315	.315	.451	.114	.110	.010	.205	.205	.009	-.024	-.167	1.351	0.127	0.6	1.0	0.6	1.0	A-	
1986	616523	Chem	318	.708	.142	.708	.085	.066	.000	.132	-.126	.132	-.127	.077	-0.305	0.127	0.9	1.1	2.5	1.2	A+	
1987	620445	Chem	318	.330	.192	.283	.330	.192	.003	.320	-.093	-.170	.320	-.090	1.408	0.124	-0.5	1.0	-0.6	1.0	A+	
1988	618712	Chem	318	.296	.296	.299	.274	.126	.006	.193	.193	-.115	.001	-.105	1.572	0.128	1.0	1.1	1.0	1.1	A+	
1989	618570	Chem	318	.660	.072	.660	.110	.157	.000	.364	-.144	.364	-.175	-.221	-0.072	0.122	-1.6	0.9	-1.9	0.9	A+	
1990	616491	Chem	318	.399	.113	.399	.204	.280	.003	.289	-.081	.289	-.149	-.120	1.082	0.119	-0.1	1.0	-0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1991	618756	Chem	318	.293	.211	.264	.293	.226	.006	.084	-.153	-.171	.084	.250	1.593	0.128	2.3	1.1	2.1	1.2	A-	
1992	618741	Chem	318	.481	.151	.267	.481	.091	.009	.277	-.056	-.184	.277	-.112	0.700	0.117	0.1	1.0	0.3	1.0	B+	
1993	619920	Chem	318	.318	.318	.340	.204	.129	.009	.337	.337	-.147	-.027	-.214	1.452	0.126	-0.6	1.0	-0.9	0.9	A+	
1994	620446	Chem	306	.248	.180	.248	.203	.360	.010	.084	.014	.084	-.007	-.077	1.770	0.137	1.4	1.1	1.5	1.1	A-	
1995	618713	Chem	306	.418	.121	.418	.314	.137	.010	.189	-.112	.189	-.027	-.062	0.930	0.121	1.6	1.1	1.8	1.1	A-	
1996	616556	Chem	306	.549	.088	.232	.549	.124	.007	.418	-.134	-.221	.418	-.165	0.364	0.120	-2.9	0.9	-2.7	0.9	A-	
1997	616524	Chem	306	.373	.131	.373	.209	.281	.007	.268	.036	.268	-.244	-.045	1.143	0.123	0.3	1.0	-0.1	1.0	A+	
1998	618572	Chem	306	.111	.141	.111	.346	.395	.007	.090	-.072	.090	.156	-.113	2.804	0.186	0.5	1.1	1.1	1.2	A-	
1999	618742	Chem	306	.467	.131	.467	.258	.134	.010	.218	-.225	.218	-.028	.006	0.712	0.119	1.6	1.1	1.1	1.1	A+	
2000	619921	Chem	306	.513	.131	.216	.513	.124	.016	.237	-.182	-.047	.237	-.033	0.498	0.120	1.1	1.0	1.0	1.0	A+	
2001	616495	Chem	306	.435	.180	.219	.435	.157	.010	.349	-.068	-.109	.349	-.216	0.855	0.120	-1.4	1.0	-0.8	1.0	A+	
2002	620447	Chem	307	.430	.108	.209	.244	.430	.010	.359	-.226	-.094	-.086	.359	0.881	0.120	-1.9	0.9	-1.8	0.9	B+	
2003	616496	Chem	307	.150	.150	.235	.209	.391	.016	.090	.090	-.002	-.029	.033	2.446	0.165	0.9	1.1	0.9	1.1	A+	
2004	618743	Chem	307	.300	.309	.287	.300	.088	.016	.245	-.044	-.072	.245	-.056	1.489	0.130	0.3	1.0	0.3	1.0	A+	
2005	619922	Chem	307	.309	.251	.309	.212	.215	.013	.158	-.084	.158	-.043	.058	1.447	0.129	1.2	1.1	1.6	1.1	B-	
2006	616557	Chem	307	.358	.235	.358	.270	.121	.016	.196	-.007	.196	-.072	-.042	1.199	0.124	1.3	1.1	1.5	1.1	A-	
2007	616525	Chem	307	.231	.192	.225	.231	.339	.013	.186	-.049	-.032	.186	-.007	1.874	0.140	0.6	1.0	1.0	1.1	A+	
2008	616558	Chem	305	.564	.046	.564	.164	.226	.000	.196	-.124	.196	-.201	.007	0.265	0.119	-0.1	1.0	0.2	1.0	A+	
2009	619923	Chem	305	.341	.138	.298	.210	.341	.013	.334	-.117	-.046	-.164	.334	1.226	0.125	-0.8	1.0	-0.9	1.0	A-	
2010	620448	Chem	305	.226	.226	.197	.282	.275	.020	.247	.247	-.102	-.006	-.066	1.822	0.142	0.2	1.0	0.1	1.0	A+	
2011	618744	Chem	305	.328	.259	.259	.328	.134	.020	.101	.102	.000	.101	-.222	1.267	0.127	2.4	1.1	2.0	1.1	A-	
2012	616526	Chem	305	.492	.092	.233	.167	.492	.016	.376	-.163	-.201	-.133	.376	0.528	0.119	-2.4	0.9	-2.1	0.9	A-	
2013	616527	Chem	308	.296	.133	.419	.149	.296	.003	.346	-.023	-.207	-.102	.346	1.586	0.130	-0.7	1.0	-0.5	1.0	A-	
2014	616363	Chem	308	.257	.211	.445	.257	.081	.007	.188	-.109	-.041	.188	.004	1.795	0.136	1.0	1.1	1.2	1.1	B-	
2015	619924	Chem	308	.406	.172	.406	.257	.146	.020	.278	-.087	.278	-.112	-.080	1.025	0.122	0.2	1.0	0.1	1.0	A+	
2016	620449	Chem	308	.260	.292	.266	.260	.156	.026	.065	.177	-.087	.065	-.141	1.734	0.136	2.1	1.1	2.3	1.2	B-	
2017	620450	Chem	308	.419	.419	.133	.351	.097	.000	.212	.212	-.179	-.145	.086	0.986	0.121	1.6	1.1	1.5	1.1	B+	
2018	616364	Chem	308	.373	.325	.373	.218	.081	.003	.299	-.160	.299	-.113	-.101	1.185	0.123	-0.4	1.0	-0.1	1.0	A+	
2019	616393	Chem	308	.315	.321	.237	.315	.127	.000	.247	-.117	.026	.247	-.213	1.477	0.128	0.4	1.0	0.3	1.0	A+	
2020	616560	Chem	308	.455	.149	.455	.270	.123	.003	.376	-.135	.376	-.210	-.121	0.821	0.120	-1.7	0.9	-1.5	0.9	B-	
2021	619925	Chem	308	.377	.172	.159	.292	.377	.000	.170	-.076	-.114	-.026	.170	1.179	0.123	1.9	1.1	1.6	1.1	A-	
2022	616528	Chem	308	.140	.179	.136	.140	.539	.007	.217	.037	-.066	.217	-.106	2.595	0.169	0.1	1.0	0.4	1.1	C-	
2023	618702	Chem	308	.250	.250	.315	.244	.179	.013	.322	.322	-.114	-.055	-.093	1.732	0.137	-0.9	0.9	-0.9	0.9	A+	
2024	619950	Chem	308	.438	.110	.438	.149	.289	.013	.212	-.101	.212	-.138	.014	0.794	0.121	1.4	1.1	1.5	1.1	A-	
2025	616529	Chem	308	.279	.347	.146	.211	.279	.016	.330	-.111	-.121	-.053	.330	1.553	0.133	-0.7	1.0	-0.2	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2026	616394	Chem	308	.539	.104	.175	.539	.169	.013	.397	-.116	-.221	.397	-.119	0.349	0.120	-1.9	0.9	-1.8	0.9	A-	
2027	618703	Chem	307	.603	.091	.140	.156	.603	.010	.433	-.223	-.092	-.239	.433	0.243	0.121	-3.1	0.9	-3.0	0.9	A-	
2028	616402	Chem	307	.401	.130	.401	.277	.186	.007	.261	-.043	.261	-.113	-.084	1.127	0.120	-0.3	1.0	-0.5	1.0	A+	
2029	616562	Chem	307	.254	.388	.212	.254	.143	.003	-.027	.200	-.098	-.027	-.064	1.844	0.134	1.9	1.1	2.9	1.2	A-	
2030	619951	Chem	307	.381	.381	.088	.274	.251	.007	.360	.360	-.174	-.087	-.147	1.211	0.121	-2.0	0.9	-1.9	0.9	C-	
2031	616395	Chem	307	.218	.218	.192	.404	.179	.007	.193	.193	-.041	-.072	-.010	2.048	0.141	0.0	1.0	0.3	1.0	A-	
2032	616366	Chem	307	.264	.274	.134	.316	.264	.013	.227	-.024	-.091	-.078	.227	1.769	0.133	-0.3	1.0	0.2	1.0	A-	
2033	616428	Chem	307	.531	.147	.531	.205	.114	.003	.311	-.116	.311	-.141	-.185	0.427	0.119	-1.2	1.0	-0.9	1.0	B+	
2034	616396	Chem	307	.590	.062	.235	.590	.114	.000	.284	-.307	-.119	.284	-.048	0.178	0.120	-0.5	1.0	-0.1	1.0	A-	
2035	619928	Chem	307	.511	.075	.143	.270	.511	.000	.292	-.129	-.177	-.113	.292	0.521	0.119	-0.2	1.0	-0.4	1.0	B+	
2036	616563	Chem	307	.394	.153	.319	.394	.104	.029	.067	-.023	-.077	.067	.053	0.970	0.123	3.4	1.1	3.9	1.2	A-	
2037	618704	Chem	307	.365	.365	.218	.303	.108	.007	.356	.356	-.241	-.220	.117	1.160	0.124	-1.4	0.9	-0.5	1.0	A-	
2038	619952	Chem	307	.329	.329	.254	.261	.140	.016	.184	.184	-.150	-.014	-.018	1.313	0.127	1.4	1.1	1.6	1.1	B-	
2039	682635	K-2	112	.786	.786	.054	.089	.071	.000	.464	.464	-.192	-.325	-.212	-3.264	0.255	-0.2	1.0	-0.8	0.8	A+	
2040	684579	K-2	112	.732	.732	.116	.071	.071	.009	.458	.458	-.375	-.085	-.197	-2.900	0.239	-0.1	1.0	1.7	1.4	A-	
2041	684749	K-2	112	.696	.089	.116	.089	.696	.009	.486	-.197	-.303	-.204	.486	-2.679	0.231	-0.3	1.0	-0.6	0.9	A+	
2042	683994	K-2	112	.795	.795	.045	.098	.063	.000	.455	.455	-.449	-.185	-.150	-3.330	0.258	-0.3	1.0	-0.3	0.9	A+	
2043	684434	K-2	112	.625	.625	.170	.089	.107	.009	.535	.535	-.292	-.271	-.193	-2.270	0.222	-0.8	0.9	-1.0	0.8	B+	
2044	684809	K-2	112	.741	.116	.741	.063	.080	.000	.629	-.315	.629	-.198	-.466	-2.957	0.241	-2.0	0.8	-1.8	0.6	A-	
2045	682430	K-2	112	.830	.125	.830	.018	.018	.009	.528	-.366	.528	-.172	-.172	-3.614	0.275	-0.8	0.9	-1.2	0.6	A+	
2046	684712	K-2	112	.911	.009	.009	.063	.911	.009	.325	-.131	-.070	-.174	.325	-4.478	0.356	0.0	1.0	0.6	1.2	A-	
2047	684735	K-2	112	.616	.214	.152	.616	.009	.009	.514	-.324	-.209	.514	-.111	-2.220	0.221	-0.6	0.9	-0.8	0.9	A+	
2048	684487	K-2	112	.920	.920	.009	.009	.054	.009	.388	.388	-.152	-.131	-.209	-4.612	0.374	-0.1	1.0	-0.8	0.5	A-	
2049	683718	K-2	112	.830	.071	.036	.830	.054	.009	.513	-.287	-.194	.513	-.227	-3.614	0.275	-0.7	0.9	-1.2	0.6	A+	
2050	684716	K-2	112	.554	.080	.241	.116	.554	.009	.215	-.331	.040	-.008	.215	-1.885	0.217	3.3	1.3	2.2	1.4	A+	
2051	683982	K-2	112	.357	.143	.357	.277	.205	.018	.199	-.157	.199	.053	-.055	-0.840	0.224	3.2	1.3	2.1	1.5	A+	
2052	684794	K-2	112	.438	.268	.161	.125	.438	.009	.314	-.167	-.055	-.092	.314	-1.276	0.217	1.7	1.2	1.1	1.2	B-	
2053	684871	K-2	112	.518	.241	.107	.518	.116	.018	.502	-.199	-.205	.502	-.213	-1.697	0.216	-0.4	1.0	0.1	1.0	A+	
2054	684493	K-2	112	.714	.161	.071	.714	.045	.009	.470	-.144	-.354	.470	-.178	-2.788	0.235	-0.2	1.0	-0.3	0.9	A+	
2055	684860	K-2	112	.857	.857	.027	.009	.098	.009	.400	.400	-.110	.012	-.308	-3.857	0.294	0.0	1.0	-0.6	0.7	A+	
2056	684280	K-2	112	.786	.786	.098	.054	.054	.009	.441	.441	-.282	-.192	-.098	-3.264	0.255	-0.1	1.0	-0.7	0.8	A-	
2057	684463	K-2	112	.313	.152	.259	.313	.259	.018	.181	-.231	.000	.181	.093	-0.584	0.230	2.8	1.3	2.2	1.6	A-	
2058	684290	K-2	112	.911	.063	.911	.009	.009	.009	.521	-.365	.521	-.152	-.152	-4.478	0.356	-0.7	0.8	-1.4	0.4	A-	
2059	683995	K-2	115	.478	.139	.330	.052	.478	.000	.383	-.404	-.025	-.178	.383	-1.207	0.204	0.4	1.0	-0.1	1.0	A-	
2060	682636	K-2	115	.426	.078	.235	.261	.426	.000	.393	-.130	-.081	-.286	.393	-0.956	0.206	0.1	1.0	1.0	1.1	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2061	684580	K-2	115	.826	.026	.078	.070	.826	.000	.427	-.051	-.408	-.174	.427	-3.134	0.262	-0.5	0.9	-0.6	0.8	A-	
2062	684870	K-2	115	.061	.130	.052	.061	.757	.000	.043	-.069	-.457	.043	.267	1.864	0.409	0.2	1.0	2.4	2.8	A+	
2063	684436	K-2	115	.644	.643	.078	.157	.122	.000	.291	.291	-.162	-.174	-.100	-2.011	0.212	1.1	1.1	0.4	1.1	B+	
2064	684750	K-2	115	.696	.078	.139	.696	.087	.000	.342	-.337	-.188	.342	-.007	-2.289	0.220	0.4	1.0	0.6	1.1	A+	
2065	684810	K-2	115	.704	.200	.096	.704	.000	.000	.529	-.446	-.214	.529	.000	-2.337	0.221	-1.4	0.9	-1.4	0.8	A+	
2066	682432	K-2	115	.730	.061	.148	.061	.730	.000	.493	-.144	-.259	-.385	.493	-2.488	0.227	-1.0	0.9	-1.2	0.8	A-	
2067	684713	K-2	115	.930	.026	.009	.930	.035	.000	.334	-.144	.009	.334	-.342	-4.276	0.380	-0.2	0.9	-0.5	0.7	A-	
2068	684736	K-2	115	.400	.400	.087	.270	.243	.000	.283	.283	.054	.027	-.386	-0.828	0.208	1.1	1.1	1.3	1.2	A+	
2069	684488	K-2	115	.939	.939	.017	.009	.035	.000	.251	.251	-.052	-.198	-.191	-4.429	0.403	-0.1	0.9	2.3	2.7	A+	
2070	683719	K-2	115	.696	.157	.696	.061	.087	.000	.170	.014	.170	-.153	-.166	-2.289	0.220	1.9	1.2	2.2	1.4	A+	
2071	684717	K-2	115	.765	.096	.765	.035	.104	.000	.448	-.251	.448	-.237	-.238	-2.702	0.237	-0.7	0.9	-0.1	1.0	A-	
2072	684728	K-2	115	.452	.052	.078	.452	.417	.000	.289	-.149	-.360	.289	-.028	-1.082	0.204	1.3	1.1	1.0	1.1	A+	
2073	684768	K-2	115	.652	.104	.652	.139	.104	.000	.635	-.308	.635	-.349	-.287	-2.056	0.213	-2.9	0.8	-2.4	0.7	A-	
2074	684872	K-2	115	.600	.270	.052	.070	.600	.009	.507	-.209	-.466	-.182	.507	-1.792	0.207	-1.4	0.9	-1.5	0.8	B-	
2075	684494	K-2	115	.548	.087	.104	.261	.548	.000	.518	-.280	-.189	-.276	.518	-1.539	0.204	-1.7	0.9	-1.6	0.8	A-	
2076	684861	K-2	115	.713	.078	.096	.713	.113	.000	.479	-.329	-.193	.479	-.227	-2.387	0.223	-0.8	0.9	-1.3	0.8	B-	
2077	684281	K-2	115	.600	.600	.113	.157	.130	.000	.515	.515	-.248	-.357	-.132	-1.792	0.207	-1.5	0.9	-1.2	0.9	A+	
2078	684464	K-2	115	.826	.087	.826	.061	.026	.000	.478	-.280	.478	-.314	-.171	-3.134	0.262	-0.7	0.9	-1.1	0.7	A-	
2079	683983	K-2	113	.885	.062	.018	.885	.035	.000	.470	-.424	-.075	.470	-.205	-4.136	0.318	-0.7	0.8	-0.1	0.9	A-	
2080	684729	K-2	113	.726	.726	.142	.062	.071	.000	.506	.506	-.335	-.357	-.090	-2.852	0.235	-0.5	0.9	-1.2	0.8	A+	
2081	682637	K-2	113	.522	.150	.522	.027	.301	.000	.420	-.181	.420	-.019	-.310	-1.733	0.213	0.6	1.1	0.0	1.0	A+	
2082	684581	K-2	113	.858	.027	.027	.858	.088	.000	.548	-.255	-.154	.548	-.441	-3.857	0.293	-1.2	0.8	-1.2	0.6	A+	
2083	684291	K-2	113	.726	.142	.035	.726	.097	.000	.405	-.278	-.224	.405	-.143	-2.852	0.235	0.4	1.0	0.6	1.1	A+	
2084	683725	K-2	113	.531	.159	.186	.124	.531	.000	.358	-.168	-.203	-.116	.358	-1.779	0.213	1.3	1.1	1.2	1.1	C+	
2085	684873	K-2	113	.646	.088	.062	.646	.195	.009	.453	-.333	-.252	.453	-.141	-2.386	0.221	0.1	1.0	0.2	1.0	A-	
2086	683720	K-2	113	.770	.088	.053	.770	.088	.000	.528	-.269	-.277	.528	-.294	-3.142	0.247	-0.9	0.9	-1.0	0.8	A-	
2087	682433	K-2	113	.425	.124	.071	.425	.381	.000	.338	-.253	-.422	.338	.050	-1.235	0.214	1.5	1.1	1.2	1.2	A-	
2088	684714	K-2	113	.549	.381	.549	.035	.035	.000	.216	-.173	.216	-.058	-.067	-1.870	0.214	3.0	1.3	3.9	1.6	A-	
2089	684737	K-2	113	.797	.035	.062	.106	.796	.000	.580	-.097	-.409	-.380	.580	-3.333	0.257	-1.4	0.8	-1.7	0.6	A-	
2090	684489	K-2	113	.363	.363	.133	.221	.274	.009	.414	.414	-.140	-.033	-.291	-0.907	0.219	0.0	1.0	0.4	1.1	A-	
2091	682628	K-2	113	.743	.106	.743	.097	.044	.009	.478	-.391	.478	-.204	-.098	-2.965	0.239	-0.4	1.0	-0.6	0.9	B-	
2092	684444	K-2	113	.513	.513	.301	.071	.097	.018	.279	.279	.022	-.344	-.216	-1.688	0.213	2.2	1.2	2.5	1.3	A+	
2093	683726	K-2	113	.460	.159	.265	.106	.460	.009	.557	-.351	-.261	-.086	.557	-1.417	0.213	-1.4	0.9	-1.6	0.8	A-	
2094	683727	K-2	113	.602	.602	.097	.106	.186	.009	.388	.388	-.229	-.204	-.133	-2.147	0.217	0.9	1.1	1.8	1.3	A+	
2095	684751	K-2	113	.620	.168	.619	.133	.062	.018	.553	-.291	.553	-.274	-.282	-2.241	0.218	-1.2	0.9	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2096	682627	K-2	113	.345	.177	.327	.142	.345	.009	.340	-.163	-.001	-.262	.340	-0.810	0.221	0.4	1.0	2.2	1.4	A+	
2097	684862	K-2	113	.797	.796	.097	.053	.044	.009	.472	.472	-.406	-.188	-.098	-3.333	0.257	-0.4	0.9	-0.9	0.8	A-	
2098	684282	K-2	113	.699	.124	.699	.088	.080	.009	.570	-.270	.570	-.212	-.388	-2.690	0.229	-1.4	0.9	-1.3	0.8	A-	
2099	684465	K-2	109	.450	.183	.450	.092	.257	.018	.372	-.303	.372	-.264	.040	-1.528	0.215	0.9	1.1	1.0	1.1	A-	
2100	683984	K-2	109	.395	.477	.083	.037	.394	.009	.300	.007	-.378	-.175	.300	-1.248	0.218	1.8	1.2	1.4	1.2	A+	
2101	684874	K-2	109	.284	.450	.284	.147	.119	.000	.332	-.133	.332	-.041	-.212	-0.643	0.234	0.3	1.0	1.3	1.3	A+	
2102	684445	K-2	109	.908	.037	.046	.009	.908	.000	.359	-.133	-.303	-.158	.359	-4.486	0.346	-0.2	0.9	-0.6	0.7	A+	
2103	684582	K-2	109	.780	.055	.138	.780	.028	.000	.466	-.139	-.417	.466	-.109	-3.323	0.251	-0.6	0.9	-0.8	0.8	A+	
2104	684730	K-2	109	.734	.083	.734	.028	.156	.000	.466	-.406	.466	-.049	-.237	-3.026	0.237	-0.7	0.9	0.6	1.1	A-	
2105	684708	K-2	109	.239	.284	.266	.239	.211	.000	.143	.060	-.175	.143	-.026	-0.356	0.246	1.3	1.2	2.8	1.7	A+	
2106	684385	K-2	109	.651	.651	.101	.165	.083	.000	.438	.438	-.232	-.172	-.272	-2.554	0.223	0.0	1.0	-0.2	1.0	A+	
2107	683734	K-2	109	.734	.734	.046	.101	.119	.000	.470	.470	-.210	-.348	-.182	-3.026	0.237	-0.8	0.9	-0.2	1.0	A+	
2108	682434	K-2	109	.569	.138	.110	.569	.183	.000	.537	-.343	-.047	.537	-.344	-2.124	0.215	-1.3	0.9	-1.0	0.9	A+	
2109	684702	K-2	109	.450	.266	.147	.450	.128	.009	.192	-.078	-.069	.192	-.122	-1.528	0.215	3.1	1.3	2.9	1.4	B-	
2110	684283	K-2	109	.505	.165	.101	.229	.505	.000	.633	-.272	-.251	-.333	.633	-1.803	0.214	-2.8	0.8	-2.6	0.7	A+	
2111	684490	K-2	109	.872	.073	.009	.037	.872	.009	.559	-.394	-.178	-.289	.559	-4.069	0.303	-1.3	0.8	-1.8	0.4	A+	
2112	682634	K-2	109	.505	.119	.211	.505	.165	.000	.334	-.254	-.160	.334	-.052	-1.803	0.214	1.5	1.1	0.9	1.1	A+	
2113	684738	K-2	109	.615	.101	.174	.615	.110	.000	.476	-.167	-.260	.476	-.265	-2.359	0.219	-0.5	1.0	0.0	1.0	A+	
2114	682638	K-2	109	.725	.183	.037	.055	.725	.000	.521	-.389	-.278	-.131	.521	-2.971	0.235	-1.2	0.9	-1.0	0.8	A+	
2115	683737	K-2	109	.486	.193	.174	.147	.486	.000	.433	-.222	-.013	-.349	.433	-1.711	0.214	0.0	1.0	0.0	1.0	A-	
2116	684752	K-2	109	.661	.138	.092	.661	.101	.009	.454	-.287	-.210	.454	-.200	-2.604	0.224	-0.1	1.0	-0.8	0.9	A+	
2117	682629	K-2	109	.339	.257	.138	.266	.339	.000	.459	-.227	-.157	-.144	.459	-0.956	0.224	-0.6	0.9	-0.5	0.9	A+	
2118	684863	K-2	109	.413	.183	.083	.413	.321	.000	.229	-.218	-.215	.229	.067	-1.342	0.216	2.3	1.2	2.3	1.3	A+	
2119	684864	K-2	114	.360	.307	.167	.158	.360	.009	.241	-.101	-.230	.057	.241	-0.851	0.211	1.3	1.1	1.8	1.3	A-	
2120	684446	K-2	114	.807	.088	.026	.807	.079	.000	.507	-.253	-.124	.507	-.403	-3.248	0.258	-0.7	0.9	-0.9	0.8	A+	
2121	683985	K-2	114	.658	.658	.070	.035	.237	.000	.221	.221	-.209	-.011	-.116	-2.322	0.217	2.1	1.2	1.7	1.2	A+	
2122	684703	K-2	114	.246	.360	.237	.149	.246	.009	.092	-.140	.086	-.015	.092	-0.222	0.232	1.4	1.2	2.6	1.6	A-	
2123	684753	K-2	114	.316	.298	.123	.316	.263	.000	.298	-.249	-.290	.298	.160	-0.623	0.217	0.7	1.1	1.2	1.2	A+	
2124	683714	K-2	114	.140	.140	.140	.035	.684	.000	.298	-.258	.298	-.058	-.007	0.548	0.282	-0.2	1.0	-0.3	0.9	A-	
2125	684799	K-2	114	.798	.096	.798	.053	.044	.009	.572	-.306	.572	-.350	-.196	-3.183	0.254	-1.4	0.8	-1.8	0.6	B-	
2126	684467	K-2	114	.746	.746	.026	.070	.149	.009	.421	.421	-.097	-.226	-.250	-2.827	0.235	-0.2	1.0	-0.3	0.9	A+	
2127	684709	K-2	114	.588	.149	.175	.079	.588	.009	.652	-.377	-.275	-.228	.652	-1.961	0.209	-3.3	0.8	-3.1	0.7	A-	
2128	683735	K-2	114	.825	.053	.061	.053	.825	.009	.535	-.273	-.261	-.264	.535	-3.385	0.267	-1.1	0.8	-1.4	0.7	A-	
2129	684764	K-2	114	.465	.465	.114	.123	.289	.009	.292	.292	-.119	-.166	-.073	-1.367	0.205	1.4	1.1	0.9	1.1	A-	
2130	684691	K-2	114	.886	.886	.018	.035	.044	.018	.531	.531	-.204	-.268	-.395	-3.967	0.315	-1.2	0.8	-1.0	0.6	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2131	684710	K-2	114	.746	.061	.061	.746	.123	.009	.574	-.386	-.216	.574	-.257	-2.827	0.235	-1.5	0.8	-1.7	0.7	A+	
2132	684455	K-2	114	.904	.061	.904	.009	.018	.009	.502	-.368	.502	-.109	-.220	-4.178	0.337	-0.6	0.8	-1.6	0.5	A+	
2133	684811	K-2	114	.483	.079	.079	.482	.351	.009	.393	-.379	-.331	.393	.034	-1.451	0.205	0.2	1.0	-0.2	1.0	A+	
2134	684740	K-2	114	.649	.649	.105	.123	.114	.009	.425	.425	-.188	-.257	-.126	-2.275	0.215	0.0	1.0	-0.6	0.9	A-	
2135	684466	K-2	114	.632	.167	.105	.088	.632	.009	.512	-.363	-.153	-.155	.512	-2.183	0.213	-1.2	0.9	-0.8	0.9	A+	
2136	683738	K-2	114	.404	.035	.360	.404	.193	.009	.202	-.256	-.064	.202	-.001	-1.070	0.207	2.0	1.2	3.1	1.4	A+	
2137	684454	K-2	114	.061	.789	.061	.061	.079	.009	-.064	.341	-.180	-.064	-.220	1.527	0.399	0.5	1.1	1.9	2.3	A+	
2138	682632	K-2	114	.342	.202	.237	.342	.202	.018	.332	-.192	-.217	.332	.070	-0.761	0.213	0.2	1.0	1.0	1.1	A+	
2139	682633	K-2	118	.559	.229	.559	.136	.076	.000	.375	-.209	.375	-.151	-.175	-1.849	0.204	0.6	1.1	1.0	1.1	A-	
2140	684865	K-2	118	.271	.280	.331	.271	.119	.000	.204	.024	.005	.204	-.321	-0.376	0.224	1.1	1.1	2.4	1.5	A-	
2141	684723	K-2	118	.856	.051	.085	.008	.856	.000	.466	-.364	-.291	-.030	.466	-3.683	0.280	-0.5	0.9	-1.1	0.7	A+	
2142	683986	K-2	118	.390	.136	.390	.195	.280	.000	.258	-.093	.258	.086	-.285	-1.018	0.207	1.6	1.1	1.8	1.2	A+	
2143	684704	K-2	118	.559	.559	.161	.136	.144	.000	.263	.263	-.196	-.134	-.037	-1.849	0.204	2.0	1.2	1.1	1.1	A+	
2144	684471	K-2	118	.466	.119	.466	.119	.297	.000	.322	-.211	.322	-.284	-.002	-1.395	0.203	1.0	1.1	1.3	1.1	A+	
2145	683715	K-2	118	.636	.119	.110	.136	.636	.000	.669	-.223	-.336	-.424	.669	-2.235	0.210	-3.2	0.7	-3.0	0.7	B+	
2146	684800	K-2	118	.475	.398	.475	.068	.059	.000	.241	-.044	.241	-.285	-.115	-1.436	0.203	2.5	1.2	2.1	1.2	A-	
2147	684468	K-2	118	.602	.144	.186	.068	.602	.000	.470	-.116	-.328	-.245	.470	-2.060	0.207	-0.7	0.9	-0.2	1.0	A+	
2148	684284	K-2	118	.475	.059	.475	.339	.127	.000	.293	-.081	.293	-.152	-.165	-1.436	0.203	1.4	1.1	1.5	1.2	A-	
2149	683736	K-2	118	.949	.008	.017	.025	.949	.000	.517	-.181	-.273	-.393	.517	-4.944	0.432	-0.7	0.7	-1.7	0.2	A-	
2150	684765	K-2	118	.576	.178	.576	.119	.127	.000	.458	-.109	.458	-.309	-.254	-1.933	0.205	-0.5	1.0	-0.2	1.0	A-	
2151	684692	K-2	118	.754	.754	.119	.102	.025	.000	.240	.240	-.174	-.030	-.241	-2.913	0.233	1.4	1.2	0.6	1.1	A+	
2152	684741	K-2	118	.576	.237	.127	.576	.059	.000	.325	-.152	-.153	.325	-.190	-1.933	0.205	1.1	1.1	1.7	1.2	A-	
2153	684456	K-2	118	.771	.771	.144	.034	.051	.000	.507	.507	-.364	-.280	-.156	-3.024	0.238	-0.9	0.9	-1.2	0.8	A-	
2154	684812	K-2	118	.610	.195	.127	.059	.610	.008	.324	-.104	-.195	-.241	.324	-2.103	0.208	1.2	1.1	1.2	1.1	A-	
2155	684451	K-2	118	.788	.788	.025	.076	.110	.000	.396	.396	-.115	-.302	-.203	-3.140	0.244	0.0	1.0	-0.4	0.9	A-	
2156	684321	K-2	118	.915	.915	.051	.025	.008	.000	.362	.362	-.183	-.254	-.225	-4.352	0.346	-0.2	0.9	-0.5	0.7	A-	
2157	683739	K-2	118	.848	.847	.051	.076	.017	.008	.557	.557	-.382	-.295	-.135	-3.606	0.274	-1.3	0.8	-1.5	0.6	A+	
2158	684754	K-2	118	.559	.093	.559	.153	.186	.008	.431	-.274	.431	-.187	-.119	-1.849	0.204	-0.2	1.0	-0.5	0.9	A+	
2159	684755	K-2	111	.180	.207	.180	.351	.261	.000	.176	-.199	.176	.079	-.056	0.008	0.263	0.2	1.0	3.3	2.3	A-	
2160	682630	K-2	111	.405	.378	.126	.090	.405	.000	.260	-.116	-.147	-.079	.260	-1.328	0.214	1.8	1.2	2.4	1.3	A+	
2161	684866	K-2	111	.514	.514	.234	.144	.108	.000	.474	.474	-.191	-.219	-.254	-1.868	0.212	-0.4	1.0	-0.4	1.0	A+	
2162	684452	K-2	111	.333	.126	.333	.378	.162	.000	.255	-.096	.255	-.128	-.071	-0.952	0.221	1.0	1.1	2.7	1.5	A-	
2163	683987	K-2	111	.748	.072	.117	.748	.063	.000	.506	-.189	-.362	.506	-.224	-3.154	0.242	-0.5	0.9	-0.9	0.8	A+	
2164	684705	K-2	111	.802	.802	.072	.090	.036	.000	.594	.594	-.320	-.361	-.272	-3.532	0.261	-1.6	0.8	-1.8	0.6	A+	
2165	684472	K-2	111	.234	.189	.216	.360	.234	.000	.315	-.187	-.082	-.055	.315	-0.371	0.241	-0.2	1.0	1.9	1.5	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2166	683716	K-2	111	.775	.126	.775	.063	.036	.000	.454	-.243	.454	-.232	-.282	-3.336	0.251	-0.4	0.9	-0.5	0.9	A-	
2167	684801	K-2	111	.324	.324	.099	.036	.541	.000	.197	.197	-.245	-.252	.057	-0.903	0.222	2.6	1.3	1.3	1.2	B+	
2168	684469	K-2	111	.378	.270	.198	.378	.144	.009	.182	-.064	-.184	.182	.000	-1.190	0.216	2.6	1.2	3.0	1.5	A-	
2169	684285	K-2	111	.604	.099	.189	.604	.108	.000	.415	-.289	-.206	.415	-.115	-2.326	0.217	0.5	1.0	0.2	1.0	A-	
2170	684583	K-2	111	.811	.054	.811	.054	.081	.000	.552	-.241	.552	-.432	-.234	-3.601	0.265	-1.2	0.8	-1.3	0.7	A-	
2171	684766	K-2	111	.288	.162	.306	.243	.288	.000	-.062	-.066	-.045	.171	-.062	-0.701	0.228	3.8	1.4	4.8	2.2	A-	
2172	684693	K-2	111	.613	.090	.613	.180	.117	.000	.552	-.328	.552	-.240	-.257	-2.373	0.218	-1.3	0.9	-1.2	0.9	A+	
2173	684743	K-2	111	.451	.450	.180	.126	.243	.000	.332	.332	-.073	-.130	-.219	-1.554	0.212	1.3	1.1	1.5	1.2	B+	
2174	684457	K-2	111	.541	.261	.117	.541	.081	.000	.543	-.342	-.187	.543	-.220	-2.003	0.213	-1.4	0.9	-1.2	0.9	A-	
2175	684813	K-2	111	.685	.054	.144	.685	.117	.000	.538	-.366	-.144	.538	-.362	-2.769	0.228	-1.1	0.9	-0.4	0.9	A+	
2176	684322	K-2	111	.775	.099	.063	.775	.063	.000	.607	-.371	-.325	.607	-.263	-3.336	0.251	-1.7	0.8	-1.6	0.7	B+	
2177	684724	K-2	111	.550	.550	.306	.081	.063	.000	.480	.480	-.130	-.427	-.255	-2.049	0.213	-0.4	1.0	-0.4	1.0	A-	
2178	683728	K-2	111	.604	.171	.090	.135	.604	.000	.434	-.389	-.059	-.143	.434	-2.326	0.217	0.2	1.0	0.3	1.0	A-	
2179	683729	K-2	111	.622	.054	.622	.261	.063	.000	.430	-.125	.430	-.340	-.128	-2.029	0.212	-0.4	1.0	-0.8	0.9	B-	
2180	684795	K-2	111	.883	.090	.009	.018	.883	.000	.385	-.365	.060	-.189	.385	-3.747	0.308	-0.4	0.9	-0.8	0.7	A+	
2181	682631	K-2	111	.613	.180	.135	.613	.072	.000	.443	-.297	-.222	.443	-.099	-1.984	0.211	-0.7	1.0	-0.9	0.9	A+	
2182	684875	K-2	111	.523	.225	.090	.523	.162	.000	.387	-.154	-.245	.387	-.160	-1.552	0.206	0.1	1.0	-0.2	1.0	B-	
2183	684323	K-2	111	.541	.279	.541	.054	.126	.000	.527	-.393	.527	-.163	-.149	-1.637	0.207	-1.9	0.9	-1.6	0.8	A+	
2184	684756	K-2	111	.252	.009	.018	.252	.721	.000	.272	-.054	.053	.272	-.267	-0.170	0.235	0.5	1.1	1.1	1.2	A-	
2185	684706	K-2	111	.234	.468	.090	.207	.234	.000	.389	-.098	-.275	-.092	.389	-0.056	0.241	-0.4	1.0	-0.4	0.9	A-	
2186	684473	K-2	111	.613	.126	.613	.072	.189	.000	.443	-.421	.443	-.066	-.151	-1.984	0.211	-0.7	0.9	-0.8	0.9	A+	
2187	684814	K-2	111	.883	.045	.045	.027	.883	.000	.345	-.257	-.153	-.160	.345	-3.747	0.308	-0.3	0.9	-0.4	0.8	A-	
2188	684802	K-2	111	.189	.505	.090	.216	.189	.000	.244	.055	-.252	-.123	.244	0.255	0.259	0.4	1.1	1.5	1.4	A-	
2189	684470	K-2	111	.550	.072	.550	.216	.162	.000	.324	-.165	.324	-.118	-.189	-1.680	0.207	0.8	1.1	0.6	1.1	B-	
2190	684286	K-2	111	.487	.180	.153	.486	.180	.000	.389	-.146	-.323	.389	-.057	-1.382	0.206	0.0	1.0	-0.2	1.0	A-	
2191	684584	K-2	111	.694	.694	.144	.090	.072	.000	.341	.341	-.213	-.102	-.207	-2.401	0.221	0.1	1.0	0.6	1.1	B+	
2192	684767	K-2	111	.414	.216	.117	.414	.252	.000	.168	-.040	.042	.168	-.183	-1.038	0.209	2.5	1.2	2.2	1.3	A-	
2193	684694	K-2	111	.523	.153	.207	.523	.117	.000	.551	-.114	-.388	.551	-.238	-1.552	0.206	-2.3	0.9	-2.0	0.8	A-	
2194	684744	K-2	111	.631	.631	.153	.108	.108	.000	.560	.560	-.365	-.196	-.251	-2.074	0.212	-2.1	0.8	-1.8	0.8	A+	
2195	684458	K-2	111	.793	.045	.081	.072	.793	.009	.357	-.112	-.254	-.207	.357	-2.999	0.249	-0.3	1.0	0.1	1.0	A-	
2196	683717	K-2	111	.514	.243	.036	.514	.207	.000	.311	-.199	-.120	.311	-.118	-1.510	0.206	1.0	1.1	3.1	1.4	A+	
2197	684453	K-2	111	.288	.180	.414	.117	.288	.000	.306	-.219	-.037	-.111	.306	-0.383	0.226	0.6	1.1	0.5	1.1	A-	
2198	684687	K-2	111	.306	.207	.270	.306	.216	.000	.222	-.108	-.081	.222	-.056	-0.484	0.223	1.1	1.1	1.6	1.3	A+	
2199	684757	K-2	111	.865	.036	.045	.054	.865	.000	.465	-.220	-.197	-.340	.465	-3.808	0.307	-0.3	0.9	0.4	1.1	A-	
2200	683730	K-2	111	.802	.802	.108	.027	.063	.000	.492	.492	-.251	-.265	-.309	-3.235	0.269	-0.2	1.0	-0.4	0.8	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2201	684796	K-2	111	.730	.730	.117	.054	.090	.009	.545	.545	-.344	-.356	-.097	-2.713	0.244	-0.7	0.9	-0.2	1.0	A-	
2202	683723	K-2	111	.432	.189	.117	.432	.261	.000	.259	-.100	-.282	.259	.003	-1.042	0.219	2.3	1.2	3.8	1.7	A+	
2203	684683	K-2	111	.550	.162	.550	.234	.054	.000	.566	-.313	.566	-.304	-.165	-1.663	0.220	-1.3	0.9	-1.2	0.8	A-	
2204	684326	K-2	111	.451	.252	.198	.450	.099	.000	.461	-.209	-.107	.461	-.322	-1.138	0.219	0.1	1.0	0.2	1.0	A-	
2205	684688	K-2	111	.739	.036	.739	.063	.153	.009	.465	-.211	.465	-.316	-.245	-2.773	0.247	0.1	1.0	0.6	1.1	A+	
2206	684272	K-2	111	.640	.640	.207	.108	.045	.000	.397	.397	-.158	-.275	-.197	-2.160	0.227	1.1	1.1	0.3	1.1	A+	
2207	684483	K-2	111	.775	.171	.775	.000	.036	.018	.408	-.220	.408	.000	-.375	-3.027	0.258	0.6	1.1	0.0	1.0	A-	
2208	684803	K-2	111	.793	.063	.063	.793	.081	.000	.604	-.145	-.428	.604	-.386	-3.164	0.265	-1.5	0.8	-0.9	0.7	A-	
2209	684267	K-2	111	.820	.045	.820	.045	.081	.009	.544	-.171	.544	-.293	-.400	-3.384	0.277	-0.6	0.9	-1.0	0.7	B-	
2210	684575	K-2	111	.423	.288	.126	.162	.423	.000	.438	-.056	-.360	-.195	.438	-0.994	0.220	0.1	1.0	0.5	1.1	A+	
2211	684287	K-2	111	.631	.108	.631	.171	.090	.000	.480	-.170	.480	-.267	-.273	-2.109	0.226	0.1	1.0	-0.4	0.9	A-	
2212	684585	K-2	111	.946	.946	.036	.009	.000	.009	.364	.364	-.288	-.190	.000	-4.982	0.443	0.0	1.0	-0.7	0.4	A-	
2213	684769	K-2	111	.414	.270	.162	.414	.144	.009	.326	-.086	-.092	.326	-.221	-0.946	0.220	1.5	1.1	2.1	1.4	A-	
2214	683988	K-2	111	.838	.838	.081	.036	.036	.009	.587	.587	-.353	-.220	-.366	-3.544	0.288	-1.2	0.8	-1.0	0.6	A+	
2215	684745	K-2	111	.658	.658	.135	.126	.063	.018	.573	.573	-.391	-.289	-.041	-2.265	0.230	-1.0	0.9	-1.2	0.8	A+	
2216	684459	K-2	111	.595	.099	.595	.171	.126	.009	.335	-.225	.335	-.186	-.050	-1.907	0.223	2.2	1.2	1.9	1.3	A+	
2217	684788	K-2	111	.766	.108	.766	.063	.054	.009	.632	-.385	.632	-.324	-.260	-2.961	0.255	-1.5	0.8	-1.6	0.6	A+	
2218	684447	K-2	111	.297	.054	.261	.378	.297	.009	.206	-.221	-.223	.133	.206	-0.282	0.234	2.7	1.3	2.3	1.6	A-	
2219	684734	K-2	105	.933	.933	.019	.029	.019	.000	.432	.432	-.293	-.300	-.130	-4.501	0.408	-0.4	0.9	-0.8	0.5	A+	
2220	684725	K-2	105	.714	.086	.048	.152	.714	.000	.497	-.123	-.329	-.334	.497	-2.501	0.239	-0.6	0.9	-0.6	0.9	A-	
2221	683731	K-2	105	.752	.057	.752	.048	.143	.000	.324	-.191	.324	-.339	-.066	-2.739	0.249	0.9	1.1	0.0	1.0	A-	
2222	684797	K-2	105	.581	.581	.067	.029	.324	.000	.256	.256	-.129	-.314	-.090	-1.771	0.220	2.1	1.2	1.7	1.2	A+	
2223	683724	K-2	105	.667	.086	.057	.190	.667	.000	.511	-.337	-.182	-.266	.511	-2.226	0.230	-0.8	0.9	-0.6	0.9	A+	
2224	684684	K-2	105	.400	.219	.400	.048	.333	.000	.273	-.008	.273	.058	-.304	-0.864	0.221	1.7	1.2	2.0	1.3	A+	
2225	684328	K-2	105	.943	.943	.000	.029	.029	.000	.489	.489	.000	-.354	-.327	-4.680	0.437	-0.5	0.8	-1.3	0.3	A-	
2226	684689	K-2	105	.667	.067	.143	.124	.667	.000	.356	-.120	-.327	-.071	.356	-2.226	0.230	0.8	1.1	0.2	1.0	A+	
2227	684273	K-2	105	.819	.819	.019	.086	.067	.010	.586	.586	-.244	-.353	-.379	-3.218	0.276	-1.3	0.8	-1.4	0.6	A+	
2228	684484	K-2	105	.838	.838	.067	.057	.038	.000	.456	.456	-.397	-.201	-.116	-3.376	0.287	-0.4	0.9	-0.4	0.8	A+	
2229	684804	K-2	105	.971	.971	.019	.010	.000	.000	.314	.314	-.293	-.126	.000	-5.446	0.598	0.1	0.9	-0.8	0.3	A-	
2230	684268	K-2	105	.581	.181	.095	.143	.581	.000	.229	-.054	-.038	-.232	.229	-1.771	0.220	2.4	1.2	1.5	1.2	A+	
2231	684576	K-2	105	.200	.248	.448	.200	.105	.000	.009	-.133	.231	.009	-.199	0.323	0.266	1.8	1.3	3.3	2.2	A-	
2232	684288	K-2	105	.771	.086	.095	.048	.771	.000	.482	-.194	-.227	-.381	.482	-2.866	0.255	-0.5	0.9	1.0	1.2	A+	
2233	684586	K-2	105	.629	.629	.286	.019	.067	.000	.361	.361	-.157	-.228	-.290	-2.019	0.225	0.9	1.1	0.3	1.0	A+	
2234	684784	K-2	105	.743	.095	.076	.743	.086	.000	.567	-.348	-.084	.567	-.441	-2.678	0.246	-1.3	0.8	-1.1	0.8	A-	
2235	683989	K-2	105	.667	.048	.086	.190	.667	.010	.544	-.277	-.369	-.243	.544	-2.226	0.230	-1.1	0.9	-1.2	0.8	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2236	684718	K-2	105	.619	.619	.067	.010	.305	.000	.334	.334	-.174	-.195	-.217	-1.969	0.224	1.1	1.1	0.5	1.1	A-	
2237	684460	K-2	105	.533	.286	.533	.067	.114	.000	.380	-.433	.380	.014	.007	-1.531	0.218	0.7	1.1	0.5	1.1	A-	
2238	684789	K-2	105	.733	.733	.038	.076	.152	.000	.543	.543	-.256	-.494	-.167	-2.618	0.244	-1.0	0.9	-1.2	0.8	A+	
2239	684790	K-2	115	.626	.165	.626	.070	.139	.000	.467	-.387	.467	-.294	-.021	-2.223	0.215	-0.3	1.0	-0.6	0.9	A-	
2240	684448	K-2	115	.600	.130	.600	.052	.217	.000	.465	-.322	.465	-.143	-.212	-2.086	0.212	-0.3	1.0	-0.5	0.9	B-	
2241	684726	K-2	115	.687	.104	.078	.687	.130	.000	.382	-.171	-.167	.382	-.238	-2.559	0.224	0.6	1.1	0.4	1.1	B-	
2242	684699	K-2	115	.687	.687	.026	.052	.235	.000	.273	.273	-.340	-.286	-.021	-2.559	0.224	1.7	1.2	1.1	1.2	A+	
2243	684798	K-2	115	.774	.104	.774	.087	.035	.000	.469	-.208	.469	-.372	-.153	-3.104	0.245	-0.4	0.9	-0.7	0.8	A+	
2244	684571	K-2	115	.652	.139	.148	.652	.061	.000	.635	-.259	-.432	.635	-.250	-2.364	0.218	-2.4	0.8	-1.8	0.7	A+	
2245	684685	K-2	115	.417	.130	.417	.296	.157	.000	.332	-.294	.332	-.003	-.174	-1.169	0.210	1.2	1.1	1.1	1.2	A-	
2246	684330	K-2	115	.800	.800	.078	.070	.052	.000	.439	.439	-.202	-.360	-.134	-3.292	0.255	-0.5	0.9	0.0	1.0	A+	
2247	684690	K-2	115	.487	.174	.139	.487	.191	.009	.470	-.276	-.026	.470	-.304	-1.517	0.208	-0.6	1.0	-0.6	0.9	A+	
2248	684274	K-2	115	.713	.713	.122	.113	.052	.000	.624	.624	-.412	-.319	-.210	-2.712	0.229	-2.0	0.8	-2.0	0.7	A-	
2249	684485	K-2	115	.287	.235	.217	.243	.287	.017	.266	-.074	-.031	-.217	.266	-0.469	0.225	1.3	1.1	2.1	1.5	A-	
2250	684805	K-2	115	.878	.070	.035	.878	.017	.000	.520	-.522	-.143	.520	-.086	-3.987	0.306	-0.9	0.8	-0.8	0.7	A-	
2251	684269	K-2	115	.835	.070	.835	.061	.035	.000	.438	-.463	.438	-.180	-.010	-3.571	0.273	-0.5	0.9	1.0	1.3	A+	
2252	684577	K-2	115	.557	.200	.043	.200	.557	.000	.436	-.378	-.156	-.083	.436	-1.864	0.210	0.1	1.0	0.5	1.1	A+	
2253	684289	K-2	115	.739	.139	.043	.739	.070	.009	.400	-.129	-.266	.400	-.301	-2.874	0.235	0.3	1.0	0.0	1.0	A+	
2254	684695	K-2	115	.748	.122	.748	.087	.043	.000	.546	-.251	.546	-.318	-.321	-2.929	0.237	-1.1	0.9	-1.3	0.8	A+	
2255	682435	K-2	115	.957	.957	.009	.035	.000	.000	.349	.349	.081	-.429	.000	-5.228	0.474	-0.4	0.8	0.2	0.9	A+	
2256	683990	K-2	115	.513	.191	.513	.139	.157	.000	.496	-.237	.496	-.351	-.092	-1.646	0.208	-1.0	0.9	-0.4	1.0	A+	
2257	684719	K-2	115	.861	.861	.043	.026	.070	.000	.448	.448	-.339	-.270	-.169	-3.809	0.291	-0.6	0.9	-0.3	0.9	A+	
2258	684461	K-2	115	.574	.148	.183	.574	.096	.000	.441	-.099	-.348	.441	-.165	-1.952	0.211	-0.1	1.0	0.1	1.0	A+	
2259	684462	K-2	111	.757	.757	.117	.063	.063	.000	.277	.277	-.079	-.247	-.137	-2.629	0.233	0.4	1.0	-0.3	0.9	A-	
2260	684791	K-2	111	.775	.775	.036	.162	.027	.000	.432	.432	-.258	-.283	-.173	-2.741	0.239	-0.6	0.9	-1.2	0.8	A+	
2261	684449	K-2	111	.586	.216	.072	.586	.126	.000	.319	-.116	-.176	.319	-.193	-1.739	0.206	0.5	1.0	0.2	1.0	A+	
2262	684746	K-2	111	.514	.180	.514	.063	.234	.009	.309	-.264	.309	-.181	-.012	-1.404	0.204	0.7	1.0	0.6	1.1	A+	
2263	684700	K-2	111	.766	.108	.766	.090	.036	.000	.429	-.327	.429	-.159	-.186	-2.684	0.236	-0.8	0.9	-0.4	0.9	A+	
2264	684277	K-2	111	.460	.297	.090	.153	.459	.000	.417	-.119	-.308	-.182	.417	-1.153	0.205	-0.9	0.9	-0.6	1.0	A-	
2265	684572	K-2	111	.460	.243	.459	.063	.234	.000	.337	-.183	.337	-.071	-.170	-1.153	0.205	-0.4	1.0	0.4	1.0	A-	
2266	684686	K-2	111	.667	.667	.099	.144	.090	.000	.303	.303	-.309	-.030	-.140	-2.135	0.214	0.4	1.0	0.5	1.1	A+	
2267	684333	K-2	111	.919	.063	.018	.000	.919	.000	.358	-.336	-.121	.000	.358	-4.021	0.356	-0.3	0.9	-0.5	0.7	A+	
2268	684867	K-2	111	.559	.234	.559	.054	.153	.000	.352	-.227	.352	-.225	-.078	-1.612	0.205	0.1	1.0	-0.4	1.0	A-	
2269	684275	K-2	111	.613	.045	.144	.189	.613	.009	.353	-.368	-.167	-.085	.353	-1.868	0.208	0.0	1.0	-0.4	1.0	A-	
2270	684486	K-2	111	.775	.081	.775	.054	.081	.009	.470	-.367	.470	-.225	-.191	-2.741	0.239	-1.0	0.9	-1.0	0.8	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2271	684806	K-2	111	.838	.838	.081	.009	.072	.000	.137	.137	-.103	.014	-.093	-3.185	0.268	0.6	1.1	1.1	1.3	A+	
2272	684270	K-2	111	.748	.063	.081	.108	.748	.000	.351	-.137	-.230	-.181	.351	-2.576	0.231	-0.4	1.0	0.9	1.2	A-	
2273	684578	K-2	111	.135	.162	.550	.153	.135	.000	.145	-.065	.047	-.137	.145	0.794	0.294	0.3	1.0	2.2	1.8	A-	
2274	684731	K-2	111	.793	.054	.081	.793	.072	.000	.201	-.035	-.103	.201	-.176	-2.858	0.246	0.6	1.1	0.5	1.1	A+	
2275	684696	K-2	111	.369	.441	.027	.369	.162	.000	.231	-.055	-.206	.231	-.137	-0.722	0.212	1.0	1.1	1.3	1.2	A-	
2276	682436	K-2	111	.793	.117	.027	.793	.063	.000	.551	-.320	-.223	.551	-.347	-2.858	0.246	-1.5	0.8	-1.5	0.7	A+	
2277	683991	K-2	111	.216	.099	.468	.216	.216	.000	.248	-.282	.189	.248	-.272	0.147	0.247	0.5	1.1	0.7	1.1	A-	
2278	684720	K-2	111	.766	.216	.766	.018	.000	.000	.138	-.090	.138	-.161	.000	-2.684	0.236	1.0	1.1	1.1	1.2	B+	
2279	684721	K-2	109	.725	.725	.119	.064	.092	.000	.448	.448	-.250	-.141	-.293	-2.780	0.245	0.4	1.0	0.3	1.1	B-	
2280	684491	K-2	109	.422	.128	.422	.147	.303	.000	.338	-.179	.338	-.137	-.127	-1.079	0.223	1.2	1.1	3.6	1.7	A+	
2281	684792	K-2	109	.716	.110	.716	.138	.037	.000	.449	-.314	.449	-.218	-.155	-2.720	0.243	0.5	1.1	0.1	1.0	A+	
2282	684450	K-2	109	.817	.064	.064	.817	.055	.000	.470	-.250	-.272	.470	-.235	-3.450	0.277	-0.4	0.9	-0.3	0.9	A-	
2283	684747	K-2	109	.505	.147	.505	.138	.211	.000	.216	-.137	.216	-.150	-.019	-1.520	0.221	3.6	1.4	2.5	1.4	A-	
2284	684681	K-2	109	.697	.092	.110	.697	.083	.018	.681	-.293	-.377	.681	-.286	-2.605	0.239	-2.4	0.7	-2.0	0.6	A+	
2285	684278	K-2	109	.578	.578	.128	.156	.119	.018	.293	.293	-.169	-.210	.065	-1.916	0.224	2.7	1.3	2.3	1.4	A-	
2286	684573	K-2	109	.404	.110	.321	.404	.156	.009	.201	-.171	-.024	.201	-.027	-0.979	0.224	3.3	1.4	3.1	1.6	A+	
2287	683732	K-2	109	.716	.716	.073	.055	.138	.018	.532	.532	-.313	-.196	-.238	-2.720	0.243	-0.5	0.9	-0.6	0.9	A-	
2288	684359	K-2	109	.220	.661	.073	.037	.220	.009	.434	-.080	-.382	-.098	.434	0.136	0.257	-0.5	0.9	-0.7	0.8	A+	
2289	684868	K-2	109	.706	.193	.706	.064	.028	.009	.532	-.303	.532	-.236	-.252	-2.662	0.241	-0.5	0.9	-0.2	0.9	A-	
2290	684276	K-2	109	.541	.073	.064	.541	.312	.009	.497	-.299	-.163	.497	-.228	-1.717	0.222	-0.2	1.0	-0.1	1.0	A-	
2291	684678	K-2	109	.881	.881	.018	.046	.046	.009	.565	.565	-.262	-.262	-.331	-4.070	0.323	-1.0	0.8	-1.4	0.4	A-	
2292	684807	K-2	109	.908	.028	.018	.908	.037	.009	.535	-.295	-.236	.535	-.270	-4.417	0.358	-1.0	0.8	-1.3	0.4	A+	
2293	684271	K-2	109	.762	.156	.761	.018	.055	.009	.363	-.111	.363	-.289	-.227	-3.029	0.255	0.9	1.1	0.5	1.1	A-	
2294	683721	K-2	109	.670	.138	.128	.046	.670	.018	.692	-.462	-.233	-.245	.692	-2.437	0.234	-2.7	0.7	-1.6	0.7	A+	
2295	684732	K-2	109	.706	.119	.128	.037	.706	.009	.509	-.211	-.228	-.336	.509	-2.662	0.241	-0.3	1.0	1.4	1.3	A+	
2296	684697	K-2	109	.266	.239	.064	.422	.266	.009	.348	-.359	-.163	.128	.348	-0.175	0.243	0.1	1.0	1.6	1.5	A+	
2297	682437	K-2	109	.835	.835	.046	.073	.037	.009	.622	.622	-.348	-.313	-.279	-3.609	0.287	-1.4	0.8	-1.7	0.5	A+	
2298	683992	K-2	109	.679	.147	.679	.083	.083	.009	.565	-.355	.565	-.162	-.253	-2.492	0.235	-0.9	0.9	-1.0	0.8	A-	
2299	683993	K-2	108	.704	.093	.019	.704	.185	.000	.254	-.204	-.104	.254	-.110	-2.436	0.229	1.3	1.1	0.8	1.1		
2300	684722	K-2	108	.370	.361	.000	.370	.269	.000	.257	-.114	.000	.257	-.156	-0.768	0.217	1.8	1.2	1.4	1.2		
2301	684492	K-2	108	.556	.111	.148	.185	.556	.000	.494	-.308	-.163	-.232	.494	-1.670	0.212	-1.1	0.9	-0.5	0.9		
2302	684793	K-2	108	.611	.611	.130	.111	.139	.009	.324	.324	-.118	-.254	-.135	-1.944	0.216	0.9	1.1	0.9	1.1		
2303	684715	K-2	108	.352	.231	.157	.259	.352	.000	.153	-.113	.011	-.068	.153	-0.673	0.219	2.3	1.2	2.4	1.4		
2304	684748	K-2	108	.389	.389	.120	.204	.287	.000	.412	.412	.092	-.221	-.313	-0.862	0.215	-0.5	1.0	-0.1	1.0		
2305	684682	K-2	108	.787	.028	.787	.102	.083	.000	.541	-.220	.541	-.483	-.142	-2.951	0.252	-1.2	0.8	-1.6	0.7		

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2306	684279	K-2	108	.630	.111	.630	.204	.056	.000	.428	-.260	.428	-.205	-.183	-2.039	0.218	-0.2	1.0	-0.6	0.9		
2307	684574	K-2	108	.676	.676	.083	.120	.120	.000	.560	.560	-.447	-.253	-.173	-2.282	0.224	-1.7	0.8	-1.4	0.8		
2308	683733	K-2	108	.454	.093	.454	.194	.259	.000	.426	.042	.426	-.475	-.083	-1.179	0.211	-0.4	1.0	0.1	1.0		
2309	684368	K-2	108	.843	.046	.065	.037	.843	.009	.564	-.208	-.313	-.354	.564	-3.372	0.280	-1.3	0.8	-1.8	0.6		
2310	684869	K-2	108	.778	.046	.778	.074	.093	.009	.388	-.105	.388	-.288	-.160	-2.888	0.249	-0.2	1.0	0.2	1.0		
2311	684727	K-2	108	.324	.361	.241	.324	.065	.009	.372	-.069	-.254	.372	-.059	-0.527	0.223	-0.5	1.0	0.4	1.1		
2312	684711	K-2	108	.898	.019	.037	.898	.037	.009	.419	-.184	-.240	.419	-.205	-3.922	0.332	-0.4	0.9	-1.1	0.6		
2313	684808	K-2	108	.843	.074	.019	.843	.056	.009	.386	-.263	-.040	.386	-.212	-3.372	0.280	-0.2	1.0	-0.7	0.8		
2314	684707	K-2	108	.732	.157	.731	.074	.028	.009	.326	-.220	.326	-.131	-.075	-2.597	0.235	0.5	1.1	0.1	1.0		
2315	683722	K-2	108	.352	.204	.352	.241	.185	.019	.221	.100	.221	-.178	-.088	-0.673	0.219	1.8	1.2	1.7	1.2		
2316	684733	K-2	108	.778	.120	.065	.778	.019	.019	.404	-.180	-.392	.404	-.024	-2.888	0.249	-0.4	1.0	0.0	1.0		
2317	684698	K-2	108	.750	.037	.750	.074	.120	.019	.446	-.125	.446	-.107	-.346	-2.710	0.240	-0.7	0.9	-0.3	0.9		
2318	682438	K-2	108	.602	.139	.194	.602	.056	.009	.412	-.210	-.164	.412	-.202	-1.898	0.215	0.0	1.0	-0.5	0.9		
2319	684335	3	434	.866	.048	.025	.058	.866	.002	.473	-.322	-.156	-.276	.473	-3.260	0.151	-1.1	0.9	-2.4	0.6	B+	
2320	684409	3	434	.461	.067	.461	.157	.313	.002	.339	-.129	.339	-.187	-.142	-0.847	0.106	1.3	1.1	2.5	1.2	A-	
2321	682891	3	434	.975	.009	.975	.000	.014	.002	.153	-.142	.153	.000	-.065	-5.215	0.313	0.3	1.1	0.5	1.2	A-	
2322	684402	3	434	.265	.067	.424	.242	.265	.002	.140	-.212	.072	-.104	.140	0.188	0.118	3.2	1.2	4.5	1.5	A-	
2323	684334	3	434	.666	.122	.150	.060	.666	.002	.547	-.361	-.226	-.218	.547	-1.870	0.112	-3.1	0.9	-2.7	0.8	A-	
2324	682883	3	434	.807	.032	.134	.806	.025	.002	.411	-.310	-.198	.411	-.210	-2.747	0.131	-0.6	1.0	-0.2	1.0	A+	
2325	692123	3	434	.903	.023	.051	.903	.018	.005	.496	-.189	-.318	.496	-.252	-3.674	0.172	-1.5	0.8	-2.5	0.5	A+	
2326	689230	3	434	.751	.751	.120	.085	.039	.005	.501	.501	-.308	-.245	-.174	-2.366	0.121	-1.9	0.9	-1.8	0.8	B-	
2327	684354	3	434	.788	.788	.069	.104	.035	.005	.562	.562	-.281	-.387	-.142	-2.613	0.127	-2.6	0.8	-3.0	0.7	A-	
2328	684392	3	434	.836	.028	.046	.836	.085	.005	.473	-.222	-.359	.473	-.175	-2.986	0.140	-1.4	0.9	-1.9	0.7	A-	
2329	684376	3	434	.380	.171	.380	.336	.106	.007	.363	-.161	.363	-.110	-.161	-0.447	0.108	0.2	1.0	1.8	1.1	A-	
2330	692118	3	434	.825	.058	.035	.825	.078	.005	.511	-.255	-.303	.511	-.241	-2.890	0.136	-1.8	0.9	-2.1	0.7	A-	
2331	684415	3	434	.666	.666	.039	.090	.200	.005	.497	.497	-.275	-.277	-.218	-1.870	0.112	-1.9	0.9	-1.8	0.9	A+	
2332	682833	3	434	.795	.046	.795	.090	.062	.007	.447	-.186	.447	-.294	-.177	-2.662	0.129	-1.1	0.9	-0.5	0.9	B+	
2333	682903	3	434	.399	.127	.399	.270	.191	.014	.223	-.162	.223	.036	-.145	-0.540	0.108	3.3	1.1	5.1	1.4	A+	
2334	684422	3	434	.489	.488	.134	.288	.076	.014	.293	.293	-.046	-.122	-.232	-0.981	0.106	2.8	1.1	3.0	1.2	A+	
2335	682869	3	434	.636	.636	.111	.187	.053	.014	.309	.309	-.234	-.124	-.058	-1.711	0.110	2.3	1.1	2.0	1.1	A+	
2336	684399	3	434	.726	.141	.037	.726	.081	.016	.335	-.071	-.209	.335	-.259	-2.210	0.117	1.2	1.1	0.8	1.1	A-	
2337	684382	3	434	.221	.058	.514	.221	.194	.014	.208	-.099	-.044	.208	-.069	0.469	0.126	1.8	1.1	3.2	1.5	A-	
2338	684365	3	434	.516	.154	.516	.152	.164	.014	.283	-.108	.283	-.166	-.077	-1.114	0.106	3.3	1.1	2.6	1.2	A+	
2339	684367	3	436	.278	.278	.046	.573	.103	.000	.095	.095	-.168	.098	-.183	0.298	0.117	4.9	1.3	5.3	1.6	A+	
2340	684336	3	436	.814	.814	.087	.044	.053	.002	.423	.423	-.203	-.243	-.236	-2.665	0.133	-0.7	1.0	-0.7	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2341	684410	3	436	.729	.039	.729	.108	.124	.000	.334	-.214	.334	-.213	-.124	-2.086	0.118	1.5	1.1	0.7	1.1	A+	
2342	682892	3	436	.828	.046	.828	.057	.069	.000	.392	-.191	.392	-.292	-.158	-2.774	0.137	-0.5	1.0	-0.1	1.0	A+	
2343	684427	3	436	.461	.197	.156	.186	.461	.000	.388	-.142	-.186	-.179	.388	-0.675	0.107	0.6	1.0	1.2	1.1	A+	
2344	688906	3	436	.890	.025	.034	.050	.890	.000	.411	-.219	-.330	-.156	.411	-3.367	0.162	-0.9	0.9	-1.2	0.8	A+	
2345	682884	3	436	.684	.683	.039	.083	.190	.005	.566	.566	-.239	-.263	-.345	-1.817	0.114	-3.0	0.9	-3.3	0.8	B-	
2346	684341	3	436	.805	.149	.021	.023	.805	.002	.490	-.348	-.246	-.194	.490	-2.595	0.131	-1.5	0.9	-1.6	0.8	A+	
2347	684342	3	436	.794	.099	.794	.048	.057	.002	.477	-.279	.477	-.251	-.216	-2.511	0.129	-1.4	0.9	-1.3	0.8	A-	
2348	684355	3	436	.755	.071	.028	.144	.755	.002	.419	-.127	-.237	-.293	.419	-2.244	0.122	-0.1	1.0	-1.0	0.9	A-	
2349	684393	3	436	.817	.050	.817	.053	.078	.002	.527	-.300	.527	-.255	-.281	-2.683	0.134	-2.2	0.8	-2.1	0.7	A-	
2350	684377	3	436	.404	.404	.135	.252	.204	.005	.394	.394	-.068	-.327	-.043	-0.387	0.108	0.6	1.0	1.0	1.1	A-	
2351	682890	3	436	.895	.028	.057	.894	.011	.009	.417	-.175	-.294	.417	-.162	-3.421	0.165	-0.8	0.9	-1.5	0.7	C+	
2352	684416	3	436	.823	.057	.053	.060	.823	.007	.545	-.232	-.313	-.309	.545	-2.737	0.136	-2.3	0.8	-2.7	0.7	A-	
2353	688901	3	436	.250	.266	.163	.250	.312	.009	.079	-.065	-.180	.079	.158	0.466	0.120	3.3	1.2	7.2	2.0	A+	
2354	682904	3	436	.819	.062	.037	.073	.819	.009	.542	-.335	-.235	-.281	.542	-2.701	0.134	-2.2	0.8	-2.8	0.7	A+	
2355	684423	3	436	.200	.200	.523	.165	.106	.007	.120	.120	.139	-.196	-.110	0.806	0.129	1.9	1.1	5.2	1.8	B+	
2356	684374	3	436	.784	.784	.057	.128	.021	.009	.428	.428	-.310	-.182	-.204	-2.445	0.127	-0.5	1.0	-0.4	1.0	A-	
2357	684386	3	436	.473	.204	.156	.472	.158	.009	.342	-.164	-.184	.342	-.068	-0.732	0.107	1.9	1.1	2.9	1.2	A-	
2358	684383	3	436	.654	.654	.092	.112	.133	.009	.468	.468	-.254	-.296	-.124	-1.652	0.111	-0.8	1.0	-1.0	0.9	A+	
2359	684400	3	430	.412	.412	.256	.030	.302	.000	.357	.357	-.280	-.104	-.077	-0.409	0.107	0.6	1.0	1.3	1.1	A-	
2360	684384	3	430	.249	.072	.249	.147	.530	.002	.151	-.131	.151	-.114	.015	0.470	0.120	3.1	1.2	2.9	1.3	A-	
2361	684337	3	430	.656	.063	.656	.063	.219	.000	.533	-.200	.533	-.247	-.351	-1.597	0.110	-3.1	0.9	-3.0	0.8	A+	
2362	684411	3	430	.840	.023	.840	.109	.028	.000	.336	-.117	.336	-.211	-.241	-2.763	0.140	-0.2	1.0	-0.1	1.0	A-	
2363	689229	3	430	.598	.077	.151	.174	.598	.000	.411	-.278	-.204	-.144	.411	-1.303	0.107	-0.4	1.0	-0.5	1.0	A+	
2364	684403	3	430	.572	.153	.121	.572	.151	.002	.466	-.176	-.257	.466	-.218	-1.178	0.106	-1.8	0.9	-1.6	0.9	A-	
2365	684348	3	430	.628	.067	.058	.628	.244	.002	.288	-.102	-.264	.288	-.108	-1.454	0.108	2.2	1.1	2.5	1.2	A+	
2366	682909	3	430	.430	.430	.163	.260	.142	.005	.304	.304	-.073	-.207	-.068	-0.499	0.106	2.2	1.1	2.0	1.1	A-	
2367	682870	3	430	.279	.114	.321	.279	.277	.009	.299	-.086	-.160	.299	-.043	0.288	0.116	0.9	1.1	0.9	1.1	A-	
2368	684343	3	430	.719	.119	.056	.102	.719	.005	.432	-.289	-.248	-.114	.432	-1.940	0.116	-1.1	0.9	-1.3	0.9	A-	
2369	684356	3	430	.914	.044	.014	.914	.016	.012	.382	-.276	-.153	.382	-.164	-3.550	0.180	-0.6	0.9	-1.6	0.7	A-	
2370	684394	3	430	.772	.026	.021	.772	.172	.009	.318	-.160	-.176	.318	-.191	-2.267	0.124	0.5	1.0	0.6	1.1	A-	
2371	684378	3	430	.458	.167	.181	.458	.179	.014	.406	-.226	-.167	.406	-.086	-0.634	0.105	-0.3	1.0	-0.4	1.0	A-	
2372	682885	3	430	.544	.321	.060	.544	.060	.014	.529	-.305	-.219	.529	-.201	-1.044	0.106	-3.5	0.9	-3.0	0.8	A+	
2373	684417	3	430	.470	.137	.251	.128	.470	.014	.522	-.364	-.210	-.080	.522	-0.689	0.105	-3.5	0.9	-3.1	0.8	A-	
2374	682880	3	430	.554	.279	.063	.553	.091	.014	.549	-.330	-.284	.549	-.134	-1.088	0.106	-4.1	0.9	-3.7	0.8	A-	
2375	682905	3	430	.540	.079	.063	.540	.300	.019	.317	-.301	-.150	.317	-.052	-1.021	0.105	2.1	1.1	1.6	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2376	684424	3	430	.247	.240	.247	.400	.086	.028	.195	-.163	.195	.110	-.202	0.484	0.120	1.7	1.1	3.0	1.3	A+	
2377	692122	3	430	.874	.023	.051	.033	.874	.019	.419	-.199	-.256	-.203	.419	-3.084	0.154	-0.7	0.9	-2.0	0.7	B+	
2378	684369	3	430	.588	.209	.588	.081	.102	.019	.405	-.139	.405	-.215	-.224	-1.257	0.107	-0.3	1.0	-0.1	1.0	A+	
2379	682871	3	430	.235	.523	.142	.235	.100	.000	.301	-.191	.055	.301	-.171	0.424	0.125	1.0	1.1	1.7	1.2	A+	
2380	684401	3	430	.905	.028	.035	.033	.905	.000	.486	-.242	-.356	-.212	.486	-3.721	0.173	-1.5	0.8	-2.1	0.6	A+	
2381	684360	3	430	.774	.774	.040	.077	.107	.002	.403	.403	-.264	-.221	-.175	-2.543	0.126	0.0	1.0	0.6	1.1	B-	
2382	684338	3	430	.898	.026	.051	.898	.023	.002	.471	-.256	-.234	.471	-.312	-3.633	0.168	-1.1	0.9	-2.4	0.5	A+	
2383	684412	3	430	.781	.044	.781	.144	.030	.000	.428	-.210	.428	-.266	-.236	-2.591	0.127	-0.3	1.0	-1.3	0.8	A+	
2384	692119	3	430	.942	.040	.942	.009	.009	.000	.336	-.185	.336	-.236	-.207	-4.309	0.214	-0.4	0.9	-1.1	0.7	A+	
2385	684431	3	430	.600	.174	.600	.100	.121	.005	.437	-.116	.437	-.217	-.281	-1.532	0.110	-0.2	1.0	-0.4	1.0	A+	
2386	684349	3	430	.679	.679	.165	.098	.056	.002	.298	.298	-.148	-.189	-.093	-1.956	0.114	2.6	1.1	1.8	1.2	A-	
2387	682886	3	430	.828	.098	.030	.037	.828	.007	.585	-.403	-.259	-.252	.585	-2.943	0.138	-2.7	0.8	-3.1	0.6	A+	
2388	682876	3	430	.554	.553	.347	.063	.033	.005	.282	.282	-.083	-.231	-.187	-1.295	0.108	3.9	1.2	2.9	1.2	A+	
2389	684344	3	430	.300	.300	.195	.200	.300	.005	.291	-.201	.056	-.130	.291	0.018	0.116	1.7	1.1	2.7	1.3	A+	
2390	682898	3	430	.802	.067	.091	.030	.802	.009	.507	-.254	-.311	-.217	.507	-2.743	0.132	-1.6	0.9	-1.9	0.8	A-	
2391	684395	3	430	.733	.044	.733	.040	.177	.007	.292	-.243	.292	-.210	-.071	-2.271	0.120	2.1	1.1	1.4	1.2	A-	
2392	688907	3	430	.372	.235	.244	.372	.137	.012	.298	-.099	-.106	.298	-.106	-0.380	0.111	1.9	1.1	3.8	1.3	A-	
2393	682910	3	430	.770	.040	.030	.770	.147	.014	.439	-.208	-.278	.439	-.196	-2.511	0.125	-0.7	1.0	-0.5	0.9	A-	
2394	684418	3	430	.563	.184	.165	.563	.072	.016	.459	-.198	-.148	.459	-.296	-1.342	0.108	-0.5	1.0	-0.3	1.0	A-	
2395	682881	3	430	.733	.151	.053	.733	.047	.016	.523	-.342	-.222	.523	-.174	-2.271	0.120	-1.9	0.9	-2.3	0.8	A+	
2396	682906	3	430	.909	.019	.035	.023	.909	.014	.414	-.144	-.223	-.268	.414	-3.782	0.177	-0.8	0.9	-1.2	0.7	A-	
2397	684425	3	430	.821	.821	.079	.044	.042	.014	.522	.522	-.314	-.267	-.210	-2.886	0.136	-1.9	0.9	-2.2	0.7	A+	
2398	684404	3	430	.719	.719	.028	.165	.074	.014	.225	.225	-.175	-.115	-.044	-2.186	0.118	3.4	1.2	3.3	1.4	A+	
2399	684405	3	427	.916	.030	.916	.035	.019	.000	.316	-.187	.316	-.207	-.130	-3.718	0.187	0.1	1.0	-0.3	0.9	B+	
2400	682872	3	427	.445	.164	.075	.445	.311	.005	.271	-.180	-.281	.271	.021	-0.507	0.109	4.4	1.2	3.9	1.3	A+	
2401	688908	3	427	.794	.108	.794	.030	.068	.000	.469	-.272	.469	-.321	-.200	-2.479	0.133	-0.6	1.0	-0.5	0.9	A+	
2402	684361	3	427	.391	.391	.073	.450	.084	.002	.298	.298	-.252	-.079	-.118	-0.230	0.111	2.5	1.1	2.8	1.3	C-	
2403	684339	3	427	.853	.056	.852	.044	.044	.002	.539	-.297	.539	-.308	-.269	-2.973	0.150	-1.6	0.9	-2.4	0.6	A+	
2404	684388	3	427	.794	.794	.037	.023	.143	.002	.381	.381	-.231	-.205	-.226	-2.479	0.133	0.8	1.1	0.1	1.0	A+	
2405	682894	3	427	.810	.033	.810	.119	.037	.000	.517	-.275	.517	-.333	-.241	-2.606	0.137	-1.3	0.9	-1.9	0.8	A-	
2406	684432	3	427	.597	.066	.260	.597	.075	.002	.478	-.197	-.233	.478	-.323	-1.282	0.111	-0.9	1.0	-1.1	0.9	A+	
2407	684350	3	427	.831	.026	.080	.831	.061	.002	.495	-.185	-.358	.495	-.256	-2.782	0.142	-1.1	0.9	-0.7	0.9	A+	
2408	682887	3	427	.768	.023	.105	.094	.768	.009	.574	-.205	-.338	-.325	.574	-2.293	0.128	-2.4	0.8	-1.7	0.8	A-	
2409	682877	3	427	.735	.131	.084	.042	.735	.007	.426	-.149	-.289	-.210	.426	-2.074	0.123	0.3	1.0	1.8	1.2	A+	
2410	684345	3	427	.600	.054	.600	.237	.101	.009	.452	-.222	.452	-.226	-.187	-1.295	0.111	0.0	1.0	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2411	682899	3	427	.775	.136	.037	.044	.775	.007	.442	-.285	-.178	-.184	.442	-2.342	0.129	0.0	1.0	-1.1	0.9	A-	
2412	684396	3	427	.667	.068	.096	.667	.162	.007	.414	-.200	-.330	.414	-.087	-1.665	0.115	0.9	1.1	0.5	1.0	A+	
2413	684379	3	427	.705	.105	.705	.070	.110	.009	.435	-.285	.435	-.270	-.068	-1.884	0.119	0.3	1.0	0.2	1.0	A-	
2414	682830	3	427	.841	.061	.047	.841	.040	.012	.529	-.374	-.232	.529	-.207	-2.865	0.145	-1.6	0.9	-2.0	0.7	A+	
2415	684419	3	427	.452	.452	.077	.185	.276	.009	.246	.246	-.130	-.125	-.052	-0.543	0.109	4.3	1.2	5.8	1.5	A+	
2416	682882	3	427	.728	.728	.087	.084	.084	.016	.500	.500	-.461	-.127	-.147	-2.029	0.122	-1.1	0.9	-0.2	1.0	A-	
2417	682907	3	427	.869	.066	.026	.869	.021	.019	.505	-.243	-.337	.505	-.253	-3.137	0.156	-1.2	0.9	-2.1	0.6	A+	
2418	684426	3	427	.888	.047	.026	.026	.888	.014	.519	-.313	-.289	-.223	.519	-3.346	0.166	-1.4	0.9	-2.2	0.6	C+	
2419	688909	3	439	.581	.264	.096	.059	.581	.000	.341	-.086	-.265	-.222	.341	-1.092	0.107	2.1	1.1	3.1	1.2	A+	
2420	684406	3	439	.811	.025	.103	.811	.062	.000	.359	-.146	-.308	.359	-.101	-2.470	0.133	0.8	1.1	1.0	1.1	B+	
2421	682873	3	439	.296	.109	.137	.458	.296	.000	.129	-.139	-.039	-.005	.129	0.365	0.114	4.3	1.2	7.5	2.0	A-	
2422	684428	3	439	.693	.112	.071	.692	.121	.005	.435	-.164	-.289	.435	-.196	-1.689	0.114	-0.1	1.0	-0.4	1.0	A-	
2423	684362	3	439	.403	.139	.169	.287	.403	.002	.306	-.108	-.241	-.041	.306	-0.208	0.107	2.9	1.1	2.1	1.2	A-	
2424	684340	3	439	.861	.036	.021	.077	.861	.005	.244	-.128	-.069	-.141	.244	-2.907	0.150	1.5	1.2	1.0	1.2	A+	
2425	684389	3	439	.959	.959	.007	.009	.016	.009	.475	.475	-.182	-.195	-.264	-4.419	0.252	-1.3	0.8	-2.9	0.2	A-	
2426	682895	3	439	.875	.023	.875	.048	.043	.011	.405	-.182	.405	-.234	-.118	-3.047	0.156	-0.4	1.0	-1.2	0.8	A+	
2427	684433	3	439	.513	.513	.084	.210	.180	.014	.492	.492	-.218	-.176	-.198	-0.751	0.106	-2.0	0.9	-1.7	0.9	A-	
2428	684351	3	439	.494	.494	.080	.123	.289	.014	.418	.418	-.152	-.155	-.175	-0.661	0.106	0.0	1.0	-0.2	1.0	A-	
2429	682888	3	439	.715	.068	.046	.153	.715	.018	.500	-.302	-.248	-.144	.500	-1.822	0.117	-1.5	0.9	-1.6	0.9	A+	
2430	682878	3	439	.854	.043	.039	.854	.043	.021	.586	-.258	-.265	.586	-.258	-2.841	0.147	-2.6	0.8	-3.3	0.5	A+	
2431	684346	3	439	.688	.025	.178	.688	.089	.021	.443	-.118	-.169	.443	-.251	-1.663	0.114	-0.3	1.0	-0.7	0.9	A-	
2432	682900	3	439	.797	.084	.041	.055	.797	.023	.609	-.224	-.284	-.321	.609	-2.366	0.130	-3.2	0.8	-3.4	0.6	A-	
2433	684413	3	439	.886	.043	.032	.014	.886	.025	.615	-.329	-.294	-.226	.615	-3.173	0.162	-2.8	0.7	-3.8	0.4	A+	
2434	684380	3	439	.503	.134	.189	.503	.153	.021	.453	-.239	-.176	.453	-.073	-0.706	0.106	-0.9	1.0	-0.4	1.0	A-	
2435	682831	3	439	.877	.021	.059	.021	.877	.023	.550	-.186	-.285	-.261	.550	-3.071	0.157	-2.1	0.8	-2.9	0.5	A-	
2436	684420	3	439	.396	.146	.210	.223	.396	.025	.291	-.152	-.058	-.021	.291	-0.173	0.108	2.6	1.1	2.9	1.2	A+	
2437	682867	3	439	.667	.667	.107	.064	.137	.025	.511	.511	-.139	-.335	-.173	-1.547	0.112	-1.8	0.9	-1.0	0.9	A-	
2438	682908	3	439	.959	.007	.959	.005	.009	.021	.397	-.163	.397	-.003	-.162	-4.419	0.252	-0.8	0.8	-1.5	0.5	A-	
2439	682875	3	427	.883	.061	.033	.883	.021	.002	.404	-.292	-.183	.404	-.150	-3.237	0.159	-0.8	0.9	-1.3	0.8	A+	
2440	684397	3	427	.700	.101	.143	.700	.056	.000	.481	-.240	-.296	.481	-.194	-1.891	0.115	-1.7	0.9	-1.8	0.9	A+	
2441	682896	3	427	.831	.073	.831	.059	.037	.000	.288	-.227	.288	-.168	-.050	-2.758	0.138	0.5	1.0	0.7	1.1	B+	
2442	682879	3	427	.801	.098	.801	.012	.089	.000	.439	-.296	.439	-.103	-.267	-2.525	0.130	-0.9	0.9	-1.5	0.8	A-	
2443	684429	3	427	.279	.237	.330	.155	.279	.000	.252	-.178	.008	-.115	.252	0.247	0.117	1.5	1.1	2.4	1.2	A-	
2444	684363	3	427	.244	.560	.082	.244	.112	.002	.282	-.048	-.181	.282	-.127	0.459	0.121	1.0	1.1	1.5	1.2	B-	
2445	684352	3	427	.258	.089	.417	.234	.258	.002	.210	-.161	.024	-.119	.210	0.372	0.119	2.0	1.1	3.0	1.3	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2446	684390	3	427	.766	.766	.117	.082	.033	.002	.336	.336	-.228	-.194	-.046	-2.285	0.123	0.4	1.0	1.6	1.2	A-	
2447	684407	3	427	.930	.047	.007	.930	.014	.002	.437	-.365	-.117	.437	-.150	-3.855	0.197	-1.0	0.8	-2.3	0.5	A+	
2448	684370	3	427	.290	.290	.361	.215	.131	.002	.102	.102	.089	-.143	-.068	0.179	0.115	3.8	1.2	6.5	1.7	A-	
2449	684357	3	427	.527	.056	.117	.527	.297	.002	.329	-.132	-.193	.329	-.141	-1.010	0.106	1.7	1.1	1.5	1.1	A-	
2450	682889	3	427	.738	.030	.185	.040	.738	.007	.481	-.210	-.298	-.232	.481	-2.109	0.119	-1.7	0.9	-2.0	0.8	B+	
2451	684372	3	427	.529	.059	.143	.529	.258	.012	.374	-.137	-.122	.374	-.217	-1.021	0.106	0.8	1.0	0.5	1.0	A+	
2452	684347	3	427	.323	.094	.323	.335	.237	.012	.249	-.270	.249	-.029	-.009	-0.002	0.112	2.0	1.1	2.5	1.2	A-	
2453	682901	3	427	.508	.028	.356	.508	.096	.012	.450	-.139	-.310	.450	-.112	-0.920	0.106	-1.3	1.0	-1.7	0.9	A-	
2454	684414	3	858	.776	.031	.069	.108	.776	.015	.511	-.228	-.280	-.252	.511	-2.377	0.088	-3.2	0.9	-3.7	0.7	A+	A-
2455	684381	3	858	.780	.780	.070	.080	.055	.015	.450	.450	-.178	-.220	-.252	-2.400	0.088	-1.8	0.9	-2.1	0.8	A+	A-
2456	682832	3	858	.921	.023	.921	.033	.009	.014	.358	-.196	.358	-.160	-.161	-3.724	0.132	-0.8	0.9	-2.5	0.6	A+	A+
2457	684421	3	858	.377	.104	.164	.340	.376	.015	.270	-.128	-.217	.027	.270	-0.316	0.077	3.6	1.1	3.6	1.2	A-	A+
2458	682868	3	858	.322	.322	.174	.263	.226	.015	.342	.342	-.146	-.237	.059	-0.030	0.079	0.4	1.0	1.6	1.1	A+	A+
2459	682902	3	431	.323	.318	.323	.169	.190	.000	.266	-.080	.266	-.056	-.169	-0.071	0.112	1.6	1.1	2.8	1.2	A+	
2460	682874	3	431	.450	.039	.255	.450	.251	.005	.450	-.167	-.251	.450	-.183	-0.711	0.105	-1.5	1.0	-1.1	0.9	A-	
2461	684398	3	431	.659	.065	.070	.204	.659	.002	.387	-.199	-.173	-.221	.387	-1.723	0.110	-0.2	1.0	-0.3	1.0	A+	
2462	684408	3	431	.381	.193	.056	.381	.371	.000	.348	-.157	-.102	.348	-.173	-0.372	0.108	0.5	1.0	2.3	1.1	A-	
2463	684366	3	431	.234	.234	.186	.478	.097	.005	.199	.199	-.138	.056	-.168	0.446	0.123	2.0	1.1	3.0	1.3	A-	
2464	684430	3	431	.508	.237	.167	.079	.508	.009	.355	-.242	-.050	-.150	.355	-0.987	0.105	1.0	1.0	1.0	1.1	A-	
2465	684364	3	431	.362	.362	.244	.121	.269	.005	.284	.284	-.234	-.115	.028	-0.278	0.109	1.9	1.1	1.9	1.1	A+	
2466	684358	3	431	.601	.601	.107	.202	.088	.002	.391	.391	-.136	-.187	-.241	-1.431	0.107	-0.1	1.0	-0.3	1.0	A-	
2467	684391	3	431	.935	.016	.028	.014	.935	.007	.379	-.135	-.296	-.122	.379	-3.963	0.202	-0.8	0.9	-2.2	0.5	B+	
2468	682897	3	431	.882	.005	.100	.882	.009	.005	.209	-.130	-.144	.209	-.063	-3.253	0.156	0.2	1.0	1.9	1.4	A-	
2469	684371	3	431	.443	.443	.146	.209	.197	.005	.315	.315	-.063	-.123	-.188	-0.678	0.105	1.7	1.1	2.4	1.1	A+	
2470	684353	3	431	.566	.049	.028	.566	.350	.007	.405	-.220	-.188	.405	-.230	-1.263	0.106	-0.4	1.0	-0.4	1.0	A+	
2471	692120	3	431	.738	.738	.072	.051	.130	.009	.472	.472	-.207	-.286	-.219	-2.159	0.118	-2.0	0.9	-2.1	0.8	A+	
2472	684373	3	431	.355	.204	.125	.304	.355	.012	.387	-.170	-.259	-.025	.387	-0.242	0.109	-0.5	1.0	0.6	1.0	A-	
2473	684375	3	431	.531	.531	.116	.179	.155	.019	.384	.384	-.256	-.156	-.086	-1.097	0.105	0.2	1.0	0.9	1.0	A+	
2474	680939	4	136	.581	.037	.581	.081	.301	.000	.282	-.058	.282	-.143	-.195	-0.929	0.194	2.2	1.2	1.9	1.3	A+	
2475	681647	4	136	.640	.132	.022	.206	.640	.000	.505	-.427	-.173	-.179	.505	-1.237	0.199	-0.9	0.9	-0.7	0.9	A-	
2476	685339	4	136	.831	.831	.000	.022	.147	.000	.306	.306	.000	-.204	-.239	-2.464	0.247	0.5	1.1	0.2	1.0	A+	
2477	684171	4	136	.529	.301	.044	.125	.529	.000	.293	-.201	-.040	-.138	.293	-0.670	0.192	2.2	1.2	1.7	1.2	B+	
2478	681653	4	136	.449	.360	.449	.081	.110	.000	.400	-.164	.400	-.159	-.245	-0.266	0.192	0.5	1.0	1.3	1.2	A-	
2479	682341	4	136	.522	.213	.154	.103	.522	.007	.248	-.126	-.059	-.112	.248	-0.633	0.192	2.8	1.2	2.2	1.3	A+	
2480	681620	4	136	.493	.110	.493	.118	.272	.007	.245	-.139	.245	-.192	.000	-0.486	0.191	2.9	1.2	2.9	1.4	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2481	683898	4	136	.860	.029	.860	.059	.044	.007	.383	-.224	.383	-.335	.004	-2.726	0.265	-0.2	1.0	-0.1	0.9	A+	
2482	682321	4	136	.596	.066	.596	.257	.074	.007	.356	-.245	.356	-.134	-.148	-1.005	0.195	1.2	1.1	2.3	1.3	A-	
2483	680967	4	136	.846	.029	.846	.044	.074	.007	.420	-.260	.420	-.195	-.194	-2.590	0.255	-0.5	0.9	-0.5	0.8	A+	
2484	684159	4	136	.919	.044	.022	.919	.007	.007	.404	-.328	-.142	.404	-.058	-3.416	0.330	-0.6	0.8	-0.7	0.6	A-	
2485	682350	4	136	.404	.404	.206	.213	.169	.007	.453	.453	-.119	-.167	-.237	-0.041	0.195	-0.3	1.0	-0.7	0.9	A-	
2486	680974	4	136	.596	.162	.596	.118	.118	.007	.539	-.331	.539	-.169	-.221	-1.005	0.195	-1.4	0.9	-1.2	0.9	A-	
2487	681665	4	136	.544	.132	.110	.206	.544	.007	.551	-.243	-.235	-.250	.551	-0.743	0.192	-1.7	0.9	-1.5	0.8	A-	
2488	682333	4	136	.507	.029	.507	.404	.051	.007	.547	-.269	.547	-.322	-.238	-0.560	0.191	-1.7	0.9	-1.8	0.8	A-	
2489	680985	4	136	.662	.662	.118	.147	.066	.007	.590	.590	-.164	-.470	-.172	-1.356	0.201	-2.0	0.8	-1.7	0.8	A-	
2490	683903	4	136	.368	.140	.279	.206	.368	.007	.468	-.156	-.322	-.026	.468	0.151	0.198	-0.7	0.9	-0.6	0.9	A-	
2491	682325	4	136	.463	.110	.184	.235	.463	.007	.419	-.294	-.094	-.149	.419	-0.339	0.192	0.2	1.0	0.1	1.0	A-	
2492	682339	4	136	.831	.051	.831	.059	.051	.007	.565	-.300	.565	-.277	-.286	-2.464	0.247	-1.5	0.8	-1.7	0.6	A+	
2493	684173	4	136	.772	.772	.088	.066	.059	.015	.515	.515	-.213	-.331	-.212	-2.024	0.224	-1.2	0.9	-0.9	0.8	B-	
2494	683246	4	138	.420	.152	.420	.333	.094	.000	.259	-.245	.259	.037	-.197	-0.120	0.189	2.0	1.2	1.4	1.2	A-	
2495	680941	4	138	1.000	.000	1.00	.000	.000	.000	1.000	.000	1.000	.000	.000	-7.111	1.835	0.0	1.0	0.0	1.0	A-	
2496	681648	4	138	.935	.935	.036	.014	.014	.000	.253	.253	-.311	-.094	.058	-3.562	0.357	-0.1	1.0	0.0	0.9	A+	
2497	685340	4	138	.609	.609	.029	.181	.181	.000	.413	.413	-.231	-.164	-.259	-1.038	0.191	0.0	1.0	-0.4	1.0	A-	
2498	680950	4	138	.732	.181	.014	.732	.072	.000	.303	-.183	-.140	.303	-.182	-1.706	0.208	0.7	1.1	1.0	1.2	A+	
2499	681630	4	138	.732	.036	.087	.732	.138	.007	.488	-.165	-.336	.488	-.228	-1.706	0.208	-1.0	0.9	-1.2	0.8	A+	
2500	684168	4	138	.333	.304	.333	.152	.203	.007	.122	.095	.122	-.083	-.147	0.325	0.197	2.8	1.3	3.0	1.4	A-	
2501	680959	4	138	.652	.652	.130	.123	.094	.000	.406	.406	-.187	-.255	-.160	-1.262	0.195	0.1	1.0	-0.4	1.0	B-	
2502	681666	4	138	.319	.043	.043	.319	.594	.000	.319	-.228	-.219	.319	-.117	0.403	0.199	0.6	1.1	0.6	1.1	A-	
2503	682322	4	138	.623	.094	.623	.101	.174	.007	.464	-.185	.464	-.170	-.289	-1.112	0.192	-0.7	1.0	-1.0	0.9	A-	
2504	680988	4	138	.493	.159	.493	.232	.101	.014	.307	-.144	.307	-.086	-.140	-0.472	0.187	1.4	1.1	1.9	1.2	B+	
2505	683261	4	138	.833	.058	.094	.833	.014	.000	.524	-.355	-.334	.524	-.124	-2.404	0.243	-1.1	0.8	-1.6	0.6	B+	
2506	682351	4	138	.355	.196	.355	.290	.159	.000	.394	-.037	.394	-.155	-.283	0.210	0.194	-0.1	1.0	0.4	1.0	A+	
2507	684172	4	138	.949	.036	.007	.949	.007	.000	.349	-.330	-.120	.349	-.056	-3.846	0.400	-0.2	0.9	-1.1	0.5	A-	
2508	683899	4	138	.710	.710	.101	.152	.036	.000	.463	.463	-.327	-.270	-.077	-1.579	0.204	-0.7	0.9	-1.1	0.8	B-	
2509	682335	4	138	.341	.312	.341	.145	.196	.007	.261	-.096	.261	-.108	-.105	0.286	0.196	1.3	1.1	1.4	1.2	A-	
2510	680986	4	138	.413	.413	.051	.370	.159	.007	.303	.303	-.258	-.039	-.209	-0.084	0.189	1.3	1.1	1.0	1.1	A+	
2511	683904	4	138	.935	.014	.935	.022	.022	.007	.385	-.200	.385	-.196	-.321	-3.562	0.357	-0.5	0.9	-0.9	0.6	A+	
2512	682326	4	138	.384	.297	.145	.384	.167	.007	.345	-.168	-.201	.345	-.023	0.061	0.191	0.7	1.1	1.3	1.2	A+	
2513	682340	4	138	.529	.167	.188	.529	.101	.014	.548	-.101	-.420	.548	-.134	-0.647	0.187	-2.1	0.9	-2.2	0.8	A-	
2514	683883	4	138	.775	.036	.775	.080	.109	.000	.390	-.147	.390	-.229	-.236	-2.160	0.220	0.1	1.0	-0.7	0.8	A+	
2515	683247	4	138	.283	.094	.370	.283	.254	.000	.147	-.124	.105	.147	-.185	0.466	0.207	1.9	1.2	3.1	1.6	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2516	681613	4	138	.406	.101	.384	.109	.406	.000	.466	-.087	-.265	-.236	.466	-0.200	0.192	-0.8	0.9	-0.2	1.0	A+	
2517	682308	4	138	.659	.203	.659	.065	.072	.000	.584	-.406	.584	-.232	-.218	-1.473	0.197	-2.3	0.8	-1.8	0.8	B+	
2518	681658	4	138	.848	.848	.087	.043	.022	.000	.420	.420	-.245	-.245	-.218	-2.710	0.252	-0.6	0.9	-0.7	0.8	A-	
2519	680951	4	138	.732	.022	.732	.072	.167	.007	.432	-.134	.432	-.212	-.278	-1.884	0.209	-0.2	1.0	-0.7	0.9	B-	
2520	684169	4	138	.362	.362	.290	.152	.188	.007	.261	.261	-.012	-.364	.062	0.024	0.195	1.9	1.2	1.7	1.2	B-	
2521	683262	4	138	.268	.268	.130	.225	.362	.014	.198	.198	-.294	-.199	.254	0.553	0.210	1.7	1.2	1.9	1.3	A-	
2522	680960	4	138	.500	.138	.500	.246	.101	.014	.492	-.192	.492	-.164	-.270	-0.667	0.189	-1.0	0.9	-0.9	0.9	A+	
2523	685345	4	138	.638	.638	.101	.109	.138	.014	.441	.441	-.037	-.221	-.303	-1.357	0.195	-0.3	1.0	-0.3	1.0	A+	
2524	681635	4	138	.623	.623	.246	.072	.043	.014	.480	.480	-.256	-.171	-.245	-1.282	0.194	-0.9	0.9	-0.4	0.9	A+	
2525	680968	4	138	.580	.580	.210	.123	.072	.014	.485	.485	-.316	-.093	-.200	-1.061	0.191	-0.8	0.9	-1.0	0.9	A-	
2526	683238	4	138	.420	.399	.080	.087	.420	.014	.314	.059	-.263	-.300	.314	-0.273	0.191	1.6	1.1	1.1	1.1	A-	
2527	682353	4	138	.674	.123	.145	.674	.043	.014	.522	-.159	-.330	.522	-.237	-1.551	0.199	-1.5	0.9	-1.1	0.8	A-	
2528	681604	4	138	.775	.036	.087	.775	.087	.014	.530	-.213	-.365	.530	-.180	-2.160	0.220	-1.4	0.9	-1.5	0.7	A-	
2529	683900	4	138	.710	.138	.080	.710	.058	.014	.570	-.268	-.274	.570	-.274	-1.755	0.205	-2.0	0.8	-1.9	0.7	A+	
2530	681673	4	138	.587	.587	.109	.239	.051	.014	.310	.310	-.206	-.001	-.273	-1.097	0.191	1.5	1.1	1.3	1.2	A+	
2531	680987	4	138	.428	.217	.196	.428	.145	.014	.395	.054	-.463	.395	-.016	-0.309	0.190	0.6	1.0	1.0	1.1	A-	
2532	683250	4	138	.203	.203	.188	.377	.217	.014	.040	.040	-.150	.131	.016	0.985	0.230	1.9	1.3	3.1	1.9	A-	
2533	682327	4	138	.529	.181	.123	.529	.145	.022	.489	-.202	-.229	.489	-.138	-0.809	0.189	-0.9	0.9	-0.8	0.9	A+	
2534	682328	4	133	.511	.263	.150	.075	.511	.000	.381	-.170	-.309	-.020	.381	-0.664	0.189	0.3	1.0	-0.1	1.0	A+	
2535	683248	4	133	.353	.256	.233	.158	.353	.000	.381	-.235	-.050	-.161	.381	0.109	0.198	-0.1	1.0	0.1	1.0	A+	
2536	683239	4	133	.218	.714	.038	.218	.030	.000	.114	-.023	.059	.114	-.281	0.908	0.228	1.5	1.2	2.6	1.6	A+	
2537	683244	4	133	.820	.820	.045	.053	.083	.000	.311	.311	-.177	-.223	-.120	-2.369	0.239	0.1	1.0	-0.1	1.0	B+	
2538	682310	4	133	.880	.008	.083	.880	.030	.000	.214	-.064	-.153	.214	-.129	-2.899	0.279	0.0	1.0	1.4	1.5	A-	
2539	681659	4	133	.932	.932	.023	.030	.008	.008	.323	.323	-.161	-.237	-.192	-3.584	0.356	-0.1	1.0	-0.8	0.6	A-	
2540	681617	4	133	.549	.060	.083	.308	.549	.000	.442	-.046	-.106	-.390	.442	-0.843	0.190	-0.7	1.0	-0.8	0.9	A-	
2541	682316	4	133	.617	.098	.165	.120	.617	.000	.658	-.297	-.396	-.260	.658	-1.172	0.193	-3.9	0.7	-3.4	0.7	A+	
2542	684175	4	133	.541	.150	.135	.541	.173	.000	.560	-.262	-.182	.560	-.326	-0.807	0.189	-2.6	0.8	-2.4	0.8	A-	
2543	680961	4	133	.594	.068	.233	.105	.594	.000	.377	-.051	-.330	-.107	.377	-1.061	0.192	0.2	1.0	0.0	1.0	A+	
2544	685346	4	133	.451	.218	.451	.083	.248	.000	.337	-.226	.337	-.214	-.036	-0.377	0.190	1.0	1.1	0.5	1.1	A-	
2545	681637	4	133	.977	.977	.008	.008	.008	.000	.273	.273	-.149	-.085	-.235	-4.780	0.592	0.0	0.9	-0.8	0.4	A-	
2546	684163	4	133	.233	.233	.271	.188	.308	.000	.111	.111	.015	-.083	-.046	0.806	0.223	1.7	1.2	3.5	1.8	A-	
2547	683251	4	133	.609	.045	.609	.143	.203	.000	.402	-.186	.402	-.262	-.163	-1.135	0.193	-0.1	1.0	-0.6	0.9	A+	
2548	681669	4	133	.774	.060	.068	.774	.098	.000	.431	-.131	-.374	.431	-.185	-2.052	0.222	-0.7	0.9	-0.8	0.8	A+	
2549	680980	4	133	.421	.421	.226	.135	.218	.000	.243	.243	-.131	-.074	-.097	-0.231	0.192	2.1	1.2	1.7	1.2	A-	
2550	685324	4	133	.790	.789	.068	.068	.068	.008	.361	.361	-.183	-.161	-.220	-2.152	0.227	0.1	1.0	-0.7	0.9	B-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2551	681674	4	133	.707	.173	.075	.707	.045	.000	.391	-.218	-.237	.391	-.159	-1.645	0.205	-0.3	1.0	0.6	1.1	A-	
2552	681610	4	133	.759	.068	.759	.068	.105	.000	.560	-.381	.560	-.278	-.240	-1.956	0.217	-2.0	0.8	-1.8	0.7	A-	
2553	683256	4	133	.481	.481	.128	.256	.135	.000	.244	.244	-.126	-.146	-.047	-0.521	0.189	2.0	1.1	2.2	1.2	A-	
2554	683249	4	127	.291	.197	.291	.039	.472	.000	.118	-.203	.118	-.116	.100	0.302	0.207	1.5	1.1	2.5	1.4	A-	
2555	682329	4	127	.638	.047	.197	.638	.110	.008	.493	-.177	-.385	.493	-.093	-1.346	0.196	-1.7	0.9	-1.8	0.8	A+	
2556	683240	4	127	.260	.173	.039	.260	.512	.016	.226	-.083	-.072	.226	-.052	0.479	0.213	0.6	1.1	0.8	1.1	B-	
2557	684176	4	127	.669	.669	.039	.126	.157	.008	.254	.254	-.127	-.038	-.230	-1.503	0.200	0.7	1.1	0.9	1.1	A+	
2558	680942	4	127	.701	.071	.118	.102	.701	.008	.494	-.332	-.144	-.256	.494	-1.666	0.205	-1.5	0.9	-1.7	0.8	A+	
2559	681649	4	127	.669	.157	.669	.126	.039	.008	.402	-.288	.402	-.115	-.149	-1.503	0.200	-0.7	1.0	-0.8	0.9	A-	
2560	681660	4	127	.795	.795	.094	.016	.087	.008	.264	.264	-.076	-.038	-.222	-2.227	0.231	0.2	1.0	0.1	1.0	A+	
2561	681618	4	127	.614	.165	.110	.102	.614	.008	.441	-.209	-.053	-.340	.441	-1.232	0.194	-1.1	0.9	-1.3	0.9	A-	
2562	682317	4	127	.236	.677	.031	.236	.055	.000	.156	-.072	-.043	.156	-.110	0.620	0.220	0.8	1.1	1.9	1.3	A+	
2563	683252	4	127	.409	.205	.197	.181	.409	.008	.166	-.096	.031	-.099	.166	-0.288	0.192	2.0	1.1	1.9	1.2	A+	
2564	680962	4	127	.244	.244	.173	.323	.252	.008	.489	.489	-.380	.013	-.127	0.572	0.218	-1.5	0.8	-1.5	0.8	A-	
2565	685347	4	127	.252	.228	.291	.213	.252	.016	.312	.047	-.255	-.038	.312	0.525	0.215	-0.2	1.0	0.2	1.0	A+	
2566	681638	4	127	.803	.803	.008	.118	.063	.008	.369	.369	-.195	-.137	-.279	-2.280	0.234	-0.4	0.9	-0.6	0.9	A+	
2567	681623	4	127	.457	.087	.165	.457	.283	.008	.309	-.259	-.221	.309	.040	-0.506	0.190	0.5	1.0	0.3	1.0	A-	
2568	684166	4	127	.756	.205	.756	.016	.016	.008	.153	-.070	.153	-.072	-.089	-1.977	0.218	1.0	1.1	1.3	1.2	B+	
2569	681643	4	127	.409	.409	.157	.228	.197	.008	.291	.291	-.085	-.180	-.049	-0.288	0.192	0.6	1.0	0.9	1.1	A+	
2570	680981	4	127	.449	.449	.055	.323	.165	.008	.178	.178	-.222	.058	-.129	-0.470	0.190	2.2	1.1	1.7	1.1	A+	
2571	685325	4	127	.465	.110	.110	.307	.465	.008	.368	-.154	-.357	-.013	.368	-0.542	0.190	-0.3	1.0	-0.2	1.0	B-	
2572	682336	4	127	.213	.126	.213	.220	.433	.008	.076	-.237	.076	-.115	.227	0.771	0.228	1.4	1.2	1.4	1.3	A-	
2573	681611	4	127	.630	.283	.630	.039	.039	.008	.434	-.290	.434	-.214	-.105	-1.307	0.195	-1.1	0.9	-1.0	0.9	A-	
2574	680975	4	132	.636	.091	.053	.220	.636	.000	.328	-.261	-.220	-.081	.328	-1.447	0.194	0.3	1.0	0.2	1.0	A+	
2575	682343	4	132	.849	.068	.038	.848	.045	.000	.472	-.338	-.222	.472	-.200	-2.754	0.254	-0.9	0.9	-1.6	0.6	A+	
2576	682315	4	132	.811	.121	.015	.053	.811	.000	.303	-.292	-.142	-.027	.303	-2.458	0.234	0.0	1.0	-0.2	0.9	A-	
2577	683265	4	132	.356	.091	.356	.106	.439	.008	.299	-.067	.299	-.260	-.081	-0.117	0.195	0.5	1.0	1.1	1.1	A+	
2578	684178	4	132	.636	.121	.121	.636	.106	.015	.311	-.147	-.128	.311	-.173	-1.447	0.194	0.6	1.0	0.3	1.0	A+	
2579	680943	4	132	.788	.136	.045	.788	.030	.000	.387	-.304	-.161	.387	-.118	-2.300	0.225	-0.6	0.9	-0.6	0.9	A-	
2580	681650	4	132	.447	.348	.091	.114	.447	.000	.253	-.139	-.110	-.088	.253	-0.555	0.188	1.3	1.1	2.7	1.3	A-	
2581	681662	4	132	.864	.030	.864	.030	.076	.000	.340	-.094	.340	-.226	-.234	-2.888	0.264	-0.4	0.9	-0.3	0.9	A-	
2582	680953	4	132	.492	.492	.250	.144	.114	.000	.536	.536	-.286	-.243	-.185	-0.766	0.187	-2.5	0.9	-2.3	0.8	B+	
2583	682318	4	132	.349	.182	.288	.348	.182	.000	.125	-.025	-.066	.125	-.052	-0.079	0.196	2.4	1.2	2.1	1.3	A+	
2584	684179	4	132	.470	.333	.068	.470	.129	.000	.463	-.288	-.133	.463	-.184	-0.661	0.188	-1.3	0.9	-1.4	0.9	A-	
2585	680964	4	132	.462	.462	.227	.152	.159	.000	.321	.321	-.128	-.253	-.043	-0.626	0.188	0.7	1.0	0.4	1.0	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2586	685348	4	132	.099	.326	.098	.424	.152	.000	.131	-.026	.131	.117	-.236	1.689	0.303	0.5	1.1	0.9	1.3	A-	
2587	682324	4	132	.796	.795	.083	.083	.038	.000	.373	.373	-.117	-.282	-.211	-2.351	0.228	-0.3	1.0	-0.6	0.9	A+	
2588	681624	4	132	.530	.530	.326	.114	.030	.000	.473	.473	-.216	-.270	-.287	-0.942	0.188	-1.5	0.9	-1.6	0.9	B+	
2589	683259	4	132	.242	.220	.205	.326	.242	.008	.037	-.041	-.178	.163	.037	0.505	0.216	1.7	1.2	3.6	1.7	A-	
2590	681644	4	132	.962	.023	.962	.000	.008	.008	.189	-.084	.189	.000	-.231	-4.359	0.463	0.0	1.0	0.0	0.9	A-	
2591	680982	4	132	.333	.144	.333	.333	.182	.008	.247	-.113	.247	.010	-.202	-0.002	0.198	1.0	1.1	1.0	1.1	A+	
2592	683901	4	132	.856	.038	.008	.091	.856	.008	.355	-.319	.055	-.225	.355	-2.820	0.259	-0.3	0.9	-0.7	0.8	A+	
2593	682337	4	132	.296	.098	.174	.424	.295	.008	.284	-.160	.049	-.197	.284	0.199	0.204	0.5	1.1	1.6	1.2	A-	
2594	681654	4	138	.188	.283	.065	.464	.188	.000	.172	.058	-.108	-.133	.172	0.771	0.229	0.7	1.1	1.3	1.3	A+	
2595	680976	4	138	.362	.304	.152	.362	.181	.000	.450	-.129	-.154	.450	-.265	-0.239	0.189	-1.1	0.9	-1.1	0.9	A+	
2596	682345	4	138	.188	.188	.109	.507	.196	.000	-.022	-.022	-.043	.052	-.011	0.771	0.229	1.6	1.2	2.8	1.7	A-	
2597	684170	4	138	.275	.203	.283	.239	.275	.000	.303	-.112	-.127	-.077	.303	0.219	0.203	0.3	1.0	0.1	1.0	B-	
2598	680983	4	138	.601	.601	.116	.167	.116	.000	.434	.434	-.271	-.150	-.218	-1.360	0.186	-0.9	0.9	-1.2	0.9	A-	
2599	684160	4	138	.420	.152	.304	.123	.420	.000	.303	-.148	-.187	-.031	.303	-0.518	0.185	0.8	1.1	0.6	1.1	A+	
2600	680945	4	138	.428	.101	.355	.428	.116	.000	.479	-.160	-.348	.479	-.070	-0.552	0.184	-1.6	0.9	-1.6	0.9	A-	
2601	681670	4	138	.565	.159	.565	.159	.116	.000	.323	-.237	.323	-.134	-.076	-1.190	0.184	0.5	1.0	0.5	1.0	A-	
2602	685341	4	138	.659	.080	.159	.659	.101	.000	.494	-.283	-.372	.494	-.072	-1.645	0.192	-1.7	0.9	-1.8	0.8	A+	
2603	680955	4	138	.587	.087	.101	.225	.587	.000	.217	-.196	-.147	-.018	.217	-1.292	0.185	1.7	1.1	1.7	1.2	A-	
2604	681633	4	138	.326	.036	.326	.188	.449	.000	.330	-.136	.330	-.129	-.159	-0.055	0.194	0.1	1.0	0.3	1.0	A+	
2605	684164	4	138	.594	.029	.594	.239	.138	.000	.381	-.132	.381	-.263	-.153	-1.326	0.186	-0.3	1.0	-0.5	1.0	C-	
2606	680965	4	138	.362	.246	.297	.094	.362	.000	.474	-.312	-.094	-.174	.474	-0.239	0.189	-1.5	0.9	-1.3	0.9	A+	
2607	681667	4	138	.196	.486	.203	.196	.116	.000	.147	.022	-.160	.147	-.017	0.720	0.226	0.7	1.1	1.5	1.3	A+	
2608	682348	4	138	.384	.101	.449	.384	.058	.007	.379	-.172	-.254	.379	.005	-0.345	0.187	-0.3	1.0	0.0	1.0	B+	
2609	681625	4	138	.855	.022	.087	.036	.855	.000	.395	-.286	-.202	-.217	.395	-2.886	0.253	-0.7	0.9	-1.1	0.7	A+	
2610	684180	4	138	.130	.420	.130	.210	.239	.000	-.006	.230	-.006	.044	-.303	1.250	0.263	1.0	1.2	2.7	1.9	A-	
2611	681651	4	138	.754	.087	.058	.754	.101	.000	.347	-.229	-.165	.347	-.153	-2.161	0.209	-0.2	1.0	-0.2	1.0	A+	
2612	684496	4	138	.377	.152	.181	.283	.377	.007	.481	-.196	-.260	-.123	.481	-0.310	0.188	-1.6	0.9	-1.3	0.9	B-	
2613	683902	4	138	.906	.022	.029	.906	.043	.000	.316	-.208	-.087	.316	-.233	-3.413	0.301	-0.2	1.0	-0.7	0.8	A+	
2614	685342	4	141	.759	.106	.092	.043	.759	.000	.397	-.268	-.161	-.203	.397	-1.843	0.211	-0.3	1.0	-0.6	0.9	A+	
2615	681655	4	141	.475	.475	.121	.199	.206	.000	.278	.278	-.300	-.026	-.076	-0.382	0.184	1.7	1.1	1.9	1.2	A+	
2616	680977	4	141	.695	.121	.113	.695	.071	.000	.390	-.291	-.087	.390	-.223	-1.472	0.197	-0.1	1.0	-0.1	1.0	A+	
2617	684181	4	141	.709	.099	.064	.709	.128	.000	.457	-.245	-.176	.457	-.273	-1.550	0.200	-0.7	0.9	-1.3	0.8	A-	
2618	680948	4	141	.794	.106	.035	.794	.064	.000	.338	-.226	-.293	.338	-.052	-2.075	0.222	-0.1	1.0	2.1	1.5	A+	
2619	684161	4	141	.497	.128	.496	.121	.248	.007	.335	-.110	.335	-.133	-.211	-0.484	0.184	1.0	1.1	0.3	1.0	A-	
2620	684165	4	141	.723	.099	.092	.723	.085	.000	.390	-.315	-.144	.390	-.139	-1.631	0.202	-0.1	1.0	-0.8	0.9	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2621	680946	4	141	.497	.128	.496	.355	.021	.000	.348	-.013	.348	-.343	-.037	-0.484	0.184	0.8	1.1	0.6	1.1	A+	
2622	682311	4	141	.624	.128	.177	.071	.624	.000	.270	-.028	-.139	-.266	.270	-1.101	0.189	1.5	1.1	1.4	1.2	A+	
2623	685306	4	141	.731	.730	.064	.064	.142	.000	.423	.423	-.242	-.229	-.208	-1.672	0.204	-0.5	1.0	-1.0	0.8	A-	
2624	680956	4	141	.404	.199	.184	.213	.404	.000	.468	-.118	-.202	-.255	.468	-0.039	0.187	-1.0	0.9	-1.2	0.9	A+	
2625	681634	4	141	.766	.092	.064	.766	.078	.000	.421	-.277	-.196	.421	-.188	-1.888	0.213	-0.4	1.0	-1.2	0.8	A+	
2626	682346	4	141	.411	.092	.213	.284	.411	.000	.439	-.177	-.286	-.105	.439	-0.074	0.187	-0.6	1.0	-0.4	1.0	A-	
2627	681621	4	141	.312	.092	.227	.312	.369	.000	.306	-.238	-.013	.306	-.139	0.439	0.197	0.8	1.1	1.0	1.1	A+	
2628	685349	4	141	.567	.071	.121	.241	.567	.000	.313	.127	-.389	-.143	.313	-0.823	0.185	1.2	1.1	1.4	1.1	A-	
2629	682349	4	141	.489	.227	.057	.489	.227	.000	.324	-.297	-.001	.324	-.090	-0.450	0.184	0.8	1.1	1.0	1.1	A+	
2630	680971	4	141	.631	.113	.248	.007	.631	.000	.289	-.254	-.114	-.110	.289	-1.137	0.189	1.2	1.1	1.2	1.1	A+	
2631	683260	4	141	.355	.440	.099	.355	.106	.000	.411	-.118	-.202	.411	-.252	0.212	0.192	-0.3	1.0	-0.4	1.0	A+	
2632	682354	4	141	.546	.170	.121	.163	.546	.000	.338	.024	-.296	-.220	.338	-0.720	0.184	0.9	1.1	1.2	1.1	A+	
2633	681605	4	141	.447	.170	.199	.184	.447	.000	.460	-.202	-.372	-.012	.460	-0.246	0.185	-0.9	0.9	-1.1	0.9	A+	
2634	680978	4	140	.600	.600	.043	.171	.186	.000	.178	.178	-.128	.049	-.205	-1.185	0.187	2.6	1.2	2.3	1.3	A-	
2635	685307	4	140	.914	.043	.014	.914	.029	.000	.314	-.208	-.159	.314	-.162	-3.409	0.313	-0.2	0.9	-0.6	0.8	A-	
2636	681639	4	140	.643	.121	.121	.643	.114	.000	.507	-.191	-.251	.507	-.310	-1.399	0.191	-1.5	0.9	-1.5	0.8	A-	
2637	681606	4	140	.936	.936	.036	.014	.014	.000	.342	.342	-.220	-.129	-.235	-3.741	0.354	-0.3	0.9	-0.8	0.6	A-	
2638	683234	4	140	.364	.207	.150	.364	.279	.000	.318	-.184	-.089	.318	-.104	-0.052	0.190	0.5	1.0	1.5	1.2	B+	
2639	681626	4	140	.929	.929	.029	.021	.021	.000	.394	.394	-.226	-.189	-.251	-3.621	0.338	-0.4	0.9	-1.3	0.5	A+	
2640	684162	4	140	.329	.186	.329	.150	.329	.007	.168	-.094	.168	-.018	-.050	0.133	0.194	2.0	1.2	2.5	1.3	A+	
2641	683253	4	140	.643	.250	.064	.043	.643	.000	.349	-.158	-.174	-.279	.349	-1.399	0.191	0.4	1.0	0.4	1.1	B-	
2642	681615	4	140	.921	.921	.043	.021	.014	.000	.382	.382	-.288	-.127	-.219	-3.511	0.325	-0.3	0.9	-1.2	0.5	A+	
2643	682312	4	140	.879	.879	.064	.043	.007	.007	.372	.372	-.269	-.208	-.016	-2.987	0.271	-0.4	0.9	-0.6	0.8	A-	
2644	685344	4	140	.393	.107	.457	.393	.036	.007	.243	-.164	-.031	.243	-.220	-0.194	0.188	2.0	1.1	1.1	1.1	A-	
2645	680957	4	140	.400	.271	.200	.400	.107	.021	.332	-.118	-.076	.332	-.175	-0.229	0.187	0.5	1.0	1.0	1.1	A-	
2646	682319	4	140	.771	.771	.064	.036	.121	.007	.393	.393	-.210	-.249	-.169	-2.129	0.215	-0.5	0.9	-0.1	1.0	A-	
2647	683257	4	140	.386	.236	.386	.250	.121	.007	.413	-.311	.413	-.058	-.097	-0.159	0.188	-0.6	1.0	-0.3	1.0	A-	
2648	681622	4	140	.479	.314	.479	.029	.171	.007	.425	-.227	.425	-.183	-.171	-0.605	0.184	-0.5	1.0	-0.9	0.9	A+	
2649	685350	4	140	.379	.400	.107	.107	.379	.007	.369	-.105	-.082	-.291	.369	-0.123	0.189	0.1	1.0	0.0	1.0	A+	
2650	681656	4	140	.471	.064	.207	.243	.471	.014	.306	-.130	-.184	-.077	.306	-0.572	0.184	1.2	1.1	1.0	1.1	A+	
2651	682865	4	140	.729	.114	.107	.729	.043	.007	.421	-.271	-.239	.421	-.075	-1.865	0.204	-0.5	1.0	-0.7	0.9	A+	
2652	684182	4	140	.450	.229	.221	.450	.093	.007	.344	-.397	.035	.344	-.023	-0.470	0.184	0.6	1.0	0.9	1.1	A+	
2653	682355	4	140	.607	.164	.143	.607	.079	.007	.493	-.325	-.117	.493	-.248	-1.220	0.188	-1.5	0.9	-1.1	0.9	C+	
2654	681672	4	139	.554	.022	.554	.259	.165	.000	.148	-.073	.148	-.093	-.059	-0.865	0.184	3.1	1.2	2.6	1.2	A-	
2655	680979	4	139	.324	.324	.165	.230	.281	.000	.339	.339	-.245	-.015	-.136	0.239	0.194	-0.1	1.0	0.1	1.0	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2656	685308	4	139	.532	.532	.151	.288	.029	.000	.454	.454	-.409	-.141	-.098	-0.764	0.184	-1.1	0.9	-1.0	0.9	A-	
2657	682338	4	139	.655	.655	.201	.108	.036	.000	.406	.406	-.331	-.187	-.013	-1.359	0.193	-0.3	1.0	-0.6	0.9	B+	
2658	681607	4	139	.878	.022	.072	.022	.878	.007	.368	-.299	-.222	-.085	.368	-2.874	0.272	-0.3	0.9	-0.4	0.9	A-	
2659	683237	4	139	.453	.453	.072	.129	.345	.000	.049	.049	.108	-.298	.101	-0.394	0.184	4.2	1.3	4.1	1.4	A+	
2660	683242	4	139	.791	.029	.108	.072	.791	.000	.526	-.186	-.462	-.152	.526	-2.159	0.223	-1.4	0.8	-1.4	0.8	A-	
2661	680969	4	139	.619	.266	.619	.043	.065	.007	.200	-.165	.200	.008	-.090	-1.178	0.189	2.1	1.2	2.0	1.2	A+	
2662	683254	4	139	.554	.554	.129	.036	.281	.000	.375	.375	-.351	-.268	-.042	-0.865	0.184	0.1	1.0	-0.1	1.0	A-	
2663	681616	4	139	.453	.036	.496	.453	.014	.000	.424	-.233	-.368	.424	.138	-0.394	0.184	-0.8	1.0	-0.8	0.9	A+	
2664	682313	4	139	.626	.626	.151	.165	.058	.000	.413	.413	-.258	-.192	-.155	-1.213	0.189	-0.3	1.0	-0.6	0.9	A+	
2665	681663	4	139	.727	.727	.058	.201	.014	.000	.316	.316	-.267	-.159	-.124	-1.751	0.205	0.3	1.0	0.8	1.1	A-	
2666	681619	4	139	.432	.338	.108	.432	.122	.000	.312	-.122	-.293	.312	-.017	-0.292	0.184	0.6	1.0	0.6	1.1	A+	
2667	683882	4	275	.622	.622	.156	.091	.127	.004	.470	.470	-.197	-.395	-.128	-1.129	0.136	-1.2	0.9	-0.8	0.9	A+	
2668	683258	4	275	.556	.204	.556	.145	.091	.004	.464	-.224	.464	-.235	-.208	-0.803	0.133	-1.2	1.0	-1.5	0.9	A-	
2669	680966	4	275	.615	.113	.098	.175	.615	.000	.187	-.180	-.203	.069	.187	-1.092	0.136	3.9	1.2	4.5	1.4	B-	
2670	683897	4	275	.753	.753	.033	.055	.153	.007	.458	.458	-.294	-.349	-.169	-1.862	0.152	-1.0	0.9	-1.0	0.9	A+	
2671	681642	4	275	.589	.095	.589	.131	.178	.007	.460	-.279	.460	-.087	-.280	-0.964	0.134	-1.0	1.0	-1.1	0.9	A-	
2672	680973	4	275	.651	.171	.651	.076	.102	.000	.343	-.049	.343	-.253	-.259	-1.280	0.138	1.0	1.1	0.9	1.1	A+	
2673	684183	4	275	.426	.287	.204	.084	.425	.000	.259	-.018	-.180	-.171	.259	-0.168	0.134	2.7	1.1	2.4	1.2	A+	
2674	683255	4	136	.427	.426	.103	.265	.199	.007	.353	.353	-.136	-.132	-.172	-0.070	0.194	1.2	1.1	1.8	1.2	A-	
2675	682332	4	136	.544	.147	.544	.066	.243	.000	.444	-.320	.444	-.114	-.185	-0.661	0.192	0.0	1.0	0.7	1.1	A-	
2676	681612	4	136	.265	.265	.088	.353	.294	.000	.178	.178	-.317	-.046	.073	0.837	0.217	1.6	1.2	2.4	1.5	A+	
2677	685309	4	136	.368	.162	.162	.368	.309	.000	.411	-.151	-.229	.411	-.125	0.238	0.199	0.0	1.0	1.4	1.2	A+	
2678	682356	4	136	.691	.059	.051	.691	.199	.000	.311	-.157	-.396	.311	-.048	-1.438	0.205	1.2	1.1	2.3	1.4	A-	
2679	681608	4	136	.552	.257	.147	.044	.551	.000	.446	-.190	-.278	-.197	.446	-0.698	0.192	0.0	1.0	-0.6	0.9	A-	
2680	682347	4	136	.765	.125	.051	.059	.765	.000	.479	-.370	-.165	-.189	.479	-1.891	0.222	-0.5	0.9	-1.0	0.8	A+	
2681	681646	4	136	.566	.566	.243	.103	.088	.000	.470	.470	-.178	-.309	-.222	-0.772	0.193	-0.4	1.0	-0.9	0.9	A-	
2682	681614	4	136	.765	.088	.081	.765	.066	.000	.423	-.137	-.312	.423	-.223	-1.891	0.222	-0.1	1.0	-0.4	0.9	A-	
2683	683266	4	136	.691	.088	.088	.132	.691	.000	.467	-.285	-.179	-.247	.467	-1.438	0.205	-0.5	1.0	-0.5	0.9	A+	
2684	680947	4	136	.860	.066	.044	.029	.860	.000	.612	-.320	-.431	-.260	.612	-2.644	0.266	-1.9	0.7	-1.8	0.5	A+	
2685	682314	4	136	.779	.059	.779	.029	.132	.000	.481	-.234	.481	-.287	-.283	-1.991	0.226	-0.6	0.9	-1.0	0.8	A-	
2686	681664	4	136	.427	.426	.015	.176	.382	.000	.426	.426	-.120	-.074	-.346	-0.070	0.194	-0.2	1.0	0.1	1.0	A-	
2687	683818	5	91	.396	.209	.396	.330	.066	.000	.052	.003	.052	-.012	-.085	-0.444	0.232	2.8	1.3	2.8	1.4	A-	
2688	683819	5	87	.529	.138	.218	.529	.115	.000	.311	-.089	-.136	.311	-.215	-1.084	0.231	-0.1	1.0	-0.1	1.0	B+	
2689	683820	5	83	.651	.181	.072	.651	.096	.000	.584	-.418	-.371	.584	-.072	-1.731	0.249	-2.4	0.8	-2.1	0.7	A-	
2690	683821	5	89	.303	.247	.202	.247	.303	.000	.209	.077	-.318	-.003	.209	-0.006	0.248	1.0	1.1	1.3	1.2	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2691	683822	5	88	.705	.125	.125	.705	.045	.000	.394	-.217	-.248	.394	-.124	-2.140	0.256	-0.3	1.0	0.1	1.0	A-	
2692	683823	5	95	.632	.632	.137	.095	.137	.000	.441	.441	-.168	-.347	-.156	-1.649	0.230	-0.9	0.9	-1.0	0.9	A+	
2693	683824	5	96	.531	.073	.208	.531	.188	.000	.096	-.240	.134	.096	-.102	-1.231	0.226	3.2	1.3	2.9	1.4	A-	
2694	683825	5	95	.295	.200	.189	.316	.295	.000	.194	-.160	-.158	.081	.194	0.138	0.241	0.7	1.1	1.2	1.2	A-	
2695	683826	5	83	.313	.313	.313	.265	.108	.000	-.076	-.076	.108	-.077	.062	-0.065	0.253	2.5	1.3	3.3	1.6	A-	
2696	683827	5	75	.520	.120	.093	.520	.267	.000	.287	-.229	-.297	.287	.039	-0.872	0.252	0.8	1.1	0.7	1.1		
2697	683828	5	92	.511	.174	.141	.511	.174	.000	.494	-.149	-.352	.494	-.179	-0.877	0.231	-1.2	0.9	-1.0	0.9	A-	
2698	683829	5	94	.479	.479	.191	.170	.160	.000	.158	.158	-.040	-.166	-.002	-0.695	0.222	1.8	1.1	2.0	1.2	B-	
2699	683830	5	96	.385	.250	.135	.385	.229	.000	.305	-.184	-.179	.305	-.018	-0.299	0.225	0.1	1.0	0.5	1.1	A+	
2700	683831	5	91	.275	.451	.154	.121	.275	.000	.269	-.006	-.075	-.277	.269	0.264	0.253	0.2	1.0	0.8	1.2	A-	
2701	683832	5	113	.460	.080	.097	.363	.460	.000	.158	-.210	-.192	.073	.158	-0.669	0.204	1.9	1.1	2.0	1.2	A+	
2702	683833	5	78	.526	.103	.526	.333	.038	.000	.209	-.217	.209	-.038	-.106	-1.183	0.248	1.7	1.2	1.3	1.2	B-	
2703	683834	5	85	.612	.612	.106	.094	.188	.000	.450	.450	-.368	-.280	-.062	-1.314	0.243	-0.8	0.9	-1.1	0.9	A+	
2704	683835	5	60	.550	.083	.200	.167	.550	.000	.592	-.193	-.303	-.322	.592	-1.040	0.279	-2.4	0.8	-2.4	0.7	A+	
2705	683836	5	80	.400	.325	.213	.400	.063	.000	.442	-.105	-.298	.442	-.189	-0.530	0.244	-1.8	0.9	-0.8	0.9	A-	
2706	683837	5	95	.421	.147	.421	.284	.147	.000	.407	-.168	.407	-.159	-.196	-0.610	0.228	-0.8	0.9	0.4	1.0	A+	
2707	683838	5	82	.732	.134	.732	.085	.049	.000	.209	-.093	.209	-.171	-.062	-2.017	0.269	1.0	1.1	0.9	1.2	A-	
2708	683839	5	83	.265	.265	.265	.217	.253	.000	.080	.080	-.337	.033	.229	0.394	0.270	1.7	1.2	2.4	1.6	A-	
2709	683840	5	106	.274	.274	.198	.189	.340	.000	-.165	-.165	-.099	.071	.180	0.200	0.233	3.2	1.4	3.9	1.8	B-	
2710	683841	5	78	.359	.231	.269	.141	.359	.000	.281	.013	-.208	-.138	.281	-0.354	0.253	0.1	1.0	0.4	1.1	B+	
2711	683866	5	93	.495	.237	.172	.495	.097	.000	.398	-.168	-.210	.398	-.165	-0.846	0.225	-0.5	1.0	-0.5	1.0	A+	
2712	683867	5	101	.455	.228	.455	.149	.168	.000	.305	-.113	.305	-.131	-.155	-0.829	0.220	0.8	1.1	1.0	1.1	A+	
2713	683868	5	89	.573	.180	.191	.056	.573	.000	.277	-.002	-.183	-.279	.277	-1.263	0.233	0.7	1.1	0.8	1.1	A+	
2714	683869	5	96	.417	.125	.417	.219	.240	.000	.478	-.219	.478	-.084	-.301	-0.411	0.226	-1.5	0.9	-1.5	0.8	A-	
2715	683870	5	87	.414	.414	.230	.069	.287	.000	-.143	-.143	.122	-.236	.174	-0.556	0.236	4.5	1.4	4.1	1.5		
2716	683871	5	91	.363	.297	.231	.363	.110	.000	.188	-.046	-.240	.188	.101	-0.364	0.242	2.0	1.2	2.4	1.4	A+	
2717	683872	5	88	.182	.386	.193	.239	.182	.000	-.078	.308	-.023	-.260	-.078	0.988	0.289	1.4	1.2	2.8	1.9	A+	
2718	683873	5	89	.596	.135	.180	.596	.090	.000	.372	-.212	-.276	.372	-.015	-1.320	0.232	-0.6	1.0	-0.6	0.9	B+	
2719	683874	5	86	.430	.163	.430	.163	.244	.000	.254	-.228	.254	-.022	-.079	-0.587	0.240	1.2	1.1	1.7	1.2	A+	
2720	683875	5	78	.423	.115	.410	.423	.051	.000	.109	-.170	.122	.109	-.270	-0.561	0.246	2.1	1.2	1.7	1.2	A+	
2721	683876	5	94	.330	.330	.309	.106	.255	.000	.197	.197	-.199	.024	-.019	-0.008	0.238	1.6	1.2	0.8	1.1	A+	
2722	683877	5	90	.300	.233	.278	.300	.189	.000	-.041	-.097	.176	-.041	-.049	0.231	0.247	2.5	1.3	3.3	1.7	A+	
2723	683879	5	96	.500	.219	.500	.146	.135	.000	.399	-.235	.399	-.122	-.173	-0.963	0.224	-0.3	1.0	-0.2	1.0	A-	
2724	683880	5	72	.264	.264	.236	.181	.319	.000	.157	.157	-.282	-.047	.147	0.145	0.289	1.1	1.2	1.2	1.3		
2725	683881	5	95	.284	.147	.284	.421	.147	.000	.041	-.165	.041	-.061	.197	0.248	0.242	1.9	1.2	2.2	1.4	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2726	683884	5	96	.521	.521	.188	.156	.135	.000	.526	.526	-.214	-.316	-.188	-1.090	0.221	-2.1	0.9	-2.0	0.8	A+	
2727	683885	5	83	.518	.518	.265	.120	.096	.000	.081	.081	.237	-.201	-.270	-0.848	0.237	2.7	1.2	2.4	1.3		
2728	683886	5	90	.344	.211	.344	.156	.289	.000	-.022	-.176	-.022	.124	.083	-0.135	0.236	2.9	1.3	2.4	1.4	A-	
2729	683887	5	100	.340	.340	.190	.330	.140	.000	.245	.245	-.048	-.125	-.110	-0.205	0.230	1.3	1.1	1.1	1.2	A+	
2730	683888	5	104	.365	.250	.192	.192	.365	.000	.086	-.100	-.023	.028	.086	-0.407	0.220	2.6	1.2	2.4	1.3	A-	
2731	683889	5	99	.313	.202	.283	.313	.202	.000	-.024	-.038	-.052	-.024	.124	-0.024	0.234	3.0	1.3	2.8	1.5	A+	
2732	683890	5	96	.583	.583	.104	.125	.188	.000	.330	.330	-.275	-.205	-.027	-1.283	0.224	0.0	1.0	0.3	1.0	A+	
2733	683891	5	84	.452	.167	.238	.452	.143	.000	.082	.101	-.135	.082	-.059	-0.661	0.240	2.7	1.3	3.1	1.4		
2734	683892	5	73	.425	.137	.425	.178	.260	.000	.451	-.084	.451	-.285	-.194	-0.670	0.256	-1.0	0.9	-0.8	0.9	A-	
2735	683893	5	79	.557	.266	.076	.557	.101	.000	.379	-.166	-.299	.379	-.118	-1.200	0.247	0.0	1.0	-0.3	1.0	B-	
2736	683894	5	94	.298	.298	.160	.415	.128	.000	.111	.111	-.133	.080	-.124	0.015	0.242	1.4	1.2	2.1	1.4	A+	
2737	683895	5	91	.681	.121	.132	.681	.066	.000	.296	.013	-.425	.296	.006	-1.721	0.242	0.4	1.0	0.3	1.0	A+	
2738	683896	5	83	.615	.614	.108	.120	.157	.000	.500	.500	-.313	-.256	-.173	-1.277	0.248	-1.2	0.9	-1.4	0.8	A-	
2739	683905	5	85	.612	.118	.612	.082	.188	.000	.502	-.173	.502	-.244	-.311	-1.383	0.241	-1.6	0.9	-1.6	0.8	A-	
2740	683906	5	110	.646	.645	.082	.118	.155	.000	.349	.349	-.167	-.252	-.110	-1.642	0.215	-0.2	1.0	-0.6	0.9	A+	
2741	683908	5	101	.406	.257	.198	.406	.139	.000	.400	-.163	-.120	.400	-.223	-0.805	0.220	-0.7	0.9	-0.2	1.0		
2742	683909	5	91	.407	.407	.341	.154	.099	.000	.400	.400	-.086	-.377	-.065	-0.592	0.232	-0.8	0.9	0.3	1.0	A+	
2743	683910	5	66	.288	.348	.288	.242	.121	.000	.200	.164	.200	-.186	-.272	-0.030	0.289	0.7	1.1	0.7	1.1		
2744	683911	5	99	.303	.222	.333	.303	.141	.000	.228	-.052	-.283	.228	.144	-0.029	0.233	0.7	1.1	0.6	1.1	A+	
2745	683912	5	94	.192	.287	.277	.245	.191	.000	.139	.077	-.225	.026	.139	0.564	0.279	0.8	1.1	1.5	1.4	A-	
2746	683913	5	92	.489	.141	.489	.207	.163	.000	.305	-.199	.305	-.003	-.223	-1.033	0.228	0.5	1.0	0.8	1.1	A+	
2747	683915	5	91	.352	.220	.176	.352	.253	.000	.092	.199	-.282	.092	-.044	-0.231	0.237	2.0	1.2	2.3	1.3	A-	
2748	683916	5	67	.373	.299	.373	.209	.119	.000	.319	-.121	.319	-.187	-.071	-0.358	0.275	0.5	1.1	0.2	1.0	A-	
2749	683918	5	78	.282	.231	.333	.282	.154	.000	-.137	.183	.137	-.137	-.221	0.216	0.272	2.9	1.4	3.3	1.8		
2750	683920	5	82	.524	.207	.159	.524	.110	.000	.096	-.171	.162	.096	-.121	-1.173	0.238	2.3	1.2	2.5	1.3	A-	
2751	683921	5	72	.444	.153	.278	.444	.125	.000	.365	-.218	-.246	.365	.021	-0.637	0.254	-0.4	1.0	-0.5	0.9	A-	
2752	683922	5	91	.341	.165	.275	.220	.341	.000	.505	-.088	-.349	-.123	.505	-0.176	0.245	-1.1	0.9	-0.9	0.9	B-	
2753	683923	5	83	.337	.217	.301	.145	.337	.000	.365	-.202	-.091	-.136	.365	-0.357	0.249	-0.4	1.0	-0.3	1.0	A-	
2754	683924	5	74	.487	.486	.162	.189	.162	.000	.329	.329	-.274	-.181	.020	-0.954	0.250	0.0	1.0	-0.1	1.0	A-	
2755	683925	5	82	.402	.402	.110	.037	.451	.000	.439	.439	-.269	-.228	-.177	-0.467	0.243	-1.0	0.9	-0.8	0.9	A-	
2756	683926	5	86	.581	.081	.581	.186	.151	.000	.371	-.339	.371	-.055	-.192	-1.369	0.244	0.6	1.1	0.4	1.1	A-	
2757	683927	5	96	.781	.031	.781	.083	.104	.000	.340	-.242	.340	-.141	-.194	-2.258	0.263	-0.2	1.0	-0.5	0.9	A-	
2758	683928	5	97	.742	.093	.052	.742	.113	.000	.260	-.183	-.086	.260	-.132	-2.196	0.246	0.4	1.0	0.0	1.0	A+	
2759	683929	5	87	.379	.172	.391	.379	.057	.000	.440	-.237	-.186	.440	-.142	-0.352	0.238	-1.3	0.9	-0.6	0.9	A-	
2760	683930	5	94	.564	.117	.106	.564	.213	.000	.437	-.103	-.254	.437	-.257	-1.283	0.228	-0.7	0.9	-1.0	0.9	A+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2761	683931	5	90	.522	.200	.522	.122	.156	.000	.157	-.095	.157	.054	-.160	-0.995	0.230	2.1	1.2	2.7	1.3	A-	
2762	684184	5	94	.394	.394	.160	.213	.234	.000	.411	.411	-.257	-.249	-.011	-0.494	0.228	-0.8	0.9	-0.6	0.9	A+	
2763	684185	5	72	.375	.167	.250	.375	.208	.000	.136	.083	-.350	.136	.136	-0.297	0.260	1.1	1.1	1.7	1.2		
2764	684186	5	92	.424	.207	.174	.424	.196	.000	.390	-.115	-.151	.390	-.224	-0.453	0.230	-0.4	1.0	-0.2	1.0	B-	
2765	684188	5	72	.417	.292	.139	.417	.153	.000	.176	.060	-.285	.176	-.044	-0.448	0.257	1.1	1.1	1.3	1.2	A+	
2766	684189	5	89	.517	.169	.517	.112	.202	.000	.301	-.071	.301	-.283	-.085	-1.074	0.233	1.0	1.1	1.2	1.1	A+	
2767	684190	5	111	.180	.180	.333	.207	.279	.000	-.010	-.010	.288	-.391	.059	0.967	0.262	1.2	1.2	3.0	2.0	A-	
2768	684192	5	77	.351	.351	.338	.117	.195	.000	-.036	-.036	.147	-.189	.021	-0.256	0.261	3.1	1.4	3.0	1.5		
2769	684193	5	100	.340	.240	.270	.340	.150	.000	.056	.128	-.114	.056	-.085	-0.237	0.227	2.2	1.2	2.6	1.4	A+	
2770	684194	5	85	.282	.200	.271	.247	.282	.000	.436	-.145	.003	-.323	.436	0.077	0.262	-0.6	0.9	-0.5	0.9	A+	
2771	684195	5	93	.419	.161	.204	.215	.419	.000	.331	.062	-.124	-.332	.331	-0.480	0.229	0.1	1.0	0.9	1.1	A-	
2772	684197	5	83	.217	.217	.145	.325	.313	.000	.280	.280	-.218	.086	-.170	0.598	0.280	-0.1	1.0	-0.1	1.0	A-	
2773	684198	5	84	.476	.214	.131	.476	.179	.000	.306	-.038	-.249	.306	-.138	-0.971	0.235	0.3	1.0	-0.1	1.0	A+	
2774	684199	5	79	.443	.241	.215	.443	.101	.000	.301	-.117	-.307	.301	.088	-0.833	0.247	0.6	1.1	1.0	1.1	A+	
2775	684200	5	94	.426	.234	.202	.426	.138	.000	.196	.056	-.230	.196	-.082	-0.477	0.225	1.2	1.1	1.9	1.2	A+	
2776	684202	5	82	.317	.268	.232	.317	.183	.000	.327	-.272	-.266	.327	.208	-0.111	0.257	0.2	1.0	0.0	1.0	B+	
2777	685310	5	90	.578	.578	.233	.156	.033	.000	.377	.377	-.348	-.075	-.065	-1.212	0.232	-0.1	1.0	-0.1	1.0	A-	
2778	685311	5	67	.806	.090	.075	.806	.030	.000	.664	-.422	-.385	.664	-.239	-2.256	0.330	-1.7	0.7	-2.1	0.5		
2779	685312	5	101	.574	.168	.089	.574	.168	.000	.334	-.133	-.134	.334	-.206	-1.289	0.218	0.1	1.0	-0.1	1.0	A+	
2780	685314	5	84	.571	.143	.571	.167	.119	.000	.506	-.253	.506	-.241	-.222	-1.201	0.241	-1.6	0.9	-1.1	0.9	A-	
2781	685315	5	95	.495	.179	.189	.137	.495	.000	.463	-.209	-.265	-.139	.463	-0.952	0.223	-1.4	0.9	-1.4	0.9	A-	
2782	685316	5	88	.227	.216	.330	.227	.227	.000	.309	-.142	-.147	-.005	.309	0.483	0.273	0.1	1.0	0.6	1.1	A-	
2783	685317	5	100	.250	.250	.250	.290	.210	.000	-.121	-.010	-.121	.008	.130	0.407	0.248	2.8	1.4	3.2	1.7	A-	
2784	685318	5	84	.595	.250	.595	.083	.071	.000	.388	-.380	.388	.052	-.157	-1.285	0.244	-0.1	1.0	-0.2	1.0	A-	
2785	685319	5	80	.263	.213	.438	.263	.088	.000	.338	-.123	-.039	.338	-.280	0.398	0.272	0.0	1.0	-0.3	0.9	A-	
2786	685320	5	90	.244	.289	.167	.300	.244	.000	.371	.157	-.378	-.196	.371	0.320	0.263	-0.2	1.0	-0.7	0.9	A+	
2787	685321	5	98	.306	.143	.306	.286	.265	.000	.180	-.068	.180	.079	-.214	0.135	0.234	1.1	1.1	0.8	1.1	A+	A+
2788	685322	5	109	.266	.339	.330	.266	.064	.000	.061	-.171	.141	.061	-.050	0.411	0.230	1.8	1.2	2.0	1.4	B-	
2789	685323	5	67	.567	.567	.164	.075	.194	.000	.355	.355	-.368	-.038	-.074	-1.364	0.267	-0.1	1.0	0.2	1.0	A-	
2790	685326	5	87	.356	.414	.356	.149	.080	.000	.093	.091	.093	-.139	-.146	-0.412	0.242	2.2	1.2	2.0	1.3		
2791	685327	5	87	.172	.080	.172	.069	.678	.000	.088	-.260	.088	-.327	.258	0.949	0.299	0.6	1.1	1.9	1.6	A+	
2792	685328	5	95	.347	.505	.347	.074	.074	.000	.058	.158	.058	-.341	-.068	-0.271	0.230	2.3	1.2	2.0	1.3	A+	
2793	685329	5	70	.486	.357	.057	.100	.486	.000	.250	.074	-.390	-.234	.250	-0.866	0.261	1.2	1.1	1.2	1.1	A+	
2794	685330	5	82	.573	.573	.220	.073	.134	.000	.422	.422	-.190	-.173	-.249	-1.458	0.244	-0.5	1.0	-0.5	0.9	A-	
2795	685331	5	91	.560	.187	.132	.560	.121	.000	.417	-.243	-.202	.417	-.135	-1.293	0.228	-1.0	0.9	-1.3	0.9	B+	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2796	685332	5	84	.310	.214	.262	.214	.310	.000	.494	-.176	-.221	-.144	.494	0.100	0.254	-1.4	0.9	-1.1	0.8	A+	
2797	685333	5	86	.593	.593	.174	.093	.140	.000	.257	.257	-.201	-.231	.049	-1.203	0.237	0.8	1.1	0.6	1.1	A-	
2798	685334	5	81	.457	.309	.457	.160	.074	.000	.132	.226	.132	-.424	-.056	-0.592	0.248	2.8	1.3	2.5	1.3	A-	
2799	685335	5	109	.615	.174	.615	.165	.046	.000	.150	-.004	.150	-.152	-.073	-1.509	0.212	2.0	1.2	1.4	1.2	A+	
2800	685336	5	86	.302	.256	.151	.302	.291	.000	-.055	.070	-.053	-.055	.030	0.050	0.250	2.3	1.3	2.5	1.4	A-	
2801	685337	5	97	.454	.371	.454	.124	.052	.000	-.271	.305	-.271	.047	-.124	-0.618	0.222	6.3	1.6	6.0	1.8		
2802	685338	5	85	.153	.153	.118	.588	.141	.000	.070	.070	-.239	.299	-.273	0.762	0.316	0.5	1.1	1.3	1.4		
2803	685351	5	84	.560	.143	.560	.214	.083	.000	.416	-.151	.416	-.146	-.338	-1.189	0.240	-0.5	1.0	-0.9	0.9	B-	
2804	685353	5	80	.475	.200	.200	.125	.475	.000	.449	-.233	-.232	-.114	.449	-0.737	0.244	-0.9	0.9	-0.6	0.9	A-	
2805	685354	5	67	.179	.433	.090	.299	.179	.000	.125	-.067	-.208	.098	.125	0.889	0.332	0.5	1.1	0.6	1.2		
2806	685356	5	88	.557	.159	.091	.557	.193	.000	.362	-.220	-.307	.362	-.027	-1.030	0.232	-0.2	1.0	-0.2	1.0	A+	
2807	685357	5	90	.178	.556	.122	.144	.178	.000	.179	.209	-.238	-.268	.179	0.788	0.288	0.2	1.0	0.5	1.1	A+	
2808	685358	5	88	.568	.273	.045	.568	.114	.000	.493	-.248	-.050	.493	-.389	-1.227	0.232	-1.8	0.9	-1.8	0.8	B+	
2809	685359	5	84	.714	.048	.714	.107	.131	.000	.349	-.097	.349	-.311	-.121	-1.936	0.260	-0.1	1.0	0.0	1.0	A+	
2810	685360	5	85	.259	.212	.400	.129	.259	.000	.170	-.126	-.029	-.027	.170	0.066	0.270	0.9	1.1	2.2	1.5		
2811	685361	5	78	.769	.090	.064	.769	.077	.000	.247	-.230	-.209	.247	.048	-2.354	0.286	0.3	1.0	0.4	1.1	A+	
2812	685363	5	72	.653	.181	.653	.056	.111	.000	.293	-.109	.293	-.187	-.174	-1.610	0.267	0.5	1.1	0.1	1.0		
2813	685364	5	76	.329	.197	.289	.329	.184	.000	.062	-.162	-.163	.062	.282	-0.117	0.266	2.2	1.3	2.4	1.4	A+	
2814	685365	5	79	.519	.177	.190	.114	.519	.000	.430	-.193	-.233	-.157	.430	-0.947	0.246	-0.7	0.9	-0.5	0.9	A+	
2815	685366	5	87	.356	.287	.034	.356	.322	.000	.147	-.015	-.375	.147	.011	-0.190	0.237	0.7	1.1	1.7	1.2	A-	
2816	685367	5	96	.344	.219	.188	.344	.250	.000	.141	-.147	-.091	.141	.068	-0.103	0.233	1.9	1.2	2.0	1.3	A-	
2817	685368	5	72	.500	.250	.500	.181	.069	.000	.211	.066	.211	-.298	-.077	-0.826	0.252	0.9	1.1	0.8	1.1	A+	
2818	685369	5	74	.392	.365	.149	.392	.095	.000	.225	-.101	-.171	.225	.000	-0.483	0.257	1.0	1.1	1.0	1.1	A-	
2819	685370	5	105	.257	.257	.438	.162	.143	.000	.149	.149	.250	-.344	-.179	0.483	0.237	1.1	1.1	1.0	1.2	A-	
2820	685371	5	88	.489	.489	.011	.114	.386	.000	.461	.461	-.200	-.334	-.212	-0.860	0.231	-1.1	0.9	-1.3	0.9	A+	
2821	685372	5	91	.297	.154	.297	.121	.429	.000	-.045	-.266	-.045	-.260	.407	-0.001	0.246	2.6	1.3	2.8	1.5	A-	
2822	685373	5	98	.388	.327	.092	.194	.388	.000	.275	-.132	-.195	-.041	.275	-0.127	0.227	0.7	1.1	1.4	1.2	A-	
2823	685374	5	77	.169	.195	.390	.247	.169	.000	.239	.011	-.041	-.171	.239	0.967	0.323	0.2	1.0	0.6	1.2	A+	
2824	685375	5	95	.221	.221	.253	.305	.221	.000	.157	-.243	.240	-.148	.157	0.398	0.262	0.7	1.1	1.6	1.4		
2825	685376	5	94	.330	.330	.191	.245	.234	.000	.006	.006	-.177	.096	.061	0.007	0.236	2.8	1.3	2.6	1.5	A+	
2826	685378	5	102	.128	.127	.392	.255	.225	.000	.004	.004	.128	-.257	.115	1.308	0.309	0.7	1.1	2.2	1.9	A+	
2827	685379	5	85	.506	.106	.188	.200	.506	.000	.386	-.146	-.150	-.224	.386	-0.879	0.238	-0.2	1.0	-0.2	1.0	A-	
2828	685380	5	97	.464	.103	.464	.320	.113	.000	.178	-.187	.178	-.129	.090	-0.890	0.218	1.6	1.1	1.4	1.1	A+	
2829	685381	5	85	.353	.353	.176	.259	.212	.000	.395	.395	-.078	-.114	-.267	-0.116	0.249	-0.2	1.0	-0.2	1.0	A-	
2830	685382	5	91	.429	.209	.077	.429	.286	.000	.272	-.164	-.157	.272	-.059	-0.646	0.232	0.9	1.1	1.1	1.1	A-	

Table B–4 (continued). Science Multiple-Choice Item Statistics

Item Information			Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
2831	685383	5	94	.351	.149	.202	.351	.298	.000	.241	-.305	.139	.241	-.136	-0.102	0.232	0.7	1.1	0.6	1.1	A-	
2832	685384	5	85	.094	.282	.282	.341	.094	.000	.040	-.058	-.141	.165	.040	1.721	0.383	0.3	1.1	1.5	1.8	A+	
2833	685385	5	93	.366	.247	.366	.301	.086	.000	-.170	.278	-.170	-.015	-.112	-0.153	0.231	4.1	1.4	4.4	1.7	A+	
2834	685386	5	92	.478	.196	.478	.174	.152	.000	.063	-.066	.063	-.052	.040	-0.785	0.226	2.9	1.2	3.2	1.4	A-	
2835	685387	5	81	.161	.309	.160	.346	.185	.000	-.179	.115	-.179	-.027	.065	0.784	0.321	1.8	1.4	3.2	2.4		
2836	685388	5	100	.600	.600	.220	.100	.080	.000	.519	.519	-.356	-.232	-.136	-1.464	0.218	-2.3	0.8	-2.2	0.8	A+	
2837	685389	5	95	.316	.316	.253	.274	.158	.000	-.182	-.182	-.175	.215	.178	0.019	0.240	4.1	1.5	4.6	2.0	A-	
2838	685390	5	82	.317	.244	.207	.232	.317	.000	.274	-.180	-.073	-.049	.274	0.107	0.257	0.6	1.1	0.1	1.0	A-	

Items with reference line numbers 1-2038 were field tested during the stand-alone field test administered in fall 2010. Items with reference line numbers 2039-2838 were field tested during the field test administered in fall 2013.

WRITING/ENGLISH COMPOSITION MULTIPLE-CHOICE ITEMS

Table B–5. Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1	622443	3	3	2753	.769	.059	.056	.769	.113	.005	.448	-.243	-.226	.448	-.194	-2.331	0.050	-2.6	0.9	-2.1	0.9	A+	A-
2	621004	3	3	2753	.893	.038	.038	.893	.027	.005	.410	-.221	-.161	.410	-.224	-3.454	0.068	-1.9	0.9	-3.4	0.7	A+	A-
3	623134	3	3	2753	.317	.208	.173	.296	.317	.006	.332	-.124	-.158	-.054	.332	0.101	0.045	2.9	1.1	5.1	1.2	A+	A-
4	639851	3	3	2753	.375	.429	.085	.375	.105	.006	.308	-.029	-.204	.308	-.183	-0.206	0.044	5.4	1.1	5.9	1.2	A+	A-
5	622448	3	3	2753	.678	.118	.100	.097	.678	.007	.495	-.231	-.217	-.242	.495	-1.780	0.045	-4.9	0.9	-4.9	0.8	A+	A-
6	631022	3	3	2753	.680	.157	.680	.066	.091	.006	.449	-.220	.449	-.241	-.171	-1.787	0.045	-2.0	1.0	-1.4	1.0	A+	A-
7	622457	3	3	2753	.537	.179	.537	.085	.191	.008	.424	-.237	.424	-.195	-.111	-1.034	0.042	-0.2	1.0	0.1	1.0	A-	A+
8	626549	3	3	2753	.433	.433	.137	.201	.220	.009	.392	.392	-.201	-.168	-.083	-0.527	0.043	1.9	1.0	4.0	1.1	A+	A+
9	635457	3	3	2753	.310	.519	.310	.125	.036	.009	.384	-.152	.384	-.133	-.179	0.142	0.045	-0.4	1.0	3.3	1.1	A-	A+
10	620993	3	3	2753	.782	.782	.079	.088	.041	.010	.445	.445	-.249	-.215	-.153	-2.441	0.051	-2.3	0.9	-3.1	0.9	A-	A-
11	622447	3	3	274	.829	.110	.829	.033	.029	.000	.409	-.246	.409	-.199	-.248	-2.813	0.176	-0.6	0.9	-0.6	0.9	A-	
12	622445	3	3	274	.412	.256	.110	.219	.412	.004	.354	-.281	-.096	-.020	.354	-0.408	0.138	2.3	1.1	2.5	1.2	A+	
13	640135	3	3	274	.438	.438	.336	.150	.077	.000	.239	.239	-.109	-.086	-.137	-0.536	0.137	3.1	1.2	3.6	1.3	A+	
14	621011	3	3	274	.544	.544	.142	.164	.135	.015	.475	.475	-.190	-.159	-.268	-1.107	0.137	-0.8	1.0	-1.1	0.9	A+	
15	621018	3	3	274	.540	.274	.080	.540	.102	.004	.518	-.248	-.167	.518	-.296	-1.063	0.136	-1.7	0.9	-1.6	0.9	A-	
16	626766	3	3	275	.596	.596	.055	.062	.284	.004	.325	.325	-.233	-.150	-.121	-1.413	0.142	1.7	1.1	1.9	1.2	A+	A-
17	623059	3	3	275	.931	.931	.029	.018	.011	.011	.474	.474	-.256	-.167	-.127	-4.536	0.305	-0.1	1.0	-1.0	0.5	A+	A+
18	634165	3	3	275	.844	.051	.844	.062	.033	.011	.458	-.272	.458	-.203	-.092	-3.085	0.188	-0.9	0.9	-1.2	0.7	A-	B-
19	621013	3	3	275	.811	.124	.033	.811	.022	.011	.523	-.307	-.234	.523	-.139	-2.851	0.177	-1.3	0.9	-1.8	0.6	A+	A-
20	621019	3	3	275	.476	.178	.182	.476	.149	.015	.418	-.119	-.156	.418	-.175	-0.812	0.140	0.2	1.0	0.8	1.1	A-	A+
21	623098	3	5	274	.551	.186	.551	.197	.066	.000	.471	-.365	.471	-.097	-.217	-1.073	0.132	-1.6	0.9	-1.2	0.9	A+	A+
22	623014	3	3	274	.281	.131	.281	.266	.321	.000	.261	-.167	.261	-.133	-.004	0.281	0.144	1.5	1.1	2.7	1.3	A-	A-
23	626921	3	3	274	.686	.139	.066	.686	.110	.000	.519	-.341	-.250	.519	-.196	-1.754	0.140	-2.4	0.9	-2.5	0.8	A+	A-
24	635445	3	3	274	.485	.139	.485	.139	.237	.000	.410	-.242	.410	-.112	-.194	-0.760	0.131	-0.3	1.0	0.3	1.0	A+	A-
25	623127	3	3	274	.361	.157	.383	.099	.361	.000	.221	-.216	-.005	-.086	.221	-0.153	0.136	3.0	1.2	2.7	1.2	A-	A-
26	630803	3	3	274	.467	.256	.168	.467	.106	.004	.262	-.042	-.171	.262	-.153	-0.681	0.132	3.0	1.2	2.7	1.2	A+	A-
27	627410	3	3	274	.679	.679	.095	.102	.120	.004	.451	.451	-.307	-.201	-.180	-1.728	0.140	-0.9	0.9	-1.8	0.8	A-	A+
28	622459	3	3	274	.416	.128	.416	.256	.201	.000	.440	-.178	.440	-.149	-.232	-0.426	0.133	-0.8	1.0	-1.0	0.9	A+	A-
29	624759	3	3	274	.672	.672	.055	.062	.212	.000	.225	.225	-.290	-.149	-.009	-1.676	0.139	2.2	1.1	3.2	1.3	B-	A-
30	623024	3	3	274	.277	.310	.172	.237	.277	.004	.332	-.181	-.155	-.005	.332	0.300	0.145	0.5	1.0	1.2	1.1	B+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
31	621399	3	3	274	.814	.814	.058	.066	.062	.000	.400	.400	-.216	-.206	-.225	-2.549	0.164	-0.6	0.9	-1.3	0.8	A+	A+
32	623137	3	3	274	.547	.102	.142	.204	.547	.004	.437	-.233	-.234	-.150	.437	-1.061	0.132	-0.7	1.0	-0.9	0.9	A+	B+
33	622456	3	3	276	.598	.598	.091	.101	.203	.007	.367	.367	-.189	-.180	-.127	-1.331	0.132	0.1	1.0	-0.3	1.0	A-	
34	635897	3	3	276	.565	.127	.178	.123	.565	.007	.405	-.178	-.183	-.121	.405	-1.170	0.131	-0.7	1.0	-0.3	1.0	A+	
35	635446	3	3	276	.837	.087	.837	.040	.029	.007	.472	-.240	.472	-.224	-.182	-2.750	0.173	-1.4	0.9	-1.6	0.7	A-	
36	635895	3	3	276	.714	.141	.094	.714	.044	.007	.442	-.199	-.276	.442	-.088	-1.925	0.142	-1.5	0.9	-1.4	0.9	A+	
37	630804	3	3	276	.540	.167	.540	.145	.138	.011	.302	-.133	.302	-.140	-.041	-1.064	0.130	1.3	1.1	1.8	1.1	A-	
38	621017	3	3	276	.388	.239	.388	.192	.167	.015	.257	-.018	.257	-.128	-.072	-0.358	0.133	1.9	1.1	3.1	1.2	A+	
39	623120	3	3	276	.380	.214	.199	.188	.380	.018	.342	-.031	-.093	-.187	.342	-0.335	0.133	0.4	1.0	1.0	1.1	A-	
40	625484	3	3	276	.826	.116	.022	.826	.015	.022	.414	-.225	-.211	.414	-.098	-2.774	0.175	-0.8	0.9	-0.8	0.9	A-	
41	634152	3	3	276	.333	.333	.185	.254	.207	.022	.136	.136	-.030	-.090	.058	-0.111	0.137	3.5	1.2	3.5	1.3	A-	
42	627784	3	3	276	.630	.120	.630	.210	.015	.025	.399	-.306	.399	-.070	-.085	-1.549	0.136	-0.3	1.0	-0.3	1.0	A+	
43	624772	3	3	276	.196	.312	.268	.196	.203	.022	.259	-.058	-.078	.259	.014	0.724	0.160	0.4	1.0	1.3	1.2	A-	
44	633542	3	3	276	.725	.112	.058	.076	.725	.029	.507	-.244	-.078	-.295	.507	-2.088	0.148	-1.8	0.9	-2.2	0.8	A+	
45	620994	3	3	277	.733	.733	.083	.079	.101	.004	.399	.399	-.116	-.270	-.176	-2.136	0.148	-0.1	1.0	0.8	1.1	A-	
46	635444	3	3	277	.347	.209	.209	.231	.347	.004	.390	-.196	-.141	-.071	.390	-0.171	0.137	-0.6	1.0	-0.5	1.0	A-	
47	626568	3	3	277	.585	.188	.101	.123	.585	.004	.443	-.249	-.151	-.174	.443	-1.334	0.134	-0.8	1.0	-0.7	0.9	A-	
48	623092	3	3	277	.874	.047	.874	.040	.033	.007	.333	-.115	.333	-.130	-.173	-3.247	0.195	-0.2	1.0	1.0	1.2	A-	
49	634153	3	3	277	.296	.220	.350	.112	.296	.022	.182	-.006	-.043	-.035	.182	0.112	0.143	2.7	1.2	4.5	1.6	A-	
50	634149	3	3	277	.801	.040	.123	.801	.025	.011	.418	-.306	-.115	.418	-.199	-2.632	0.165	-0.1	1.0	-0.7	0.9	A+	
51	639885	3	3	277	.617	.163	.617	.090	.116	.014	.522	-.267	.522	-.146	-.235	-1.527	0.137	-2.2	0.9	-1.7	0.9	A+	
52	628033	3	3	277	.913	.025	.036	.913	.014	.011	.427	-.128	-.295	.427	-.061	-3.849	0.240	-0.6	0.9	-1.5	0.6	A+	
53	622991	3	3	277	.769	.769	.108	.061	.047	.014	.418	.418	-.209	-.147	-.185	-2.421	0.157	-0.1	1.0	-0.8	0.9	A-	
54	622999	3	3	277	.354	.242	.137	.354	.246	.022	.456	-.154	-.163	.456	-.121	-0.219	0.138	-1.2	0.9	-1.3	0.9	A-	
55	621009	3	3	277	.780	.018	.040	.780	.144	.018	.393	-.202	-.327	.393	-.086	-2.514	0.161	-0.2	1.0	0.7	1.1	A-	
56	633543	3	3	277	.697	.108	.137	.043	.697	.014	.557	-.240	-.302	-.200	.557	-1.968	0.144	-2.5	0.8	-2.6	0.7	A+	
57	620995	3	3	275	.542	.222	.146	.087	.542	.004	.399	-.108	-.220	-.207	.399	-0.959	0.136	1.4	1.1	0.9	1.1	B+	
58	628317	3	3	275	.844	.022	.022	.106	.844	.007	.413	-.191	-.180	-.238	.413	-2.777	0.185	-0.6	0.9	-0.4	0.9	A+	
59	635878	3	3	275	.633	.124	.633	.066	.171	.007	.422	-.141	.422	-.216	-.228	-1.414	0.141	0.1	1.0	0.1	1.0	A-	
60	633544	3	3	275	.822	.051	.822	.036	.084	.007	.498	-.275	.498	-.226	-.235	-2.644	0.179	-1.5	0.8	-1.1	0.8	A+	
61	639886	3	3	275	.466	.222	.135	.175	.466	.004	.398	-.276	-.140	-.049	.398	-0.551	0.136	1.2	1.1	0.9	1.1	A-	
62	634150	3	3	275	.847	.087	.015	.847	.047	.004	.463	-.295	-.148	.463	-.224	-2.894	0.191	-1.0	0.9	-1.4	0.7	A+	
63	622461	3	3	275	.836	.836	.095	.047	.018	.004	.322	.322	-.297	.027	-.150	-2.753	0.183	-0.1	1.0	1.3	1.3	A-	
64	623007	3	3	275	.556	.233	.116	.091	.556	.004	.379	-.170	-.197	-.125	.379	-1.015	0.136	1.6	1.1	0.6	1.1	A+	
65	639446	3	3	275	.073	.651	.073	.076	.196	.004	-.057	-.063	-.057	-.061	.198	2.958	0.316	0.5	1.1	1.2	1.6	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
66	639870	3	3	275	.411	.226	.258	.102	.411	.004	.396	-.206	-.140	-.098	.396	-0.211	0.138	0.1	1.0	0.5	1.0	C-	
67	622995	3	3	275	.520	.520	.138	.138	.200	.004	.423	.423	-.107	-.261	-.167	-0.828	0.136	0.5	1.0	0.5	1.0	A+	
68	634154	3	3	275	.578	.164	.578	.135	.120	.004	.390	-.222	.390	-.226	-.049	-1.071	0.137	0.8	1.0	0.6	1.1	A+	
69	623100	3	3	275	.738	.069	.087	.738	.098	.007	.426	-.179	-.236	.426	-.136	-2.015	0.152	-0.7	0.9	-0.7	0.9	A+	A-
70	639429	3	4	275	.887	.887	.022	.022	.058	.011	.526	.526	-.163	-.258	-.240	-3.403	0.218	-0.8	0.9	-1.6	0.6	A-	A-
71	620987	3	3	275	.298	.393	.298	.218	.080	.011	.195	.122	.195	-.119	-.190	0.263	0.143	3.0	1.2	2.8	1.4	A+	A+
72	634159	3	3	275	.487	.487	.302	.127	.069	.015	.395	.395	-.203	.010	-.225	-0.725	0.134	0.6	1.0	0.3	1.0	B-	A+
73	621007	3	3	275	.407	.200	.164	.407	.218	.011	.411	-.167	-.119	.411	-.103	-0.318	0.135	-0.4	1.0	-0.4	1.0	A-	A-
74	623084	3	3	275	.386	.196	.309	.095	.386	.015	.303	-.217	.083	-.157	.303	-0.227	0.136	2.4	1.1	1.9	1.2	A-	A+
75	623025	3	3	275	.807	.058	.807	.058	.066	.011	.489	-.189	.489	-.199	-.217	-2.531	0.170	-1.0	0.9	-1.7	0.7	A+	A-
76	626548	3	3	275	.407	.189	.124	.266	.407	.015	.323	-.155	-.196	.031	.323	-0.346	0.135	2.0	1.1	2.2	1.2	A+	A+
77	623094	3	4	275	.880	.066	.880	.026	.018	.011	.557	-.349	.557	-.173	-.140	-3.356	0.215	-0.9	0.9	-2.1	0.5	A+	A-
78	639871	3	3	275	.331	.196	.138	.324	.331	.011	.308	-.207	-.103	.046	.308	0.061	0.140	1.2	1.1	2.5	1.3	B-	A+
79	639887	3	3	275	.284	.207	.258	.284	.236	.015	.233	.042	-.090	.233	-.076	0.343	0.145	1.5	1.1	3.4	1.5	A-	A-
80	630795	3	3	275	.869	.047	.040	.869	.029	.015	.547	-.259	-.270	.547	-.155	-3.261	0.209	-0.9	0.9	-1.7	0.6	A+	A-
81	633545	3	3	275	.822	.073	.822	.040	.055	.011	.603	-.262	.603	-.268	-.271	-2.745	0.179	-2.0	0.8	-2.6	0.6	A+	A-
82	635896	3	3	277	.531	.357	.033	.531	.079	.000	.309	-.197	-.221	.309	-.077	-0.991	0.133	2.6	1.1	1.9	1.2	A-	
83	620998	3	3	277	.686	.242	.043	.022	.686	.007	.473	-.345	-.221	-.146	.473	-1.843	0.144	-1.2	0.9	-0.5	0.9	A+	
84	624841	3	4	277	.650	.108	.650	.076	.166	.000	.462	-.214	.462	-.168	-.294	-1.581	0.139	-1.3	0.9	-0.6	0.9	A-	
85	635898	3	3	277	.747	.747	.036	.079	.134	.004	.426	.426	-.226	-.139	-.297	-2.177	0.152	-0.6	1.0	-0.3	1.0	A+	
86	621010	3	3	277	.379	.379	.314	.246	.061	.000	.331	.331	-.071	-.223	-.132	-0.249	0.137	2.1	1.1	1.6	1.2	A-	
87	632331	3	3	277	.451	.144	.307	.098	.451	.000	.428	-.119	-.259	-.174	.428	-0.597	0.134	-0.4	1.0	0.4	1.0	A-	
88	624751	3	3	277	.404	.404	.177	.123	.296	.000	.341	.341	-.113	-.239	-.101	-0.379	0.135	1.7	1.1	2.3	1.2	B-	
89	630796	3	3	277	.830	.051	.076	.033	.830	.011	.394	-.290	-.158	-.227	.394	-2.868	0.179	-0.4	1.0	-0.9	0.8	A-	
90	620997	3	3	277	.177	.303	.177	.079	.440	.000	.108	-.068	.108	-.151	.063	1.068	0.173	2.0	1.2	3.2	1.7	A-	
91	627700	3	3	277	.502	.159	.148	.502	.181	.011	.492	-.280	-.164	.492	-.176	-0.876	0.134	-1.0	1.0	-1.2	0.9	A-	
92	623021	3	3	277	.386	.289	.123	.386	.199	.004	.439	-.093	-.242	.439	-.213	-0.288	0.136	-0.2	1.0	0.1	1.0	C+	
93	639850	3	3	277	.408	.123	.383	.408	.079	.007	.381	-.148	-.151	.381	-.223	-0.372	0.136	0.3	1.0	0.9	1.1	A+	
94	639881	3	3	277	.783	.069	.783	.076	.058	.014	.545	-.243	.545	-.298	-.301	-2.502	0.164	-2.2	0.8	-2.1	0.7	A+	
95	622444	3	3	276	.674	.116	.044	.167	.674	.000	.410	-.261	-.215	-.174	.410	-1.809	0.140	-0.1	1.0	-0.1	1.0	A-	A-
96	622449	3	3	276	.562	.188	.562	.163	.087	.000	.441	-.184	.441	-.175	-.292	-1.228	0.133	-0.2	1.0	-0.6	1.0	A+	A+
97	623010	3	3	276	.717	.717	.065	.130	.080	.007	.404	.404	-.093	-.264	-.228	-2.077	0.147	-0.1	1.0	-0.1	1.0	A+	A-
98	623031	3	3	276	.370	.344	.112	.170	.370	.004	.321	-.141	-.138	-.111	.321	-0.279	0.137	2.0	1.1	1.8	1.2	A-	A-
99	634028	3	3	276	.591	.116	.591	.141	.152	.000	.370	-.284	.370	-.054	-.201	-1.355	0.134	0.9	1.1	0.2	1.0	A+	A-
100	634163	3	3	276	.446	.083	.152	.315	.446	.004	.377	-.329	-.095	-.136	.377	-0.651	0.134	0.6	1.0	1.1	1.1	A+	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
101	639883	3	3	276	.772	.069	.105	.772	.054	.000	.507	-.264	-.316	.507	-.215	-2.396	0.155	-1.8	0.9	-2.2	0.7	A+	A-
102	634151	3	3	276	.804	.029	.145	.804	.022	.000	.369	-.197	-.257	.369	-.157	-2.626	0.163	-0.3	1.0	0.5	1.1	A-	A-
103	620991	3	3	276	.725	.725	.058	.123	.094	.000	.408	.408	-.189	-.152	-.302	-2.099	0.147	-0.2	1.0	-0.5	0.9	A+	A+
104	628101	3	3	276	.380	.152	.254	.380	.214	.000	.493	-.170	-.216	.493	-.206	-0.331	0.136	-1.9	0.9	0.5	1.0	A+	A-
105	621002	3	3	276	.420	.073	.275	.232	.420	.000	.525	-.276	-.345	-.080	.525	-0.533	0.134	-2.1	0.9	-2.2	0.8	B+	A-
106	622462	3	N/A	276	.254	.308	.254	.370	.069	.000	-.045	-.176	-.045	.149	.116	0.404	0.151	4.9	1.4	5.7	2.0	A+	A-
107	621005	3	3	276	.848	.036	.848	.098	.015	.004	.354	-.317	.354	-.149	-.168	-3.005	0.181	-0.4	1.0	0.5	1.1	A+	B+
108	620990	3	3	274	.912	.040	.912	.037	.011	.000	.404	-.394	.404	-.124	-.132	-3.538	0.226	-1.0	0.8	-1.3	0.6	A+	A+
109	622450	3	3	274	.799	.033	.037	.799	.128	.004	.424	-.205	-.109	.424	-.308	-2.487	0.166	-0.5	1.0	0.1	1.0	A-	A-
110	634032	3	3	274	.745	.080	.069	.099	.745	.007	.503	-.249	-.269	-.224	.503	-2.112	0.154	-1.2	0.9	-1.8	0.8	A-	A-
111	635443	3	3	274	.693	.135	.077	.693	.095	.000	.442	-.300	-.174	.442	-.188	-1.768	0.144	-0.6	1.0	-1.2	0.9	A-	A+
112	622463	3	3	274	.602	.602	.146	.117	.131	.004	.414	.414	-.186	-.184	-.200	-1.297	0.137	0.2	1.0	0.7	1.1	A+	A+
113	623091	3	3	274	.679	.033	.259	.679	.026	.004	.381	-.220	-.212	.381	-.225	-1.709	0.143	0.4	1.0	1.4	1.2	A+	A+
114	625477	3	3	274	.934	.026	.934	.026	.015	.000	.408	-.253	.408	-.261	-.166	-3.955	0.262	-0.7	0.9	-1.9	0.4	A+	A-
115	622458	3	3	274	.485	.117	.146	.248	.485	.004	.417	-.217	-.192	-.141	.417	-0.713	0.134	0.5	1.0	0.2	1.0	A-	A-
116	639884	3	3	274	.715	.124	.073	.715	.084	.004	.447	-.168	-.284	.447	-.249	-1.930	0.148	-0.7	1.0	-0.7	0.9	A-	A+
117	621015	3	3	274	.307	.307	.358	.157	.175	.004	.181	.181	.019	-.139	-.084	0.236	0.144	3.4	1.2	4.3	1.6	A-	A-
118	626555	3	3	274	.383	.161	.193	.259	.383	.004	.396	-.173	-.238	-.073	.396	-0.205	0.137	0.5	1.0	0.8	1.1	A+	A-
119	620988	3	3	274	.639	.150	.084	.120	.639	.007	.516	-.194	-.241	-.299	.516	-1.500	0.140	-1.7	0.9	-2.1	0.8	A+	A+
120	634164	3	3	274	.628	.080	.150	.628	.131	.011	.377	-.227	-.220	.377	-.052	-1.443	0.139	0.9	1.1	2.0	1.2	A-	B-
121	626547	3	3	274	.420	.197	.226	.153	.420	.004	.169	-.062	-.052	-.092	.169	-0.448	0.133	4.3	1.2	4.6	1.4	B+	A-
122	621012	3	3	276	.482	.123	.188	.482	.203	.004	.315	-.226	-.055	.315	-.104	-0.777	0.129	0.1	1.0	0.7	1.0	A+	
123	634030	3	3	277	.386	.206	.386	.163	.231	.014	.386	-.123	.386	-.145	-.119	-0.369	0.135	0.2	1.0	-0.1	1.0	A-	
124	634160	3	3	275	.520	.207	.076	.520	.193	.004	.451	-.167	-.205	.451	-.217	-0.810	0.136	-0.5	1.0	-0.2	1.0	A+	
125	623056	3	3	275	.884	.884	.033	.026	.044	.015	.559	.559	-.266	-.106	-.320	-3.447	0.222	-1.0	0.8	-2.0	0.5	A-	A-
126	621006	3	3	277	.668	.065	.668	.166	.098	.004	.533	-.265	.533	-.278	-.268	-1.730	0.141	-2.2	0.9	-1.9	0.8	A+	
127	624801	3	3	276	.873	.044	.044	.873	.040	.000	.439	-.275	-.297	.439	-.151	-3.221	0.192	-0.9	0.9	-1.8	0.6	A-	A+
128	623023	3	3	274	.438	.120	.175	.263	.438	.004	.239	-.275	-.025	-.039	.239	-0.466	0.135	4.3	1.2	2.8	1.3	A-	B+
129	622985	3	3	274	.449	.153	.120	.277	.449	.000	.495	-.186	-.409	-.102	.495	-0.585	0.132	-2.2	0.9	-1.4	0.9	A-	B-
130	624847	3	3	277	.480	.480	.152	.090	.264	.014	.256	.256	-.082	-.111	-.067	-0.847	0.133	3.6	1.2	3.8	1.3	A+	
131	624849	3	3	276	.355	.254	.217	.170	.355	.004	.291	-.186	-.071	-.024	.291	-0.168	0.135	0.7	1.0	1.6	1.1	A-	
132	622465	3	3	277	.422	.209	.422	.148	.213	.007	.373	-.120	.373	-.189	-.122	-0.546	0.134	0.6	1.0	1.3	1.1	A-	
133	634029	3	3	275	.695	.095	.156	.695	.051	.004	.459	-.302	-.195	.459	-.158	-1.730	0.146	-0.7	1.0	-1.4	0.8	A+	
134	634162	3	3	275	.546	.116	.146	.182	.546	.011	.522	-.219	-.234	-.152	.522	-1.027	0.135	-2.2	0.9	-1.8	0.9	A+	B-
135	626574	3	3	277	.823	.058	.079	.040	.823	.000	.466	-.215	-.321	-.210	.466	-2.732	0.171	-1.3	0.9	-1.2	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
136	636550	3	3	276	.645	.159	.091	.105	.645	.000	.519	-.315	-.224	-.223	.519	-1.653	0.138	-2.1	0.9	-2.3	0.8	A+	A-
137	622979	3	3	274	.752	.110	.752	.044	.091	.004	.392	-.204	.392	-.122	-.245	-2.152	0.154	0.5	1.0	-0.2	1.0	A+	A+
138	621008	3	3	274	.453	.117	.285	.453	.146	.000	.274	-.153	-.022	.274	-.219	-0.603	0.132	2.5	1.1	2.6	1.2	A-	A-
139	623107	3	3	276	.323	.323	.326	.188	.141	.022	.299	.299	-.069	-.094	-.068	-0.044	0.138	0.8	1.1	1.5	1.1	A+	
140	625516	3	3	275	.498	.498	.196	.189	.109	.007	.387	.387	-.134	-.109	-.257	-0.709	0.136	1.2	1.1	1.1	1.1	A+	
141	623113	4	3	233	.931	.034	.931	.009	.026	.000	.393	-.300	.393	-.082	-.235	-3.289	0.274	-0.6	0.9	-1.1	0.6	B+	
142	637175	4	4	232	.315	.315	.315	.306	.060	.004	.434	-.145	.434	-.230	-.048	0.431	0.153	-0.8	1.0	-0.4	1.0	A+	A-
143	633445	4	4	235	.843	.030	.102	.843	.026	.000	.404	-.288	-.226	.404	-.189	-2.327	0.194	-0.6	0.9	-0.7	0.8	A-	
144	635414	4	4	233	.794	.090	.043	.073	.794	.000	.589	-.352	-.291	-.302	.589	-1.892	0.176	-2.2	0.8	-2.4	0.7	A+	
145	639852	4	4	234	.543	.252	.111	.081	.543	.013	.498	-.208	-.128	-.255	.498	-0.601	0.143	-2.3	0.9	-1.9	0.9	A+	
146	623033	4	4	232	.341	.280	.211	.164	.341	.004	.308	-.131	-.190	-.005	.308	0.344	0.148	1.0	1.1	0.3	1.0	A+	A+
147	623013	4	4	233	.730	.730	.099	.073	.094	.004	.515	.515	-.355	-.235	-.139	-1.638	0.159	-2.5	0.8	-1.2	0.8	A-	
148	633852	4	4	233	.489	.120	.489	.155	.232	.004	.380	-.225	.380	-.194	-.060	-0.342	0.144	0.7	1.0	0.6	1.0	A+	
149	624765	4	4	233	.790	.052	.125	.790	.030	.004	.515	-.301	-.295	.515	-.272	-1.863	0.173	-1.8	0.8	-2.1	0.7	A+	
150	625527	4	3	232	.552	.194	.190	.052	.552	.013	.386	-.145	-.269	-.007	.386	-0.760	0.144	0.5	1.0	0.2	1.0	A-	A-
151	627004	4	3	232	.935	.935	.017	.013	.030	.004	.273	.273	-.121	-.205	-.168	-3.608	0.290	-0.1	1.0	-1.1	0.6	A+	A-
152	637177	4	4	235	.562	.149	.128	.562	.162	.000	.461	-.208	-.284	.461	-.162	-0.588	0.146	-0.4	1.0	-0.7	0.9	A-	
153	633432	4	4	233	.717	.107	.047	.129	.717	.000	.496	-.261	-.338	-.212	.496	-1.390	0.158	-1.3	0.9	-1.2	0.9	A+	
154	633464	4	4	234	.654	.086	.654	.115	.137	.009	.501	-.196	.501	-.218	-.214	-1.153	0.150	-2.0	0.9	-2.1	0.8	A+	
155	639854	4	4	232	.453	.319	.125	.453	.099	.004	.427	-.132	-.262	.427	-.189	-0.204	0.142	-1.2	0.9	-0.4	1.0	A+	A-
156	623136	4	4	233	.571	.167	.150	.107	.571	.004	.465	-.321	-.180	-.081	.465	-0.800	0.144	-1.6	0.9	-1.1	0.9	A-	
157	635900	4	4	233	.803	.133	.803	.026	.034	.004	.465	-.249	.465	-.247	-.219	-2.089	0.179	-1.0	0.9	-1.4	0.8	A-	
158	635412	4	4	233	.352	.172	.352	.378	.099	.000	.340	-.188	.340	-.082	-.173	0.404	0.147	0.1	1.0	0.9	1.1	A+	
159	630419	4	4	232	.375	.323	.151	.142	.375	.009	.306	-.092	-.151	-.064	.306	0.113	0.147	1.5	1.1	1.9	1.2	A-	A+
160	630295	4	3	235	.702	.209	.026	.055	.702	.009	.493	-.372	-.218	-.148	.493	-1.375	0.159	-1.1	0.9	-1.3	0.8	A+	
161	622466	4	4	2796	.729	.151	.729	.062	.055	.004	.471	-.271	.471	-.204	-.210	-1.565	0.046	-4.0	0.9	-4.5	0.8	A+	B+
162	633465	4	4	2796	.788	.066	.051	.092	.788	.004	.475	-.237	-.241	-.234	.475	-1.960	0.050	-4.2	0.9	-4.9	0.8	A+	A-
163	622994	4	4	2796	.748	.091	.088	.070	.748	.004	.473	-.249	-.246	-.195	.473	-1.686	0.048	-4.0	0.9	-4.9	0.8	A+	A-
164	622981	4	4	2796	.722	.722	.079	.081	.114	.005	.489	.489	-.224	-.232	-.246	-1.534	0.046	-4.2	0.9	-5.5	0.8	A+	B-
165	639855	4	4	2796	.330	.402	.141	.330	.123	.005	.319	-.075	-.168	.319	-.115	0.493	0.044	1.4	1.0	3.3	1.1	A+	A+
166	635475	4	4	2796	.315	.334	.109	.315	.238	.004	.205	-.074	-.191	.205	.039	0.567	0.044	7.1	1.1	8.4	1.3	A-	A-
167	623002	4	4	2796	.345	.182	.345	.341	.127	.006	.255	-.149	.255	-.054	-.058	0.393	0.043	6.7	1.1	6.8	1.2	A-	A-
168	635410	4	4	2796	.264	.291	.232	.264	.207	.007	.180	.003	-.092	.180	-.055	0.858	0.046	6.8	1.2	8.0	1.3	A+	A+
169	623118	4	3	2796	.548	.132	.155	.548	.157	.008	.448	-.202	-.189	.448	-.181	-0.620	0.042	-3.0	1.0	-2.1	1.0	A+	A-
170	633433	4	4	2796	.696	.696	.172	.061	.064	.007	.452	.452	-.225	-.215	-.210	-1.388	0.045	-2.7	0.9	-3.4	0.9	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
171	622426	4	4	234	.457	.218	.457	.103	.218	.004	.225	-.078	.225	-.076	-.082	-0.060	0.145	2.8	1.2	2.9	1.3	A-	
172	622986	4	4	234	.786	.068	.064	.786	.077	.004	.499	-.225	-.296	.499	-.196	-1.902	0.176	-0.8	0.9	-1.2	0.8	A+	
173	637007	4	4	234	.603	.128	.603	.145	.115	.009	.481	-.134	.481	-.198	-.277	-0.815	0.149	-1.5	0.9	-1.2	0.9	A-	
174	626821	4	3	234	.380	.380	.184	.274	.154	.009	.284	.284	-.157	-.003	-.120	0.321	0.148	1.6	1.1	1.2	1.1	A-	
175	639853	4	4	467	.595	.161	.131	.595	.107	.006	.484	-.253	-.210	.484	-.152	-0.821	0.104	-1.6	0.9	-1.9	0.9	A-	A+
176	624798	4	4	232	.530	.147	.125	.530	.198	.000	.472	-.189	-.285	.472	-.185	-0.559	0.149	-1.2	0.9	-1.1	0.9	A-	A-
177	635447	4	4	232	.629	.629	.125	.099	.147	.000	.525	.525	-.329	-.237	-.209	-1.069	0.155	-1.6	0.9	-1.6	0.8	A-	A-
178	637015	4	4	232	.599	.052	.599	.323	.026	.000	.553	-.268	.553	-.389	-.188	-0.926	0.153	-2.3	0.9	-2.2	0.8	A+	A-
179	631096	4	3	232	.194	.254	.310	.233	.194	.009	.170	-.143	-.036	.043	.170	1.447	0.184	1.1	1.1	0.9	1.2	A+	A-
180	624770	4	4	232	.177	.427	.177	.207	.185	.004	.100	.211	.100	-.154	-.198	1.662	0.194	0.3	1.0	1.8	1.5	A+	A-
181	626571	4	4	233	.760	.150	.026	.760	.064	.000	.498	-.348	-.205	.498	-.229	-1.873	0.170	-1.3	0.9	-1.6	0.8	A+	
182	635901	4	4	233	.768	.077	.768	.090	.060	.004	.435	-.214	.435	-.256	-.127	-1.932	0.172	-0.4	1.0	-0.4	0.9	C+	
183	637147	4	3	233	.910	.034	.910	.013	.039	.004	.432	-.299	.432	-.148	-.154	-3.343	0.263	-0.2	0.9	-0.8	0.7	A+	
184	634143	4	3	233	.326	.245	.223	.326	.197	.009	.381	-.335	-.019	.381	-.005	0.454	0.153	-1.4	0.9	0.4	1.0	A+	
185	624845	4	4	233	.369	.155	.206	.262	.369	.009	.250	-.098	-.048	-.101	.250	0.217	0.149	1.1	1.1	1.6	1.2	A-	
186	633463	4	4	232	.470	.211	.280	.470	.039	.000	.077	-.026	.015	.077	-.179	-0.183	0.142	3.0	1.2	3.4	1.3	A+	
187	635471	4	4	232	.414	.224	.414	.194	.164	.004	.401	-.211	.401	-.112	-.115	0.064	0.144	-0.7	1.0	-0.3	1.0	A-	
188	622464	4	4	232	.823	.091	.823	.035	.047	.004	.421	-.264	.421	-.121	-.188	-2.149	0.185	-0.5	0.9	-1.0	0.8	A+	
189	623022	4	4	232	.599	.599	.091	.060	.241	.009	.123	.123	-.165	-.241	.176	-0.826	0.145	3.5	1.2	3.3	1.3	A-	
190	625493	4	4	232	.582	.276	.116	.582	.017	.009	.397	-.209	-.199	.397	-.106	-0.751	0.145	-0.6	1.0	0.4	1.0	A+	
191	623011	4	4	233	.781	.026	.120	.073	.781	.000	.314	-.240	-.119	-.205	.314	-1.778	0.169	0.5	1.1	-0.2	1.0	A+	
192	633855	4	4	233	.451	.270	.064	.215	.451	.000	.370	-.094	-.270	-.186	.370	-0.072	0.141	0.0	1.0	0.2	1.0	A-	
193	635442	4	4	233	.644	.056	.116	.644	.185	.000	.333	-.273	-.056	.333	-.203	-0.991	0.147	0.6	1.0	0.7	1.1	A-	
194	637142	4	3	233	.867	.034	.013	.086	.867	.000	.365	-.256	-.193	-.198	.365	-2.464	0.204	-0.3	1.0	-0.7	0.8	A-	
195	637146	4	3	233	.897	.056	.897	.013	.034	.000	.385	-.290	.385	-.199	-.155	-2.740	0.224	-0.6	0.9	-1.4	0.7	A+	
196	622997	4	4	233	.519	.077	.335	.519	.069	.000	.423	-.223	-.160	.423	-.303	-0.392	0.141	-0.9	1.0	-0.5	1.0	A-	
197	636253	4	4	233	.717	.146	.717	.116	.017	.004	.267	-.202	.267	-.040	-.280	-1.377	0.156	1.1	1.1	0.3	1.0	A-	
198	629829	4	4	233	.747	.747	.142	.034	.073	.004	.427	.427	-.201	-.270	-.252	-1.579	0.162	-0.7	0.9	-1.2	0.9	A-	
199	624818	4	4	233	.253	.253	.116	.189	.442	.000	.013	.013	.025	-.109	.059	0.967	0.160	3.0	1.3	3.2	1.5	A+	
200	627011	4	4	233	.421	.318	.421	.150	.112	.000	.371	-.265	.371	-.139	-.033	0.070	0.142	-0.3	1.0	1.1	1.1	A+	
201	623012	4	4	232	.190	.233	.384	.194	.190	.000	.211	-.013	-.055	-.129	.211	1.214	0.178	0.8	1.1	2.5	1.5	A-	A+
202	635473	4	4	232	.241	.216	.121	.241	.418	.004	.074	-.108	.014	.074	.052	0.888	0.166	2.6	1.2	3.5	1.5	A-	A-
203	637143	4	3	232	.759	.069	.039	.129	.759	.004	.493	-.230	-.132	-.328	.493	-1.850	0.165	-1.6	0.9	-1.8	0.8	A-	A-
204	623028	4	4	232	.448	.103	.448	.060	.384	.004	.432	-.139	.432	-.189	-.227	-0.226	0.144	-0.9	1.0	-1.2	0.9	A+	A+
205	622998	4	4	232	.737	.043	.078	.737	.138	.004	.447	-.134	-.273	.447	-.230	-1.717	0.161	-1.1	0.9	-0.9	0.9	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
206	636254	4	4	232	.487	.207	.142	.487	.155	.009	.383	-.208	-.107	.383	-.114	-0.436	0.143	0.4	1.0	0.9	1.1	A+	B-
207	630294	4	4	232	.392	.108	.392	.237	.254	.009	.293	-.183	.293	-.104	-.032	0.026	0.146	1.8	1.1	2.4	1.2	A+	A+
208	632572	4	4	232	.651	.651	.116	.198	.022	.013	.336	.336	-.136	-.201	-.053	-1.258	0.150	1.1	1.1	0.9	1.1	A+	B+
209	627495	4	4	232	.565	.181	.151	.565	.095	.009	.527	-.276	-.173	.527	-.220	-0.810	0.144	-2.5	0.9	-2.1	0.9	A+	A+
210	624275	4	4	235	.702	.230	.038	.702	.030	.000	.501	-.337	-.255	.501	-.226	-1.341	0.157	-1.3	0.9	-1.7	0.8	A+	
211	635474	4	4	235	.315	.298	.315	.179	.209	.000	.288	-.148	.288	-.269	.092	0.686	0.155	2.2	1.2	2.4	1.3	B-	
212	626557	4	3	235	.860	.072	.051	.860	.013	.004	.453	-.262	-.323	.453	-.124	-2.521	0.205	-0.9	0.9	-1.3	0.7	A+	
213	637056	4	4	235	.817	.817	.077	.038	.068	.000	.456	.456	-.197	-.173	-.359	-2.113	0.183	-1.0	0.9	-1.0	0.8	B+	
214	636255	4	4	235	.723	.047	.162	.064	.723	.004	.431	-.172	-.294	-.189	.431	-1.486	0.161	-0.4	1.0	-0.4	0.9	A-	
215	636256	4	4	235	.677	.051	.677	.128	.136	.009	.365	-.178	.365	-.232	-.157	-1.229	0.155	1.0	1.1	0.7	1.1	A-	
216	622451	4	4	235	.660	.660	.085	.238	.017	.000	.474	.474	-.189	-.366	-.123	-1.100	0.152	-0.8	1.0	-1.0	0.9	A+	
217	623119	4	3	235	.740	.136	.740	.047	.077	.000	.401	-.253	.401	-.231	-.151	-1.574	0.163	-0.1	1.0	0.0	1.0	B+	
218	625521	4	3	235	.362	.345	.362	.238	.051	.004	.323	-.130	.323	-.120	-.171	0.423	0.151	1.9	1.1	2.9	1.3	A-	
219	635885	4	4	233	.640	.150	.103	.640	.107	.000	.408	-.155	-.287	.408	-.172	-0.968	0.148	-0.3	1.0	0.0	1.0	A-	
220	636257	4	4	233	.579	.155	.579	.155	.112	.000	.354	-.078	.354	-.218	-.215	-0.669	0.144	0.8	1.0	0.7	1.1	A-	
221	639432	4	4	233	.858	.060	.858	.022	.060	.000	.443	-.281	.443	-.208	-.243	-2.434	0.205	-0.6	0.9	-0.9	0.8	B+	
222	624771	4	N/A	233	.258	.258	.189	.197	.356	.000	.006	.006	-.161	-.161	.259	0.922	0.158	3.1	1.3	4.9	1.7	A+	
223	623116	4	4	233	.803	.129	.047	.022	.803	.000	.465	-.244	-.308	-.262	.465	-1.956	0.179	-0.6	0.9	-1.2	0.8	A-	
224	622452	4	4	233	.262	.103	.047	.262	.588	.000	.190	-.141	-.170	.190	-.009	0.922	0.158	0.6	1.0	3.2	1.5	A-	
225	623029	4	4	233	.652	.082	.064	.652	.197	.004	.371	-.253	-.195	.371	-.137	-1.022	0.150	0.2	1.0	-0.1	1.0	A+	
226	622992	4	4	233	.876	.077	.876	.026	.022	.000	.450	-.224	.450	-.311	-.272	-2.614	0.217	-0.6	0.9	-1.0	0.8	A+	
227	627417	4	4	233	.588	.588	.103	.137	.167	.004	.410	.410	-.192	-.248	-.143	-0.721	0.145	-0.2	1.0	-0.1	1.0	A-	
228	639370	4	4	234	.282	.449	.081	.180	.282	.009	.345	-.028	-.311	-.076	.345	0.704	0.156	0.1	1.0	0.1	1.0	B+	
229	633431	4	4	234	.752	.752	.064	.068	.107	.009	.449	.449	-.229	-.137	-.204	-1.691	0.164	-0.8	0.9	-0.6	0.9	A+	
230	635435	4	4	234	.415	.051	.415	.188	.333	.013	.436	-.169	.436	-.166	-.138	0.033	0.144	-1.3	0.9	-1.2	0.9	A-	
231	637144	4	3	234	.551	.197	.551	.120	.124	.009	.406	-.166	.406	-.210	-.083	-0.639	0.143	-0.2	1.0	-0.6	1.0	A-	
232	627048	4	4	234	.372	.372	.342	.167	.107	.013	.312	.312	-.088	-.123	-.051	0.225	0.146	1.2	1.1	0.9	1.1	A-	
233	622455	4	4	234	.808	.808	.081	.060	.039	.013	.516	.516	-.189	-.217	-.273	-2.130	0.183	-1.3	0.9	-1.5	0.8	A+	
234	623095	4	4	234	.222	.406	.133	.222	.227	.013	.089	-.020	-.133	.089	.157	1.070	0.167	2.3	1.2	3.7	1.7	A+	
235	635881	4	4	234	.607	.231	.607	.111	.039	.013	.415	-.210	.415	-.170	-.070	-0.921	0.146	-0.2	1.0	-0.3	1.0	A-	
236	626556	4	3	234	.201	.312	.201	.274	.201	.013	.178	.032	.178	-.086	-.001	1.246	0.174	0.7	1.1	2.7	1.5	A-	
237	622990	4	4	234	.483	.081	.214	.483	.209	.013	.463	-.224	-.176	.463	-.123	-0.318	0.143	-1.6	0.9	-1.4	0.9	A-	
238	635941	4	4	232	.599	.134	.129	.599	.138	.000	.317	-.294	-.090	.317	-.073	-0.884	0.144	0.9	1.1	1.0	1.1	A+	A-
239	623122	4	3	232	.466	.289	.172	.466	.073	.000	.480	-.331	-.130	.480	-.154	-0.253	0.142	-2.1	0.9	-1.9	0.9	A-	A-
240	635472	4	4	232	.341	.185	.237	.237	.341	.000	.349	-.256	-.039	-.116	.349	0.354	0.148	0.0	1.0	1.1	1.1	A+	B+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
241	635411	4	4	232	.746	.078	.746	.086	.086	.004	.462	-.282	.462	-.222	-.207	-1.678	0.162	-0.9	0.9	-1.5	0.8	A-	A-
242	631025	4	4	232	.672	.073	.151	.672	.095	.009	.364	-.202	-.179	.364	-.152	-1.286	0.151	0.4	1.0	0.0	1.0	B+	A-
243	623132	4	3	232	.427	.358	.134	.078	.427	.004	.464	-.208	-.335	-.032	.464	-0.082	0.143	-1.5	0.9	-1.3	0.9	A+	A-
244	625490	4	4	232	.358	.233	.147	.254	.358	.009	.215	-.062	-.138	-.044	.215	0.244	0.147	2.3	1.1	2.5	1.2	A+	A+
245	623018	4	4	232	.422	.125	.267	.177	.422	.009	.235	-.163	-.065	-.065	.235	-0.074	0.143	2.8	1.2	2.0	1.2	A+	A-
246	628102	4	3	232	.466	.466	.147	.168	.207	.013	.338	.338	-.243	-.042	-.118	-0.281	0.142	1.0	1.1	1.0	1.1	A+	A+
247	625496	4	4	232	.535	.211	.535	.086	.155	.013	.428	-.207	.428	-.221	-.132	-0.608	0.143	-0.7	1.0	-0.5	1.0	A+	A-
248	635899	4	4	232	.578	.578	.129	.091	.185	.017	.446	.446	-.260	-.092	-.190	-0.817	0.144	-0.8	1.0	-1.1	0.9	B-	A+
249	622431	4	4	233	.657	.176	.125	.657	.034	.009	.480	-.340	-.182	.480	-.079	-1.246	0.150	-1.6	0.9	-1.3	0.9	A-	
250	633434	4	4	233	.794	.077	.039	.086	.794	.004	.406	-.260	-.166	-.150	.406	-2.054	0.174	-0.8	0.9	0.1	1.0	A+	
251	624284	4	4	233	.777	.064	.077	.077	.777	.004	.449	-.270	-.171	-.204	.449	-1.935	0.169	-1.3	0.9	-1.0	0.8	A-	
252	623026	4	3	233	.609	.155	.129	.609	.103	.004	.327	-.115	-.224	.327	-.073	-0.990	0.146	1.3	1.1	0.9	1.1	B-	
253	622993	4	4	233	.494	.416	.069	.494	.017	.004	.260	-.088	-.185	.260	-.148	-0.429	0.143	2.8	1.2	2.1	1.2	A-	
254	628103	4	3	233	.665	.150	.665	.120	.060	.004	.404	-.293	.404	-.050	-.206	-1.277	0.151	-0.2	1.0	-0.6	0.9	A-	
255	635356	4	4	233	.322	.159	.373	.322	.142	.004	.418	-.336	.010	.418	-.162	0.424	0.152	-0.8	0.9	-0.4	1.0	A+	
256	624846	4	3	233	.232	.189	.232	.331	.240	.009	.328	-.064	.328	-.090	-.101	0.979	0.168	-0.2	1.0	0.6	1.1	A+	
257	634144	4	4	233	.712	.215	.004	.060	.712	.009	.464	-.346	-.087	-.147	.464	-1.550	0.157	-1.1	0.9	-1.3	0.8	A-	
258	627071	4	4	233	.434	.163	.434	.236	.150	.017	.340	-.098	.340	-.162	-.109	-0.172	0.144	1.1	1.1	1.2	1.1	A+	
259	636551	4	4	233	.494	.155	.163	.494	.172	.017	.352	-.194	-.134	.352	-.070	-0.457	0.143	1.2	1.1	0.6	1.0	A-	
260	624796	4	4	233	.129	.296	.438	.133	.129	.004	.135	-.041	.042	-.075	.135	1.895	0.211	0.8	1.1	2.0	1.6	A+	
261	624810	4	4	233	.640	.060	.094	.640	.202	.004	.377	-.071	-.220	.377	-.195	-1.090	0.150	0.6	1.0	0.4	1.0	A-	
262	635574	4	4	233	.313	.262	.228	.313	.193	.004	.151	-.126	.022	.151	-.004	0.547	0.153	3.3	1.2	4.6	1.6	A-	
263	637140	4	3	233	.901	.026	.901	.056	.013	.004	.317	-.093	.317	-.205	-.101	-3.051	0.239	0.2	1.0	0.1	1.0	B-	
264	637145	4	3	233	.880	.073	.880	.022	.022	.004	.477	-.269	.477	-.221	-.218	-2.741	0.215	-0.9	0.9	-2.2	0.5	A-	
265	634033	4	4	233	.322	.090	.502	.322	.082	.004	.273	-.036	-.114	.273	-.142	0.500	0.152	1.8	1.1	2.0	1.2	B-	
266	636252	4	4	233	.897	.897	.034	.013	.052	.004	.440	.440	-.232	-.107	-.262	-2.940	0.230	-0.8	0.9	-1.7	0.6	A+	
267	639431	4	4	233	.571	.137	.185	.103	.571	.004	.495	-.210	-.296	-.118	.495	-0.740	0.145	-1.9	0.9	-1.6	0.9	A-	
268	624766	4	4	233	.575	.077	.228	.575	.116	.004	.450	-.218	-.132	.450	-.273	-0.740	0.145	-1.1	0.9	-1.1	0.9	A+	
269	635582	4	4	233	.442	.442	.403	.107	.043	.004	.386	.386	-.210	-.131	-.130	-0.113	0.144	0.1	1.0	1.3	1.1	A+	
270	623017	4	4	235	.740	.119	.038	.740	.102	.000	.462	-.176	-.200	.462	-.354	-1.547	0.163	-1.2	0.9	-1.6	0.8	A-	
271	625455	4	4	233	.640	.142	.052	.167	.640	.000	.365	-.143	-.304	-.157	.365	-0.968	0.148	0.6	1.0	0.6	1.1	A-	
272	622453	4	4	234	.756	.073	.064	.756	.098	.009	.474	-.240	-.221	.474	-.156	-1.718	0.165	-1.1	0.9	-1.4	0.8	A-	
273	623135	4	4	232	.263	.112	.263	.353	.263	.009	.111	-.146	-.088	.093	.111	0.757	0.158	2.6	1.2	2.7	1.4	A+	A-
274	632573	4	4	233	.451	.451	.210	.167	.159	.013	.174	.174	-.149	-.094	.109	-0.236	0.144	4.6	1.3	4.1	1.3	A-	
275	623020	4	4	233	.790	.082	.094	.026	.790	.009	.474	-.303	-.179	-.212	.474	-2.017	0.177	-1.1	0.9	-1.4	0.8	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
276	633435	4	4	233	.687	.219	.047	.047	.687	.000	.361	-.162	-.263	-.210	.361	-1.215	0.152	0.3	1.0	-0.2	1.0	A-	
277	623108	4	4	232	.591	.134	.147	.121	.591	.009	.535	-.272	-.196	-.224	.535	-0.915	0.145	-3.2	0.8	-2.7	0.8	A-	A+
278	633468	4	4	235	.745	.745	.051	.081	.119	.004	.490	.490	-.239	-.214	-.303	-1.620	0.165	-1.2	0.9	-0.9	0.9	A-	
279	627696	4	4	233	.236	.219	.236	.451	.090	.004	.035	-.137	.035	.109	-.026	1.074	0.163	2.4	1.2	3.1	1.5	A-	
280	623115	4	4	233	.730	.116	.730	.099	.056	.000	.426	-.314	.426	-.170	-.166	-1.441	0.160	-0.4	1.0	-1.3	0.9	A-	
281	622983	4	4	234	.727	.727	.073	.171	.021	.009	.375	.375	-.190	-.153	-.135	-1.560	0.160	0.3	1.0	0.0	1.0	A-	
282	622454	4	4	232	.379	.052	.379	.405	.164	.000	.279	-.185	.279	-.213	.028	0.159	0.145	1.2	1.1	2.0	1.2	A-	A-
283	621395	4	4	233	.249	.159	.142	.249	.446	.004	.220	-.079	-.117	.220	-.010	0.871	0.164	1.0	1.1	2.5	1.4	A+	
284	632587	4	4	233	.442	.155	.202	.197	.442	.004	.547	-.202	-.258	-.185	.547	-0.113	0.144	-3.3	0.8	-3.1	0.8	A+	
285	623019	4	4	233	.803	.803	.099	.073	.026	.000	.319	.319	-.192	-.158	-.181	-1.897	0.174	0.0	1.0	-0.1	1.0	A-	
286	634025	4	4	232	.724	.177	.724	.035	.056	.009	.434	-.254	.434	-.150	-.179	-1.648	0.159	-0.5	1.0	-1.1	0.9	A-	A-
287	626922	4	4	235	.494	.204	.494	.204	.098	.000	.446	-.255	.446	-.189	-.148	-0.247	0.145	-0.1	1.0	0.3	1.0	A+	
288	633469	4	4	233	.627	.219	.627	.060	.090	.004	.525	-.251	.525	-.295	-.262	-0.914	0.148	-2.0	0.9	-2.3	0.8	B+	
289	628471	4	4	234	.124	.419	.321	.124	.124	.013	.049	.114	.109	-.228	.049	1.899	0.210	1.0	1.1	2.5	1.7	A+	
290	637149	5	4	218	.913	.000	.913	.009	.078	.000	.298	.000	.298	-.068	-.289	-2.668	0.247	-0.1	1.0	-1.1	0.7	A+	
291	633440	5	5	221	.629	.177	.100	.629	.081	.014	.410	-.168	-.162	.410	-.129	-0.769	0.149	-0.7	1.0	-1.3	0.9	A+	
292	635884	5	5	221	.846	.846	.041	.045	.063	.005	.499	.499	-.327	-.200	-.202	-2.250	0.202	-1.0	0.9	-1.6	0.7	B-	
293	637062	5	5	218	.390	.115	.330	.390	.161	.005	.197	-.132	.072	.197	-.176	0.252	0.150	3.0	1.2	2.5	1.2	A+	
294	623027	5	5	220	.750	.055	.050	.141	.750	.005	.553	-.298	-.261	-.299	.553	-1.459	0.167	-2.5	0.8	-2.6	0.7	A+	
295	622469	5	4	221	.439	.213	.122	.439	.213	.014	.393	-.024	-.176	.393	-.239	0.188	0.148	0.0	1.0	0.5	1.0	A-	
296	639843	5	5	222	.788	.788	.045	.032	.131	.005	.372	.372	-.268	-.252	-.135	-1.669	0.177	0.0	1.0	-0.2	1.0	A+	
297	635417	5	5	221	.448	.448	.199	.154	.186	.014	.347	.347	-.087	-.098	-.134	0.019	0.147	0.9	1.1	0.4	1.0	A+	
298	620819	5	5	220	.486	.118	.177	.209	.486	.009	.449	-.258	-.088	-.219	.449	-0.205	0.147	-0.9	1.0	-0.2	1.0	A-	A-
299	635605	5	5	221	.285	.240	.104	.285	.362	.009	.187	-.020	-.190	.187	.063	0.895	0.157	1.1	1.1	2.7	1.3	A+	
300	637148	5	4	221	.833	.014	.018	.127	.833	.009	.431	-.149	-.177	-.217	.431	-1.982	0.191	-0.7	0.9	-1.1	0.8	A-	
301	633439	5	5	221	.448	.281	.154	.109	.448	.009	.321	-.142	-.064	-.131	.321	0.002	0.146	1.1	1.1	0.9	1.1	A-	
302	620820	5	5	218	.537	.197	.151	.106	.537	.009	.429	-.272	-.123	-.086	.429	-0.453	0.148	-0.8	1.0	-0.9	0.9	A+	
303	626566	5	5	220	.764	.764	.041	.123	.068	.005	.490	.490	-.212	-.279	-.253	-1.545	0.170	-1.7	0.9	-1.6	0.8	A+	
304	623129	5	5	221	.819	.072	.068	.819	.032	.009	.513	-.261	-.292	.513	-.176	-1.865	0.187	-1.6	0.8	-2.2	0.6	C+	
305	629858	5	4	222	.383	.140	.153	.315	.383	.009	.307	-.260	-.178	.027	.307	0.441	0.148	0.5	1.0	0.5	1.0	A-	
306	639864	5	5	221	.765	.167	.765	.050	.009	.009	.464	-.273	.464	-.209	-.061	-1.617	0.171	-1.2	0.9	-1.1	0.8	A-	
307	627291	5	5	220	.555	.127	.241	.073	.555	.005	.429	-.198	-.218	-.175	.429	-0.534	0.148	-0.5	1.0	-0.4	1.0	C+	A+
308	639349	5	5	218	.541	.541	.257	.087	.106	.009	.513	.513	-.290	-.213	-.202	-0.257	0.148	-2.0	0.9	-2.2	0.9	A-	
309	626818	5	5	221	.371	.190	.371	.050	.380	.009	.362	-.238	.362	-.189	-.017	0.371	0.149	-0.3	1.0	0.3	1.0	A-	
310	627692	5	5	2867	.523	.135	.523	.197	.141	.004	.394	-.167	.394	-.184	-.142	-0.273	0.040	-1.1	1.0	-1.1	1.0	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
311	633441	5	5	2867	.346	.112	.346	.181	.357	.005	.329	-.076	.329	-.144	-.120	0.581	0.042	1.4	1.0	2.0	1.1	A-	A+
312	626569	5	5	2867	.354	.200	.354	.296	.145	.006	.239	-.174	.239	-.024	-.035	0.542	0.042	6.7	1.1	7.5	1.2	B-	A+
313	635887	5	5	2867	.474	.241	.110	.474	.169	.005	.356	-.089	-.198	.356	-.149	-0.041	0.040	1.1	1.0	1.5	1.0	A-	A+
314	626554	5	5	2867	.608	.129	.102	.155	.608	.006	.408	-.157	-.218	-.159	.408	-0.685	0.041	-1.8	1.0	-2.0	1.0	A+	A-
315	628059	5	5	2867	.595	.116	.595	.155	.127	.007	.351	-.155	.351	-.103	-.186	-0.621	0.041	1.7	1.0	2.6	1.1	A+	A-
316	635609	5	5	2867	.218	.431	.140	.218	.202	.008	.172	.079	-.127	.172	-.095	1.328	0.048	3.9	1.1	6.4	1.3	A-	A+
317	627072	5	4	2867	.637	.145	.092	.116	.637	.011	.425	-.227	-.210	-.108	.425	-0.841	0.042	-2.8	1.0	-2.3	0.9	A+	A-
318	623109	5	5	2867	.524	.137	.524	.203	.124	.011	.364	-.174	.364	-.109	-.151	-0.290	0.041	1.6	1.0	1.3	1.0	A+	A-
319	630296	5	5	2867	.479	.090	.218	.200	.479	.014	.370	-.165	-.109	-.157	.370	-0.082	0.041	1.1	1.0	0.9	1.0	A+	A-
320	625492	5	5	221	.525	.177	.149	.525	.149	.000	.361	-.110	-.233	.361	-.155	-0.226	0.146	-0.1	1.0	-0.2	1.0	B+	
321	626926	5	5	221	.620	.199	.620	.081	.091	.009	.198	-.018	.198	-.204	-.054	-0.703	0.150	2.7	1.2	2.7	1.2	A+	
322	635607	5	4	221	.425	.213	.190	.425	.167	.005	.354	.056	-.256	.354	-.195	0.245	0.147	0.5	1.0	0.3	1.0	A+	
323	623121	5	5	221	.520	.045	.326	.095	.520	.014	.471	-.273	-.254	-.076	.471	-0.219	0.146	-2.2	0.9	-2.0	0.9	A+	
324	623140	5	5	221	.615	.167	.615	.167	.032	.018	.311	-.132	.311	-.125	-.107	-0.694	0.151	0.7	1.0	-0.1	1.0	A-	
325	624283	5	5	221	.833	.833	.081	.068	.018	.000	.459	.459	-.281	-.274	-.193	-2.089	0.193	-0.6	0.9	-1.6	0.7	A+	A-
326	635608	5	4	221	.362	.362	.226	.217	.195	.000	.346	.346	-.133	-.152	-.122	0.505	0.152	-0.6	1.0	-0.5	0.9	A-	A+
327	637154	5	5	221	.629	.086	.167	.629	.118	.000	.481	-.142	-.281	.481	-.272	-0.810	0.153	-2.0	0.9	-2.1	0.8	A+	A-
328	627772	5	5	221	.747	.050	.131	.747	.068	.005	.499	-.213	-.245	.499	-.320	-1.494	0.169	-1.2	0.9	-1.2	0.8	A-	B-
329	625513	5	5	221	.308	.136	.434	.308	.104	.018	.337	-.245	.002	.337	-.163	0.775	0.158	0.4	1.0	1.4	1.2	A-	A-
330	626573	5	5	221	.692	.167	.081	.692	.054	.005	.399	-.238	-.183	.399	-.097	-1.080	0.158	0.0	1.0	-0.3	1.0	A-	
331	638016	5	5	221	.597	.077	.100	.597	.222	.005	.511	-.236	-.222	.511	-.237	-0.586	0.149	-3.2	0.8	-3.0	0.8	A+	
332	632602	5	5	221	.353	.353	.177	.249	.213	.009	.262	.262	-.076	-.030	-.136	0.585	0.151	0.6	1.0	1.0	1.1	A+	
333	628021	5	5	221	.579	.122	.208	.579	.077	.014	.520	-.178	-.333	.520	-.108	-0.519	0.149	-2.4	0.9	-1.9	0.9	A-	
334	626563	5	5	221	.249	.249	.158	.167	.407	.018	.283	.283	-.070	-.098	-.039	1.178	0.167	0.3	1.0	0.5	1.1	A+	
335	626577	5	5	222	.523	.135	.270	.523	.068	.005	.365	-.143	-.197	.365	-.097	-0.257	0.145	-0.4	1.0	-0.7	1.0	A-	
336	637151	5	5	222	.342	.342	.203	.257	.189	.009	.276	.276	-.007	-.064	-.147	0.616	0.153	0.7	1.0	0.5	1.0	A-	
337	626564	5	3	222	.581	.581	.099	.126	.180	.014	.418	.418	-.042	-.181	-.236	-0.551	0.147	-0.1	1.0	0.2	1.0	A+	
338	624753	5	5	222	.464	.104	.248	.171	.464	.014	.392	-.180	-.119	-.101	.392	0.012	0.146	-0.9	1.0	-0.3	1.0	A-	
339	627009	5	5	222	.189	.302	.279	.189	.221	.009	.182	.040	.009	.182	-.154	1.551	0.184	0.7	1.1	1.6	1.3	A+	
340	623103	5	5	218	.775	.064	.096	.775	.064	.000	.334	-.306	-.129	.334	-.108	-1.455	0.172	-0.2	1.0	0.0	1.0	A+	
341	635439	5	5	218	.762	.762	.078	.028	.133	.000	.291	.291	-.225	-.170	-.105	-1.368	0.169	0.4	1.0	0.8	1.1	A+	
342	635604	5	5	218	.500	.243	.096	.500	.161	.000	.413	-.189	-.229	.413	-.158	-0.039	0.147	-0.3	1.0	-0.5	1.0	A+	
343	632605	5	5	218	.220	.188	.482	.110	.220	.000	.338	-.090	-.128	-.131	.338	1.442	0.174	0.2	1.0	-0.3	1.0	A-	
344	635606	5	5	218	.509	.106	.229	.156	.509	.000	.390	-.133	-.309	-.068	.390	-0.083	0.147	0.2	1.0	0.3	1.0	A+	
345	626565	5	3	218	.518	.161	.156	.518	.165	.000	.447	-.223	-.164	.447	-.221	-0.126	0.147	-0.8	1.0	-0.7	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
346	627493	5	5	218	.610	.610	.147	.115	.128	.000	.482	.482	-.275	-.224	-.198	-0.568	0.150	-1.5	0.9	-1.8	0.9	B+	
347	622435	5	5	218	.518	.165	.174	.518	.142	.000	.501	-.133	-.201	.501	-.357	-0.104	0.147	-2.4	0.9	-2.3	0.9	A+	
348	627681	5	5	218	.445	.147	.445	.179	.225	.005	.423	-.219	.423	-.223	-.103	0.214	0.148	-0.4	1.0	-0.1	1.0	A-	
349	621388	5	5	218	.688	.119	.688	.078	.101	.014	.461	-.137	.461	-.251	-.294	-1.018	0.160	-1.2	0.9	-0.9	0.9	B+	
350	632518	5	4	218	.372	.124	.289	.372	.202	.014	.280	-.176	-.069	.280	-.082	0.563	0.152	1.8	1.1	2.1	1.2	B-	
351	635440	5	5	221	.584	.584	.054	.213	.140	.009	.295	.295	-.152	-.093	-.072	-0.539	0.146	1.1	1.1	1.2	1.1	B-	
352	628104	5	5	221	.742	.081	.081	.742	.086	.009	.461	-.220	-.158	.461	-.180	-1.361	0.164	-1.2	0.9	-1.7	0.8	A-	
353	623112	5	5	221	.810	.810	.068	.086	.027	.009	.496	.496	-.274	-.284	.012	-1.807	0.182	-1.4	0.9	-1.6	0.8	A-	
354	635610	5	5	221	.661	.077	.661	.154	.100	.009	.452	-.125	.452	-.264	-.125	-0.915	0.152	-1.5	0.9	-1.7	0.9	A-	
355	626817	5	5	221	.267	.407	.072	.244	.267	.009	.261	-.050	-.014	-.091	.261	0.996	0.160	0.5	1.0	0.6	1.1	A+	
356	623087	5	5	221	.706	.027	.059	.199	.706	.009	.520	-.243	-.166	-.276	.520	-1.154	0.157	-2.3	0.8	-2.5	0.8	A+	
357	632519	5	4	221	.796	.050	.796	.045	.100	.009	.428	-.140	.428	-.158	-.203	-1.710	0.177	-0.6	0.9	-1.5	0.8	A-	
358	622988	5	5	221	.226	.457	.199	.226	.109	.009	.238	.042	-.163	.238	-.024	1.240	0.169	0.4	1.0	1.0	1.1	A+	
359	623085	5	5	221	.208	.208	.195	.475	.113	.009	.094	.094	-.187	.229	-.096	1.358	0.173	1.6	1.2	2.3	1.4	A+	
360	632607	5	5	221	.520	.100	.158	.520	.213	.009	.340	-.134	-.068	.340	-.139	-0.244	0.144	0.3	1.0	0.2	1.0	A+	
361	635448	5	N/A	221	.195	.054	.195	.534	.213	.005	.095	-.226	.095	-.067	.176	1.408	0.179	1.2	1.1	2.7	1.5	A+	
362	639865	5	5	221	.348	.285	.190	.348	.167	.009	.093	.152	-.162	.093	-.079	0.497	0.151	3.3	1.2	3.3	1.3	A-	
363	624815	5	5	221	.796	.796	.050	.072	.072	.009	.468	.468	-.211	-.296	-.155	-1.874	0.183	-0.8	0.9	-1.2	0.8	A+	
364	632604	5	5	221	.887	.059	.018	.887	.027	.009	.468	-.226	-.173	.468	-.321	-2.727	0.237	-0.9	0.9	-1.2	0.7	B+	
365	623124	5	5	221	.760	.032	.760	.145	.059	.005	.437	-.207	.437	-.258	-.148	-1.598	0.171	-0.7	0.9	-0.5	0.9	B+	
366	620999	5	5	221	.548	.109	.104	.235	.548	.005	.346	-.061	-.200	-.159	.346	-0.461	0.146	0.8	1.0	0.8	1.1	A-	
367	628315	5	5	221	.634	.253	.036	.634	.072	.005	.545	-.396	-.328	.545	-.017	-0.882	0.151	-2.6	0.9	-2.7	0.8	B+	
368	627683	5	5	221	.679	.140	.679	.104	.072	.005	.521	-.258	.521	-.278	-.169	-1.119	0.156	-1.9	0.9	-2.0	0.8	A+	
369	630396	5	5	221	.317	.095	.317	.100	.480	.009	.070	-.162	.070	-.272	.257	0.647	0.154	3.6	1.2	3.9	1.4	A+	
370	627007	5	5	221	.670	.109	.131	.670	.081	.009	.592	-.301	-.256	.592	-.241	-1.082	0.156	-3.0	0.8	-3.1	0.7	A+	
371	623104	5	5	218	.491	.087	.184	.234	.491	.005	.390	-.083	-.200	-.167	.390	-0.209	0.147	-0.8	1.0	-0.5	1.0	A-	
372	625535	5	5	218	.381	.239	.381	.161	.211	.009	.335	-.103	.335	-.080	-.133	0.294	0.150	0.4	1.0	1.6	1.2	A+	
373	626815	5	5	218	.922	.922	.032	.023	.018	.005	.423	.423	-.221	-.198	-.158	-3.210	0.278	-0.2	0.9	-1.1	0.6	A+	
374	639866	5	N/A	218	.174	.147	.115	.174	.555	.009	.036	-.204	-.063	.036	.202	1.497	0.187	1.5	1.2	3.3	1.8	B+	
375	630408	5	5	218	.826	.826	.151	.000	.018	.005	.475	.475	-.373	.000	-.171	-2.117	0.193	-0.7	0.9	-0.9	0.8	B+	
376	628023	5	5	218	.849	.055	.849	.046	.041	.009	.517	-.215	.517	-.329	-.161	-2.344	0.208	-1.0	0.9	-1.8	0.7	A-	
377	637139	5	5	218	.362	.156	.280	.188	.362	.014	.377	-.117	-.197	-.024	.377	0.380	0.152	-0.4	1.0	0.0	1.0	A+	
378	628063	5	5	218	.844	.844	.028	.055	.055	.018	.499	.499	-.017	-.345	-.214	-2.360	0.210	-0.7	0.9	-0.9	0.8	A+	
379	624819	5	5	218	.688	.142	.106	.688	.051	.014	.505	-.200	-.259	.505	-.200	-1.239	0.160	-1.4	0.9	-1.6	0.8	B-	
380	621000	5	5	218	.560	.073	.560	.248	.101	.018	.512	-.115	.512	-.248	-.245	-0.584	0.150	-2.2	0.9	-2.1	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
381	620818	5	5	220	.832	.036	.832	.050	.082	.000	.449	-.210	.449	-.291	-.238	-2.001	0.189	-1.3	0.9	-1.9	0.7	A-	
382	628105	5	5	220	.932	.014	.018	.932	.036	.000	.188	-.173	-.077	.188	-.090	-3.100	0.273	0.1	1.0	0.4	1.1	A+	
383	626985	5	5	220	.632	.086	.136	.632	.146	.000	.405	-.115	-.238	.405	-.230	-0.796	0.150	-0.8	1.0	-0.7	0.9	A-	
384	626558	5	3	220	.505	.068	.314	.505	.105	.009	.344	-.116	-.177	.344	-.162	-0.207	0.146	1.0	1.1	0.9	1.1	A+	
385	637172	5	5	220	.718	.132	.055	.091	.718	.005	.458	-.174	-.239	-.284	.458	-1.270	0.161	-1.2	0.9	-1.6	0.8	A+	
386	628308	5	5	220	.468	.136	.314	.077	.468	.005	.394	-.237	-.118	-.186	.394	-0.023	0.146	0.0	1.0	-0.1	1.0	A+	
387	626812	5	3	220	.759	.759	.068	.064	.105	.005	.391	.391	-.282	-.155	-.153	-1.516	0.169	-0.3	1.0	-0.8	0.9	A+	
388	635944	5	5	220	.482	.482	.159	.227	.127	.005	.409	.409	-.176	-.090	-.274	-0.088	0.146	-0.3	1.0	-0.5	1.0	A+	
389	626544	5	5	220	.705	.705	.114	.073	.105	.005	.452	.452	-.269	-.223	-.170	-1.193	0.159	-1.4	0.9	-0.4	0.9	A-	
390	639867	5	5	220	.273	.250	.186	.273	.277	.014	.117	-.053	-.043	.117	-.026	0.948	0.163	2.9	1.2	3.1	1.4	A-	
391	622432	5	5	221	.765	.765	.109	.095	.032	.000	.359	.359	-.139	-.308	-.106	-1.459	0.168	-0.1	1.0	-0.6	0.9	B+	
392	633848	5	5	221	.552	.244	.552	.158	.045	.000	.271	-.215	.271	-.082	-.061	-0.337	0.146	2.5	1.1	1.6	1.1	A-	
393	639366	5	5	221	.873	.027	.068	.032	.873	.000	.312	-.230	-.137	-.183	.312	-2.297	0.211	-0.2	1.0	-0.7	0.8	A+	
394	626999	5	5	221	.683	.118	.683	.095	.104	.000	.330	-.253	.330	-.109	-.131	-0.990	0.155	0.3	1.0	0.7	1.1	A+	
395	628120	5	4	221	.281	.172	.281	.262	.276	.009	.315	-.116	.315	-.068	-.113	1.013	0.162	0.5	1.0	1.9	1.2	A-	
396	630721	5	5	221	.493	.113	.303	.493	.081	.009	.436	-.215	-.236	.436	-.056	-0.066	0.146	-0.8	1.0	-0.5	1.0	A-	
397	623128	5	5	221	.692	.045	.100	.154	.692	.009	.530	-.135	-.334	-.252	.530	-1.055	0.157	-2.4	0.8	-2.5	0.7	A-	
398	623131	5	5	221	.552	.158	.027	.253	.552	.009	.538	-.318	-.142	-.235	.538	-0.346	0.147	-3.3	0.8	-1.9	0.9	B+	
399	627494	5	5	221	.529	.113	.529	.145	.208	.005	.457	-.111	.457	-.264	-.204	-0.232	0.146	-1.3	0.9	-1.3	0.9	A+	
400	624817	5	5	221	.294	.113	.154	.294	.430	.009	.309	-.133	-.141	.309	-.045	0.941	0.160	1.2	1.1	0.7	1.1	B-	
401	625498	5	4	221	.534	.262	.140	.534	.050	.014	.451	-.197	-.244	.451	-.127	-0.273	0.147	-1.2	0.9	-1.1	0.9	A-	
402	623102	5	5	222	.905	.036	.045	.014	.905	.000	.407	-.336	-.237	-.066	.407	-2.733	0.246	-0.5	0.9	-1.0	0.7	A+	
403	635436	5	5	222	.635	.081	.635	.090	.194	.000	.340	-.222	.340	-.177	-.133	-0.763	0.150	0.4	1.0	0.4	1.0	A+	
404	635441	5	5	222	.721	.721	.036	.149	.095	.000	.384	.384	-.163	-.212	-.226	-1.220	0.160	-0.1	1.0	-0.4	1.0	A-	
405	627046	5	5	222	.698	.144	.104	.698	.054	.000	.424	-.142	-.328	.424	-.198	-1.094	0.157	-0.6	1.0	-0.9	0.9	B+	
406	628967	5	5	222	.703	.167	.703	.045	.086	.000	.469	-.286	.469	-.200	-.237	-1.118	0.158	-1.3	0.9	-1.6	0.8	A+	
407	637150	5	N/A	222	.158	.045	.401	.392	.158	.005	.063	-.091	-.018	.009	.063	1.807	0.194	0.8	1.1	1.8	1.4	A+	
408	624764	5	5	222	.342	.086	.342	.293	.270	.009	.144	-.167	.144	.016	-.014	0.628	0.151	2.9	1.2	2.6	1.2	A+	
409	624768	5	5	222	.617	.230	.617	.050	.095	.009	.383	-.167	.383	-.070	-.267	-0.687	0.149	-0.1	1.0	0.1	1.0	A-	
410	628470	5	5	222	.653	.113	.144	.068	.653	.023	.555	-.231	-.239	-.311	.555	-0.894	0.153	-3.3	0.8	-3.0	0.8	A-	
411	624839	5	5	222	.491	.072	.491	.176	.243	.018	.538	-.232	.538	-.280	-.194	-0.119	0.145	-3.4	0.8	-3.0	0.8	A+	
412	627073	5	4	222	.667	.108	.131	.667	.081	.014	.443	-.203	-.274	.443	-.182	-0.983	0.155	-0.9	0.9	-1.2	0.9	A+	
413	623110	5	5	221	.692	.104	.068	.692	.127	.009	.496	-.232	-.172	.496	-.213	-1.186	0.158	-1.8	0.9	-1.6	0.8	A-	
414	635437	5	5	221	.846	.036	.846	.059	.050	.009	.375	-.131	.375	-.188	-.104	-2.227	0.199	-0.2	1.0	-0.2	1.0	B+	
415	637173	5	3	221	.747	.086	.122	.036	.747	.009	.374	-.170	-.161	-.098	.374	-1.503	0.167	0.2	1.0	-0.5	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
416	627358	5	5	221	.507	.262	.507	.163	.059	.009	.348	-.109	.348	-.102	-.189	-0.257	0.146	0.9	1.1	0.5	1.0	A-	
417	622438	5	5	221	.774	.036	.068	.113	.774	.009	.399	-.236	-.243	-.057	.399	-1.677	0.173	-0.5	1.0	0.6	1.1	A+	
418	623117	5	5	221	.593	.023	.136	.593	.240	.009	.428	-.197	-.253	.428	-.118	-0.671	0.149	-0.8	1.0	-0.5	1.0	B-	
419	637152	5	4	221	.656	.656	.045	.222	.068	.009	.440	.440	-.246	-.171	-.171	-0.991	0.153	-0.8	1.0	-0.8	0.9	A+	
420	625489	5	5	221	.253	.434	.100	.204	.253	.009	.211	.094	-.176	-.104	.211	1.037	0.165	1.3	1.1	1.9	1.3	C+	
421	639863	5	5	221	.652	.652	.154	.072	.109	.014	.544	.544	-.255	-.299	-.129	-0.979	0.154	-2.7	0.8	-2.5	0.8	A-	
422	628057	5	5	221	.724	.118	.724	.077	.068	.014	.484	-.196	.484	-.118	-.288	-1.382	0.163	-1.3	0.9	-1.6	0.8	A-	
423	633436	5	5	221	.548	.018	.548	.181	.240	.014	.392	-.006	.392	-.184	-.174	-0.459	0.147	0.3	1.0	-0.3	1.0	A+	
424	635940	5	5	220	.455	.455	.318	.136	.091	.000	.363	.363	-.258	-.168	-.011	-0.044	0.148	1.1	1.1	0.6	1.0	A-	C-
425	627364	5	5	220	.623	.255	.050	.623	.073	.000	.373	-.316	-.161	.373	-.031	-0.857	0.151	0.3	1.0	0.0	1.0	A+	B+
426	637174	5	3	220	.586	.123	.091	.200	.586	.000	.496	-.298	-.210	-.216	.496	-0.677	0.149	-2.0	0.9	-2.2	0.8	A+	A-
427	628251	5	5	220	.486	.177	.214	.486	.123	.000	.340	-.203	-.175	.340	-.064	-0.196	0.147	1.4	1.1	1.3	1.1	A-	A+
428	624805	5	5	220	.955	.014	.955	.014	.018	.000	.239	-.205	.239	-.174	-.044	-3.780	0.346	0.1	1.0	-0.4	0.8	A+	A-
429	622439	5	5	220	.736	.086	.068	.109	.736	.000	.494	-.192	-.274	-.304	.494	-1.475	0.164	-1.8	0.9	-2.1	0.7	A-	B-
430	637153	5	4	220	.718	.064	.718	.091	.123	.005	.418	-.206	.418	-.152	-.261	-1.387	0.162	-0.6	1.0	-0.6	0.9	A-	A+
431	625547	5	5	220	.391	.146	.064	.396	.391	.005	.335	-.258	-.226	-.019	.335	0.284	0.151	0.8	1.1	0.9	1.1	A+	A-
432	621001	5	5	220	.491	.196	.491	.100	.209	.005	.489	-.238	.489	-.130	-.252	-0.205	0.147	-2.0	0.9	-1.9	0.9	A+	A-
433	639842	5	5	220	.596	.168	.596	.150	.077	.009	.343	-.118	.343	-.233	-.104	-0.743	0.150	1.1	1.1	1.3	1.1	A+	A+
434	633437	5	5	220	.705	.068	.114	.705	.105	.009	.434	-.231	-.255	.434	-.149	-1.323	0.161	-0.6	1.0	-0.9	0.9	A+	A+
435	623105	5	5	221	.290	.190	.100	.416	.290	.005	.289	-.193	-.246	.087	.289	0.820	0.158	0.1	1.0	0.0	1.0	A+	
436	626927	5	5	218	.569	.165	.133	.569	.128	.005	.453	-.168	-.164	.453	-.247	-0.602	0.149	-1.2	0.9	-0.8	0.9	A+	
437	632608	5	5	220	.750	.091	.750	.077	.082	.000	.490	-.288	.490	-.241	-.237	-1.439	0.166	-2.0	0.8	-1.9	0.8	A-	
438	625460	5	5	221	.742	.742	.104	.068	.081	.005	.440	.440	-.187	-.250	-.202	-1.326	0.164	-1.1	0.9	-1.1	0.9	A+	
439	626923	5	5	222	.554	.225	.185	.554	.036	.000	.337	-.133	-.178	.337	-.229	-0.371	0.145	0.7	1.0	1.0	1.1	A-	
440	628065	5	4	221	.335	.262	.335	.158	.235	.009	.435	-.182	.435	-.146	-.066	0.583	0.153	-1.5	0.9	-0.4	1.0	A+	
441	633443	5	5	220	.755	.755	.123	.091	.027	.005	.367	.367	-.181	-.238	-.134	-1.579	0.168	-0.1	1.0	-0.7	0.9	A-	A-
442	621390	5	N/A	218	.106	.395	.106	.307	.184	.009	-.082	.227	-.082	.024	-.231	2.462	0.233	1.3	1.2	2.8	1.9	A-	
443	626820	5	5	221	.697	.045	.140	.109	.697	.009	.550	-.202	-.281	-.210	.550	-1.105	0.156	-2.9	0.8	-3.0	0.7	B+	
444	624842	5	5	218	.537	.197	.133	.537	.119	.014	.450	-.134	-.115	.450	-.281	-0.463	0.148	-1.0	1.0	-1.1	0.9	A-	
445	624800	5	5	218	.307	.083	.307	.495	.110	.005	.237	-.039	.237	-.056	-.150	0.674	0.157	1.6	1.1	1.1	1.1	A-	
446	627413	5	5	220	.286	.491	.155	.286	.068	.000	.433	-.209	-.113	.433	-.199	0.904	0.160	-0.9	0.9	-0.7	0.9	A+	
447	630403	5	5	221	.516	.516	.186	.177	.118	.005	.358	.358	-.223	-.037	-.228	-0.173	0.146	0.7	1.0	0.8	1.1	A-	
448	624804	5	5	222	.676	.126	.162	.036	.676	.000	.509	-.371	-.147	-.327	.509	-0.972	0.154	-2.0	0.9	-1.6	0.9	A-	
449	626570	5	5	221	.312	.235	.339	.104	.312	.009	.381	-.116	-.050	-.195	.381	0.703	0.156	-0.6	1.0	0.1	1.0	A+	
450	624773	5	4	220	.500	.500	.114	.196	.186	.005	.403	.403	-.164	-.173	-.186	-0.271	0.147	0.2	1.0	0.0	1.0	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
451	633442	5	5	218	.748	.748	.083	.138	.032	.000	.326	.326	-.243	-.131	-.168	-1.311	0.167	0.3	1.0	0.4	1.1	A-	
452	629854	5	5	221	.326	.199	.326	.204	.262	.009	.185	.009	.185	-.161	.051	0.679	0.152	2.0	1.1	2.0	1.2	B+	
453	623060	5	5	221	.778	.118	.063	.778	.032	.009	.511	-.225	-.276	.511	-.231	-1.738	0.177	-1.2	0.9	-1.7	0.8	B+	
454	627488	5	5	220	.396	.241	.396	.086	.273	.005	.375	-.146	.375	-.181	-.133	0.326	0.149	-0.3	1.0	1.8	1.2	A+	
455	624292	6	6	304	.599	.161	.599	.099	.135	.007	.232	-.066	.232	-.106	-.113	-0.485	0.126	2.7	1.1	2.6	1.2	A-	A-
456	626934	6	6	303	.630	.129	.076	.630	.162	.003	.384	-.233	-.277	.384	-.043	-0.580	0.129	0.3	1.0	0.1	1.0	A-	B+
457	627013	6	4	304	.915	.053	.020	.013	.915	.000	.459	-.287	-.305	-.191	.459	-2.724	0.220	-0.9	0.9	-1.9	0.5	A+	A-
458	632646	6	6	305	.446	.157	.292	.446	.102	.003	.342	-.237	-.096	.342	-.118	0.370	0.125	1.1	1.1	0.8	1.1	A+	A+
459	624829	6	6	304	.454	.109	.227	.211	.454	.000	.086	-.016	.008	-.100	.086	0.303	0.123	5.0	1.2	5.6	1.3	A-	
460	630378	6	6	304	.734	.095	.092	.066	.734	.013	.486	-.149	-.243	-.316	.486	-1.231	0.140	-2.3	0.9	-1.9	0.8	A-	A-
461	624297	6	6	303	.693	.693	.102	.106	.092	.007	.321	.321	-.200	-.031	-.166	-0.916	0.135	1.1	1.1	0.9	1.1	A+	A-
462	635654	6	6	304	.658	.109	.658	.125	.099	.010	.474	-.315	.474	-.165	-.200	-0.728	0.133	-1.5	0.9	-1.4	0.9	A+	C-
463	639363	6	6	305	.341	.315	.226	.112	.341	.007	.330	-.193	.063	-.279	.330	0.876	0.130	0.4	1.0	1.7	1.2	A-	A-
464	633448	6	6	304	.599	.095	.599	.201	.076	.030	.386	-.212	.386	-.126	-.110	-0.438	0.127	-0.2	1.0	-0.6	1.0	B+	
465	623114	6	6	303	.673	.112	.673	.145	.063	.007	.401	-.179	.401	-.195	-.158	-0.809	0.133	-0.1	1.0	-0.5	1.0	A+	B-
466	626932	6	6	304	.852	.852	.046	.030	.072	.000	.486	.486	-.329	-.216	-.259	-1.975	0.172	-1.3	0.9	-2.7	0.6	A-	B-
467	635660	6	4	305	.390	.180	.390	.148	.282	.000	.284	-.074	.284	-.062	-.196	0.643	0.127	1.6	1.1	2.7	1.2	A-	A-
468	626822	6	6	304	.816	.072	.059	.053	.816	.000	.478	-.282	-.290	-.195	.478	-1.583	0.155	-1.9	0.8	-2.4	0.7	A-	
469	625478	6	6	304	.546	.109	.546	.217	.115	.013	.315	-.145	.315	-.167	-.067	-0.253	0.125	1.3	1.1	2.3	1.1	B+	B+
470	626776	6	6	303	.406	.112	.112	.406	.363	.007	.390	-.075	-.245	.390	-.126	0.499	0.126	-0.3	1.0	-0.2	1.0	A+	A-
471	624296	6	6	304	.895	.895	.033	.033	.033	.007	.474	.474	-.258	-.249	-.259	-2.537	0.206	-1.0	0.9	-1.9	0.6	A+	A+
472	628055	6	6	305	.433	.036	.479	.433	.049	.003	.327	-.328	-.109	.327	-.221	0.422	0.125	1.2	1.1	1.3	1.1	A+	B-
473	627289	6	6	304	.559	.095	.234	.089	.559	.023	.492	-.083	-.216	-.296	.492	-0.229	0.125	-2.8	0.9	-2.7	0.9	A+	
474	633444	6	6	304	.671	.122	.671	.118	.066	.023	.546	-.293	.546	-.245	-.220	-0.923	0.134	-3.3	0.8	-3.1	0.7	A-	A-
475	639351	6	6	2733	.449	.374	.105	.070	.449	.003	.269	-.042	-.158	-.220	.269	0.315	0.042	6.5	1.1	5.9	1.1	A+	A+
476	633449	6	6	2733	.587	.071	.199	.587	.140	.003	.367	-.165	-.181	.367	-.165	-0.343	0.042	0.5	1.0	0.2	1.0	A+	A-
477	639377	6	6	2733	.667	.109	.667	.085	.136	.002	.482	-.201	.482	-.290	-.217	-0.743	0.044	-6.0	0.9	-6.2	0.8	A-	A-
478	628472	6	6	2733	.408	.202	.203	.183	.408	.003	.381	-.170	-.145	-.127	.381	0.511	0.042	-0.8	1.0	-0.5	1.0	A+	A-
479	639389	6	6	2733	.435	.435	.248	.103	.208	.006	.425	.425	-.129	-.269	-.140	0.379	0.042	-3.8	1.0	-3.0	0.9	A-	A-
480	624831	6	6	2733	.422	.206	.219	.422	.146	.007	.179	.009	-.102	.179	-.088	0.434	0.042	9.9	1.2	9.9	1.3	A-	A+
481	624761	6	6	2733	.733	.733	.062	.062	.136	.008	.459	.459	-.243	-.280	-.167	-1.122	0.047	-4.2	0.9	-3.9	0.9	A+	A+
482	626546	6	4	2733	.437	.437	.154	.116	.283	.011	.324	.324	-.181	-.166	-.044	0.357	0.042	3.8	1.1	3.4	1.1	A+	A-
483	639362	6	6	2733	.506	.283	.126	.506	.070	.015	.374	-.085	-.275	.374	-.134	0.018	0.042	0.2	1.0	0.8	1.0	A-	A+
484	625483	6	6	2733	.247	.054	.143	.540	.247	.015	.184	-.169	-.110	.045	.184	1.356	0.047	4.6	1.1	7.8	1.3	A+	A+
485	639406	6	6	303	.835	.026	.835	.020	.116	.003	.363	-.128	.363	-.108	-.256	-1.840	0.164	-0.4	1.0	-1.2	0.8	A-	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
486	624288	6	6	303	.726	.726	.178	.073	.017	.007	.386	.386	-.187	-.239	-.069	-1.122	0.139	-0.4	1.0	0.2	1.0	A-	A-
487	639397	6	6	303	.716	.106	.716	.139	.033	.007	.374	-.138	.374	-.238	-.080	-1.065	0.137	-0.5	1.0	-0.5	1.0	A+	A-
488	624808	6	6	303	.568	.568	.112	.109	.205	.007	.447	.447	-.223	-.166	-.172	-0.297	0.126	-1.7	0.9	-1.7	0.9	A+	A+
489	623057	6	6	303	.588	.132	.139	.588	.135	.007	.483	-.101	-.327	.483	-.178	-0.393	0.127	-2.1	0.9	-2.0	0.9	A+	A+
490	639400	6	6	303	.488	.488	.238	.172	.096	.007	.376	.376	-.017	-.318	-.105	0.081	0.125	-0.1	1.0	0.2	1.0	B-	A-
491	635611	6	6	303	.340	.046	.485	.340	.122	.007	.431	-.182	-.144	.431	-.196	0.812	0.131	-1.1	0.9	-1.0	0.9	B-	B-
492	639347	6	6	303	.581	.139	.116	.158	.581	.007	.482	-.219	-.216	-.173	.482	-0.361	0.126	-1.6	0.9	-1.4	0.9	A+	A-
493	622437	6	6	303	.531	.201	.149	.531	.112	.007	.382	-.172	-.178	.382	-.090	-0.123	0.125	0.3	1.0	0.0	1.0	A+	A-
494	627682	6	6	303	.442	.152	.248	.149	.442	.010	.373	-.155	-.159	-.073	.373	0.299	0.126	-0.1	1.0	0.1	1.0	A+	C-
495	632949	6	6	303	.310	.320	.310	.244	.116	.010	.276	.096	.276	-.215	-.140	0.969	0.134	1.2	1.1	1.7	1.2	A-	A+
496	639436	6	3	303	.396	.360	.396	.096	.139	.010	.153	-.001	.153	-.217	.072	0.524	0.128	4.3	1.2	3.2	1.2	A+	A-
497	639880	6	6	303	.660	.096	.188	.040	.660	.017	.531	-.308	-.191	-.236	.531	-0.785	0.132	-2.8	0.9	-2.2	0.8	A+	A+
498	621385	6	6	303	.333	.102	.333	.452	.092	.020	.387	-.228	.387	-.030	-.221	0.824	0.132	-0.9	1.0	-0.8	0.9	A+	A+
499	639877	6	6	608	.382	.160	.382	.133	.313	.013	.389	-.219	.389	-.211	-.030	0.626	0.091	-0.9	1.0	1.1	1.1	A+	A-
500	620814	6	6	304	.602	.076	.072	.250	.602	.000	.414	-.072	-.206	-.301	.414	-0.423	0.127	-1.3	0.9	-0.7	1.0	A-	
501	629914	6	6	304	.704	.197	.704	.059	.036	.003	.290	-.097	.290	-.256	-.142	-0.929	0.135	0.6	1.0	0.5	1.1	A-	
502	632647	6	6	304	.753	.010	.158	.753	.079	.000	.290	-.108	-.136	.290	-.241	-1.204	0.142	-0.2	1.0	-0.1	1.0	A-	
503	639369	6	6	304	.750	.089	.059	.102	.750	.000	.433	-.158	-.229	-.293	.433	-1.225	0.143	-1.3	0.9	0.0	1.0	A+	
504	624802	6	6	304	.701	.095	.161	.043	.701	.000	.387	-.184	-.192	-.259	.387	-0.917	0.135	-0.5	1.0	-0.5	1.0	A+	
505	639401	6	N/A	304	.030	.411	.030	.533	.026	.000	.027	-.142	.027	.169	-.120	4.390	0.417	0.3	1.1	0.1	1.0	A-	
506	639352	6	6	304	.556	.138	.099	.556	.207	.000	.516	-.247	-.276	.516	-.220	-0.200	0.125	-3.5	0.9	-3.0	0.8	A-	
507	624837	6	3	304	.543	.543	.240	.151	.063	.003	.350	.350	-.158	-.217	-.093	-0.114	0.125	-0.3	1.0	-0.6	1.0	A+	
508	624813	6	6	304	.516	.178	.099	.204	.516	.003	.451	-.220	-.260	-.141	.451	-0.020	0.124	-1.3	1.0	-1.2	0.9	A+	
509	623089	6	6	304	.540	.385	.540	.013	.059	.003	.287	-.167	.287	-.138	-.167	-0.098	0.125	1.8	1.1	0.7	1.0	B-	
510	627059	6	N/A	304	.263	.444	.132	.155	.263	.007	.080	.132	-.176	-.076	.080	1.282	0.140	3.0	1.2	3.8	1.5	A-	
511	639437	6	3	304	.576	.576	.174	.072	.174	.003	.275	.275	-.106	-.183	-.110	-0.303	0.126	1.6	1.1	2.0	1.1	A-	
512	624844	6	6	304	.530	.086	.191	.188	.530	.007	.517	-.165	-.306	-.212	.517	-0.090	0.125	-3.3	0.9	-3.2	0.8	B+	
513	621387	6	6	304	.339	.191	.339	.211	.253	.007	.246	-.011	.246	-.238	-.012	0.839	0.131	2.1	1.1	2.1	1.2	A-	
514	639878	6	6	608	.273	.273	.239	.275	.194	.020	.391	.391	-.112	-.099	-.137	1.184	0.097	-1.6	0.9	-0.5	1.0	A+	A+
515	623096	6	6	303	.815	.815	.050	.099	.036	.000	.282	.282	-.095	-.178	-.191	-1.516	0.156	0.3	1.0	0.0	1.0	B+	A+
516	635398	6	6	303	.822	.036	.033	.822	.109	.000	.415	-.191	-.194	.415	-.283	-1.566	0.158	-1.1	0.9	-1.7	0.8	A+	A+
517	639354	6	6	303	.488	.142	.488	.132	.238	.000	.346	-.104	.346	-.240	-.130	0.252	0.124	0.7	1.0	1.1	1.1	A-	B-
518	639379	6	6	303	.551	.254	.551	.109	.076	.010	.498	-.230	.498	-.252	-.232	-0.064	0.126	-2.8	0.9	-2.3	0.9	A-	A-
519	625536	6	6	303	.703	.030	.195	.703	.069	.003	.501	-.193	-.254	.501	-.378	-0.822	0.135	-2.6	0.9	-2.5	0.8	A-	A-
520	639405	6	6	303	.201	.165	.558	.201	.076	.000	.292	.023	-.202	.292	-.096	1.813	0.153	0.4	1.0	1.1	1.2	A+	B-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
521	635455	6	N/A	303	.525	.086	.122	.267	.525	.000	.329	-.174	-.221	-.098	.329	0.080	0.125	1.0	1.0	0.8	1.1	A+	A-
522	625485	6	3	303	.343	.472	.119	.343	.066	.000	.110	.038	-.158	.110	-.081	0.963	0.131	3.9	1.2	4.1	1.4	A-	A-
523	625464	6	6	303	.429	.102	.330	.139	.429	.000	.423	-.255	-.127	-.210	.423	0.534	0.126	-1.2	0.9	-0.9	0.9	A-	B-
524	622984	6	6	303	.845	.053	.845	.063	.036	.003	.428	-.279	.428	-.194	-.227	-1.776	0.168	-1.1	0.9	-1.3	0.8	A-	A+
525	627780	6	6	303	.469	.172	.469	.198	.152	.010	.396	-.182	.396	-.126	-.213	0.317	0.125	-0.2	1.0	-0.1	1.0	A-	A+
526	639444	6	3	303	.356	.356	.076	.248	.310	.010	.272	.272	-.184	-.223	.049	0.872	0.130	1.8	1.1	2.0	1.2	A-	A-
527	627010	6	6	303	.720	.083	.720	.152	.033	.013	.489	-.296	.489	-.288	-.143	-0.961	0.139	-1.6	0.9	-2.1	0.8	A+	A-
528	635652	6	6	303	.654	.654	.231	.050	.053	.013	.497	.497	-.321	-.208	-.209	-0.595	0.131	-2.2	0.9	-2.1	0.8	A-	A+
529	639879	6	6	303	.452	.267	.211	.056	.452	.013	.433	-.134	-.230	-.230	.433	0.392	0.126	-1.1	1.0	-1.0	0.9	A+	A-
530	625531	6	6	303	.729	.086	.066	.729	.119	.000	.497	-.274	-.204	.497	-.288	-1.089	0.137	-1.7	0.9	-2.2	0.8	A+	
531	639346	6	N/A	303	.116	.116	.317	.515	.050	.003	.037	.037	-.028	.093	-.218	2.402	0.191	0.9	1.1	1.1	1.2	A+	
532	627356	6	6	303	.333	.347	.175	.145	.333	.000	.380	-.190	-.156	-.083	.380	0.838	0.130	-1.2	0.9	-1.2	0.9	B-	
533	639386	6	6	303	.710	.086	.073	.710	.129	.003	.412	-.294	-.231	.412	-.125	-0.991	0.135	-0.7	1.0	-1.1	0.9	A+	
534	626924	6	6	303	.363	.152	.363	.320	.162	.003	.272	-.109	.272	-.045	-.159	0.704	0.128	0.6	1.0	1.4	1.1	A-	
535	639417	6	6	303	.330	.026	.439	.201	.330	.003	.309	-.132	-.027	-.246	.309	0.854	0.130	0.2	1.0	0.6	1.1	A+	
536	625467	6	6	303	.875	.030	.875	.036	.053	.007	.438	-.162	.438	-.243	-.219	-2.193	0.187	-0.4	0.9	-1.4	0.7	A-	
537	623086	6	6	303	.512	.066	.145	.271	.512	.007	.372	-.097	-.240	-.122	.372	-0.013	0.123	-0.1	1.0	0.0	1.0	A+	
538	626553	6	6	303	.307	.241	.228	.307	.218	.007	.237	-.024	-.160	.237	-.021	0.975	0.133	1.3	1.1	2.1	1.2	A-	
539	625497	6	4	303	.297	.188	.119	.389	.297	.007	.299	-.201	-.151	.028	.299	1.028	0.134	0.3	1.0	0.4	1.0	A+	
540	634135	6	6	303	.446	.079	.238	.231	.446	.007	.394	-.244	-.059	-.194	.394	0.292	0.124	-0.8	1.0	-0.8	1.0	A+	
541	623130	6	6	303	.644	.109	.109	.132	.644	.007	.528	-.192	-.211	-.308	.528	-0.640	0.128	-3.3	0.9	-3.3	0.8	A+	
542	629823	6	6	303	.406	.254	.406	.152	.178	.010	.329	-.124	.329	-.249	.018	0.471	0.125	0.4	1.0	0.2	1.0	C+	
543	635658	6	6	303	.211	.317	.224	.211	.241	.007	.138	.092	-.136	.138	-.045	1.566	0.149	1.3	1.1	1.9	1.2	A+	
544	623123	6	6	303	.323	.132	.271	.323	.264	.010	.202	-.122	.094	.202	-.156	0.900	0.131	1.6	1.1	1.7	1.1	A+	
545	635397	6	6	304	.625	.128	.135	.625	.112	.000	.398	-.194	-.244	.398	-.141	-0.603	0.128	-0.5	1.0	-0.8	0.9	A-	A-
546	639367	6	6	304	.766	.069	.766	.053	.109	.003	.316	-.122	.316	-.244	-.098	-1.383	0.144	0.2	1.0	0.2	1.0	A-	A-
547	639348	6	N/A	304	.115	.401	.115	.309	.171	.003	.049	.086	.049	-.093	.008	2.320	0.187	0.8	1.1	3.1	1.8	A-	A+
548	633853	6	6	304	.526	.230	.053	.526	.188	.003	.417	-.226	-.210	.417	-.124	-0.129	0.124	-0.2	1.0	-0.8	1.0	A-	A-
549	639345	6	6	304	.303	.299	.076	.319	.303	.003	.191	.012	-.203	-.047	.191	0.969	0.134	2.7	1.2	2.9	1.3	A+	A-
550	639390	6	6	304	.309	.214	.309	.339	.132	.007	.139	-.045	.139	-.102	.064	0.927	0.133	3.1	1.2	4.1	1.4	A-	A-
551	635617	6	6	304	.628	.099	.628	.184	.082	.007	.368	-.149	.368	-.163	-.171	-0.633	0.128	0.0	1.0	0.8	1.1	B+	A+
552	639416	6	6	304	.372	.257	.316	.372	.049	.007	.492	-.200	-.208	.492	-.144	0.601	0.128	-2.5	0.9	-2.2	0.9	A-	A-
553	624755	6	6	304	.691	.135	.691	.079	.089	.007	.456	-.218	.456	-.165	-.243	-0.958	0.133	-1.7	0.9	-1.6	0.9	A-	B-
554	627047	6	6	304	.418	.306	.171	.095	.418	.010	.363	-.041	-.244	-.148	.363	0.364	0.126	0.3	1.0	0.4	1.0	A+	A+
555	621155	6	6	304	.507	.171	.250	.507	.063	.010	.369	-.206	-.122	.369	-.122	-0.059	0.124	0.5	1.0	-0.1	1.0	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
556	624757	6	6	304	.691	.691	.132	.095	.066	.016	.305	.305	-.169	-.083	-.106	-0.991	0.135	0.9	1.1	1.2	1.1	A+	A+
557	639425	6	3	304	.237	.293	.339	.237	.122	.010	.259	-.097	-.068	.259	-.028	1.337	0.144	1.0	1.1	1.1	1.1	A-	A-
558	626929	6	6	304	.592	.115	.151	.592	.132	.010	.484	-.139	-.318	.484	-.162	-0.468	0.126	-2.1	0.9	-2.2	0.9	A-	A-
559	635653	6	6	304	.516	.516	.181	.148	.138	.016	.443	.443	-.094	-.239	-.216	-0.126	0.125	-1.3	0.9	-0.9	1.0	A+	A-
560	639872	6	6	304	.569	.569	.237	.092	.079	.023	.404	.404	-.135	-.210	-.205	-0.400	0.127	-0.4	1.0	-0.4	1.0	A+	A-
561	633450	6	6	304	.684	.063	.158	.072	.684	.023	.541	-.207	-.296	-.258	.541	-0.996	0.135	-3.2	0.8	-3.1	0.7	A+	A-
562	639428	6	6	303	.759	.125	.086	.026	.759	.003	.555	-.334	-.292	-.165	.555	-1.304	0.145	-2.7	0.8	-2.8	0.7	A-	A-
563	639350	6	6	303	.805	.106	.805	.066	.020	.003	.434	-.207	.434	-.269	-.168	-1.622	0.156	-0.7	0.9	-1.2	0.8	A+	A+
564	635416	6	6	303	.508	.152	.201	.508	.135	.003	.447	-.210	-.204	.447	-.140	0.013	0.125	-1.8	0.9	-1.4	0.9	A-	A-
565	635902	6	6	303	.749	.109	.053	.086	.749	.003	.518	-.211	-.257	-.296	.518	-1.221	0.143	-2.6	0.8	-2.1	0.8	A+	A+
566	628039	6	6	303	.502	.122	.135	.238	.502	.003	.301	-.012	-.237	-.112	.301	0.044	0.125	2.0	1.1	1.9	1.1	A-	A-
567	639391	6	8	303	.696	.696	.116	.142	.043	.003	.514	.514	-.232	-.261	-.260	-0.931	0.135	-2.2	0.9	-2.4	0.8	A-	A+
568	635618	6	6	303	.878	.030	.056	.878	.026	.010	.474	-.273	-.214	.474	-.179	-2.313	0.192	-1.0	0.9	-1.5	0.7	A+	A-
569	635616	6	6	303	.568	.119	.568	.139	.168	.007	.507	-.112	.507	-.334	-.186	-0.273	0.126	-2.7	0.9	-2.7	0.8	A+	A+
570	624832	6	6	303	.568	.568	.215	.099	.112	.007	.404	.404	-.101	-.175	-.243	-0.273	0.126	-0.2	1.0	-0.2	1.0	A+	B-
571	639404	6	6	303	.446	.251	.116	.446	.182	.007	.241	-.029	-.222	.241	-.017	0.308	0.125	3.2	1.2	3.1	1.2	A+	A-
572	623097	6	6	303	.871	.076	.871	.023	.023	.007	.418	-.210	.418	-.188	-.174	-2.210	0.186	-0.3	1.0	-1.3	0.8	A-	C-
573	623090	6	6	303	.178	.281	.228	.307	.178	.007	.052	-.007	-.085	.106	.052	1.841	0.159	1.7	1.2	3.4	1.6	A-	A-
574	639427	6	3	303	.271	.363	.175	.185	.271	.007	.238	.039	-.095	-.150	.238	1.208	0.138	1.4	1.1	2.2	1.2	A+	A+
575	639361	6	6	303	.832	.076	.832	.056	.026	.010	.478	-.345	.478	-.130	-.161	-1.836	0.166	-1.2	0.9	-2.2	0.7	A-	A+
576	627697	6	5	303	.634	.162	.634	.096	.099	.010	.459	-.195	.459	-.281	-.117	-0.611	0.130	-1.2	0.9	-1.6	0.9	A+	A-
577	639873	6	6	303	.442	.139	.178	.442	.228	.013	.470	-.211	-.223	.470	-.100	0.311	0.126	-2.1	0.9	-1.8	0.9	A+	A-
578	633451	6	6	303	.515	.221	.102	.515	.142	.020	.360	-.077	-.235	.360	-.100	-0.044	0.126	0.9	1.0	0.9	1.1	A-	B+
579	639376	6	6	304	.734	.220	.734	.023	.023	.000	.324	-.213	.324	-.215	-.152	-1.138	0.141	0.8	1.1	0.7	1.1	A+	A-
580	639353	6	6	304	.720	.720	.109	.092	.079	.000	.537	.537	-.352	-.262	-.207	-1.059	0.139	-2.4	0.8	-2.5	0.8	A-	A-
581	635449	6	6	304	.526	.247	.526	.092	.135	.000	.394	-.100	.394	-.265	-.225	-0.058	0.125	0.1	1.0	0.0	1.0	B-	A-
582	635415	6	6	304	.766	.089	.033	.766	.112	.000	.385	-.323	-.160	.385	-.134	-1.324	0.146	-0.4	1.0	-0.5	0.9	A+	B-
583	639399	6	6	304	.615	.135	.135	.615	.115	.000	.500	-.293	-.220	.500	-.213	-0.491	0.128	-2.2	0.9	-2.3	0.8	A+	A-
584	639398	6	6	304	.717	.118	.109	.717	.056	.000	.513	-.263	-.287	.513	-.247	-1.040	0.138	-2.1	0.9	-2.0	0.8	A+	A+
585	635620	6	6	304	.513	.204	.148	.135	.513	.000	.455	-.138	-.225	-.268	.455	0.004	0.125	-1.5	0.9	-0.9	0.9	A-	A-
586	639387	6	6	304	.901	.030	.901	.026	.040	.003	.415	-.216	.415	-.272	-.225	-2.539	0.206	-0.9	0.9	-1.6	0.7	A+	A+
587	624834	6	6	304	.141	.138	.171	.549	.141	.000	-.012	-.012	-.142	.124	-.012	2.149	0.173	1.5	1.2	3.3	1.8	A-	A+
588	624752	6	5	304	.461	.207	.214	.461	.112	.007	.289	-.036	-.108	.289	-.242	0.236	0.125	2.7	1.1	1.9	1.1	A+	A+
589	630726	6	6	304	.898	.056	.026	.898	.013	.007	.462	-.271	-.309	.462	-.169	-2.580	0.209	-0.7	0.9	-2.0	0.6	A+	A-
590	639433	6	3	304	.457	.457	.079	.378	.076	.010	.206	.206	-.150	.063	-.289	0.266	0.125	3.6	1.2	4.2	1.3	C-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
591	639430	6	6	304	.875	.030	.040	.049	.875	.007	.501	-.194	-.356	-.251	.501	-2.299	0.191	-1.1	0.9	-2.3	0.6	A-	A+
592	635355	6	8	304	.747	.053	.747	.046	.145	.010	.421	-.304	.421	-.259	-.127	-1.262	0.145	-0.4	1.0	-0.2	1.0	A-	A-
593	635659	6	5	304	.408	.155	.191	.237	.408	.010	.292	-.108	-.112	-.105	.292	0.488	0.126	2.1	1.1	1.8	1.1	A+	A-
594	639874	6	6	304	.665	.122	.665	.092	.112	.010	.563	-.291	.563	-.332	-.186	-0.778	0.133	-2.7	0.9	-2.8	0.8	B+	A-
595	633452	6	6	304	.707	.026	.188	.707	.066	.013	.463	-.211	-.302	.463	-.181	-1.036	0.139	-1.0	0.9	-1.1	0.9	A-	A+
596	622440	6	6	305	.721	.220	.721	.039	.020	.000	.480	-.414	.480	-.177	-.067	-1.007	0.138	-1.5	0.9	-1.5	0.9	B-	A-
597	635945	6	6	305	.702	.053	.702	.098	.141	.007	.442	-.208	.442	-.206	-.243	-0.912	0.136	-0.8	1.0	-0.9	0.9	A-	A+
598	635450	6	6	305	.571	.053	.571	.167	.210	.000	.300	-.222	.300	-.144	-.112	-0.220	0.126	1.9	1.1	1.8	1.1	A-	A+
599	635615	6	6	305	.741	.134	.085	.036	.741	.003	.417	-.182	-.277	-.199	.417	-1.133	0.141	-0.7	1.0	-0.4	1.0	A-	A-
600	639403	6	6	305	.790	.075	.790	.059	.075	.000	.526	-.300	.526	-.332	-.215	-1.443	0.151	-2.1	0.8	-2.5	0.7	B+	A+
601	635453	6	6	305	.679	.144	.105	.679	.069	.003	.454	-.195	-.301	.454	-.186	-0.778	0.133	-1.4	0.9	-0.2	1.0	A-	A+
602	624806	6	6	305	.653	.098	.108	.653	.138	.003	.512	-.359	-.232	.512	-.176	-0.638	0.131	-2.2	0.9	-2.1	0.8	A+	C-
603	639388	6	6	305	.859	.016	.043	.079	.859	.003	.544	-.183	-.340	-.346	.544	-2.014	0.175	-1.9	0.8	-2.9	0.5	A-	A-
604	625480	6	6	305	.600	.151	.600	.102	.148	.000	.364	-.235	.364	-.167	-.124	-0.364	0.127	0.8	1.0	0.2	1.0	A-	B-
605	624827	6	6	305	.571	.571	.138	.164	.128	.000	.392	.392	-.288	-.152	-.115	-0.220	0.126	0.0	1.0	0.2	1.0	A+	B-
606	632917	6	6	305	.771	.053	.026	.771	.151	.000	.456	-.381	-.303	.456	-.163	-1.310	0.146	-1.3	0.9	-0.1	1.0	A+	A+
607	639434	6	3	305	.321	.351	.321	.105	.213	.010	.271	-.060	.271	-.007	-.207	0.977	0.132	1.9	1.1	0.9	1.1	A-	A+
608	639426	6	4	305	.607	.167	.030	.190	.607	.007	.367	-.181	-.303	-.141	.367	-0.416	0.128	0.6	1.0	0.3	1.0	A+	A+
609	624767	6	5	305	.226	.177	.125	.226	.466	.007	.220	-.191	-.209	.220	.111	1.531	0.145	0.8	1.1	2.4	1.3	A+	A+
610	639875	6	6	305	.820	.056	.059	.820	.059	.007	.556	-.349	-.293	.556	-.252	-1.698	0.161	-2.4	0.8	-2.8	0.6	A+	A+
611	624824	6	4	305	.741	.039	.161	.049	.741	.010	.523	-.265	-.296	-.274	.523	-1.164	0.143	-2.0	0.9	-2.4	0.8	A-	A-
612	635454	6	6	304	.727	.095	.727	.102	.076	.000	.285	-.082	.285	-.136	-.235	-1.019	0.136	0.8	1.1	0.5	1.1	A+	
613	639378	6	6	304	.572	.138	.572	.171	.118	.000	.323	-.136	.323	-.239	-.071	-0.241	0.123	1.0	1.0	0.6	1.0	A-	
614	639371	6	6	304	.678	.036	.079	.207	.678	.000	.329	-.300	-.183	-.119	.329	-0.753	0.130	-0.4	1.0	0.6	1.1	A+	
615	635882	6	6	304	.674	.092	.674	.079	.155	.000	.383	-.221	.383	-.125	-.227	-0.736	0.130	-1.1	0.9	-0.3	1.0	A-	
616	639368	6	6	304	.717	.092	.079	.717	.112	.000	.355	-.174	-.310	.355	-.082	-0.964	0.134	-0.5	1.0	-0.6	0.9	A+	
617	635612	6	6	304	.645	.092	.158	.645	.105	.000	.374	-.148	-.199	.374	-.208	-0.587	0.127	-1.1	1.0	-0.6	1.0	A-	
618	624295	6	6	304	.533	.155	.533	.155	.158	.000	.399	-.299	.399	-.126	-.125	-0.059	0.123	-0.8	1.0	-1.0	1.0	A-	
619	639402	6	6	304	.372	.214	.306	.372	.109	.000	.200	-.120	-.026	.200	-.115	0.691	0.126	2.6	1.1	2.5	1.2	A+	
620	627774	6	6	304	.740	.072	.740	.148	.040	.000	.367	-.091	.367	-.282	-.192	-1.094	0.138	-0.6	1.0	-0.8	0.9	A-	
621	623088	6	4	304	.615	.158	.086	.615	.135	.007	.338	-.083	-.192	.338	-.165	-0.454	0.126	0.3	1.0	-0.4	1.0	A+	
622	623083	6	5	304	.566	.059	.345	.566	.020	.010	.261	-.200	-.087	.261	-.082	-0.228	0.124	1.9	1.1	1.5	1.1	A+	
623	623036	6	6	304	.724	.724	.102	.125	.030	.020	.447	.447	-.269	-.210	-.066	-1.070	0.138	-1.5	0.9	-1.6	0.8	B+	
624	639435	6	3	304	.263	.135	.263	.319	.263	.020	.119	-.224	.119	.101	.038	1.239	0.138	2.7	1.2	2.8	1.3	B-	
625	627061	6	6	304	.661	.118	.661	.122	.076	.023	.463	-.191	.463	-.185	-.199	-0.735	0.131	-1.7	0.9	-1.9	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
626	624843	6	5	304	.477	.286	.118	.095	.477	.023	.515	-.252	-.144	-.179	.515	0.157	0.124	-3.6	0.9	-3.5	0.8	A+	
627	639876	6	6	304	.605	.605	.217	.040	.109	.030	.363	.363	-.203	-.153	-.053	-0.471	0.127	-0.2	1.0	0.9	1.1	A+	
628	633446	6	6	304	.477	.477	.135	.253	.135	.000	.273	.273	-.289	.035	-.156	0.175	0.124	2.8	1.1	2.9	1.2	A+	A-
629	635619	6	6	305	.246	.246	.134	.266	.354	.000	.250	.250	-.201	-.195	.099	1.422	0.142	0.7	1.1	2.7	1.4	A-	A-
630	635662	6	4	304	.322	.260	.128	.322	.286	.003	.261	-.151	.001	.261	-.114	0.934	0.130	1.2	1.1	1.2	1.1	A+	
631	623111	6	6	304	.668	.086	.066	.178	.668	.003	.380	-.112	-.198	-.212	.380	-0.821	0.131	-0.1	1.0	-0.8	0.9	A+	A+
632	624754	6	6	303	.363	.588	.363	.023	.020	.007	.242	-.063	.242	-.163	-.223	0.711	0.129	2.6	1.1	2.4	1.2	A-	A+
633	628060	6	6	304	.513	.168	.174	.513	.138	.007	.412	-.100	-.176	.412	-.265	0.007	0.125	-0.5	1.0	-0.4	1.0	A-	A-
634	627415	6	6	305	.266	.348	.157	.230	.266	.000	.287	-.132	-.173	-.003	.287	1.304	0.138	0.6	1.0	1.7	1.2	A+	A+
635	624287	6	6	304	.793	.049	.069	.793	.066	.023	.559	-.278	-.297	.559	-.203	-1.534	0.154	-2.6	0.8	-3.2	0.6	A+	
636	624763	6	6	304	.556	.174	.165	.556	.092	.013	.412	-.101	-.232	.412	-.193	-0.304	0.125	-0.6	1.0	-1.0	0.9	A+	B+
637	627960	6	6	303	.320	.320	.122	.073	.469	.017	.216	.216	-.216	-.255	.152	0.923	0.133	2.6	1.2	2.6	1.2	A-	A+
638	633447	6	6	305	.712	.712	.098	.085	.105	.000	.296	.296	-.078	-.216	-.165	-0.951	0.136	1.1	1.1	1.3	1.1	A-	A-
639	639392	6	6	304	.293	.240	.211	.257	.293	.000	.297	-.129	-.062	-.126	.297	1.096	0.134	0.2	1.0	1.3	1.1	A-	
640	635661	6	4	304	.474	.474	.105	.191	.227	.003	.224	.224	-.136	-.095	-.036	0.119	0.124	3.1	1.1	2.7	1.2	A-	A+
641	624289	6	6	303	.762	.050	.079	.762	.102	.007	.450	-.213	-.213	.450	-.191	-1.331	0.146	-0.8	0.9	-1.4	0.8	A+	A-
642	624756	6	6	304	.464	.211	.161	.464	.165	.000	.140	-.076	-.053	.140	-.054	0.253	0.125	4.9	1.2	4.7	1.3	A+	A+
643	628061	6	6	305	.777	.777	.128	.053	.036	.007	.447	.447	-.224	-.280	-.228	-1.382	0.149	-0.9	0.9	-1.5	0.8	A-	A-
644	628112	6	6	304	.434	.214	.434	.217	.122	.013	.378	-.141	.378	-.192	-.052	0.378	0.124	-0.4	1.0	-0.7	1.0	A+	
645	626567	6	6	304	.461	.174	.138	.217	.461	.010	.460	-.143	-.191	-.204	.460	0.159	0.125	-1.7	0.9	-1.5	0.9	A+	A+
646	624840	6	6	303	.551	.165	.076	.551	.198	.010	.456	-.130	-.220	.456	-.222	-0.186	0.126	-1.8	0.9	-1.7	0.9	A+	A-
647	627030	6	6	304	.549	.145	.549	.089	.207	.010	.418	-.189	.418	-.327	-.080	-0.192	0.126	-0.3	1.0	0.0	1.0	A-	A+
648	627052	7	3	280	.839	.839	.057	.014	.086	.004	.389	.389	-.169	-.077	-.264	-1.676	0.173	-0.6	0.9	-0.8	0.9	B+	
649	639447	7	7	280	.775	.136	.775	.029	.061	.000	.447	-.334	.447	-.183	-.175	-1.145	0.152	-1.3	0.9	-1.6	0.8	A-	
650	627058	7	3	280	.446	.214	.196	.139	.446	.004	-.008	.008	.069	-.081	-.008	0.593	0.130	7.3	1.4	6.7	1.5	A-	A-
651	639380	7	7	279	.545	.545	.204	.161	.086	.004	.304	.304	-.166	-.053	-.157	0.000	0.129	1.7	1.1	1.2	1.1	A-	
652	624286	7	7	280	.711	.136	.711	.093	.054	.007	.499	-.251	.499	-.182	-.222	-0.801	0.141	-2.0	0.9	-2.2	0.8	A-	
653	624822	7	4	280	.246	.343	.132	.271	.246	.007	.173	.067	-.098	-.093	.173	1.549	0.147	1.7	1.1	2.9	1.4	B+	
654	636003	7	7	280	.457	.457	.071	.257	.214	.000	.222	.222	-.303	-.128	.057	0.495	0.130	3.4	1.2	3.4	1.2	A-	
655	633454	7	7	280	.811	.071	.811	.054	.061	.004	.545	-.240	.545	-.288	-.310	-1.376	0.166	-1.9	0.8	-2.4	0.7	B+	A-
656	635909	7	7	279	.491	.118	.491	.179	.204	.007	.454	-.179	.454	-.223	-.155	0.239	0.129	-1.8	0.9	-1.9	0.9	A+	
657	634300	7	7	280	.561	.143	.179	.561	.107	.011	.460	-.203	-.210	.460	-.126	-0.051	0.130	-1.9	0.9	-2.0	0.9	C+	
658	626992	7	3	280	.875	.025	.875	.029	.071	.000	.353	-.220	.353	-.159	-.217	-1.933	0.188	-0.5	0.9	-0.8	0.8	A+	
659	639438	7	7	280	.882	.054	.029	.882	.036	.000	.435	-.348	-.181	.435	-.172	-1.958	0.198	-0.9	0.9	-1.4	0.7	A+	B-
660	628116	7	3	279	.548	.548	.093	.118	.237	.004	.483	.483	-.252	-.239	-.162	-0.017	0.129	-2.7	0.9	-2.0	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
661	626764	7	7	280	.771	.771	.057	.057	.107	.007	.448	.448	-.223	-.235	-.143	-1.166	0.152	-1.2	0.9	-0.9	0.9	A-	
662	639394	7	7	280	.500	.171	.500	.143	.179	.007	.339	-.200	.339	-.150	-.026	0.248	0.130	1.1	1.1	1.1	1.1	A+	
663	628476	7	4	280	.254	.264	.254	.389	.093	.000	.110	-.041	.110	.014	-.127	1.553	0.147	2.7	1.2	3.5	1.5	B+	
664	636008	7	8	280	.750	.075	.068	.107	.750	.000	.470	-.160	-.259	-.311	.470	-0.926	0.149	-1.3	0.9	-1.8	0.8	A+	A-
665	633455	7	7	279	.896	.025	.050	.896	.025	.004	.427	-.203	-.253	.427	-.145	-2.242	0.205	-0.7	0.9	-2.0	0.6	A+	
666	639420	7	7	280	.304	.304	.300	.207	.182	.007	.232	.232	-.041	-.103	-.022	1.195	0.138	1.3	1.1	1.7	1.2	A-	
667	634299	7	7	280	.646	.132	.646	.093	.114	.014	.523	-.187	.523	-.244	-.239	-0.491	0.137	-2.3	0.9	-2.3	0.8	A-	
668	630377	7	7	2516	.845	.049	.845	.053	.052	.002	.355	-.200	.355	-.177	-.162	-1.665	0.058	-1.0	1.0	-2.1	0.9	A+	A+
669	627055	7	3	2516	.725	.066	.725	.159	.047	.003	.422	-.200	.422	-.242	-.181	-0.837	0.048	-2.5	0.9	-2.5	0.9	A-	A-
670	625552	7	7	2516	.328	.176	.246	.328	.247	.004	.355	-.128	-.117	.355	-.122	1.134	0.046	0.2	1.0	0.7	1.0	A-	A-
671	623032	7	4	2516	.762	.091	.069	.762	.075	.003	.396	-.185	-.227	.396	-.165	-1.067	0.050	-1.4	1.0	-2.5	0.9	A+	A+
672	629824	7	7	2516	.407	.139	.407	.235	.215	.005	.250	-.100	.250	-.109	-.065	0.736	0.044	6.4	1.1	7.6	1.2	A-	A+
673	621386	7	7	2516	.734	.734	.097	.121	.044	.005	.435	.435	-.181	-.236	-.223	-0.902	0.049	-3.0	0.9	-3.2	0.9	A+	A-
674	628106	7	7	2516	.467	.301	.467	.085	.143	.004	.303	-.032	.303	-.239	-.154	0.449	0.043	4.2	1.1	3.8	1.1	A-	A-
675	639419	7	7	2516	.417	.197	.068	.417	.314	.005	.462	-.283	-.222	.462	-.097	0.691	0.044	-6.5	0.9	-3.9	0.9	A+	A-
676	627967	7	7	2516	.425	.111	.271	.186	.425	.006	.414	-.155	-.134	-.202	.414	0.647	0.044	-2.8	1.0	-1.3	1.0	A-	A-
677	633456	7	7	2516	.657	.050	.116	.170	.657	.006	.465	-.231	-.253	-.190	.465	-0.483	0.046	-4.6	0.9	-4.1	0.9	B+	A+
678	622603	7	7	558	.502	.034	.238	.224	.502	.002	.307	-.049	-.179	-.137	.307	0.286	0.092	2.5	1.1	2.1	1.1	A+	
679	622817	7	7	558	.785	.038	.125	.785	.050	.002	.453	-.221	-.291	.453	-.168	-1.213	0.110	-1.9	0.9	-2.6	0.8	A-	
680	639383	7	7	558	.713	.063	.106	.115	.713	.004	.487	-.200	-.245	-.267	.487	-0.779	0.101	-3.1	0.9	-3.2	0.8	A-	
681	630380	7	8	558	.744	.045	.052	.158	.744	.002	.392	-.193	-.166	-.228	.392	-0.950	0.104	-0.7	1.0	-1.1	0.9	A+	
682	626769	7	7	558	.781	.781	.134	.034	.048	.002	.432	.432	-.305	-.189	-.135	-1.189	0.109	-1.5	0.9	-1.9	0.8	A-	
683	630286	7	7	558	.296	.296	.350	.154	.195	.005	.307	.307	-.051	-.156	-.114	1.302	0.099	0.7	1.0	1.3	1.1	A-	
684	625543	7	3	558	.263	.253	.263	.208	.272	.004	.115	.059	.115	-.109	-.047	1.485	0.102	3.6	1.2	4.8	1.4	A-	
685	625514	7	7	558	.575	.301	.082	.039	.575	.002	.404	-.212	-.227	-.147	.404	-0.053	0.092	-0.6	1.0	-0.9	1.0	A-	
686	621207	7	7	279	.699	.068	.115	.699	.115	.004	.526	-.145	-.286	.526	-.346	-0.623	0.141	-2.7	0.8	-2.9	0.7	A-	
687	633851	7	7	279	.488	.054	.136	.488	.319	.004	.208	-.152	-.221	.208	.024	0.437	0.130	3.7	1.2	3.8	1.3	B+	
688	639415	7	7	279	.878	.878	.075	.011	.036	.000	.465	.465	-.417	-.148	-.144	-1.918	0.195	-1.1	0.9	-1.4	0.7	A+	
689	634073	7	7	279	.728	.082	.728	.115	.075	.000	.433	-.199	.433	-.339	-.115	-0.754	0.144	-1.5	0.9	-1.6	0.8	A-	
690	625510	7	7	558	.262	.093	.262	.624	.018	.004	.039	-.064	.039	.048	-.079	1.516	0.103	4.0	1.2	6.0	1.6	A-	
691	628024	7	7	558	.618	.090	.215	.618	.074	.004	.449	-.201	-.237	.449	-.200	-0.278	0.094	-2.2	0.9	-2.6	0.9	A+	
692	639445	7	3	279	.301	.348	.301	.136	.215	.000	.093	.140	.093	-.135	-.154	1.388	0.140	2.7	1.2	3.2	1.3	A-	
693	633847	7	7	559	.528	.106	.195	.168	.528	.004	.305	-.125	-.114	-.130	.305	0.148	0.092	2.6	1.1	2.7	1.1	A-	
694	636005	7	7	559	.424	.177	.424	.258	.136	.005	.435	-.052	.435	-.180	-.258	0.641	0.093	-2.1	0.9	-1.7	0.9	A-	
695	639412	7	7	559	.850	.007	.061	.850	.077	.005	.411	-.137	-.239	.411	-.190	-1.755	0.126	-1.1	0.9	-1.0	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
696	633844	7	7	559	.483	.091	.152	.267	.483	.007	.401	-.150	-.205	-.109	.401	0.358	0.092	-0.1	1.0	0.0	1.0	A-	
697	635990	7	8	559	.556	.147	.556	.127	.161	.009	.406	-.191	.406	-.262	-.029	0.005	0.093	-0.8	1.0	-0.1	1.0	A+	
698	633408	7	7	559	.472	.472	.132	.109	.279	.007	.261	.261	-.139	-.238	.058	0.409	0.092	3.7	1.1	4.2	1.2	A-	
699	627049	7	7	559	.479	.297	.106	.479	.109	.009	.385	-.231	-.219	.385	.057	0.373	0.092	0.2	1.0	0.9	1.0	B-	
700	627006	7	7	279	.728	.086	.728	.093	.086	.007	.498	-.184	.498	-.310	-.165	-0.878	0.147	-1.6	0.9	-1.6	0.8	A+	
701	626995	7	3	559	.632	.632	.143	.149	.070	.007	.373	.373	-.274	-.062	-.104	-0.363	0.095	0.5	1.0	-0.2	1.0	A-	
702	626989	7	7	559	.846	.034	.079	.032	.846	.009	.462	-.127	-.287	-.157	.462	-1.739	0.126	-1.3	0.9	-1.8	0.8	A+	
703	628309	7	7	279	.488	.172	.176	.488	.158	.007	.390	-.068	-.151	.390	-.214	0.376	0.132	0.3	1.0	-0.1	1.0	A+	
704	639423	7	7	279	.516	.516	.090	.093	.290	.011	.389	.389	-.279	-.173	-.074	0.221	0.132	0.4	1.0	-0.1	1.0	A-	
705	639355	7	7	279	.398	.229	.233	.129	.398	.011	.293	-.022	-.061	-.207	.293	0.815	0.134	1.9	1.1	1.4	1.1	A-	
706	629850	7	7	279	.599	.061	.237	.599	.093	.011	.490	-.159	-.307	.490	-.134	-0.186	0.135	-2.2	0.9	-2.0	0.9	A+	
707	626559	7	7	279	.169	.488	.169	.222	.111	.011	.012	.112	.012	-.032	-.043	2.194	0.170	2.2	1.2	4.0	1.9	A-	
708	639372	7	7	279	.344	.222	.290	.344	.143	.000	.253	-.237	.044	.253	-.119	1.066	0.135	2.0	1.1	2.0	1.2	A-	
709	635943	7	7	279	.652	.047	.258	.043	.652	.000	.375	-.101	-.211	-.320	.375	-0.430	0.136	-0.3	1.0	-0.2	1.0	A+	
710	639605	7	8	279	.918	.039	.918	.025	.018	.000	.368	-.240	.368	-.247	-.120	-2.430	0.226	-0.7	0.9	-1.1	0.7	A-	
711	627412	7	3	279	.434	.133	.394	.434	.039	.000	.248	-.298	.002	.248	-.117	0.643	0.131	2.1	1.1	2.9	1.2	A+	
712	626990	7	7	279	.731	.108	.072	.090	.731	.000	.347	-.223	-.059	-.243	.347	-0.866	0.146	0.2	1.0	-0.2	1.0	A+	
713	638833	7	7	279	.470	.158	.172	.470	.197	.004	.332	-.269	-.110	.332	-.032	0.455	0.130	0.8	1.0	0.7	1.1	A+	
714	627050	7	7	279	.853	.050	.054	.853	.043	.000	.464	-.344	-.273	.464	-.137	-1.743	0.180	-1.2	0.9	-1.5	0.7	A-	
715	628241	7	N/A	279	.233	.412	.233	.169	.186	.000	.081	.209	.081	-.296	-.068	1.692	0.150	2.3	1.2	2.9	1.4	A-	
716	625476	7	7	279	.520	.208	.082	.520	.190	.000	.411	-.214	-.278	.411	-.107	0.219	0.130	-1.2	1.0	0.4	1.0	A+	
717	627414	7	6	279	.918	.918	.022	.032	.029	.000	.387	.387	-.253	-.168	-.239	-2.430	0.226	-0.7	0.9	-1.7	0.6	A-	
718	627062	7	7	279	.878	.050	.025	.047	.878	.000	.483	-.322	-.145	-.309	.483	-1.989	0.195	-1.4	0.8	-2.3	0.6	A+	
719	634301	7	7	279	.563	.186	.093	.158	.563	.000	.423	-.199	-.151	-.242	.423	0.015	0.131	-0.8	1.0	-0.5	1.0	A+	
720	633390	7	7	279	.308	.122	.333	.237	.308	.000	.365	-.134	.001	-.295	.365	1.255	0.139	-0.7	1.0	-0.5	1.0	A-	
721	639385	7	N/A	279	.111	.125	.466	.111	.294	.004	.032	-.258	.241	.032	-.087	2.717	0.201	0.8	1.1	2.3	1.6	A+	
722	639408	7	7	279	.699	.699	.104	.122	.075	.000	.378	.378	-.226	-.131	-.235	-0.680	0.141	-0.5	1.0	-0.9	0.9	A-	
723	627473	7	7	280	.407	.404	.407	.071	.118	.000	.292	-.137	.292	-.156	-.112	0.747	0.131	1.4	1.1	1.0	1.1	A+	
724	633405	7	6	280	.332	.343	.332	.107	.214	.004	.304	-.067	.304	-.074	-.195	1.121	0.136	0.6	1.0	0.4	1.0	A-	
725	628131	7	8	280	.632	.136	.200	.632	.032	.000	.259	-.104	-.199	.259	-.056	-0.324	0.133	2.0	1.1	1.8	1.1	A+	
726	627363	7	7	280	.932	.932	.011	.032	.025	.000	.278	.278	-.109	-.197	-.153	-2.625	0.243	0.0	1.0	-0.7	0.8	A+	
727	635669	7	4	280	.550	.550	.164	.221	.064	.000	.248	.248	-.238	-.017	-.114	0.073	0.130	2.2	1.1	2.2	1.1	A-	
728	639422	7	7	280	.350	.121	.282	.246	.350	.000	.236	-.201	-.071	-.035	.236	1.030	0.134	1.5	1.1	1.2	1.1	A-	
729	625524	7	7	280	.446	.446	.239	.096	.218	.000	.358	.358	-.090	-.304	-.121	0.559	0.130	0.3	1.0	0.4	1.0	A+	
730	639424	7	7	280	.793	.139	.054	.793	.014	.000	.465	-.400	-.178	.465	-.082	-1.239	0.156	-1.9	0.9	-1.9	0.8	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
731	626988	7	7	280	.254	.307	.154	.254	.282	.004	.266	-.154	-.176	.266	.061	1.558	0.146	0.3	1.0	2.3	1.3	A+	
732	627043	7	7	280	.800	.039	.089	.068	.800	.004	.547	-.243	-.381	-.236	.547	-1.305	0.159	-1.9	0.8	-2.7	0.7	A+	
733	639374	7	7	280	.696	.086	.086	.696	.132	.000	.442	-.304	-.334	.442	-.073	-0.658	0.139	-1.4	0.9	-1.2	0.9	A+	
734	639579	7	8	280	.625	.189	.089	.093	.625	.004	.303	-.105	-.149	-.213	.303	-0.300	0.133	0.8	1.0	0.9	1.1	A+	
735	634302	7	7	280	.454	.189	.454	.125	.232	.000	.286	-.234	.286	-.185	.025	0.525	0.129	1.6	1.1	1.8	1.1	B+	
736	627782	7	7	280	.564	.179	.564	.114	.143	.000	.370	-.263	.370	-.104	-.141	0.005	0.130	0.3	1.0	0.1	1.0	A+	
737	628310	7	3	280	.361	.129	.161	.350	.361	.000	.229	-.223	-.102	.004	.229	0.975	0.134	2.2	1.1	2.2	1.2	A-	
738	630298	7	3	280	.329	.293	.271	.329	.104	.004	.257	-.008	-.130	.257	-.127	1.089	0.136	1.4	1.1	2.5	1.2	A-	
739	639356	7	7	280	.471	.471	.129	.250	.143	.007	.084	.084	-.072	.054	-.073	0.373	0.130	5.8	1.3	5.2	1.3	A+	
740	639360	7	7	280	.439	.050	.104	.439	.404	.004	.161	-.225	-.064	.161	.019	0.540	0.130	4.3	1.2	4.3	1.3	A-	
741	625459	7	7	280	.889	.071	.889	.025	.011	.004	.388	-.259	.388	-.098	-.189	-2.158	0.201	-0.4	0.9	-0.4	0.9	B+	
742	629848	7	7	280	.329	.329	.289	.186	.189	.007	.234	.234	-.064	-.098	-.028	1.087	0.136	1.7	1.1	2.9	1.3	A+	
743	623058	7	N/A	280	.179	.514	.143	.157	.179	.007	.067	.301	-.205	-.200	.067	2.006	0.163	1.8	1.2	3.3	1.6	A-	
744	625509	7	7	280	.382	.446	.032	.132	.382	.007	.473	-.281	-.220	-.058	.473	0.815	0.133	-2.0	0.9	-2.1	0.9	A-	
745	635908	7	7	280	.371	.293	.371	.189	.136	.011	.330	-.151	.330	-.069	-.092	0.862	0.133	0.6	1.0	1.3	1.1	A+	
746	626986	7	7	280	.686	.079	.143	.086	.686	.007	.632	-.335	-.351	-.173	.632	-0.678	0.140	-4.4	0.8	-4.2	0.7	B+	
747	633850	7	7	280	.679	.086	.679	.186	.043	.007	.435	-.154	.435	-.219	-.212	-0.639	0.139	-0.9	1.0	-0.4	1.0	A-	
748	627053	7	7	280	.418	.275	.193	.104	.418	.011	.390	-.114	-.122	-.186	.390	0.634	0.131	-0.1	1.0	0.0	1.0	A+	
749	633133	7	7	280	.568	.568	.161	.207	.054	.011	.295	.295	-.100	-.100	-.142	-0.086	0.132	2.2	1.1	2.1	1.1	A-	
750	627785	7	7	280	.432	.207	.114	.432	.236	.011	.377	-.116	-.181	.377	-.107	0.565	0.131	0.4	1.0	-0.2	1.0	A+	
751	635663	7	7	280	.614	.614	.221	.043	.111	.011	.524	.524	-.264	-.217	-.206	-0.316	0.134	-2.6	0.9	-2.4	0.8	B+	
752	633849	7	7	280	.539	.236	.129	.539	.086	.011	.413	-.189	-.217	.413	-.058	0.052	0.131	-0.4	1.0	-0.1	1.0	B-	
753	635369	7	8	280	.929	.929	.014	.032	.011	.014	.363	.363	-.086	-.193	-.090	-2.866	0.263	0.0	1.0	-0.8	0.7	A+	
754	639421	7	N/A	280	.171	.154	.546	.171	.114	.014	.128	-.188	.205	.128	-.134	2.055	0.166	0.9	1.1	3.4	1.7	A-	
755	626941	7	7	280	.761	.761	.064	.068	.107	.000	.381	.381	-.219	-.215	-.177	-1.054	0.149	-0.5	1.0	-0.6	0.9	A+	
756	639365	7	7	280	.632	.218	.068	.632	.082	.000	.448	-.320	-.145	.448	-.171	-0.344	0.134	-1.3	0.9	-1.2	0.9	A-	
757	639611	7	8	280	.243	.575	.129	.054	.243	.000	.119	.097	-.188	-.159	.119	1.619	0.149	2.5	1.2	3.6	1.5	A+	
758	639357	7	7	280	.625	.193	.625	.007	.175	.000	.372	-.323	.372	-.051	-.127	-0.308	0.133	0.2	1.0	-0.1	1.0	A+	
759	635903	7	7	280	.764	.100	.061	.075	.764	.000	.395	-.236	-.207	-.179	.395	-1.077	0.150	-0.7	0.9	-0.7	0.9	A+	
760	635911	7	7	280	.450	.132	.239	.179	.450	.000	.341	-.157	-.177	-.107	.341	0.529	0.130	1.1	1.1	0.8	1.1	A-	
761	627051	7	7	280	.475	.057	.293	.175	.475	.000	.565	-.104	-.493	-.089	.565	0.410	0.130	-4.2	0.8	-3.4	0.8	A+	
762	628130	7	7	280	.436	.436	.118	.093	.354	.000	.422	.422	-.199	-.152	-.212	0.597	0.130	-0.7	1.0	-0.5	1.0	A+	
763	639409	7	7	280	.514	.164	.189	.132	.514	.000	.498	-.139	-.215	-.335	.498	0.225	0.129	-2.4	0.9	-2.3	0.9	A-	
764	640044	7	4	280	.761	.079	.082	.761	.079	.000	.393	-.103	-.233	.393	-.283	-1.054	0.149	-0.7	0.9	-0.5	0.9	A+	
765	633134	7	7	280	.236	.021	.536	.236	.207	.000	.255	-.150	-.151	.255	-.028	1.664	0.150	1.0	1.1	1.7	1.2	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
766	625511	7	7	280	.407	.407	.354	.118	.121	.000	.361	.361	-.188	-.158	-.113	0.734	0.131	0.7	1.0	0.0	1.0	A+	
767	639440	7	7	280	.718	.107	.718	.096	.079	.000	.529	-.234	.529	-.357	-.225	-0.799	0.142	-2.7	0.8	-2.5	0.7	A+	
768	625517	7	7	280	.575	.575	.157	.154	.114	.000	.392	.392	-.297	-.071	-.190	-0.063	0.131	0.0	1.0	-0.3	1.0	B+	
769	637141	7	3	280	.314	.221	.432	.314	.032	.000	.215	-.375	.097	.215	.044	1.207	0.138	2.0	1.1	3.3	1.3	C+	
770	635942	7	7	280	.682	.139	.089	.682	.089	.000	.417	-.217	-.214	.417	-.203	-0.602	0.138	-0.9	1.0	-0.5	0.9	A+	
771	628477	7	4	280	.343	.211	.343	.282	.164	.000	.311	-.160	.311	-.066	-.143	1.056	0.136	1.1	1.1	1.3	1.1	A+	
772	633846	7	7	280	.829	.036	.096	.829	.039	.000	.461	-.220	-.307	.461	-.219	-1.484	0.171	-1.0	0.9	-2.1	0.7	A-	A+
773	639373	7	7	280	.475	.050	.475	.311	.161	.004	.277	-.203	.277	-.079	-.146	0.513	0.130	1.3	1.1	1.6	1.1	A+	A+
774	627001	7	7	280	.207	.232	.189	.371	.207	.000	.152	.006	-.117	-.037	.152	1.888	0.155	1.3	1.1	2.2	1.3	A-	A-
775	639382	7	7	280	.593	.121	.593	.139	.146	.000	.315	-.193	.315	-.202	-.062	-0.076	0.132	1.2	1.1	1.4	1.1	A-	B-
776	630728	7	7	280	.343	.343	.150	.368	.139	.000	.291	.291	-.155	-.011	-.224	1.107	0.135	1.0	1.1	1.5	1.1	A-	A-
777	628322	7	7	280	.718	.718	.093	.096	.093	.000	.489	.489	-.314	-.186	-.256	-0.733	0.143	-1.6	0.9	-2.1	0.8	A-	A-
778	639414	7	7	280	.432	.314	.168	.432	.086	.000	.434	-.357	.022	.434	-.205	0.687	0.130	-1.4	0.9	-1.1	0.9	A-	A+
779	635912	7	7	280	.682	.086	.075	.157	.682	.000	.418	-.230	-.249	-.178	.418	-0.513	0.138	-0.9	1.0	-0.8	0.9	A+	A-
780	633135	7	3	280	.371	.371	.296	.111	.221	.000	.224	.224	-.185	-.105	.023	0.999	0.133	2.0	1.1	1.9	1.2	A+	A+
781	621154	7	7	280	.800	.143	.800	.036	.021	.000	.441	-.347	.441	-.154	-.181	-1.186	0.158	-1.3	0.9	-2.0	0.7	A+	A-
782	633453	7	7	280	.682	.193	.075	.682	.050	.000	.498	-.309	-.273	.498	-.174	-0.552	0.139	-1.8	0.9	-1.7	0.9	A-	A-
783	635349	7	7	280	.818	.818	.068	.036	.079	.000	.482	.482	-.303	-.244	-.241	-1.426	0.168	-1.1	0.9	-1.7	0.8	A-	A-
784	627067	7	7	280	.186	.179	.221	.407	.186	.007	.144	-.149	-.038	.067	.144	2.036	0.161	1.1	1.1	2.6	1.4	A-	A-
785	627068	7	7	280	.536	.132	.171	.536	.161	.000	.388	-.020	-.272	.388	-.230	0.198	0.130	-0.3	1.0	0.3	1.0	A+	A-
786	633391	7	N/A	280	.064	.186	.064	.532	.218	.000	-.070	-.069	-.070	.105	-.021	3.593	0.278	0.4	1.1	1.3	1.5	A-	A+
787	635879	7	7	280	.657	.132	.154	.657	.057	.000	.440	-.237	-.262	.440	-.147	-0.400	0.136	-1.2	0.9	-0.8	0.9	A-	A-
788	624830	7	7	280	.600	.600	.150	.175	.075	.000	.410	.410	-.148	-.283	-.153	-0.128	0.132	-0.4	1.0	-0.2	1.0	C+	A-
789	633460	7	7	279	.358	.358	.176	.387	.075	.004	.269	.269	-.061	-.142	-.061	0.884	0.134	1.4	1.1	2.0	1.2	A+	
790	633459	7	7	279	.602	.602	.136	.140	.118	.004	.426	.426	-.192	-.215	-.146	-0.273	0.131	-1.0	1.0	-1.3	0.9	A-	
791	635880	7	7	279	.652	.133	.122	.652	.090	.004	.452	-.123	-.340	.452	-.145	-0.523	0.135	-1.5	0.9	-1.3	0.9	A-	
792	628321	7	7	279	.634	.229	.093	.039	.634	.004	.458	-.199	-.267	-.198	.458	-0.432	0.133	-1.7	0.9	-1.7	0.9	A-	
793	628056	7	7	279	.294	.373	.294	.179	.151	.004	.353	-.131	.353	.001	-.215	1.221	0.140	-0.2	1.0	0.0	1.0	A+	
794	628148	7	7	279	.620	.620	.176	.100	.093	.011	.432	.432	-.276	-.123	-.134	-0.379	0.133	-1.1	0.9	-1.1	0.9	A-	
795	626993	7	7	279	.308	.072	.444	.165	.308	.011	.316	-.223	.028	-.199	.316	1.133	0.138	0.5	1.0	0.7	1.1	A+	
796	639359	7	7	280	.436	.082	.229	.250	.436	.004	.272	-.153	-.031	-.137	.272	0.544	0.129	1.8	1.1	1.6	1.1	A-	
797	639443	7	3	280	.446	.325	.089	.446	.132	.007	.248	.030	-.177	.248	-.146	0.491	0.129	2.3	1.1	2.6	1.2	A-	
798	626991	7	3	280	.682	.154	.086	.682	.071	.007	.514	-.208	-.255	.514	-.217	-0.644	0.138	-2.6	0.9	-2.2	0.8	A+	
799	630414	7	7	280	.332	.100	.075	.332	.486	.007	.143	-.198	-.261	.143	.196	1.046	0.135	3.1	1.2	3.2	1.3	A+	
800	634076	7	5	280	.629	.046	.629	.086	.232	.007	.290	-.174	.290	-.202	-.023	-0.369	0.133	1.5	1.1	1.5	1.1	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
801	625529	7	3	280	.779	.093	.779	.075	.046	.007	.377	-.116	.377	-.137	-.235	-1.213	0.154	-0.3	1.0	-0.3	1.0	A+	
802	630730	7	7	280	.336	.411	.111	.136	.336	.007	.246	.094	-.177	-.203	.246	1.027	0.135	1.7	1.1	1.2	1.1	A-	
803	627040	7	7	280	.468	.096	.361	.064	.468	.011	.306	-.155	-.004	-.273	.306	0.384	0.129	1.3	1.1	1.4	1.1	A+	
804	627684	7	3	280	.775	.036	.107	.082	.775	.000	.338	-.181	-.201	-.165	.338	-1.088	0.154	0.2	1.0	0.0	1.0	A-	B-
805	625487	7	7	279	.262	.280	.262	.376	.079	.004	.092	-.135	.092	.132	-.084	1.404	0.145	2.8	1.2	3.4	1.4	A-	
806	627464	7	7	280	.882	.036	.882	.054	.021	.007	.488	-.265	.488	-.196	-.184	-2.072	0.197	-1.0	0.9	-2.0	0.6	A+	
807	639375	7	7	280	.696	.696	.193	.068	.036	.007	.514	.514	-.297	-.192	-.211	-0.738	0.141	-2.2	0.9	-2.0	0.8	A+	
808	633458	7	7	280	.693	.693	.057	.096	.154	.000	.325	.325	-.303	-.230	-.033	-0.660	0.139	0.6	1.0	0.5	1.1	A+	
809	626996	7	6	280	.382	.146	.368	.382	.104	.000	.168	-.201	.025	.168	-.075	0.911	0.132	3.6	1.2	3.4	1.3	A+	A+
810	628098	7	4	279	.412	.111	.136	.412	.333	.007	.321	-.098	-.133	.321	-.128	0.611	0.131	0.9	1.0	1.0	1.1	A+	
811	639358	7	7	280	.575	.575	.161	.118	.139	.007	.450	.450	-.223	-.091	-.213	-0.109	0.130	-1.6	0.9	-1.8	0.9	A-	
812	635665	7	5	280	.318	.221	.189	.257	.318	.014	.315	-.004	-.152	-.110	.315	1.134	0.138	0.5	1.0	1.5	1.1	B+	
813	627361	7	7	280	.446	.164	.329	.446	.061	.000	.319	-.292	-.074	.319	-.066	0.546	0.130	1.6	1.1	1.1	1.1	B+	
814	627056	7	3	279	.652	.075	.197	.652	.068	.007	.294	-.078	-.093	.294	-.215	-0.528	0.135	1.3	1.1	1.1	1.1	A-	
815	639407	7	7	280	.275	.275	.382	.232	.107	.004	.063	.063	.087	.025	-.193	1.353	0.141	3.2	1.2	3.6	1.4	B+	
816	626943	7	7	280	.732	.061	.057	.732	.143	.007	.413	-.208	-.198	.413	-.159	-0.944	0.146	-0.4	1.0	-0.7	0.9	A-	
817	639364	7	7	280	.800	.054	.064	.800	.082	.000	.448	-.213	-.292	.448	-.217	-1.314	0.158	-1.2	0.9	-1.8	0.7	B-	
818	633457	7	7	280	.611	.139	.611	.186	.064	.000	.199	.031	.199	-.112	-.264	-0.164	0.133	3.0	1.2	3.5	1.3	A-	B+
819	626997	7	6	279	.738	.140	.738	.054	.061	.007	.351	-.110	.351	-.174	-.223	-1.006	0.146	-0.1	1.0	0.3	1.0	B+	
820	630429	7	4	280	.314	.314	.232	.154	.293	.007	.294	.294	.055	-.190	-.119	1.138	0.137	0.4	1.0	1.1	1.1	B+	
821	625506	7	7	280	.779	.054	.779	.071	.086	.011	.560	-.235	.560	-.322	-.214	-1.257	0.156	-2.2	0.8	-3.0	0.6	A+	
822	635668	7	5	280	.196	.361	.311	.132	.196	.000	.152	-.014	.074	-.258	.152	1.929	0.160	1.6	1.2	2.4	1.4	A-	
823	627362	7	7	280	.650	.650	.036	.054	.261	.000	.379	.379	-.289	-.256	-.158	-0.344	0.135	-0.1	1.0	-0.6	1.0	A-	A+
824	633498	8	8	144	.507	.076	.507	.368	.049	.000	.163	-.081	.163	-.076	-.109	0.360	0.177	2.3	1.1	1.7	1.1	A+	
825	639580	8	8	145	.435	.110	.435	.207	.248	.000	.188	-.321	.188	.114	-.091	0.902	0.178	2.2	1.1	2.0	1.2	A-	
826	624848	8	4	143	.518	.273	.518	.140	.070	.000	.358	-.156	.358	-.132	-.250	0.428	0.178	-0.2	1.0	0.0	1.0	A+	
827	639612	8	7	144	.639	.639	.188	.118	.056	.000	.252	.252	-.253	-.004	-.091	-0.058	0.184	1.1	1.1	0.7	1.1	A+	
828	628115	8	5	144	.278	.083	.278	.063	.569	.007	.337	-.205	.337	-.159	-.076	1.419	0.196	-0.4	1.0	0.6	1.1	C-	
829	627963	8	8	144	.486	.028	.104	.375	.486	.007	.337	-.194	-.215	-.103	.337	0.442	0.177	0.3	1.0	0.0	1.0	A+	
830	628311	8	3	145	.317	.228	.228	.317	.228	.000	.278	-.117	-.046	.278	-.145	1.472	0.189	0.6	1.0	0.7	1.1	A-	
831	628242	8	8	143	.469	.175	.469	.126	.231	.000	.193	-.103	.193	-.096	-.061	0.650	0.178	2.0	1.1	2.0	1.1	A+	
832	639857	8	8	144	.875	.875	.028	.083	.014	.000	.356	.356	-.214	-.292	-.017	-1.568	0.259	-0.5	0.9	-0.4	0.9	A+	
833	639441	8	4	144	.799	.069	.083	.799	.042	.007	.483	-.206	-.371	.483	-.104	-1.249	0.222	-0.9	0.9	-1.4	0.8	A+	
834	633497	8	8	145	.524	.055	.214	.207	.524	.000	.317	-.165	-.116	-.181	.317	0.491	0.177	0.6	1.0	0.5	1.0	A+	
835	639588	8	8	143	.706	.063	.203	.028	.706	.000	.586	-.308	-.401	-.185	.586	-0.481	0.193	-2.5	0.8	-2.7	0.7	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
836	625522	8	4	144	.833	.007	.833	.104	.056	.000	.403	-.097	.403	-.281	-.245	-1.207	0.232	-0.7	0.9	-1.1	0.8	A-	
837	639610	8	8	144	.750	.042	.049	.750	.160	.000	.395	-.270	-.286	.395	-.151	-0.896	0.204	-0.7	0.9	-0.8	0.9	A+	
838	624828	8	5	144	.813	.056	.090	.813	.035	.007	.340	-.082	-.217	.340	-.169	-1.272	0.224	-0.3	1.0	-0.3	0.9	B+	
839	625520	8	7	145	.641	.117	.641	.041	.200	.000	.318	-.294	.318	-.239	-.026	-0.060	0.184	0.2	1.0	0.6	1.1	A-	
840	625508	8	3	143	.594	.042	.594	.280	.084	.000	.492	-.286	.492	-.250	-.260	0.075	0.181	-1.9	0.9	-1.9	0.9	A+	
841	626775	8	8	144	.639	.306	.028	.028	.639	.000	.449	-.318	-.165	-.256	.449	-0.058	0.184	-1.3	0.9	-1.4	0.9	C-	
842	639856	8	8	144	.819	.819	.042	.083	.042	.014	.548	.548	-.247	-.384	-.161	-1.447	0.236	-1.2	0.8	-2.0	0.6	B+	
843	639439	8	4	144	.854	.854	.049	.042	.049	.007	.386	.386	-.221	-.215	-.116	-1.606	0.248	-0.5	0.9	-0.9	0.8	A+	
844	627686	8	3	1298	.508	.012	.474	.005	.508	.002	.263	-.071	-.215	-.089	.263	0.406	0.059	3.5	1.1	2.9	1.1	A+	A+
845	626768	8	8	1298	.504	.220	.109	.164	.504	.003	.371	-.078	-.231	-.181	.371	0.421	0.060	-0.9	1.0	-0.9	1.0	A+	A-
846	639592	8	8	1298	.500	.207	.500	.126	.164	.004	.399	-.127	.399	-.192	-.186	0.438	0.060	-1.6	1.0	-1.5	1.0	A-	B-
847	622606	8	8	1298	.633	.172	.138	.633	.052	.006	.350	-.125	-.158	.350	-.202	-0.195	0.062	0.2	1.0	0.3	1.0	A-	A-
848	624758	8	6	1298	.307	.307	.201	.197	.289	.007	.265	.265	-.052	-.099	-.084	1.371	0.064	1.8	1.1	3.4	1.2	A+	A+
849	621161	8	7	1298	.408	.297	.164	.125	.408	.007	.482	-.167	-.195	-.195	.482	0.866	0.060	-6.1	0.9	-4.8	0.9	A-	C-
850	628474	8	N/A	1298	.212	.212	.275	.277	.230	.007	.070	.070	-.115	-.015	.129	1.942	0.072	4.6	1.2	5.5	1.4	A-	A+
851	628319	8	4	1298	.608	.047	.260	.608	.077	.008	.398	-.192	-.181	.398	-.182	-0.076	0.061	-1.5	1.0	-1.7	1.0	A-	A-
852	639600	8	8	1298	.735	.103	.735	.067	.089	.007	.493	-.246	.493	-.243	-.203	-0.746	0.067	-4.0	0.9	-4.5	0.8	A-	B-
853	633499	8	8	1298	.498	.140	.218	.498	.135	.009	.345	-.116	-.190	.345	-.079	0.441	0.060	0.6	1.0	1.1	1.0	A+	A+
854	633845	8	7	145	.600	.021	.145	.228	.600	.007	.398	-.090	-.184	-.191	.398	0.047	0.182	-0.9	0.9	-1.1	0.9	A+	
855	638830	8	7	145	.766	.766	.041	.103	.083	.007	.191	.191	-.224	.110	-.118	-0.896	0.211	1.1	1.1	1.9	1.4	A+	
856	639595	8	8	145	.628	.007	.628	.193	.159	.014	.339	.015	.339	-.073	-.216	-0.147	0.187	0.4	1.0	0.0	1.0	A-	
857	622607	8	8	145	.490	.055	.048	.490	.393	.014	.316	-.208	-.175	.316	-.031	0.519	0.180	1.2	1.1	0.6	1.0	A-	
858	635384	8	8	145	.435	.200	.124	.435	.228	.014	.118	.004	.082	.118	-.071	0.814	0.181	3.9	1.3	4.0	1.4	A-	
859	639603	8	8	145	.379	.110	.379	.469	.028	.014	.248	-.094	.248	-.012	-.168	1.049	0.184	1.3	1.1	1.4	1.1	B+	
860	635367	8	8	145	.531	.241	.069	.145	.531	.014	.501	-.144	-.282	-.168	.501	0.324	0.180	-2.5	0.9	-2.4	0.8	A+	
861	628254	8	8	145	.669	.276	.669	.021	.021	.014	.378	-.180	.378	-.065	-.215	-0.362	0.192	-0.1	1.0	-0.4	0.9	A+	
862	640047	8	3	145	.152	.552	.152	.200	.083	.014	.021	.341	.021	-.180	-.175	2.512	0.248	0.9	1.2	2.4	1.7	A+	
863	640045	8	4	145	.469	.138	.269	.469	.110	.014	.359	-.116	-.169	.359	-.021	0.617	0.180	0.0	1.0	0.2	1.0	A+	
864	627486	8	8	145	.207	.648	.014	.117	.207	.014	.331	.009	-.106	-.213	.331	2.028	0.217	0.0	1.0	-0.5	0.9	A+	
865	639585	8	8	145	.435	.386	.069	.435	.097	.014	.433	-.072	-.207	.433	-.237	0.781	0.181	-1.4	0.9	-1.4	0.9	A+	
866	638663	8	4	145	.807	.090	.807	.048	.041	.014	.500	-.244	.500	-.211	-.127	-1.229	0.230	-0.9	0.9	-1.4	0.7	A-	
867	640050	8	4	145	.807	.807	.103	.048	.028	.014	.483	.483	-.209	-.200	-.165	-1.176	0.227	-1.2	0.8	-1.4	0.7	A+	
868	639858	8	8	145	.724	.152	.724	.069	.035	.021	.490	-.227	.490	-.208	-.147	-0.705	0.204	-1.3	0.9	-1.6	0.8	A-	
869	622604	8	8	145	.855	.041	.041	.855	.062	.000	.235	-.209	-.129	.235	-.063	-1.656	0.246	0.4	1.1	0.5	1.1	A-	
870	639607	8	8	145	.628	.103	.179	.090	.628	.000	.359	-.184	-.167	-.187	.359	-0.235	0.185	-0.4	1.0	-0.6	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
871	628245	8	8	145	.821	.048	.821	.097	.035	.000	.342	-.169	.342	-.280	-.068	-1.374	0.228	-0.1	1.0	0.5	1.1	A+	
872	639598	8	8	145	.462	.193	.462	.310	.035	.000	.372	-.220	.372	-.126	-.219	0.554	0.180	-0.1	1.0	-0.6	1.0	A-	
873	635905	8	8	145	.835	.041	.069	.055	.835	.000	.509	-.136	-.355	-.316	.509	-1.482	0.234	-1.4	0.8	-1.8	0.6	A+	
874	638831	8	7	145	.545	.228	.145	.545	.069	.014	.392	-.016	-.379	.392	-.103	0.134	0.181	0.1	1.0	-0.2	1.0	A-	
875	628122	8	8	145	.703	.152	.703	.083	.048	.014	.506	-.290	.506	-.156	-.220	-0.679	0.197	-1.4	0.9	-1.5	0.8	B+	
876	635352	8	7	145	.503	.090	.269	.124	.503	.014	.427	-.168	-.189	-.135	.427	0.332	0.181	-0.4	1.0	-0.2	1.0	A-	
877	640051	8	4	145	.497	.103	.497	.269	.117	.014	.437	-.176	.437	-.190	-.136	0.365	0.181	-1.8	0.9	-1.1	0.9	C+	
878	640046	8	4	145	.897	.014	.897	.021	.055	.014	.444	-.183	.444	-.241	-.187	-2.218	0.299	-0.5	0.9	-1.2	0.6	A+	
879	635371	8	8	145	.317	.497	.117	.317	.055	.014	.138	.148	-.328	.138	.020	1.252	0.192	2.0	1.2	3.1	1.4	A-	
880	633427	8	8	145	.428	.317	.179	.055	.428	.021	.129	.004	.064	-.184	.129	0.689	0.183	3.8	1.3	3.8	1.4	A+	
881	628121	8	8	145	.655	.655	.076	.179	.076	.014	.540	.540	-.199	-.339	-.139	-0.415	0.190	-1.8	0.9	-2.2	0.8	A+	
882	635732	8	5	145	.448	.166	.235	.145	.448	.007	.584	-.354	-.167	-.201	.584	0.600	0.181	-3.5	0.8	-3.3	0.7	B+	
883	639859	8	8	145	.393	.283	.110	.393	.207	.007	.140	.028	-.031	.140	-.132	0.867	0.184	2.7	1.2	2.5	1.3	A-	
884	628243	8	8	143	.608	.608	.161	.042	.189	.000	.199	.199	-.081	-.025	-.160	-0.137	0.184	0.9	1.1	1.1	1.1	A-	
885	626950	8	8	143	.392	.091	.392	.399	.119	.000	.302	-.134	.302	-.157	-.099	0.874	0.182	0.6	1.0	0.3	1.0	A-	
886	639574	8	8	143	.322	.483	.322	.077	.119	.000	.226	-.187	.226	.030	-.063	1.219	0.189	1.1	1.1	1.1	1.1	A-	
887	622429	8	8	143	.776	.776	.042	.042	.140	.000	.358	.358	-.168	-.059	-.299	-1.062	0.214	-0.3	1.0	-0.4	0.9	A+	
888	636010	8	8	143	.657	.112	.175	.657	.049	.007	.334	-.017	-.285	.334	-.228	-0.408	0.190	0.3	1.0	-0.1	1.0	A-	
889	638880	8	7	143	.685	.105	.168	.685	.042	.000	.413	-.164	-.262	.413	-.219	-0.527	0.193	-0.6	1.0	-0.6	0.9	A+	
890	628253	8	8	143	.518	.231	.161	.091	.518	.000	.328	.008	-.305	-.192	.328	0.290	0.179	0.4	1.0	0.2	1.0	A+	
891	635934	8	8	143	.790	.091	.790	.070	.049	.000	.568	-.354	.568	-.331	-.210	-1.109	0.217	-1.7	0.8	-2.2	0.7	A+	
892	640055	8	4	143	.476	.140	.161	.224	.476	.000	.161	-.008	-.055	-.138	.161	0.483	0.179	2.1	1.1	3.1	1.3	A+	
893	640048	8	5	143	.413	.056	.252	.280	.413	.000	.406	-.093	-.183	-.221	.406	0.808	0.181	-1.6	0.9	-1.6	0.9	A-	
894	627680	8	4	143	.294	.294	.294	.231	.182	.000	.253	.253	-.039	-.089	-.157	1.366	0.193	0.4	1.0	0.4	1.1	A-	
895	639442	8	3	143	.203	.385	.203	.252	.161	.000	.119	-.176	.119	.056	.037	1.955	0.219	0.5	1.1	1.0	1.2	A+	
896	635353	8	7	143	.867	.035	.042	.867	.056	.000	.531	-.185	-.367	.531	-.317	-1.784	0.262	-0.9	0.8	-2.0	0.5	A-	
897	634075	8	5	143	.245	.245	.168	.511	.077	.000	.139	.139	-.294	.184	-.157	1.684	0.205	0.8	1.1	1.3	1.2	C+	
898	639860	8	8	143	.748	.084	.098	.748	.070	.000	.503	-.101	-.346	.503	-.343	-0.885	0.206	-1.4	0.9	-1.8	0.7	A+	
899	636056	8	8	145	.738	.097	.738	.055	.103	.007	.368	-.126	.368	-.254	-.092	-0.926	0.204	0.1	1.0	-0.1	1.0	A-	
900	640049	8	6	145	.869	.035	.028	.869	.062	.007	.506	-.229	-.164	.506	-.264	-1.925	0.263	-1.1	0.8	-1.7	0.5	A-	
901	636016	8	8	145	.890	.007	.069	.890	.028	.007	.357	-.039	-.196	.357	-.127	-2.150	0.283	-0.1	1.0	-0.5	0.8	A-	
902	625550	8	8	145	.814	.021	.035	.117	.814	.014	.479	-.174	-.069	-.341	.479	-1.484	0.233	-0.8	0.9	-1.4	0.7	A-	
903	621164	8	6	145	.538	.179	.131	.538	.138	.014	.465	-.166	-.235	.465	-.094	0.119	0.182	-1.3	0.9	-1.4	0.9	B+	
904	639609	8	7	145	.524	.062	.069	.331	.524	.014	.271	-.150	-.216	.025	.271	0.185	0.181	1.8	1.1	2.1	1.2	A-	
905	640053	8	6	145	.772	.062	.041	.772	.110	.014	.488	-.165	-.203	.488	-.217	-1.161	0.216	-1.4	0.8	-1.5	0.7	C+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
906	635935	8	8	145	.828	.069	.828	.055	.035	.014	.525	-.170	.525	-.216	-.271	-1.574	0.239	-1.5	0.8	-1.9	0.6	A-	
907	628132	8	8	145	.628	.628	.152	.117	.083	.021	.520	.520	-.235	-.269	-.061	-0.343	0.189	-1.8	0.9	-1.9	0.8	A+	
908	635930	8	8	145	.538	.110	.538	.159	.172	.021	.251	-.087	.251	-.104	.010	0.105	0.183	1.5	1.1	1.5	1.2	A+	
909	635377	8	8	145	.255	.400	.255	.124	.200	.021	.088	-.034	.088	.092	.030	1.558	0.205	2.5	1.3	2.9	1.5	A-	
910	621202	8	4	145	.421	.276	.421	.186	.097	.021	.330	-.105	.330	-.178	.059	0.672	0.183	0.3	1.0	0.8	1.1	A+	
911	635354	8	7	145	.455	.055	.069	.400	.455	.021	.342	-.111	-.183	-.071	.342	0.504	0.182	1.1	1.1	1.2	1.1	A+	
912	634317	8	5	145	.524	.145	.159	.152	.524	.021	.420	-.121	-.207	-.078	.420	0.172	0.182	-0.9	0.9	-0.8	0.9	B+	
913	639861	8	8	145	.221	.248	.221	.255	.255	.021	.062	.025	.062	-.062	.124	1.779	0.215	2.2	1.3	2.8	1.6	A+	
914	627035	8	8	144	.861	.861	.035	.076	.028	.000	.181	.181	-.186	-.093	-.023	-1.616	0.247	0.1	1.0	0.5	1.1	A-	
915	636001	8	8	144	.667	.146	.111	.667	.076	.000	.326	-.188	-.142	.326	-.160	-0.387	0.186	-0.3	1.0	-0.6	0.9	A+	
916	639604	8	8	144	.806	.090	.806	.028	.076	.000	.271	-.076	.271	-.208	-.193	-1.185	0.218	-0.1	1.0	-0.3	0.9	A-	
917	636050	8	8	144	.708	.028	.083	.181	.708	.000	.249	-.073	-.128	-.172	.249	-0.602	0.192	0.5	1.0	1.1	1.2	A-	
918	636007	8	8	144	.778	.097	.076	.778	.035	.014	.362	-.168	-.229	.362	-.048	-1.061	0.213	-0.3	1.0	-0.6	0.9	A-	
919	626781	8	6	144	.486	.111	.132	.486	.264	.007	.386	-.174	-.113	.386	-.179	0.442	0.177	-0.5	1.0	-0.6	1.0	A-	
920	639583	8	8	144	.486	.090	.250	.167	.486	.007	.244	-.167	.130	-.294	.244	0.442	0.177	1.6	1.1	1.5	1.1	A-	
921	639596	8	8	144	.215	.215	.472	.208	.097	.007	.127	.127	-.016	-.033	-.032	1.842	0.214	1.3	1.2	1.7	1.3	A+	
922	639581	8	8	144	.819	.049	.819	.111	.014	.007	.356	-.011	.356	-.309	-.142	-1.323	0.227	-0.5	0.9	0.0	1.0	A+	
923	633501	8	8	144	.486	.486	.125	.188	.194	.007	.423	.423	-.192	-.193	-.131	0.442	0.177	-1.2	0.9	-1.0	0.9	A+	
924	630671	8	4	144	.313	.146	.250	.313	.285	.007	.250	-.155	-.016	.250	-.074	1.274	0.191	0.7	1.1	1.5	1.2	A+	
925	628111	8	6	144	.431	.125	.132	.306	.431	.007	.291	-.057	-.140	-.124	.291	0.697	0.179	1.0	1.1	0.6	1.1	A+	
926	635382	8	8	144	.215	.361	.181	.236	.215	.007	.224	.077	-.134	-.134	.224	1.842	0.214	0.9	1.1	0.5	1.1	A-	
927	621208	8	4	144	.549	.063	.201	.181	.549	.007	.488	-.219	-.264	-.164	.488	0.157	0.178	-2.3	0.9	-2.0	0.8	A+	
928	628013	8	4	144	.375	.299	.208	.375	.111	.007	.275	-.184	.001	.275	-.090	0.960	0.183	0.8	1.1	1.2	1.1	A-	
929	625518	8	6	144	.410	.167	.257	.410	.160	.007	.423	-.104	-.233	.423	-.127	0.794	0.180	-1.2	0.9	-0.7	0.9	A+	
930	639868	8	8	144	.347	.229	.347	.236	.181	.007	.393	-.130	.393	-.229	-.037	1.096	0.186	-0.5	1.0	-0.7	0.9	A+	
931	627470	8	8	145	.448	.331	.172	.448	.048	.000	.319	-.064	-.293	.319	-.085	0.838	0.178	0.5	1.0	0.6	1.1	A+	
932	639601	8	8	145	.745	.745	.055	.131	.069	.000	.456	.456	-.144	-.275	-.289	-0.608	0.200	-1.1	0.9	-1.5	0.8	A-	
933	634074	8	6	145	.421	.048	.290	.421	.241	.000	.235	-.033	.071	.235	-.330	0.966	0.179	1.6	1.1	1.4	1.1	A-	
934	639573	8	8	145	.800	.800	.097	.021	.083	.000	.398	.398	-.250	-.184	-.215	-0.954	0.217	-0.8	0.9	-0.6	0.9	B-	
935	639578	8	8	145	.793	.041	.083	.083	.793	.000	.443	-.168	-.216	-.314	.443	-0.908	0.214	-0.9	0.9	-1.4	0.8	A-	
936	626819	8	6	145	.524	.028	.083	.524	.366	.000	.344	-.284	-.194	.344	-.149	0.491	0.177	0.2	1.0	0.3	1.0	B+	
937	628128	8	4	145	.372	.228	.372	.269	.131	.000	.296	-.109	.296	-.245	.034	1.196	0.182	0.5	1.0	0.8	1.1	A-	
938	635933	8	8	145	.393	.283	.393	.159	.159	.007	.345	-.062	.345	-.263	-.096	1.091	0.181	0.0	1.0	0.3	1.0	A+	
939	639590	8	8	145	.579	.117	.207	.097	.579	.000	.585	-.211	-.372	-.238	.585	0.236	0.179	-3.4	0.8	-3.0	0.8	A-	
940	639591	8	8	145	.662	.152	.662	.062	.124	.000	.536	-.301	.536	-.204	-.292	-0.163	0.186	-2.2	0.8	-2.3	0.8	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
941	628313	8	6	145	.200	.035	.469	.297	.200	.000	.340	-.239	-.116	-.075	.340	2.162	0.217	-0.3	1.0	-0.2	1.0	A-	
942	635364	8	8	145	.283	.435	.283	.145	.131	.007	.256	-.125	.256	-.108	-.068	1.639	0.195	0.7	1.1	0.6	1.1	A-	
943	635388	8	8	145	.255	.255	.193	.331	.221	.000	.087	.087	-.172	.037	.031	1.814	0.200	1.8	1.2	1.9	1.3	A-	
944	633504	8	8	145	.710	.710	.048	.110	.131	.000	.485	.485	-.138	-.259	-.324	-0.414	0.193	-1.5	0.9	-1.6	0.8	A+	
945	635358	8	7	145	.572	.076	.262	.572	.083	.007	.358	-.019	-.243	.358	-.202	0.258	0.179	0.0	1.0	0.4	1.0	A+	
946	622609	8	8	145	.310	.310	.235	.262	.193	.000	.157	.157	-.095	.010	-.094	1.509	0.190	1.4	1.1	2.4	1.3	A-	
947	634304	8	8	145	.497	.124	.207	.497	.172	.000	.228	-.049	-.278	.228	.040	0.617	0.177	1.7	1.1	1.8	1.1	A+	
948	629913	8	8	143	.539	.175	.539	.238	.049	.000	.393	-.046	.393	-.354	-.129	0.333	0.178	-0.6	1.0	-0.6	1.0	A+	
949	639602	8	8	143	.713	.028	.713	.133	.126	.000	.364	-.201	.364	-.379	-.008	-0.518	0.195	-0.7	0.9	0.4	1.0	A-	
950	629912	8	8	143	.636	.245	.049	.636	.070	.000	.314	-.125	-.154	.314	-.252	-0.125	0.184	0.3	1.0	0.2	1.0	B-	
951	628244	8	8	143	.776	.042	.063	.776	.119	.000	.351	-.308	-.233	.351	-.087	-0.886	0.210	-0.3	1.0	-0.4	0.9	A+	
952	630386	8	6	143	.462	.245	.140	.147	.462	.007	.417	.027	-.349	-.261	.417	0.672	0.178	-0.9	1.0	-1.0	0.9	B+	
953	634314	8	6	143	.364	.224	.364	.154	.259	.000	-.057	-.182	-.057	.007	.230	1.138	0.183	4.2	1.3	3.7	1.4	A-	
954	627694	8	4	143	.273	.252	.161	.315	.273	.000	.328	-.044	-.138	-.164	.328	1.607	0.197	-0.3	1.0	0.2	1.0	A+	
955	635936	8	8	143	.413	.294	.175	.413	.119	.000	.430	-.279	-.116	.430	-.126	0.906	0.180	-1.3	0.9	-0.9	0.9	A+	
956	627773	8	3	143	.308	.203	.308	.203	.287	.000	.381	-.099	.381	-.240	-.087	1.419	0.190	-0.7	1.0	-0.6	0.9	A+	
957	628129	8	4	143	.406	.259	.147	.406	.189	.000	.258	.089	-.128	.258	-.307	0.939	0.180	0.9	1.1	1.3	1.1	A-	
958	630669	8	6	143	.217	.217	.280	.273	.231	.000	.060	.060	-.006	-.096	.050	1.940	0.211	1.2	1.1	2.1	1.4	B+	
959	635389	8	8	143	.434	.196	.182	.434	.189	.000	.227	-.167	-.176	.227	.056	0.810	0.179	1.5	1.1	1.5	1.1	A+	
960	639594	8	8	143	.559	.147	.154	.140	.559	.000	.242	-.147	-.088	-.105	.242	0.237	0.179	1.3	1.1	1.6	1.1	A+	
961	630413	8	7	143	.413	.119	.070	.413	.399	.000	.190	-.181	-.310	.190	.090	0.906	0.180	1.8	1.1	2.0	1.2	A+	
962	627979	8	3	143	.336	.490	.091	.084	.336	.000	.084	.118	-.164	-.186	.084	1.276	0.187	2.5	1.2	2.1	1.2	A+	
963	638828	8	7	143	.329	.182	.182	.329	.308	.000	.329	-.102	.023	.329	-.269	1.311	0.187	0.1	1.0	-0.2	1.0	A+	
964	635730	8	8	143	.301	.301	.273	.182	.245	.000	.418	.418	-.140	-.123	-.191	1.455	0.191	-1.1	0.9	-0.8	0.9	A-	
965	630375	8	8	144	.326	.396	.222	.056	.326	.000	.249	-.146	.014	-.224	.249	1.407	0.188	1.0	1.1	0.8	1.1	A-	
966	636011	8	8	144	.972	.014	.972	.014	.000	.000	.239	-.137	.239	-.198	.000	-3.234	0.509	0.1	1.0	-0.9	0.5	A-	
967	635459	8	8	144	.854	.854	.049	.014	.083	.000	.260	.260	-.090	-.264	-.150	-1.377	0.244	-0.1	1.0	0.2	1.0	A-	
968	628117	8	3	144	.396	.208	.097	.299	.396	.000	.456	-.207	-.020	-.291	.456	1.067	0.181	-1.5	0.9	-1.4	0.9	A+	
969	640054	8	6	144	.264	.049	.146	.264	.542	.000	.122	-.055	-.069	.122	-.036	1.743	0.199	1.2	1.1	2.6	1.4	A-	
970	635937	8	8	144	.500	.167	.139	.500	.194	.000	.478	-.282	-.059	.478	-.287	0.588	0.177	-2.0	0.9	-1.8	0.9	B-	
971	639606	8	8	144	.924	.924	.014	.028	.035	.000	.396	.396	-.174	-.213	-.273	-2.143	0.319	-0.5	0.9	-1.4	0.5	A+	
972	634158	8	8	144	.625	.243	.083	.625	.049	.000	.270	-.151	-.046	.270	-.248	0.009	0.182	0.8	1.1	1.1	1.1	A+	
973	639575	8	8	144	.576	.271	.576	.076	.076	.000	.267	-.056	.267	-.157	-.246	0.238	0.179	1.2	1.1	0.6	1.1	A+	
974	640052	8	3	144	.792	.000	.035	.174	.792	.000	.368	.000	-.216	-.291	.368	-0.908	0.214	-0.4	1.0	-0.8	0.9	A+	
975	622417	8	6	144	.465	.215	.465	.146	.174	.000	.207	-.129	.207	-.070	-.067	0.745	0.177	2.1	1.1	1.7	1.1	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
976	635731	8	4	144	.326	.222	.243	.326	.208	.000	.142	-.007	-.198	.142	.052	1.407	0.188	1.8	1.1	2.2	1.3	A-	
977	628320	8	4	144	.826	.028	.826	.063	.083	.000	.359	-.083	.359	-.251	-.223	-1.154	0.228	-0.3	1.0	-1.0	0.8	A-	
978	634072	8	4	144	.875	.063	.049	.875	.014	.000	.456	-.290	-.260	.456	-.211	-1.568	0.259	-0.9	0.9	-1.5	0.6	A+	
979	634071	8	7	144	.264	.639	.056	.042	.264	.000	.475	-.302	-.116	-.190	.475	1.743	0.199	-1.5	0.9	-1.2	0.8	A+	
980	635938	8	8	144	.375	.299	.201	.375	.125	.000	.288	.002	-.248	.288	-.125	1.166	0.182	0.7	1.0	0.6	1.1	A+	
981	635390	8	8	144	.451	.125	.451	.264	.160	.000	.026	-.025	.026	-.017	.008	0.809	0.178	4.2	1.3	4.3	1.4	A+	
982	639950	8	8	144	.792	.153	.792	.028	.028	.000	.306	-.187	.306	-.197	-.149	-1.161	0.216	0.0	1.0	-0.2	1.0	A-	
983	639593	8	8	144	.507	.507	.160	.146	.188	.000	.444	.444	-.057	-.390	-.163	0.320	0.177	-1.1	0.9	-1.3	0.9	A-	
984	635383	8	8	144	.382	.194	.382	.278	.146	.000	.109	.064	.109	-.122	-.067	0.897	0.182	2.3	1.2	2.7	1.3	A+	
985	636000	8	8	144	.792	.063	.049	.792	.076	.021	.495	-.371	-.190	.495	-.207	-1.286	0.226	-1.2	0.9	-1.3	0.8	A-	
986	639576	8	8	144	.681	.681	.069	.146	.090	.014	.489	.489	-.285	-.308	-.092	-0.560	0.193	-1.3	0.9	-1.3	0.9	A+	
987	638827	8	7	144	.250	.361	.250	.174	.215	.000	.043	.191	.043	-.128	-.152	1.628	0.203	1.3	1.1	2.0	1.3	A-	
988	639952	8	8	144	.507	.354	.069	.063	.507	.007	.409	-.091	-.236	-.342	.409	0.304	0.178	-0.7	1.0	-0.7	1.0	A+	
989	633500	8	8	144	.160	.188	.160	.278	.368	.007	.178	.097	.178	-.122	-.063	2.192	0.236	0.2	1.0	1.8	1.4	A+	
990	628312	8	3	144	.201	.368	.243	.201	.181	.007	.108	.041	.071	.108	-.196	1.885	0.217	1.0	1.1	1.6	1.3	A+	
991	628247	8	4	144	.167	.056	.549	.222	.167	.007	.296	-.227	-.123	.050	.296	2.137	0.232	-0.1	1.0	0.0	1.0	A+	
992	627065	8	4	144	.604	.097	.181	.604	.111	.007	.412	-.339	-.150	.412	-.081	-0.117	0.182	-1.2	0.9	-1.0	0.9	A-	
993	635363	8	8	144	.396	.090	.396	.340	.167	.007	.058	-.125	.058	.067	-.016	0.819	0.181	3.5	1.2	3.9	1.4	A+	
994	636054	8	8	144	.361	.319	.361	.215	.097	.007	.229	-.099	.229	.018	-.179	0.987	0.184	1.4	1.1	1.5	1.1	A-	
995	630289	8	4	144	.743	.076	.049	.743	.125	.007	.624	-.270	-.316	.624	-.347	-0.886	0.204	-2.4	0.8	-2.7	0.6	A+	
996	634316	8	4	144	.514	.250	.139	.514	.090	.007	.455	-.124	-.318	.455	-.159	0.272	0.178	-1.4	0.9	-1.2	0.9	A-	
997	634155	8	8	144	.340	.167	.340	.354	.132	.007	.304	-.078	.304	-.035	-.238	1.090	0.186	0.4	1.0	0.5	1.1	A+	
998	627484	8	8	144	.528	.528	.028	.229	.208	.007	.304	.304	-.202	-.341	.105	0.240	0.178	0.5	1.0	0.3	1.0	A-	
999	636213	8	8	143	.378	.154	.231	.238	.378	.000	.318	-.072	-.179	-.125	.318	1.071	0.182	0.3	1.0	0.0	1.0	A-	
1000	639599	8	8	144	.771	.049	.771	.139	.042	.000	.372	-.194	.372	-.290	-.072	-0.774	0.208	-0.4	1.0	-0.8	0.9	A-	
1001	633503	8	8	144	.688	.049	.181	.083	.688	.000	.235	-.264	-.021	-.159	.235	-0.546	0.191	1.0	1.1	1.6	1.2	A+	
1002	629857	8	4	144	.278	.104	.278	.438	.174	.007	.360	-.105	.360	-.235	.022	1.463	0.197	-0.2	1.0	-0.1	1.0	A-	
1003	634156	8	8	145	.283	.283	.062	.166	.490	.000	.301	.301	-.043	-.219	-.088	1.657	0.194	0.3	1.0	0.2	1.0	A+	
1004	639577	8	8	143	.594	.594	.259	.077	.070	.000	.503	.503	-.261	-.272	-.236	0.075	0.181	-2.1	0.9	-2.0	0.9	A+	
1005	635385	8	8	144	.236	.076	.236	.243	.444	.000	.384	-.123	.384	-.115	-.164	1.908	0.206	-0.7	0.9	-0.2	1.0	A+	
1006	635351	8	N/A	144	.097	.097	.431	.368	.097	.007	.142	-.051	-.204	.191	.142	2.883	0.297	0.0	1.0	0.3	1.1	A+	
1007	627964	8	8	144	.729	.729	.097	.076	.090	.007	.414	.414	-.181	-.242	-.158	-0.741	0.198	-0.9	0.9	-0.9	0.9	A-	
1008	626786	8	8	145	.497	.035	.207	.255	.497	.007	.570	-.294	-.302	-.234	.570	0.607	0.178	-3.2	0.8	-3.1	0.8	A-	
1009	636212	8	8	144	.924	.007	.042	.028	.924	.000	.232	-.206	-.135	-.106	.232	-2.143	0.319	0.0	1.0	-0.4	0.8	A+	
1010	639597	8	8	144	.750	.049	.132	.750	.063	.007	.417	-.292	-.269	.417	-.100	-0.928	0.206	-0.5	0.9	-0.5	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1011	633502	8	8	144	.528	.257	.528	.167	.042	.007	.330	-.145	.330	-.212	-.007	0.252	0.178	0.4	1.0	-0.1	1.0	A+	
1012	629860	8	4	145	.441	.103	.179	.276	.441	.000	.391	-.036	-.268	-.180	.391	0.870	0.178	-0.4	1.0	-0.6	1.0	A+	
1013	634157	8	8	143	.664	.042	.245	.049	.664	.000	.220	-.366	.031	-.203	.220	-0.263	0.187	1.0	1.1	1.4	1.2	A-	
1014	639608	8	8	144	.847	.035	.028	.847	.090	.000	.385	-.316	-.023	.385	-.269	-1.319	0.240	-0.6	0.9	-1.0	0.8	A-	
1015	635386	8	8	144	.236	.153	.194	.410	.236	.007	.149	-.224	-.240	.265	.149	1.661	0.206	1.2	1.1	1.4	1.2	A-	
1016	635350	8	7	144	.319	.313	.153	.208	.319	.007	.282	-.195	-.038	-.016	.282	1.238	0.190	0.7	1.1	0.7	1.1	A+	
1017	628143	8	8	145	.766	.103	.766	.069	.062	.000	.475	-.262	.475	-.295	-.194	-0.731	0.205	-1.2	0.9	-1.8	0.7	A-	
1018	626785	8	8	143	.580	.580	.126	.063	.231	.000	.428	.428	-.446	-.211	-.030	0.140	0.180	-1.0	0.9	-1.1	0.9	C-	
1019	622816	EC	EC	173	.509	.093	.139	.254	.509	.006	.415	-.116	-.255	-.118	.415	0.496	0.163	-1.3	0.9	-0.4	1.0	A-	
1020	639932	EC	EC	173	.231	.312	.110	.231	.335	.012	.269	.070	-.110	.269	-.145	1.804	0.189	0.1	1.0	0.3	1.0	A+	
1021	639920	EC	EC	171	.515	.146	.123	.515	.211	.006	.503	-.168	-.283	.503	-.165	0.573	0.168	-2.0	0.9	-1.6	0.9	A-	
1022	634313	EC	EC	173	.497	.075	.150	.254	.497	.023	.424	-.146	-.079	-.199	.424	0.474	0.168	-0.4	1.0	-0.3	1.0	A+	
1023	633540	EC	EC	172	.576	.227	.576	.070	.116	.012	.437	-.204	.437	-.151	-.163	0.115	0.169	-0.7	1.0	-0.6	1.0	A+	
1024	622613	EC	EC	173	.457	.121	.249	.457	.150	.023	.389	-.147	-.113	.389	-.024	0.677	0.167	0.2	1.0	-0.1	1.0	A+	
1025	623126	EC	EC	173	.515	.243	.515	.139	.081	.023	.248	-.141	.248	.002	-.125	0.449	0.166	2.2	1.1	2.5	1.2	A-	
1026	639971	EC	EC	174	.626	.626	.149	.092	.092	.040	.468	.468	-.150	-.177	-.059	-0.227	0.172	-1.4	0.9	-1.6	0.9	A-	
1027	629853	EC	EC	174	.253	.149	.253	.368	.213	.017	.353	-.202	.353	.037	-.113	1.930	0.187	-0.3	1.0	0.1	1.0	A+	
1028	630391	EC	EC	173	.734	.127	.734	.058	.046	.035	.490	-.226	.490	-.190	-.132	-0.822	0.196	-1.0	0.9	-1.3	0.8	B+	
1029	622815	EC	EC	174	.764	.764	.121	.052	.058	.006	.342	.342	-.085	-.318	-.067	-0.713	0.192	0.1	1.0	0.4	1.1	A+	
1030	639933	EC	EC	173	.347	.347	.173	.121	.353	.006	.215	.215	-.021	-.148	-.026	1.252	0.171	1.4	1.1	1.2	1.1	A+	
1031	639919	EC	EC	173	.480	.231	.173	.116	.480	.000	.239	-.108	-.065	-.155	.239	0.688	0.165	1.9	1.1	1.6	1.1	A+	
1032	634349	EC	EC	174	.443	.052	.443	.218	.276	.012	.053	-.133	.053	-.154	.264	0.709	0.167	5.7	1.4	5.7	1.5	A+	
1033	633536	EC	EC	174	.454	.132	.454	.305	.092	.017	.394	-.172	.394	-.155	-.107	0.606	0.166	-0.1	1.0	-0.5	1.0	A+	
1034	622611	EC	EC	174	.661	.075	.109	.121	.661	.035	.548	-.174	-.239	-.145	.548	-0.288	0.181	-1.4	0.9	-1.6	0.8	A-	
1035	621166	EC	EC	173	.468	.202	.139	.468	.168	.023	.338	.005	-.221	.338	-.078	0.611	0.169	1.6	1.1	1.5	1.1	B-	
1036	630659	EC	EC	173	.410	.249	.410	.162	.168	.012	.407	-.186	.407	-.084	-.111	0.943	0.166	-1.1	0.9	-0.9	0.9	B+	
1037	629822	EC	EC	173	.335	.335	.121	.330	.197	.017	.354	.354	-.090	-.132	-.044	1.216	0.171	-0.6	1.0	-0.5	1.0	A-	
1038	630392	EC	EC	171	.655	.140	.140	.655	.029	.035	.503	-.277	-.227	.503	-.119	-0.226	0.181	-1.8	0.9	-1.8	0.8	A+	
1039	628028	EC	EC	2595	.086	.825	.050	.030	.086	.009	.270	-.033	-.068	-.052	.270	3.214	0.073	-1.2	0.9	-1.5	0.9	A+	A+
1040	636061	EC	EC	2595	.706	.706	.091	.108	.084	.011	.460	.460	-.220	-.177	-.159	-0.535	0.047	-4.5	0.9	-5.0	0.8	A-	A-
1041	639964	EC	EC	2595	.530	.217	.144	.094	.530	.015	.367	-.155	-.058	-.153	.367	0.352	0.043	1.3	1.0	1.5	1.0	A+	A+
1042	640040	EC	EC	2595	.925	.026	.015	.020	.925	.014	.433	-.160	-.125	-.133	.433	-2.531	0.085	-0.9	0.9	-4.0	0.6	A+	A-
1043	629820	EC	EC	2595	.621	.621	.114	.126	.121	.017	.470	.470	-.196	-.204	-.117	-0.105	0.044	-5.2	0.9	-5.2	0.9	A+	C-
1044	633537	EC	EC	2595	.278	.293	.221	.278	.188	.020	.302	-.024	-.088	.302	-.062	1.620	0.047	0.6	1.0	4.1	1.1	A+	B+
1045	639959	EC	EC	2595	.662	.115	.662	.115	.085	.023	.481	-.154	.481	-.223	-.149	-0.340	0.046	-5.2	0.9	-4.8	0.9	A-	A-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1046	635484	EC	EC	2595	.558	.155	.148	.558	.115	.024	.417	-.147	-.121	.417	-.132	0.192	0.043	-1.5	1.0	-1.8	1.0	A+	A+
1047	629833	EC	EC	2595	.289	.174	.289	.278	.229	.030	.168	.023	.168	-.116	.088	1.534	0.047	8.0	1.2	9.6	1.3	A-	A-
1048	635741	EC	EC	2595	.600	.118	.131	.600	.121	.031	.410	-.122	-.182	.410	-.093	-0.036	0.044	-0.7	1.0	-1.0	1.0	A+	A-
1049	639954	EC	EC	173	.728	.087	.728	.069	.104	.012	.559	-.246	.559	-.165	-.276	-0.894	0.189	-2.3	0.8	-2.5	0.6	A-	
1050	635482	EC	EC	173	.515	.173	.168	.515	.127	.017	.357	-.111	-.134	.357	-.059	0.280	0.169	0.4	1.0	0.3	1.0	A-	
1051	636019	EC	EC	173	.723	.098	.121	.723	.046	.012	.513	-.222	-.191	.513	-.227	-0.859	0.188	-1.8	0.8	-2.0	0.7	A+	
1052	629825	EC	EC	173	.416	.260	.416	.220	.081	.023	.315	-.060	.315	-.059	-.087	0.705	0.171	2.1	1.1	1.4	1.1	A+	
1053	640020	EC	EC	173	.422	.150	.364	.422	.035	.029	.453	-.161	-.119	.453	-.066	0.671	0.171	-1.7	0.9	-1.1	0.9	A+	
1054	640105	EC	EC	173	.272	.272	.289	.272	.139	.029	.260	.260	-.026	-.061	.059	1.491	0.187	1.4	1.1	2.0	1.3	B-	
1055	635947	EC	EC	173	.335	.249	.254	.335	.133	.029	.228	.089	-.126	.228	.016	1.126	0.178	2.7	1.2	2.6	1.3	A-	
1056	636051	EC	EC	173	.121	.133	.121	.150	.567	.029	.171	-.153	.171	-.230	.353	2.778	0.258	0.1	1.0	1.3	1.4	A-	
1057	640015	EC	EC	173	.630	.093	.116	.630	.127	.035	.500	-.167	-.138	.500	-.131	-0.369	0.177	-1.4	0.9	-1.7	0.8	A+	
1058	640036	EC	EC	173	.549	.549	.139	.156	.116	.041	.573	.573	-.205	-.197	-.113	0.010	0.172	-2.9	0.8	-2.5	0.8	A+	
1059	639990	EC	EC	173	.711	.104	.093	.711	.058	.035	.585	-.169	-.272	.585	-.125	-0.874	0.191	-2.4	0.8	-1.9	0.7	A+	
1060	639994	EC	EC	173	.335	.249	.168	.214	.335	.035	.220	-.053	-.027	.086	.220	1.123	0.178	2.3	1.2	2.6	1.3	A+	
1061	636018	EC	EC	173	.578	.121	.098	.578	.168	.035	.501	-.176	-.162	.501	-.097	-0.123	0.173	-1.3	0.9	-1.4	0.9	B+	
1062	621160	EC	EC	173	.225	.289	.225	.116	.324	.046	.166	.161	.166	-.113	.004	1.810	0.200	1.4	1.2	2.7	1.5	A+	
1063	629856	EC	EC	173	.260	.283	.260	.301	.116	.041	.103	-.008	.103	.096	.067	1.624	0.192	2.4	1.3	2.8	1.5	A-	
1064	639956	EC	EC	171	.275	.146	.275	.328	.234	.018	.194	-.207	.194	.209	-.062	1.675	0.186	1.7	1.2	1.3	1.2	A-	
1065	636060	EC	EC	171	.456	.456	.094	.228	.199	.023	.466	.466	-.035	-.206	-.110	0.692	0.168	-2.3	0.9	-2.1	0.9	A-	
1066	636024	EC	EC	171	.696	.140	.696	.029	.111	.023	.380	-.088	.380	-.195	-.065	-0.491	0.182	0.0	1.0	-0.3	1.0	A-	
1067	639997	EC	EC	171	.637	.035	.064	.637	.240	.023	.432	-.065	-.168	.432	-.148	-0.172	0.175	-1.0	0.9	-1.1	0.9	A+	
1068	639992	EC	EC	171	.556	.368	.053	.556	.000	.023	.240	.049	-.230	.240	.000	0.211	0.169	2.3	1.1	2.0	1.2	A+	
1069	638834	EC	EC	171	.415	.111	.281	.415	.175	.018	.334	-.182	.045	.334	-.111	0.929	0.170	0.8	1.1	0.8	1.1	B+	
1070	630714	EC	EC	171	.532	.059	.532	.135	.257	.018	.384	-.075	.384	-.154	-.083	0.364	0.168	0.1	1.0	0.2	1.0	A+	
1071	636052	EC	EC	171	.444	.117	.199	.444	.222	.018	.321	-.027	-.021	.321	-.137	0.786	0.168	1.1	1.1	1.0	1.1	A-	
1072	640016	EC	EC	171	.737	.164	.041	.041	.737	.018	.415	-.082	-.171	-.166	.415	-0.711	0.189	-0.3	1.0	-0.7	0.9	A-	
1073	640037	EC	EC	171	.801	.053	.029	.094	.801	.023	.468	-.166	-.097	-.134	.468	-1.168	0.211	-0.2	1.0	-0.9	0.8	A+	
1074	639909	EC	EC	171	.866	.035	.866	.018	.059	.023	.434	-.128	.434	-.087	-.080	-1.748	0.252	-0.2	1.0	-0.3	0.9	A+	
1075	639931	EC	EC	171	.175	.175	.304	.263	.234	.023	.146	.146	.053	.005	.029	2.301	0.213	1.0	1.1	1.3	1.3	A+	
1076	635485	EC	EC	171	.281	.234	.211	.281	.246	.029	.255	-.085	-.043	.255	.092	1.599	0.184	0.6	1.1	0.9	1.1	A-	
1077	621389	EC	EC	171	.444	.105	.444	.363	.064	.023	.423	-.062	.423	-.187	-.031	0.782	0.168	-1.0	0.9	-0.9	0.9	B-	
1078	630427	EC	EC	171	.339	.269	.175	.193	.339	.023	.331	-.030	-.131	.002	.331	1.313	0.176	0.0	1.0	-0.4	1.0	B-	
1079	639940	EC	EC	173	.515	.243	.515	.035	.208	.000	.174	-.220	.174	-.067	.049	0.470	0.163	2.7	1.1	3.5	1.3	A-	
1080	635486	EC	EC	173	.486	.121	.486	.243	.139	.012	.366	-.229	.366	-.078	-.103	0.595	0.163	-0.7	1.0	-0.7	1.0	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1081	640072	EC	EC	173	.815	.052	.069	.815	.058	.006	.369	-.086	-.180	.369	-.190	-1.155	0.208	-0.2	1.0	-0.4	0.9	B+	
1082	640071	EC	EC	173	.653	.029	.272	.041	.653	.006	.449	-.204	-.227	-.225	.449	-0.189	0.170	-2.0	0.9	-1.3	0.9	A+	
1083	625530	EC	EC	173	.624	.041	.272	.624	.058	.006	.220	-.086	-.056	.220	-.132	-0.046	0.168	1.6	1.1	1.5	1.1	A-	
1084	640085	EC	EC	173	.642	.168	.642	.104	.075	.012	.305	-.028	.305	-.244	-.088	-0.147	0.170	0.8	1.1	0.8	1.1	B+	
1085	640001	EC	EC	173	.405	.439	.041	.098	.405	.017	.273	-.021	-.211	-.131	.273	0.959	0.166	1.0	1.1	0.5	1.0	B+	
1086	640087	EC	EC	173	.347	.046	.405	.347	.191	.012	.191	-.212	-.003	.191	.006	1.254	0.171	2.2	1.2	1.6	1.2	A-	
1087	638881	EC	EC	173	.312	.312	.243	.254	.173	.017	.256	.256	-.128	-.060	.036	1.459	0.176	0.6	1.0	1.3	1.1	A+	
1088	635583	EC	EC	173	.561	.116	.202	.561	.110	.012	.281	-.104	-.103	.281	-.055	0.243	0.165	1.2	1.1	1.3	1.1	A+	
1089	630715	EC	EC	173	.434	.104	.214	.434	.237	.012	.185	.043	-.023	.185	-.112	0.861	0.165	2.4	1.1	2.2	1.2	A+	
1090	636053	EC	EC	173	.399	.179	.399	.231	.179	.012	.276	-.121	.276	-.101	.003	0.998	0.166	1.0	1.1	1.3	1.1	B-	
1091	639969	EC	EC	173	.480	.197	.480	.208	.104	.012	.343	-.151	.343	-.077	-.106	0.618	0.163	0.2	1.0	0.5	1.0	A+	
1092	640018	EC	EC	173	.809	.809	.104	.052	.023	.012	.453	.453	-.240	-.221	-.052	-1.146	0.209	-0.7	0.9	-1.5	0.7	A+	
1093	635877	EC	EC	173	.480	.220	.098	.191	.480	.012	.516	-.182	-.140	-.236	.516	0.618	0.163	-3.4	0.8	-2.8	0.8	C+	
1094	640025	EC	EC	173	.844	.844	.017	.052	.064	.023	.425	.425	-.133	-.193	-.106	-1.497	0.235	-0.3	0.9	-0.8	0.8	A-	
1095	629818	EC	EC	173	.422	.098	.087	.382	.422	.012	.418	-.170	-.101	-.164	.418	0.888	0.165	-1.5	0.9	-0.4	1.0	A-	
1096	639928	EC	EC	173	.358	.358	.214	.225	.191	.012	.274	.274	-.160	-.099	.058	1.225	0.170	0.6	1.0	0.6	1.1	A+	
1097	621165	EC	EC	173	.260	.168	.318	.231	.260	.023	.294	-.135	.047	-.121	.294	1.709	0.185	0.2	1.0	0.9	1.1	A+	
1098	640092	EC	EC	173	.434	.162	.185	.434	.191	.029	.294	-.032	-.168	.294	-.022	0.832	0.166	0.8	1.0	0.8	1.1	B+	
1099	628027	EC	EC	173	.272	.260	.249	.272	.202	.017	.299	-.139	-.034	.299	-.031	1.642	0.182	0.0	1.0	0.9	1.1	C-	
1100	621157	EC	EC	173	.451	.179	.451	.156	.197	.017	.334	-.080	.334	-.123	-.114	0.734	0.164	0.3	1.0	0.4	1.0	A-	
1101	630428	EC	EC	173	.278	.278	.133	.387	.185	.017	.458	.458	-.167	-.165	-.059	1.642	0.182	-1.8	0.9	-1.8	0.8	A-	
1102	639953	EC	EC	174	.460	.460	.477	.012	.046	.006	.337	.337	-.202	-.146	-.095	0.857	0.165	0.9	1.1	0.5	1.0	A-	
1103	629917	EC	EC	174	.575	.224	.138	.575	.058	.006	.400	-.199	-.169	.400	-.107	0.311	0.166	-0.8	1.0	0.2	1.0	A+	
1104	640078	EC	EC	174	.575	.264	.575	.121	.035	.006	.410	-.200	.410	-.119	-.244	0.311	0.166	-0.3	1.0	-0.9	0.9	A+	
1105	638882	EC	EC	174	.431	.161	.293	.109	.431	.006	.414	-.273	-.095	-.095	.414	0.994	0.166	-0.7	1.0	-0.7	0.9	B+	
1106	636006	EC	EC	174	.615	.052	.293	.035	.615	.006	.242	-.214	-.030	-.138	.242	0.114	0.169	2.0	1.1	2.2	1.2	A-	
1107	639970	EC	EC	174	.828	.828	.103	.040	.017	.012	.402	.402	-.202	-.118	-.287	-1.207	0.218	-0.7	0.9	-0.4	0.9	A-	
1108	640002	EC	EC	174	.489	.069	.098	.333	.489	.012	.518	-.199	-.238	-.233	.518	0.702	0.165	-3.1	0.8	-2.4	0.8	A-	
1109	640096	EC	EC	174	.569	.138	.569	.247	.040	.006	.299	-.143	.299	-.138	-.041	0.338	0.166	1.5	1.1	1.0	1.1	A+	
1110	635988	EC	EC	174	.333	.253	.184	.213	.333	.017	.245	-.044	-.128	.021	.245	1.479	0.174	1.9	1.1	1.3	1.1	B-	
1111	635586	EC	EC	174	.845	.023	.086	.845	.040	.006	.340	-.216	-.016	.340	-.278	-1.309	0.224	-0.2	1.0	1.0	1.2	A+	
1112	629851	EC	EC	174	.598	.075	.598	.155	.167	.006	.427	-.224	.427	-.217	-.108	0.199	0.168	-0.7	1.0	-0.9	0.9	A-	
1113	640093	EC	EC	174	.672	.672	.178	.092	.052	.006	.523	.523	-.235	-.276	-.200	-0.181	0.175	-2.4	0.8	-1.9	0.8	A+	
1114	640091	EC	EC	174	.816	.103	.816	.063	.012	.006	.443	-.263	.443	-.203	-.099	-1.075	0.210	-0.8	0.9	-0.6	0.9	A-	
1115	640024	EC	EC	174	.897	.017	.052	.897	.029	.006	.510	-.130	-.274	.510	-.276	-1.839	0.266	-0.9	0.8	-2.0	0.5	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1116	625507	EC	EC	174	.379	.132	.328	.155	.379	.006	.447	-.107	-.139	-.232	.447	1.248	0.169	-1.3	0.9	-0.9	0.9	A-	
1117	639900	EC	EC	174	.276	.126	.333	.276	.241	.023	.316	-.093	-.081	.316	-.049	1.781	0.183	0.2	1.0	0.9	1.1	A+	
1118	640043	EC	EC	174	.517	.517	.092	.052	.322	.017	.342	.342	-.173	-.228	-.036	0.570	0.165	0.9	1.1	0.6	1.1	A+	
1119	629819	EC	EC	174	.328	.161	.328	.247	.247	.017	.203	-.162	.203	-.068	.109	1.504	0.175	1.9	1.1	3.0	1.4	A+	
1120	625533	EC	EC	174	.299	.167	.230	.287	.299	.017	.419	-.105	-.071	-.154	.419	1.661	0.179	-0.9	0.9	-0.7	0.9	B-	
1121	639929	EC	EC	174	.178	.253	.213	.178	.339	.017	.096	-.041	.034	.096	.043	2.442	0.211	1.6	1.2	2.3	1.5	A-	
1122	635948	EC	EC	174	.276	.126	.253	.276	.328	.017	.284	-.088	-.078	.284	-.023	1.793	0.183	0.6	1.1	1.4	1.2	A-	
1123	636025	EC	EC	174	.218	.310	.236	.213	.218	.023	.246	-.010	.036	-.153	.246	2.139	0.197	0.7	1.1	1.3	1.2	A-	
1124	635739	EC	EC	174	.264	.287	.149	.264	.276	.023	.302	-.073	-.083	.302	-.039	1.852	0.185	0.5	1.0	0.8	1.1	A-	
1125	630652	EC	EC	173	.780	.780	.029	.121	.069	.000	.331	.331	-.067	-.187	-.256	-0.964	0.193	0.0	1.0	0.1	1.0	A+	
1126	639946	EC	EC	173	.254	.694	.254	.017	.035	.000	.168	-.053	.168	-.115	-.185	1.667	0.184	0.9	1.1	0.7	1.1	A-	
1127	640090	EC	EC	173	.445	.023	.266	.445	.260	.006	.261	-.154	-.140	.261	-.024	0.708	0.162	1.2	1.1	1.1	1.1	A+	
1128	635580	EC	EC	173	.815	.133	.029	.017	.815	.006	.449	-.256	-.202	-.147	.449	-1.202	0.206	-1.1	0.9	-1.8	0.7	A+	
1129	629852	EC	EC	173	.254	.254	.121	.185	.428	.012	.249	.249	-.119	-.003	-.026	1.663	0.184	0.3	1.0	0.8	1.1	A-	
1130	639972	EC	EC	173	.526	.104	.526	.127	.231	.012	.260	-.120	.260	-.066	-.038	0.332	0.162	1.3	1.1	1.6	1.1	A-	
1131	640104	EC	EC	173	.509	.197	.202	.509	.081	.012	.416	-.133	-.161	.416	-.127	0.411	0.162	-1.4	0.9	-1.6	0.9	A-	
1132	622423	EC	EC	173	.491	.179	.491	.225	.093	.012	.331	-.054	.331	-.197	-.025	0.490	0.162	0.2	1.0	0.2	1.0	A+	
1133	640089	EC	EC	173	.393	.104	.353	.393	.133	.017	.223	-.180	.093	.223	-.117	0.934	0.166	1.5	1.1	1.8	1.1	B+	
1134	635587	EC	EC	173	.630	.035	.630	.052	.272	.012	.423	-.169	.423	-.189	-.170	-0.155	0.168	-1.1	0.9	-1.2	0.9	A-	
1135	640008	EC	EC	173	.497	.225	.173	.497	.093	.012	.279	.105	-.225	.279	-.148	0.463	0.162	1.1	1.1	1.3	1.1	A+	
1136	630395	EC	EC	173	.688	.173	.087	.035	.688	.017	.457	-.136	-.207	-.221	.457	-0.465	0.176	-1.3	0.9	-1.5	0.8	A+	
1137	640102	EC	EC	173	.335	.335	.145	.173	.335	.012	.325	.089	-.183	-.200	.325	1.225	0.170	-0.1	1.0	-0.1	1.0	B+	
1138	640026	EC	EC	173	.902	.046	.902	.035	.000	.017	.422	-.160	.422	-.211	.000	-2.152	0.285	-0.2	0.9	-1.2	0.6	B+	
1139	628030	EC	EC	173	.231	.145	.405	.208	.231	.012	.310	-.133	.067	-.151	.310	1.802	0.189	-0.3	1.0	-0.1	1.0	A-	
1140	639901	EC	EC	173	.243	.243	.162	.370	.214	.012	.239	.239	-.011	-.081	-.009	1.732	0.186	0.2	1.0	1.1	1.2	A+	
1141	622418	EC	EC	173	.324	.145	.312	.324	.202	.017	.129	.048	.016	.129	-.063	1.278	0.172	2.5	1.2	1.9	1.2	A+	
1142	629834	EC	EC	173	.214	.208	.353	.214	.214	.012	.332	-.078	-.088	-.016	.332	1.913	0.194	-0.7	0.9	0.1	1.0	B-	
1143	639930	EC	EC	173	.335	.358	.335	.156	.127	.023	.156	.027	.156	-.043	-.031	1.209	0.171	2.0	1.1	2.2	1.2	A+	
1144	630297	EC	EC	173	.353	.116	.231	.353	.283	.017	.121	-.117	.096	.121	-.007	1.129	0.169	2.6	1.2	2.9	1.3	A-	
1145	622608	EC	EC	173	.543	.543	.127	.179	.133	.017	.451	.451	-.134	-.111	-.233	0.238	0.163	-2.0	0.9	-1.9	0.9	B+	
1146	621391	EC	EC	173	.295	.127	.266	.295	.295	.017	.378	.020	-.163	-.107	.378	1.428	0.176	-1.0	0.9	-0.5	0.9	A+	
1147	635888	EC	EC	173	.278	.289	.278	.306	.098	.029	.237	-.053	.237	.026	-.119	1.505	0.180	0.7	1.1	0.8	1.1	A+	
1148	639938	EC	EC	173	.763	.763	.052	.058	.121	.006	.391	.391	-.230	-.204	-.105	-0.771	0.192	-0.9	0.9	-1.1	0.8	A+	
1149	639947	EC	EC	173	.428	.202	.046	.318	.428	.006	.375	-.121	-.234	-.117	.375	0.854	0.166	-0.9	1.0	-0.6	1.0	A-	
1150	640098	EC	EC	173	.659	.220	.052	.659	.064	.006	.342	-.126	-.173	.342	-.155	-0.240	0.174	0.2	1.0	0.0	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1151	636058	EC	EC	173	.069	.069	.387	.462	.069	.012	.094	-.052	.338	-.280	.094	3.617	0.333	0.2	1.0	-0.1	0.9	A-	
1152	630381	EC	EC	173	.838	.064	.052	.838	.041	.006	.427	-.241	-.228	.427	-.071	-1.419	0.228	-0.3	1.0	-0.9	0.8	A-	
1153	639973	EC	EC	173	.688	.093	.688	.093	.116	.012	.465	-.169	.465	-.204	-.215	-0.446	0.181	-1.2	0.9	-1.3	0.9	A-	
1154	640009	EC	EC	173	.451	.214	.185	.451	.145	.006	.462	-.036	-.204	.462	-.291	0.771	0.165	-2.0	0.9	-2.1	0.9	A-	
1155	622433	EC	EC	173	.353	.318	.353	.191	.133	.006	.203	.160	.203	-.178	-.200	1.222	0.171	1.7	1.1	2.0	1.2	A-	
1156	628250	EC	EC	173	.538	.093	.208	.538	.150	.012	.285	-.090	-.127	.285	-.074	0.323	0.166	1.5	1.1	1.3	1.1	A+	
1157	635588	EC	EC	173	.734	.116	.734	.098	.041	.012	.380	-.136	.380	-.194	-.123	-0.730	0.190	0.3	1.0	-0.4	0.9	A+	
1158	630394	EC	EC	173	.538	.272	.093	.538	.087	.012	.443	-.229	-.045	.443	-.226	0.342	0.166	-1.5	0.9	-1.7	0.9	B+	
1159	634315	EC	EC	173	.249	.093	.249	.561	.087	.012	.074	-.095	.074	.105	-.049	1.816	0.188	2.0	1.2	3.4	1.5	A-	
1160	640061	EC	EC	173	.584	.064	.173	.584	.168	.012	.284	-.263	-.099	.284	.011	0.147	0.168	1.5	1.1	0.9	1.1	A-	
1161	640027	EC	EC	173	.775	.156	.775	.041	.017	.012	.473	-.314	.473	-.141	-.102	-1.001	0.203	-0.7	0.9	-1.1	0.8	A-	
1162	629821	EC	EC	173	.578	.110	.225	.075	.578	.012	.442	-.261	-.159	-.104	.442	0.147	0.168	-1.1	0.9	-1.0	0.9	A-	
1163	639910	EC	EC	173	.890	.017	.064	.890	.006	.023	.437	-.066	-.248	.437	-.216	-2.129	0.295	-0.2	1.0	-0.5	0.8	A+	
1164	628014	EC	EC	173	.162	.104	.665	.162	.052	.017	-.090	-.217	.303	-.090	.008	2.461	0.223	1.2	1.2	3.2	1.8	A-	
1165	639925	EC	EC	173	.376	.278	.376	.231	.087	.029	.365	-.006	.365	-.160	-.132	1.067	0.170	-0.2	1.0	-0.2	1.0	A+	
1166	639998	EC	EC	173	.607	.254	.046	.064	.607	.029	.503	-.167	-.289	-.200	.503	-0.045	0.171	-2.4	0.9	-1.8	0.9	A+	
1167	625548	EC	EC	173	.243	.168	.243	.301	.260	.029	.049	.041	.049	-.148	.216	1.783	0.189	2.4	1.2	3.3	1.5	B-	
1168	621158	EC	EC	173	.607	.150	.075	.139	.607	.029	.520	-.197	-.149	-.235	.520	-0.045	0.171	-2.9	0.8	-2.7	0.8	A-	
1169	640062	EC	EC	173	.827	.827	.064	.046	.035	.029	.469	.469	-.280	-.208	-.013	-1.519	0.236	-0.6	0.9	-0.6	0.8	A+	
1170	636475	EC	EC	173	.116	.116	.162	.428	.260	.035	.007	.007	-.167	.144	.104	2.828	0.253	0.6	1.1	2.8	1.9	A-	
1171	639957	EC	EC	171	.661	.193	.088	.047	.661	.012	.175	.064	-.171	-.119	.175	-0.154	0.178	2.8	1.2	2.5	1.3	A+	
1172	639948	EC	EC	171	.819	.140	.023	.819	.012	.006	.315	-.200	-.078	.315	-.076	-1.171	0.216	0.4	1.0	0.9	1.2	A-	
1173	630660	EC	EC	171	.111	.111	.246	.099	.532	.012	.033	.033	-.181	-.001	.210	3.049	0.255	1.0	1.2	3.0	2.2	A+	
1174	640099	EC	EC	171	.754	.076	.754	.070	.094	.006	.470	-.206	.470	-.219	-.205	-0.712	0.194	-1.1	0.9	-1.3	0.8	A-	
1175	636059	EC	EC	171	.614	.228	.614	.070	.070	.018	.532	-.365	.532	-.114	-.119	0.050	0.174	-2.1	0.9	-2.2	0.8	A-	
1176	635886	EC	EC	171	.784	.047	.784	.064	.099	.006	.427	-.193	.427	-.206	-.176	-0.909	0.202	-0.6	0.9	-0.6	0.9	B+	
1177	627975	EC	EC	171	.637	.053	.637	.222	.082	.006	.208	-.099	.208	-.076	-.052	-0.040	0.175	2.9	1.2	2.0	1.2	A+	
1178	627045	EC	EC	171	.749	.035	.082	.749	.123	.012	.393	-.048	-.321	.393	-.121	-0.704	0.194	-0.2	1.0	0.6	1.1	C+	
1179	622420	EC	EC	171	.474	.152	.263	.474	.099	.012	.548	-.213	-.223	.548	-.217	0.757	0.169	-2.9	0.8	-2.7	0.8	A+	
1180	635589	EC	EC	171	.690	.690	.070	.047	.187	.006	.451	.451	-.311	-.238	-.120	-0.325	0.181	-0.8	0.9	-1.1	0.9	A+	
1181	635950	EC	EC	171	.836	.053	.059	.047	.836	.006	.508	-.159	-.271	-.271	.508	-1.318	0.225	-1.1	0.9	-1.9	0.6	A+	
1182	639926	EC	EC	171	.784	.053	.064	.094	.784	.006	.451	-.258	-.163	-.193	.451	-0.909	0.202	-0.7	0.9	-1.3	0.8	A+	
1183	626928	EC	EC	171	.252	.252	.252	.310	.175	.012	.297	.297	-.131	-.066	-.011	1.931	0.190	0.3	1.0	1.0	1.2	A-	
1184	640029	EC	EC	171	.842	.076	.029	.041	.842	.012	.464	-.306	-.145	-.143	.464	-1.421	0.232	-0.8	0.9	-1.2	0.7	B+	
1185	634319	EC	EC	171	.158	.059	.626	.140	.158	.018	.159	-.111	.130	-.157	.159	2.635	0.225	0.6	1.1	2.1	1.6	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1186	639996	EC	EC	171	.456	.175	.456	.228	.129	.012	.455	-.202	.455	-.178	-.118	0.833	0.169	-0.8	1.0	-0.8	0.9	A-	
1187	630390	EC	EC	171	.240	.345	.275	.240	.123	.018	.096	.047	-.037	.096	-.018	1.983	0.193	2.2	1.2	3.7	1.7	A-	
1188	640077	EC	EC	171	.790	.790	.088	.064	.035	.023	.524	.524	-.275	-.204	-.233	-1.068	0.211	-1.5	0.8	-1.4	0.7	A-	
1189	639999	EC	EC	171	.760	.012	.187	.760	.018	.023	.062	-.085	.142	.062	-.190	-0.844	0.201	2.7	1.3	4.8	2.1	A+	
1190	639902	EC	EC	171	.544	.544	.099	.146	.193	.018	.450	.450	-.178	-.242	-.112	0.385	0.170	-0.7	1.0	-0.7	0.9	A-	
1191	621394	EC	EC	171	.714	.059	.105	.105	.714	.018	.528	-.245	-.297	-.159	.528	-0.523	0.188	-1.7	0.9	-1.6	0.8	A+	
1192	630407	EC	EC	171	.345	.211	.152	.257	.345	.035	.215	.088	-.211	-.037	.215	1.346	0.177	2.7	1.2	2.1	1.2	A-	
1193	640010	EC	EC	171	.450	.181	.450	.181	.152	.035	.272	-.147	.272	-.134	.048	0.830	0.171	1.9	1.1	1.7	1.2	A-	
1194	639958	EC	EC	173	.642	.225	.642	.087	.041	.006	.400	-.212	.400	-.223	-.183	-0.117	0.172	-0.4	1.0	-0.5	1.0	A+	
1195	639941	EC	EC	173	.665	.665	.179	.012	.139	.006	.469	.469	-.348	-.143	-.208	-0.233	0.174	-1.4	0.9	-1.7	0.8	A+	
1196	636004	EC	EC	173	.358	.191	.098	.358	.353	.000	.251	-.191	-.154	.251	.002	1.275	0.171	0.9	1.1	1.2	1.1	A-	
1197	640100	EC	EC	173	.890	.041	.890	.058	.012	.000	.399	-.284	.399	-.219	-.164	-1.791	0.253	-0.7	0.9	-1.2	0.7	A+	
1198	630662	EC	EC	173	.619	.619	.214	.035	.133	.000	.453	.453	-.237	-.270	-.216	0.027	0.169	-1.4	0.9	-1.5	0.9	A-	
1199	628020	EC	EC	173	.214	.173	.480	.214	.133	.000	.224	-.419	.113	.224	.031	2.102	0.197	0.6	1.1	1.4	1.2	A+	
1200	640057	EC	EC	173	.711	.121	.093	.711	.058	.017	.336	-.132	-.184	.336	-.139	-0.524	0.183	0.4	1.0	-0.2	1.0	B-	
1201	628011	EC	EC	173	.266	.266	.075	.104	.543	.012	.178	.178	-.049	-.165	-.010	1.735	0.184	1.0	1.1	2.6	1.4	B+	
1202	630661	EC	EC	173	.289	.254	.249	.197	.289	.012	.380	-.052	-.167	-.168	.380	1.603	0.180	-0.1	1.0	0.1	1.0	A-	
1203	640082	EC	EC	173	.474	.474	.150	.075	.295	.006	.459	.459	-.231	-.222	-.172	0.690	0.165	-1.5	0.9	-1.3	0.9	B+	
1204	628475	EC	EC	173	.399	.150	.399	.116	.324	.012	.279	-.194	.279	-.099	-.054	1.033	0.168	1.8	1.1	1.6	1.1	A-	
1205	635949	EC	EC	173	.665	.058	.098	.665	.162	.017	.586	-.334	-.274	.586	-.277	-0.292	0.176	-3.0	0.8	-3.0	0.7	A-	
1206	639903	EC	EC	173	.642	.075	.642	.231	.035	.017	.523	-.104	.523	-.424	-.084	-0.156	0.173	-1.8	0.9	-1.8	0.8	A-	
1207	640033	EC	EC	173	.595	.104	.104	.595	.179	.017	.400	-.180	-.221	.400	-.116	0.078	0.169	-0.1	1.0	-0.1	1.0	A-	
1208	640000	EC	EC	173	.266	.549	.266	.168	.000	.017	.013	.016	.013	.042	.000	1.719	0.183	2.9	1.3	3.8	1.6	B+	
1209	630672	EC	EC	173	.295	.249	.231	.202	.295	.023	.195	.013	-.063	-.095	.195	1.542	0.179	1.9	1.2	1.4	1.2	A+	
1210	639927	EC	EC	173	.676	.104	.676	.121	.081	.017	.574	-.315	.574	-.208	-.278	-0.341	0.177	-2.5	0.8	-2.3	0.8	A-	
1211	640022	EC	EC	173	.376	.370	.121	.110	.376	.023	.286	.088	-.279	-.193	.286	1.119	0.170	1.3	1.1	1.1	1.1	A-	
1212	627689	EC	EC	173	.335	.214	.110	.335	.324	.017	.068	.071	-.268	.068	.110	1.339	0.173	3.6	1.3	3.1	1.4	A+	
1213	628064	EC	EC	173	.740	.069	.740	.093	.081	.017	.428	-.218	.428	-.216	-.150	-0.710	0.189	-0.4	1.0	-0.9	0.9	A-	
1214	634318	EC	EC	173	.283	.283	.457	.197	.041	.023	.137	.137	.001	.015	-.170	1.615	0.180	2.2	1.2	3.0	1.4	A+	
1215	621392	EC	EC	173	.538	.041	.358	.538	.041	.023	.556	-.132	-.347	.556	-.255	0.347	0.167	-2.8	0.9	-2.7	0.8	A+	
1216	640074	EC	EC	173	.480	.179	.087	.225	.480	.029	.508	-.234	-.208	-.169	.508	0.606	0.166	-2.1	0.9	-1.7	0.9	A+	
1217	639960	EC	EC	173	.376	.202	.197	.376	.214	.012	.279	-.195	-.149	.279	.090	1.088	0.172	2.0	1.1	2.1	1.2	B+	
1218	639955	EC	EC	173	.821	.029	.821	.127	.017	.006	.366	-.122	.366	-.218	-.140	-1.330	0.213	-0.3	1.0	-0.8	0.8	B-	
1219	640058	EC	EC	173	.468	.468	.341	.139	.046	.006	.189	.189	.028	-.194	-.055	0.637	0.167	3.1	1.2	3.4	1.3	A+	
1220	640101	EC	EC	173	.520	.249	.520	.179	.041	.012	.401	-.210	.401	-.109	-.124	0.382	0.167	0.6	1.0	0.2	1.0	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1221	636057	EC	EC	173	.717	.133	.717	.087	.058	.006	.408	-.132	.408	-.226	-.199	-0.634	0.184	-0.4	1.0	-0.6	0.9	A+	
1222	635461	EC	EC	173	.486	.133	.081	.289	.486	.012	.535	-.136	-.176	-.306	.535	0.542	0.168	-2.4	0.9	-2.1	0.8	B-	
1223	639975	EC	EC	173	.763	.069	.104	.763	.046	.017	.443	-.157	-.273	.443	-.025	-0.951	0.196	-0.7	0.9	-0.8	0.9	B+	
1224	640034	EC	EC	173	.272	.029	.023	.272	.665	.012	.321	-.271	-.115	.321	-.073	1.662	0.185	0.3	1.0	1.4	1.2	A+	
1225	640011	EC	EC	173	.832	.023	.832	.017	.104	.023	.390	-.171	.390	-.124	-.129	-1.528	0.228	0.3	1.0	0.0	1.0	A-	
1226	640064	EC	EC	173	.728	.046	.110	.728	.098	.017	.515	-.231	-.243	.515	-.159	-0.742	0.189	-1.5	0.9	-1.3	0.8	A-	
1227	640075	EC	EC	173	.590	.590	.127	.150	.116	.017	.519	.519	-.220	-.222	-.143	0.022	0.171	-1.9	0.9	-1.9	0.8	A-	
1228	639982	EC	EC	173	.243	.306	.243	.335	.093	.023	.002	.110	.002	.042	-.021	1.828	0.192	3.6	1.4	4.3	1.9	A+	
1229	639904	EC	EC	173	.890	.041	.890	.046	.000	.023	.507	-.201	.507	-.255	.000	-2.169	0.280	-0.5	0.9	-1.5	0.5	A-	
1230	622818	EC	EC	173	.590	.191	.116	.081	.590	.023	.578	-.195	-.185	-.305	.578	0.006	0.172	-2.9	0.8	-2.9	0.7	B+	
1231	630393	EC	EC	173	.786	.121	.046	.023	.786	.023	.525	-.315	-.116	-.150	.525	-1.161	0.207	-1.4	0.8	-0.7	0.9	A-	
1232	630673	EC	EC	173	.214	.272	.214	.208	.278	.029	.126	.019	.126	.080	-.048	2.015	0.200	1.8	1.2	3.3	1.7	A+	
1233	634303	EC	EC	173	.746	.746	.075	.093	.058	.029	.523	.523	-.202	-.216	-.140	-0.892	0.196	-1.0	0.9	-1.8	0.7	A-	
1234	640042	EC	EC	173	.751	.098	.081	.751	.035	.035	.541	-.245	-.167	.541	-.165	-0.960	0.199	-1.2	0.9	-1.7	0.7	A+	
1235	629828	EC	EC	173	.260	.347	.260	.191	.173	.029	.257	-.033	.257	-.008	-.066	1.715	0.188	1.3	1.1	1.8	1.3	A-	
1236	630434	EC	EC	173	.150	.150	.185	.405	.225	.035	.129	.129	-.054	.152	-.057	2.511	0.227	1.2	1.2	2.4	1.7	A+	
1237	634321	EC	EC	173	.214	.214	.364	.243	.150	.029	.235	.235	-.004	-.029	-.036	2.016	0.200	0.6	1.1	2.7	1.6	A-	
1238	628100	EC	EC	173	.653	.121	.069	.127	.653	.029	.557	-.168	-.190	-.279	.557	-0.345	0.179	-2.0	0.9	-2.2	0.8	A-	
1239	639995	EC	EC	173	.567	.098	.168	.567	.127	.041	.388	-.174	-.145	.388	.011	0.093	0.172	0.9	1.1	1.0	1.1	A+	
1240	622672	EC	EC	174	.328	.333	.029	.328	.305	.006	.253	-.226	-.220	.253	.115	1.291	0.176	1.8	1.1	1.4	1.2	A-	
1241	629919	EC	EC	174	.385	.184	.190	.385	.236	.006	.358	-.050	-.145	.358	-.163	1.022	0.170	-0.4	1.0	-0.5	1.0	A-	
1242	622612	EC	EC	174	.540	.069	.224	.540	.155	.012	.369	-.145	-.208	.369	-.101	0.217	0.167	0.3	1.0	0.7	1.1	A+	
1243	640079	EC	EC	174	.552	.086	.253	.092	.552	.017	.247	-.132	.031	-.149	.247	0.168	0.167	2.5	1.2	3.2	1.3	A+	
1244	639968	EC	EC	174	.822	.052	.822	.075	.040	.012	.496	-.211	.496	-.210	-.188	-1.392	0.216	-1.0	0.9	-1.8	0.6	A+	
1245	636064	EC	EC	174	.632	.046	.259	.052	.632	.012	.487	-.144	-.242	-.215	.487	-0.216	0.172	-1.7	0.9	-1.9	0.8	A-	
1246	635740	EC	EC	174	.213	.213	.305	.155	.310	.017	.063	.063	-.074	-.113	.223	1.980	0.200	2.5	1.3	3.3	1.7	A-	
1247	636049	EC	EC	174	.644	.075	.644	.098	.172	.012	.360	-.124	.360	-.213	-.069	-0.276	0.173	0.4	1.0	0.2	1.0	A-	
1248	639977	EC	EC	174	.753	.753	.052	.121	.058	.017	.490	.490	-.142	-.245	-.199	-0.925	0.193	-1.3	0.9	-1.6	0.7	A+	
1249	640083	EC	EC	174	.494	.121	.494	.195	.178	.012	.336	-.033	.336	-.190	-.080	0.487	0.166	0.6	1.0	0.5	1.0	A+	
1250	639912	EC	EC	174	.672	.190	.052	.672	.075	.012	.357	-.085	-.190	.357	-.155	-0.428	0.176	0.7	1.1	0.1	1.0	A-	
1251	640066	EC	EC	174	.684	.035	.040	.684	.230	.012	.488	-.140	-.172	.488	-.277	-0.459	0.177	-2.0	0.9	-1.8	0.8	A+	
1252	639905	EC	EC	174	.535	.144	.535	.259	.046	.017	.423	-.263	.423	-.105	-.090	0.254	0.167	-0.8	1.0	-0.6	0.9	B-	
1253	640041	EC	EC	174	.333	.230	.184	.236	.333	.017	.262	.010	-.061	-.117	.262	1.254	0.175	1.6	1.1	1.9	1.2	A-	
1254	639914	EC	EC	174	.523	.000	.391	.523	.075	.012	.379	.000	-.184	.379	-.185	0.322	0.166	0.3	1.0	0.2	1.0	A-	
1255	640023	EC	EC	174	.540	.540	.144	.190	.103	.023	.441	.441	-.203	-.141	-.112	0.203	0.168	-0.7	1.0	-0.9	0.9	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1256	639923	EC	EC	174	.448	.213	.103	.213	.448	.023	.274	-.074	-.153	-.002	.274	0.651	0.168	2.2	1.1	2.3	1.2	B-	
1257	640076	EC	EC	174	.632	.075	.632	.155	.115	.023	.418	-.052	.418	-.270	-.098	-0.260	0.173	-0.2	1.0	-0.5	0.9	A+	
1258	621206	EC	EC	174	.385	.121	.385	.230	.241	.023	.449	-.170	.449	-.205	-.042	0.966	0.171	-1.1	0.9	-1.0	0.9	B+	
1259	638877	EC	EC	174	.535	.046	.264	.535	.132	.023	.465	-.081	-.159	.465	-.254	0.259	0.167	-1.6	0.9	-1.7	0.9	A-	
1260	635841	EC	EC	174	.632	.632	.155	.132	.058	.023	.466	.466	-.258	-.151	-.091	-0.260	0.173	-1.1	0.9	-1.2	0.9	A-	
1261	639888	EC	EC	174	.552	.098	.103	.224	.552	.023	.545	-.233	-.265	-.149	.545	0.147	0.168	-3.0	0.8	-2.6	0.8	A+	
1262	630425	EC	EC	174	.356	.356	.253	.259	.109	.023	.459	.459	-.132	-.210	-.038	1.114	0.173	-1.3	0.9	-1.1	0.9	A-	
1263	639976	EC	EC	174	.477	.132	.477	.144	.224	.023	.466	-.165	.466	-.230	-.090	0.511	0.167	-1.4	0.9	-1.3	0.9	B-	
1264	630649	EC	EC	172	.558	.111	.157	.169	.558	.006	.531	-.206	-.270	-.190	.531	0.216	0.168	-3.0	0.8	-2.9	0.8	A+	
1265	635462	EC	EC	172	.750	.023	.012	.209	.750	.006	.320	-.317	.008	-.152	.320	-0.814	0.191	0.9	1.1	0.9	1.1	A-	
1266	639974	EC	EC	172	.616	.262	.076	.616	.041	.006	.520	-.257	-.257	.520	-.212	-0.071	0.171	-2.2	0.9	-2.2	0.8	A+	
1267	640095	EC	EC	172	.436	.076	.297	.436	.186	.006	.266	-.243	-.069	.266	-.016	0.803	0.168	1.8	1.1	1.9	1.2	A+	
1268	625505	EC	EC	172	.622	.035	.169	.169	.622	.006	.396	-.216	-.141	-.185	.396	-0.100	0.172	-0.1	1.0	0.2	1.0	A-	
1269	636065	EC	EC	172	.424	.134	.424	.308	.128	.006	.249	-.029	.249	-.069	-.155	0.888	0.168	1.4	1.1	1.3	1.1	A+	
1270	639979	EC	EC	172	.215	.587	.122	.215	.070	.006	.104	.239	-.132	.104	-.342	2.019	0.199	2.0	1.2	2.0	1.4	A-	
1271	630709	EC	EC	172	.814	.070	.814	.064	.047	.006	.501	-.125	.501	-.286	-.299	-1.259	0.212	-1.2	0.9	-1.9	0.7	C+	
1272	628135	EC	EC	172	.384	.384	.297	.128	.186	.006	.194	.194	-.156	.042	-.019	1.061	0.171	3.1	1.2	2.9	1.3	A+	
1273	640063	EC	EC	172	.442	.471	.029	.047	.442	.012	.465	-.243	-.175	-.191	.465	0.763	0.168	-1.3	0.9	-1.3	0.9	A-	
1274	640080	EC	EC	172	.535	.140	.535	.192	.122	.012	.515	-.148	.515	-.332	-.106	0.314	0.168	-2.2	0.9	-2.0	0.8	B+	
1275	640067	EC	EC	172	.331	.145	.070	.331	.436	.017	.388	-.304	-.246	.388	.070	1.315	0.176	-0.2	1.0	-0.1	1.0	A+	
1276	639906	EC	EC	172	.663	.157	.663	.163	.006	.012	.373	-.148	.373	-.215	-.041	-0.333	0.177	0.5	1.0	-0.1	1.0	A-	
1277	640021	EC	EC	172	.791	.064	.099	.791	.035	.012	.368	-.109	-.214	.368	-.104	-1.120	0.205	0.3	1.0	-0.2	1.0	A+	
1278	639917	EC	EC	172	.727	.070	.093	.727	.099	.012	.475	-.236	-.126	.475	-.251	-0.698	0.187	-1.2	0.9	-1.0	0.9	A-	
1279	640028	EC	EC	172	.593	.593	.302	.035	.052	.017	.461	.461	-.276	-.081	-.168	0.013	0.171	-0.9	0.9	-0.9	0.9	B-	
1280	639934	EC	EC	172	.273	.221	.215	.273	.273	.017	.245	-.106	-.071	.025	.245	1.640	0.185	1.2	1.1	2.3	1.3	A-	
1281	640030	EC	EC	172	.890	.029	.890	.052	.012	.017	.537	-.301	.537	-.239	-.162	-2.113	0.279	-0.7	0.8	-1.8	0.5	A+	
1282	625549	EC	EC	172	.645	.151	.645	.081	.099	.023	.337	-.170	.337	-.091	-.078	-0.276	0.177	1.6	1.1	0.3	1.0	C-	
1283	635487	EC	EC	172	.616	.616	.099	.145	.116	.023	.546	.546	-.269	-.238	-.155	-0.122	0.174	-2.4	0.8	-2.3	0.8	A+	
1284	639889	EC	EC	172	.692	.105	.692	.116	.064	.023	.512	-.261	.512	-.231	-.124	-0.536	0.184	-1.3	0.9	-1.8	0.8	A+	
1285	634320	EC	EC	172	.529	.198	.192	.529	.058	.023	.383	-.091	-.102	.383	-.268	0.317	0.169	0.7	1.0	0.2	1.0	A-	
1286	635738	EC	EC	172	.186	.186	.326	.244	.221	.023	.179	.179	.020	-.109	.048	2.211	0.209	0.8	1.1	3.0	1.7	A-	
1287	633534	EC	EC	172	.488	.488	.285	.116	.076	.035	.265	.265	-.053	-.054	-.152	0.486	0.169	2.7	1.2	2.2	1.2	A-	
1288	639937	EC	EC	174	.810	.810	.069	.040	.081	.000	.254	.254	-.070	-.211	-.147	-1.246	0.204	0.1	1.0	0.5	1.1	A-	
1289	639939	EC	EC	174	.494	.454	.494	.017	.035	.000	.265	-.141	.265	-.176	-.217	0.452	0.164	1.8	1.1	1.4	1.1	A-	
1290	626920	EC	EC	174	.672	.035	.029	.264	.672	.000	.474	-.132	-.215	-.369	.474	-0.412	0.173	-1.6	0.9	-1.6	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1291	626947	EC	EC	174	.529	.270	.132	.529	.058	.012	.365	-.134	-.107	.365	-.244	0.272	0.165	0.3	1.0	0.1	1.0	A-	
1292	639983	EC	EC	174	.299	.437	.299	.115	.144	.006	.211	.052	.211	-.251	-.063	1.404	0.177	1.7	1.1	1.5	1.2	A+	
1293	639961	EC	EC	174	.483	.172	.190	.144	.483	.012	.348	-.084	-.096	-.222	.348	0.484	0.165	1.0	1.1	0.9	1.1	A+	
1294	639980	EC	EC	174	.333	.213	.167	.333	.282	.006	.197	.027	-.176	.197	-.040	1.221	0.172	1.9	1.1	2.9	1.3	A+	
1295	639984	EC	EC	174	.592	.063	.264	.592	.075	.006	.471	-.199	-.266	.471	-.173	-0.025	0.167	-1.6	0.9	-1.5	0.9	A+	
1296	630387	EC	EC	174	.615	.615	.218	.092	.069	.006	.461	.461	-.128	-.275	-.281	-0.138	0.169	-1.7	0.9	-0.5	1.0	A+	
1297	640065	EC	EC	174	.655	.655	.058	.058	.218	.012	.490	.490	-.342	-.325	-.113	-0.365	0.173	-1.6	0.9	-1.1	0.9	A+	
1298	640086	EC	EC	174	.483	.109	.483	.144	.253	.012	.327	-.040	.327	-.209	-.108	0.478	0.165	1.0	1.1	1.0	1.1	A-	
1299	640068	EC	EC	174	.615	.144	.121	.109	.615	.012	.453	-.276	-.099	-.193	.453	-0.159	0.169	-0.9	0.9	-0.8	0.9	A+	
1300	639907	EC	EC	174	.661	.161	.121	.661	.046	.012	.485	-.171	-.336	.485	-.125	-0.395	0.174	-1.0	0.9	-1.3	0.9	A-	
1301	640004	EC	EC	174	.316	.420	.316	.138	.115	.012	.290	.044	.290	-.231	-.144	1.300	0.175	0.9	1.1	0.8	1.1	A+	
1302	639918	EC	EC	174	.741	.178	.741	.046	.023	.012	.529	-.326	.529	-.236	-.177	-0.851	0.187	-1.6	0.9	-1.9	0.8	A-	
1303	639899	EC	EC	174	.592	.017	.592	.253	.126	.012	.449	-.181	.449	-.225	-.206	-0.044	0.168	-0.9	0.9	-0.8	0.9	A-	
1304	640012	EC	EC	174	.414	.414	.305	.213	.046	.023	.420	.420	-.146	-.264	-.006	0.776	0.167	-0.7	1.0	-0.3	1.0	A-	
1305	639911	EC	EC	174	.615	.615	.098	.109	.155	.023	.360	.360	-.173	-.222	-.042	-0.197	0.171	0.4	1.0	1.0	1.1	A-	
1306	630416	EC	EC	174	.581	.086	.138	.167	.581	.029	.635	-.199	-.272	-.319	.635	-0.037	0.169	-3.9	0.8	-3.8	0.7	A-	
1307	635478	EC	EC	174	.322	.126	.115	.408	.322	.029	.343	.004	-.320	-.029	.343	1.243	0.175	0.5	1.0	0.1	1.0	A-	
1308	639890	EC	EC	174	.351	.218	.201	.351	.201	.029	.151	-.105	-.007	.151	.048	1.092	0.172	2.8	1.2	3.6	1.4	A+	
1309	635569	EC	EC	174	.615	.081	.126	.615	.144	.035	.405	-.113	-.147	.405	-.200	-0.231	0.173	0.0	1.0	0.1	1.0	A-	
1310	635751	EC	EC	174	.529	.086	.121	.529	.230	.035	.432	-.249	.006	.432	-.239	0.203	0.168	-0.6	1.0	-0.1	1.0	B+	
1311	633535	EC	EC	174	.259	.069	.259	.443	.195	.035	.227	-.234	.227	.042	-.035	1.590	0.186	0.9	1.1	2.1	1.3	A+	
1312	639943	EC	EC	173	.468	.035	.468	.353	.133	.012	.154	-.096	.154	-.011	.003	0.655	0.166	3.4	1.2	3.7	1.3	A+	
1313	639942	EC	EC	173	.711	.069	.104	.711	.098	.017	.578	-.176	-.214	.578	-.252	-0.609	0.184	-2.6	0.8	-2.6	0.7	A-	
1314	627284	EC	EC	173	.630	.185	.630	.104	.064	.017	.471	-.179	.471	-.130	-.169	-0.166	0.173	-1.5	0.9	-1.4	0.9	A+	
1315	636022	EC	EC	173	.578	.173	.578	.081	.150	.017	.416	-.112	.416	-.137	-.136	0.125	0.168	-0.6	1.0	-0.6	1.0	A-	
1316	639986	EC	EC	173	.769	.069	.098	.046	.769	.017	.442	-.102	-.185	-.133	.442	-0.974	0.198	-0.4	1.0	-0.1	1.0	A+	
1317	639962	EC	EC	173	.642	.150	.642	.127	.064	.017	.540	-.202	.540	-.209	-.163	-0.226	0.174	-2.5	0.8	-2.5	0.8	A-	
1318	639981	EC	EC	173	.723	.035	.069	.723	.150	.023	.383	-.131	-.169	.383	-.068	-0.665	0.187	0.0	1.0	-0.2	1.0	A-	
1319	639989	EC	EC	173	.266	.266	.451	.156	.110	.017	.254	.254	.007	-.024	-.095	1.675	0.185	0.6	1.1	2.3	1.3	A-	
1320	640060	EC	EC	173	.549	.087	.549	.156	.185	.023	.365	-.024	.365	-.230	-.024	0.229	0.168	0.2	1.0	0.4	1.0	A+	
1321	628016	EC	EC	173	.405	.306	.052	.405	.214	.023	.197	.009	-.205	.197	.063	0.929	0.169	2.9	1.2	2.9	1.3	A-	
1322	622421	EC	EC	173	.428	.179	.150	.225	.428	.017	.456	-.185	-.115	-.088	.456	0.822	0.167	-1.8	0.9	-1.7	0.9	A-	
1323	640097	EC	EC	173	.462	.254	.462	.220	.041	.023	.436	-.153	.436	-.072	-.167	0.649	0.167	-1.1	0.9	-1.3	0.9	B+	
1324	640069	EC	EC	173	.642	.642	.162	.064	.110	.023	.496	.496	-.220	-.158	-.095	-0.207	0.174	-2.0	0.9	-1.5	0.8	A-	
1325	640005	EC	EC	173	.549	.549	.266	.093	.069	.023	.320	.320	-.019	-.105	-.125	0.230	0.168	1.2	1.1	2.6	1.2	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1326	639922	EC	EC	173	.150	.486	.150	.121	.220	.023	-.004	.201	-.004	-.100	.053	2.544	0.229	1.4	1.2	2.8	1.8	A-	
1327	639908	EC	EC	173	.902	.902	.035	.012	.017	.035	.526	.526	-.147	-.064	-.178	-2.404	0.319	-0.3	0.9	-1.4	0.5	A-	
1328	640014	EC	EC	173	.434	.405	.052	.075	.434	.035	.424	-.027	-.248	-.161	.424	0.764	0.168	-0.9	1.0	-0.8	0.9	A-	
1329	639913	EC	EC	173	.457	.139	.254	.457	.116	.035	.262	-.027	-.038	.262	-.017	0.651	0.168	2.4	1.1	2.6	1.2	A-	
1330	630417	EC	EC	173	.526	.526	.127	.110	.202	.035	.399	.399	-.073	-.123	-.093	0.313	0.168	0.0	1.0	0.0	1.0	A+	
1331	635479	EC	EC	173	.312	.162	.237	.312	.249	.041	.161	-.003	.043	.161	.035	1.417	0.179	2.6	1.2	2.7	1.3	A-	
1332	639891	EC	EC	173	.665	.075	.064	.665	.150	.046	.392	-.113	-.016	.392	-.106	-0.428	0.182	0.5	1.0	0.4	1.1	A+	
1333	635773	EC	EC	173	.462	.081	.353	.064	.462	.041	.381	-.179	-.008	-.124	.381	0.618	0.168	0.3	1.0	0.2	1.0	A+	
1334	635772	EC	EC	173	.208	.104	.208	.370	.278	.041	.187	-.123	.187	.040	.110	2.022	0.201	1.0	1.1	2.6	1.5	A+	
1335	633538	EC	EC	173	.173	.382	.110	.289	.173	.046	.317	.041	-.142	.040	.317	2.280	0.214	-0.3	1.0	0.1	1.0	A-	
1336	639944	EC	EC	174	.184	.374	.310	.184	.126	.006	.112	.049	.031	.112	-.156	2.333	0.206	1.1	1.1	2.9	1.7	A+	
1337	639949	EC	EC	174	.776	.776	.058	.035	.126	.006	.314	.314	-.281	-.196	-.001	-0.900	0.198	0.1	1.0	1.1	1.2	A+	
1338	630383	EC	EC	174	.707	.000	.707	.155	.126	.012	.451	.000	.451	-.286	-.177	-0.481	0.184	-0.5	1.0	-0.6	0.9	A-	
1339	640059	EC	EC	174	.649	.649	.259	.029	.058	.006	.325	.325	-.094	-.205	-.216	-0.145	0.175	0.5	1.0	0.9	1.1	A+	
1340	639991	EC	EC	174	.374	.310	.247	.374	.058	.012	.364	-.120	-.065	.364	-.213	1.215	0.170	0.4	1.0	0.5	1.1	A+	
1341	639965	EC	EC	174	.615	.069	.069	.615	.236	.012	.506	-.278	-.233	.506	-.160	0.022	0.172	-1.4	0.9	-1.8	0.8	A+	
1342	639987	EC	EC	174	.839	.035	.035	.839	.081	.012	.551	-.212	-.135	.551	-.332	-1.425	0.227	-1.3	0.8	-1.4	0.7	A-	
1343	640003	EC	EC	174	.810	.035	.810	.058	.081	.017	.590	-.228	.590	-.303	-.210	-1.213	0.215	-1.8	0.8	-2.3	0.6	B+	
1344	622419	EC	EC	174	.753	.052	.753	.115	.063	.017	.463	-.142	.463	-.217	-.150	-0.792	0.196	-0.6	0.9	-0.8	0.9	A-	
1345	639978	EC	EC	174	.833	.833	.012	.069	.063	.023	.492	.492	-.006	-.325	-.149	-1.458	0.230	-0.8	0.9	-0.7	0.8	A-	
1346	630710	EC	EC	174	.782	.058	.782	.063	.075	.023	.473	-.180	.473	-.170	-.148	-1.021	0.207	-0.4	1.0	-0.5	0.9	B+	
1347	640103	EC	EC	174	.517	.161	.138	.517	.155	.029	.538	-.265	-.116	.538	-.123	0.490	0.168	-2.7	0.8	-2.4	0.8	A+	
1348	640073	EC	EC	174	.402	.086	.402	.345	.138	.029	.350	-.172	.350	-.050	-.037	1.057	0.169	0.9	1.1	0.8	1.1	A-	
1349	640006	EC	EC	174	.397	.132	.167	.270	.397	.035	.324	-.028	-.112	-.034	.324	1.069	0.170	1.4	1.1	1.6	1.2	A-	
1350	639924	EC	EC	174	.810	.023	.092	.810	.040	.035	.497	-.143	-.086	.497	-.287	-1.318	0.224	-0.4	1.0	-0.5	0.9	C+	
1351	640032	EC	EC	174	.879	.879	.012	.046	.029	.035	.611	.611	-.135	-.280	-.201	-2.067	0.282	-0.8	0.8	-2.3	0.4	A+	
1352	640019	EC	EC	174	.322	.218	.322	.385	.046	.029	.259	-.026	.259	.012	-.176	1.460	0.176	1.6	1.1	1.6	1.2	A-	
1353	640038	EC	EC	174	.667	.081	.063	.161	.667	.029	.497	-.162	-.207	-.166	.497	-0.307	0.181	-0.9	0.9	-0.7	0.9	A-	
1354	635590	EC	EC	174	.718	.075	.121	.718	.040	.046	.589	-.145	-.353	.589	-.071	-0.695	0.195	-1.8	0.8	-1.6	0.8	A+	
1355	635480	EC	EC	174	.310	.190	.310	.270	.190	.040	.221	-.007	.221	-.117	.094	1.503	0.178	2.3	1.2	2.1	1.3	A+	
1356	635667	EC	EC	174	.287	.081	.241	.345	.287	.046	.241	-.051	-.021	.025	.241	1.629	0.181	1.4	1.1	2.2	1.3	A+	
1357	636476	EC	EC	174	.287	.046	.287	.431	.195	.040	.128	-.113	.128	.097	.006	1.632	0.181	2.7	1.2	4.1	1.7	A+	
1358	621393	EC	EC	174	.563	.563	.058	.052	.282	.046	.513	.513	-.080	-.297	-.161	0.201	0.173	-1.3	0.9	-1.4	0.9	B-	
1359	633539	EC	EC	174	.506	.259	.063	.132	.506	.040	.427	-.064	-.159	-.183	.427	0.503	0.170	0.0	1.0	0.2	1.0	A+	
1360	639945	EC	EC	174	.603	.603	.218	.092	.075	.012	.373	.373	-.095	-.155	-.160	-0.014	0.166	-1.0	0.9	-0.9	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1361	640056	EC	EC	174	.218	.661	.218	.086	.017	.017	.358	-.021	.358	-.128	-.185	1.902	0.194	-0.6	0.9	-0.6	0.9	A+	
1362	630667	EC	EC	174	.448	.035	.448	.397	.103	.017	.256	-.076	.256	-.090	.028	0.685	0.164	2.0	1.1	1.6	1.1	A+	
1363	636023	EC	EC	174	.851	.063	.046	.851	.023	.017	.482	-.113	-.210	.482	-.149	-1.592	0.233	-0.6	0.9	-1.1	0.8	A+	
1364	639993	EC	EC	174	.201	.207	.241	.201	.333	.017	.108	.154	-.023	.108	-.037	2.019	0.200	1.0	1.1	2.0	1.4	B-	
1365	639967	EC	EC	174	.603	.138	.603	.075	.161	.023	.246	.030	.246	-.176	-.008	-0.055	0.168	1.9	1.1	1.2	1.1	A+	
1366	639988	EC	EC	174	.448	.190	.448	.178	.167	.017	.265	.017	.265	-.083	-.077	0.685	0.164	1.9	1.1	1.5	1.1	A+	
1367	640088	EC	EC	174	.632	.213	.046	.632	.086	.023	.324	-.064	-.262	.324	.055	-0.200	0.170	0.8	1.1	0.8	1.1	A-	
1368	640081	EC	EC	174	.172	.132	.500	.167	.172	.029	.065	-.036	.129	.036	.065	2.217	0.211	1.5	1.2	1.9	1.4	A-	
1369	635581	EC	EC	174	.644	.121	.144	.069	.644	.023	.499	-.154	-.115	-.229	.499	-0.259	0.172	-2.4	0.9	-2.2	0.8	A+	
1370	636885	EC	EC	174	.328	.236	.201	.328	.213	.023	.148	.011	.020	.148	.021	1.265	0.173	2.6	1.2	2.4	1.3	A+	
1371	640094	EC	EC	174	.500	.086	.184	.201	.500	.029	.351	-.104	-.191	.047	.351	0.413	0.164	0.1	1.0	0.2	1.0	A-	
1372	640084	EC	EC	174	.356	.224	.155	.356	.241	.023	.212	-.040	-.087	.212	.088	1.119	0.170	1.5	1.1	3.6	1.4	A-	
1373	639921	EC	EC	174	.598	.218	.598	.081	.075	.029	.425	-.073	.425	-.127	-.159	-0.038	0.168	-1.2	0.9	-0.5	1.0	A-	
1374	621156	EC	EC	174	.241	.224	.201	.299	.241	.035	.206	-.040	-.052	.110	.206	1.738	0.188	0.8	1.1	2.6	1.4	A+	
1375	640031	EC	EC	174	.512	.328	.017	.115	.512	.029	.379	-.043	-.118	-.165	.379	0.374	0.164	-0.2	1.0	-0.2	1.0	A+	
1376	640035	EC	EC	174	.695	.695	.075	.155	.046	.029	.459	.459	-.150	-.139	-.097	-0.549	0.180	-1.0	0.9	-0.9	0.9	A+	
1377	628314	EC	EC	174	.695	.121	.695	.121	.023	.040	.489	-.155	.489	-.166	-.108	-0.604	0.183	-1.3	0.9	-1.4	0.8	A+	
1378	635591	EC	EC	174	.483	.103	.483	.218	.155	.040	.412	-.159	.412	-.072	-.065	0.473	0.165	-0.9	1.0	-1.2	0.9	B+	
1379	635481	EC	EC	174	.316	.316	.247	.259	.138	.040	.401	.401	-.074	-.032	-.105	1.295	0.175	-1.1	0.9	-1.2	0.9	A+	
1380	621159	EC	EC	174	.408	.247	.178	.408	.126	.040	.407	-.101	-.103	.407	-.039	0.830	0.167	-1.3	0.9	-0.7	0.9	A-	
1381	635946	EC	EC	174	.356	.144	.299	.356	.161	.040	.315	-.105	-.049	.315	.034	1.086	0.170	0.4	1.0	0.5	1.0	A+	
1382	628062	EC	EC	174	.310	.161	.310	.247	.236	.046	.334	-.059	.334	-.021	-.048	1.314	0.176	-0.3	1.0	0.4	1.0	A+	
1383	633541	EC	EC	174	.282	.282	.132	.448	.092	.046	.269	.269	.050	.014	-.142	1.474	0.181	0.5	1.0	1.3	1.2	A+	
1384	684126	K	K	139	.863	.086	.036	.007	.863	.007	.422	-.324	-.297	.017	.422	-3.298	0.267	-0.3	1.0	-0.8	0.7	A-	
1385	685000	K	K	139	.806	.144	.806	.007	.029	.014	.468	-.309	.468	-.091	-.212	-2.802	0.234	-0.7	0.9	-0.8	0.8	A-	
1386	684304	K	K	139	.899	.899	.050	.022	.007	.022	.495	.495	-.281	-.222	-.218	-3.697	0.301	-1.0	0.8	-1.3	0.5	A+	
1387	684993	K	K	139	.468	.072	.410	.043	.468	.007	.274	-.363	.004	-.137	.274	-0.896	0.190	2.6	1.2	2.0	1.2	A-	
1388	685029	K	K	141	.872	.078	.035	.872	.007	.007	.499	-.300	-.397	.499	-.075	-3.186	0.269	-0.8	0.9	-1.3	0.6	A+	
1389	684123	K	K	141	.943	.943	.028	.007	.021	.000	.483	.483	-.327	-.229	-.265	-4.175	0.379	-0.7	0.8	-1.5	0.3	A+	
1390	683778	K	K	141	.816	.121	.816	.035	.021	.007	.483	-.362	.483	-.231	-.164	-2.684	0.235	-0.7	0.9	-1.2	0.7	B+	
1391	683781	K	K	140	.829	.829	.014	.064	.086	.007	.532	.532	-.138	-.341	-.333	-2.688	0.244	-0.9	0.9	-1.4	0.7	A-	
1392	684129	K	K	140	.957	.014	.957	.007	.021	.000	.416	-.345	.416	-.191	-.188	-4.410	0.432	-0.4	0.8	-0.7	0.6	A-	
1393	683779	K	K	140	.836	.050	.836	.014	.093	.007	.413	-.348	.413	-.301	-.147	-2.748	0.247	-0.1	1.0	-0.5	0.9	A-	
1394	684990	K	K	143	.958	.021	.958	.007	.014	.000	.320	-.321	.320	-.132	-.061	-4.669	0.432	-0.1	0.9	-0.7	0.6	A+	
1395	685030	K	K	143	.923	.923	.021	.014	.035	.007	.434	.434	-.184	-.103	-.325	-3.968	0.331	-0.4	0.9	-1.2	0.5	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1396	684987	K	K	143	.532	.049	.531	.203	.210	.007	.433	-.280	.433	-.079	-.261	-1.201	0.184	-0.3	1.0	-0.5	1.0	A-	
1397	683788	K	K	145	.766	.048	.041	.145	.766	.000	.596	-.360	-.240	-.363	.596	-2.352	0.221	-1.4	0.8	-1.8	0.6	A+	
1398	684988	K	K	145	.848	.048	.034	.069	.848	.000	.568	-.367	-.293	-.283	.568	-3.021	0.256	-1.3	0.8	-1.3	0.6	A+	
1399	684306	K	K	145	.890	.055	.890	.021	.034	.000	.568	-.467	.568	-.209	-.229	-3.461	0.288	-1.3	0.8	-1.6	0.4	A+	
1400	683785	K	K	145	.828	.021	.828	.055	.097	.000	.398	-.192	.398	-.222	-.244	-3.217	0.245	0.5	1.1	-0.1	0.9	A-	
1401	685048	K	K	145	.924	.021	.924	.041	.014	.000	.541	-.270	.541	-.371	-.265	-4.334	0.336	-1.1	0.7	-1.7	0.3	A-	
1402	684986	K	K	145	.938	.021	.938	.007	.028	.007	.314	-.259	.314	-.168	-.203	-4.579	0.365	0.0	1.0	0.8	1.4	A-	
1403	684127	K	K	148	.831	.074	.054	.831	.041	.000	.415	-.321	-.218	.415	-.112	-3.006	0.236	-0.2	1.0	-1.0	0.7	A-	
1404	684125	K	K	148	.878	.088	.878	.014	.020	.000	.423	-.291	.423	-.157	-.268	-3.443	0.266	-0.6	0.9	-0.8	0.7	A+	
1405	683783	K	K	148	.730	.101	.730	.135	.034	.000	.569	-.302	.569	-.363	-.208	-2.298	0.203	-1.8	0.8	-1.7	0.7	A+	
1406	685022	K	K	142	.817	.014	.007	.162	.817	.000	.267	-.234	.046	-.216	.267	-2.816	0.235	1.0	1.1	0.1	1.0	A+	
1407	683787	K	K	142	.782	.782	.049	.120	.049	.000	.460	.460	-.396	-.208	-.171	-2.556	0.222	-0.4	0.9	-1.1	0.8	A-	
1408	685023	K	K	142	.789	.028	.162	.021	.789	.000	.595	-.253	-.449	-.247	.595	-2.605	0.224	-1.9	0.8	-1.9	0.6	A+	
1409	685001	K	K	142	.866	.077	.866	.028	.028	.000	.482	-.413	.482	-.084	-.240	-3.380	0.266	-0.8	0.9	-1.2	0.6	A+	
1410	683782	K	K	142	.866	.056	.063	.014	.866	.000	.544	-.350	-.385	-.091	.544	-3.380	0.266	-1.1	0.8	-1.6	0.5	A-	
1411	684985	K	K	142	.894	.049	.035	.021	.894	.000	.548	-.376	-.293	-.228	.548	-3.689	0.291	-1.2	0.8	-1.6	0.4	A-	
1412	684992	K	K	142	.838	.049	.838	.056	.056	.000	.574	-.188	.574	-.344	-.396	-3.117	0.248	-1.7	0.8	-1.1	0.7	A-	
1413	684305	K	K	141	.922	.043	.035	.922	.000	.000	.396	-.335	-.209	.396	.000	-4.436	0.340	-0.6	0.9	0.0	0.9	A+	
1414	683784	K	K	141	.709	.099	.149	.043	.709	.000	.450	-.250	-.297	-.120	.450	-2.450	0.214	0.7	1.1	0.1	1.0	A+	
1415	685028	K	K	141	.830	.085	.830	.043	.043	.000	.551	-.272	.551	-.289	-.361	-3.354	0.252	-1.1	0.8	-1.3	0.6	A-	
1416	683786	K	K	144	.847	.007	.118	.021	.847	.007	.449	-.179	-.326	-.249	.449	-3.265	0.253	-0.5	0.9	-0.6	0.8	A+	
1417	683780	K	K	144	.750	.014	.201	.750	.035	.000	.429	-.138	-.278	.429	-.316	-2.519	0.213	-0.1	1.0	0.1	1.0	A+	
1418	685013	K	K	144	.813	.014	.063	.111	.813	.000	.465	-.151	-.304	-.287	.465	-2.968	0.235	-0.3	1.0	-0.9	0.8	B+	
1419	685027	K	K	142	.979	.979	.014	.007	.000	.000	.232	.232	-.220	-.089	.000	-5.685	0.595	0.1	1.0	-0.6	0.4	A+	
1420	684128	K	K	142	.747	.746	.056	.169	.028	.000	.326	.326	-.361	-.060	-.218	-2.562	0.216	1.2	1.1	1.1	1.2	A+	
1421	685049	K	K	142	.817	.049	.063	.063	.817	.007	.591	-.299	-.321	-.301	.591	-3.076	0.239	-1.5	0.8	-1.9	0.6	A-	
1422	684991	K	K	142	.768	.162	.768	.035	.021	.014	.450	-.262	.450	-.203	-.232	-2.706	0.222	-0.2	1.0	0.1	1.0	A-	
1423	685024	K	K	143	.916	.916	.049	.014	.021	.000	.480	.480	-.389	-.157	-.216	-4.106	0.322	-0.7	0.9	-1.6	0.4	A+	
1424	684124	K	K	143	.301	.301	.161	.294	.238	.007	.365	.365	-.369	-.101	.065	0.047	0.206	0.9	1.1	1.0	1.2	A-	
1425	684994	K	K	143	.846	.070	.014	.063	.846	.007	.568	-.313	-.191	-.366	.568	-3.297	0.256	-1.6	0.8	-1.3	0.6	A+	
1426	684130	K	K	137	.898	.036	.898	.022	.044	.000	.465	-.301	.465	-.218	-.257	-3.862	0.306	-0.3	0.9	-1.1	0.6	A-	
1427	684989	K	K	137	.905	.044	.007	.905	.036	.007	.587	-.453	-.220	.587	-.266	-3.959	0.315	-1.3	0.7	-1.8	0.4	A-	
1428	684858	1	1	139	.856	.856	.043	.022	.079	.000	.317	.317	-.152	-.086	-.252	-3.229	0.261	0.8	1.1	-0.4	0.9	A+	
1429	685015	1	1	139	.453	.065	.453	.446	.036	.000	.306	-.269	.306	-.108	-.174	-0.823	0.190	2.0	1.2	1.4	1.2	A+	
1430	684835	1	1	139	.576	.576	.129	.108	.187	.000	.531	.531	-.181	-.230	-.334	-1.436	0.191	-1.4	0.9	-1.4	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1431	684782	1	1	139	.612	.144	.612	.137	.101	.007	.553	-.283	.553	-.248	-.227	-1.621	0.194	-1.6	0.9	-2.0	0.8	A-	
1432	684980	1	1	139	.662	.029	.043	.259	.662	.007	.433	-.212	-.272	-.222	.433	-1.890	0.199	0.0	1.0	0.2	1.0	A+	
1433	684972	1	1	139	.684	.683	.014	.259	.036	.007	.365	.365	-.193	-.198	-.231	-2.011	0.202	0.8	1.1	0.3	1.0	A+	
1434	684969	1	1	139	.734	.115	.072	.734	.065	.014	.572	-.386	-.428	.572	-.015	-2.310	0.212	-1.8	0.8	-1.6	0.7	A-	
1435	684854	1	1	139	.863	.065	.863	.022	.043	.007	.537	-.251	.537	-.285	-.318	-3.298	0.267	-1.3	0.8	-1.4	0.6	A+	
1436	683757	1	1	141	.546	.248	.142	.064	.546	.000	.380	-.272	-.123	-.118	.380	-1.122	0.187	0.7	1.0	0.0	1.0	A+	
1437	685018	1	1	141	.716	.035	.716	.142	.092	.014	.330	-.100	.330	-.100	-.310	-2.020	0.205	0.8	1.1	0.3	1.0	A-	
1438	684850	1	1	141	.617	.199	.617	.078	.099	.007	.434	-.294	.434	-.137	-.164	-1.477	0.191	-0.1	1.0	-0.7	0.9	A+	
1439	685014	1	1	141	.731	.730	.057	.085	.128	.000	.249	.249	-.224	-.212	.001	-2.105	0.208	1.5	1.2	1.2	1.2	A-	
1440	685025	1	1	141	.752	.142	.752	.057	.050	.000	.407	-.281	.407	-.147	-.202	-2.238	0.213	-0.2	1.0	1.4	1.3	B-	
1441	684843	1	1	141	.723	.723	.092	.092	.092	.000	.428	.428	-.108	-.243	-.310	-2.063	0.206	-0.1	1.0	-0.7	0.9	A-	
1442	684545	1	1	141	.837	.837	.078	.071	.007	.007	.478	.478	-.288	-.295	-.171	-2.857	0.245	-0.5	0.9	-1.3	0.7	A-	
1443	684771	1	1	141	.823	.057	.085	.021	.823	.014	.623	-.336	-.444	-.187	.623	-2.740	0.238	-1.8	0.8	-2.2	0.5	A+	
1444	684840	1	1	141	.617	.135	.149	.617	.092	.007	.517	-.416	-.152	.517	-.159	-1.477	0.191	-1.4	0.9	-1.3	0.9	A+	
1445	685037	1	1	140	.886	.036	.014	.886	.057	.007	.606	-.386	-.257	.606	-.358	-3.237	0.285	-1.3	0.8	-2.0	0.5	A+	
1446	684976	1	1	140	.771	.086	.086	.057	.771	.000	.321	-.139	-.195	-.177	.321	-2.261	0.220	0.8	1.1	0.3	1.0	A+	
1447	684857	1	1	140	.771	.107	.036	.086	.771	.000	.500	-.327	-.311	-.183	.500	-2.261	0.220	-0.8	0.9	-0.3	0.9	A+	
1448	685039	1	1	140	.807	.807	.121	.036	.036	.000	.453	.453	-.232	-.245	-.311	-2.517	0.233	-0.4	0.9	-0.7	0.9	A+	
1449	685026	1	1	140	.857	.057	.064	.857	.014	.007	.504	-.328	-.283	.504	-.271	-2.941	0.261	-0.8	0.9	-1.0	0.7	A-	
1450	685148	1	1	140	.671	.079	.064	.186	.671	.000	.401	-.137	-.369	-.157	.401	-1.658	0.198	0.2	1.0	-0.4	0.9	A+	
1451	684770	1	1	140	.479	.386	.064	.479	.071	.000	.349	-.015	-.326	.349	-.339	-0.698	0.185	0.5	1.0	0.5	1.0	A+	
1452	683758	1	1	140	.864	.864	.071	.036	.029	.000	.499	.499	-.319	-.283	-.218	-3.010	0.266	-0.6	0.9	-1.3	0.7	A-	
1453	684116	1	1	140	.879	.071	.879	.029	.021	.000	.446	-.319	.446	-.250	-.152	-3.158	0.278	-0.4	0.9	-1.0	0.7	A-	
1454	685057	1	1	140	.864	.864	.029	.021	.079	.007	.535	.535	-.187	-.321	-.326	-3.010	0.266	-1.0	0.8	-1.3	0.7	A+	
1455	685040	1	1	143	.664	.084	.664	.070	.182	.000	.248	-.144	.248	-.302	-.001	-1.874	0.194	2.0	1.2	1.3	1.2	A-	
1456	684546	1	1	143	.762	.762	.042	.182	.014	.000	.099	.099	-.002	-.107	-.006	-2.451	0.214	2.4	1.3	2.2	1.4	A+	
1457	685041	1	1	143	.755	.112	.063	.063	.755	.007	.523	-.313	-.184	-.265	.523	-2.406	0.212	-1.3	0.9	-1.2	0.8	A-	
1458	684296	1	1	143	.238	.238	.175	.266	.315	.007	.082	.082	-.084	.168	-.129	0.330	0.211	1.8	1.2	2.8	1.6	A-	
1459	684542	1	1	143	.636	.084	.636	.105	.168	.007	.379	-.368	.379	-.243	.032	-1.726	0.191	0.5	1.0	0.0	1.0	A+	
1460	684110	1	1	143	.643	.189	.112	.049	.643	.007	.665	-.426	-.204	-.325	.665	-1.762	0.192	-3.5	0.7	-3.2	0.7	A+	
1461	683810	1	1	143	.734	.175	.734	.049	.035	.007	.491	-.317	.491	-.143	-.263	-2.274	0.207	-0.8	0.9	-1.0	0.8	A-	
1462	684547	1	1	143	.476	.392	.105	.014	.476	.014	.264	-.105	-.184	-.131	.264	-0.931	0.184	2.2	1.2	2.2	1.2	A+	
1463	684295	1	1	145	.352	.469	.145	.352	.034	.000	.214	-.035	-.130	.214	-.213	-0.031	0.197	2.5	1.2	3.8	1.7	A+	
1464	685021	1	1	145	.766	.152	.766	.062	.021	.000	.496	-.389	.496	-.230	-.106	-2.352	0.221	-0.3	1.0	-0.7	0.8	A+	
1465	685056	1	1	145	.835	.083	.041	.034	.834	.007	.573	-.347	-.350	-.285	.573	-2.895	0.248	-1.4	0.8	-1.1	0.7	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1466	684772	1	1	145	.972	.972	.007	.000	.021	.000	.299	.299	-.214	.000	-.219	-5.107	0.522	0.0	1.0	-0.8	0.3	A+	
1467	684970	1	1	145	.841	.062	.841	.062	.034	.000	.398	-.248	.398	-.157	-.261	-2.957	0.251	0.2	1.0	0.3	1.1	A-	
1468	685059	1	1	145	.890	.028	.028	.055	.890	.000	.596	-.317	-.361	-.332	.596	-3.461	0.288	-1.6	0.7	-1.7	0.4	A-	
1469	684549	1	1	145	.841	.841	.041	.117	.000	.000	.306	.306	-.218	-.213	.000	-2.957	0.251	1.1	1.2	0.3	1.1	A+	
1470	685055	1	1	145	.772	.069	.014	.138	.772	.007	.581	-.301	-.166	-.442	.581	-2.401	0.223	-1.4	0.8	-1.5	0.7	A+	
1471	684841	1	1	145	.635	.090	.634	.145	.131	.000	.533	-.289	.533	-.313	-.191	-1.540	0.197	-0.8	0.9	-1.2	0.8	A+	
1472	685044	1	1	145	.862	.862	.083	.028	.028	.000	.575	.575	-.369	-.329	-.262	-3.543	0.266	-1.4	0.8	-1.5	0.6	A-	
1473	685053	1	1	145	.903	.034	.041	.903	.014	.007	.298	.002	-.363	.298	-.197	-4.027	0.305	0.2	1.0	1.3	1.6	A-	
1474	684975	1	1	145	.676	.676	.048	.028	.248	.000	.339	.339	-.246	-.136	-.194	-2.156	0.202	1.8	1.2	1.3	1.2	A+	
1475	685034	1	1	145	.828	.828	.021	.069	.083	.000	.515	.515	-.226	-.316	-.299	-3.217	0.245	-0.7	0.9	-1.0	0.7	A-	
1476	684995	1	1	145	.931	.028	.021	.931	.021	.000	.554	-.388	-.270	.554	-.270	-4.451	0.349	-1.2	0.7	-1.8	0.3	A-	
1477	684844	1	1	145	.566	.076	.566	.145	.214	.000	.509	-.073	.509	-.292	-.318	-1.547	0.190	-0.6	1.0	-1.0	0.9	A-	
1478	685032	1	1	145	.883	.883	.055	.041	.021	.000	.571	.571	-.361	-.315	-.270	-3.768	0.283	-1.2	0.8	-1.7	0.4	A+	
1479	684977	1	1	145	.572	.097	.124	.207	.572	.000	.344	-.142	-.397	.007	.344	-1.583	0.191	1.8	1.2	1.8	1.2	B+	
1480	683763	1	1	145	.841	.055	.028	.841	.076	.000	.613	-.368	-.242	.613	-.379	-3.341	0.252	-1.6	0.8	-2.0	0.5	A+	
1481	683761	1	1	148	.710	.209	.020	.709	.054	.007	.391	-.388	-.301	.391	.133	-2.176	0.199	0.0	1.0	1.2	1.2	A-	
1482	683748	1	1	148	.885	.885	.061	.020	.034	.000	.410	.410	-.244	-.279	-.182	-3.515	0.273	-0.6	0.9	-0.6	0.7	A+	
1483	684112	1	1	148	.777	.101	.054	.068	.777	.000	.334	-.236	-.103	-.177	.334	-2.602	0.215	0.4	1.1	0.3	1.1	A+	
1484	685052	1	1	148	.966	.966	.007	.020	.007	.000	.267	.267	-.017	-.312	-.036	-4.925	0.464	-0.1	0.9	-0.5	0.6	A+	
1485	684548	1	1	148	.520	.291	.041	.520	.142	.007	.379	-.246	-.314	.379	-.066	-1.175	0.184	1.1	1.1	0.6	1.1	A+	
1486	684308	1	1	148	.493	.493	.189	.291	.027	.000	.209	.209	-.314	.057	-.044	-1.040	0.184	3.0	1.2	3.7	1.4	A+	
1487	684114	1	1	148	.926	.926	.034	.034	.007	.000	.367	.367	-.259	-.199	-.166	-4.043	0.326	-0.4	0.9	-0.8	0.6	A+	
1488	683816	1	1	142	.909	.028	.908	.021	.042	.000	.375	-.314	.375	-.130	-.186	-3.733	0.308	-0.2	0.9	-0.8	0.7	A+	
1489	684783	1	1	142	.697	.190	.697	.042	.070	.000	.566	-.490	.566	-.228	-.086	-2.025	0.201	-1.8	0.8	-1.6	0.8	A+	
1490	685051	1	1	142	.901	.901	.042	.035	.021	.000	.451	.451	-.345	-.160	-.247	-3.641	0.299	-0.6	0.9	-1.3	0.5	A-	
1491	684773	1	1	142	.930	.056	.930	.007	.007	.000	.310	-.246	.310	-.095	-.175	-4.051	0.345	0.1	1.0	-0.5	0.7	A-	
1492	684298	1	1	142	.662	.120	.127	.070	.662	.021	.548	-.358	-.287	-.126	.548	-1.828	0.196	-1.6	0.9	-1.4	0.8	A+	
1493	685054	1	1	142	.627	.077	.627	.225	.070	.000	.235	-.200	.235	-.132	-.021	-1.639	0.192	2.6	1.2	2.6	1.4	A+	
1494	684134	1	1	142	.782	.162	.782	.021	.035	.000	.546	-.367	.546	-.282	-.270	-2.556	0.222	-1.4	0.8	-1.4	0.7	A+	
1495	684774	1	1	142	.909	.908	.028	.028	.035	.000	.491	.491	-.242	-.202	-.370	-3.733	0.308	-0.8	0.8	-1.5	0.5	A-	
1496	684563	1	1	142	.585	.197	.585	.014	.204	.000	.338	-.283	.338	-.077	-.111	-1.421	0.189	1.4	1.1	0.5	1.1	A+	
1497	685017	1	1	142	.451	.183	.345	.451	.021	.000	.138	-.279	.149	.138	-.217	-0.814	0.192	4.9	1.4	5.1	1.8	A+	
1498	684855	1	1	142	.838	.838	.035	.028	.092	.007	.446	.446	-.203	-.212	-.295	-3.117	0.248	-0.4	0.9	-0.8	0.7	A-	
1499	684851	1	1	142	.655	.655	.092	.141	.113	.000	.564	.564	-.342	-.170	-.349	-1.889	0.198	-1.6	0.9	-1.6	0.8	A+	
1500	684543	1	1	142	.866	.049	.866	.063	.014	.007	.340	-.195	.340	-.236	-.130	-3.380	0.266	0.2	1.0	0.1	1.0	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1501	684849	1	1	142	.507	.507	.239	.085	.169	.000	.239	.239	.050	-.259	-.183	-1.107	0.191	3.4	1.3	3.0	1.4	A+	
1502	685058	1	1	142	.810	.810	.042	.127	.021	.000	.339	.339	-.258	-.155	-.207	-2.885	0.234	0.6	1.1	0.0	1.0	B-	
1503	685035	1	1	142	.754	.183	.754	.042	.021	.000	.545	-.354	.545	-.326	-.228	-2.482	0.216	-1.3	0.9	-1.5	0.7	A-	
1504	684979	1	1	142	.838	.077	.838	.049	.035	.000	.463	-.340	.463	-.195	-.203	-3.117	0.248	-0.6	0.9	-0.9	0.7	A+	
1505	684544	1	1	141	.879	.879	.064	.021	.035	.000	.493	.493	-.256	-.257	-.330	-3.857	0.286	-0.8	0.9	-1.0	0.6	A+	
1506	685036	1	1	141	.745	.213	.028	.014	.745	.000	.607	-.443	-.343	-.224	.607	-2.688	0.222	-1.6	0.8	-1.6	0.7	A+	
1507	684852	1	1	141	.645	.106	.645	.135	.113	.000	.536	-.324	.536	-.274	-.199	-2.055	0.205	-0.3	1.0	-0.6	0.9	A-	
1508	685020	1	1	141	.553	.035	.326	.085	.553	.000	.375	-.287	-.215	-.117	.375	-1.527	0.199	2.4	1.2	3.5	1.6	A+	
1509	683760	1	1	141	.674	.674	.043	.184	.099	.000	.516	.516	-.237	-.256	-.316	-2.227	0.209	-0.1	1.0	-0.5	0.9	A+	
1510	684561	1	1	141	.738	.149	.064	.738	.043	.007	.617	-.359	-.321	.617	-.283	-2.639	0.220	-1.8	0.8	-1.2	0.7	A+	
1511	684973	1	1	141	.667	.667	.092	.085	.149	.007	.491	.491	-.140	-.244	-.304	-2.183	0.208	0.3	1.0	-0.1	1.0	A-	
1512	683764	1	1	141	.688	.688	.106	.064	.142	.000	.578	.578	-.465	-.358	-.106	-2.315	0.211	-1.2	0.9	0.5	1.1	A+	
1513	685033	1	1	141	.603	.135	.603	.064	.199	.000	.471	-.336	.471	-.326	-.091	-1.808	0.201	0.8	1.1	0.4	1.1	A+	
1514	684847	1	1	141	.518	.092	.170	.220	.518	.000	.566	-.199	-.523	-.069	.566	-1.330	0.198	-0.9	0.9	-0.7	0.9	A+	
1515	683815	1	1	144	.764	.139	.035	.063	.764	.000	.523	-.289	-.308	-.273	.523	-2.612	0.217	-0.8	0.9	-1.4	0.7	B-	
1516	685031	1	1	144	.507	.021	.076	.507	.396	.000	.284	-.302	-.185	.284	-.102	-1.187	0.186	2.4	1.2	2.3	1.3	A-	
1517	684115	1	1	144	.569	.188	.076	.569	.167	.000	.532	-.322	-.349	.532	-.120	-1.501	0.188	-1.5	0.9	-1.4	0.9	A-	
1518	684786	1	1	144	.618	.021	.618	.000	.361	.000	.293	-.239	.293	.000	-.226	-1.753	0.192	2.1	1.2	1.1	1.1	A+	
1519	684117	1	1	144	.889	.889	.042	.049	.021	.000	.566	.566	-.326	-.365	-.239	-3.696	0.286	-1.3	0.8	-1.7	0.5	B+	
1520	684996	1	1	144	.826	.063	.056	.826	.056	.000	.584	-.354	-.342	.584	-.250	-3.082	0.241	-1.5	0.8	-1.5	0.6	A-	
1521	685038	1	1	144	.722	.194	.722	.069	.007	.007	.315	-.058	.315	-.342	-.234	-2.342	0.207	1.2	1.1	1.1	1.2	A-	
1522	685043	1	1	144	.799	.799	.076	.104	.021	.000	.504	.504	-.179	-.375	-.281	-2.861	0.229	-0.7	0.9	-1.1	0.8	A+	
1523	685016	1	1	142	.894	.035	.894	.014	.042	.014	.313	-.296	.313	-.180	-.044	-3.836	0.293	0.1	1.0	0.5	1.2	A+	
1524	684113	1	1	142	.901	.063	.021	.014	.901	.000	.477	-.359	-.178	-.246	.477	-3.924	0.301	-0.8	0.8	-1.3	0.5	A-	
1525	683811	1	1	142	.958	.007	.021	.958	.014	.000	.378	-.145	-.254	.378	-.233	-4.930	0.432	-0.3	0.9	-1.2	0.3	A+	
1526	684108	1	1	142	.845	.056	.845	.049	.042	.007	.454	-.184	.454	-.234	-.308	-3.319	0.254	-0.3	0.9	-1.0	0.7	A+	
1527	684560	1	1	142	.528	.359	.070	.028	.528	.014	.444	-.395	-.004	-.133	.444	-1.324	0.191	0.6	1.0	-0.1	1.0	A+	
1528	684307	1	1	142	.183	.500	.268	.183	.049	.000	.190	-.152	.106	.190	-.205	0.693	0.239	1.0	1.1	2.2	1.8	A+	
1529	684974	1	1	142	.817	.070	.817	.049	.056	.007	.615	-.316	.615	-.278	-.374	-3.076	0.239	-2.0	0.8	-2.0	0.5	A-	
1530	683756	1	1	142	.465	.127	.162	.239	.465	.007	.538	-.347	-.169	-.188	.538	-0.997	0.191	-1.4	0.9	-0.7	0.9	A+	
1531	685019	1	1	143	.755	.133	.755	.070	.042	.000	.437	-.398	.437	-.160	-.061	-2.568	0.222	0.4	1.1	0.0	1.0	A+	
1532	685157	1	1	143	.825	.825	.063	.056	.056	.000	.483	.483	-.382	-.279	-.115	-3.108	0.246	-0.6	0.9	-0.4	0.9	A-	
1533	684562	1	1	143	.699	.091	.112	.699	.098	.000	.529	-.399	-.194	.529	-.225	-2.196	0.210	-0.3	1.0	-1.1	0.8	A-	
1534	684971	1	1	143	.839	.063	.839	.035	.063	.000	.574	-.316	.574	-.225	-.382	-3.233	0.253	-1.4	0.8	-1.8	0.5	A+	
1535	683765	1	1	143	.797	.049	.070	.077	.797	.007	.558	-.283	-.376	-.200	.558	-2.879	0.234	-1.6	0.8	0.4	1.1	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1536	684856	1	1	143	.790	.049	.790	.049	.105	.007	.453	-.364	.453	-.233	-.136	-2.824	0.232	0.0	1.0	0.1	1.0	A+	
1537	685050	1	1	137	.898	.898	.044	.036	.022	.000	.481	.481	-.501	-.094	-.174	-3.862	0.306	-0.8	0.8	-0.1	0.9	A+	
1538	684111	1	1	137	.723	.029	.073	.723	.175	.000	.323	-.071	-.229	.323	-.192	-2.358	0.216	1.4	1.2	1.7	1.3	A-	
1539	684978	1	1	137	.898	.015	.898	.015	.073	.000	.539	-.177	.539	-.298	-.409	-3.862	0.306	-1.1	0.8	-1.4	0.5	A-	
1540	683755	1	1	137	.818	.818	.058	.058	.066	.000	.559	.559	-.466	-.136	-.302	-3.043	0.247	-1.2	0.8	-0.9	0.8	A-	
1541	683759	1	1	137	.759	.066	.044	.759	.131	.000	.444	-.081	-.343	.444	-.295	-2.601	0.225	0.1	1.0	0.4	1.1	A+	
1542	684848	1	1	137	.438	.139	.438	.153	.270	.000	.390	-.389	.390	-.150	-.011	-0.824	0.192	-0.2	1.0	2.3	1.3	A+	
1543	683762	1	1	137	.876	.876	.058	.051	.015	.000	.636	.636	-.459	-.360	-.191	-3.601	0.284	-1.7	0.7	-2.1	0.4	A+	
1544	684109	1	1	137	.788	.095	.044	.788	.073	.000	.680	-.488	-.335	.680	-.254	-2.812	0.235	-2.3	0.7	-2.5	0.5	A-	
1545	685155	1	1	137	.642	.109	.080	.168	.642	.000	.566	-.392	-.288	-.189	.566	-1.882	0.202	-1.4	0.9	-0.7	0.9	A-	
1546	684899	2	2	139	.669	.173	.669	.079	.079	.000	.442	-.316	.442	-.246	-.082	-1.930	0.200	0.0	1.0	-0.4	0.9	A+	
1547	684902	2	2	139	.770	.770	.043	.101	.086	.000	.499	.499	-.130	-.298	-.335	-2.544	0.221	-1.0	0.9	0.1	1.0	A-	
1548	684914	2	2	139	.309	.180	.252	.259	.309	.000	.280	-.156	-.055	-.104	.280	-0.064	0.203	0.9	1.1	2.6	1.5	A-	
1549	684896	2	2	139	.676	.676	.079	.151	.086	.007	.496	.496	-.393	-.183	-.155	-1.970	0.201	-0.7	0.9	-1.2	0.8	A+	
1550	684879	2	3	139	.338	.129	.165	.338	.353	.014	.031	-.200	-.005	.031	.136	-0.225	0.199	4.4	1.4	3.7	1.7	A-	
1551	684920	2	2	139	.518	.223	.518	.158	.094	.007	.450	-.211	.450	-.314	-.019	-1.147	0.189	-0.3	1.0	-0.1	1.0	A+	
1552	683777	2	2	139	.655	.094	.165	.079	.655	.007	.560	-.339	-.177	-.314	.560	-1.851	0.198	-1.7	0.9	-1.7	0.8	A+	
1553	684892	2	2	139	.504	.245	.122	.504	.108	.022	.505	-.191	-.274	.505	-.200	-1.075	0.189	-1.3	0.9	-0.1	1.0	A+	
1554	684845	2	2	141	.603	.106	.092	.199	.603	.000	.599	-.416	-.159	-.298	.599	-1.405	0.190	-2.6	0.8	-2.3	0.8	A+	
1555	683771	2	2	141	.809	.809	.035	.064	.092	.000	.447	.447	-.327	-.198	-.232	-2.630	0.232	-0.5	0.9	-0.7	0.8	A-	
1556	683776	2	2	141	.560	.348	.057	.560	.028	.007	-.006	.263	-.259	-.006	-.356	-1.192	0.187	5.7	1.5	4.9	1.6	B-	
1557	684917	2	2	141	.787	.085	.007	.113	.787	.007	.523	-.444	-.056	-.281	.523	-2.475	0.223	-1.1	0.9	-0.8	0.8	A-	
1558	684982	2	2	141	.752	.135	.752	.078	.035	.000	.501	-.221	.501	-.306	-.319	-2.238	0.213	-1.0	0.9	-0.7	0.9	A-	
1559	684120	2	2	141	.688	.156	.064	.688	.092	.000	.529	-.166	-.350	.529	-.344	-1.857	0.200	-1.3	0.9	-1.3	0.8	A+	
1560	684928	2	2	141	.674	.241	.028	.043	.674	.014	.412	-.215	-.307	-.251	.412	-1.778	0.197	0.1	1.0	0.0	1.0	A-	
1561	684886	2	2	141	.731	.142	.730	.078	.043	.007	.417	-.276	.417	-.318	-.002	-2.105	0.208	-0.1	1.0	-0.3	1.0	A+	
1562	684135	2	2	140	.586	.129	.071	.586	.214	.000	.476	-.415	-.258	.476	-.071	-1.215	0.188	-1.0	0.9	-0.7	0.9	A+	
1563	684900	2	2	140	.686	.107	.686	.093	.114	.000	.306	-.072	.306	-.329	-.077	-1.737	0.200	1.1	1.1	2.0	1.3	A+	
1564	684912	2	2	140	.836	.093	.836	.029	.043	.000	.517	-.341	.517	-.271	-.235	-2.748	0.247	-0.8	0.9	-1.5	0.7	B-	
1565	684302	2	2	140	.686	.686	.086	.057	.171	.000	.310	.310	-.070	-.192	-.211	-1.737	0.200	1.1	1.1	0.9	1.1	A+	
1566	684877	2	2	140	.493	.121	.300	.079	.493	.007	.400	-.333	-.068	-.228	.400	-0.766	0.185	-0.1	1.0	0.2	1.0	A+	
1567	684890	2	2	140	.500	.179	.500	.293	.029	.000	.245	-.337	.245	.044	-.081	-0.800	0.185	2.3	1.2	2.1	1.2	A+	
1568	685153	2	2	140	.550	.300	.057	.093	.550	.000	.404	-.221	-.238	-.153	.404	-1.040	0.186	0.0	1.0	-0.1	1.0	B-	
1569	683775	2	2	143	.525	.119	.266	.091	.524	.000	.346	-.106	-.187	-.194	.346	-1.168	0.184	0.9	1.1	1.1	1.1	A-	
1570	684779	2	2	143	.916	.042	.035	.916	.007	.000	.233	-.271	.022	.233	-.171	-3.863	0.318	0.1	1.0	0.8	1.3	A+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1571	684118	2	2	143	.839	.084	.839	.042	.028	.007	.562	-.386	.562	-.271	-.167	-3.023	0.245	-1.4	0.8	-1.8	0.6	A+	
1572	684299	2	2	143	.643	.252	.049	.049	.643	.007	.518	-.291	-.242	-.242	.518	-1.762	0.192	-1.3	0.9	-1.5	0.8	A+	
1573	684787	2	2	143	.713	.084	.042	.713	.154	.007	.422	-.174	-.287	.422	-.188	-2.149	0.202	-0.2	1.0	0.1	1.0	A-	
1574	683767	2	2	143	.629	.175	.056	.629	.126	.014	.492	-.317	-.339	.492	-.067	-1.689	0.190	-1.1	0.9	-0.5	0.9	B+	
1575	684911	2	2	143	.818	.818	.070	.042	.056	.014	.412	.412	-.289	.015	-.318	-2.851	0.235	-0.1	1.0	-0.7	0.8	A+	
1576	683814	2	2	143	.490	.273	.168	.063	.490	.007	.544	-.247	-.284	-.157	.544	-0.999	0.184	-2.5	0.8	-1.3	0.9	A-	
1577	684776	2	2	143	.678	.210	.678	.091	.014	.007	.575	-.434	.575	-.200	-.145	-1.950	0.196	-1.9	0.8	-2.0	0.8	A+	
1578	684309	2	2	145	.683	.186	.683	.055	.069	.007	.370	-.225	.370	-.255	-.058	-1.819	0.203	1.4	1.1	0.9	1.2	A-	
1579	685151	2	2	145	.731	.731	.076	.131	.062	.000	.439	.439	-.255	-.317	-.085	-2.119	0.212	0.3	1.0	1.0	1.2	A+	
1580	685046	2	2	145	.828	.034	.110	.828	.021	.007	.615	-.333	-.456	.615	-.116	-2.834	0.244	-1.6	0.8	-1.9	0.5	A-	
1581	684930	2	2	145	.414	.172	.414	.090	.324	.000	.282	-.126	.282	-.074	-.150	-0.369	0.192	1.9	1.2	3.7	1.6	A-	
1582	684916	2	2	145	.793	.793	.097	.083	.028	.000	.351	.351	-.220	-.288	.014	-2.555	0.230	1.1	1.1	-0.1	0.9	A-	
1583	684842	2	2	145	.648	.110	.124	.648	.117	.000	.513	-.316	-.306	.513	-.140	-1.618	0.198	-0.5	1.0	-0.8	0.9	A+	
1584	684904	2	2	145	.607	.069	.138	.607	.186	.000	.539	-.312	-.319	.539	-.191	-1.388	0.194	-0.8	0.9	-0.8	0.9	A+	
1585	683769	2	2	145	.635	.634	.159	.103	.103	.000	.394	.394	-.350	-.166	-.036	-1.540	0.197	1.2	1.1	1.2	1.2	A+	
1586	684132	2	2	145	.710	.124	.097	.710	.069	.000	.470	-.243	-.277	.470	-.203	-2.365	0.208	0.0	1.0	1.1	1.2	A+	
1587	684923	2	2	145	.462	.152	.179	.207	.462	.000	.462	-.139	-.246	-.213	.462	-1.013	0.188	0.0	1.0	-0.5	0.9	A-	
1588	684983	2	2	145	.862	.069	.862	.048	.021	.000	.432	-.191	.432	-.276	-.293	-3.543	0.266	-0.1	1.0	-0.3	0.9	A-	
1589	684121	2	2	145	.910	.910	.028	.028	.034	.000	.587	.587	-.291	-.320	-.372	-4.123	0.314	-1.5	0.7	-1.9	0.3	A-	
1590	684981	2	2	145	.807	.131	.034	.028	.807	.000	.498	-.321	-.233	-.281	.498	-3.044	0.236	-0.5	0.9	0.2	1.0	A-	
1591	684903	2	2	145	.497	.179	.200	.497	.124	.000	.433	-.316	-.260	.433	.027	-1.190	0.188	0.6	1.0	0.4	1.0	A-	
1592	684929	2	2	145	.407	.234	.200	.152	.407	.007	.262	-.065	-.165	-.081	.262	-0.727	0.190	2.3	1.2	2.8	1.4	B+	
1593	684303	2	2	145	.455	.455	.083	.414	.048	.000	.382	.382	-.317	-.183	-.061	-0.978	0.188	1.1	1.1	1.4	1.2	A+	
1594	684564	2	2	148	.466	.142	.466	.101	.291	.000	.426	-.360	.426	-.191	-.065	-0.905	0.184	0.1	1.0	0.6	1.1	A-	
1595	684552	2	2	148	.703	.115	.128	.047	.703	.007	.432	-.386	-.015	-.291	.432	-2.137	0.198	-0.2	1.0	1.0	1.2	A-	
1596	684887	2	2	148	.743	.081	.743	.122	.054	.000	.534	-.218	.534	-.343	-.272	-2.381	0.206	-1.3	0.9	-1.4	0.7	A+	
1597	684895	2	2	148	.426	.203	.074	.297	.426	.000	.348	-.127	-.344	-.067	.348	-0.700	0.186	1.4	1.1	1.6	1.2	A-	
1598	684556	2	2	148	.770	.162	.770	.041	.027	.000	.342	-.215	.342	-.244	-.100	-2.557	0.213	0.5	1.1	0.2	1.0	A-	
1599	683812	2	2	148	.696	.696	.216	.027	.061	.000	.319	.319	-.168	-.251	-.155	-2.098	0.197	1.1	1.1	1.0	1.2	A-	
1600	684891	2	2	148	.662	.176	.662	.061	.101	.000	.584	-.421	.584	-.193	-.231	-1.908	0.192	-2.2	0.8	-1.9	0.7	A-	
1601	683773	2	2	148	.777	.122	.047	.054	.777	.000	.503	-.306	-.161	-.333	.503	-2.602	0.215	-1.3	0.9	-0.6	0.9	A-	
1602	684781	2	2	148	.473	.095	.054	.473	.378	.000	.251	-.281	-.252	.251	.028	-0.939	0.184	2.8	1.2	3.3	1.4	A-	
1603	684878	2	2	148	.453	.284	.128	.135	.453	.000	.350	-.127	-.148	-.198	.350	-0.837	0.185	1.5	1.1	1.0	1.1	A-	
1604	683774	2	2	142	.655	.655	.070	.099	.176	.000	.212	.212	-.053	-.355	.050	-1.789	0.195	2.6	1.2	3.0	1.5	A+	
1605	684889	2	2	142	.627	.028	.077	.627	.268	.000	.256	.002	-.169	.256	-.179	-1.639	0.192	2.3	1.2	2.7	1.4	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1606	684300	2	2	142	.394	.296	.148	.394	.162	.000	.211	-.162	.000	.211	-.079	-0.466	0.191	2.5	1.2	3.0	1.4	A+	
1607	683768	2	2	142	.472	.310	.113	.472	.106	.000	.493	-.081	-.364	.493	-.305	-0.858	0.187	-0.8	0.9	-1.1	0.9	A+	
1608	684881	2	2	142	.514	.155	.113	.514	.197	.021	.475	-.431	-.156	.475	-.055	-1.068	0.187	-0.5	1.0	-0.8	0.9	A-	
1609	684888	2	2	142	.725	.725	.141	.099	.035	.000	.523	.523	-.349	-.169	-.334	-2.191	0.207	-1.2	0.9	-1.2	0.8	A-	
1610	683813	2	2	142	.838	.070	.056	.035	.838	.000	.486	-.362	-.180	-.242	.486	-2.989	0.246	-0.8	0.9	-1.2	0.7	A+	
1611	685047	2	2	142	.683	.683	.183	.063	.070	.000	.426	.426	-.174	-.261	-.263	-2.049	0.202	0.4	1.0	-0.1	1.0	A+	
1612	684555	2	2	142	.549	.289	.549	.077	.085	.000	.363	-.180	.363	-.018	-.341	-1.326	0.191	1.6	1.1	1.2	1.2	A+	
1613	685149	2	2	142	.648	.120	.113	.120	.648	.000	.468	-.249	-.162	-.282	.468	-1.850	0.197	-0.2	1.0	0.3	1.0	A-	
1614	684883	2	2	142	.747	.141	.746	.035	.077	.000	.434	-.366	.434	-.154	-.125	-2.436	0.214	0.0	1.0	-0.5	0.9	A+	
1615	684554	2	2	142	.500	.085	.310	.106	.500	.000	.458	-.313	-.149	-.238	.458	-1.071	0.191	0.1	1.0	0.0	1.0	A+	
1616	685042	2	2	142	.817	.817	.028	.085	.063	.007	.459	.459	-.276	-.243	-.236	-2.940	0.237	-0.4	0.9	-0.9	0.7	A-	
1617	684557	2	2	142	.648	.141	.063	.648	.148	.000	.408	-.366	-.112	.408	-.114	-1.850	0.197	0.7	1.1	0.8	1.1	A+	
1618	684918	2	2	142	.754	.183	.042	.754	.021	.000	.493	-.287	-.273	.493	-.322	-2.482	0.216	-0.6	0.9	-1.2	0.8	A+	
1619	684880	2	2	141	.915	.915	.028	.035	.021	.000	.404	.404	-.145	-.230	-.321	-4.324	0.328	-0.6	0.9	-0.4	0.7	A+	
1620	684921	2	2	141	.731	.191	.057	.730	.021	.000	.449	-.323	-.202	.449	-.175	-2.591	0.219	0.7	1.1	0.1	1.0	A-	
1621	684131	2	2	141	.922	.922	.035	.014	.028	.000	.435	.435	-.351	-.235	-.145	-4.436	0.340	-0.7	0.8	-0.1	0.9	A+	
1622	684894	2	2	141	.688	.128	.092	.688	.085	.007	.601	-.257	-.327	.601	-.296	-2.315	0.211	-1.6	0.8	-1.0	0.8	C+	
1623	684901	2	2	141	.475	.121	.121	.475	.284	.000	.496	-.319	-.344	.496	-.071	-1.094	0.199	0.3	1.0	0.2	1.0	A+	
1624	684553	2	2	141	.674	.071	.170	.071	.674	.014	.516	-.367	-.124	-.306	.516	-2.227	0.209	-0.1	1.0	-0.1	1.0	A+	
1625	684551	2	2	141	.582	.135	.582	.206	.078	.000	.564	-.344	.564	-.214	-.278	-1.687	0.200	-0.9	0.9	-0.7	0.9	A-	
1626	684559	2	2	144	.785	.069	.056	.785	.090	.000	.498	-.336	-.157	.498	-.291	-2.758	0.224	-0.6	0.9	-1.2	0.8	A-	
1627	684931	2	2	144	.438	.438	.139	.160	.264	.000	.285	.285	-.084	-.135	-.143	-0.841	0.187	1.3	1.1	3.9	1.5	A+	
1628	684893	2	2	144	.833	.076	.833	.049	.042	.000	.578	-.298	.578	-.323	-.334	-3.141	0.245	-1.5	0.8	-1.5	0.6	A+	
1629	684778	2	2	144	.375	.313	.111	.375	.201	.000	.338	-.123	-.181	.338	-.124	-0.522	0.190	0.9	1.1	0.9	1.1	A+	
1630	684122	2	2	144	.743	.056	.743	.160	.042	.000	.566	-.223	.566	-.386	-.273	-2.474	0.212	-1.5	0.8	-1.2	0.8	A+	
1631	684853	2	2	144	.479	.479	.188	.090	.243	.000	.295	.295	-.322	-.043	-.022	-1.049	0.186	2.3	1.2	1.7	1.2	B+	
1632	684119	2	2	144	.604	.250	.090	.604	.056	.000	.454	-.241	-.301	.454	-.138	-1.680	0.190	-0.1	1.0	-0.4	1.0	A-	
1633	684910	2	2	144	.813	.111	.035	.035	.813	.007	.569	-.268	-.374	-.341	.569	-2.968	0.235	-1.3	0.8	-1.7	0.6	A+	
1634	684297	2	2	144	.778	.132	.778	.049	.042	.000	.583	-.381	.583	-.232	-.318	-2.708	0.222	-1.4	0.8	-1.7	0.7	A-	
1635	684884	2	2	142	.556	.176	.134	.556	.134	.000	.449	-.182	-.398	.449	-.053	-1.470	0.192	0.4	1.0	0.3	1.0	A-	
1636	684927	2	2	142	.711	.099	.711	.127	.063	.000	.475	-.251	.475	-.253	-.231	-2.337	0.209	-0.1	1.0	-0.6	0.9	A-	
1637	684897	2	2	142	.761	.761	.056	.155	.028	.000	.426	.426	-.313	-.238	-.143	-2.657	0.220	0.1	1.0	0.1	1.0	A+	
1638	685152	2	2	142	.570	.275	.085	.570	.070	.000	.547	-.214	-.378	.547	-.273	-1.544	0.193	-1.3	0.9	-0.4	1.0	A-	
1639	684913	2	2	142	.683	.113	.085	.683	.106	.014	.597	-.318	-.288	.597	-.283	-2.167	0.204	-1.8	0.8	-1.5	0.8	B+	
1640	684885	2	2	142	.676	.676	.134	.056	.127	.007	.583	.583	-.403	-.211	-.230	-2.125	0.203	-1.5	0.9	-1.7	0.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1641	684898	2	2	142	.352	.225	.141	.352	.268	.014	.274	-.321	-.105	.274	.137	-0.401	0.197	1.6	1.1	3.5	1.6	A-	
1642	684785	2	2	142	.648	.042	.190	.648	.113	.007	.532	-.199	-.366	.532	-.190	-1.964	0.199	-1.0	0.9	-0.1	1.0	A+	
1643	684558	2	2	143	.692	.070	.112	.692	.119	.007	.611	-.176	-.398	.611	-.323	-2.152	0.209	-1.5	0.9	-1.8	0.7	A+	
1644	684919	2	2	143	.322	.175	.077	.322	.427	.000	.367	-.210	-.256	.367	-.048	-0.078	0.203	0.8	1.1	1.4	1.3	A-	
1645	684780	2	2	143	.839	.056	.042	.063	.839	.000	.508	-.238	-.275	-.316	.508	-3.233	0.253	-0.5	0.9	-1.4	0.6	B-	
1646	684550	2	2	143	.657	.657	.091	.126	.126	.000	.506	.506	-.254	-.252	-.252	-1.939	0.204	0.0	1.0	-0.1	1.0	A+	
1647	684133	2	2	143	.699	.091	.077	.133	.699	.000	.661	-.273	-.372	-.370	.661	-2.196	0.210	-2.4	0.8	-2.5	0.6	A+	
1648	684777	2	2	143	.559	.140	.175	.559	.119	.007	.464	-.290	-.189	.464	-.136	-1.383	0.196	0.6	1.1	0.7	1.1	A+	
1649	684925	2	2	143	.525	.147	.315	.524	.007	.007	.673	-.300	-.472	.673	.043	-1.193	0.194	-3.0	0.8	-2.7	0.7	B+	
1650	684846	2	2	143	.392	.399	.119	.392	.084	.007	.447	-.250	-.123	.447	-.151	-0.475	0.196	-0.1	1.0	1.2	1.2	A+	
1651	683770	2	2	143	.476	.203	.112	.476	.203	.007	.528	-.250	-.326	.528	-.116	-0.930	0.194	-0.5	1.0	-0.7	0.9	A+	
1652	684915	2	2	143	.713	.084	.070	.126	.713	.007	.657	-.165	-.292	-.491	.657	-2.285	0.213	-2.2	0.8	-2.4	0.6	A+	
1653	684775	2	2	143	.650	.650	.070	.126	.147	.007	.465	.465	-.313	-.130	-.240	-1.898	0.203	0.4	1.0	1.1	1.2	B-	
1654	684984	2	2	137	.839	.839	.058	.007	.095	.000	.352	.352	-.267	-.182	-.175	-3.235	0.258	0.6	1.1	0.5	1.1	A+	
1655	684924	2	2	137	.526	.095	.124	.255	.526	.000	.509	-.246	-.265	-.218	.509	-1.266	0.193	-1.4	0.9	-0.7	0.9	A-	
1656	683766	2	2	137	.803	.102	.036	.803	.058	.000	.568	-.348	-.275	.568	-.294	-2.925	0.240	-1.0	0.9	-1.3	0.7	A-	
1657	684882	2	2	137	.832	.832	.044	.102	.022	.000	.589	.589	-.327	-.390	-.240	-3.169	0.254	-1.3	0.8	-1.6	0.6	A+	
1658	683772	2	2	137	.730	.109	.088	.730	.066	.007	.512	-.475	-.172	.512	-.081	-2.405	0.217	-0.6	0.9	0.0	1.0	A-	
1659	685150	2	2	137	.657	.131	.117	.095	.657	.000	.330	-.247	-.053	-.191	.330	-1.964	0.204	1.7	1.2	1.2	1.2	A-	
1660	685045	2	2	137	.708	.058	.708	.153	.080	.000	.475	-.294	.475	-.083	-.430	-2.267	0.212	-0.1	1.0	0.1	1.0	A-	
1661	683817	2	2	137	.380	.380	.380	.073	.168	.000	.166	-.027	.166	-.099	-.111	-0.525	0.195	3.5	1.3	3.7	1.6	B+	
1662	684565	2	2	137	.562	.066	.117	.255	.562	.000	.337	-.276	-.123	-.137	.337	-1.453	0.194	1.5	1.1	1.7	1.2	A+	
1663	684610	3	3	574	.401	.303	.275	.021	.401	.000	.429	-.341	-.074	-.143	.429	-0.013	0.093	-1.4	1.0	-0.4	1.0	A+	B-
1664	684949	3	3	574	.401	.401	.040	.380	.179	.000	.239	.239	-.118	-.067	-.160	-0.013	0.093	4.2	1.2	4.5	1.3	A-	A+
1665	686605	3	3	574	.352	.232	.352	.214	.200	.002	.180	-.024	.180	-.101	-.081	0.236	0.095	5.5	1.2	6.0	1.4	A+	B+
1666	684637	3	3	574	.524	.098	.064	.524	.312	.002	.231	-.249	-.311	.231	.080	-0.620	0.092	6.1	1.2	5.5	1.3	A-	A-
1667	684938	3	3	574	.807	.118	.807	.031	.044	.000	.425	-.247	.425	-.183	-.276	-2.228	0.115	-0.5	1.0	-0.6	0.9	A-	A+
1668	684946	3	3	574	.666	.094	.106	.132	.666	.002	.478	-.259	-.134	-.309	.478	-1.340	0.098	-1.1	1.0	-1.6	0.9	A+	A-
1669	686604	3	3	574	.591	.223	.108	.591	.075	.003	.445	-.183	-.250	.445	-.222	-0.948	0.094	-0.1	1.0	-0.5	1.0	A+	B-
1670	684614	3	3	574	.768	.768	.052	.098	.078	.003	.616	.616	-.362	-.357	-.248	-1.956	0.108	-4.2	0.8	-4.4	0.6	A+	A-
1671	684633	3	3	574	.854	.092	.854	.024	.026	.003	.424	-.194	.424	-.246	-.304	-2.618	0.127	-1.0	0.9	-1.5	0.8	A+	B+
1672	684631	3	3	574	.744	.091	.075	.744	.084	.007	.489	-.193	-.291	.489	-.248	-1.798	0.105	-1.5	0.9	-1.6	0.9	A-	A+
1673	684623	3	3	574	.484	.066	.249	.195	.484	.005	.323	-.253	-.143	-.069	.323	-0.425	0.092	2.9	1.1	2.8	1.1	A-	A-
1674	684936	3	3	574	.653	.066	.220	.653	.056	.005	.420	-.308	-.150	.420	-.226	-1.274	0.097	0.4	1.0	-0.4	1.0	A-	A+
1675	684961	3	3	574	.746	.051	.746	.111	.087	.005	.516	-.266	.516	-.291	-.233	-1.809	0.105	-2.2	0.9	-1.0	0.9	A+	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1676	684958	3	3	574	.488	.300	.139	.068	.488	.005	.241	-.135	-.020	-.167	.241	-0.442	0.092	5.4	1.2	5.5	1.3	A+	A+
1677	684627	3	3	574	.779	.077	.080	.779	.057	.007	.585	-.350	-.290	.585	-.268	-2.027	0.110	-3.4	0.8	-3.7	0.7	A-	B-
1678	684960	3	3	574	.740	.740	.061	.085	.108	.005	.535	.535	-.369	-.229	-.234	-1.776	0.104	-2.7	0.9	-2.5	0.8	A+	B+
1679	684943	3	3	574	.828	.071	.040	.054	.828	.007	.552	-.364	-.237	-.259	.552	-2.392	0.119	-2.5	0.8	-3.3	0.6	A+	A-
1680	684613	3	3	574	.436	.436	.139	.172	.244	.009	.340	.340	-.309	-.114	-.019	-0.186	0.093	1.4	1.1	2.5	1.1	A+	A+
1681	684942	3	3	574	.706	.228	.042	.706	.019	.005	.473	-.272	-.339	.473	-.178	-1.566	0.101	-0.9	1.0	-1.7	0.9	A+	A-
1682	684939	3	3	574	.686	.059	.127	.118	.686	.009	.518	-.334	-.236	-.214	.518	-1.456	0.099	-2.3	0.9	-2.3	0.8	A-	A-
1683	684636	3	3	592	.588	.179	.204	.027	.588	.002	.459	-.217	-.291	-.144	.459	-1.053	0.093	-0.6	1.0	-0.8	1.0	A-	B-
1684	684625	3	3	592	.487	.390	.095	.486	.029	.000	.419	-.319	-.067	.419	-.204	-0.543	0.092	0.7	1.0	1.1	1.1	A-	A+
1685	686602	3	3	592	.780	.066	.780	.035	.118	.000	.392	-.144	.392	-.265	-.240	-2.162	0.108	0.0	1.0	-0.7	0.9	A+	B-
1686	684953	3	3	592	.975	.008	.010	.007	.975	.000	.314	-.204	-.149	-.192	.314	-4.814	0.269	-0.6	0.9	-2.2	0.4	A+	A-
1687	684940	3	3	592	.640	.047	.306	.640	.007	.000	.293	-.263	-.162	.293	-.121	-1.326	0.095	3.9	1.2	4.1	1.3	B-	B-
1688	684950	3	3	592	.716	.057	.716	.057	.166	.003	.388	-.251	.388	-.274	-.151	-1.752	0.100	0.4	1.0	0.6	1.1	A-	A-
1689	684615	3	3	592	.860	.860	.042	.076	.022	.000	.467	.467	-.264	-.329	-.148	-2.798	0.127	-1.7	0.9	-1.6	0.8	A+	A-
1690	684628	3	3	592	.753	.118	.753	.035	.091	.002	.525	-.356	.525	-.204	-.242	-1.981	0.104	-2.5	0.9	-2.6	0.8	B+	A+
1691	684935	3	3	592	.694	.194	.044	.064	.694	.003	.487	-.296	-.266	-.196	.487	-1.624	0.098	-1.6	0.9	-1.2	0.9	A+	A+
1692	684941	3	3	592	.460	.032	.481	.459	.024	.003	.300	-.283	-.139	.300	-.177	-0.407	0.092	4.9	1.2	4.0	1.2	A-	A-
1693	684618	3	3	592	.684	.160	.684	.095	.059	.002	.293	-.103	.293	-.189	-.169	-1.566	0.098	3.0	1.1	2.8	1.2	A+	A-
1694	684934	3	3	592	.495	.495	.383	.063	.057	.002	.302	.302	-.133	-.169	-.179	-0.585	0.092	4.6	1.2	6.9	1.4	A+	B+
1695	684957	3	3	592	.431	.111	.316	.431	.137	.005	.461	-.258	-.162	.461	-.193	-0.261	0.093	-1.0	1.0	-0.2	1.0	A-	A-
1696	684620	3	3	592	.655	.655	.204	.091	.046	.003	.456	.456	-.195	-.328	-.187	-1.408	0.096	-0.5	1.0	-0.4	1.0	A+	A-
1697	684944	3	3	592	.883	.042	.883	.025	.042	.007	.482	-.303	.482	-.207	-.252	-3.039	0.136	-1.9	0.8	-2.5	0.6	B+	A-
1698	684621	3	3	592	.775	.088	.088	.042	.775	.007	.520	-.342	-.221	-.264	.520	-2.127	0.107	-2.6	0.9	-1.7	0.8	A+	B-
1699	684611	3	3	592	.564	.564	.130	.176	.122	.008	.397	.397	-.130	-.346	-.044	-0.933	0.092	1.7	1.1	1.3	1.1	A+	A-
1700	686603	3	3	592	.382	.341	.149	.120	.382	.008	.403	-.022	-.336	-.187	.403	-0.006	0.095	1.3	1.1	0.7	1.1	A+	A+
1701	684624	3	3	592	.287	.255	.204	.247	.287	.007	.479	-.313	-.261	.071	.479	0.528	0.101	-2.1	0.9	-0.7	0.9	A+	A+
1702	684945	3	3	592	.758	.093	.088	.758	.052	.008	.573	-.331	-.346	.573	-.195	-2.014	0.105	-3.7	0.8	-3.8	0.7	A+	A-
1703	684963	3	3	571	.862	.026	.862	.086	.025	.002	.329	-.189	.329	-.163	-.227	-2.904	0.129	0.3	1.0	-0.4	0.9	A-	
1704	684959	3	3	571	.485	.201	.254	.485	.058	.002	.278	-.074	-.115	.278	-.236	-0.655	0.092	3.9	1.1	3.5	1.2	A+	
1705	684619	3	3	571	.769	.769	.117	.049	.063	.002	.479	.479	-.276	-.224	-.255	-2.175	0.108	-1.7	0.9	-2.1	0.8	A+	
1706	684626	3	3	571	.632	.201	.053	.632	.110	.004	.318	-.055	-.287	.318	-.211	-1.385	0.095	2.7	1.1	3.9	1.3	A+	
1707	684956	3	3	571	.445	.445	.128	.236	.186	.005	.340	.340	-.131	-.160	-.153	-0.458	0.093	2.4	1.1	2.0	1.1	A+	
1708	684634	3	3	571	.870	.040	.870	.032	.056	.002	.383	-.310	.383	-.194	-.146	-2.990	0.133	-0.9	0.9	-1.0	0.8	A-	
1709	684954	3	3	571	.478	.193	.158	.478	.168	.004	.404	-.156	-.192	.404	-.189	-0.621	0.092	0.6	1.0	0.5	1.0	A-	
1710	686607	3	3	571	.184	.184	.271	.299	.243	.002	.110	.110	-.036	.019	-.083	1.040	0.116	2.2	1.2	5.1	1.8	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1711	684937	3	3	571	.804	.028	.804	.119	.046	.004	.491	-.256	.491	-.302	-.242	-2.421	0.114	-1.9	0.9	-2.3	0.8	A+	
1712	684632	3	3	571	.532	.165	.140	.532	.161	.002	.412	-.216	-.133	.412	-.210	-0.885	0.092	-0.2	1.0	1.0	1.1	A-	
1713	684622	3	3	571	.648	.145	.114	.084	.648	.009	.578	-.359	-.190	-.293	.578	-1.468	0.096	-4.2	0.8	-3.7	0.8	A+	
1714	684933	3	3	571	.550	.296	.550	.112	.033	.009	.327	-.144	.327	-.160	-.200	-0.971	0.093	2.6	1.1	2.5	1.1	A-	
1715	684635	3	3	571	.827	.053	.072	.039	.827	.011	.548	-.275	-.303	-.287	.548	-2.597	0.119	-2.9	0.8	-3.6	0.6	A+	
1716	684616	3	3	571	.159	.096	.193	.159	.543	.009	.051	-.227	-.169	.051	.257	1.237	0.122	2.7	1.2	5.6	2.0	A-	
1717	684630	3	3	571	.473	.145	.473	.236	.137	.009	.418	-.219	.418	-.083	-.242	-0.595	0.092	0.0	1.0	0.3	1.0	A-	
1718	684932	3	3	571	.716	.046	.173	.054	.716	.011	.475	-.174	-.286	-.243	.475	-1.848	0.101	-1.6	0.9	-1.5	0.9	B+	
1719	684951	3	3	571	.680	.110	.680	.075	.126	.009	.574	-.271	.574	-.343	-.240	-1.638	0.098	-4.2	0.8	-3.7	0.8	A+	
1720	684617	3	3	571	.536	.124	.149	.179	.536	.012	.508	-.264	-.273	-.136	.508	-0.902	0.092	-2.8	0.9	-2.3	0.9	A-	
1721	684612	3	3	571	.692	.692	.096	.112	.086	.014	.552	.552	-.316	-.283	-.200	-1.707	0.099	-3.3	0.9	-3.4	0.8	C-	
1722	686601	3	3	571	.692	.198	.070	.025	.692	.016	.451	-.225	-.257	-.205	.451	-1.707	0.099	-1.1	1.0	-0.7	1.0	A+	
1723	682232	4	4	1137	.675	.185	.075	.066	.675	.000	.426	-.186	-.225	-.275	.426	-0.970	0.070	0.3	1.0	0.2	1.0	A+	
1724	682087	4	4	1137	.790	.790	.101	.051	.058	.000	.389	.389	-.266	-.154	-.191	-1.696	0.080	0.6	1.0	-0.4	1.0	A-	
1725	686597	4	4	1137	.423	.285	.142	.423	.149	.002	.365	-.164	-.118	.365	-.181	0.330	0.067	2.2	1.1	2.9	1.1	A-	
1726	682152	4	4	1137	.955	.026	.955	.015	.003	.001	.309	-.179	.309	-.262	-.061	-3.683	0.149	-0.6	0.9	-0.7	0.9	A-	
1727	682085	4	4	1137	.694	.694	.107	.073	.126	.000	.423	.423	-.237	-.152	-.248	-1.080	0.071	0.4	1.0	-0.4	1.0	B+	
1728	682248	4	4	1137	.829	.055	.828	.075	.038	.004	.451	-.257	.451	-.248	-.201	-1.997	0.086	-1.3	0.9	-2.0	0.8	A-	
1729	682144	4	4	1137	.738	.105	.122	.034	.738	.001	.432	-.236	-.239	-.200	.432	-1.346	0.074	-0.3	1.0	-0.6	1.0	A-	
1730	682095	4	4	1137	.164	.233	.164	.416	.185	.003	.006	-.076	.006	.081	-.017	1.955	0.088	5.8	1.3	9.6	2.4	A-	
1731	682099	4	4	1137	.858	.047	.059	.858	.034	.001	.468	-.274	-.291	.468	-.186	-2.265	0.092	-1.9	0.9	-2.4	0.8	A-	
1732	682146	4	4	1137	.873	.085	.027	.872	.013	.002	.447	-.280	-.296	.447	-.159	-2.406	0.096	-1.8	0.9	-1.7	0.8	C+	
1733	682135	4	4	1137	.531	.026	.309	.531	.130	.004	.336	-.178	-.278	.336	-.011	-0.216	0.067	4.8	1.1	3.1	1.1	A-	
1734	682214	4	4	1137	.953	.019	.953	.008	.017	.004	.301	-.160	.301	-.161	-.161	-3.618	0.145	-0.6	0.9	1.4	1.3	A-	
1735	682142	4	4	1137	.502	.183	.138	.172	.502	.004	.464	-.214	-.202	-.189	.464	-0.070	0.066	-1.9	1.0	0.1	1.0	A+	
1736	682094	4	4	1137	.726	.726	.201	.033	.033	.007	.358	.358	-.116	-.288	-.272	-1.269	0.074	1.7	1.1	4.3	1.3	A-	
1737	682223	4	4	1137	.849	.073	.849	.033	.038	.007	.502	-.315	.502	-.149	-.304	-2.174	0.090	-2.5	0.9	-3.2	0.7	A+	
1738	682224	4	4	1137	.530	.195	.099	.168	.529	.009	.465	-.224	-.250	-.152	.465	-0.207	0.067	-1.4	1.0	-0.7	1.0	A-	
1739	682213	4	4	1137	.376	.062	.471	.084	.376	.007	.401	-.268	-.197	-.071	.401	0.573	0.068	0.1	1.0	3.0	1.2	B-	
1740	682086	4	4	1137	.842	.119	.027	.842	.005	.007	.327	-.162	-.282	.327	-.129	-2.111	0.088	0.8	1.0	0.9	1.1	A+	
1741	682083	4	4	1137	.643	.103	.643	.060	.182	.012	.443	-.235	.443	-.277	-.162	-0.795	0.069	-0.1	1.0	0.3	1.0	A+	
1742	682148	4	4	1137	.742	.064	.049	.136	.742	.008	.511	-.280	-.213	-.281	.511	-1.374	0.075	-2.7	0.9	-2.8	0.8	A-	
1743	682078	4	4	1134	.526	.153	.145	.526	.175	.001	.472	-.261	-.202	.472	-.184	-0.040	0.066	-1.6	1.0	-1.9	0.9	A-	A+
1744	682150	4	4	1134	.739	.150	.015	.096	.739	.000	.353	-.267	-.166	-.134	.353	-1.195	0.074	1.5	1.1	1.7	1.1	A-	A-
1745	686600	4	4	1134	.601	.601	.144	.054	.199	.003	.423	.423	-.234	-.250	-.166	-0.420	0.068	0.7	1.0	0.6	1.0	A+	B-

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1746	682079	4	4	1134	.583	.138	.583	.129	.149	.001	.501	-.251	.501	-.228	-.233	-0.330	0.067	-2.6	0.9	-2.9	0.9	A+	A-
1747	682096	4	4	1134	.572	.086	.296	.572	.044	.001	.444	-.166	-.324	.444	-.111	-0.276	0.067	-0.2	1.0	-0.2	1.0	A-	A+
1748	682145	4	4	1134	.779	.116	.779	.050	.055	.001	.496	-.352	.496	-.192	-.219	-1.455	0.078	-2.5	0.9	-3.2	0.8	A+	A+
1749	682137	4	4	1134	.883	.050	.024	.041	.883	.002	.475	-.289	-.258	-.235	.475	-2.335	0.098	-2.7	0.8	-2.3	0.7	C+	A-
1750	682081	4	4	1134	.752	.752	.076	.034	.135	.003	.464	.464	-.273	-.216	-.242	-1.279	0.075	-1.6	0.9	-2.3	0.9	A-	B-
1751	682143	4	4	1134	.830	.040	.083	.830	.044	.004	.532	-.259	-.342	.532	-.233	-1.838	0.085	-3.6	0.8	-4.1	0.7	A+	A-
1752	686594	4	4	1134	.486	.153	.486	.122	.235	.004	.315	-.266	.315	-.197	.026	0.158	0.066	5.4	1.1	5.2	1.2	A+	B-
1753	682227	4	4	1134	.665	.049	.117	.665	.164	.005	.416	-.268	-.305	.416	-.089	-0.763	0.070	0.5	1.0	1.1	1.1	A+	A+
1754	682216	4	4	1134	.726	.076	.726	.120	.074	.004	.404	-.248	.404	-.176	-.187	-1.113	0.073	0.5	1.0	-0.9	0.9	A+	A-
1755	686593	4	4	1134	.519	.519	.278	.078	.119	.007	.269	.269	-.079	-.179	-.131	-0.005	0.066	6.9	1.2	6.7	1.3	A-	A+
1756	682140	4	4	1134	.711	.111	.094	.711	.078	.005	.484	-.248	-.277	.484	-.198	-1.024	0.072	-2.0	0.9	-2.4	0.9	B+	B-
1757	682092	4	4	1134	.477	.082	.207	.227	.477	.007	.478	-.354	-.200	-.120	.478	0.202	0.066	-1.8	1.0	-1.8	0.9	A+	A+
1758	682136	4	4	1134	.667	.667	.058	.213	.057	.005	.349	.349	-.144	-.201	-.171	-0.772	0.070	2.8	1.1	2.1	1.1	A+	A-
1759	684480	4	4	1134	.435	.466	.077	.435	.016	.007	.243	-.058	-.250	.243	-.117	0.416	0.067	8.3	1.2	7.8	1.3	A+	A+
1760	682089	4	4	1134	.658	.229	.658	.045	.059	.009	.465	-.290	.465	-.200	-.186	-0.724	0.069	-1.2	1.0	-1.7	0.9	A-	A+
1761	682133	4	4	1134	.609	.058	.221	.103	.609	.008	.452	-.260	-.184	-.233	.452	-0.466	0.068	-0.6	1.0	-0.2	1.0	A+	A+
1762	682093	4	4	1134	.455	.455	.185	.182	.171	.007	.432	.432	-.183	-.179	-.171	0.313	0.067	0.1	1.0	0.4	1.0	A-	A+
1763	682151	4	4	1141	.912	.040	.912	.038	.009	.001	.335	-.252	.335	-.171	-.130	-2.721	0.110	-0.5	1.0	-0.6	0.9	A+	A+
1764	682090	4	4	1141	.696	.055	.039	.209	.696	.001	.414	-.267	-.173	-.233	.414	-0.966	0.071	0.1	1.0	-0.3	1.0	A-	A-
1765	682226	4	4	1141	.507	.180	.507	.065	.247	.002	.334	-.074	.334	-.191	-.205	0.014	0.066	4.1	1.1	3.5	1.1	A-	A+
1766	682211	4	4	1141	.821	.025	.057	.821	.096	.001	.467	-.184	-.244	.467	-.317	-1.793	0.083	-2.3	0.9	-2.0	0.8	A+	A-
1767	682088	4	4	1141	.186	.195	.237	.186	.376	.006	.042	-.044	.009	.042	.009	1.825	0.082	5.3	1.3	8.8	2.0	A+	A+
1768	682149	4	4	1141	.864	.864	.036	.039	.058	.004	.375	.375	-.256	-.138	-.204	-2.168	0.092	-0.7	1.0	-1.5	0.8	A+	A+
1769	682139	4	4	1141	.699	.699	.052	.032	.216	.002	.420	.420	-.143	-.138	-.321	-0.981	0.071	-0.2	1.0	-0.8	1.0	A+	A-
1770	682134	4	4	1141	.248	.152	.491	.248	.104	.005	.199	.072	-.023	.199	-.300	1.392	0.075	3.1	1.1	6.4	1.5	A-	A-
1771	682215	4	4	1141	.422	.122	.422	.232	.221	.004	.391	-.235	.391	-.190	-.066	0.434	0.066	0.3	1.0	2.4	1.1	A-	A+
1772	682221	4	4	1141	.833	.034	.053	.833	.074	.006	.457	-.228	-.287	.457	-.202	-1.885	0.085	-1.9	0.9	-2.6	0.8	A-	A-
1773	686595	4	4	1141	.477	.193	.477	.165	.161	.004	.246	-.161	.246	-.120	-.019	0.160	0.066	7.4	1.2	6.0	1.2	A+	A+
1774	682098	4	4	1141	.482	.204	.135	.174	.482	.004	.516	-.240	-.231	-.190	.516	0.134	0.066	-4.2	0.9	-4.1	0.9	A-	A-
1775	682228	4	4	1141	.517	.517	.161	.236	.081	.005	.444	.444	-.223	-.174	-.209	-0.038	0.066	-0.8	1.0	-0.9	1.0	A-	A+
1776	682141	4	4	1141	.775	.084	.775	.078	.056	.007	.526	-.276	.526	-.268	-.253	-1.453	0.077	-3.4	0.9	-4.4	0.7	B+	B-
1777	682225	4	4	1141	.816	.045	.046	.086	.816	.007	.551	-.269	-.252	-.321	.551	-1.751	0.083	-3.8	0.8	-5.4	0.6	A+	A-
1778	682138	4	4	1141	.357	.078	.018	.539	.357	.008	.255	-.241	-.160	-.049	.255	0.767	0.068	5.2	1.2	6.1	1.3	A-	A-
1779	682220	4	4	1141	.850	.850	.067	.067	.008	.008	.391	.391	-.183	-.266	-.146	-2.037	0.089	-0.8	1.0	-1.3	0.9	B+	A+
1780	682082	4	4	1141	.536	.220	.135	.100	.535	.010	.488	-.270	-.217	-.154	.488	-0.129	0.066	-2.7	0.9	-3.0	0.9	A-	A+

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1781	682217	4	4	1141	.784	.128	.784	.061	.018	.009	.462	-.254	.462	-.286	-.183	-1.514	0.078	-1.8	0.9	-2.6	0.8	A-	B-
1782	682091	4	4	1141	.376	.286	.189	.376	.139	.010	.277	-.038	-.121	.277	-.166	0.666	0.067	4.3	1.1	5.2	1.3	A+	A+
1783	682080	5	5	170	.582	.241	.065	.582	.112	.000	.435	-.202	-.238	.435	-.221	-0.755	0.174	-0.3	1.0	-0.9	0.9	A+	
1784	682101	5	5	158	.532	.234	.532	.127	.108	.000	.256	.040	.256	-.230	-.219	-0.527	0.174	1.7	1.1	1.6	1.1	A+	
1785	682102	5	5	134	.224	.179	.231	.224	.366	.000	.095	-.221	-.021	.095	.112	1.072	0.224	1.7	1.2	3.5	2.1	A+	
1786	682103	5	5	164	.360	.463	.122	.360	.055	.000	.240	.078	-.367	.240	-.149	0.461	0.175	1.1	1.1	1.6	1.2	A+	
1787	682104	5	5	141	.674	.149	.135	.674	.043	.000	.496	-.246	-.227	.496	-.334	-1.084	0.200	-0.8	0.9	-1.4	0.8	A+	
1788	682105	5	5	150	.593	.247	.593	.087	.073	.000	.364	-.095	.364	-.290	-.215	-0.906	0.183	0.4	1.0	0.0	1.0	B+	
1789	682106	5	5	153	.634	.634	.072	.203	.092	.000	.550	.550	-.298	-.292	-.244	-0.998	0.186	-2.1	0.8	-1.9	0.8	A+	
1790	682107	5	5	141	.156	.248	.489	.106	.156	.000	.150	-.115	.197	-.335	.150	1.683	0.247	0.4	1.1	3.4	2.6	A+	
1791	682108	5	5	159	.283	.440	.132	.283	.145	.000	.130	.105	-.229	.130	-.094	0.739	0.191	2.0	1.2	3.1	1.6	A-	
1792	682109	5	5	166	.163	.108	.181	.548	.163	.000	.013	-.238	-.020	.155	.013	1.508	0.223	1.2	1.2	4.2	2.5	A+	
1793	682110	5	5	161	.584	.584	.161	.149	.106	.000	.305	.305	-.166	-.141	-.127	-0.910	0.177	1.3	1.1	1.2	1.1	A-	
1794	682111	5	5	155	.729	.097	.729	.071	.103	.000	.283	-.127	.283	-.246	-.083	-1.505	0.197	0.7	1.1	1.0	1.1	A+	
1795	682113	5	5	160	.256	.263	.256	.244	.238	.000	.246	-.097	.246	-.230	.080	0.849	0.194	0.5	1.0	1.4	1.2	A-	
1796	682114	5	5	129	.256	.202	.256	.279	.264	.000	.051	-.088	.051	-.030	.059	0.959	0.214	1.8	1.2	2.5	1.5	A-	
1797	682115	5	5	142	.282	.268	.282	.232	.218	.000	-.015	-.029	-.015	-.040	.088	0.790	0.199	2.7	1.3	4.4	1.9	A+	
1798	682117	5	5	170	.653	.100	.218	.653	.029	.000	.405	-.247	-.235	.405	-.129	-1.123	0.178	-0.1	1.0	-0.1	1.0	A+	
1799	682118	5	5	132	.409	.409	.167	.205	.220	.000	.297	.297	-.126	-.200	-.044	0.168	0.193	0.4	1.0	2.0	1.2	A+	
1800	682119	5	5	157	.554	.191	.204	.051	.554	.000	.593	-.287	-.276	-.320	.593	-0.647	0.176	-3.6	0.8	-3.5	0.7	A-	
1801	682120	5	5	169	.249	.361	.249	.249	.142	.000	.076	.040	-.030	.076	-.112	0.897	0.189	1.6	1.2	3.0	1.6	B-	
1802	682121	5	5	162	.457	.179	.136	.457	.228	.000	.289	-.017	-.225	.289	-.144	-0.160	0.174	1.5	1.1	1.6	1.2	A-	
1803	682122	5	5	161	.603	.137	.124	.602	.137	.000	.392	-.214	-.106	.392	-.243	-0.754	0.178	0.1	1.0	-0.4	1.0	C+	
1804	682123	5	5	154	.630	.065	.630	.188	.117	.000	.331	-.046	.331	-.120	-.316	-0.960	0.184	0.7	1.1	0.6	1.1	A+	
1805	682124	5	5	154	.500	.188	.195	.500	.117	.000	.332	-.259	-.174	.332	.013	-0.368	0.177	0.7	1.0	0.7	1.1	A+	
1806	682126	5	5	159	.767	.767	.075	.132	.025	.000	.443	.443	-.252	-.291	-.142	-1.875	0.206	-0.5	0.9	-1.1	0.8	A+	
1807	682127	5	5	160	.613	.131	.613	.138	.119	.000	.434	-.246	.434	-.257	-.123	-1.082	0.181	-0.3	1.0	-0.9	0.9	A-	
1808	682128	5	5	154	.494	.201	.494	.084	.221	.000	.439	-.254	.439	-.321	-.068	-0.329	0.180	-0.6	1.0	-0.4	1.0	A+	
1809	682129	5	5	172	.448	.448	.343	.116	.093	.000	.124	.124	.154	-.211	-.231	-0.190	0.168	3.8	1.3	3.6	1.4	A+	
1810	682130	5	5	160	.231	.175	.294	.300	.231	.000	.169	-.169	.006	-.020	.169	1.042	0.200	0.8	1.1	2.2	1.4	A+	
1811	682131	5	5	184	.261	.212	.196	.332	.261	.000	.116	.074	-.163	-.035	.116	0.889	0.179	1.9	1.2	2.3	1.4	A+	
1812	682154	5	5	151	.729	.132	.093	.728	.046	.000	.502	-.280	-.276	.502	-.230	-1.805	0.208	-0.4	1.0	-1.2	0.8	A+	
1813	682155	5	5	163	.503	.196	.503	.202	.098	.000	.560	-.235	.560	-.333	-.178	-0.411	0.177	-2.0	0.9	-2.1	0.8	B+	
1814	682156	5	5	147	.517	.102	.170	.211	.517	.000	.260	-.181	.020	-.203	.260	-0.334	0.178	1.0	1.1	1.5	1.1	A-	
1815	682157	5	5	145	.152	.152	.110	.503	.234	.000	.063	.063	-.318	.083	.085	1.660	0.242	0.7	1.1	2.4	1.8	B+	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical												Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1816	682158	5	5	161	.311	.460	.106	.124	.311	.000	.095	.141	-.203	-.158	.095	0.701	0.184	2.7	1.2	3.9	1.7	A+	
1817	682159	5	5	155	.555	.116	.219	.555	.110	.000	.397	-.102	-.234	.397	-.217	-0.709	0.180	0.0	1.0	0.6	1.1	A+	
1818	682160	5	5	147	.626	.170	.054	.150	.626	.000	.238	-.005	-.172	-.208	.238	-1.098	0.187	1.7	1.1	1.5	1.2	A+	
1819	682161	5	5	159	.786	.101	.786	.088	.025	.000	.385	-.273	.385	-.160	-.193	-1.836	0.212	0.2	1.0	-0.7	0.9	A+	
1820	682162	5	5	158	.703	.703	.139	.108	.051	.000	.525	.525	-.232	-.345	-.241	-1.516	0.195	-1.1	0.9	-1.6	0.8	A-	
1821	682163	5	5	186	.559	.253	.559	.081	.108	.000	.278	-.116	.278	-.289	-.029	-0.756	0.163	1.8	1.1	1.2	1.1	A+	
1822	682164	5	5	134	.739	.060	.164	.739	.037	.000	.440	-.115	-.328	.440	-.236	-1.604	0.216	-0.5	0.9	-1.0	0.8	A-	
1823	682165	5	5	148	.899	.899	.041	.020	.041	.000	.389	.389	-.228	-.155	-.257	-2.904	0.290	-0.3	0.9	-1.2	0.6	A-	
1824	682166	5	5	146	.856	.068	.021	.856	.055	.000	.385	-.391	-.078	.385	-.110	-2.657	0.254	-0.3	0.9	-0.6	0.8	A+	
1825	682167	5	5	167	.677	.228	.054	.677	.042	.000	.440	-.220	-.330	.440	-.194	-1.202	0.185	-0.1	1.0	-0.5	0.9	B+	
1826	682168	5	5	168	.542	.542	.363	.060	.036	.000	.362	.362	-.183	-.292	-.126	-0.607	0.170	0.3	1.0	0.1	1.0	A-	
1827	682169	5	5	142	.704	.134	.704	.120	.042	.000	.366	-.203	.366	-.094	-.334	-1.486	0.203	0.1	1.0	1.0	1.1	A-	
1828	682170	5	5	137	.372	.526	.073	.029	.372	.000	.181	.112	-.377	-.268	.181	0.380	0.192	1.7	1.1	3.3	1.4	A-	
1829	682171	5	5	148	.770	.122	.770	.054	.054	.000	.420	-.316	.420	-.173	-.150	-1.781	0.214	-0.5	0.9	-0.7	0.9	A+	
1830	682172	5	5	156	.654	.256	.077	.654	.013	.000	.429	-.249	-.349	.429	-.020	-1.121	0.187	-0.3	1.0	-0.6	0.9	A+	
1831	682173	5	5	142	.739	.070	.077	.113	.739	.000	.309	-.125	-.227	-.136	.309	-1.597	0.211	0.9	1.1	0.6	1.1	A-	
1832	682212	5	5	151	.536	.536	.338	.079	.046	.000	.196	.196	.043	-.237	-.257	-0.633	0.181	2.7	1.2	3.8	1.4	B-	
1833	682218	5	5	155	.761	.761	.129	.065	.045	.000	.549	.549	-.395	-.317	-.115	-1.842	0.205	-1.9	0.8	-2.2	0.6	A+	
1834	682219	5	5	146	.877	.068	.877	.034	.021	.000	.432	-.283	.432	-.240	-.190	-2.707	0.267	-0.7	0.9	-1.3	0.6	A+	
1835	682230	5	5	142	.655	.655	.169	.063	.113	.000	.338	.338	-.146	-.189	-.191	-1.286	0.195	0.9	1.1	0.2	1.0	A+	
1836	682231	5	5	127	.677	.110	.102	.677	.110	.000	.496	-.408	-.277	.496	-.066	-1.113	0.205	-1.5	0.9	-1.9	0.8	A-	
1837	682233	5	5	140	.279	.314	.279	.286	.121	.000	.160	-.014	.160	-.162	.025	0.768	0.201	1.0	1.1	2.1	1.3	A-	
1838	682234	5	5	140	.471	.093	.193	.243	.471	.000	.324	-.201	-.212	-.046	.324	-0.142	0.187	1.1	1.1	0.7	1.1	A-	
1839	682235	5	5	156	.609	.609	.109	.045	.237	.000	.166	.166	-.314	-.265	.168	-1.072	0.183	3.1	1.3	3.4	1.4	B+	
1840	682236	5	5	145	.607	.607	.117	.193	.083	.000	.386	.386	-.276	-.214	-.055	-0.992	0.190	0.2	1.0	0.7	1.1	A+	
1841	682237	5	5	156	.750	.090	.083	.750	.077	.000	.373	-.240	-.242	.373	-.098	-1.767	0.201	-0.3	1.0	0.1	1.0	A-	
1842	682238	5	5	161	.248	.248	.255	.329	.168	.000	.064	.064	-.164	.027	.084	0.913	0.194	1.9	1.2	2.6	1.5	B-	
1843	682239	5	5	148	.608	.608	.209	.135	.047	.000	.344	.344	-.084	-.281	-.179	-1.043	0.185	0.4	1.0	0.5	1.1	A+	
1844	682240	5	5	172	.529	.529	.314	.064	.093	.000	.491	.491	-.255	-.143	-.317	-0.424	0.166	-2.2	0.9	-2.2	0.8	A-	
1845	682241	5	5	163	.552	.552	.104	.110	.233	.000	.041	.041	-.154	.067	.014	-0.627	0.175	5.0	1.4	4.7	1.5	A-	
1846	682242	5	5	160	.200	.250	.481	.200	.069	.000	.042	-.183	.165	.042	-.079	1.255	0.209	1.5	1.2	3.2	1.8	A+	
1847	682243	5	5	153	.641	.085	.170	.641	.105	.000	.563	-.258	-.324	.563	-.250	-1.031	0.188	-2.1	0.8	-2.3	0.8	A+	
1848	682244	5	5	140	.786	.043	.786	.107	.064	.000	.484	-.250	.484	-.241	-.298	-1.978	0.224	-1.3	0.9	-1.1	0.8	A+	
1849	682245	5	5	147	.762	.762	.116	.054	.068	.000	.514	.514	-.303	-.268	-.244	-1.755	0.212	-1.5	0.8	-1.3	0.8	A+	
1850	682249	5	5	155	.852	.852	.084	.032	.032	.000	.413	.413	-.352	-.086	-.193	-2.569	0.242	-0.6	0.9	-0.5	0.9	A-	

Table B–5 (continued). Writing/English Composition Multiple-Choice Item Statistics

Item Information				Classical											Rasch		Infit		Outfit		DIF	
Ref	ID	FT Grade	PCS Grade	*N*	PVal	P(A)	P(B)	P(C)	P(D)	P(-)	PtBis	PT(A)	PT(B)	PT(C)	PT(D)	Meas	MSE	*t*	MS	*t*	MS	M /F	W /B
1851	682250	5	5	159	.635	.132	.138	.094	.635	.000	.666	-.429	-.271	-.280	.666	-1.113	0.187	-3.8	0.7	-3.3	0.6	A+	
1852	684475	5	5	184	.717	.103	.114	.717	.065	.000	.535	-.376	-.174	.535	-.290	-1.558	0.182	-1.6	0.9	-1.8	0.8	A+	
1853	686598	5	5	163	.761	.110	.761	.074	.055	.000	.485	-.229	.485	-.306	-.242	-1.790	0.201	-1.1	0.9	-1.4	0.8	A+	

Items with reference line numbers 1-1383 were field tested during the stand-alone field test administered in spring 2011. Items with reference line numbers 1383-1853 were field tested during the field test administered in fall 2013.

Appendix B: Field Test Item Statistics

APPENDIX C: VERTICAL LINKING ITEM DETAILS

This appendix provides details on the items used to build the vertical scales in each content area. Information such as grade, n-count, eligible content code, and diagnostic category is provided for each of the vertical linking items. This information is based on the academic standards in place at the time each of the content area vertical scale was established[1]. Summary tables indicate the number of linking items in each diagnostic category. A sample of the vertical linking Excel file is provided as well as plots of the vertical linking items.

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Tables C–1 through C–8 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 600869 is a grade 3 item used to link grades 3 and 4. It was administered 1,280 times on the lower grade forms (grade 3) and 964 times on the upper grade forms (grade 4).

Diagnostic categories for Algebra I, Geometry, and Algebra II are different than diagnostic categories for grades 3 through 8 and 11 Mathematics. Items may fall into both a Mathematics diagnostic category and an Algebra I, Geometry, or Algebra II diagnostic category. This is shown in Tables C–6, C–7, and C–8. For example, item 601329 is in the Mathematics diagnostic category "Geometry" and the Geometry diagnostic category "Coordinate Geometry and Right Triangles".

The Mathematics diagnostic categories are[2]:

- Numbers and Operations
- Measurement
- Geometry
- Algebraic Concepts
- Data Analysis and Probability

The Algebra I diagnostic categories are:

- Operations with Real Numbers and Expressions
- Linear Equations & Inequalities
- Functions & Coordinate Geometry
- Data Analysis

[1] Before the 2013-2014 school year all CDT items were re-aligned to the new Pennsylvania Core Standards.
[2] Mathematics diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Appendix C: Vertical Linking Item Details

The Geometry diagnostic categories are:

- Geometric Properties
- Congruence, Similarity, & Proofs
- Coordinate Geometry and Right Triangles
- Measurement

The Algebra II diagnostic categories are:

- Operations with Complex Numbers
- Non-linear Expressions & Equations
- Functions
- Data Analysis

Appendix C: Vertical Linking Item Details

Table C–1. Mathematics Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
600869	3	Grade 3 to Grade 4	1280	964	M3.B.1.1.1	Measure.
600871	3	Grade 3 to Grade 4	1275	964	M3.B.2.2.1	Measure.
601980	3	Grade 3 to Grade 4	1280	964	M3.B.1.2.1	Measure.
604352	3	Grade 3 to Grade 4	1281	964	M3.D.2.1.1	Alg. Con.
600442	3	Grade 3 to Grade 4	1280	964	M3.C.2.1.1	Geo.
600431	3	Grade 3 to Grade 4	1274	964	M3.A.1.1.1	Numbers & Op.
601975	3	Grade 3 to Grade 4	1281	964	M3.A.2.1.1	Numbers & Op.
600865	3	Grade 3 to Grade 4	1279	964	M3.A.1.3.1	Numbers & Op.
601985	3	Grade 3 to Grade 4	1285	963	M3.E.1.1.1	Data & Prob.
601897	3	Grade 3 to Grade 4	1282	964	M3.A.1.2.1	Numbers & Op.
601437	3	Grade 3 to Grade 4	1274	963	M3.A.1.1.4	Numbers & Op.
600438	3	Grade 3 to Grade 4	1277	963	M3.A.1.2.2	Numbers & Op.
600427	3	Grade 3 to Grade 4	1282	963	M3.C.1.1.1	Geo.
600877	3	Grade 3 to Grade 4	1283	963	M3.E.1.2.1	Data & Prob.
601587	3	Grade 3 to Grade 4	1276	963	M3.A.2.1.3	Numbers & Op.
600440	3	Grade 3 to Grade 4	639	963	M3.B.2.1.1	Measure.
600921	3	Grade 3 to Grade 4	1271	963	M3.A.1.3.2	Numbers & Op.
601589	3	Grade 3 to Grade 4	639	962	M3.D.1.1.1	Alg. Con.
601440	3	Grade 3 to Grade 4	1272	962	M3.B.1.1.3	Measure.
601984	3	Grade 3 to Grade 4	1278	962	M3.D.2.1.2	Alg. Con.
604193	4	Grade 3 to Grade 4	1283	959	M4.D.1.1.2	Alg. Con.
602015	4	Grade 3 to Grade 4	1284	481	M4.E.1.2.1	Data & Prob.
601993	4	Grade 3 to Grade 4	1282	1447	M4.C.1.1.1	Geo.
603609	4	Grade 3 to Grade 4	1284	959	M4.B.2.1.1	Measure.
604189	4	Grade 3 to Grade 4	1280	962	M4.B.1.1.3	Measure.
602010	4	Grade 3 to Grade 4	1285	961	M4.C.1.1.2	Geo.
601646	4	Grade 3 to Grade 4	1283	960	M4.D.2.2.2	Alg. Con.
604186	4	Grade 3 to Grade 4	1279	965	M4.A.3.1.1	Numbers & Op.
601958	4	Grade 3 to Grade 4	1281	961	M4.A.1.1.2	Numbers & Op.
604488	4	Grade 3 to Grade 4	1279	958	M4.A.1.2.2	Numbers & Op.
603744	4	Grade 3 to Grade 4	1279	481	M4.B.2.2.1	Measure.
602009	4	Grade 3 to Grade 4	1279	963	M4.C.1.1.2	Geo.
604514	4	Grade 3 to Grade 4	1280	481	M4.C.2.1.1	Geo.
604492	4	Grade 3 to Grade 4	1278	961	M4.A.3.1.2	Numbers & Op.
601972	4	Grade 3 to Grade 4	1281	965	M4.E.1.2.2	Data & Prob.
601962	4	Grade 3 to Grade 4	1278	962	M4.A.1.3.2	Numbers & Op.
601987	4	Grade 3 to Grade 4	1278	961	M4.A.1.1.4	Numbers & Op.
604195	4	Grade 3 to Grade 4	1279	481	M4.D.2.1.1	Alg. Con.
604501	4	Grade 3 to Grade 4	1279	959	M4.E.1.1.1	Data & Prob.
604493	4	Grade 3 to Grade 4	1279	1443	M4.B.1.1.4	Measure.

Appendix C: Vertical Linking Item Details

Table C–2. Mathematics Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
601646	4	Grade 4 to Grade 5	960	1187	M4.D.2.2.2	Alg. Con.
601987	4	Grade 4 to Grade 5	961	1186	M4.A.1.1.4	Numbers & Op.
604493	4	Grade 4 to Grade 5	1443	1183	M4.B.1.1.4	Measure.
601961	4	Grade 4 to Grade 5	965	1184	M4.A.1.3.2	Numbers & Op.
604499	4	Grade 4 to Grade 5	962	1188	M4.E.1.1.1	Data & Prob.
602889	4	Grade 4 to Grade 5	962	1187	M4.E.1.2.2	Data & Prob.
602885	4	Grade 4 to Grade 5	965	1186	M4.B.2.2.1	Measure.
602887	4	Grade 4 to Grade 5	962	1187	M4.C.3.1.1	Geo.
601639	4	Grade 4 to Grade 5	960	1184	M4.A.3.1.3	Numbers & Op.
604969	4	Grade 4 to Grade 5	480	1184	M4.C.1.2.2	Geo.
601994	4	Grade 4 to Grade 5	479	1185	M4.D.1.2.2	Alg. Con.
601998	4	Grade 4 to Grade 5	960	1191	M4.E.3.1.1	Data & Prob.
602000	4	Grade 4 to Grade 5	959	1190	M4.C.1.1.1	Geo.
601991	4	Grade 4 to Grade 5	959	1189	M4.A.2.1.2	Numbers & Op.
604879	4	Grade 4 to Grade 5	1441	1188	M4.D.1.1.3	Alg. Con.
601964	4	Grade 4 to Grade 5	961	1188	M4.A.3.2.2	Numbers & Op.
602971	4	Grade 4 to Grade 5	480	1187	M4.B.2.1.1	Measure.
604486	4	Grade 4 to Grade 5	481	1186	M4.E.1.2.1	Data & Prob.
604967	4	Grade 4 to Grade 5	962	1187	M4.A.1.2.2	Numbers & Op.
602973	4	Grade 4 to Grade 5	964	1186	M4.C.2.1.1	Geo.
600853	5	Grade 4 to Grade 5	964	1790	M5.B.2.1.1	Measure.
604790	5	Grade 4 to Grade 5	964	586	M5.C.2.1.2	Geo.
604956	5	Grade 4 to Grade 5	959	1175	M5.A.2.1.1	Numbers & Op.
604862	5	Grade 4 to Grade 5	960	1182	M5.D.1.2.1	Alg. Con.
604783	5	Grade 4 to Grade 5	961	1179	M5.A.1.2.1	Numbers & Op.
606159	5	Grade 4 to Grade 5	960	1190	M5.A.1.5.1	Numbers & Op.
604848	5	Grade 4 to Grade 5	961	1784	M5.E.3.1.1	Data & Prob.
604843	5	Grade 4 to Grade 5	959	1186	M5.C.1.1.2	Geo.
604966	5	Grade 4 to Grade 5	961	596	M5.E.1.1.1	Data & Prob.
606163	5	Grade 4 to Grade 5	961	1188	M5.B.1.1.1	Measure.
601532	5	Grade 4 to Grade 5	956	2369	M5.A.1.1.1	Numbers & Op.
606160	5	Grade 4 to Grade 5	958	1190	M5.A.3.1.1	Numbers & Op.
604960	5	Grade 4 to Grade 5	957	594	M5.B.2.2.3	Measure.
600852	5	Grade 4 to Grade 5	958	1178	M5.D.1.1.1	Alg. Con.
604834	5	Grade 4 to Grade 5	954	1189	M5.A.1.3.1	Numbers & Op.
604959	5	Grade 4 to Grade 5	956	1183	M5.B.1.2.2	Measure.
604961	5	Grade 4 to Grade 5	956	1193	M5.C.1.2.1	Geo.
606278	5	Grade 4 to Grade 5	954	1177	M5.D.2.1.2	Alg. Con.
604965	5	Grade 4 to Grade 5	957	1190	M5.E.1.1.1	Data & Prob.
604865	5	Grade 4 to Grade 5	956	1192	M5.A.1.6.2	Numbers & Op.

Appendix C: Vertical Linking Item Details

Table C–3. Mathematics Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
606277	5	Grade 5 to Grade 6	1175	1225	M5.D.2.1.2	Alg. Con.
606153	5	Grade 5 to Grade 6	590	1225	M5.A.1.4.2	Numbers & Op.
604796	5	Grade 5 to Grade 6	1194	1224	M5.B.1.3.2	Measure.
606154	5	Grade 5 to Grade 6	1195	1223	M5.A.2.1.3	Numbers & Op.
604962	5	Grade 5 to Grade 6	1192	1222	M5.C.1.2.1	Geo.
606826	5	Grade 5 to Grade 6	593	1221	M5.A.1.3.2	Numbers & Op.
604859	5	Grade 5 to Grade 6	1766	1223	M5.C.1.1.1	Geo.
604860	5	Grade 5 to Grade 6	1184	1215	M5.D.1.2.1	Alg. Con.
606167	5	Grade 5 to Grade 6	1181	1216	M5.E.3.1.1	Data & Prob.
604836	5	Grade 5 to Grade 6	1176	1216	M5.A.1.6.1	Numbers & Op.
606162	5	Grade 5 to Grade 6	593	1216	M5.B.1.1.1	Measure.
604841	5	Grade 5 to Grade 6	594	1215	M5.B.2.2.1	Measure.
606155	5	Grade 5 to Grade 6	1193	1215	M5.C.2.1.2	Geo.
601592	5	Grade 5 to Grade 6	595	1214	M5.E.2.1.1	Data & Prob.
601590	5	Grade 5 to Grade 6	2372	1214	M5.A.1.1.1	Numbers & Op.
604953	5	Grade 5 to Grade 6	1171	1226	M5.A.1.3.3	Numbers & Op.
604853	5	Grade 5 to Grade 6	1175	1227	M5.A.1.5.1	Numbers & Op.
604784	5	Grade 5 to Grade 6	1178	1227	M5.A.1.2.1	Numbers & Op.
604868	5	Grade 5 to Grade 6	1176	1225	M5.B.1.2.1	Measure.
604964	5	Grade 5 to Grade 6	1190	1226	M5.E.1.1.1	Data & Prob.
601542	5	Grade 5 to Grade 6	1189	1225	M5.B.2.1.1	Measure.
606276	5	Grade 5 to Grade 6	590	1223	M5.C.2.1.1	Geo.
604856	5	Grade 5 to Grade 6	1180	1219	M5.A.3.1.1	Numbers & Op.
606166	5	Grade 5 to Grade 6	1181	1220	M5.D.2.1.1	Alg. Con.
604958	5	Grade 5 to Grade 6	1176	1219	M5.A.2.1.1	Numbers & Op.
604842	5	Grade 5 to Grade 6	1182	1219	M5.C.1.1.2	Geo.
606157	5	Grade 5 to Grade 6	1188	1219	M5.D.1.1.2	Alg. Con.
604794	5	Grade 5 to Grade 6	1177	1217	M5.E.2.1.2	Data & Prob.
604869	5	Grade 5 to Grade 6	1191	1216	M5.B.2.2.2	Measure.
606279	5	Grade 5 to Grade 6	1196	1219	M5.E.3.1.2	Data & Prob.
601040	6	Grade 5 to Grade 6	1190	609	M6.E.3.1.1	Data & Prob.
602096	6	Grade 5 to Grade 6	1190	1213	M6.B.2.1.1	Measure.
601730	6	Grade 5 to Grade 6	1191	1223	M6.B.2.2.1	Measure.
602081	6	Grade 5 to Grade 6	1188	1199	M6.E.1.1.3	Data & Prob.
599668	6	Grade 5 to Grade 6	1186	608	M6.A.1.3.1	Numbers & Op.
600989	6	Grade 5 to Grade 6	1184	1223	M6.D.1.1.1	Alg. Con.
602070	6	Grade 5 to Grade 6	1184	614	M6.E.1.1.1	Data & Prob.
601689	6	Grade 5 to Grade 6	1185	609	M6.C.1.2.2	Geo.
601031	6	Grade 5 to Grade 6	1185	1206	M6.D.2.1.2	Alg. Con.
602174	6	Grade 5 to Grade 6	1181	1210	M6.A.3.2.1	Numbers & Op.

Table C–3 (continued). Mathematics Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
601249	6	Grade 5 to Grade 6	1186	600	M6.C.3.1.1	Geo.
599670	6	Grade 5 to Grade 6	1181	1199	M6.A.1.3.2	Numbers & Op.
600978	6	Grade 5 to Grade 6	1184	615	M6.D.2.2.1	Alg. Con.
601706	6	Grade 5 to Grade 6	1186	1209	M6.E.2.1.1	Data & Prob.
601024	6	Grade 5 to Grade 6	1183	608	M6.D.1.2.1	Alg. Con.
602176	6	Grade 5 to Grade 6	1183	1213	M6.B.1.1.1	Measure.
602071	6	Grade 5 to Grade 6	1184	1210	M6.E.1.1.2	Data & Prob.
602104	6	Grade 5 to Grade 6	1179	607	M6.B.2.1.2	Measure.
599667	6	Grade 5 to Grade 6	1181	1226	M6.A.1.2.1	Numbers & Op.
601260	6	Grade 5 to Grade 6	1181	610	M6.C.1.1.1	Geo.

Appendix C: Vertical Linking Item Details

Table C–4. Mathematics Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
599606	6	Grade 6 to Grade 7	1224	792	M6.A.1.2.1	Numbers & Op.
601257	6	Grade 6 to Grade 7	1214	792	M6.C.3.1.1	Geo.
601026	6	Grade 6 to Grade 7	614	790	M6.D.1.2.1	Alg. Con.
601705	6	Grade 6 to Grade 7	1221	786	M6.E.1.1.1	Data & Prob.
601811	6	Grade 6 to Grade 7	1220	785	M6.A.2.1.1	Numbers & Op.
601714	6	Grade 6 to Grade 7	1203	786	M6.C.1.2.1	Geo.
601032	6	Grade 6 to Grade 7	1210	783	M6.D.2.1.2	Alg. Con.
599590	6	Grade 6 to Grade 7	2447	783	M6.A.1.1.1	Numbers & Op.
602095	6	Grade 6 to Grade 7	606	784	M6.B.2.1.3	Measure.
601700	6	Grade 6 to Grade 7	1230	785	M6.C.1.1.3	Geo.
601277	6	Grade 6 to Grade 7	1223	785	M6.E.3.1.1	Data & Prob.
602073	6	Grade 6 to Grade 7	603	784	M6.E.1.1.3	Data & Prob.
599643	6	Grade 6 to Grade 7	1217	778	M6.A.1.3.2	Numbers & Op.
602177	6	Grade 6 to Grade 7	1217	778	M6.B.1.1.1	Measure.
601220	6	Grade 6 to Grade 7	1205	778	M6.B.2.3.1	Measure.
601030	6	Grade 6 to Grade 7	1217	789	M6.D.2.1.1	Alg. Con.
601275	6	Grade 6 to Grade 7	592	786	M6.E.2.1.1	Data & Prob.
601678	6	Grade 6 to Grade 7	1220	785	M6.D.1.1.1	Alg. Con.
601301	6	Grade 6 to Grade 7	1220	785	M6.E.1.1.2	Data & Prob.
601245	6	Grade 6 to Grade 7	1225	783	M6.E.3.1.2	Data & Prob.
599593	6	Grade 6 to Grade 7	1221	784	M6.A.1.1.2	Numbers & Op.
601664	6	Grade 6 to Grade 7	600	780	M6.C.1.1.4	Geo.
599609	6	Grade 6 to Grade 7	1207	776	M6.A.1.3.1	Numbers & Op.
601799	6	Grade 6 to Grade 7	1211	778	M6.A.1.4.1	Numbers & Op.
602101	6	Grade 6 to Grade 7	612	775	M6.B.2.1.1	Measure.
602175	6	Grade 6 to Grade 7	614	773	M6.A.3.2.1	Numbers & Op.
601044	6	Grade 6 to Grade 7	1210	773	M6.D.2.2.1	Alg. Con.
601694	6	Grade 6 to Grade 7	1211	773	M6.C.1.1.2	Geo.
602088	6	Grade 6 to Grade 7	1226	772	M6.B.2.2.1	Measure.
601702	6	Grade 6 to Grade 7	605	771	M6.C.1.2.2	Geo.
601287	7	Grade 6 to Grade 7	1222	395	M7.D.2.1.1	Alg. Con.
601050	7	Grade 6 to Grade 7	1223	399	M7.E.2.1.1	Data & Prob.
601772	7	Grade 6 to Grade 7	1222	793	M7.D.1.1.1	Alg. Con.
602215	7	Grade 6 to Grade 7	1222	765	M7.B.2.1.3	Measure.
601132	7	Grade 6 to Grade 7	1221	764	M7.E.4.1.1	Data & Prob.
599720	7	Grade 6 to Grade 7	1221	757	M7.A.2.1.1	Numbers & Op.
602190	7	Grade 6 to Grade 7	1219	788	M7.B.1.1.1	Measure.
601273	7	Grade 6 to Grade 7	1215	762	M7.D.2.2.1	Alg. Con.
599734	7	Grade 6 to Grade 7	1215	792	M7.A.1.2.1	Numbers & Op.
601784	7	Grade 6 to Grade 7	1216	373	M7.C.1.1.2	Geo.

Table C–4 (continued). Mathematics Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
601278	7	Grade 6 to Grade 7	1213	401	M7.D.3.1.1	Alg. Con.
601704	7	Grade 6 to Grade 7	1214	788	M7.C.3.1.1	Geo.
602189	7	Grade 6 to Grade 7	1212	780	M7.A.3.2.2	Numbers & Op.
601123	7	Grade 6 to Grade 7	1209	385	M7.E.3.1.1	Data & Prob.
599633	7	Grade 6 to Grade 7	1209	797	M7.A.2.2.4	Numbers & Op.
601099	7	Grade 6 to Grade 7	1218	777	M7.E.1.1.1	Data & Prob.
599685	7	Grade 6 to Grade 7	1214	400	M7.A.2.2.2	Numbers & Op.
601124	7	Grade 6 to Grade 7	1216	785	M7.E.3.1.2	Data & Prob.
602193	7	Grade 6 to Grade 7	1214	792	M7.B.2.1.1	Measure.
601827	7	Grade 6 to Grade 7	1211	772	M7.C.1.1.3	Geo.
601067	7	Grade 6 to Grade 7	1208	781	M7.D.2.1.1	Alg. Con.
601379	7	Grade 6 to Grade 7	1212	793	M7.E.2.1.2	Data & Prob.
599708	7	Grade 6 to Grade 7	1206	563	M7.A.1.1.1	Numbers & Op.
601771	7	Grade 6 to Grade 7	1202	767	M7.D.1.1.1	Alg. Con.
601271	7	Grade 6 to Grade 7	1206	761	M7.D.2.2.1	Alg. Con.
599715	7	Grade 6 to Grade 7	1206	781	M7.A.1.2.2	Numbers & Op.
599650	7	Grade 6 to Grade 7	1193	798	M7.A.3.2.1	Numbers & Op.
602180	7	Grade 6 to Grade 7	1199	789	M7.B.1.1.1	Measure.
601355	7	Grade 6 to Grade 7	1190	399	M7.D.3.1.1	Alg. Con.
602202	7	Grade 6 to Grade 7	1194	795	M7.C.1.1.1	Geo.

Appendix C: Vertical Linking Item Details

Table C–5. Mathematics Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
601054	7	Grade 8 to Grade 7	745	312	M7.E.3.1.1	Data & Prob.
601365	7	Grade 8 to Grade 7	746	312	M7.D.3.1.1	Alg. Con.
601117	7	Grade 8 to Grade 7	747	311	M7.E.1.1.1	Data & Prob.
601835	7	Grade 8 to Grade 7	748	310	M7.C.1.1.3	Geo.
601677	7	Grade 8 to Grade 7	749	312	M7.C.1.2.2	Geo.
602155	7	Grade 8 to Grade 7	750	312	M7.A.3.2.2	Numbers & Op.
602142	7	Grade 8 to Grade 7	751	312	M7.B.2.1.3	Measure.
601300	7	Grade 8 to Grade 7	752	312	M7.D.2.1.2	Alg. Con.
601130	7	Grade 8 to Grade 7	753	312	M7.E.3.1.3	Data & Prob.
599682	7	Grade 8 to Grade 7	754	311	M7.A.2.2.1	Numbers & Op.
602144	7	Grade 8 to Grade 7	755	309	M7.B.2.2.2	Measure.
599732	7	Grade 8 to Grade 7	756	309	M7.A.2.2.6	Numbers & Op.
599727	7	Grade 8 to Grade 7	757	309	M7.A.1.2.1	Numbers & Op.
599686	7	Grade 8 to Grade 7	758	309	M7.A.2.2.3	Numbers & Op.
601687	7	Grade 8 to Grade 7	759	307	M7.C.3.1.2	Geo.
601218	7	Grade 8 to Grade 7	760	315	M7.C.3.1.1	Geo.
599722	7	Grade 8 to Grade 7	761	314	M7.A.2.1.1	Numbers & Op.
599684	7	Grade 8 to Grade 7	762	313	M7.A.2.2.2	Numbers & Op.
602141	7	Grade 8 to Grade 7	763	311	M7.B.2.1.2	Measure.
601051	7	Grade 8 to Grade 7	764	314	M7.E.2.1.2	Data & Prob.
599712	7	Grade 8 to Grade 7	765	314	M7.A.3.2.1	Numbers & Op.
602234	7	Grade 8 to Grade 7	766	314	M7.C.1.1.1	Geo.
602146	7	Grade 8 to Grade 7	767	314	M7.C.1.2.1	Geo.
601773	7	Grade 8 to Grade 7	768	313	M7.D.2.1.1	Alg. Con.
599711	7	Grade 8 to Grade 7	769	313	M7.A.2.2.5	Numbers & Op.
602143	7	Grade 8 to Grade 7	770	313	M7.B.2.2.1	Measure.
601110	7	Grade 8 to Grade 7	771	313	M7.E.3.1.2	Data & Prob.
601272	7	Grade 8 to Grade 7	772	312	M7.D.2.2.1	Alg. Con.
601357	7	Grade 8 to Grade 7	773	313	M7.D.3.1.2	Alg. Con.
601086	7	Grade 8 to Grade 7	774	313	M7.E.4.1.1	Data & Prob.
601263	8	Grade 8 to Grade 7	775	309	M8.C.3.1.1	Geo.
601757	8	Grade 8 to Grade 7	776	158	M8.D.1.1.2	Alg. Con.
601069	8	Grade 8 to Grade 7	777	308	M8.E.4.1.2	Data & Prob.
599651	8	Grade 8 to Grade 7	778	318	M8.A.3.1.2	Numbers & Op.
601073	8	Grade 8 to Grade 7	779	314	M8.D.2.1.3	Alg. Con.
601801	8	Grade 8 to Grade 7	780	154	M8.B.1.1.1	Measure.
599610	8	Grade 8 to Grade 7	781	160	M8.A.2.1.1	Numbers & Op.
601097	8	Grade 8 to Grade 7	782	159	M8.E.1.1.1	Data & Prob.
601725	8	Grade 8 to Grade 7	783	316	M8.B.1.1.3	Measure.
601744	8	Grade 8 to Grade 7	784	157	M8.B.2.2.3	Measure.

Table C–5 (continued). Mathematics Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category
			Lower Grade	Upper Grade		
601288	8	Grade 8 to Grade 7	785	157	M8.D.2.1.1	Alg. Con.
601247	8	Grade 8 to Grade 7	786	312	M8.D.2.2.2	Alg. Con.
599698	8	Grade 8 to Grade 7	787	156	M8.A.2.2.2	Numbers & Op.
601763	8	Grade 8 to Grade 7	788	306	M8.D.4.1.2	Alg. Con.
601090	8	Grade 8 to Grade 7	789	154	M8.E.1.1.3	Data & Prob.
601804	8	Grade 8 to Grade 7	790	318	M8.B.1.1.4	Measure.
599640	8	Grade 8 to Grade 7	791	311	M8.A.3.1.1	Numbers & Op.
602158	8	Grade 8 to Grade 7	792	310	M8.B.1.1.2	Measure.
602072	8	Grade 8 to Grade 7	793	315	M8.D.1.1.1	Alg. Con.
601707	8	Grade 8 to Grade 7	794	317	M8.D.1.1.3	Alg. Con.
601332	8	Grade 8 to Grade 7	795	312	M8.D.2.1.2	Alg. Con.
599613	8	Grade 8 to Grade 7	796	317	M8.A.2.2.1	Numbers & Op.
601675	8	Grade 8 to Grade 7	797	317	M8.D.4.1.3	Alg. Con.
601100	8	Grade 8 to Grade 7	798	157	M8.E.3.1.1	Data & Prob.
599583	8	Grade 8 to Grade 7	799	636	M8.A.1.1.1	Numbers & Op.
601340	8	Grade 8 to Grade 7	800	156	M8.D.2.2.1	Alg. Con.
601344	8	Grade 8 to Grade 7	801	321	M8.D.4.1.1	Alg. Con.
600990	8	Grade 8 to Grade 7	802	306	M8.E.1.1.2	Data & Prob.
599645	8	Grade 8 to Grade 7	803	160	M8.A.3.3.1	Numbers & Op.
602058	8	Grade 8 to Grade 7	804	307	M8.C.1.1.1	Geo.

Appendix C: Vertical Linking Item Details

Table C–6. Mathematics Items Used to Link Algebra I to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category	Algebra I Diagnostic Category
			Lower Grade	Upper Grade			
601121	8	Algebra I to Grade 8	316	1400	M8.A.3.3.1	Numbers & Op.	Op. with Real Num.
601102	8	Algebra I to Grade 8	310	1406	M8.E.3.1.1	Data & Prob.	Data Anal.
601360	8	Algebra I to Grade 8	155	1403	M8.D.4.1.1	Alg. Con.	Functions & Geo.
601764	8	Algebra I to Grade 8	316	1396	M8.D.4.1.3	Alg. Con.	Functions & Geo.
602052	8	Algebra I to Grade 8	318	1396	M8.D.1.1.3	Alg. Con.	Functions & Geo.
599639	8	Algebra I to Grade 8	154	1391	M8.A.3.1.1	Numbers & Op.	Op. with Real Num.
602065	8	Algebra I to Grade 8	156	1376	M8.D.1.1.1	Alg. Con.	Functions & Geo.
601346	8	Algebra I to Grade 8	306	1390	M8.D.2.2.2	Alg. Con.	Linear Eq.
599582	8	Algebra I to Grade 8	625	1387	M8.A.1.1.1	Numbers & Op.	Op. with Real Num.
599697	8	Algebra I to Grade 8	314	1377	M8.A.2.2.1	Numbers & Op.	Op. with Real Num.
600980	8	Algebra I to Grade 8	318	1376	M8.D.2.1.3	Alg. Con.	Linear Eq.
601127	8	Algebra I to Grade 8	158	1376	M8.E.4.1.1	Data & Prob.	Data Anal.
601776	8	Algebra I to Grade 8	311	1370	M8.D.4.1.2	Alg. Con.	Functions & Geo.
601092	8	Algebra I to Grade 8	306	1362	M8.E.1.1.2	Data & Prob.	Data Anal.
601232	8	Algebra I to Grade 8	151	1359	M8.D.2.1.1	Alg. Con.	Linear Eq.
601348	8	Algebra I to Grade 8	311	1402	M8.D.2.2.1	Alg. Con.	Linear Eq.
601777	8	Algebra I to Grade 8	307	1401	M8.D.4.1.3	Alg. Con.	Functions & Geo.
599619	8	Algebra I to Grade 8	314	1388	M8.A.2.2.2	Numbers & Op.	Op. with Real Num.
601222	8	Algebra I to Grade 8	311	1389	M8.C.3.1.1	Geo.	None
601384	8	Algebra I to Grade 8	317	1388	M8.D.4.1.1	Alg. Con.	Functions & Geo.
601091	8	Algebra I to Grade 8	314	1390	M8.E.1.1.3	Data & Prob.	Data Anal.
599585	8	Algebra I to Grade 8	310	1377	M8.A.2.1.1	Numbers & Op.	Op. with Real Num.
599637	8	Algebra I to Grade 8	308	1380	M8.A.3.1.2	Numbers & Op.	Op. with Real Num.
601231	8	Algebra I to Grade 8	313	1374	M8.D.2.1.1	Alg. Con.	Linear Eq.
601663	8	Algebra I to Grade 8	155	1368	M8.D.1.1.2	Alg. Con.	Functions & Geo.
601126	8	Algebra I to Grade 8	308	1370	M8.E.4.1.2	Data & Prob.	Data Anal.
601089	8	Algebra I to Grade 8	151	1357	M8.E.1.1.2	Data & Prob.	Data Anal.
601234	8	Algebra I to Grade 8	303	1356	M8.D.2.1.2	Alg. Con.	Linear Eq.
601775	8	Algebra I to Grade 8	312	1349	M8.D.4.1.2	Alg. Con.	Functions & Geo.
601103	8	Algebra I to Grade 8	319	1344	M8.E.3.2.1	Data & Prob.	Data Anal.
602259	11	Algebra I to Grade 8	312	714	M11.E.2.1.3	Data & Prob.	Data Anal.
604952	11	Algebra I to Grade 8	312	710	M11.E.4.1.2	Data & Prob.	Data Anal.
601837	A1	Algebra I to Grade 8	312	700	A1.2.2.1.1	Alg. Con.	Functions & Geo.
602184	A1	Algebra I to Grade 8	313	1421	A1.2.1.1.1	Alg. Con.	Functions & Geo.
601554	11	Algebra I to Grade 8	313	711	M11.E.2.1.3	Data & Prob.	Data Anal.
602171	A1	Algebra I to Grade 8	309	1382	A1.2.1.2.2	Alg. Con.	Functions & Geo.
601841	A1	Algebra I to Grade 8	313	1383	A1.2.2.1.2	Alg. Con.	Functions & Geo.
604806	11	Algebra I to Grade 8	312	710	M11.E.4.1.2	Data & Prob.	Data Anal.
600839	11	Algebra I to Grade 8	313	713	M11.E.1.1.1	Data & Prob.	Data Anal.
601461	11	Algebra I to Grade 8	313	711	M11.E.1.1.1	Data & Prob.	Data Anal.

Table C–6 (continued). Mathematics Items Used to Link Algebra I to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category	Algebra I Diagnostic Category
			Lower Grade	Upper Grade			
604804	11	Algebra I to Grade 8	313	705	M11.E.2.1.3	Data & Prob.	Data Anal.
602241	A1	Algebra I to Grade 8	312	1420	A1.2.1.2.1	Alg. Con.	Functions & Geo.
601793	A1	Algebra I to Grade 8	313	1425	A1.2.2.1.4	Alg. Con.	Functions & Geo.
602159	A1	Algebra I to Grade 8	312	1416	A1.2.2.2.1	Alg. Con.	Functions & Geo.
602274	11	Algebra I to Grade 8	312	713	M11.E.4.1.2	Data & Prob.	Data Anal.
601135	A1	Algebra I to Grade 8	315	1418	A1.2.3.3.1	Data & Prob.	Data Anal.
601144	A1	Algebra I to Grade 8	317	1415	A1.1.2.1.3	Alg. Con.	Linear Eq.
600842	11	Algebra I to Grade 8	316	717	M11.A.2.1.3	Numbers & Op.	Op. with Real Num.
601370	A1	Algebra I to Grade 8	314	1364	A1.1.3.1.3	Alg. Con.	Linear Eq.
600646	11	Algebra I to Grade 8	315	710	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601630	11	Algebra I to Grade 8	314	718	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601138	A1	Algebra I to Grade 8	313	1378	A1.2.3.2.1	Data & Prob.	Data Anal.
601139	A1	Algebra I to Grade 8	310	1413	A1.2.3.2.2	Data & Prob.	Data Anal.
600826	11	Algebra I to Grade 8	311	716	M11.A.3.1.1	Numbers & Op.	Op. with Real Num.
601140	A1	Algebra I to Grade 8	310	1408	A1.2.3.2.3	Data & Prob.	Data Anal.
600930	A1	Algebra I to Grade 8	311	707	A1.1.1.4.1	Numbers & Op.	Op. with Real Num.
602260	11	Algebra I to Grade 8	312	717	M11.A.2.1.1	Numbers & Op.	Op. with Real Num.
600931	A1	Algebra I to Grade 8	310	1375	A1.1.1.5.1	Alg. Con.	Op. with Real Num.
602644	11	Algebra I to Grade 8	311	714	M11.A.2.1.1	Numbers & Op.	Op. with Real Num.
604162	11	Algebra I to Grade 8	310	714	M11.A.2.1.2	Numbers & Op.	Op. with Real Num.

Appendix C: Vertical Linking Item Details

Table C–7. Mathematics Items Used to Link Geometry to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category	Geometry Diagnostic Category
			Lower Grade	Upper Grade			
601740	8	Geometry to Grade 8	306	1052	M8.B.2.1.3	Measure.	Measure.
602118	8	Geometry to Grade 8	319	1049	M8.B.2.2.1	Measure.	Measure.
602056	8	Geometry to Grade 8	306	1052	M8.C.1.1.2	Geo.	Geo. Prop.
602059	8	Geometry to Grade 8	156	1052	M8.C.1.1.2	Geo.	Geo. Prop.
601733	8	Geometry to Grade 8	151	1039	M8.B.2.1.1	Measure.	Measure.
602133	8	Geometry to Grade 8	320	1049	M8.C.1.1.3	Geo.	Geo. Prop.
602117	8	Geometry to Grade 8	151	1046	M8.B.2.2.2	Measure.	Measure.
602128	8	Geometry to Grade 8	312	1047	M8.C.1.1.1	Geo.	Geo. Prop.
601802	8	Geometry to Grade 8	319	1047	M8.B.1.1.3	Measure.	None
602205	8	Geometry to Grade 8	318	1047	M8.C.1.1.1	Geo.	Geo. Prop.
601723	8	Geometry to Grade 8	306	1037	M8.B.1.1.1	Measure.	None
602208	8	Geometry to Grade 8	317	1043	M8.C.1.1.3	Geo.	Geo. Prop.
601326	8	Geometry to Grade 8	317	1038	M8.C.1.2.1	Geo.	Coor. Geo.
601338	8	Geometry to Grade 8	311	1038	M8.C.3.1.1	Geo.	Coor. Geo.
601371	8	Geometry to Grade 8	316	1031	M8.C.3.1.1	Geo.	Coor. Geo.
601736	8	Geometry to Grade 8	316	1048	M8.B.2.1.2	Measure.	Measure.
602136	8	Geometry to Grade 8	316	1034	M8.C.1.2.1	Geo.	Coor. Geo.
601755	8	Geometry to Grade 8	306	1039	M8.C.1.2.1	Geo.	Coor. Geo.
601372	8	Geometry to Grade 8	316	1037	M8.C.3.1.1	Geo.	Coor. Geo.
601782	8	Geometry to Grade 8	156	1028	M8.B.1.1.4	Measure.	None
602204	8	Geometry to Grade 8	308	1039	M8.C.1.1.1	Geo.	Geo. Prop.
602131	8	Geometry to Grade 8	317	1037	M8.C.1.1.2	Geo.	Geo. Prop.
602061	8	Geometry to Grade 8	314	1035	M8.C.1.1.2	Geo.	Geo. Prop.
602115	8	Geometry to Grade 8	317	1029	M8.B.2.2.2	Measure.	Measure.
602087	8	Geometry to Grade 8	312	1034	M8.C.1.1.3	Geo.	Geo. Prop.
602212	8	Geometry to Grade 8	319	1030	M8.C.1.1.3	Geo.	Geo. Prop.
601724	8	Geometry to Grade 8	310	1023	M8.B.1.1.2	Measure.	None
602113	8	Geometry to Grade 8	315	1023	M8.B.2.2.1	Measure.	Measure.
601329	8	Geometry to Grade 8	302	1031	M8.C.3.1.1	Geo.	Coor. Geo.
601743	8	Geometry to Grade 8	305	1029	M8.B.2.2.3	Measure.	Measure.
602661	11	Geometry to Grade 8	316	531	M11.B.2.1.1	Measure.	Measure.
604163	11	Geometry to Grade 8	317	531	M11.B.2.2.2	Measure.	Measure.
604671	GE	Geometry to Grade 8	311	1963	G.1.1.1.1	Geo.	Geo. Prop.
604400	GE	Geometry to Grade 8	316	992	G.1.3.1.1	Geo.	Congruence
604389	GE	Geometry to Grade 8	316	1001	G.2.1.1.1	Geo.	Coor. Geo.
604799	11	Geometry to Grade 8	316	528	M11.B.2.3.1	Measure.	Measure.
604418	GE	Geometry to Grade 8	312	478	G.1.2.1.4	Geo.	Geo. Prop.
600651	11	Geometry to Grade 8	315	531	M11.B.2.2.4	Measure.	Measure.
604707	GE	Geometry to Grade 8	314	1053	G.1.2.1.5	Geo.	Geo. Prop.
604180	11	Geometry to Grade 8	316	528	M11.B.2.2.3	Measure.	Measure.

Table C–7 (continued). Mathematics Items Used to Link Geometry to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Mathematics Diagnostic Category	Geometry Diagnostic Category
			Lower Grade	Upper Grade			
604378	GE	Geometry to Grade 8	316	1048	G.2.2.1.1	Geo.	Measure.
601544	11	Geometry to Grade 8	316	532	M11.B.2.1.1	Measure.	Measure.
600749	11	Geometry to Grade 8	314	531	M11.B.2.2.4	Measure.	Measure.
604392	GE	Geometry to Grade 8	315	1053	G.1.1.1.4	Geo.	Geo. Prop.
604395	GE	Geometry to Grade 8	314	1024	G.1.3.1.2	Geo.	Congruence
604178	11	Geometry to Grade 8	315	531	M11.C.1.3.1	Geo.	Congruence
600785	11	Geometry to Grade 8	315	530	M11.C.1.2.2	Geo.	Geo. Prop.
604522	11	Geometry to Grade 8	313	533	M11.C.1.4.1	Geo.	Coor. Geo.
604763	GE	Geometry to Grade 8	308	503	G.2.2.2.1	Geo.	Measure.
602650	11	Geometry to Grade 8	313	530	M11.C.1.3.1	Geo.	Congruence
604474	GE	Geometry to Grade 8	313	988	G.2.2.1.2	Geo.	Measure.
604600	GE	Geometry to Grade 8	310	1053	G.2.2.2.4	Geo.	Measure.
604361	GE	Geometry to Grade 8	312	525	G.2.3.2.1	Geo.	Measure.
601550	11	Geometry to Grade 8	311	530	M11.C.1.2.3	Geo.	Geo. Prop.
604360	GE	Geometry to Grade 8	309	1042	G.2.3.1.3	Geo.	Measure.
604170	11	Geometry to Grade 8	309	528	M11.C.1.4.1	Geo.	Coor. Geo.
604354	GE	Geometry to Grade 8	306	1007	G.2.2.3.1	Geo.	Measure.
601549	11	Geometry to Grade 8	306	530	M11.C.1.2.3	Geo.	Geo. Prop.
602268	11	Geometry to Grade 8	305	527	M11.C.1.3.1	Geo.	Congruence
604453	GE	Geometry to Grade 8	304	955	G.2.2.2.2	Geo.	Measure.

Appendix C: Vertical Linking Item Details

Table C–8. Mathematics Items Used to Link Algebra II to Algebra I

Item ID	Item Grade	Link	N Count		Eligible Content	Algebra I Diagnostic Category	Algebra II Diagnostic Category
			Lower Grade	Upper Grade			
602167	A1	Algebra II to Algebra I	701	949	A1.1.3.2.1	Linear Eq.	Non-linear
601423	A1	Algebra II to Algebra I	709	951	A1.1.2.1.3	Linear Eq.	Non-linear
602188	A1	Algebra II to Algebra I	708	943	A1.2.2.1.4	Functions & Geo.	Functions
600971	A1	Algebra II to Algebra I	1407	944	A1.1.1.5.1	Op. with Real Num.	Non-linear
601180	A1	Algebra II to Algebra I	1372	948	A1.1.2.1.1	Linear Eq.	Non-linear
601854	A1	Algebra II to Algebra I	670	937	A1.1.2.2.2	Linear Eq.	Non-linear
602253	A1	Algebra II to Algebra I	705	939	A1.2.2.1.2	Functions & Geo.	Functions
601419	A1	Algebra II to Algebra I	693	941	A1.1.3.1.2	Linear Eq.	Non-linear
602251	A1	Algebra II to Algebra I	1371	942	A1.2.1.2.2	Functions & Geo.	Functions
601176	A1	Algebra II to Algebra I	676	941	A1.2.3.2.3	Data Anal.	Data Anal.
600928	A1	Algebra II to Algebra I	1405	935	A1.1.1.2.1	Op. with Real Num.	Non-linear
600926	A1	Algebra II to Algebra I	2816	940	A1.1.1.1.1	Op. with Real Num.	Non-linear
602237	A1	Algebra II to Algebra I	662	931	A1.2.1.1.1	Functions & Geo.	Functions
601394	A1	Algebra II to Algebra I	697	931	A1.2.1.1.3	Functions & Geo.	Functions
600973	A1	Algebra II to Algebra I	682	925	A1.1.1.5.3	Op. with Real Num.	Non-linear
601397	A1	Algebra II to Algebra I	1378	943	A1.1.3.1.1	Linear Eq.	Non-linear
601368	A1	Algebra II to Algebra I	1374	948	A1.1.3.1.3	Linear Eq.	Non-linear
601136	A1	Algebra II to Algebra I	709	942	A1.1.2.1.2	Linear Eq.	Non-linear
601836	A1	Algebra II to Algebra I	713	946	A1.2.2.1.1	Functions & Geo.	Functions
601148	A1	Algebra II to Algebra I	1395	942	A1.2.3.3.1	Data Anal.	Data Anal.
602160	A1	Algebra II to Algebra I	1397	947	A1.2.2.2.1	Functions & Geo.	Functions
601813	A1	Algebra II to Algebra I	1424	941	A1.2.1.2.1	Functions & Geo.	Functions
601805	A1	Algebra II to Algebra I	1348	920	A1.2.2.1.3	Functions & Geo.	Functions
600953	A1	Algebra II to Algebra I	659	940	A1.1.1.1.2	Op. with Real Num.	Non-linear
600932	A1	Algebra II to Algebra I	1411	941	A1.1.1.5.2	Op. with Real Num.	Non-linear
601398	A1	Algebra II to Algebra I	1410	931	A1.1.2.2.1	Linear Eq.	Non-linear
600948	A1	Algebra II to Algebra I	1387	920	A1.2.3.1.1	Data Anal.	Data Anal.
600966	A1	Algebra II to Algebra I	1395	912	A1.1.1.3.1	Op. with Real Num.	Non-linear
602154	A1	Algebra II to Algebra I	1387	918	A1.1.3.2.2	Linear Eq.	Non-linear
601380	A1	Algebra II to Algebra I	1392	915	A1.2.1.1.2	Functions & Geo.	Functions
604700	A2	Algebra II to Algebra I	1406	927	A2.2.1.1.1	Functions & Geo.	Functions
603013	A2	Algebra II to Algebra I	1406	957	A2.1.3.1.4	Linear Eq.	Non-linear
604570	A2	Algebra II to Algebra I	1386	462	A2.2.2.1.3	Functions & Geo.	Functions
603086	A2	Algebra II to Algebra I	1400	914	A2.1.2.1.4	Op. with Real Num.	Non-linear
604625	A2	Algebra II to Algebra I	1380	948	A2.2.1.1.3	Functions & Geo.	Functions
604530	A2	Algebra II to Algebra I	1380	935	A2.1.3.2.2	Linear Eq.	Non-linear
604686	A2	Algebra II to Algebra I	1379	446	A2.2.2.2.1	Functions & Geo.	Functions
603043	A2	Algebra II to Algebra I	1383	932	A2.1.2.1.2	Op. with Real Num.	Non-linear
603037	A2	Algebra II to Algebra I	1366	950	A2.2.1.1.4	Functions & Geo.	Functions
604572	A2	Algebra II to Algebra I	1377	453	A2.2.2.1.4	Functions & Geo.	Functions

Table C–8 (continued). Mathematics Items Used to Link Algebra II to Algebra I

Item ID	Item Grade	Link	N Count		Eligible Content	Algebra I Diagnostic Category	Algebra II Diagnostic Category
			Lower Grade	Upper Grade			
603000	A2	Algebra II to Algebra I	1372	471	A2.1.2.2.2	Op. with Real Num.	Non-linear
604537	A2	Algebra II to Algebra I	1373	908	A2.2.1.1.2	Functions & Geo.	Functions
604634	A2	Algebra II to Algebra I	1369	472	A2.2.3.2.3	Data Anal.	Data Anal.
603106	A2	Algebra II to Algebra I	1360	898	A2.2.3.1.2	Data Anal.	Data Anal.
603057	A2	Algebra II to Algebra I	1351	456	A2.2.3.2.1	Data Anal.	Data Anal.
603055	A2	Algebra II to Algebra I	1397	919	A2.2.3.1.1	Data Anal.	Data Anal.
603018	A2	Algebra II to Algebra I	1408	937	A2.1.2.2.1	Op. with Real Num.	Non-linear
604685	A2	Algebra II to Algebra I	1404	476	A2.2.2.2.1	Functions & Geo.	Functions
603126	A2	Algebra II to Algebra I	1396	474	A2.2.3.2.3	Data Anal.	Data Anal.
604539	A2	Algebra II to Algebra I	1395	941	A2.1.3.2.1	Linear Eq.	Non-linear
604540	A2	Algebra II to Algebra I	1382	889	A2.1.3.2.2	Linear Eq.	Non-linear
604703	A2	Algebra II to Algebra I	1397	479	A2.2.1.1.1	Functions & Geo.	Functions
604629	A2	Algebra II to Algebra I	1387	902	A2.2.2.1.1	Functions & Geo.	Functions
603056	A2	Algebra II to Algebra I	1390	928	A2.2.3.2.1	Data Anal.	Data Anal.
603003	A2	Algebra II to Algebra I	1376	473	A2.1.3.1.2	Linear Eq.	Non-linear
604550	A2	Algebra II to Algebra I	1369	939	A2.2.2.1.4	Functions & Geo.	Functions
603098	A2	Algebra II to Algebra I	1374	944	A2.1.2.1.3	Op. with Real Num.	Non-linear
604544	A2	Algebra II to Algebra I	1370	461	A2.2.1.1.2	Functions & Geo.	Functions
604627	A2	Algebra II to Algebra I	1363	953	A2.2.1.1.3	Functions & Geo.	Functions
603042	A2	Algebra II to Algebra I	1368	936	A2.1.2.1.1	Op. with Real Num.	Non-linear

Appendix C: Vertical Linking Item Details

Tables C–9 through C–16 summarize the number of linking items by diagnostic category. Items coded in a Mathematics diagnostic category and an Algebra I, Geometry, or Algebra II diagnostic category are noted.

Table C–9. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

	Link Grade 3 to Grade 4		
	Grade 3 Items	**Grade 4 Items**	**Total**
Numbers & Operations	8	6	14
Measurement	5	4	9
Geometry	2	4	6
Algebraic Concepts	3	3	6
Data Analysis & Probability	2	3	5
TOTAL	20	20	40

Table C–10. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

	Grade 4 to Grade 5		
	Grade 4 Items	**Grade 5 Items**	**Total**
Numbers & Operations	6	7	13
Measurement	3	4	7
Geometry	4	3	7
Algebraic Concepts	3	3	6
Data Analysis & Probability	4	3	7
TOTAL	20	20	40

Table C–11. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

	Grade 5 to Grade 6		
	Grade 5 Items	**Grade 6 Items**	**Total**
Numbers & Operations	10	4	14
Measurement	6	4	10
Geometry	5	3	8
Algebraic Concepts	4	4	8
Data Analysis & Probability	5	5	10
TOTAL	30	20	50

Appendix C: Vertical Linking Item Details

Table C–12. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

	Grade 6 to Grade 7		
	Grade 6 Items	**Grade 7 Items**	**Total**
Numbers & Operations	8	8	16
Measurement	5	4	9
Geometry	6	4	10
Algebraic Concepts	5	8	13
Data Analysis & Probability	6	6	12
TOTAL	30	30	60

Table C–13. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Grade 8 to Grade 7		
	Grade 7 Items	**Grade 8 Items**	**Total**
Numbers & Operations	9	7	16
Measurement	4	5	9
Geometry	6	2	8
Algebraic Concepts	5	11	16
Data Analysis & Probability	6	5	11
TOTAL	30	30	60

Table C–14. Number of Items Linking Algebra I to Grade 8 by Diagnostic Category

	Algebra I to Grade 8		
	Grade 8 Items	**Algebra I Items**	**Total**
Numbers & Operations	7	8	15
Measurement	0	0	0
Geometry	1	0	1
Algebraic Concepts	15	10	25
Data Analysis & Probability	7	12	19
No Grade 8 DC	0	0	0
TOTAL	30	30	60
	Algebra I to Grade 8		
	Grade 8 Items	**Algebra I Items**	**Total**
Operations with Real Numbers	7	9	16
Linear Equations	6	2	8
Functions	9	7	16
Data Analysis	7	12	19
No Algebra I DC	1	0	1
TOTAL	30	30	60

Appendix C: Vertical Linking Item Details

Table C–15. Number of Items Linking Geometry to Grade 8 by Diagnostic Category

	Geometry to Grade 8		
	Grade 8 Items	**Geometry Items**	**Total**
Numbers & Operations	0	0	0
Measurement	12	0	12
Geometry	18	30	48
Algebraic Concepts	0	0	0
Data Analysis & Probability	0	0	0
No Grade 8 DC	0	0	0
TOTAL	30	30	60
	Geometry to Grade 8		
	Grade 8 Items	**Geometry Items**	**Total**
Geometric Properties	11	8	19
Congruence	0	4	4
Coordinate	7	2	9
Measurement	8	16	24
No Geometry DC	4	0	4
TOTAL	30	30	60

Table C–16. Number of Items Linking Algebra II to Algebra I by Diagnostic Category

	Algebra II to Algebra I		
	Algebra I Items	**Algebra II Items**	**Total**
Operations with Real Numbers	7	6	13
Linear Equations	10	5	15
Functions	10	13	23
Data Analysis	3	6	9
No Algebra I DC	0	0	0
TOTAL	30	30	60
	Algebra II to Algebra I		
	Algebra I Items	**Algebra II Items**	**Total**
Op. with Complex Numbers	0	0	0
Non-linear	17	11	28
Functions	10	13	23
Data Analysis	3	6	9
No Algebra II DC	0	0	0
TOTAL	30	30	60

Appendix C: Vertical Linking Item Details

Table C–17. Mathematics Example of Vertical Linking Workbook

		Grade 4 Calibration			Grade 5 Calibration				Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
601646	4	-1.028	1.020	-0.006	-1.880	1.000	-0.004	-0.852	-1.650	-0.458	
601987	4	0.195	0.970	0.001	-0.384	0.930	0.000	-0.579	-0.427	0.205	
604493	4	0.784	1.030	0.000	0.204	1.010	0.000	-0.580	0.162	0.203	
601961	4	0.684	1.000	0.002	-0.469	0.910	0.000	-1.153	0.062	-1.189	
604499	4	-0.488	0.900	0.001	-0.492	0.910	0.000	-0.004	-1.110	1.601	
602889	4	-0.160	0.920	-0.002	-1.157	0.840	0.000	-0.997	-0.782	-0.810	
602885	4	0.112	1.200	0.003	0.051	1.220	0.000	-0.061	-0.510	1.463	
602887	4	-0.493	1.070	-0.002	-1.063	1.030	0.000	-0.570	-1.115	0.227	
601639	4	0.397	1.070	0.001	0.149	1.090	0.000	-0.248	-0.225	1.009	
604969	4	1.559	1.060	0.000	1.469	1.080	0.000	-0.090	0.937	1.393	
601994	4	0.257	0.950	0.000	0.100	1.090	0.000	-0.157	-0.365	1.230	
601998	4	-0.551	1.120	-0.001	-1.376	1.140	-0.004	-0.825	-1.173	-0.392	
602000	4	2.034	1.070	-0.006	1.248	1.060	-0.003	-0.786	1.412	-0.297	
601991	4	1.106	0.900	0.001	0.095	0.860	-0.003	-1.011	0.484	-0.844	
604879	4	-0.099	1.020	0.000	-1.101	0.870	-0.003	-1.002	-0.721	-0.822	
601964	4	1.069	1.020	0.001	0.154	1.010	-0.003	-0.915	0.447	-0.611	
602971	4	-0.355	1.000	0.000	-0.858	1.070	-0.003	-0.503	-0.977	0.390	
604486	4	-0.420	0.940	0.000	-0.749	0.970	-0.003	-0.329	-1.042	0.812	
604967	4	-1.495	0.900	0.001	-1.254	0.960	-0.003	0.241	-2.117	2.196	high robust Z
602973	4	-0.035	0.940	0.003	0.362	1.220	-0.003	0.397	-0.657	2.575	high robust Z
600853	5	0.883	1.100	0.004	-0.047	1.100	-0.003	-0.930	0.261	-0.647	
604790	5	-0.495	1.010	0.004	-1.082	0.970	0.000	-0.587	-1.117	0.186	
604956	5	1.299	0.870	0.004	0.590	0.820	-0.003	-0.709	0.677	-0.110	
604862	5	1.405	0.920	0.004	0.368	0.850	-0.003	-1.037	0.783	-0.907	
604783	5	0.764	0.970	0.004	-0.814	0.890	0.001	-1.578	0.142	-2.221	high robust Z
606159	5	0.793	1.090	0.004	-0.157	0.990	-0.003	-0.950	0.171	-0.696	
604848	5	0.301	0.910	0.004	-0.707	1.020	0.001	-1.008	-0.321	-0.837	
604843	5	1.481	1.050	0.004	0.819	0.940	0.001	-0.662	0.859	0.004	
604966	5	-1.974	0.920	0.004	-3.190	0.870	-0.005	-1.216	-2.596	-1.342	
606163	5	0.780	1.130	0.004	0.478	1.200	0.002	-0.302	0.158	0.878	
601532	5	-0.368	0.950	0.000	-1.033	0.920	-0.001	-0.665	-0.990	-0.004	
606160	5	0.382	1.070	0.000	-0.313	0.940	-0.005	-0.695	-0.240	-0.076	
604960	5	0.618	0.910	0.000	0.223	1.050	0.000	-0.395	-0.004	0.652	
600852	5	0.753	1.100	0.000	0.050	1.020	0.002	-0.703	0.131	-0.096	
604834	5	-0.673	0.980	0.000	-1.151	0.980	-0.004	-0.478	-1.295	0.450	
604959	5	0.012	0.880	0.000	-0.871	0.840	-0.001	-0.883	-0.610	-0.533	
604961	5	0.141	1.000	0.000	-0.319	1.010	0.002	-0.460	-0.481	0.494	
606278	5	1.197	1.000	0.000	0.700	0.960	0.001	-0.497	0.575	0.404	
604965	5	-1.454	0.890	0.000	-1.565	0.900	-0.005	-0.111	-2.076	1.342	
604865	5	0.454	0.930	0.000	-0.537	0.910	-0.001	-0.991	-0.168	-0.795	
	Mean	0.234			-0.388			-0.622	-0.388	0.101	
	SD	0.887			0.893			0.413	0.887	1.002	
	SD Ratio	0.993									
	Correlation	0.892									
	Add. Constant	-0.622									
	Median							-0.664			
	Q							0.557			

Appendix C: Vertical Linking Item Details

Figures C–1 through C–8 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C–1. CDT Mathematics: Grade 3 to Grade 4 Linking – All Links

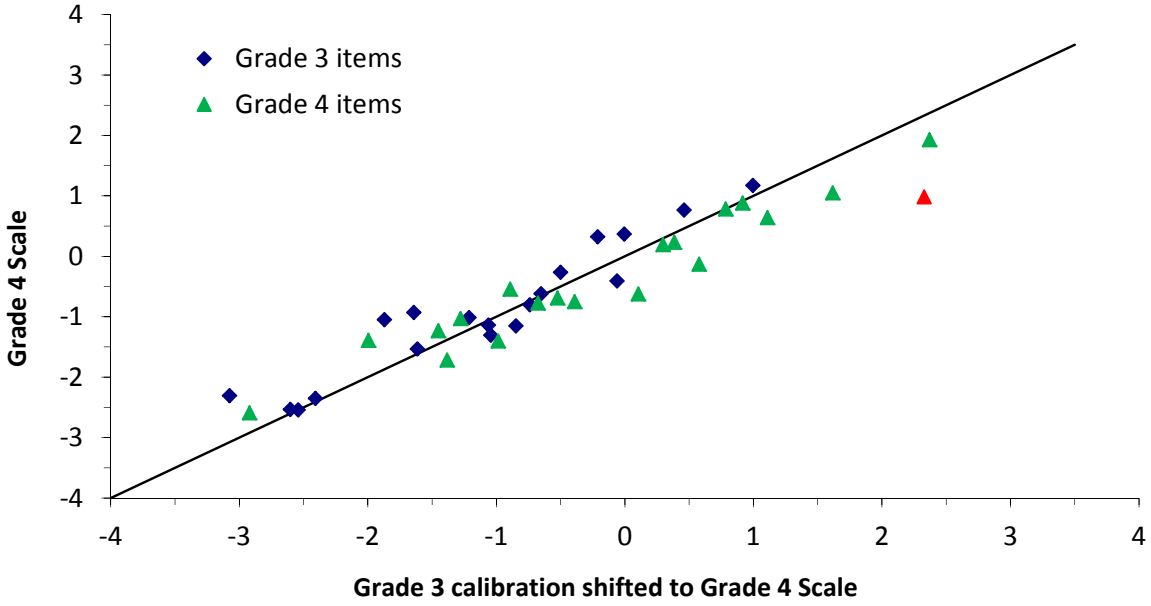


Figure C–2. CDT Mathematics: Grade 4 to Grade 5 Linking – All Links

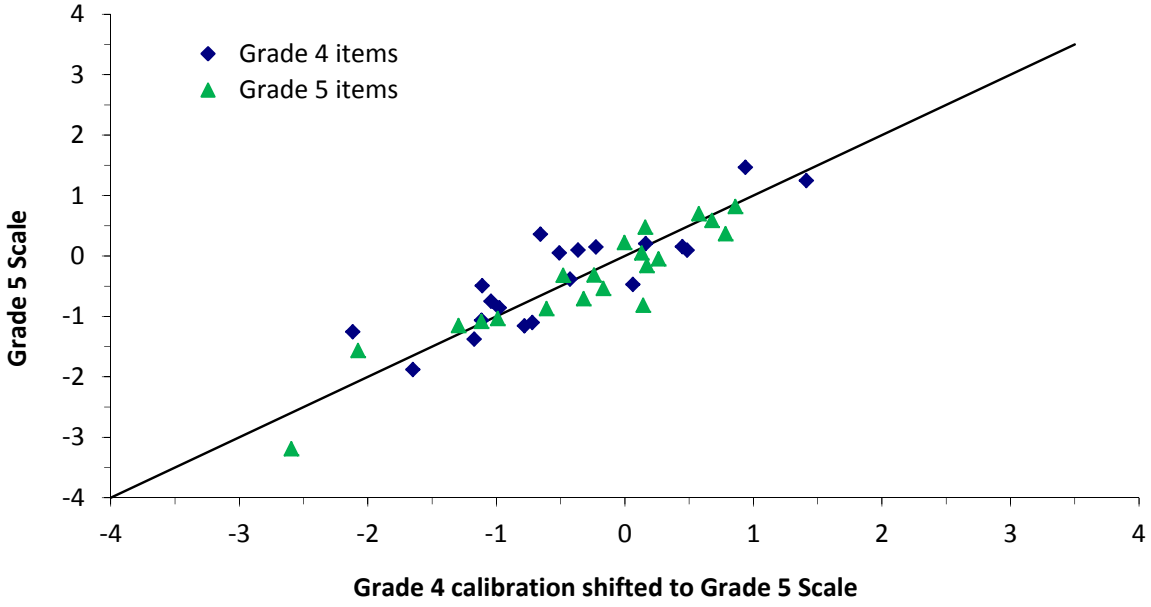


Figure C–3. CDT Mathematics: Grade 5 to Grade 6 Linking – All Links

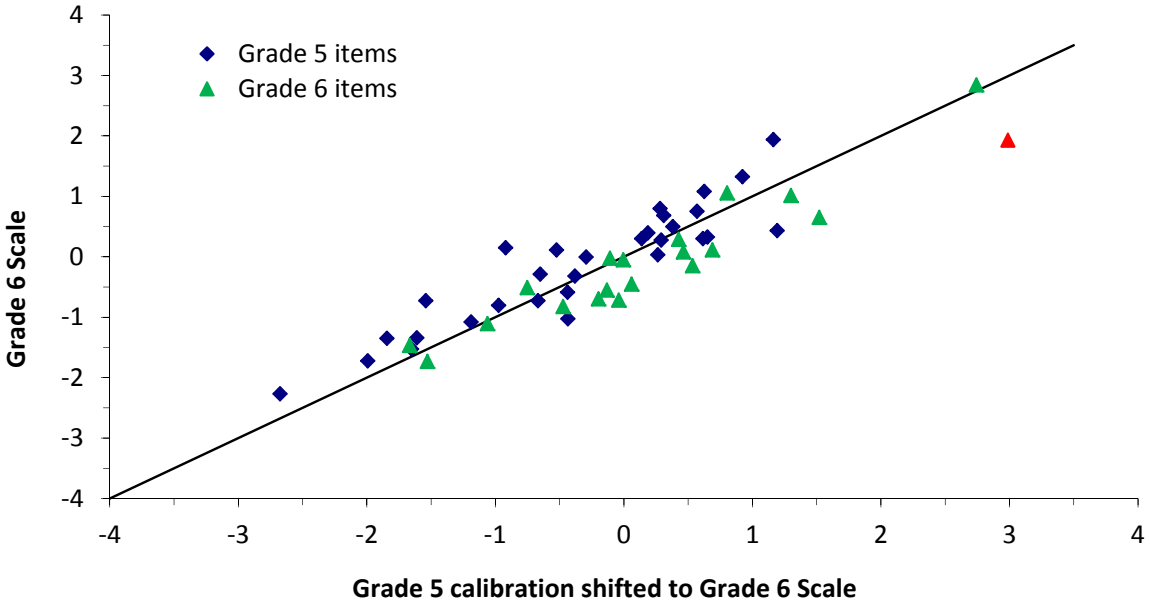


Figure C–4. CDT Mathematics: Grade 6 to Grade 7 Linking – All Links

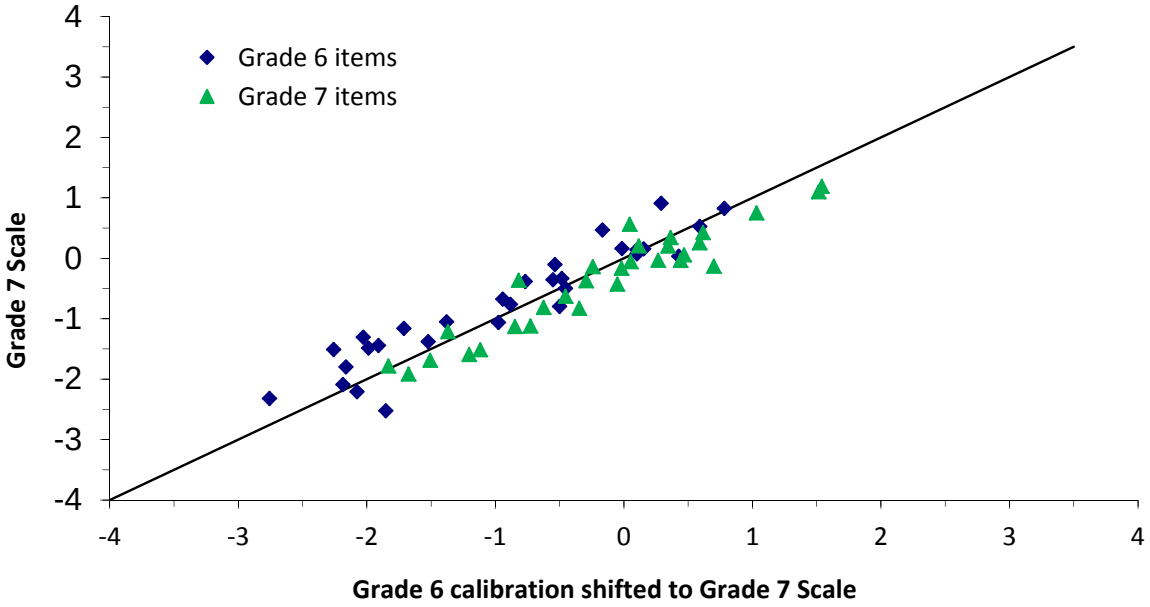


Figure C–5. CDT Mathematics: Grade 8 to Grade 7 Linking – All Links

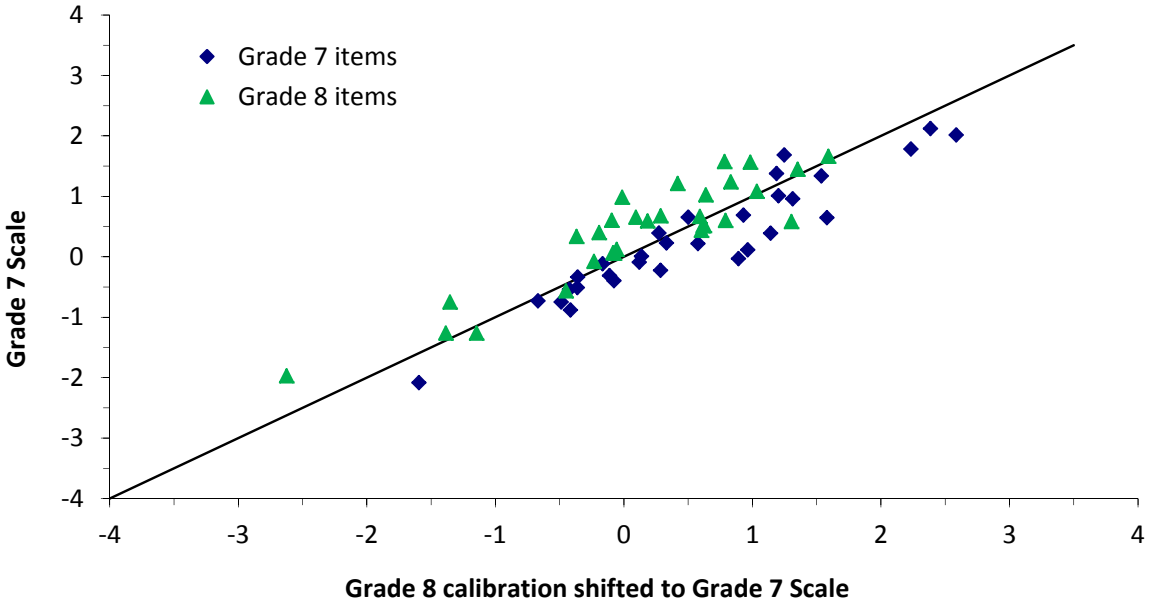


Figure C–6. CDT Mathematics: Algebra I to Grade 8 Linking – All Links

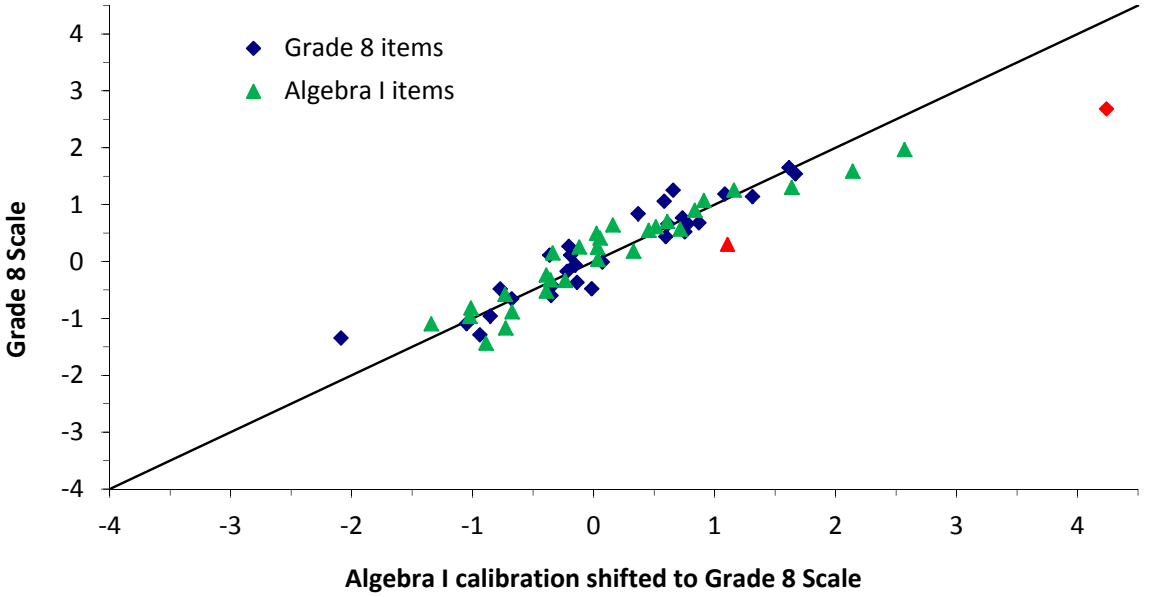


Figure C–7. CDT Mathematics: Geometry to Grade 8 Linking – All Links

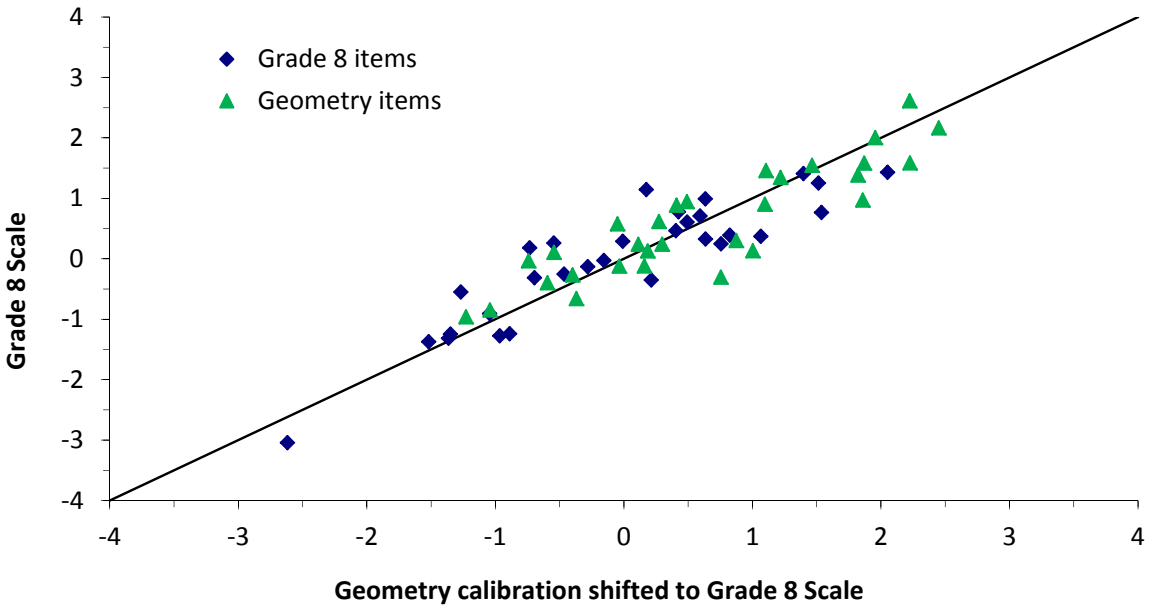
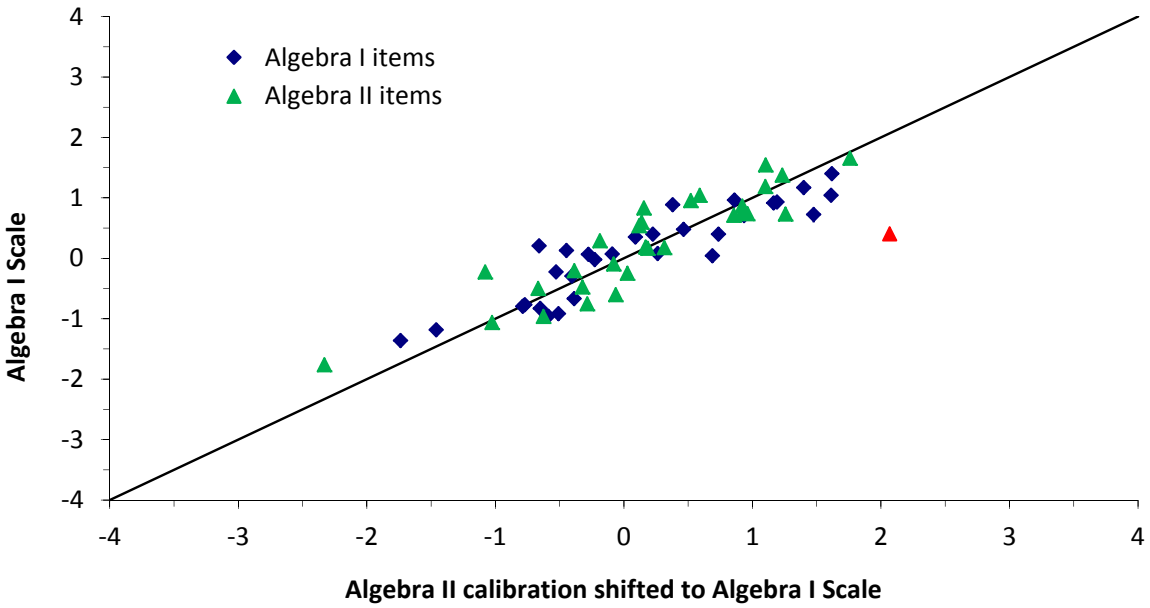


Figure C–8. CDT Mathematics: Algebra II to Algebra I Linking – All Links



READING/LITERATURE

Tables C–18 through C–23 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 613607 is a grade 3 item used to link grades 3 and 4. It was administered 761 times on the lower grade form (grade 3) and 826 times on the upper grade form (grade 4). In some cases, a linking item was also a common item. This results in n-count that is much higher in one of the two grades. For example, item 613400 is a grade 4 item used to link grades 3 and 4. It was also a common grade 4 item (meaning it appeared on all grade 4 forms). The n-counts reflect this: Grade 3 n-count is 754 while grade 4 n-count is 6,574.

The diagnostic categories are[3]:

- Comprehension
- Vocabulary
- Interpretation/Analysis Literary Elements & Devices
- Interpretation/Analysis Persuasive Techniques
- Interpretation/Analysis Organizational Skills

[3] Reading diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Appendix C: Vertical Linking Item Details

Table C–18. Reading/Literature Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
613605	3	Grade 3 to Grade 4	5272	823	R3A.1.1.2	Vocabulary
613613	3	Grade 3 to Grade 4	5270	822	R3A.2.2.1	Vocabulary
613614	3	Grade 3 to Grade 4	5275	822	R3A.2.1.1	Vocabulary
613592	3	Grade 3 to Grade 4	5262	822	R3A.2.3.1	Comprehension
613593	3	Grade 3 to Grade 4	5263	822	R3A.2.4.1	Comprehension
613460	3	Grade 3 to Grade 4	5251	823	R3A.1.2.2	Vocabulary
613459	3	Grade 3 to Grade 4	5245	822	R3A.1.1.1	Vocabulary
613461	3	Grade 3 to Grade 4	5242	823	R3A.1.4.1	Comprehension
613463	3	Grade 3 to Grade 4	5246	823	R3B.2.1.1	I/A Literary
613462	3	Grade 3 to Grade 4	5241	823	R3A.1.5.1	Comprehension
613607	3	Grade 3 to Grade 4	761	826	R3A.1.2.1	Vocabulary
613446	3	Grade 3 to Grade 4	752	825	R3A.1.1.1	Vocabulary
613444	3	Grade 3 to Grade 4	752	824	R3B.1.1.1	I/A Literary
613445	3	Grade 3 to Grade 4	751	823	R3A.1.5.1	Comprehension
613440	3	Grade 3 to Grade 4	744	823	R3A.1.2.2	Vocabulary
613439	3	Grade 3 to Grade 4	740	823	R3A.1.1.1	Vocabulary
613438	3	Grade 3 to Grade 4	739	822	R3B.1.1.1	I/A Literary
613443	3	Grade 3 to Grade 4	739	823	R3A.1.6.1	Comprehension
613442	3	Grade 3 to Grade 4	735	822	R3A.1.5.1	Comprehension
613441	3	Grade 3 to Grade 4	733	821	R3A.1.3.1	Comprehension
613220	4	Grade 3 to Grade 4	755	6576	R4B.2.1.3	I/A Literary
613219	4	Grade 3 to Grade 4	754	6573	R4B.2.1.2	I/A Literary
613399	4	Grade 3 to Grade 4	757	6569	R4A.2.2.1	Vocabulary
613400	4	Grade 3 to Grade 4	754	6574	R4A.2.3.1	Comprehension
613402	4	Grade 3 to Grade 4	756	6568	R4B.3.2.1	I/A Persuasive
613403	4	Grade 3 to Grade 4	759	6566	R4B.3.2.1	I/A Persuasive
613401	4	Grade 3 to Grade 4	756	6570	R4A.2.6.1	Comprehension
613288	4	Grade 3 to Grade 4	757	6569	R4A.1.1.2	Vocabulary
613291	4	Grade 3 to Grade 4	756	6567	R4A.1.1.1	Vocabulary
613295	4	Grade 3 to Grade 4	757	6563	R4A.2.2.1	Vocabulary
613289	4	Grade 3 to Grade 4	756	804	R4A.1.2.1	Vocabulary
613292	4	Grade 3 to Grade 4	756	805	R4A.1.2.2	Vocabulary
613215	4	Grade 3 to Grade 4	755	805	R4A.1.2.2	Vocabulary
613213	4	Grade 3 to Grade 4	751	803	R4B.2.1.1	I/A Literary
613214	4	Grade 3 to Grade 4	752	804	R4A.1.4.1	Comprehension
613388	4	Grade 3 to Grade 4	749	827	R4A.2.3.1	Comprehension
613389	4	Grade 3 to Grade 4	750	827	R4A.2.4.1	Comprehension
613391	4	Grade 3 to Grade 4	748	827	R4B.3.3.2	I/A Organizational
613392	4	Grade 3 to Grade 4	746	826	R4B.3.3.3	I/A Organizational
613390	4	Grade 3 to Grade 4	746	826	R4A.2.5.1	Comprehension

Appendix C: Vertical Linking Item Details

Table C–19. Reading/Literature Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
613220	4	Grade 4 to Grade 5	6576	955	R4B.2.1.3	I/A Literary
613219	4	Grade 4 to Grade 5	6573	957	R4B.2.1.2	I/A Literary
613399	4	Grade 4 to Grade 5	6569	958	R4A.2.2.1	Vocabulary
613400	4	Grade 4 to Grade 5	6574	958	R4A.2.3.1	Comprehension
613402	4	Grade 4 to Grade 5	6568	957	R4B.3.2.1	I/A Persuasive
613403	4	Grade 4 to Grade 5	6566	957	R4B.3.2.1	I/A Persuasive
613401	4	Grade 4 to Grade 5	6570	958	R4A.2.6.1	Comprehension
613288	4	Grade 4 to Grade 5	6569	958	R4A.1.1.2	Vocabulary
613291	4	Grade 4 to Grade 5	6567	958	R4A.1.1.1	Vocabulary
613295	4	Grade 4 to Grade 5	6563	958	R4A.2.2.1	Vocabulary
613293	4	Grade 4 to Grade 5	830	931	R4A.2.1.2	Vocabulary
613297	4	Grade 4 to Grade 5	829	930	R4A.2.2.2	Vocabulary
613212	4	Grade 4 to Grade 5	829	930	R4A.1.1.2	Vocabulary
613211	4	Grade 4 to Grade 5	830	926	R4A.1.5.1	Comprehension
613210	4	Grade 4 to Grade 5	829	925	R4A.1.6.1	Comprehension
613369	4	Grade 4 to Grade 5	815	920	R4A.2.2.1	Vocabulary
613370	4	Grade 4 to Grade 5	813	920	R4A.2.4.1	Comprehension
613372	4	Grade 4 to Grade 5	813	919	R4B.3.1.1	I/A Persuasive
613371	4	Grade 4 to Grade 5	813	917	R4A.2.5.1	Comprehension
613373	4	Grade 4 to Grade 5	812	915	R4B.3.3.1	I/A Organizational
611554	5	Grade 4 to Grade 5	812	7546	R5A.2.1.1	Vocabulary
613007	5	Grade 4 to Grade 5	813	7530	R5B.2.1.4	I/A Literary
613005	5	Grade 4 to Grade 5	810	7528	R5B.1.1.1	I/A Literary
613006	5	Grade 4 to Grade 5	812	7526	R5A.1.6.2	Comprehension
611354	5	Grade 4 to Grade 5	811	7530	R5A.2.1.2	Vocabulary
611377	5	Grade 4 to Grade 5	808	7524	R5B.3.3.2	I/A Organizational
611376	5	Grade 4 to Grade 5	812	7526	R5B.3.1.1	I/A Persuasive
611390	5	Grade 4 to Grade 5	810	7517	R5B.3.3.3	I/A Organizational
611374	5	Grade 4 to Grade 5	807	7510	R5A.2.5.1	Comprehension
611375	5	Grade 4 to Grade 5	808	7509	R5A.2.6.2	Comprehension
611550	5	Grade 4 to Grade 5	826	931	R5A.2.1.2	Vocabulary
611245	5	Grade 4 to Grade 5	826	924	R5B.2.1.1	I/A Literary
611246	5	Grade 4 to Grade 5	826	924	R5B.2.2.1	I/A Literary
611244	5	Grade 4 to Grade 5	826	921	R5A.1.4.1	Comprehension
611269	5	Grade 4 to Grade 5	826	935	R5A.2.1.1	Vocabulary
611272	5	Grade 4 to Grade 5	824	935	R5B.3.1.1	I/A Persuasive
611270	5	Grade 4 to Grade 5	823	935	R5A.2.3.1	Comprehension
611274	5	Grade 4 to Grade 5	824	935	R5B.3.3.2	I/A Organizational
611271	5	Grade 4 to Grade 5	824	934	R5A.2.6.1	Comprehension
611273	5	Grade 4 to Grade 5	824	933	R5B.3.3.1	I/A Organizational

Appendix C: Vertical Linking Item Details

Table C–20. Reading/Literature Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
611554	5	Grade 5 to Grade 6	7546	716	R5A.2.1.1	Vocabulary
613007	5	Grade 5 to Grade 6	7530	719	R5B.2.1.4	I/A Literary
613005	5	Grade 5 to Grade 6	7528	721	R5B.1.1.1	I/A Literary
613006	5	Grade 5 to Grade 6	7526	720	R5A.1.6.2	Comprehension
611354	5	Grade 5 to Grade 6	7530	719	R5A.2.1.2	Vocabulary
611377	5	Grade 5 to Grade 6	7524	717	R5B.3.3.2	I/A Organizational
611376	5	Grade 5 to Grade 6	7526	719	R5B.3.1.1	I/A Persuasive
611390	5	Grade 5 to Grade 6	7517	718	R5B.3.3.3	I/A Organizational
611374	5	Grade 5 to Grade 6	7510	717	R5A.2.5.1	Comprehension
611375	5	Grade 5 to Grade 6	7509	717	R5A.2.6.2	Comprehension
611247	5	Grade 5 to Grade 6	928	697	R5A.1.1.1	Vocabulary
611251	5	Grade 5 to Grade 6	928	698	R5B.2.1.4	I/A Literary
611250	5	Grade 5 to Grade 6	926	697	R5B.2.1.3	I/A Literary
611249	5	Grade 5 to Grade 6	926	696	R5A.1.3.2	Comprehension
611248	5	Grade 5 to Grade 6	926	694	R5A.1.3.1	Comprehension
611309	5	Grade 5 to Grade 6	925	688	R5B.3.3.3	I/A Organizational
611278	5	Grade 5 to Grade 6	924	687	R5A.2.3.2	Comprehension
611291	5	Grade 5 to Grade 6	921	685	R5B.3.3.1	I/A Organizational
611545	5	Grade 5 to Grade 6	942	682	R5A.1.1.2	Vocabulary
611553	5	Grade 5 to Grade 6	945	680	R5A.2.1.1	Vocabulary
610132	6	Grade 5 to Grade 6	936	7111	R6A.1.2.1	Vocabulary
610135	6	Grade 5 to Grade 6	937	7105	R6B.2.1.2	I/A Literary
610133	6	Grade 5 to Grade 6	935	7086	R6A.1.4.1	Comprehension
610355	6	Grade 5 to Grade 6	935	7075	R6A.1.3.2	Comprehension
610136	6	Grade 5 to Grade 6	935	7066	R6B.2.2.2	I/A Literary
610134	6	Grade 5 to Grade 6	936	7069	R6A.1.6.1	Comprehension
612249	6	Grade 5 to Grade 6	937	7035	R6B.3.3.4	I/A Organizational
612248	6	Grade 5 to Grade 6	936	7026	R6A.2.6.2	Comprehension
607918	6	Grade 5 to Grade 6	937	7150	R6A.2.1.1	Vocabulary
607921	6	Grade 5 to Grade 6	937	7142	R6A.2.1.2	Vocabulary
607927	6	Grade 5 to Grade 6	941	713	R6A.2.2.1	Vocabulary
607917	6	Grade 5 to Grade 6	941	716	R6A.2.1.1	Vocabulary
610141	6	Grade 5 to Grade 6	938	703	R6A.1.1.1	Vocabulary
610144	6	Grade 5 to Grade 6	937	701	R6B.2.1.1	I/A Literary
610305	6	Grade 5 to Grade 6	933	700	R6A.1.3.1	Comprehension
610145	6	Grade 5 to Grade 6	932	695	R6B.2.2.2	I/A Literary
610142	6	Grade 5 to Grade 6	927	695	R6A.1.5.1	Comprehension
610143	6	Grade 5 to Grade 6	925	694	R6A.1.6.1	Comprehension
610310	6	Grade 5 to Grade 6	917	726	R6B.3.2.2	I/A Persuasive
610309	6	Grade 5 to Grade 6	917	726	R6A.2.6.1	Comprehension

Appendix C: Vertical Linking Item Details

Table C–21. Reading/Literature Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
610132	6	Grade 6 to Grade 7	7111	549	R6A.1.2.1	Vocabulary
610135	6	Grade 6 to Grade 7	7105	550	R6B.2.1.2	I/A Literary
610133	6	Grade 6 to Grade 7	7086	551	R6A.1.4.1	Comprehension
610355	6	Grade 6 to Grade 7	7075	551	R6A.1.3.2	Comprehension
610136	6	Grade 6 to Grade 7	7066	551	R6B.2.2.2	I/A Literary
610134	6	Grade 6 to Grade 7	7069	551	R6A.1.6.1	Comprehension
607921	6	Grade 6 to Grade 7	7142	550	R6A.2.1.2	Vocabulary
610327	6	Grade 6 to Grade 7	685	550	R6A.1.2.2	Vocabulary
610328	6	Grade 6 to Grade 7	682	549	R6B.2.1.4	I/A Literary
610329	6	Grade 6 to Grade 7	679	548	R6B.2.2.1	I/A Literary
610065	6	Grade 6 to Grade 7	696	551	R6A.1.1.1	Vocabulary
610071	6	Grade 6 to Grade 7	692	550	R6A.1.3.1	Comprehension
610066	6	Grade 6 to Grade 7	691	550	R6B.2.1.4	I/A Literary
610070	6	Grade 6 to Grade 7	689	551	R6A.1.3.2	Comprehension
610078	6	Grade 6 to Grade 7	687	551	R6B.2.1.3	I/A Literary
609022	6	Grade 6 to Grade 7	1433	551	R6A.1.1.2	Vocabulary
609025	6	Grade 6 to Grade 7	1431	550	R6B.2.1.1	I/A Literary
609026	6	Grade 6 to Grade 7	1431	550	R6B.2.1.4	I/A Literary
609023	6	Grade 6 to Grade 7	1431	549	R6A.1.3.1	Comprehension
609024	6	Grade 6 to Grade 7	1432	548	R6A.1.6.2	Comprehension
609658	7	Grade 6 to Grade 7	722	4978	R7A.1.1.1	Vocabulary
609663	7	Grade 6 to Grade 7	725	4976	R7B.2.2.1	I/A Literary
609661	7	Grade 6 to Grade 7	723	4971	R7A.1.5.1	Comprehension
610324	7	Grade 6 to Grade 7	724	4974	R7A.2.2.1	Vocabulary
610325	7	Grade 6 to Grade 7	723	4968	R7A.2.3.2	Comprehension
610146	7	Grade 6 to Grade 7	722	563	R7A.1.1.1	Vocabulary
610149	7	Grade 6 to Grade 7	723	565	R7B.2.1.1	I/A Literary
610147	7	Grade 6 to Grade 7	722	564	R7A.1.3.1	Comprehension
610338	7	Grade 6 to Grade 7	721	563	R7B.1.1.1	I/A Literary
610148	7	Grade 6 to Grade 7	721	564	R7A.1.6.1	Comprehension
607933	7	Grade 6 to Grade 7	705	545	R7A.1.1.2	Vocabulary
607936	7	Grade 6 to Grade 7	703	545	R7A.1.2.1	Vocabulary
609243	7	Grade 6 to Grade 7	701	544	R7B.2.1.2	I/A Literary
609053	7	Grade 6 to Grade 7	700	544	R7A.1.3.2	Comprehension
609219	7	Grade 6 to Grade 7	700	544	R7A.1.6.2	Comprehension
609037	7	Grade 6 to Grade 7	695	553	R7A.2.2.2	Vocabulary
609038	7	Grade 6 to Grade 7	692	552	R7A.2.4.1	Comprehension
609039	7	Grade 6 to Grade 7	684	551	R7A.2.6.2	Comprehension
609040	7	Grade 6 to Grade 7	680	553	R7B.3.1.1	I/A Persuasive
609041	7	Grade 6 to Grade 7	678	552	R7B.3.3.1	I/A Organizational

Appendix C: Vertical Linking Item Details

Table C–22. Reading/Literature Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
609658	7	Grade 8 to Grade 7	4978	518	R7A.1.1.1	Vocabulary
609663	7	Grade 8 to Grade 7	4976	518	R7B.2.2.1	I/A Literary
609661	7	Grade 8 to Grade 7	4971	517	R7A.1.5.1	Comprehension
610324	7	Grade 8 to Grade 7	4974	516	R7A.2.2.1	Vocabulary
610325	7	Grade 8 to Grade 7	4968	515	R7A.2.3.2	Comprehension
610146	7	Grade 8 to Grade 7	563	491	R7A.1.1.1	Vocabulary
610149	7	Grade 8 to Grade 7	565	491	R7B.2.1.1	I/A Literary
610147	7	Grade 8 to Grade 7	564	490	R7A.1.3.1	Comprehension
610338	7	Grade 8 to Grade 7	563	488	R7B.1.1.1	I/A Literary
610148	7	Grade 8 to Grade 7	564	485	R7A.1.6.1	Comprehension
614855	7	Grade 8 to Grade 7	559	516	R7A.1.1.2	Vocabulary
614859	7	Grade 8 to Grade 7	558	516	R7B.2.2.1	I/A Literary
614858	7	Grade 8 to Grade 7	559	515	R7B.2.1.2	I/A Literary
614856	7	Grade 8 to Grade 7	559	515	R7A.1.3.2	Comprehension
614857	7	Grade 8 to Grade 7	558	514	R7A.1.6.1	Comprehension
609152	7	Grade 8 to Grade 7	550	504	R7B.3.1.1	I/A Persuasive
609072	7	Grade 8 to Grade 7	551	502	R7A.2.5.1	Comprehension
609209	7	Grade 8 to Grade 7	548	500	R7B.1.1.1	I/A Literary
609210	7	Grade 8 to Grade 7	548	496	R7B.2.1.1	I/A Literary
609208	7	Grade 8 to Grade 7	548	495	R7A.1.3.1	Comprehension
609060	8	Grade 8 to Grade 7	550	4645	R8B.3.1.1	I/A Persuasive
609059	8	Grade 8 to Grade 7	550	4647	R8A.2.5.1	Comprehension
608017	8	Grade 8 to Grade 7	550	4637	R8A.1.1.2	Vocabulary
608016	8	Grade 8 to Grade 7	551	4629	R8B.2.1.2	I/A Literary
607999	8	Grade 8 to Grade 7	550	4622	R8A.1.6.2	Comprehension
610087	8	Grade 8 to Grade 7	550	510	R8B.3.3.4	I/A Organizational
610260	8	Grade 8 to Grade 7	550	509	R8B.3.3.2	I/A Organizational
610090	8	Grade 8 to Grade 7	550	511	R8B.3.3.4	I/A Organizational
610089	8	Grade 8 to Grade 7	550	511	R8B.3.3.4	I/A Organizational
610088	8	Grade 8 to Grade 7	550	510	R8B.3.3.4	I/A Organizational
609135	8	Grade 8 to Grade 7	540	531	R8B.3.2.1	I/A Persuasive
609131	8	Grade 8 to Grade 7	540	532	R8B.3.2.1	I/A Persuasive
609120	8	Grade 8 to Grade 7	539	532	R8B.3.3.2	I/A Organizational
609143	8	Grade 8 to Grade 7	539	531	R8A.2.3.2	Comprehension
609140	8	Grade 8 to Grade 7	539	532	R8A.2.6.2	Comprehension
609264	8	Grade 8 to Grade 7	539	513	R8A.1.1.2	Vocabulary
609267	8	Grade 8 to Grade 7	539	513	R8B.2.1.2	I/A Literary
609265	8	Grade 8 to Grade 7	539	514	R8A.1.3.2	Comprehension
609269	8	Grade 8 to Grade 7	539	514	R8B.2.2.1	I/A Literary
609266	8	Grade 8 to Grade 7	539	515	R8A.1.6.1	Comprehension

Appendix C: Vertical Linking Item Details

Table C–23. Reading/Literature Items Used to Link Literature to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Reading/Literature Diagnostic Category
			Lower Grade	Upper Grade		
608017	8	Literature to Grade 8	4637	255	R8A.1.1.2	Vocabulary
608016	8	Literature to Grade 8	4629	253	R8B.2.1.2	I/A Literary
607999	8	Literature to Grade 8	4622	252	R8A.1.6.2	Comprehension
610087	8	Literature to Grade 8	510	256	R8B.3.3.4	I/A Organizational
610260	8	Literature to Grade 8	509	256	R8B.3.3.2	I/A Organizational
610090	8	Literature to Grade 8	511	255	R8B.3.3.4	I/A Organizational
610089	8	Literature to Grade 8	511	255	R8B.3.3.4	I/A Organizational
610088	8	Literature to Grade 8	510	255	R8B.3.3.4	I/A Organizational
607957	8	Literature to Grade 8	502	254	R8A.1.1.2	Vocabulary
607963	8	Literature to Grade 8	501	254	R8A.1.1.1	Vocabulary
607958	8	Literature to Grade 8	516	258	R8A.1.2.1	Vocabulary
607962	8	Literature to Grade 8	516	258	R8A.1.1.1	Vocabulary
612324	8	Literature to Grade 8	516	257	R8B.3.3.4	I/A Organizational
612280	8	Literature to Grade 8	517	257	R8B.3.3.4	I/A Organizational
612279	8	Literature to Grade 8	517	257	R8A.2.6.1	Comprehension
609244	8	Literature to Grade 8	523	257	R8A.1.1.1	Vocabulary
609254	8	Literature to Grade 8	523	256	R8B.2.1.1	I/A Literary
609279	8	Literature to Grade 8	522	256	R8B.1.1.1	I/A Literary
609245	8	Literature to Grade 8	523	256	R8A.1.3.1	Comprehension
609252	8	Literature to Grade 8	523	256	R8A.1.6.1	Comprehension
608136	Lit	Literature to Grade 8	515	258	L.F.1.3.1	Comprehension
608138	Lit	Literature to Grade 8	515	258	L.F.2.3.4	I/A Literary
608137	Lit	Literature to Grade 8	512	257	L.F.2.2.1	Comprehension
614029	Lit	Literature to Grade 8	515	271	L.F.1.2.4	Vocabulary
614032	Lit	Literature to Grade 8	515	271	L.F.2.3.1	I/A Literary
614030	Lit	Literature to Grade 8	515	271	L.F.2.1.1	Comprehension
614031	Lit	Literature to Grade 8	515	271	L.F.2.2.2	Comprehension
614033	Lit	Literature to Grade 8	515	271	L.F.2.3.2	I/A Literary
614034	Lit	Literature to Grade 8	510	271	L.F.2.5.1	I/A Literary
608118	Lit	Literature to Grade 8	514	265	L.F.1.2.4	Vocabulary
610352	Lit	Literature to Grade 8	516	261	L.F.2.5.2	I/A Literary
610092	Lit	Literature to Grade 8	511	261	L.F.2.2.1	Comprehension
610094	Lit	Literature to Grade 8	509	260	L.F.2.3.6	I/A Literary
610095	Lit	Literature to Grade 8	510	259	L.F.2.4.1	I/A Literary
610093	Lit	Literature to Grade 8	509	260	L.F.2.3.4	I/A Literary
610091	Lit	Literature to Grade 8	507	260	L.F.1.1.1	Comprehension
612547	Lit	Literature to Grade 8	504	258	L.F.1.2.2	Vocabulary
612498	Lit	Literature to Grade 8	502	258	L.F.2.2.2	Comprehension
612548	Lit	Literature to Grade 8	499	258	L.F.1.3.2	Comprehension
612496	Lit	Literature to Grade 8	497	258	L.F.1.1.1	Comprehension

Appendix C: Vertical Linking Item Details

Tables C–24 through C–29 summarize the number of linking items by diagnostic category.

Vertical linking items are not distributed evenly across the diagnostic categories. This is due to the fact that Reading and Literature items are passage based. The three passage types (literary, persuasive, and organizational) may each have associated comprehension and vocabulary items, as well as interpretation/analysis items.

Table C–24. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

	Link Grade 3 to Grade 4		
	Grade 3 Items	**Grade 4 Items**	**Total**
Comprehension	8	6	14
Vocabulary	9	7	16
I/A Literary	3	3	6
I/A Persuasive	0	2	2
I/A Organizational	0	2	2
TOTAL	20	20	40

Table C–25. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

	Grade 4 to Grade 5		
	Grade 4 Items	**Grade 5 Items**	**Total**
Comprehension	6	6	12
Vocabulary	8	4	12
I/A Literary	2	4	6
I/A Persuasive	3	2	5
I/A Organizational	1	4	5
TOTAL	20	20	40

Table C–26. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

	Grade 5 to Grade 6		
	Grade 5 Items	**Grade 6 Items**	**Total**
Comprehension	6	8	14
Vocabulary	5	6	11
I/A Literary	4	4	8
I/A Persuasive	1	1	2
I/A Organizational	4	1	5
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–27. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

	Grade 6 to Grade 7		
	Grade 6 Items	**Grade 7 Items**	**Total**
Comprehension	7	8	15
Vocabulary	5	6	11
I/A Literary	8	4	12
I/A Persuasive	0	1	1
I/A Organizational	0	1	1
TOTAL	20	20	40

Table C–28. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Grade 8 to Grade 7		
	Grade 7 Items	**Grade 8 Items**	**Total**
Comprehension	8	6	14
Vocabulary	4	2	6
I/A Literary	7	3	10
I/A Persuasive	1	3	4
I/A Organizational	0	6	6
TOTAL	20	20	40

Table C–29. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Link Literature to Grade 8		
	Grade 8 Items	**Literature Items**	**Total**
Comprehension	4	9	13
Vocabulary	6	3	9
I/A Literary	3	8	11
I/A Persuasive	0	0	0
I/A Organizational	7	0	7
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–30. Reading/Literature Example of Vertical Linking Workbook

		Grade 4 Calibration			Grade 5 Calibration				Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
613220	4	0.700	1.090	0.000	0.258	1.040	-0.003	-0.442	0.290	-0.271	
613219	4	-0.063	0.980	0.000	-0.495	0.960	-0.003	-0.432	-0.473	-0.235	
613399	4	0.557	1.040	0.000	0.056	0.980	-0.003	-0.501	0.147	-0.486	
613400	4	0.589	1.020	0.000	0.131	1.000	-0.003	-0.458	0.179	-0.329	
613402	4	0.316	1.070	0.000	0.014	0.930	-0.003	-0.302	-0.094	0.238	
613403	4	0.295	0.970	0.000	-0.446	0.890	-0.003	-0.741	-0.115	-1.360	
613401	4	-0.657	0.810	0.000	-1.307	0.810	-0.003	-0.650	-1.067	-1.028	
613288	4	-0.608	0.960	0.000	-1.044	0.950	-0.003	-0.436	-1.018	-0.249	
613291	4	0.927	1.200	0.000	0.628	1.170	-0.003	-0.299	0.517	0.249	
613295	4	-1.117	0.880	0.000	-1.712	0.900	-0.003	-0.595	-1.527	-0.828	
613293	4	0.173	0.930	0.002	-0.113	0.880	0.000	-0.286	-0.237	0.297	
613297	4	0.807	1.070	0.002	0.424	0.990	0.000	-0.383	0.397	-0.056	
613212	4	1.664	1.210	0.003	1.491	1.220	0.000	-0.173	1.254	0.708	
613211	4	0.245	0.930	0.002	0.082	0.890	0.000	-0.163	-0.165	0.744	
613210	4	0.203	1.000	0.002	-0.273	0.910	0.000	-0.476	-0.207	-0.395	
613369	4	-0.556	0.900	0.004	-0.791	0.920	0.000	-0.235	-0.966	0.482	
613370	4	0.433	0.930	0.004	0.151	0.950	0.000	-0.282	0.023	0.311	
613372	4	-0.305	0.860	0.004	-0.698	0.870	0.000	-0.393	-0.715	-0.093	
613371	4	-0.513	0.910	0.004	-0.670	0.960	0.000	-0.157	-0.923	0.766	
613373	4	1.012	1.060	0.004	1.002	1.040	0.000	-0.010	0.602	1.301	
611554	5	1.180	1.170	0.003	1.126	1.050	0.000	-0.054	0.770	1.141	
613007	5	-0.124	0.900	0.003	-0.476	0.960	-0.001	-0.352	-0.534	0.056	
613005	5	2.069	1.250	0.003	2.138	1.220	0.000	0.069	1.659	1.589	
613006	5	2.275	1.240	0.003	2.367	1.120	0.000	0.092	1.865	1.673	
611354	5	0.669	1.020	0.003	0.576	1.020	-0.001	-0.093	0.259	0.999	
611377	5	0.336	1.060	0.003	0.559	1.010	-0.001	0.223	-0.074	2.149	high robust Z
611376	5	-0.804	0.840	0.003	-0.946	0.850	-0.001	-0.142	-1.214	0.821	
611390	5	1.351	1.110	0.003	1.443	1.040	0.000	0.092	0.941	1.673	
611374	5	0.109	0.930	0.003	-0.065	0.920	-0.001	-0.174	-0.301	0.704	
611375	5	0.581	1.160	0.003	0.605	1.120	-0.001	0.024	0.171	1.425	
611550	5	0.355	1.000	0.001	-0.586	0.900	0.000	-0.941	-0.055	-2.088	high robust Z
611245	5	1.298	1.070	0.001	0.635	1.030	0.000	-0.663	0.888	-1.076	
611246	5	-0.051	0.860	0.001	-0.532	0.850	0.000	-0.481	-0.461	-0.413	
611244	5	-0.152	0.910	0.001	-0.226	0.940	0.000	-0.074	-0.562	1.068	
611269	5	-0.287	0.900	0.001	-1.341	0.960	-0.006	-1.054	-0.697	-2.499	high robust Z
611272	5	-0.860	0.840	0.001	-2.081	0.930	-0.006	-1.221	-1.270	-3.107	high robust Z
611270	5	-0.274	0.900	0.001	-1.286	0.960	-0.006	-1.012	-0.684	-2.346	high robust Z
611274	5	-0.784	0.760	0.001	-2.720	0.870	-0.006	-1.936	-1.194	-5.709	high robust Z
611271	5	0.972	0.910	0.001	0.157	0.900	-0.005	-0.815	0.562	-1.629	
611273	5	2.533	1.250	0.001	2.056	1.040	-0.004	-0.477	2.123	-0.399	
	Mean	0.362			-0.048			-0.410	-0.048	-0.155	
	SD	0.868			1.107			0.415	0.868	1.511	
	SD Ratio	0.784									
	Correlation	0.940									
	Add. Constant	-0.410									
	Median							-0.368			
	Q							0.371			

Figures C–9 through C–14 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C–9. CDT Reading/Literature: Grade 3 to Grade 4 Linking – All Links

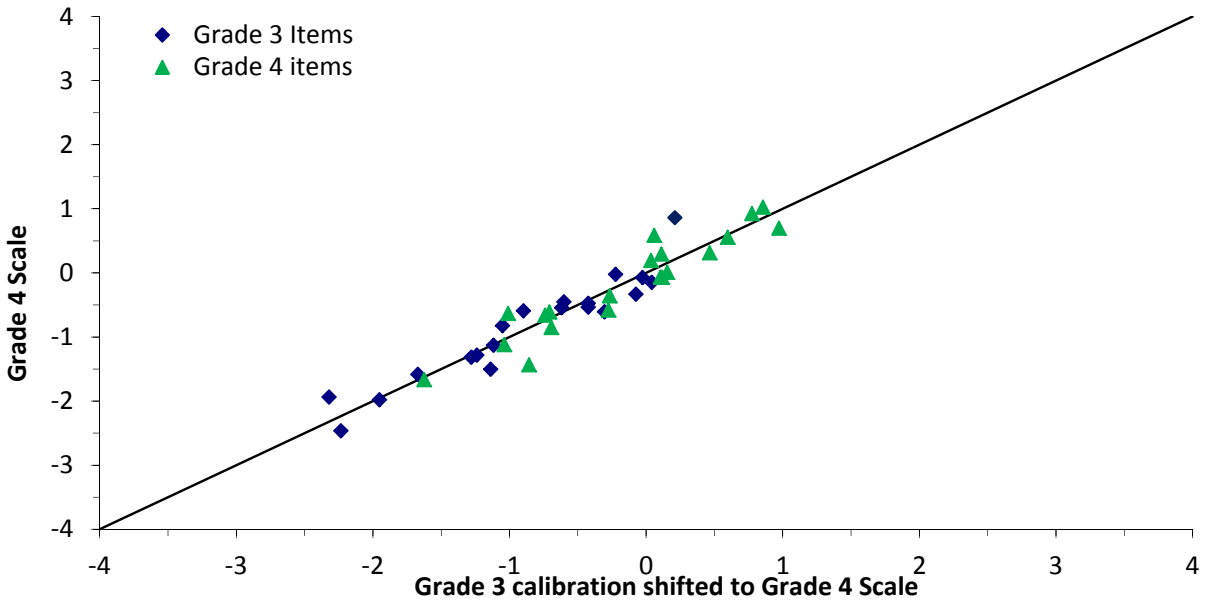


Figure C–10. CDT Reading/Literature: Grade 4 to Grade 5 Linking – All Links

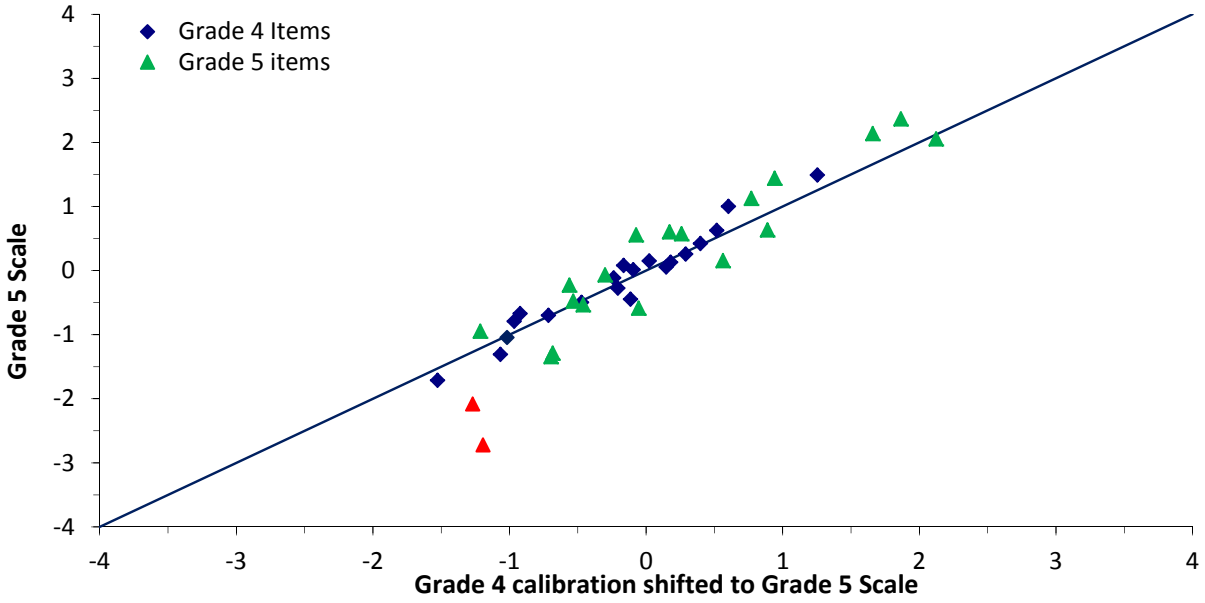


Figure C–11. CDT Reading/Literature: Grade 5 to Grade 6 Linking – All Links

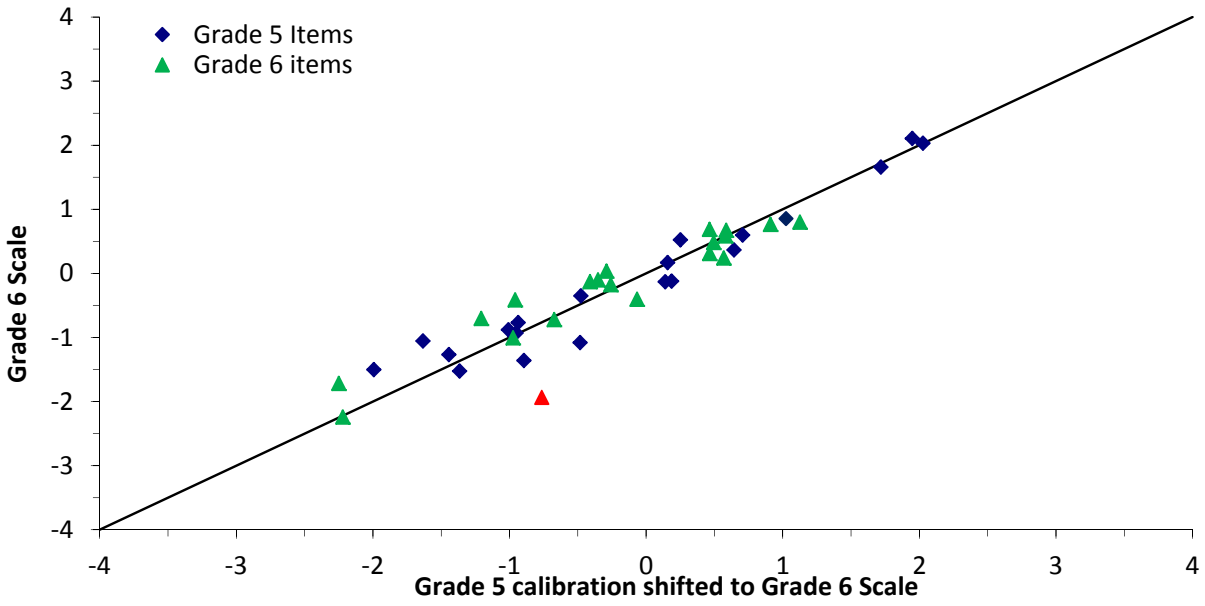


Figure C–12. CDT Reading/Literature: Grade 6 to Grade 7 Linking – All Links

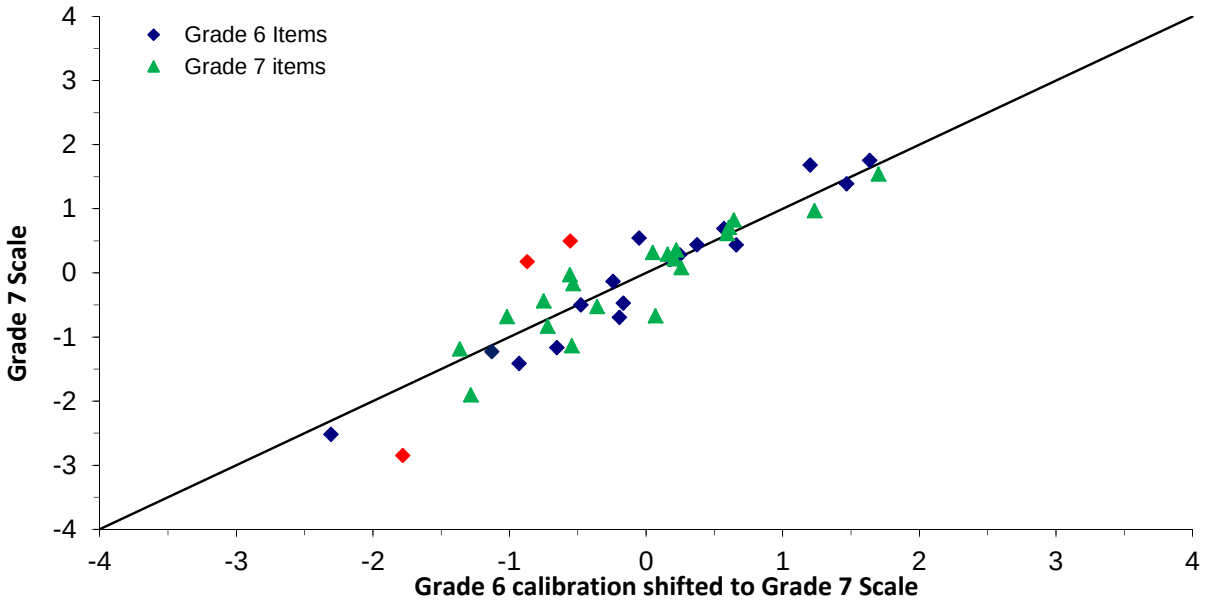


Figure C–13. CDT Reading/Literature: Grade 8 to Grade 7 Linking – All Links

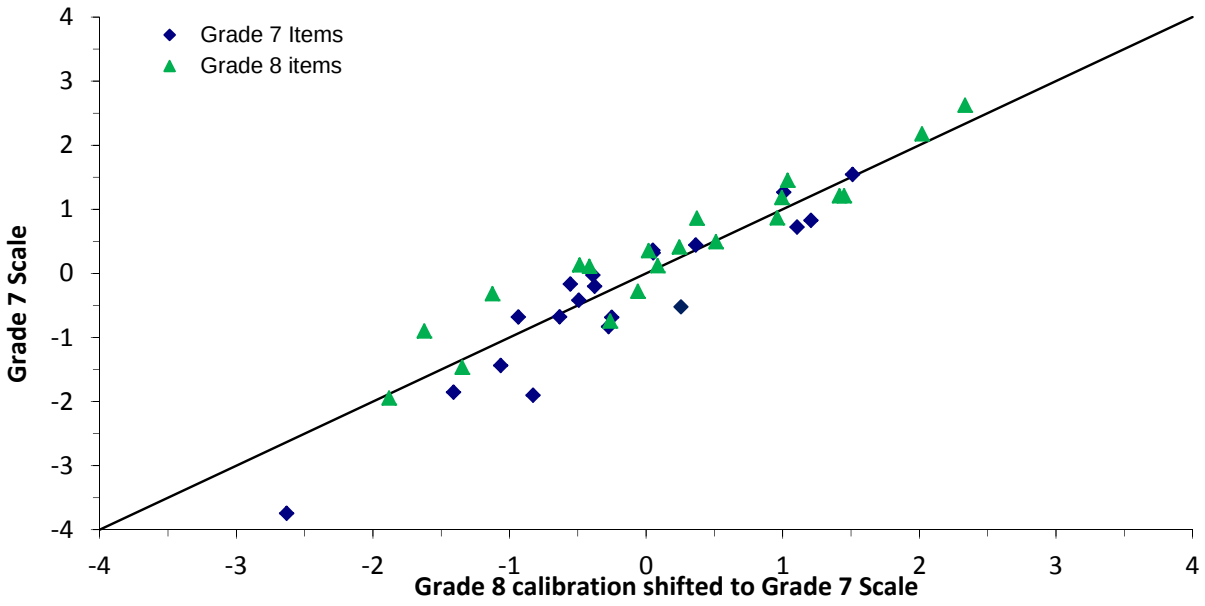
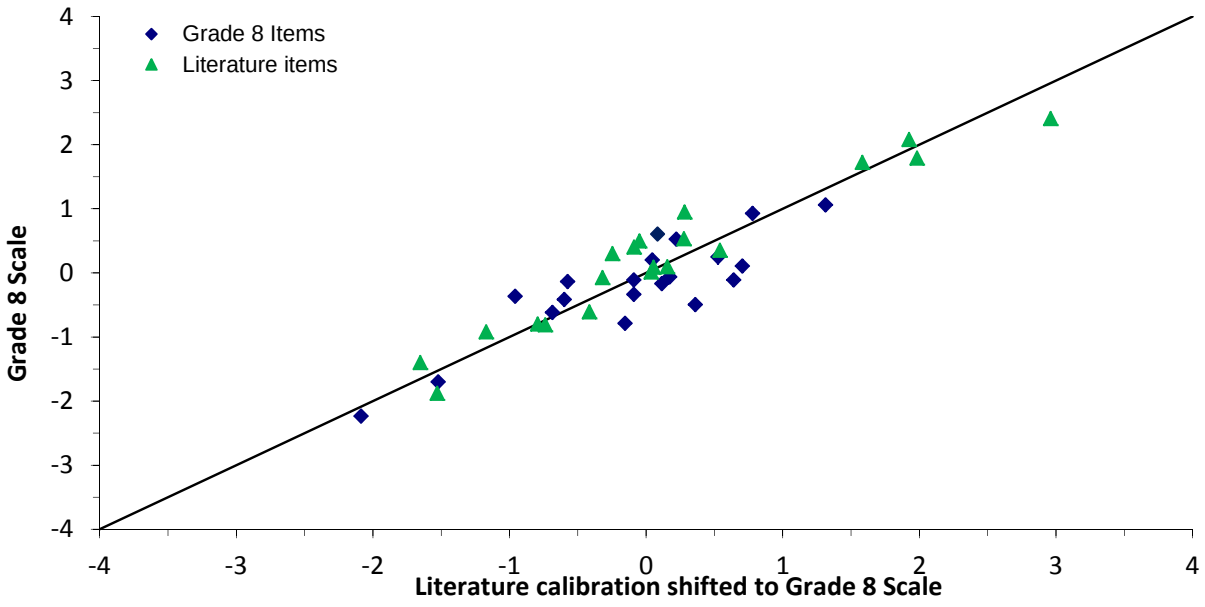


Figure C–14. CDT Reading/Literature: Literature to Grade 8 Linking – All Links



Appendix C: Vertical Linking Item Details

SCIENCE

Tables C–31 through C–37 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 615315 is a grade 3 item used to link grades 3 and 4. It was administered 789 times on the lower grade form (grade 3) and 530 times on the upper grade form (grade 4). In some cases, a linking item was also a common item. This results in n-count that is much higher in one of the two grades. For example, item 617401 is a Biology item used to link Biology and grade 8. It was also a common Biology item (meaning it appeared on all Biology forms). The n-counts reflect this: Grade 8 n-count is 256 while Biology n-count is 4,874.

Diagnostic categories for Biology and Chemistry are different than diagnostic categories for grades 3 through 8 and 11 Science. Items may fall into both a Science diagnostic category and a Biology or Chemistry diagnostic category. This is shown in Tables C–36 and C–37. For example, item 615777 is in the Science diagnostic category "Biological Sciences" and the Biology diagnostic category "Basic Biological Principles".

The Science diagnostic categories are:

- The Nature of Science
- Biological Science
- Physical Sciences
- Earth and Space Sciences

The Biology diagnostic categories are:

- Basic Biological Principles/Chemical Basis for Life
- Bioenergetics/Homeostasis and Transport
- Cell Growth and Reproduction/Genetics
- Theory of Evolution/Ecology

The Chemistry diagnostic categories are:

- Properties and Classification of Matter
- Atomic Structure and the Periodic Table
- The Mole and Chemical Bonding
- Chemical Relationships and Reactions

Appendix C: Vertical Linking Item Details

Table C–31. Science Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category
			Lower Grade	Upper Grade		
615315	3	Grade 3 to Grade 4	789	530	S3.A.2.1.3	Nature of Science
615379	3	Grade 3 to Grade 4	790	530	S3.D.1.2.1	Earth and Space Sci.
615333	3	Grade 3 to Grade 4	770	530	S3.B.2.1.1	Biological Sci.
615395	3	Grade 3 to Grade 4	797	530	S3.D.1.3.3	Earth and Space Sci.
615363	3	Grade 3 to Grade 4	1559	530	S3.C.1.1.4	Physical Sci.
615368	3	Grade 3 to Grade 4	773	530	S3.C.2.1.2	Physical Sci.
615314	3	Grade 3 to Grade 4	796	530	S3.A.2.1.2	Nature of Science
615331	3	Grade 3 to Grade 4	782	529	S3.B.1.1.4	Biological Sci.
615324	3	Grade 3 to Grade 4	786	529	S3.A.2.1.3	Nature of Science
615347	3	Grade 3 to Grade 4	796	528	S3.B.3.1.2	Biological Sci.
615385	3	Grade 3 to Grade 4	771	525	S3.D.1.2.1	Earth and Space Sci.
615319	3	Grade 3 to Grade 4	790	524	S3.A.3.1.1	Nature of Science
615339	3	Grade 3 to Grade 4	785	524	S3.B.2.2.1	Biological Sci.
617274	3	Grade 3 to Grade 4	796	525	S3.A.1.1.1	Nature of Science
615400	3	Grade 3 to Grade 4	771	524	S3.D.3.1.1	Earth and Space Sci.
615322	3	Grade 3 to Grade 4	1572	523	S3.A.3.2.1	Nature of Science
615325	3	Grade 3 to Grade 4	773	523	S3.B.1.1.1	Biological Sci.
615376	3	Grade 3 to Grade 4	785	521	S3.D.1.1.1	Earth and Space Sci.
615327	3	Grade 3 to Grade 4	787	521	S3.B.1.1.2	Biological Sci.
615334	3	Grade 3 to Grade 4	794	521	S3.B.2.1.2	Biological Sci.
617229	4	Grade 3 to Grade 4	792	538	S4.C.1.1.2	Physical Sci.
617061	4	Grade 3 to Grade 4	793	1086	S4.A.2.1.4	Nature of Science
617244	4	Grade 3 to Grade 4	789	558	S4.D.1.1.1	Earth and Space Sci.
617095	4	Grade 3 to Grade 4	792	1097	S4.B.2.1.2	Biological Sci.
615621	4	Grade 3 to Grade 4	793	1065	S4.A.1.1.1	Nature of Science
617239	4	Grade 3 to Grade 4	793	1073	S4.C.3.1.1	Physical Sci.
617099	4	Grade 3 to Grade 4	793	539	S4.B.2.2.1	Biological Sci.
617249	4	Grade 3 to Grade 4	792	539	S4.D.1.1.3	Earth and Space Sci.
617084	4	Grade 3 to Grade 4	790	536	S4.B.1.1.1	Biological Sci.
615625	4	Grade 3 to Grade 4	791	539	S4.A.1.3.1	Nature of Science
617233	4	Grade 3 to Grade 4	780	535	S4.C.2.1.2	Physical Sci.
615632	4	Grade 3 to Grade 4	782	534	S4.A.1.3.5	Nature of Science
617245	4	Grade 3 to Grade 4	780	536	S4.D.1.1.1	Earth and Space Sci.
617096	4	Grade 3 to Grade 4	780	1092	S4.B.2.1.2	Biological Sci.
615627	4	Grade 3 to Grade 4	781	528	S4.A.1.3.2	Nature of Science
617255	4	Grade 3 to Grade 4	779	538	S4.D.1.2.3	Earth and Space Sci.
617101	4	Grade 3 to Grade 4	778	540	S4.B.3.1.1	Biological Sci.
617253	4	Grade 3 to Grade 4	779	559	S4.D.1.2.2	Earth and Space Sci.
617071	4	Grade 3 to Grade 4	779	531	S4.A.3.1.4	Nature of Science
617091	4	Grade 3 to Grade 4	779	529	S4.B.1.1.5	Biological Sci.

Appendix C: Vertical Linking Item Details

Table C–32. Science Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category
			Lower Grade	Upper Grade		
617231	4	Grade 4 to Grade 5	1099	608	S4.C.2.1.1	Physical Sci.
617060	4	Grade 4 to Grade 5	527	606	S4.A.2.1.3	Nature of Science
617092	4	Grade 4 to Grade 5	524	607	S4.B.1.1.5	Biological Sci.
617074	4	Grade 4 to Grade 5	528	608	S4.A.3.2.2	Nature of Science
617246	4	Grade 4 to Grade 5	537	606	S4.D.1.1.2	Earth and Space Sci.
617237	4	Grade 4 to Grade 5	538	607	S4.C.2.1.4	Physical Sci.
617068	4	Grade 4 to Grade 5	536	607	S4.A.3.1.3	Nature of Science
617102	4	Grade 4 to Grade 5	534	604	S4.B.3.1.2	Biological Sci.
617075	4	Grade 4 to Grade 5	557	606	S4.A.3.2.2	Nature of Science
617259	4	Grade 4 to Grade 5	523	604	S4.D.1.3.3	Earth and Space Sci.
617072	4	Grade 4 to Grade 5	539	599	S4.A.3.2.1	Nature of Science
617240	4	Grade 4 to Grade 5	540	600	S4.C.3.1.2	Physical Sci.
617112	4	Grade 4 to Grade 5	533	600	S4.B.3.3.3	Biological Sci.
617080	4	Grade 4 to Grade 5	533	601	S4.A.3.3.1	Nature of Science
617257	4	Grade 4 to Grade 5	538	600	S4.D.1.3.1	Earth and Space Sci.
617271	4	Grade 4 to Grade 5	533	600	S4.D.3.1.3	Earth and Space Sci.
617089	4	Grade 4 to Grade 5	534	600	S4.B.1.1.4	Biological Sci.
617234	4	Grade 4 to Grade 5	527	600	S4.C.2.1.3	Physical Sci.
617070	4	Grade 4 to Grade 5	537	599	S4.A.3.1.4	Nature of Science
617260	4	Grade 4 to Grade 5	531	599	S4.D.1.3.3	Earth and Space Sci.
617311	5	Grade 4 to Grade 5	532	604	S5.B.1.1.2	Biological Sci.
616317	5	Grade 4 to Grade 5	533	609	S5.A.1.1.2	Nature of Science
615950	5	Grade 4 to Grade 5	532	616	S5.B.2.1.1	Biological Sci.
617328	5	Grade 4 to Grade 5	532	610	S5.C.3.2.1	Physical Sci.
617304	5	Grade 4 to Grade 5	533	598	S5.A.2.1.2	Nature of Science
615962	5	Grade 4 to Grade 5	533	606	S5.D.3.1.1	Earth and Space Sci.
615936	5	Grade 4 to Grade 5	533	633	S5.A.1.1.2	Nature of Science
617330	5	Grade 4 to Grade 5	532	636	S5.D.1.1.1	Earth and Space Sci.
615958	5	Grade 4 to Grade 5	532	629	S5.C.1.2.1	Physical Sci.
617307	5	Grade 4 to Grade 5	528	635	S5.A.2.2.1	Nature of Science
617338	5	Grade 4 to Grade 5	540	617	S5.D.1.2.2	Earth and Space Sci.
615939	5	Grade 4 to Grade 5	538	610	S5.A.2.1.1	Nature of Science
617504	5	Grade 4 to Grade 5	541	630	S5.B.3.2.2	Biological Sci.
616969	5	Grade 4 to Grade 5	541	637	S5.C.2.1.1	Physical Sci.
615943	5	Grade 4 to Grade 5	538	627	S5.B.1.1.1	Biological Sci.
617502	5	Grade 4 to Grade 5	539	616	S5.B.2.1.3	Biological Sci.
617499	5	Grade 4 to Grade 5	540	614	S5.A.1.1.3	Nature of Science
615965	5	Grade 4 to Grade 5	540	608	S5.D.1.1.1	Earth and Space Sci.
615942	5	Grade 4 to Grade 5	539	608	S5.A.3.1.1	Nature of Science
617507	5	Grade 4 to Grade 5	539	607	S5.C.2.1.2	Physical Sci.

Appendix C: Vertical Linking Item Details

Table C–33. Science Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category
			Lower Grade	Upper Grade		
617334	5	Grade 5 to Grade 6	605	621	S5.C.2.1.4	Physical Sci.
615949	5	Grade 5 to Grade 6	629	622	S5.B.1.1.3	Biological Sci.
615938	5	Grade 5 to Grade 6	608	622	S5.A.2.1.1	Nature of Science
615963	5	Grade 5 to Grade 6	617	623	S5.D.3.1.2	Earth and Space Sci.
615946	5	Grade 5 to Grade 6	617	621	S5.B.1.1.3	Biological Sci.
616968	5	Grade 5 to Grade 6	608	620	S5.C.1.2.2	Physical Sci.
617725	5	Grade 5 to Grade 6	602	620	S5.A.2.2.2	Nature of Science
616319	5	Grade 5 to Grade 6	637	618	S5.C.1.1.2	Physical Sci.
617318	5	Grade 5 to Grade 6	629	618	S5.B.3.1.2	Biological Sci.
616970	5	Grade 5 to Grade 6	637	617	S5.C.2.1.1	Physical Sci.
617339	5	Grade 5 to Grade 6	602	624	S5.D.1.2.1	Earth and Space Sci.
617729	5	Grade 5 to Grade 6	1215	623	S5.B.2.1.4	Biological Sci.
617501	5	Grade 5 to Grade 6	606	625	S5.A.1.1.3	Nature of Science
617342	5	Grade 5 to Grade 6	616	627	S5.D.2.1.2	Earth and Space Sci.
617310	5	Grade 5 to Grade 6	628	626	S5.A.3.2.1	Nature of Science
617326	5	Grade 5 to Grade 6	636	625	S5.C.2.1.4	Physical Sci.
617305	5	Grade 5 to Grade 6	617	625	S5.A.2.1.2	Nature of Science
617323	5	Grade 5 to Grade 6	1219	626	S5.C.1.1.1	Physical Sci.
617312	5	Grade 5 to Grade 6	634	618	S5.B.1.1.2	Biological Sci.
617327	5	Grade 5 to Grade 6	629	609	S5.C.2.1.4	Physical Sci.
615560	6	Grade 5 to Grade 6	614	623	S6.C.1.2.2	Physical Sci.
615518	6	Grade 5 to Grade 6	614	625	S6.A.2.2.1	Nature of Science
617741	6	Grade 5 to Grade 6	614	616	S6.B.2.1.2	Biological Sci.
615520	6	Grade 5 to Grade 6	614	619	S6.A.2.1.1	Nature of Science
615594	6	Grade 5 to Grade 6	614	624	S6.D.2.1.1	Earth and Space Sci.
619132	6	Grade 5 to Grade 6	614	617	S6.C.2.1.3	Physical Sci.
615554	6	Grade 5 to Grade 6	613	625	S6.B.3.2.1	Biological Sci.
615557	6	Grade 5 to Grade 6	613	620	S6.C.1.2.1	Physical Sci.
615514	6	Grade 5 to Grade 6	614	624	S6.A.1.1.3	Nature of Science
615603	6	Grade 5 to Grade 6	612	616	S6.D.3.1.2	Earth and Space Sci.
615574	6	Grade 5 to Grade 6	613	620	S6.C.2.1.3	Physical Sci.
618591	6	Grade 5 to Grade 6	612	625	S6.A.1.2.2	Nature of Science
615532	6	Grade 5 to Grade 6	612	621	S6.B.2.1.2	Biological Sci.
619296	6	Grade 5 to Grade 6	611	625	S6.A.2.1.1	Nature of Science
615601	6	Grade 5 to Grade 6	610	616	S6.D.3.1.1	Earth and Space Sci.
617512	6	Grade 5 to Grade 6	610	625	S6.C.2.1.1	Physical Sci.
615540	6	Grade 5 to Grade 6	610	624	S6.B.3.1.1	Biological Sci.
617508	6	Grade 5 to Grade 6	608	619	S6.B.1.1.1	Biological Sci.
615526	6	Grade 5 to Grade 6	608	620	S6.A.3.2.1	Nature of Science
619365	6	Grade 5 to Grade 6	608	618	S6.D.2.1.1	Earth and Space Sci.

Appendix C: Vertical Linking Item Details

Table C–34. Science Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category
			Lower Grade	Upper Grade		
615535	6	Grade 6 to Grade 7	1248	428	S6.A.3.2.1	Nature of Science
615562	6	Grade 6 to Grade 7	620	428	S6.C.1.2.2	Physical Sci.
615530	6	Grade 6 to Grade 7	1234	428	S6.B.2.1.1	Biological Sci.
619141	6	Grade 6 to Grade 7	616	426	S6.D.2.1.3	Earth and Space Sci.
615510	6	Grade 6 to Grade 7	1253	425	S6.A.1.1.2	Nature of Science
618609	6	Grade 6 to Grade 7	625	426	S6.C.3.1.2	Physical Sci.
618590	6	Grade 6 to Grade 7	1243	425	S6.A.1.2.1	Nature of Science
615576	6	Grade 6 to Grade 7	621	424	S6.C.2.1.3	Physical Sci.
615551	6	Grade 6 to Grade 7	621	424	S6.C.1.2.1	Physical Sci.
615512	6	Grade 6 to Grade 7	1233	423	S6.A.1.1.3	Nature of Science
615577	6	Grade 6 to Grade 7	619	428	S6.C.3.1.1	Physical Sci.
618791	6	Grade 6 to Grade 7	1235	428	S6.A.1.2.1	Nature of Science
615531	6	Grade 6 to Grade 7	1225	428	S6.B.2.1.1	Biological Sci.
619624	6	Grade 6 to Grade 7	627	428	S6.D.3.1.2	Earth and Space Sci.
616332	6	Grade 6 to Grade 7	1228	426	S6.A.1.1.3	Nature of Science
619149	6	Grade 6 to Grade 7	618	425	S6.C.3.2.1	Physical Sci.
617533	6	Grade 6 to Grade 7	1249	427	S6.B.2.1.1	Biological Sci.
618794	6	Grade 6 to Grade 7	624	426	S6.C.3.2.1	Physical Sci.
615517	6	Grade 6 to Grade 7	1245	426	S6.A.1.2.2	Nature of Science
615567	6	Grade 6 to Grade 7	616	425	S6.C.2.1.1	Physical Sci.
616616	7	Grade 6 to Grade 7	619	428	S7.D.1.1.2	Earth and Space Sci.
615235	7	Grade 6 to Grade 7	619	430	S7.B.1.1.2	Biological Sci.
617184	7	Grade 6 to Grade 7	616	424	S7.A.1.1.1	Nature of Science
618806	7	Grade 6 to Grade 7	618	427	S7.D.2.1.1	Earth and Space Sci.
615974	7	Grade 6 to Grade 7	618	443	S7.A.1.2.1	Nature of Science
618603	7	Grade 6 to Grade 7	617	439	S7.C.2.1.3	Physical Sci.
615973	7	Grade 6 to Grade 7	617	424	S7.A.1.1.4	Nature of Science
615275	7	Grade 6 to Grade 7	614	870	S7.B.3.3.2	Biological Sci.
615238	7	Grade 6 to Grade 7	609	427	S7.B.1.1.3	Biological Sci.
618802	7	Grade 6 to Grade 7	606	430	S7.C.2.1.1	Physical Sci.
617531	7	Grade 6 to Grade 7	624	424	S7.D.1.1.2	Earth and Space Sci.
616339	7	Grade 6 to Grade 7	626	431	S7.A.2.2.3	Nature of Science
615970	7	Grade 6 to Grade 7	625	429	S7.A.1.1.2	Nature of Science
616626	7	Grade 6 to Grade 7	625	443	S7.D.3.1.1	Earth and Space Sci.
617195	7	Grade 6 to Grade 7	626	444	S7.A.1.3.1	Nature of Science
617526	7	Grade 6 to Grade 7	624	422	S7.C.1.2.2	Physical Sci.
619627	7	Grade 6 to Grade 7	625	428	S7.A.1.1.4	Nature of Science
615252	7	Grade 6 to Grade 7	624	444	S7.B.2.1.3	Biological Sci.
615234	7	Grade 6 to Grade 7	620	427	S7.B.1.1.1	Biological Sci.
616039	7	Grade 6 to Grade 7	618	424	S7.C.2.1.3	Physical Sci.

Appendix C: Vertical Linking Item Details

Table C–35. Science Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category
			Lower Grade	Upper Grade		
617198	7	Grade 8 to Grade 7	431	256	S7.A.1.3.2	Nature of Science
616619	7	Grade 8 to Grade 7	426	256	S7.D.1.2.2	Earth and Space Sci.
615969	7	Grade 8 to Grade 7	427	255	S7.A.1.1.1	Nature of Science
616038	7	Grade 8 to Grade 7	424	256	S7.C.2.1.2	Physical Sci.
616622	7	Grade 8 to Grade 7	427	254	S7.D.2.1.1	Earth and Space Sci.
615971	7	Grade 8 to Grade 7	429	254	S7.A.1.1.3	Nature of Science
615249	7	Grade 8 to Grade 7	425	255	S7.B.2.1.2	Biological Sci.
618803	7	Grade 8 to Grade 7	432	254	S7.D.2.1.1	Earth and Space Sci.
618801	7	Grade 8 to Grade 7	427	252	S7.C.2.1.3	Physical Sci.
615999	7	Grade 8 to Grade 7	423	251	S7.B.1.1.3	Biological Sci.
615308	7	Grade 8 to Grade 7	422	253	S7.C.3.1.3	Physical Sci.
618855	7	Grade 8 to Grade 7	430	254	S7.A.2.1.1	Nature of Science
618853	7	Grade 8 to Grade 7	425	254	S7.A.1.3.1	Nature of Science
616348	7	Grade 8 to Grade 7	438	254	S7.B.2.2.2	Biological Sci.
616621	7	Grade 8 to Grade 7	426	254	S7.D.1.2.3	Earth and Space Sci.
617000	7	Grade 8 to Grade 7	441	254	S7.D.3.1.3	Earth and Space Sci.
616014	7	Grade 8 to Grade 7	419	254	S7.B.3.1.1	Biological Sci.
617196	7	Grade 8 to Grade 7	441	252	S7.A.1.3.1	Nature of Science
616313	7	Grade 8 to Grade 7	430	251	S7.C.3.1.1	Physical Sci.
616007	7	Grade 8 to Grade 7	429	252	S7.B.2.1.2	Biological Sci.
615771	8	Grade 8 to Grade 7	445	262	S8.A.3.3.2	Nature of Science
617489	8	Grade 8 to Grade 7	445	257	S8.C.3.1.1	Physical Sci.
615784	8	Grade 8 to Grade 7	444	262	S8.B.2.1.1	Biological Sci.
620362	8	Grade 8 to Grade 7	444	271	S8.D.1.2.1	Earth and Space Sci.
618535	8	Grade 8 to Grade 7	444	267	S8.A.3.2.2	Nature of Science
617484	8	Grade 8 to Grade 7	444	258	S8.D.1.1.2	Earth and Space Sci.
618896	8	Grade 8 to Grade 7	443	272	S8.D.1.3.2	Earth and Space Sci.
615776	8	Grade 8 to Grade 7	443	255	S8.B.1.1.2	Biological Sci.
618543	8	Grade 8 to Grade 7	442	264	S8.C.2.2.2	Physical Sci.
617735	8	Grade 8 to Grade 7	441	287	S8.A.2.1.2	Nature of Science
617294	8	Grade 8 to Grade 7	432	262	S8.D.2.1.3	Earth and Space Sci.
617289	8	Grade 8 to Grade 7	432	255	S8.B.2.2.1	Biological Sci.
618544	8	Grade 8 to Grade 7	432	260	S8.C.2.2.2	Physical Sci.
620027	8	Grade 8 to Grade 7	432	289	S8.A.3.1.5	Nature of Science
617962	8	Grade 8 to Grade 7	432	259	S8.A.1.3.4	Nature of Science
615810	8	Grade 8 to Grade 7	432	267	S8.C.2.1.1	Physical Sci.
617279	8	Grade 8 to Grade 7	432	258	S8.B.1.1.1	Biological Sci.
617293	8	Grade 8 to Grade 7	430	286	S8.D.2.1.3	Earth and Space Sci.
620020	8	Grade 8 to Grade 7	430	256	S8.A.1.1.2	Nature of Science
620400	8	Grade 8 to Grade 7	430	255	S8.B.3.2.3	Biological Sci.

Appendix C: Vertical Linking Item Details

Table C–36. Science Items Used to Link Biology to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category	Biology Diagnostic Category
			Lower Grade	Upper Grade			
615777	8	Biology to Grade 8	261	306	S8.B.1.1.3	Biological Sci.	Basic Bio. Princ.
615790	8	Biology to Grade 8	259	306	S8.B.2.1.3	Biological Sci.	Cell Growth
615817	8	Biology to Grade 8	519	306	S8.C.2.1.3	Physical Sci.	No Biology DC
620364	8	Biology to Grade 8	256	305	S8.D.1.3.1	Earth and Space Sci.	Theory of Evolution
617739	8	Biology to Grade 8	288	304	S8.A.2.1.4	Nature of Science	No Biology DC
615789	8	Biology to Grade 8	257	303	S8.B.2.1.2	Biological Sci.	Theory of Evolution
618786	8	Biology to Grade 8	257	305	S8.A.3.2.3	Nature of Science	No Biology DC
617059	8	Biology to Grade 8	266	306	S8.B.1.1.1	Biological Sci.	Basic Bio. Princ.
615791	8	Biology to Grade 8	529	305	S8.B.2.1.3	Biological Sci.	Cell Growth
617284	8	Biology to Grade 8	259	305	S8.B.2.1.3	Biological Sci.	Cell Growth
620015	8	Biology to Grade 8	254	298	S8.A.1.1.1	Nature of Science	No Biology DC
620396	8	Biology to Grade 8	256	298	S8.B.3.2.2	Biological Sci.	Theory of Evolution
617737	8	Biology to Grade 8	252	298	S8.A.2.1.3	Nature of Science	No Biology DC
617292	8	Biology to Grade 8	255	297	S8.B.2.2.2	Biological Sci.	Cell Growth
615822	8	Biology to Grade 8	542	298	S8.C.2.2.3	Physical Sci.	Theory of Evolution
620637	8	Biology to Grade 8	262	298	S8.B.3.1.3	Biological Sci.	Theory of Evolution
618540	8	Biology to Grade 8	259	298	S8.A.3.3.1	Nature of Science	No Biology DC
618548	8	Biology to Grade 8	260	298	S8.D.1.3.4	Earth and Space Sci.	Theory of Evolution
620029	8	Biology to Grade 8	522	298	S8.A.3.2.3	Nature of Science	No Biology DC
620401	8	Biology to Grade 8	259	298	S8.B.3.2.3	Biological Sci.	Theory of Evolution
617377	Bio	Biology to Grade 8	257	305	BIO.A.4.2.1	Biological Sci.	Bioenergetics
617565	Bio	Biology to Grade 8	256	311	BIO.B.4.2.5	Biological Sci.	Theory of Evolution
616111	Bio	Biology to Grade 8	256	303	BIO.A.1.2.1	Biological Sci.	Basic Bio. Princ.
617401	Bio	Biology to Grade 8	256	4874	BIO.B.2.1.1	Biological Sci.	Cell Growth
617430	Bio	Biology to Grade 8	256	309	BIO.B.3.1.1	Biological Sci.	Theory of Evolution
617395	Bio	Biology to Grade 8	256	310	BIO.B.1.2.2	Biological Sci.	Cell Growth
617013	Bio	Biology to Grade 8	257	311	BIO.A.2.2.3	Biological Sci.	Basic Bio. Princ.
617444	Bio	Biology to Grade 8	257	311	BIO.B.3.2.1	Biological Sci.	Theory of Evolution
617458	Bio	Biology to Grade 8	256	295	BIO.B.4.1.2	Biological Sci.	Theory of Evolution
617449	Bio	Biology to Grade 8	256	311	BIO.B.3.3.1	Biological Sci.	Theory of Evolution
617839	Bio	Biology to Grade 8	263	300	BIO.A.4.2.1	Biological Sci.	Bioenergetics
617462	Bio	Biology to Grade 8	263	297	BIO.B.3.3.1	Biological Sci.	Theory of Evolution
616112	Bio	Biology to Grade 8	263	305	BIO.A.1.2.1	Biological Sci.	Basic Bio. Princ.
617457	Bio	Biology to Grade 8	263	4863	BIO.B.4.1.2	Biological Sci.	Theory of Evolution
617394	Bio	Biology to Grade 8	262	296	BIO.B.1.2.2	Biological Sci.	Cell Growth
617454	Bio	Biology to Grade 8	263	310	BIO.B.4.1.1	Biological Sci.	Theory of Evolution
617349	Bio	Biology to Grade 8	263	309	BIO.A.3.1.1	Biological Sci.	Bioenergetics
617414	Bio	Biology to Grade 8	263	300	BIO.B.2.2.2	Biological Sci.	Cell Growth
617880	Bio	Biology to Grade 8	263	305	BIO.B.2.2.2	Biological Sci.	Cell Growth
617451	Bio	Biology to Grade 8	263	298	BIO.B.3.3.1	Biological Sci.	Theory of Evolution

Appendix C: Vertical Linking Item Details

Table C–37. Science Items Used to Link Chemistry to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Science Diagnostic Category	Chemistry Diagnostic Category
			Lower Grade	Upper Grade			
615817	8	Chemistry to Grade 8	519	305	S8.C.2.1.3	Physical Sci.	Properties of Matter
615822	8	Chemistry to Grade 8	542	304	S8.C.2.2.3	Physical Sci.	No Chemistry DC
620029	8	Chemistry to Grade 8	522	307	S8.A.3.2.3	Nature of Science	No Chemistry DC
620025	8	Chemistry to Grade 8	258	308	S8.A.2.1.1	Nature of Science	No Chemistry DC
615819	8	Chemistry to Grade 8	261	308	S8.C.2.2.1	Physical Sci.	No Chemistry DC
620021	8	Chemistry to Grade 8	262	308	S8.A.1.1.3	Nature of Science	No Chemistry DC
615833	8	Chemistry to Grade 8	265	306	S8.D.1.1.2	Earth and Space Sci.	No Chemistry DC
615749	8	Chemistry to Grade 8	259	307	S8.A.2.2.3	Nature of Science	No Chemistry DC
620426	8	Chemistry to Grade 8	253	306	S8.B.3.3.4	Biological Sci.	No Chemistry DC
615723	8	Chemistry to Grade 8	270	305	S8.A.1.3.3	Nature of Science	No Chemistry DC
615809	8	Chemistry to Grade 8	511	307	S8.C.1.1.3	Physical Sci.	Chem. Relation.
615884	8	Chemistry to Grade 8	253	306	S8.A.2.1.1	Nature of Science	No Chemistry DC
615919	8	Chemistry to Grade 8	260	306	S8.C.1.1.1	Physical Sci.	Mole
620030	8	Chemistry to Grade 8	258	307	S8.A.3.2.3	Nature of Science	No Chemistry DC
620427	8	Chemistry to Grade 8	287	304	S8.B.3.3.4	Biological Sci.	No Chemistry DC
615927	8	Chemistry to Grade 8	266	305	S8.A.1.3.1	Nature of Science	No Chemistry DC
615826	8	Chemistry to Grade 8	262	306	S8.C.3.1.2	Physical Sci.	No Chemistry DC
620023	8	Chemistry to Grade 8	262	305	S8.A.1.3.2	Nature of Science	No Chemistry DC
615857	8	Chemistry to Grade 8	267	304	S8.D.2.1.1	Earth and Space Sci.	No Chemistry DC
615804	8	Chemistry to Grade 8	259	306	S8.C.1.1.1	Physical Sci.	Mole
616406	Chem	Chemistry to Grade 8	258	305	CHEM.A.2.1.2	Physical Sci.	Atomic Structure
618699	Chem	Chemistry to Grade 8	259	302	CHEM.B.2.1.5	Physical Sci.	Chem. Relation.
616511	Chem	Chemistry to Grade 8	259	299	CHEM.B.1.4.1	Physical Sci.	Mole
616362	Chem	Chemistry to Grade 8	258	303	CHEM.A.1.1.2	Physical Sci.	Properties of Matter
618734	Chem	Chemistry to Grade 8	259	307	CHEM.B.2.1.4	Physical Sci.	Chem. Relation.
616367	Chem	Chemistry to Grade 8	259	615	CHEM.A.1.2.2	Physical Sci.	Properties of Matter
616559	Chem	Chemistry to Grade 8	259	305	CHEM.A.1.1.5	Physical Sci.	Properties of Matter
619910	Chem	Chemistry to Grade 8	259	306	CHEM.B.1.4.2	Physical Sci.	Mole
616494	Chem	Chemistry to Grade 8	259	305	CHEM.A.1.2.3	Physical Sci.	Properties of Matter
616518	Chem	Chemistry to Grade 8	259	304	CHEM.B.2.1.5	Physical Sci.	Chem. Relation.
616427	Chem	Chemistry to Grade 8	260	306	CHEM.A.1.1.1	Physical Sci.	Properties of Matter
618726	Chem	Chemistry to Grade 8	260	309	CHEM.B.1.3.1	Physical Sci.	Mole
616365	Chem	Chemistry to Grade 8	260	301	CHEM.A.1.1.5	Physical Sci.	Properties of Matter
616516	Chem	Chemistry to Grade 8	260	306	CHEM.B.2.1.3	Physical Sci.	Chem. Relation.
618733	Chem	Chemistry to Grade 8	260	307	CHEM.B.2.1.3	Physical Sci.	Chem. Relation.
620468	Chem	Chemistry to Grade 8	260	315	CHEM.B.2.1.1	Physical Sci.	Chem. Relation.
616561	Chem	Chemistry to Grade 8	260	307	CHEM.A.1.2.2	Physical Sci.	Properties of Matter
616376	Chem	Chemistry to Grade 8	259	304	CHEM.A.2.3.1	Physical Sci.	Atomic Structure
616533	Chem	Chemistry to Grade 8	259	306	CHEM.A.2.2.2	Physical Sci.	Atomic Structure
618698	Chem	Chemistry to Grade 8	259	302	CHEM.B.2.1.4	Physical Sci.	Chem. Relation.

Appendix C: Vertical Linking Item Details

Tables C–38 through C–44 summarize the number of linking items by diagnostic category. Items coded in a Science diagnostic category and a Biology or Chemistry diagnostic category are noted.

Table C–38. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

	Link Grade 3 to Grade 4		
	Grade 3 Items	Grade 4 Items	Total
Nature of Science	6	6	12
Biological Sciences	7	6	13
Physical Sciences	2	3	5
Earth and Space Sciences	5	5	10
TOTAL	20	20	40

Table C–39. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

	Grade 4 to Grade 5		
	Grade 4 Items	Grade 5 Items	Total
Nature of Science	7	7	14
Biological Sciences	4	5	9
Physical Sciences	4	4	8
Earth and Space Sciences	5	4	9
TOTAL	20	20	40

Table C–40. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

	Grade 5 to Grade 6		
	Grade 5 Items	Grade 6 Items	Total
Nature of Science	5	6	11
Biological Sciences	5	5	10
Physical Sciences	7	5	12
Earth and Space Sciences	3	4	7
TOTAL	20	20	40

Table C–41. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

	Grade 6 to Grade 7		
	Grade 6 Items	Grade 7 Items	Total
Nature of Science	7	7	14
Biological Sciences	3	5	8
Physical Sciences	8	4	12
Earth and Space Sciences	2	4	6
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–42. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Grade 8 to Grade 7		
	Grade 7 Items	**Grade 8 Items**	**Total**
Nature of Science	6	6	12
Biological Sciences	5	5	10
Physical Sciences	4	4	8
Earth and Space Sciences	5	5	10
TOTAL	20	20	40

Table C–43. Number of Items Linking Algebra I to Grade 8 by Diagnostic Category

	Biology to Grade 8		
	Grade 8 Items	**Biology Items**	**Total**
Nature of Science	6	0	6
Biological Sciences	10	20	30
Physical Sciences	2	0	2
Earth and Space Sciences	2	0	2
No Grade 8 DC	0	0	0
TOTAL	20	20	40
	Biology to Grade 8		
	Grade 8 Items	**Biology Items**	**Total**
Basic Biological Principles	2	3	5
Bioenergetics	0	3	3
Cell Growth	4	5	9
Theory of Evolution	7	9	16
No Biology DC	7	0	7
TOTAL	20	20	40

Table C–44. Number of Items Linking Geometry to Grade 8 by Diagnostic Category

	Chemistry to Grade 8		
	Grade 8 Items	**Chemistry Items**	**Total**
Nature of Science	9	0	9
Biological Sciences	2	0	2
Physical Sciences	7	20	27
Earth and Space Sciences	2	0	2
No Grade 8 DC	0	0	0
TOTAL	20	20	40
	Chemistry to Grade 8		
	Grade 8 Items	**Chemistry Items**	**Total**
Properties of Matter	1	7	8
Atomic Structure	0	3	3
The Mole	2	3	5
Chemical Relationships	1	7	8
No Chemistry DC	16	0	16
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–45. Science Example of Vertical Linking Workbook

		Grade 4 Calibration			Grade 5 Calibration				Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
617231	4	-0.669	0.980	0.001	-1.440	1.040	-0.004	-0.771	-1.442	-0.097	
617060	4	0.409	1.030	-0.002	-0.267	1.050	-0.003	-0.676	-0.364	0.312	
617092	4	-0.519	1.040	-0.002	-1.314	0.930	-0.004	-0.795	-1.292	-0.200	
617074	4	-0.048	0.950	-0.002	-0.773	1.000	-0.003	-0.725	-0.821	0.101	
617246	4	0.952	0.930	0.000	-0.093	0.900	-0.003	-1.045	0.179	-1.275	
617237	4	0.497	0.970	0.000	-0.250	0.950	-0.003	-0.747	-0.276	0.006	
617068	4	-0.016	1.030	0.002	-0.396	0.980	-0.003	-0.380	-0.789	1.585	
617102	4	2.758	1.090	-0.006	1.678	1.100	-0.003	-1.080	1.985	-1.426	
617075	4	0.654	1.030	-0.001	0.375	1.010	-0.003	-0.279	-0.119	2.019	high robust Z
617259	4	1.107	1.120	-0.001	0.532	1.070	-0.003	-0.575	0.334	0.746	
617072	4	0.683	0.970	0.004	-0.653	0.950	-0.002	-1.336	-0.090	-2.526	high robust Z
617240	4	0.983	1.080	0.004	0.131	1.100	-0.002	-0.852	0.210	-0.445	
617112	4	0.827	0.970	-0.001	0.145	0.930	-0.002	-0.682	0.054	0.286	
617080	4	1.924	1.230	-0.001	1.183	1.110	-0.002	-0.741	1.151	0.032	
617257	4	0.184	0.950	0.004	-0.368	0.960	-0.002	-0.552	-0.589	0.845	
617271	4	0.518	0.980	0.002	-0.502	0.920	-0.002	-1.020	-0.255	-1.168	
617089	4	0.146	1.140	-0.006	-0.345	1.080	-0.002	-0.491	-0.627	1.107	
617234	4	0.420	0.990	-0.002	0.000	1.060	-0.002	-0.420	-0.353	1.413	
617070	4	-0.383	0.940	0.000	-1.133	0.920	-0.002	-0.750	-1.156	-0.006	
617260	4	1.940	1.120	0.003	1.201	1.140	-0.002	-0.739	1.167	0.041	
617311	5	-0.320	1.000	0.002	-0.902	0.970	-0.001	-0.582	-1.093	0.716	
616317	5	-0.027	1.040	0.002	-0.296	1.080	0.001	-0.269	-0.800	2.062	high robust Z
615950	5	0.038	0.970	0.002	-0.902	0.920	0.001	-0.940	-0.735	-0.823	
617328	5	-0.257	0.960	0.002	-0.859	0.860	0.001	-0.602	-1.030	0.630	
617304	5	1.292	1.120	0.002	0.486	1.020	0.001	-0.806	0.519	-0.247	
615962	5	-0.868	0.940	0.002	-1.223	0.930	0.001	-0.355	-1.641	1.692	
615936	5	-0.152	0.990	0.002	-1.059	0.890	0.003	-0.907	-0.925	-0.682	
617330	5	0.732	0.940	0.002	-0.012	0.840	-0.002	-0.744	-0.041	0.019	
615958	5	0.180	1.070	0.002	-0.560	1.010	0.003	-0.740	-0.593	0.037	
617307	5	1.109	0.950	0.002	0.289	0.970	-0.002	-0.820	0.336	-0.307	
617338	5	0.456	0.940	0.005	-0.715	0.920	0.001	-1.171	-0.317	-1.817	
615939	5	0.484	0.980	0.005	-0.418	0.850	-0.002	-0.902	-0.289	-0.660	
617504	5	2.443	0.990	0.005	1.115	1.020	0.004	-1.328	1.670	-2.492	high robust Z
616969	5	-0.111	1.080	0.005	-0.812	1.030	-0.002	-0.701	-0.884	0.204	
615943	5	0.657	1.070	0.005	-0.391	0.940	0.003	-1.048	-0.116	-1.288	
617502	5	0.997	0.980	0.005	0.107	0.970	0.001	-0.890	0.224	-0.608	
617499	5	0.794	1.030	0.005	-0.130	1.000	-0.002	-0.924	0.021	-0.755	
615965	5	1.460	0.920	0.005	0.316	0.920	-0.001	-1.144	0.687	-1.701	
615942	5	-1.725	0.940	0.005	-2.577	0.940	-0.001	-0.852	-2.498	-0.445	
617507	5	0.870	1.230	0.005	0.340	1.130	0.001	-0.530	0.097	0.940	
	Mean	0.510			-0.262			-0.773	-0.262	-0.104	
	SD	0.875			0.810			0.259	0.875	1.114	
	SD Ratio	1.080									
	Correlation	0.956									
	Add. Constant	-0.773									
	Median							-0.749			
	Q							0.314			

Appendix C: Vertical Linking Item Details

Figures C–15 through C–21 are the adjacent grade linking plots. Items removed from final linking procedure are colored red.

Figure C–15. CDT Science: Grade 3 to Grade 4 Linking – All Links

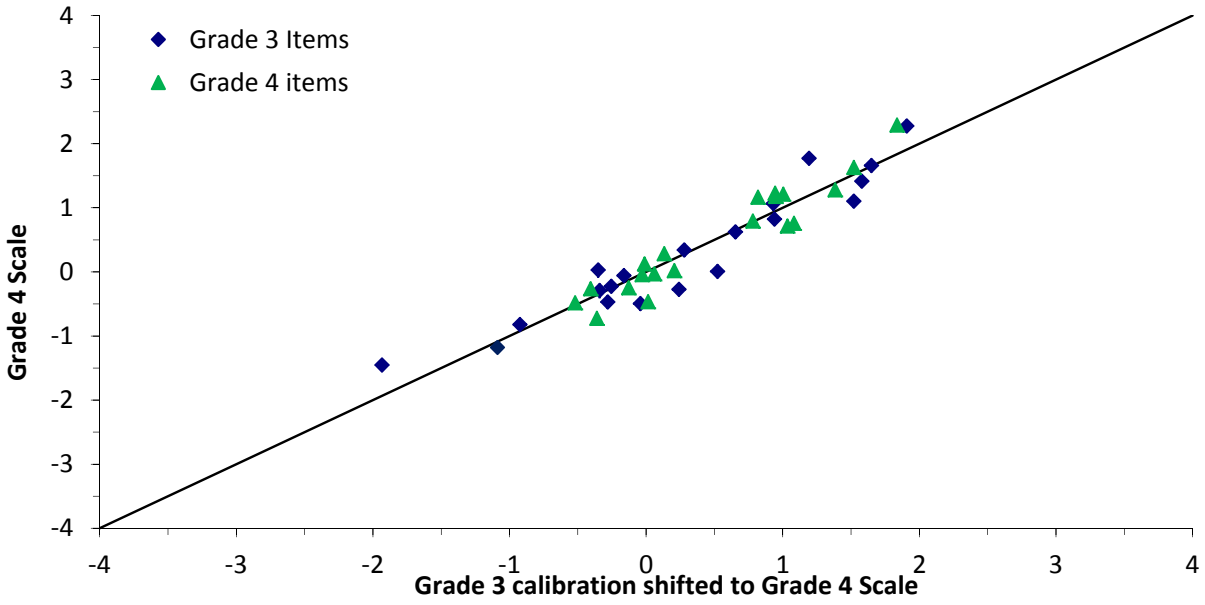


Figure C–16. CDT Science: Grade 4 to Grade 5 Linking – All Links

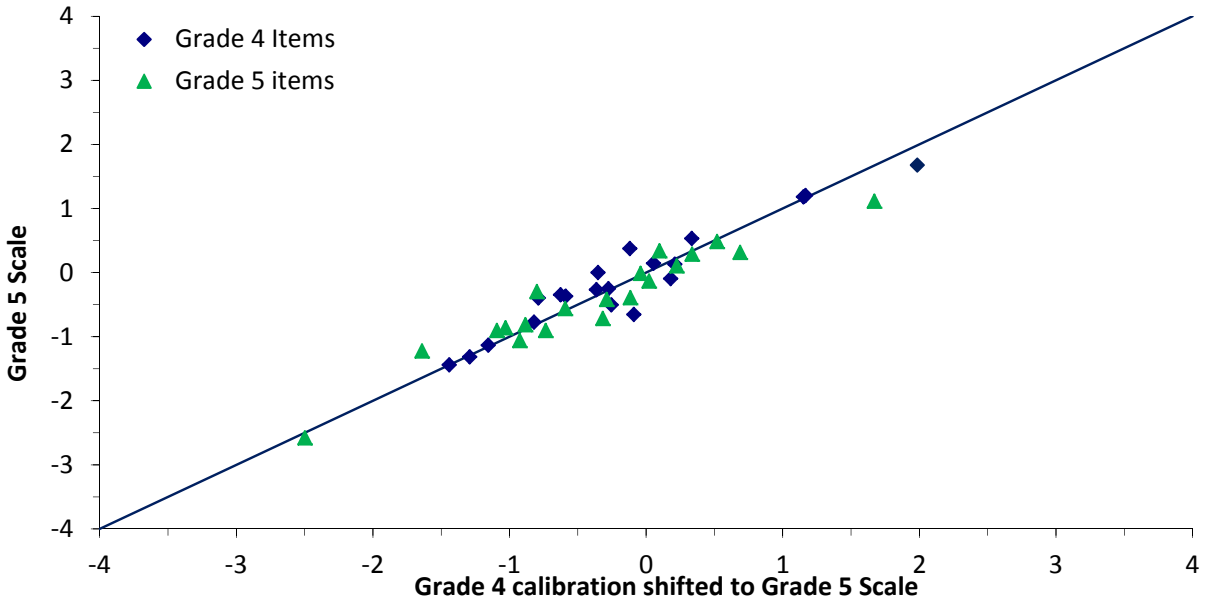


Figure C–17. CDT Science: Grade 5 to Grade 6 Linking – All Links

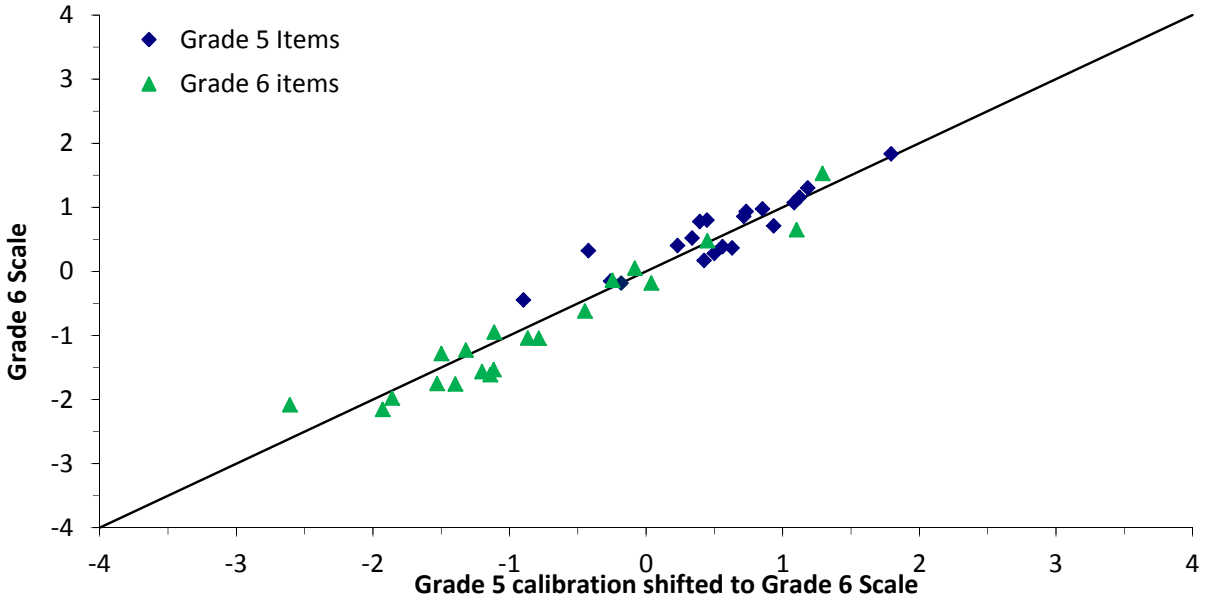


Figure C–18. CDT Science: Grade 6 to Grade 7 Linking – All Links

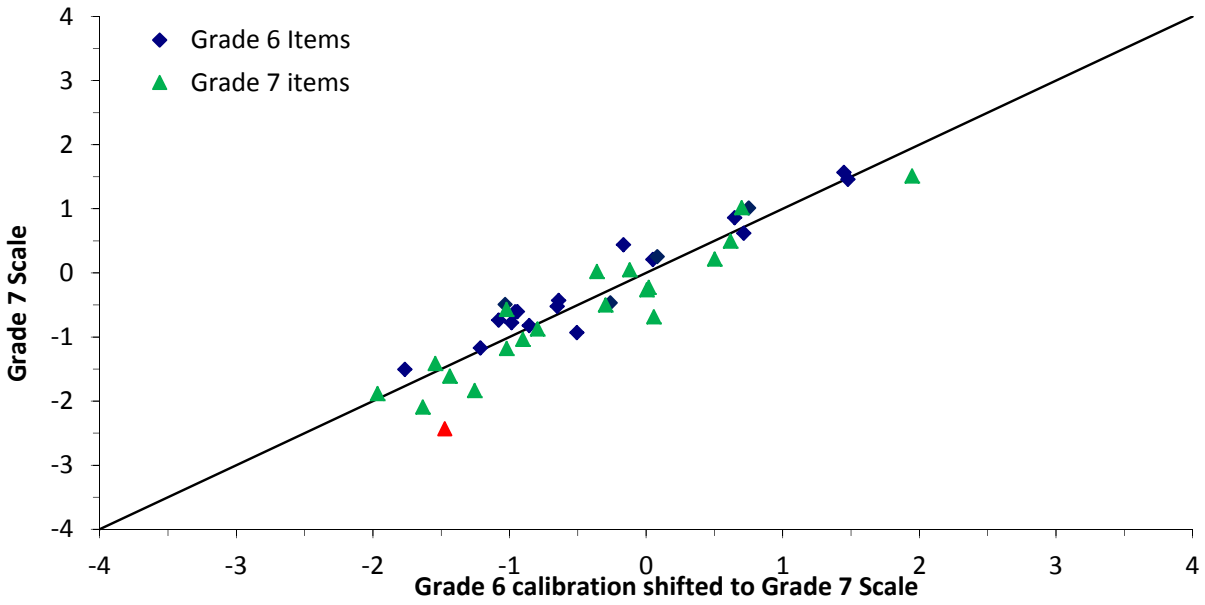


Figure C–19. CDT Science: Grade 8 to Grade 7 Linking – All Links

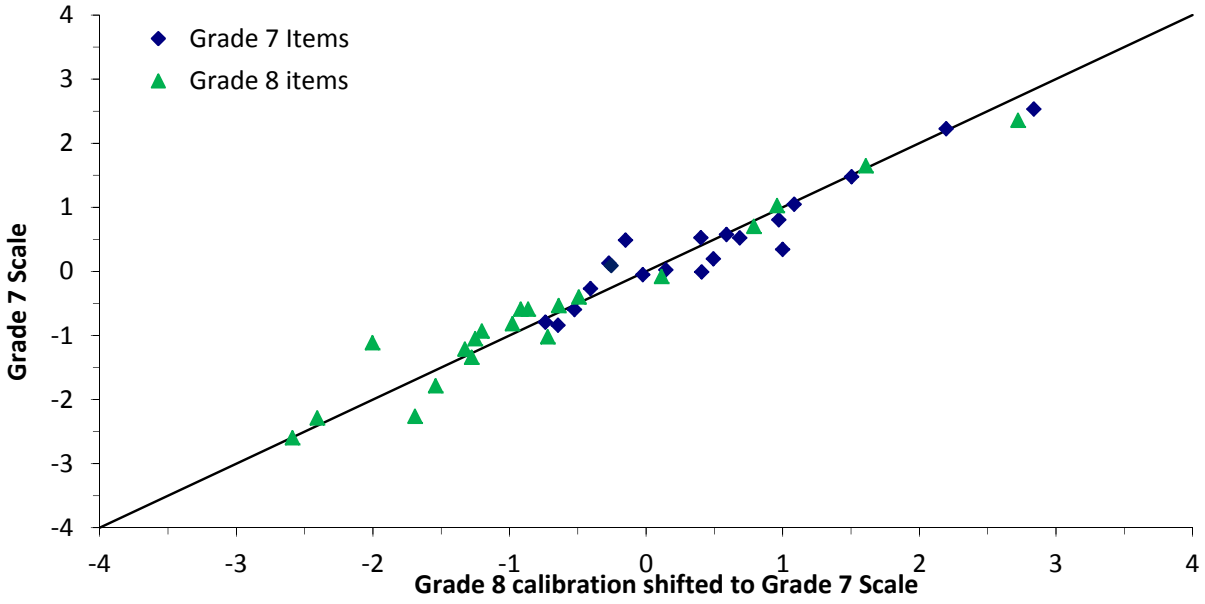


Figure C–20. CDT Science: Biology to Grade 8 Linking – All Links

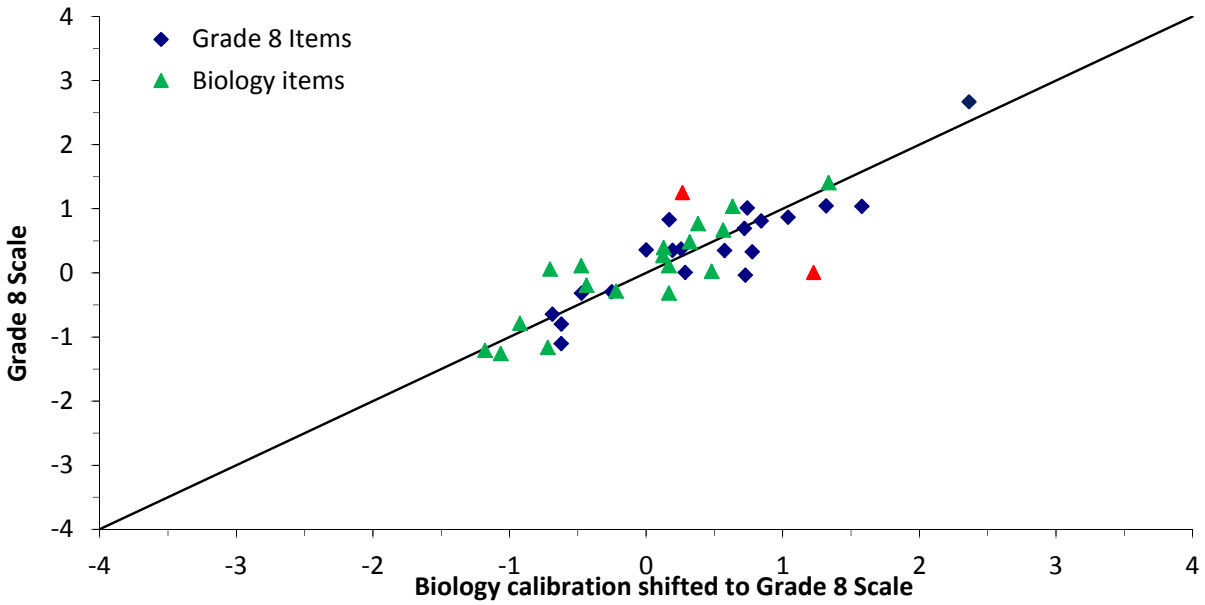
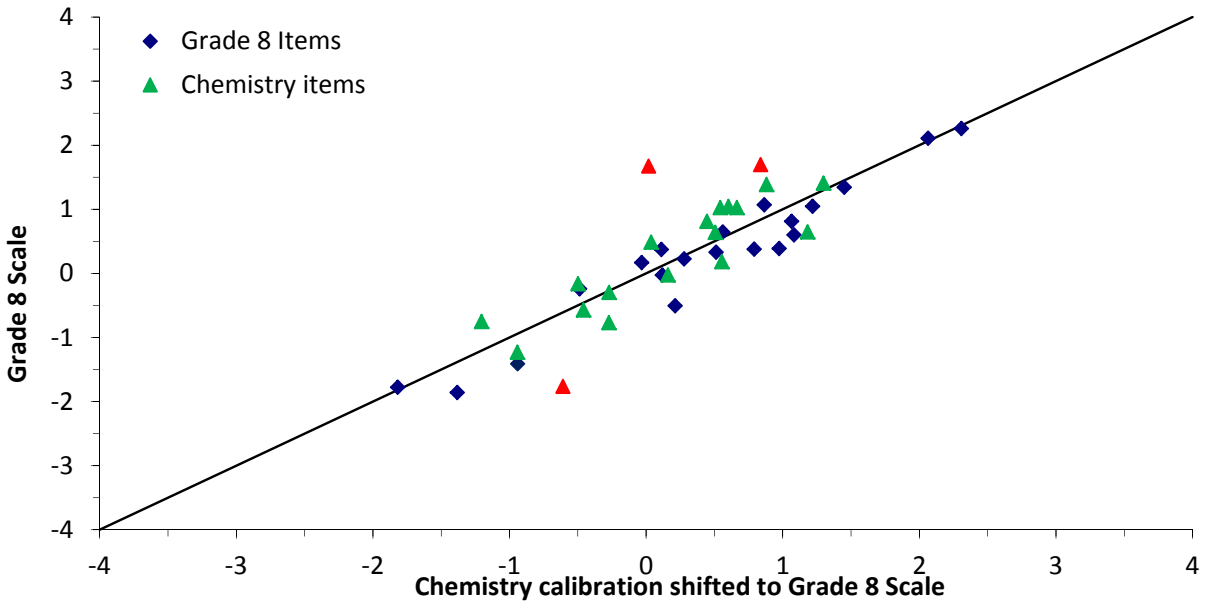


Figure C–21. CDT Science: Chemistry to Grade 8 Linking – All Links



WRITING/ENGLISH COMPOSITION

Tables C–46 through C–51 show n-counts, eligible content code, and diagnostic category for each of the vertical linking items.

Each item was administered in two grades so there are two n-counts: one for the lower grade and one for the upper grade. For example, item 626547 is a grade 3 item used to link grades 3 and 4. It was administered 274 times on the lower grade form (grade 3) and 234 times on the upper grade form (grade 4).

The diagnostic categories are[4]:

- Quality of Writing: Focus and Content
- Quality of Writing: Organization and Style
- Quality of Writing: Editing
- Conventions: Spelling, Capitalization, and Punctuation
- Conventions: Grammar and Sentence Formation

[4] Writing diagnostic categories changed at the start of the 2013-2014 school year due to re-alignment to the Pennsylvania Core Standards. See Chapter Thirteen for a list of the current diagnostic categories.

Table C–46. Writing/English Composition Items Used to Link Grade 3 to Grade 4

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
626547	3	Grade 3 to Grade 4	274	234	W.1.5.3.F.b	Spell., Cap., Punct.
621012	3	Grade 3 to Grade 4	276	234	W.1.5.3.F.d	Gram. and Sent.
634030	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.a	Spell., Cap., Punct.
634160	3	Grade 3 to Grade 4	275	234	W.1.5.3.D	Org and Style
623056	3	Grade 3 to Grade 4	275	234	W.1.5.3.C	Org and Style
621006	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.d	Gram. and Sent.
624801	3	Grade 3 to Grade 4	276	234	W.1.5.3.A	Focus and Content
623023	3	Grade 3 to Grade 4	274	234	W.1.5.3.F.d	Gram. and Sent.
622985	3	Grade 3 to Grade 4	274	234	W.1.5.3.B	Focus and Content
624847	3	Grade 3 to Grade 4	277	234	W.1.5.3.F.c	Spell., Cap., Punct.
624849	3	Grade 3 to Grade 4	276	232	W.1.5.3.F.b	Spell., Cap., Punct.
622465	3	Grade 3 to Grade 4	277	232	W.1.5.3.F.d	Gram. and Sent.
634029	3	Grade 3 to Grade 4	275	232	W.1.5.3.F.a	Spell., Cap., Punct.
634162	3	Grade 3 to Grade 4	275	232	W.1.5.3.D	Org and Style
626574	3	Grade 3 to Grade 4	277	232	W.1.5.3.C	Org and Style
636550	3	Grade 3 to Grade 4	276	232	W.1.5.3.F.d	Gram. and Sent.
622979	3	Grade 3 to Grade 4	274	232	W.1.5.3.A	Focus and Content
621008	3	Grade 3 to Grade 4	274	232	W.1.5.3.F.d	Gram. and Sent.
623107	3	Grade 3 to Grade 4	276	232	W.1.5.3.B	Focus and Content
625516	3	Grade 3 to Grade 4	275	232	W.1.5.3.F.c	Spell., Cap., Punct.
623113	4	Grade 3 to Grade 4	274	233	W.1.5.4.C	Org and Style
637175	4	Grade 3 to Grade 4	274	232	W.1.5.4.D	Org and Style
633445	4	Grade 3 to Grade 4	274	235	W.1.5.4.F.a	Spell., Cap., Punct.
635414	4	Grade 3 to Grade 4	274	233	W.1.5.4.A	Focus and Content
639852	4	Grade 3 to Grade 4	274	234	W.1.5.4.F.c	Spell., Cap., Punct.
623033	4	Grade 3 to Grade 4	274	232	W.1.5.4.F.b	Spell., Cap., Punct.
623013	4	Grade 3 to Grade 4	274	233	W.1.5.4.B	Focus and Content
633852	4	Grade 3 to Grade 4	274	233	W.1.5.4.C	Org and Style
624765	4	Grade 3 to Grade 4	274	233	W.1.5.4.F.d	Gram. and Sent.
625527	4	Grade 3 to Grade 4	274	232	W.1.5.4.E	Editing
627004	4	Grade 3 to Grade 4	275	232	W.1.5.4.E	Editing
637177	4	Grade 3 to Grade 4	275	235	W.1.5.4.D	Org and Style
633432	4	Grade 3 to Grade 4	275	233	W.1.5.4.F.a	Spell., Cap., Punct.
633464	4	Grade 3 to Grade 4	275	234	W.1.5.4.A	Focus and Content
639854	4	Grade 3 to Grade 4	275	232	W.1.5.4.F.c	Spell., Cap., Punct.
623136	4	Grade 3 to Grade 4	275	233	W.1.5.4.F.b	Spell., Cap., Punct.
635900	4	Grade 3 to Grade 4	275	233	W.1.5.4.B	Focus and Content
635412	4	Grade 3 to Grade 4	275	233	W.1.5.4.C	Org and Style
630419	4	Grade 3 to Grade 4	275	232	W.1.5.4.F.d	Gram. and Sent.
630295	4	Grade 3 to Grade 4	275	235	W.1.5.4.E	Editing

Table C–47. Writing/English Composition Items Used to Link Grade 4 to Grade 5

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
623017	4	Grade 4 to Grade 5	235	221	W.1.5.4.E	Editing
625455	4	Grade 4 to Grade 5	233	221	W.1.5.4.A	Focus and Content
622453	4	Grade 4 to Grade 5	234	221	W.1.5.4.E	Editing
623135	4	Grade 4 to Grade 5	232	221	W.1.5.4.F.b	Spell., Cap., Punct.
632573	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.d	Gram. and Sent.
623020	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
633435	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.a	Spell., Cap., Punct.
623108	4	Grade 4 to Grade 5	232	221	W.1.5.4.B	Focus and Content
633468	4	Grade 4 to Grade 5	235	221	W.1.5.4.C	Org and Style
627696	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.c	Spell., Cap., Punct.
623115	4	Grade 4 to Grade 5	233	221	W.1.5.4.E	Editing
622983	4	Grade 4 to Grade 5	234	221	W.1.5.4.A	Focus and Content
622454	4	Grade 4 to Grade 5	232	221	W.1.5.4.E	Editing
621395	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.b	Spell., Cap., Punct.
632587	4	Grade 4 to Grade 5	233	221	W.1.5.4.F.d	Gram. and Sent.
623019	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
634025	4	Grade 4 to Grade 5	232	221	W.1.5.4.F.a	Spell., Cap., Punct.
626922	4	Grade 4 to Grade 5	235	221	W.1.5.4.B	Focus and Content
633469	4	Grade 4 to Grade 5	233	221	W.1.5.4.C	Org and Style
628471	4	Grade 4 to Grade 5	234	221	W.1.5.4.F.c	Spell., Cap., Punct.
637149	5	Grade 4 to Grade 5	233	218	W.1.5.5.F.d	Gram. and Sent.
633440	5	Grade 4 to Grade 5	233	221	W.1.5.5.F.a	Spell., Cap., Punct.
635884	5	Grade 4 to Grade 5	233	221	W.1.5.5.E	Editing
637062	5	Grade 4 to Grade 5	233	218	W.1.5.5.F.d	Gram. and Sent.
623027	5	Grade 4 to Grade 5	233	220	W.1.5.5.F.d	Gram. and Sent.
622469	5	Grade 4 to Grade 5	233	221	W.1.5.5.F.b	Spell., Cap., Punct.
639843	5	Grade 4 to Grade 5	233	222	W.1.5.5.F.c	Spell., Cap., Punct.
635417	5	Grade 4 to Grade 5	233	221	W.1.5.5.C	Org and Style
620819	5	Grade 4 to Grade 5	233	220	W.1.5.5.C	Org and Style
635605	5	Grade 4 to Grade 5	233	221	W.1.5.5.C	Org and Style
637148	5	Grade 4 to Grade 5	232	221	W.1.5.5.C	Org and Style
633439	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.a	Spell., Cap., Punct.
620820	5	Grade 4 to Grade 5	232	218	W.1.5.5.E	Editing
626566	5	Grade 4 to Grade 5	232	220	W.1.5.5.F.d	Gram. and Sent.
623129	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.d	Gram. and Sent.
629858	5	Grade 4 to Grade 5	232	222	W.1.5.5.F.b	Spell., Cap., Punct.
639864	5	Grade 4 to Grade 5	232	221	W.1.5.5.F.c	Spell., Cap., Punct.
627291	5	Grade 4 to Grade 5	232	220	W.1.5.5.C	Org and Style
639349	5	Grade 4 to Grade 5	232	218	W.1.5.5.C	Org and Style
626818	5	Grade 4 to Grade 5	232	221	W.1.5.5.C	Org and Style

Table C–48. Writing/English Composition Items Used to Link Grade 5 to Grade 6

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
623105	5	Grade 5 to Grade 6	221	303	W.1.5.5.A	Focus and Content
626927	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.d	Gram. and Sent.
632608	5	Grade 5 to Grade 6	220	303	W.1.5.5.E	Editing
625460	5	Grade 5 to Grade 6	221	303	W.1.5.5.C	Org and Style
626923	5	Grade 5 to Grade 6	222	303	W.1.5.5.E	Editing
628065	5	Grade 5 to Grade 6	221	303	W.1.5.5.F.b	Spell., Cap., Punct.
633443	5	Grade 5 to Grade 6	220	303	W.1.5.5.F.a	Spell., Cap., Punct.
621390	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.c	Spell., Cap., Punct.
626820	5	Grade 5 to Grade 6	221	303	W.1.5.5.E	Editing
624842	5	Grade 5 to Grade 6	218	303	W.1.5.5.F.d	Gram. and Sent.
624800	5	Grade 5 to Grade 6	218	304	W.1.5.5.A	Focus and Content
627413	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.d	Gram. and Sent.
630403	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
624804	5	Grade 5 to Grade 6	222	304	W.1.5.5.C	Org and Style
626570	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
624773	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.b	Spell., Cap., Punct.
633442	5	Grade 5 to Grade 6	218	304	W.1.5.5.F.a	Spell., Cap., Punct.
629854	5	Grade 5 to Grade 6	221	304	W.1.5.5.F.c	Spell., Cap., Punct.
623060	5	Grade 5 to Grade 6	221	304	W.1.5.5.E	Editing
627488	5	Grade 5 to Grade 6	220	304	W.1.5.5.F.d	Gram. and Sent.
624292	6	Grade 5 to Grade 6	221	304	W.1.5.6.E	Editing
626934	6	Grade 5 to Grade 6	221	303	W.1.5.6.A	Focus and Content
627013	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.b	Spell., Cap., Punct.
632646	6	Grade 5 to Grade 6	221	305	W.1.5.6.F.d	Gram. and Sent.
624829	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.d	Gram. and Sent.
630378	6	Grade 5 to Grade 6	221	304	W.1.5.6.B	Focus and Content
624297	6	Grade 5 to Grade 6	221	303	W.1.5.6.C	Org and Style
635654	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.c	Spell., Cap., Punct.
639363	6	Grade 5 to Grade 6	221	305	W.1.5.6.C	Org and Style
633448	6	Grade 5 to Grade 6	221	304	W.1.5.6.F.a	Spell., Cap., Punct.
623114	6	Grade 5 to Grade 6	222	303	W.1.5.6.E	Editing
626932	6	Grade 5 to Grade 6	222	304	W.1.5.6.A	Focus and Content
635660	6	Grade 5 to Grade 6	222	305	W.1.5.6.F.b	Spell., Cap., Punct.
626822	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.d	Gram. and Sent.
625478	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.d	Gram. and Sent.
626776	6	Grade 5 to Grade 6	222	303	W.1.5.6.B	Focus and Content
624296	6	Grade 5 to Grade 6	222	304	W.1.5.6.C	Org and Style
628055	6	Grade 5 to Grade 6	222	305	W.1.5.6.F.c	Spell., Cap., Punct.
627289	6	Grade 5 to Grade 6	222	304	W.1.5.6.C	Org and Style
633444	6	Grade 5 to Grade 6	222	304	W.1.5.6.F.a	Spell., Cap., Punct.

Table C–49. Writing/English Composition Items Used to Link Grade 6 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
633446	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.a	Spell., Cap., Punct.
635619	6	Grade 6 to Grade 7	305	279	W.1.5.6.D	Org and Style
635662	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.b	Spell., Cap., Punct.
623111	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624754	6	Grade 6 to Grade 7	303	279	W.1.5.6.F.d	Gram. and Sent.
628060	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.c	Spell., Cap., Punct.
627415	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.d	Gram. and Sent.
624287	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624763	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
627960	6	Grade 6 to Grade 7	303	279	W.1.5.6.A	Focus and Content
633447	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.a	Spell., Cap., Punct.
639392	6	Grade 6 to Grade 7	304	279	W.1.5.6.D	Org and Style
635661	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.b	Spell., Cap., Punct.
624289	6	Grade 6 to Grade 7	303	279	W.1.5.6.E	Editing
624756	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
628061	6	Grade 6 to Grade 7	305	279	W.1.5.6.F.c	Spell., Cap., Punct.
628112	6	Grade 6 to Grade 7	304	279	W.1.5.6.F.d	Gram. and Sent.
626567	6	Grade 6 to Grade 7	304	279	W.1.5.6.E	Editing
624840	6	Grade 6 to Grade 7	303	279	W.1.5.6.F.d	Gram. and Sent.
627030	6	Grade 6 to Grade 7	304	279	W.1.5.6.A	Focus and Content
627052	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639447	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
627058	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639380	7	Grade 6 to Grade 7	303	279	W.1.5.7.A	Focus and Content
624286	7	Grade 6 to Grade 7	303	280	W.1.5.7.B	Focus and Content
624822	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.b	Spell., Cap., Punct.
636003	7	Grade 6 to Grade 7	303	280	W.1.5.7.C	Org and Style
633454	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.a	Spell., Cap., Punct.
635909	7	Grade 6 to Grade 7	303	279	W.1.5.7.D	Org and Style
634300	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.c	Spell., Cap., Punct.
626992	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
639438	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.d	Gram. and Sent.
628116	7	Grade 6 to Grade 7	303	279	W.1.5.7.F.d	Gram. and Sent.
626764	7	Grade 6 to Grade 7	303	280	W.1.5.7.A	Focus and Content
639394	7	Grade 6 to Grade 7	303	280	W.1.5.7.B	Focus and Content
628476	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.b	Spell., Cap., Punct.
636008	7	Grade 6 to Grade 7	303	280	W.1.5.7.C	Org and Style
633455	7	Grade 6 to Grade 7	303	279	W.1.5.7.F.a	Spell., Cap., Punct.
639420	7	Grade 6 to Grade 7	303	280	W.1.5.7.D	Org and Style
634299	7	Grade 6 to Grade 7	303	280	W.1.5.7.F.c	Spell., Cap., Punct.

Appendix C: Vertical Linking Item Details

Table C–50. Writing/English Composition Items Used to Link Grade 8 to Grade 7

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
627684	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.d	Gram. and Sent.
625487	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
627464	7	Grade 8 to Grade 7	280	145	W.1.5.7.A	Focus and Content
639375	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633458	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.a	Spell., Cap., Punct.
626996	7	Grade 8 to Grade 7	280	145	W.1.5.7.E	Editing
628098	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.b	Spell., Cap., Punct.
639358	7	Grade 8 to Grade 7	280	145	W.1.5.7.B	Focus and Content
635665	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.c	Spell., Cap., Punct.
627361	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
627056	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
639407	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.d	Gram. and Sent.
626943	7	Grade 8 to Grade 7	280	145	W.1.5.7.A	Focus and Content
639364	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633457	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.a	Spell., Cap., Punct.
626997	7	Grade 8 to Grade 7	279	145	W.1.5.7.F.d	Gram. and Sent.
630429	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.b	Spell., Cap., Punct.
625506	7	Grade 8 to Grade 7	280	145	W.1.5.7.B	Focus and Content
635668	7	Grade 8 to Grade 7	280	145	W.1.5.7.F.c	Spell., Cap., Punct.
627362	7	Grade 8 to Grade 7	280	145	W.1.5.7.C	Org and Style
633498	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.a	Spell., Cap., Punct.
639580	8	Grade 8 to Grade 7	279	145	W.1.5.8.C	Org and Style
624848	8	Grade 8 to Grade 7	279	143	W.1.5.8.F.b	Spell., Cap., Punct.
639612	8	Grade 8 to Grade 7	279	144	W.1.5.8.B	Focus and Content
628115	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.d	Gram. and Sent.
627963	8	Grade 8 to Grade 7	279	144	W.1.5.8.A	Focus and Content
628311	8	Grade 8 to Grade 7	279	145	W.1.5.8.F.d	Gram. and Sent.
628242	8	Grade 8 to Grade 7	279	143	W.1.5.8.B	Focus and Content
639857	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.c	Spell., Cap., Punct.
639441	8	Grade 8 to Grade 7	279	144	W.1.5.8.F.d	Gram. and Sent.
633497	8	Grade 8 to Grade 7	280	145	W.1.5.8.F.a	Spell., Cap., Punct.
639588	8	Grade 8 to Grade 7	280	143	W.1.5.8.C	Org and Style
625522	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.b	Spell., Cap., Punct.
639610	8	Grade 8 to Grade 7	280	144	W.1.5.8.B	Focus and Content
624828	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.d	Gram. and Sent.
625520	8	Grade 8 to Grade 7	280	145	W.1.5.8.A	Focus and Content
625508	8	Grade 8 to Grade 7	280	143	W.1.5.8.F.d	Gram. and Sent.
626775	8	Grade 8 to Grade 7	280	144	W.1.5.8.B	Focus and Content
639856	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.c	Spell., Cap., Punct.
639439	8	Grade 8 to Grade 7	280	144	W.1.5.8.F.d	Gram. and Sent.

Table C–51. Writing/English Composition Items Used to Link Literature to Grade 8

Item ID	Item Grade	Link	N Count		Eligible Content	Writing/Composition Diagnostic Category
			Lower Grade	Upper Grade		
636213	8	English Comp to Grade 8	143	173	W.1.5.8.F.d	Gram. and Sent.
639599	8	English Comp to Grade 8	144	173	W.1.5.8.C	Org and Style
633503	8	English Comp to Grade 8	144	173	W.1.5.8.F.a	Spell., Cap., Punct.
629857	8	English Comp to Grade 8	144	173	W.1.5.8.F.b	Spell., Cap., Punct.
634156	8	English Comp to Grade 8	145	173	W.1.5.8.F.c	Spell., Cap., Punct.
639577	8	English Comp to Grade 8	143	173	W.1.5.8.E	Editing
635385	8	English Comp to Grade 8	144	173	W.1.5.8.F.d	Gram. and Sent.
635351	8	English Comp to Grade 8	144	173	W.1.5.8.F.d	Gram. and Sent.
627964	8	English Comp to Grade 8	144	173	W.1.5.8.A	Focus and Content
626786	8	English Comp to Grade 8	145	173	W.1.5.8.C	Org and Style
636212	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.
639597	8	English Comp to Grade 8	144	171	W.1.5.8.C	Org and Style
633502	8	English Comp to Grade 8	144	171	W.1.5.8.F.a	Spell., Cap., Punct.
629860	8	English Comp to Grade 8	145	171	W.1.5.8.F.b	Spell., Cap., Punct.
634157	8	English Comp to Grade 8	143	171	W.1.5.8.F.c	Spell., Cap., Punct.
639608	8	English Comp to Grade 8	144	171	W.1.5.8.E	Editing
635386	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.
635350	8	English Comp to Grade 8	144	171	W.1.5.8.F.d	Gram. and Sent.
628143	8	English Comp to Grade 8	145	171	W.1.5.8.A	Focus and Content
626785	8	English Comp to Grade 8	143	171	W.1.5.8.C	Org and Style
622816	EC	English Comp to Grade 8	143	173	C.E.1.1.1	Focus and Content
639932	EC	English Comp to Grade 8	143	173	C.E.3.1.5	Gram. and Sent.
639920	EC	English Comp to Grade 8	143	171	C.E.3.1.4	Gram. and Sent.
634313	EC	English Comp to Grade 8	143	173	C.E.3.1.2	Spell., Cap., Punct.
633540	EC	English Comp to Grade 8	143	172	C.E.3.1.1	Spell., Cap., Punct.
622613	EC	English Comp to Grade 8	143	173	C.E.1.1.3	Org and Style
623126	EC	English Comp to Grade 8	143	173	C.E.3.1.4	Gram. and Sent.
639971	EC	English Comp to Grade 8	143	174	C.E.1.1.2	Focus and Content
629853	EC	English Comp to Grade 8	143	174	C.E.3.1.3	Spell., Cap., Punct.
630391	EC	English Comp to Grade 8	143	173	C.E.1.1.3	Org and Style
622815	EC	English Comp to Grade 8	145	174	C.P.1.1.1	Focus and Content
639933	EC	English Comp to Grade 8	145	173	C.E.3.1.5	Gram. and Sent.
639919	EC	English Comp to Grade 8	145	173	C.E.3.1.4	Gram. and Sent.
634349	EC	English Comp to Grade 8	145	174	C.E.3.1.2	Spell., Cap., Punct.
633536	EC	English Comp to Grade 8	145	174	C.E.3.1.1	Spell., Cap., Punct.
622611	EC	English Comp to Grade 8	145	174	C.E.1.1.3	Org and Style
621166	EC	English Comp to Grade 8	145	173	C.E.3.1.4	Gram. and Sent.
630659	EC	English Comp to Grade 8	145	173	C.E.1.1.2	Focus and Content
629822	EC	English Comp to Grade 8	145	173	C.E.3.1.3	Spell., Cap., Punct.
630392	EC	English Comp to Grade 8	145	171	C.E.1.1.3	Org and Style

Appendix C: Vertical Linking Item Details

Tables C–52 through C–57 summarize the number of linking items by diagnostic category.

Table C–52. Number of Items Linking Grade 3 to Grade 4 by Diagnostic Category

	Link Grade 3 to Grade 4		
	Grade 3 Items	Grade 4 Items	Total
Focus and Content	4	4	8
Org and Style	4	5	9
Editing	0	3	3
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	2	8
TOTAL	20	20	40

Table C–53. Number of Items Linking Grade 4 to Grade 5 by Diagnostic Category

	Grade 4 to Grade 5		
	Grade 4 Items	Grade 5 Items	Total
Focus and Content	4	0	4
Org and Style	4	7	11
Editing	4	2	6
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	2	5	7
TOTAL	20	20	40

Table C–54. Number of Items Linking Grade 5 to Grade 6 by Diagnostic Category

	Grade 5 to Grade 6		
	Grade 5 Items	Grade 6 Items	Total
Focus and Content	2	4	6
Org and Style	2	4	6
Editing	6	2	8
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	4	4	8
TOTAL	20	20	40

Table C–55. Number of Items Linking Grade 6 to Grade 7 by Diagnostic Category

	Grade 6 to Grade 7		
	Grade 6 Items	Grade 7 Items	Total
Focus and Content	2	4	6
Org and Style	2	4	6
Editing	4	0	4
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	6	12
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–56. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Grade 8 to Grade 7		
	Grade 7 Items	**Grade 8 Items**	**Total**
Focus and Content	4	6	10
Org and Style	4	2	6
Editing	1	0	1
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	5	6	11
TOTAL	20	20	40

Table C–57. Number of Items Linking Grade 8 to Grade 7 by Diagnostic Category

	Link English Composition to Grade 8		
	Grade 8 Items	**Eng Comp Items**	**Total**
Focus and Content	2	4	6
Org and Style	4	4	8
Editing	2	0	2
Spell., Cap., Punct.	6	6	12
Gram. and Sent.	6	6	12
TOTAL	20	20	40

Appendix C: Vertical Linking Item Details

Table C–58. Writing/English Composition Example of Vertical Linking Workbook

		Grade 4 Calibration			Grade 5 Calibration				Grade 4 on		
Item ID	Item Grade	Difficulty	Fit	Displace	Difficulty	Fit	Displace	Discrepancy	Grade 5 Scale	Robust Z	Flag
623017	4	-0.784	0.910	-0.006	-0.927	0.910	0.000	-0.143	-1.005	0.233	
625455	4	-0.205	1.030	-0.001	0.132	1.010	0.001	0.337	-0.426	1.437	
622453	4	-0.955	0.910	0.003	-1.526	0.860	0.000	-0.571	-1.176	-0.840	
623135	4	1.520	1.200	0.005	1.516	1.110	0.001	-0.004	1.299	0.582	
632573	4	0.527	1.250	-0.002	0.872	1.190	0.001	0.345	0.306	1.457	
623020	4	-1.254	0.890	-0.001	-1.487	0.900	0.000	-0.233	-1.475	0.008	
633435	4	-0.452	1.020	-0.003	-0.441	0.910	0.000	0.011	-0.673	0.620	
623108	4	-0.152	0.830	0.000	0.025	0.920	0.000	0.177	-0.373	1.036	
633468	4	-0.857	0.900	-0.006	-0.475	0.860	0.000	0.382	-1.078	1.550	
627696	4	1.837	1.210	-0.001	1.968	1.140	0.001	0.131	1.616	0.921	
623115	4	-0.678	0.960	-0.001	-1.072	0.890	-0.003	-0.394	-0.899	-0.396	
622983	4	-0.797	1.020	0.003	-1.360	0.980	-0.003	-0.563	-1.018	-0.820	
622454	4	0.922	1.070	0.005	0.483	1.000	-0.002	-0.439	0.701	-0.509	
621395	4	1.634	1.080	-0.002	0.998	1.090	-0.002	-0.636	1.413	-1.003	
632587	4	0.650	0.830	-0.001	0.149	0.980	-0.002	-0.501	0.429	-0.665	
623019	4	-1.134	0.990	-0.003	-1.611	1.020	-0.003	-0.477	-1.355	-0.605	
634025	4	-0.885	0.960	0.000	-1.496	0.920	-0.003	-0.611	-1.106	-0.941	
626922	4	0.516	1.000	-0.006	0.159	0.970	-0.002	-0.357	0.295	-0.304	
633469	4	-0.151	0.880	-0.001	-0.121	0.900	-0.002	0.030	-0.372	0.667	
628471	4	2.662	1.140	0.003	2.119	1.130	-0.001	-0.543	2.441	-0.770	
637149	5	-2.406	0.960	0.003	-2.126	0.960	0.005	0.280	-2.627	1.294	
633440	5	-0.302	1.040	0.003	-0.227	0.960	0.001	0.075	-0.523	0.780	
635884	5	-1.607	0.840	0.003	-1.708	0.870	-0.001	-0.101	-1.828	0.339	
637062	5	0.739	1.110	0.004	0.794	1.170	0.000	0.055	0.518	0.730	
623027	5	-0.341	0.780	0.003	-0.917	0.800	-0.004	-0.576	-0.562	-0.853	
622469	5	1.057	1.110	0.004	0.730	1.000	0.000	-0.327	0.836	-0.228	
639843	5	-0.548	0.910	0.003	-1.127	0.990	-0.002	-0.579	-0.769	-0.860	
635417	5	0.499	1.050	0.004	0.561	1.050	-0.005	0.062	0.278	0.747	
620819	5	0.739	0.970	0.004	0.337	0.950	-0.005	-0.402	0.518	-0.416	
635605	5	1.417	1.220	0.004	1.437	1.080	0.001	0.020	1.196	0.642	
637148	5	-0.606	0.950	0.002	-1.440	0.920	0.001	-0.834	-0.827	-1.500	
633439	5	0.404	1.100	0.002	0.544	1.050	-0.001	0.140	0.183	0.943	
620820	5	0.287	0.950	0.002	0.089	0.960	0.000	-0.198	0.066	0.095	
626566	5	-0.764	0.860	0.002	-1.003	0.860	-0.004	-0.239	-0.985	-0.008	
623129	5	-1.331	0.800	0.002	-1.323	0.820	0.000	0.008	-1.552	0.612	
629858	5	1.124	1.020	0.003	0.983	1.020	-0.002	-0.141	0.903	0.238	
639864	5	-0.729	0.950	0.002	-1.075	0.900	-0.005	-0.346	-0.950	-0.276	
627291	5	0.515	0.880	0.002	0.008	0.970	-0.005	-0.507	0.294	-0.680	
639349	5	0.658	1.040	0.002	0.285	0.890	0.005	-0.373	0.437	-0.344	
626818	5	1.722	0.970	0.003	0.913	0.990	-0.001	-0.809	1.501	-1.437	
	Mean	0.062			-0.159			-0.221	-0.159	0.037	
	SD	1.088			1.095			0.330	1.088	0.828	
	SD Ratio	0.993									
	Correlation	0.954									
	Add. Constant	-0.221									
	Median							-0.236			
	Q							0.539			

Figures C–22 through C–27 are the adjacent grade linking plots. No items were removed from final linking procedure so there are no red items in these plots.

Figure C–22. CDT Writing/English Composition: Grade 3 to Grade 4 Linking – All Links

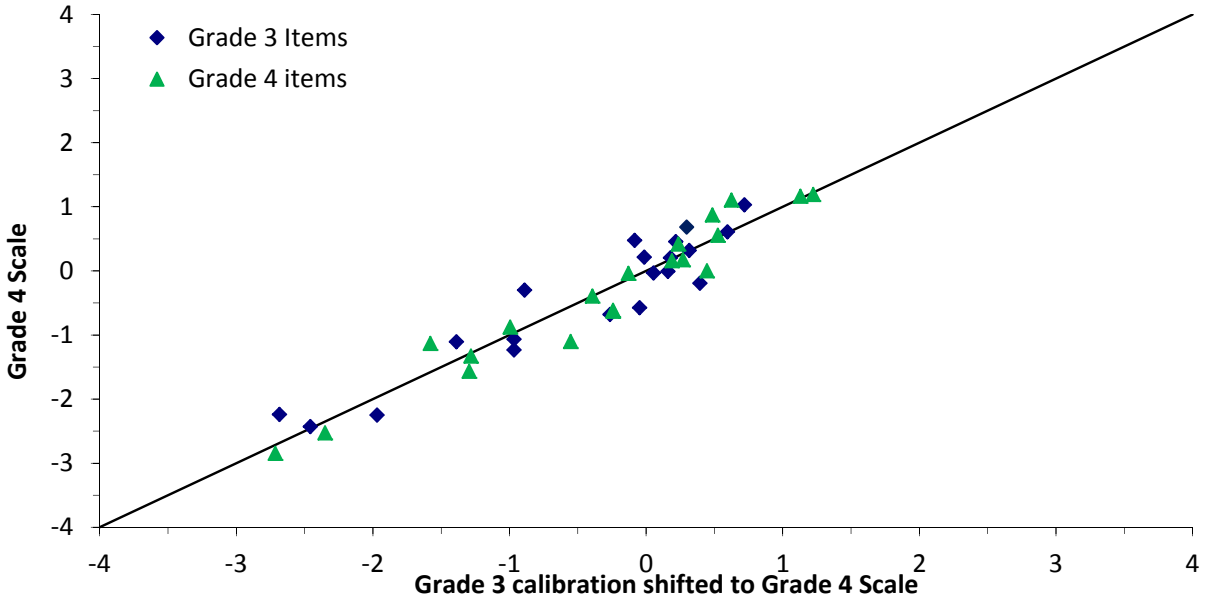


Figure C–23. CDT Writing/English Composition: Grade 4 to Grade 5 Linking – All Links

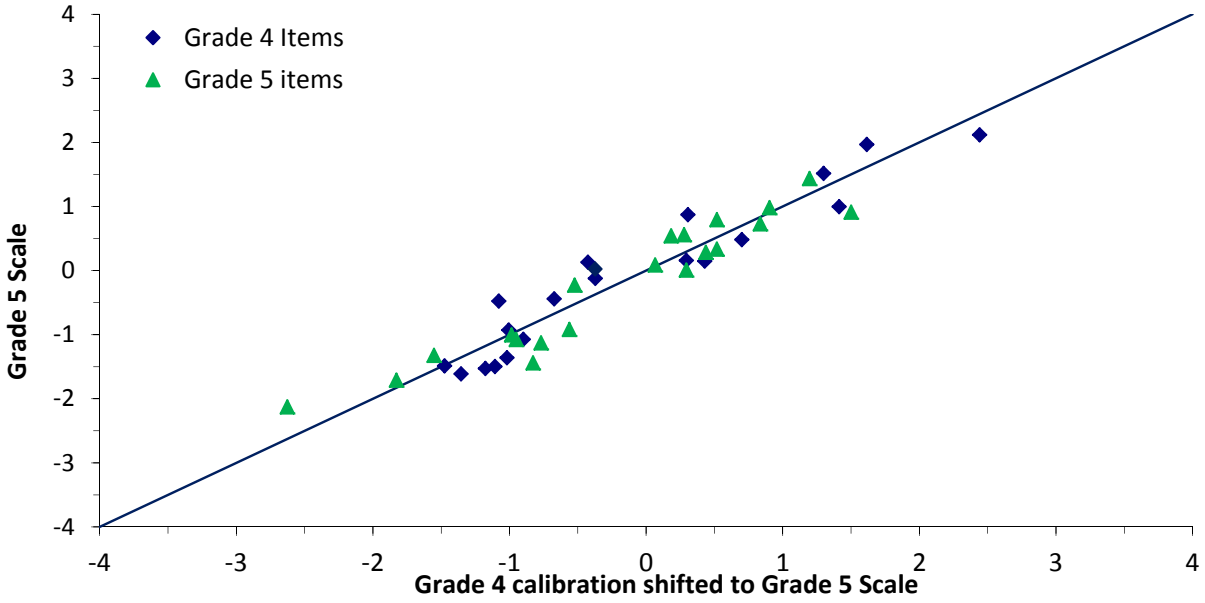


Figure C–24. CDT Writing/English Composition: Grade 5 to Grade 6 Linking – All Links

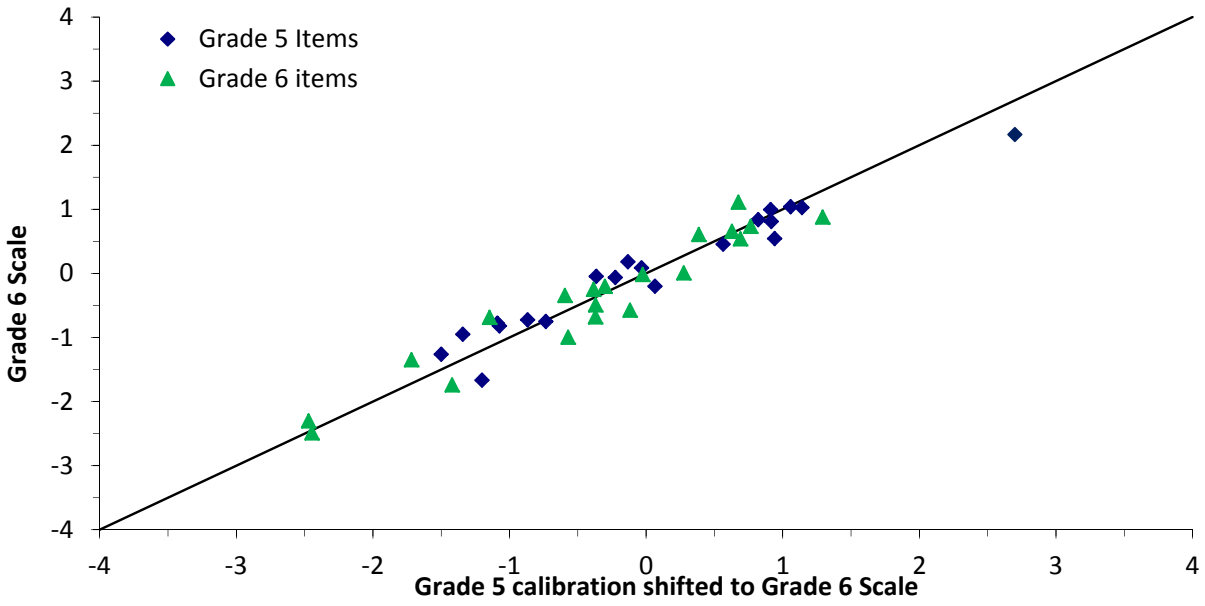


Figure C–25. CDT Writing/English Composition: Grade 6 to Grade 7 Linking – All Links

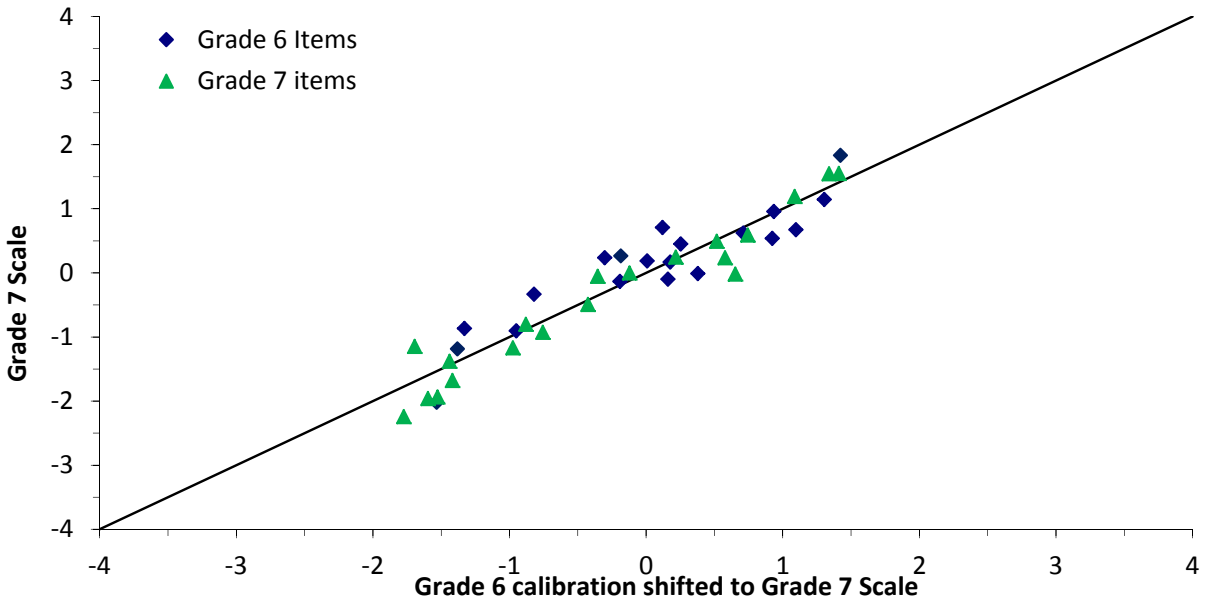


Figure C–26. CDT Writing/English Composition: Grade 8 to Grade 7 Linking – All Links

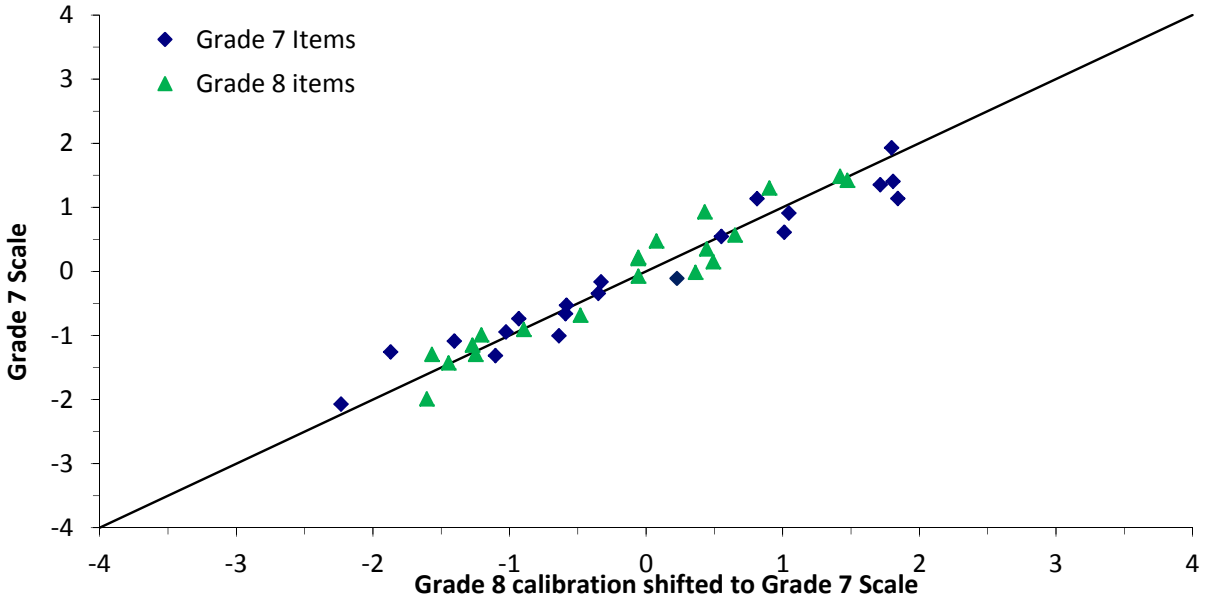
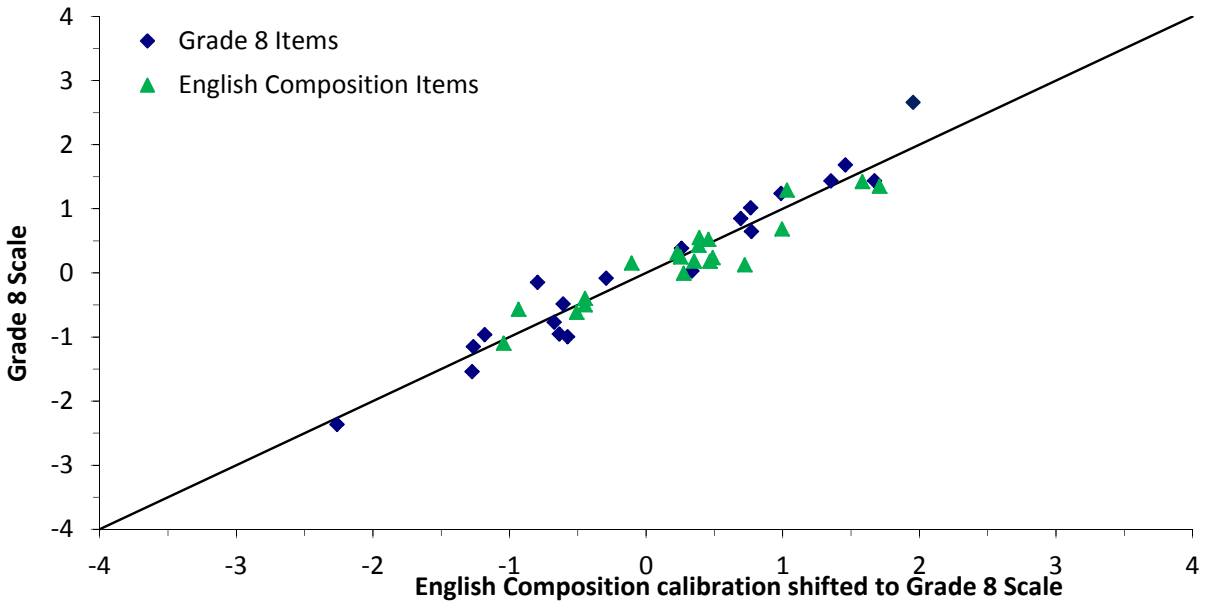


Figure C–27. CDT Writing/English Composition: Literature to Grade 8 Linking – All Links



APPENDIX D: SIGNIFICANT DIFFERENCES AMONG DIAGNOSTIC CATEGORIES

In Chapter Fifteen (Operational Administration 2013–2014), significant differences among diagnostic categories were tested with a t-test using a Bonferroni correction for multiple comparisons to keep the familywise Type I error rate at 0.32. The tables in this appendix show the significant differences with the familywise Type I error rate at 0.10.

DIAGNOSTIC CATEGORY SIGNIFICANT DIFFERENCES

Table D–1a. Diagnostic Category Significant Differences – Mathematics Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	55	8,062	0.7%	99.3%
DC1	DC3	82	8,035	1.0%	99.0%
DC1	DC4	68	8,049	0.8%	99.2%
DC2	DC3	68	8,049	0.8%	99.2%
DC2	DC4	66	8,051	0.8%	99.2%
DC3	DC4	68	8,049	0.8%	99.2%

Note: Z value is 2.39

Table D–1b. Total Number of Diagnostic Category Significant Differences – Mathematics Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	7,811	96.2%
1	222	2.7%
2	70	0.9%
3	11	0.1%
4	3	0.0%
5	0	0.0%
6	0	0.0%

Appendix D: Significant Differences Among Diagnostic Categories

Table D–2a. Diagnostic Category Significant Differences – Mathematics

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	784	119,304	0.7%	99.3%
DC1	DC3	855	119,233	0.7%	99.3%
DC1	DC4	749	119,339	0.6%	99.4%
DC2	DC3	834	119,254	0.7%	99.3%
DC2	DC4	844	119,244	0.7%	99.3%
DC3	DC4	774	119,314	0.6%	99.4%

Note: Z value is 2.39

Table D–2b. Total Number of Diagnostic Category Significant Differences – Mathematics

Number of Significant Differences	Number of Students	Percent of Students
0	116,444	97.0%
1	2,668	2.2%
2	775	0.6%
3	182	0.2%
4	19	0.0%
5	0	0.0%
6	0	0.0%

Table D–3a. Diagnostic Category Significant Differences – Algebra I

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	1,339	143,573	0.9%	99.1%
DC1	DC3	1,480	143,432	1.0%	99.0%
DC1	DC4	1,655	143,257	1.1%	98.9%
DC2	DC3	674	144,238	0.5%	99.5%
DC2	DC4	1,071	143,841	0.7%	99.3%
DC3	DC4	1,091	143,821	0.8%	99.2%

Note: Z value is 2.39

Appendix D: Significant Differences Among Diagnostic Categories

Table D–3b. Total Number of Diagnostic Category Significant Differences – Algebra I

Number of Significant Differences	Number of Students	Percent of Students
0	139,412	96.2%
1	4,019	2.8%
2	1,170	0.8%
3	293	0.2%
4	18	0.0%
5	0	0.0%
6	0	0.0%

Table D–4a. Diagnostic Category Significant Differences – Geometry

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	67	13,226	0.5%	99.5%
DC1	DC3	86	13,207	0.6%	99.4%
DC1	DC4	114	13,179	0.9%	99.1%
DC2	DC3	104	13,189	0.8%	99.2%
DC2	DC4	120	13,173	0.9%	99.1%
DC3	DC4	144	13,149	1.1%	98.9%

Note: Z value is 2.39

Table D–4b. Total Number of Diagnostic Category Significant Differences – Geometry

Number of Significant Differences	Number of Students	Percent of Students
0	12,818	96.4%
1	344	2.6%
2	106	0.8%
3	21	0.2%
4	4	0.0%
5	0	0.0%
6	0	0.0%

Appendix D: Significant Differences Among Diagnostic Categories

Table D–5a. Diagnostic Category Significant Differences – Algebra II

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	366	14,831	2.4%	97.6%
DC1	DC3	284	14,913	1.9%	98.1%
DC1	DC4	472	14,725	3.1%	96.9%
DC2	DC3	161	15,036	1.1%	98.9%
DC2	DC4	188	15,009	1.2%	98.8%
DC3	DC4	184	15,013	1.2%	98.8%

Note: Z value is 2.39

Table D–5b. Total Number of Diagnostic Category Significant Differences – Algebra II

Number of Significant Differences	Number of Students	Percent of Students
0	14,036	92.4%
1	783	5.2%
2	266	1.8%
3	108	0.7%
4	4	0.0%
5	0	0.0%
6	0	0.0%

Table D–6a. Diagnostic Category Significant Differences – Reading Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2	7,162	0.0%	100.0%
DC1	DC3	3	7,161	0.0%	100.0%
DC1	DC4	2	7,162	0.0%	100.0%
DC1	DC5	4	7,160	0.1%	99.9%
DC2	DC3	4	7,160	0.1%	99.9%
DC2	DC4	3	7,161	0.0%	100.0%
DC2	DC5	1	7,163	0.0%	100.0%
DC3	DC4	4	7,160	0.1%	99.9%
DC3	DC5	6	7,158	0.1%	99.9%
DC4	DC5	6	7,158	0.1%	99.9%

Note: Z value is 2.58

Appendix D: Significant Differences Among Diagnostic Categories

Table D–6b. Total Number of Diagnostic Category Significant Differences – Reading Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	7,132	99.6%
1	29	0.4%
2	3	0.0%
3	0	0.0%
4	0	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table D–7a. Diagnostic Category Significant Differences – Reading/Literature

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	62	277,474	0.0%	100.0%
DC1	DC3	75	277,461	0.0%	100.0%
DC1	DC4	122	277,414	0.0%	100.0%
DC1	DC5	102	277,434	0.0%	100.0%
DC2	DC3	77	277,459	0.0%	100.0%
DC2	DC4	74	277,462	0.0%	100.0%
DC2	DC5	85	277,451	0.0%	100.0%
DC3	DC4	45	277,491	0.0%	100.0%
DC3	DC5	183	277,353	0.1%	99.9%
DC4	DC5	207	277,329	0.1%	99.9%

Note: Z value is 2.58

Appendix D: Significant Differences Among Diagnostic Categories

Table D–7b. Total Number of Diagnostic Category Significant Differences – Reading/Literature

Number of Significant Differences	Number of Students	Percent of Students
0	276,631	99.7%
1	793	0.3%
2	98	0.0%
3	13	0.0%
4	1	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Table D–8a. Diagnostic Category Significant Differences – Science Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	0	490	0.0%	100.0%
DC1	DC3	1	489	0.2%	99.8%
DC1	DC4	3	487	0.6%	99.4%
DC2	DC3	2	488	0.4%	99.6%
DC2	DC4	2	488	0.4%	99.6%
DC3	DC4	3	487	0.6%	99.4%

Note: Z value is 2.39

Table D–8b. Total Number of Diagnostic Category Significant Differences – Science Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	480	98.0%
1	9	1.8%
2	1	0.2%
3	0	0.0%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Appendix D: Significant Differences Among Diagnostic Categories

Table D–9a. Diagnostic Category Significant Differences – Science

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	300	53,236	0.6%	99.4%
DC1	DC3	335	53,201	0.6%	99.4%
DC1	DC4	274	53,262	0.5%	99.5%
DC2	DC3	275	53,261	0.5%	99.5%
DC2	DC4	253	53,283	0.5%	99.5%
DC3	DC4	221	53,315	0.4%	99.6%

Note: Z value is 2.39

Table D–9b. Total Number of Diagnostic Category Significant Differences – Science

Number of Significant Differences	Number of Students	Percent of Students
0	52,268	97.6%
1	951	1.8%
2	244	0.5%
3	73	0.1%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Table D–10a. Diagnostic Category Significant Differences – Biology

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	558	117,090	0.5%	99.5%
DC1	DC3	611	117,037	0.5%	99.5%
DC1	DC4	771	116,877	0.7%	99.3%
DC2	DC3	251	117,397	0.2%	99.8%
DC2	DC4	848	116,800	0.7%	99.3%
DC3	DC4	761	116,887	0.6%	99.4%

Note: Z value is 2.39

Appendix D: Significant Differences Among Diagnostic Categories

Table D–10b. Total Number of Diagnostic Category Significant Differences – Biology

Number of Significant Differences	Number of Students	Percent of Students
0	114,534	97.4%
1	2,520	2.1%
2	507	0.4%
3	82	0.1%
4	5	0.0%
5	0	0.0%
6	0	0.0%

Table D–11a. Diagnostic Category Significant Differences – Chemistry

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	146	11,634	1.2%	98.8%
DC1	DC3	96	11,684	0.8%	99.2%
DC1	DC4	82	11,698	0.7%	99.3%
DC2	DC3	7	11,773	0.1%	99.9%
DC2	DC4	21	11,759	0.2%	99.8%
DC3	DC4	13	11,767	0.1%	99.9%

Note: Z value is 2.39

Table D–11b. Total Number of Diagnostic Category Significant Differences – Chemistry

Number of Significant Differences	Number of Students	Percent of Students
0	11,481	97.5%
1	240	2.0%
2	52	0.4%
3	7	0.1%
4	0	0.0%
5	0	0.0%
6	0	0.0%

Appendix D: Significant Differences Among Diagnostic Categories

Table D–12a. Diagnostic Category Significant Differences – Writing Lower Grades

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	2	338	0.6%	99.4%
DC1	DC3	0	340	0.0%	100.0%
DC1	DC4	1	339	0.3%	99.7%
DC1	DC5	0	340	0.0%	100.0%
DC2	DC3	1	339	0.3%	99.7%
DC2	DC4	2	338	0.6%	99.4%
DC2	DC5	1	339	0.3%	99.7%
DC3	DC4	1	339	0.3%	99.7%
DC3	DC5	0	340	0.0%	100.0%
DC4	DC5	0	340	0.0%	100.0%

Note: Z value is 2.58

Table D–12b. Total Number of Diagnostic Category Significant Differences – Writing Lower Grades

Number of Significant Differences	Number of Students	Percent of Students
0	335	98.5%
1	3	0.9%
2	1	0.3%
3	1	0.3%
4	0	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

Appendix D: Significant Differences Among Diagnostic Categories

Table D–13a. Diagnostic Category Significant Differences – Writing/English Composition

Comparison		Significant Difference			
Group 1	Group 2	Yes	No	% Yes	% No
DC1	DC2	28	25,947	0.1%	99.9%
DC1	DC3	39	25,936	0.2%	99.8%
DC1	DC4	57	25,918	0.2%	99.8%
DC1	DC5	48	25,927	0.2%	99.8%
DC2	DC3	40	25,935	0.2%	99.8%
DC2	DC4	48	25,927	0.2%	99.8%
DC2	DC5	41	25,934	0.2%	99.8%
DC3	DC4	44	25,931	0.2%	99.8%
DC3	DC5	49	25,926	0.2%	99.8%
DC4	DC5	36	25,939	0.1%	99.9%

Note: Z value is 2.58

Table D–13b. Total Number of Diagnostic Category Significant Differences – Writing/English Composition

Number of Significant Differences	Number of Students	Percent of Students
0	25,650	98.7%
1	248	1.0%
2	52	0.2%
3	22	0.1%
4	3	0.0%
5	0	0.0%
6	0	0.0%
7	0	0.0%
8	0	0.0%
9	0	0.0%
10	0	0.0%

APPENDIX E: DECISION CONSISTENCY

In Chapter Sixteen (Reliability), decision consistency for each CDT test and benchmark cut is reported with two values: exact agreement rate and kappa. However, as noted in the chapter, retest classification probability varies at different points along the scale. For example, the retest probability of green is higher for scores near the red/green cut than for scores very low in the red range. This appendix provides a more detailed examination of the differences in retest probability across the score range. 3 X 3 retest classification probability tables and retest classification percent tables by score range are presented for all CDT tests and benchmark cuts.

3 X 3 RETEST CLASSIFICATION PROBABILITY

Table E–1. Retest Classification Probability – Mathematics Grade 3

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.857	0.143	0.000
	green	0.063	0.822	0.115
	blue	0.000	0.091	0.909

Exact Agreement Rate = 0.872

Kappa = 0.780

N-count = 2,468

Table E–2. Retest Classification Probability – Mathematics Grade 4

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.861	0.139	0.000
	green	0.058	0.828	0.114
	blue	0.000	0.103	0.897

Exact Agreement Rate = 0.865

Kappa = 0.774

N-count = 3,001

Appendix E: Decision Consistency

Table E–3. Retest Classification Probability – Mathematics Grade 5

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.870	0.130	0.000
	green	0.064	0.826	0.110
	blue	0.000	0.107	0.893

Exact Agreement Rate = 0.861

Kappa = 0.776

N-count = 2,648

Table E–4. Retest Classification Probability – Mathematics Grade 6

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.903	0.097	0.000
	green	0.096	0.829	0.075
	blue	0.000	0.168	0.832

Exact Agreement Rate = 0.860

Kappa = 0.773

N-count = 40,464

Table E–5. Retest Classification Probability – Mathematics Grade 7

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.906	0.094	0.000
	green	0.101	0.834	0.064
	blue	0.000	0.177	0.823

Exact Agreement Rate = 0.865

Kappa = 0.772

N-count = 47,665

Appendix E: Decision Consistency

Table E–6. Retest Classification Probability – Mathematics Grade 8

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.913	0.087	0.000
	green	0.118	0.835	0.048
	blue	0.000	0.194	0.806

Exact Agreement Rate = 0.875
Kappa = 0.767
N-count = 30,785

Table E–7. Retest Classification Probability – Mathematics High School

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.953	0.047	0.000
	green	0.137	0.811	0.052
	blue	0.000	0.159	0.841

Exact Agreement Rate = 0.920
Kappa = 0.793
N-count = 1,174

Table E–8. Retest Classification Probability – Algebra I

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.914	0.086	0.000
	green	0.163	0.810	0.026
	blue	0.000	0.204	0.796

Exact Agreement Rate = 0.880
Kappa = 0.735
N-count = 144,912

Appendix E: Decision Consistency

Table E–9. Retest Classification Probability – Geometry

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.931	0.069	0.000
	green	0.135	0.818	0.047
	blue	0.000	0.143	0.857

Exact Agreement Rate = 0.897

Kappa = 0.779

N-count = 13,293

Table E–10. Retest Classification Probability – Algebra II

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.944	0.056	0.000
	green	0.143	0.815	0.042
	blue	0.000	0.149	0.851

Exact Agreement Rate = 0.916

Kappa = 0.777

N-count = 15,197

Table E–11. Retest Classification Probability – Reading Grade 3

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.890	0.110	0.000
	green	0.073	0.856	0.071
	blue	0.000	0.166	0.834

Exact Agreement Rate = 0.863

Kappa = 0.775

N-count = 2,597

Appendix E: Decision Consistency

Table E–12. Retest Classification Probability – Reading Grade 4

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.900	0.100	0.000
	green	0.074	0.853	0.073
	blue	0.000	0.183	0.817

Exact Agreement Rate = 0.863

Kappa = 0.774

N-count = 2,524

Table E–13. Retest Classification Probability – Reading Grade 5

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.899	0.101	0.000
	green	0.059	0.869	0.073
	blue	0.000	0.192	0.808

Exact Agreement Rate = 0.866

Kappa = 0.775

N-count = 2,043

Table E–14. Retest Classification Probability – Reading/Literature Grade 6

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.916	0.084	0.000
	green	0.078	0.862	0.060
	blue	0.000	0.217	0.783

Exact Agreement Rate = 0.877

Kappa = 0.786

N-count = 37,520

Table E–15. Retest Classification Probability – Reading/Literature Grade 7

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.916	0.084	0.000
	green	0.080	0.862	0.057
	blue	0.000	0.229	0.771

Exact Agreement Rate = 0.878
Kappa = 0.784
N-count = 46,393

Table E–16. Retest Classification Probability – Reading/Literature Grade 8

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.915	0.085	0.000
	green	0.083	0.863	0.055
	blue	0.000	0.238	0.762

Exact Agreement Rate = 0.878
Kappa = 0.783
N-count = 44,395

Table E–17. Retest Classification Probability – Literature

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.917	0.083	0.000
	green	0.077	0.859	0.064
	blue	0.000	0.235	0.765

Exact Agreement Rate = 0.873
Kappa = 0.780
N-count = 149,228

Appendix E: Decision Consistency

Table E–18. Retest Classification Probability – Science Grade 3

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.867	0.133	0.000
	green	0.082	0.838	0.079
	blue	0.000	0.196	0.804

Exact Agreement Rate = 0.839

Kappa = 0.731

N-count = 192

Table E–19. Retest Classification Probability – Science Grade 4

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.843	0.157	0.000
	green	0.054	0.800	0.146
	blue	0.000	0.184	0.816

Exact Agreement Rate = 0.811

Kappa = 0.678

N-count = 243

Table E–20. Retest Classification Probability – Science Grade 5

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.904	0.096	0.000
	green	0.087	0.846	0.067
	blue	0.000	0.249	0.751

Exact Agreement Rate = 0.855

Kappa = 0.756

N-count = 55

Appendix E: Decision Consistency

Table E–21. Retest Classification Probability – Science Grade 6

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.911	0.089	0.000
	green	0.110	0.835	0.055
	blue	0.000	0.226	0.774

Exact Agreement Rate = 0.871

Kappa = 0.763

N-count = 8,695

Table E–22. Retest Classification Probability – Science Grade 7

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.917	0.083	0.000
	green	0.109	0.838	0.054
	blue	0.000	0.265	0.735

Exact Agreement Rate = 0.875

Kappa = 0.767

N-count = 17,690

Table E–23. Retest Classification Probability – Science Grade 8

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.906	0.094	0.000
	green	0.124	0.836	0.040
	blue	0.000	0.267	0.733

Exact Agreement Rate = 0.871

Kappa = 0.753

N-count = 24,411

Appendix E: Decision Consistency

Table E–24. Retest Classification Probability – Science High School

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.934	0.066	0.000
	green	0.173	0.800	0.026
	blue	0.000	0.234	0.766

Exact Agreement Rate = 0.898

Kappa = 0.743

N-count = 2,740

Table E–25. Retest Classification Probability – Biology

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.905	0.095	0.000
	green	0.131	0.827	0.042
	blue	0.000	0.183	0.817

Exact Agreement Rate = 0.870

Kappa = 0.755

N-count = 117,648

Table E–26. Retest Classification Probability – Chemistry

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.903	0.097	0.000
	green	0.158	0.817	0.026
	blue	0.000	0.211	0.789

Exact Agreement Rate = 0.874

Kappa = 0.725

N-count = 11,780

Appendix E: Decision Consistency

Table E–27. Retest Classification Probability – Writing Grade 3

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.804	0.196	0.000
	green	0.048	0.814	0.138
	blue	0.000	0.059	0.941

Exact Agreement Rate = 0.920

Kappa = 0.752

N-count = 112

Table E–28. Retest Classification Probability – Writing Grade 4

		Retest Classification Probability		
CDT Test		red	green	blue
	red	N/A	N/A	N/A
	green	0.047	0.788	0.165
	blue	0.000	0.065	0.935

Exact Agreement Rate = 0.904

Kappa = 0.742

N-count = 104

Table E–29. Retest Classification Probability – Writing Grade 5

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.916	0.084	0.000
	green	0.027	0.810	0.163
	blue	0.000	0.107	0.893

Exact Agreement Rate = 0.871

Kappa = 0.727

N-count = 124

Table E–30. Retest Classification Probability – Writing/English Composition Grade 6

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.911	0.089	0.000
	green	0.076	0.842	0.082
	blue	0.000	0.179	0.821

Exact Agreement Rate = 0.863
Kappa = 0.776
N-count = 3,330

Table E–31. Retest Classification Probability – Writing/English Composition Grade 7

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.910	0.090	0.000
	green	0.092	0.846	0.061
	blue	0.000	0.230	0.770

Exact Agreement Rate = 0.866
Kappa = 0.767
N-count = 4,854

Table E–32. Retest Classification Probability – Writing/English Composition Grade 8

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.900	0.100	0.000
	green	0.102	0.843	0.055
	blue	0.000	0.234	0.766

Exact Agreement Rate = 0.866
Kappa = 0.756
N-count = 4,891

Table E–33. Retest Classification Probability – English Composition

		Retest Classification Probability		
CDT Test		red	green	blue
	red	0.902	0.098	0.000
	green	0.080	0.851	0.069
	blue	0.000	0.166	0.834

Exact Agreement Rate = 0.865

Kappa = 0.773

N-count = 12,900

RETEST CLASSIFICATION PERCENT FOR VARIOUS SCALE SCORE RANGES

Tables E–34 through E–66 show the percent chance of scoring in each color range if retested without additional instruction for various scale scores ranges.

Table E–34. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 3

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	1	>99.9%	0.0%	0.0%	>99.9%	
350 to 399	3	>99.9%	0.0%	0.0%	>99.9%	
400 to 449	10	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	14	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	30	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	60	98.9%	1.1%	0.0%	98.9%	
600 to 649	97	85.0%	15.0%	0.0%	85.0%	
650 to 699	150	45.2%	54.8%	0.0%	62.4%	Red/Green cut = 672
700 to 749	244	9.3%	90.4%	0.3%	90.4%	
750 to 799	318	0.5%	92.7%	6.8%	92.7%	
800 to 849	376	0.0%	59.5%	40.5%	64.1%	Green/Blue cut = 835
850 to 899	374	0.0%	15.9%	84.1%	84.1%	
900 to 949	338	0.0%	1.5%	98.5%	98.5%	
950 to 999	244	0.0%	0.0%	>99.9%	>99.9%	
1000 to 1049	130	0.0%	0.0%	>99.9%	>99.9%	
1050 to 1099	53	0.0%	0.0%	>99.9%	>99.9%	
1100 to 1149	16	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	6	0.0%	0.0%	>99.9%	>99.9%	
1200 to 1249	4	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–34 (continued). Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 3

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	2,468				
* Retest assuming no additional instruction					

Table E–35. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 4

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	5	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	6	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	25	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	52	99.9%	0.1%	0.0%	99.9%	
650 to 699	88	97.9%	2.1%	0.0%	97.9%	
700 to 749	137	79.2%	20.8%	0.0%	79.2%	
750 to 799	220	34.1%	65.9%	0.0%	67.7%	Red/Green cut = 760
800 to 849	348	4.6%	94.6%	0.8%	94.6%	
850 to 899	451	0.2%	88.2%	11.6%	88.2%	
900 to 949	491	0.0%	48.2%	51.8%	63.1%	Green/Blue cut = 923
950 to 999	458	0.0%	10.3%	89.7%	89.7%	
1000 to 1049	331	0.0%	0.8%	99.2%	99.2%	
1050 to 1099	204	0.0%	0.0%	>99.9%	>99.9%	
1100 to 1149	106	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	54	0.0%	0.0%	>99.9%	>99.9%	
1200 to 1249	18	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	5	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	2	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–35 (continued). Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 4

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	3,001				
* Retest assuming no additional instruction					

Table E–36. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 5

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	9	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	17	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	28	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	43	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	74	99.6%	0.4%	0.0%	99.6%	
750 to 799	121	91.1%	8.9%	0.0%	91.1%	
800 to 849	192	55.6%	44.3%	0.0%	62.9%	Red/Green cut = 833
850 to 899	282	13.9%	86.0%	0.1%	86.0%	
900 to 949	367	1.1%	95.1%	3.9%	95.1%	
950 to 999	437	0.0%	71.0%	28.9%	71.3%	Green/Blue cut = 996
1000 to 1049	371	0.0%	24.8%	75.2%	75.2%	
1050 to 1099	338	0.0%	3.0%	97.0%	97.0%	
1100 to 1149	197	0.0%	0.1%	99.9%	99.9%	
1150 to 1199	92	0.0%	0.0%	>99.9%	>99.9%	
1200 to 1249	52	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	16	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	9	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	1	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–36 (continued). Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 5

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	2,648				
* Retest assuming no additional instruction					

Table E–37. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 6

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	7	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	70	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	279	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	722	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,427	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,253	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	3,400	99.7%	0.3%	0.0%	99.7%	
850 to 899	4,757	93.3%	6.7%	0.0%	93.3%	
900 to 949	5,713	59.9%	40.1%	0.0%	64.7%	Red/Green cut = 936
950 to 999	5,824	16.0%	83.9%	0.1%	83.9%	
1000 to 1049	5,654	1.2%	95.8%	3.0%	95.8%	
1050 to 1099	4,640	0.0%	74.1%	25.8%	74.1%	Green/Blue cut = 1099
1100 to 1149	3,132	0.0%	28.0%	72.0%	72.0%	
1150 to 1199	1,554	0.0%	3.2%	96.8%	96.8%	
1200 to 1249	651	0.0%	0.1%	99.9%	99.9%	
1250 to 1299	262	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	81	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	27	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	8	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	0					
1500 to 1549	2	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	1	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	40,464					
* Retest assuming no additional instruction						

Table E–38. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 7

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	6	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	28	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	161	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	490	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,015	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	1,662	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	2,640	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	3,909	99.8%	0.2%	0.0%	99.8%	
900 to 949	5,633	95.5%	4.5%	0.0%	95.5%	
950 to 999	6,721	67.1%	32.9%	0.0%	68.0%	Red/Green cut = 994
1000 to 1049	7,526	21.3%	78.7%	0.0%	78.7%	
1050 to 1099	7,168	2.1%	96.1%	1.8%	96.1%	
1100 to 1149	5,199	0.0%	80.9%	19.0%	80.9%	
1150 to 1199	3,091	0.0%	35.6%	64.4%	65.9%	Green/Blue cut = 1157
1200 to 1249	1,469	0.0%	5.2%	94.8%	94.8%	
1250 to 1299	637	0.0%	0.2%	99.8%	99.8%	
1300 to 1349	217	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	60	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	22	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	10	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	1	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	47,665					
* Retest assuming no additional instruction						

Table E–39. Retest Classification Percent for Various Scale Score Ranges – Mathematics Grade 8

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	2	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	13	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	85	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	287	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	611	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	1,051	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	1,502	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	2,222	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	3,066	99.7%	0.3%	0.0%	99.7%	
950 to 999	4,098	93.7%	6.3%	0.0%	93.7%	
1000 to 1049	4,974	60.4%	39.6%	0.0%	64.6%	Red/Green cut = 1037
1050 to 1099	5,232	17.0%	82.9%	0.1%	82.9%	
1100 to 1149	4,275	1.4%	96.0%	2.6%	96.0%	
1150 to 1199	2,161	0.0%	76.5%	23.5%	76.5%	
1200 to 1249	725	0.0%	30.9%	69.1%	69.1%	Green/Blue cut = 1200
1250 to 1299	283	0.0%	3.5%	96.5%	96.5%	
1300 to 1349	121	0.0%	0.1%	99.9%	99.9%	
1350 to 1399	46	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	16	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	10	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	1	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	2	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	1	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	0					
1700 to 1749	1	0.0%	0.0%	>99.9%	>99.9%	
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	30,785					
* Retest assuming no additional instruction						

Table E–40. Retest Classification Percent for Various Scale Score Ranges – Mathematics High School

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	1	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	2	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	16	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	41	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	56	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	84	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	95	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	112	>99.9%	0.0%	0.0%	>99.9%	
950 to 999	108	>99.9%	0.0%	0.0%	>99.9%	
1000 to 1049	142	99.7%	0.3%	0.0%	99.7%	
1050 to 1099	141	92.8%	7.2%	0.0%	92.8%	
1100 to 1149	132	58.7%	41.3%	0.0%	63.9%	Red/Green cut = 1134
1150 to 1199	90	16.9%	83.0%	0.1%	83.0%	
1200 to 1249	66	1.1%	95.8%	3.1%	95.8%	
1250 to 1299	43	0.0%	74.7%	25.3%	74.8%	Green/Blue cut = 1297
1300 to 1349	22	0.0%	29.1%	70.9%	70.9%	
1350 to 1399	14	0.0%	3.0%	97.0%	97.0%	
1400 to 1449	5	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	3	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	1	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	1,174					
* Retest assuming no additional instruction						

Table E–41. Retest Classification Percent for Various Scale Score Ranges – Algebra I

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	1	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	20	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	169	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	696	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,679	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,667	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	3,929	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	5,762	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	8,407	>99.9%	0.0%	0.0%	>99.9%	
950 to 999	12,403	>99.9%	0.0%	0.0%	>99.9%	
1000 to 1049	18,047	99.7%	0.3%	0.0%	99.7%	
1050 to 1099	25,010	92.6%	7.4%	0.0%	92.6%	
1100 to 1149	28,443	58.6%	41.4%	0.0%	64.2%	Red/Green cut = 1134
1150 to 1199	21,377	16.0%	83.9%	0.1%	83.9%	
1200 to 1249	10,252	1.3%	96.0%	2.7%	96.0%	
1250 to 1299	3,828	0.0%	75.0%	25.0%	75.0%	Green/Blue cut = 1297
1300 to 1349	1,422	0.0%	27.8%	72.2%	72.2%	
1350 to 1399	521	0.0%	2.9%	97.1%	97.1%	
1400 to 1449	189	0.0%	0.1%	99.9%	99.9%	
1450 to 1499	59	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	13	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	7	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	3	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	4	0.0%	0.0%	>99.9%	>99.9%	
1700 to 1749	2	0.0%	0.0%	>99.9%	>99.9%	
1750 to 1799	2	0.0%	0.0%	>99.9%	>99.9%	
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	144,912					
* Retest assuming no additional instruction						

Table E–42. Retest Classification Percent for Various Scale Score Ranges – Geometry

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	3	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	8	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	33	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	91	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	190	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	284	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	480	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	697	>99.9%	0.0%	0.0%	>99.9%	
950 to 999	1,035	>99.9%	0.0%	0.0%	>99.9%	
1000 to 1049	1,438	>99.9%	0.0%	0.0%	>99.9%	
1050 to 1099	1,989	98.8%	1.2%	0.0%	98.8%	
1100 to 1149	2,229	83.8%	16.2%	0.0%	83.8%	
1150 to 1199	1,779	40.9%	59.1%	0.0%	64.2%	Red/Green cut = 1165
1200 to 1249	1,227	6.9%	92.8%	0.4%	92.8%	
1250 to 1299	833	0.3%	92.4%	7.3%	92.4%	
1300 to 1349	455	0.0%	56.5%	43.5%	64.2%	Green/Blue cut = 1328
1350 to 1399	262	0.0%	12.9%	87.1%	87.1%	
1400 to 1449	150	0.0%	1.1%	98.9%	98.9%	
1450 to 1499	67	0.0%	0.1%	99.9%	99.9%	
1500 to 1549	31	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	5	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	3	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	1	0.0%	0.0%	>99.9%	>99.9%	
1700 to 1749	3	0.0%	0.0%	>99.9%	>99.9%	
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	13,293					
* Retest assuming no additional instruction						

Table E–43. Retest Classification Percent for Various Scale Score Ranges – Algebra II

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	2	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	7	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	23	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	109	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	129	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	247	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	348	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	494	>99.9%	0.0%	0.0%	>99.9%	
950 to 999	765	>99.9%	0.0%	0.0%	>99.9%	
1000 to 1049	1,215	>99.9%	0.0%	0.0%	>99.9%	
1050 to 1099	1,848	>99.9%	0.0%	0.0%	>99.9%	
1100 to 1149	2,719	99.5%	0.5%	0.0%	99.5%	
1150 to 1199	2,606	91.2%	8.8%	0.0%	91.2%	
1200 to 1249	1,890	54.7%	45.3%	0.0%	63.7%	Red/Green cut = 1228
1250 to 1299	1,180	12.3%	87.5%	0.1%	87.5%	
1300 to 1349	751	0.8%	95.4%	3.8%	95.4%	
1350 to 1399	405	0.0%	70.0%	30.0%	71.0%	Green/Blue cut = 1391
1400 to 1449	238	0.0%	22.0%	78.0%	78.0%	
1450 to 1499	120	0.0%	2.6%	97.4%	97.4%	
1500 to 1549	48	0.0%	0.1%	99.9%	99.9%	
1550 to 1599	30	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	18	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	4	0.0%	0.0%	>99.9%	>99.9%	
1700 to 1749	0					
1750 to 1799	1	0.0%	0.0%	>99.9%	>99.9%	
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	15,197					
* Retest assuming no additional instruction						

Table E–44. Retest Classification Percent for Various Scale Score Ranges – Reading Grade 3

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	2	>99.9%	0.0%	0.0%	>99.9%	
350 to 399	3	>99.9%	0.0%	0.0%	>99.9%	
400 to 449	12	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	40	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	93	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	153	99.8%	0.2%	0.0%	99.8%	
600 to 649	192	96.9%	3.1%	0.0%	96.9%	
650 to 699	258	77.8%	22.2%	0.0%	77.8%	
700 to 749	286	36.7%	63.3%	0.0%	65.2%	Red/Green cut = 712
750 to 799	315	7.0%	93.0%	0.0%	93.0%	
800 to 849	312	0.5%	98.5%	1.0%	98.5%	
850 to 899	327	0.0%	88.9%	11.1%	88.9%	
900 to 949	269	0.0%	53.1%	46.9%	61.9%	Green/Blue cut = 927
950 to 999	182	0.0%	14.5%	85.5%	85.5%	
1000 to 1049	89	0.0%	2.0%	98.0%	98.0%	
1050 to 1099	49	0.0%	0.1%	99.9%	99.9%	
1100 to 1149	12	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	2	0.0%	0.0%	>99.9%	>99.9%	
1200 to 1249	1	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–44 (continued). Retest Classification Percent for Various Scale Score Ranges – Reading Grade 3

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	2,597				
* Retest assuming no additional instruction					

Table E–45. Retest Classification Percent for Various Scale Score Ranges – Reading Grade 4

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	1	>99.9%	0.0%	0.0%	>99.9%	
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	13	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	37	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	74	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	134	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	156	99.4%	0.6%	0.0%	99.4%	
700 to 749	233	92.1%	7.9%	0.0%	92.1%	
750 to 799	265	61.7%	38.3%	0.0%	64.4%	Red/Green cut = 790
800 to 849	278	21.3%	78.7%	0.0%	78.7%	
850 to 899	294	2.6%	97.2%	0.1%	97.2%	
900 to 949	339	0.1%	96.4%	3.5%	96.4%	
950 to 999	292	0.0%	76.0%	24.0%	76.0%	
1000 to 1049	204	0.0%	35.2%	64.8%	65.5%	Green/Blue cut = 1005
1050 to 1099	132	0.0%	7.9%	92.1%	92.1%	
1100 to 1149	51	0.0%	0.9%	99.1%	99.1%	
1150 to 1199	16	0.0%	0.1%	99.9%	99.9%	
1200 to 1249	3	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–45 (continued). Retest Classification Percent for Various Scale Score Ranges – Reading Grade 4

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	2,524				
* Retest assuming no additional instruction					

Table E–46. Retest Classification Percent for Various Scale Score Ranges – Reading Grade 5

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	7	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	11	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	40	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	55	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	80	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	102	99.4%	0.6%	0.0%	99.4%	
750 to 799	130	91.7%	8.3%	0.0%	91.7%	
800 to 849	167	62.5%	37.5%	0.0%	64.5%	Red/Green cut = 840
850 to 899	229	19.5%	80.5%	0.0%	80.5%	
900 to 949	274	2.5%	97.4%	0.1%	97.4%	
950 to 999	310	0.1%	96.6%	3.3%	96.6%	
1000 to 1049	250	0.0%	76.0%	24.0%	76.0%	
1050 to 1099	201	0.0%	35.3%	64.7%	65.3%	Green/Blue cut = 1055
1100 to 1149	121	0.0%	8.5%	91.5%	91.5%	
1150 to 1199	44	0.0%	1.1%	98.9%	98.9%	
1200 to 1249	12	0.0%	0.1%	99.9%	99.9%	
1250 to 1299	8	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	2	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–46 (continued). Retest Classification Percent for Various Scale Score Ranges – Reading Grade 5

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	2,043				
* Retest assuming no additional instruction					

Table E–47. Retest Classification Percent for Various Scale Score Ranges – Reading/Literature Grade 6

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	6	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	25	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	137	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	534	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	1,177	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	1,590	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	2,006	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,429	99.9%	0.1%	0.0%	99.9%	
800 to 849	2,992	97.0%	3.0%	0.0%	97.0%	
850 to 899	3,632	77.5%	22.5%	0.0%	77.5%	
900 to 949	4,429	35.7%	64.3%	0.0%	66.0%	Red/Green cut = 910
950 to 999	5,024	6.8%	93.2%	0.0%	93.2%	
1000 to 1049	4,879	0.5%	98.3%	1.2%	98.3%	
1050 to 1099	4,064	0.0%	87.2%	12.8%	87.2%	
1100 to 1149	2,557	0.0%	53.0%	47.0%	61.0%	Green/Blue cut = 1125
1150 to 1199	1,281	0.0%	17.6%	82.4%	82.4%	
1200 to 1249	527	0.0%	3.5%	96.5%	96.5%	
1250 to 1299	173	0.0%	0.6%	99.4%	99.4%	
1300 to 1349	42	0.0%	0.1%	99.9%	99.9%	
1350 to 1399	14	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	2	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	37,520					
* Retest assuming no additional instruction						

Table E–48. Retest Classification Percent for Various Scale Score Ranges – Reading/Literature Grade 7

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	22	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	90	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	411	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	876	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	1,542	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	2,061	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,516	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	3,043	99.7%	0.3%	0.0%	99.7%	
850 to 899	3,850	95.2%	4.8%	0.0%	95.2%	
900 to 949	4,884	70.7%	29.3%	0.0%	70.7%	
950 to 999	5,945	27.2%	72.8%	0.0%	72.8%	Red/Green cut = 950
1000 to 1049	6,415	4.3%	95.6%	0.1%	95.6%	
1050 to 1099	5,961	0.2%	97.6%	2.2%	97.6%	
1100 to 1149	4,382	0.0%	81.9%	18.1%	81.9%	
1150 to 1199	2,590	0.0%	45.2%	54.8%	60.3%	Green/Blue cut = 1165
1200 to 1249	1,182	0.0%	14.2%	85.8%	85.8%	
1250 to 1299	469	0.0%	3.0%	97.0%	97.0%	
1300 to 1349	121	0.0%	0.6%	99.4%	99.4%	
1350 to 1399	21	0.0%	0.1%	99.9%	99.9%	
1400 to 1449	6	0.0%	0.1%	99.9%	99.9%	
1450 to 1499	3	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	1	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	46,393					
* Retest assuming no additional instruction						

Table E–49. Retest Classification Percent for Various Scale Score Ranges – Reading/Literature Grade 8

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	11	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	34	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	193	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	556	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	1,125	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,717	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	2,039	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	2,555	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	3,224	99.0%	1.0%	0.0%	99.0%	
900 to 949	4,332	88.5%	11.5%	0.0%	88.5%	
950 to 999	5,179	52.2%	47.8%	0.0%	61.8%	Red/Green cut = 979
1000 to 1049	6,147	14.1%	85.9%	0.0%	85.9%	
1050 to 1099	6,151	1.5%	98.2%	0.4%	98.2%	
1100 to 1149	5,180	0.1%	93.8%	6.2%	93.8%	
1150 to 1199	3,285	0.0%	67.7%	32.3%	68.1%	Green/Blue cut = 1194
1200 to 1249	1,676	0.0%	29.9%	70.1%	70.1%	
1250 to 1299	678	0.0%	8.3%	91.7%	91.7%	
1300 to 1349	225	0.0%	1.8%	98.2%	98.2%	
1350 to 1399	59	0.0%	0.5%	99.5%	99.5%	
1400 to 1449	22	0.0%	0.2%	99.8%	99.8%	
1450 to 1499	5	0.0%	0.1%	99.9%	99.9%	
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	44,395					
* Retest assuming no additional instruction						

Table E–50. Retest Classification Percent for Various Scale Score Ranges – Literature

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	10	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	27	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	178	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	707	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	1,819	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	3,323	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	4,757	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	5,826	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	7,006	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	8,776	99.8%	0.2%	0.0%	99.8%	
900 to 949	11,352	95.5%	4.5%	0.0%	95.5%	
950 to 999	14,565	71.1%	28.9%	0.0%	71.1%	
1000 to 1049	18,136	28.1%	71.9%	0.0%	71.9%	Red/Green cut = 1001
1050 to 1099	20,221	4.5%	95.4%	0.1%	95.4%	
1100 to 1149	19,674	0.3%	97.4%	2.3%	97.4%	
1150 to 1199	15,732	0.0%	81.6%	18.4%	81.6%	
1200 to 1249	9,758	0.0%	45.4%	54.6%	60.1%	Green/Blue cut = 1216
1250 to 1299	4,736	0.0%	15.8%	84.2%	84.2%	
1300 to 1349	1,797	0.0%	4.0%	96.0%	96.0%	
1350 to 1399	582	0.0%	1.1%	98.9%	98.9%	
1400 to 1449	169	0.0%	0.4%	99.6%	99.6%	
1450 to 1499	58	0.0%	0.2%	99.8%	99.8%	
1500 to 1549	16	0.0%	0.2%	99.8%	99.8%	
1550 to 1599	0					
1600 to 1649	1	0.0%	0.2%	99.8%	99.8%	
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	2	0.1%	1.1%	98.8%	98.8%	
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	149,228					
* Retest assuming no additional instruction						

Table E–51. Retest Classification Percent for Various Scale Score Ranges – Science Grade 3

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	1	>99.9%	0.0%	0.0%	>99.9%	
300 to 349	1	>99.9%	0.0%	0.0%	>99.9%	
350 to 399	0					
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	5	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	7	99.7%	0.3%	0.0%	99.7%	
600 to 649	9	94.3%	5.7%	0.0%	94.3%	
650 to 699	18	65.2%	34.8%	0.0%	65.8%	Red/Green cut = 694
700 to 749	31	22.5%	77.4%	0.0%	77.4%	
750 to 799	32	2.4%	96.3%	1.3%	96.3%	
800 to 849	34	0.1%	84.2%	15.7%	84.2%	
850 to 899	28	0.0%	41.4%	58.6%	64.6%	Green/Blue cut = 867
900 to 949	14	0.0%	8.0%	92.0%	92.0%	
950 to 999	6	0.0%	0.5%	99.5%	99.5%	
1000 to 1049	2	0.0%	0.0%	>99.9%	>99.9%	
1050 to 1099	0					
1100 to 1149	0					
1150 to 1199	0					
1200 to 1249	0					
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–51 (continued). Retest Classification Percent for Various Scale Score Ranges – Science Grade 3

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	192				
* Retest assuming no additional instruction					

Table E–52. Retest Classification Percent for Various Scale Score Ranges – Science Grade 4

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	0					
550 to 599	4	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	2	99.7%	0.3%	0.0%	99.7%	
650 to 699	8	95.5%	4.5%	0.0%	95.5%	
700 to 749	14	71.4%	28.6%	0.0%	71.4%	
750 to 799	27	24.7%	75.2%	0.0%	75.2%	Red/Green cut = 751
800 to 849	26	3.2%	95.9%	1.0%	95.9%	
850 to 899	45	0.2%	86.7%	13.1%	86.7%	
900 to 949	61	0.0%	51.6%	48.4%	61.7%	Green/Blue cut = 924
950 to 999	34	0.0%	12.9%	87.1%	87.1%	
1000 to 1049	10	0.0%	1.0%	99.0%	99.0%	
1050 to 1099	9	0.0%	0.0%	>99.9%	>99.9%	
1100 to 1149	1	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	0					
1200 to 1249	0					
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–52 (continued). Retest Classification Percent for Various Scale Score Ranges – Science Grade 4

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	243				
* Retest assuming no additional instruction					

Table E–53. Retest Classification Percent for Various Scale Score Ranges – Science Grade 5

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	0					
600 to 649	4	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	7	99.8%	0.2%	0.0%	99.8%	
700 to 749	3	97.1%	2.9%	0.0%	97.1%	
750 to 799	7	72.6%	27.4%	0.0%	72.6%	
800 to 849	6	31.6%	68.4%	0.0%	68.4%	Red/Green cut =804
850 to 899	8	5.4%	94.0%	0.6%	94.0%	
900 to 949	11	0.2%	89.8%	10.0%	89.8%	
950 to 999	5	0.0%	49.9%	50.1%	63.3%	Green/Blue cut = 977
1000 to 1049	3	0.0%	19.1%	80.9%	80.9%	
1050 to 1099	0					
1100 to 1149	1	0.0%	0.1%	99.9%	99.9%	
1150 to 1199	0					
1200 to 1249	0					
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–53 (continued). Retest Classification Percent for Various Scale Score Ranges – Science Grade 5

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	55				
* Retest assuming no additional instruction					

Table E–54. Retest Classification Percent for Various Scale Score Ranges – Science Grade 6

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	2	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	28	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	136	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	413	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	652	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	771	99.9%	0.1%	0.0%	99.9%	
750 to 799	977	97.9%	2.1%	0.0%	97.9%	
800 to 849	1,178	79.2%	20.8%	0.0%	79.2%	
850 to 899	1,393	36.0%	64.0%	0.0%	66.2%	Red/Green cut = 861
900 to 949	1,361	6.3%	93.3%	0.4%	93.3%	
950 to 999	993	0.3%	92.6%	7.1%	92.6%	
1000 to 1049	532	0.0%	62.7%	37.3%	65.8%	Green/Blue cut = 1034
1050 to 1099	195	0.0%	18.5%	81.5%	81.5%	
1100 to 1149	47	0.0%	2.0%	98.0%	98.0%	
1150 to 1199	12	0.0%	0.1%	99.9%	99.9%	
1200 to 1249	2	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	0					
1300 to 1349	1	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	8,695					
* Retest assuming no additional instruction						

Table E–55. Retest Classification Percent for Various Scale Score Ranges – Science Grade 7

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	3	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	41	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	178	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	639	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	954	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,201	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	1,508	99.9%	0.1%	0.0%	99.9%	
800 to 849	1,883	97.4%	2.6%	0.0%	97.4%	
850 to 899	2,317	77.6%	22.4%	0.0%	77.6%	
900 to 949	2,785	33.4%	66.6%	0.0%	67.7%	Red/Green cut = 908
950 to 999	2,820	5.4%	94.0%	0.5%	94.0%	
1000 to 1049	2,010	0.3%	91.7%	8.1%	91.7%	
1050 to 1099	997	0.0%	60.3%	39.7%	64.4%	Green/Blue cut = 1081
1100 to 1149	292	0.0%	18.4%	81.6%	81.6%	
1150 to 1199	52	0.0%	2.1%	97.9%	97.9%	
1200 to 1249	9	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	1	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	17,690					
* Retest assuming no additional instruction						

Table E–56. Retest Classification Percent for Various Scale Score Ranges – Science Grade 8

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	3	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	27	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	137	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	480	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	862	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	1,218	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	1,590	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	2,118	99.8%	0.2%	0.0%	99.8%	
850 to 899	2,779	95.8%	4.2%	0.0%	95.8%	
900 to 949	3,875	70.5%	29.5%	0.0%	70.5%	Red/Green cut = 949
950 to 999	4,437	26.3%	73.7%	0.0%	73.7%	
1000 to 1049	3,773	3.6%	95.5%	0.9%	95.5%	
1050 to 1099	2,153	0.1%	88.8%	11.1%	88.8%	
1100 to 1149	736	0.0%	52.1%	47.9%	61.9%	Green/Blue cut = 1122
1150 to 1199	168	0.0%	12.8%	87.2%	87.2%	
1200 to 1249	35	0.0%	0.8%	99.2%	99.2%	
1250 to 1299	14	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	4	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	1	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	0					
1450 to 1499	1	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	24,411					
* Retest assuming no additional instruction						

Table E–57. Retest Classification Percent for Various Scale Score Ranges – Science High School

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	7	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	20	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	90	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	143	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	162	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	190	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	216	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	280	99.9%	0.1%	0.0%	99.9%	
900 to 949	393	98.0%	2.0%	0.0%	98.0%	
950 to 999	411	80.5%	19.5%	0.0%	80.5%	
1000 to 1049	420	38.3%	61.7%	0.0%	64.3%	Red/Green cut = 1012
1050 to 1099	246	7.0%	92.7%	0.4%	92.7%	
1100 to 1149	105	0.4%	92.5%	7.1%	92.5%	
1150 to 1199	40	0.0%	67.9%	32.1%	68.9%	Green/Blue cut = 1185
1200 to 1249	14	0.0%	20.3%	79.7%	79.7%	
1250 to 1299	2	0.0%	0.8%	99.2%	99.2%	
1300 to 1349	1	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	2,740					
* Retest assuming no additional instruction						

Table E–58. Retest Classification Percent for Various Scale Score Ranges – Biology

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	1	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	15	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	72	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	421	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	1,447	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	3,179	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	5,215	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	7,278	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	10,119	99.9%	0.1%	0.0%	99.9%	
900 to 949	14,426	97.9%	2.1%	0.0%	97.9%	
950 to 999	19,083	80.4%	19.6%	0.0%	80.4%	
1000 to 1049	20,497	37.6%	62.4%	0.0%	65.1%	Red/Green cut = 1012
1050 to 1099	16,633	6.9%	92.8%	0.4%	92.8%	
1100 to 1149	10,295	0.4%	93.1%	6.5%	93.1%	
1150 to 1199	5,019	0.0%	63.3%	36.7%	66.2%	Green/Blue cut = 1185
1200 to 1249	2,272	0.0%	19.1%	80.9%	80.9%	
1250 to 1299	1,014	0.0%	1.9%	98.1%	98.1%	
1300 to 1349	421	0.0%	0.1%	99.9%	99.9%	
1350 to 1399	156	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	54	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	18	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	9	0.0%	0.0%	>99.9%	>99.9%	
1550 to 1599	3	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	1	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	117,648					
* Retest assuming no additional instruction						

Table E–59. Retest Classification Percent for Various Scale Score Ranges – Chemistry

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	0					
500 to 549	1	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	1	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	3	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	23	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	65	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	233	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	561	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	959	>99.9%	0.0%	0.0%	>99.9%	
900 to 949	1,532	99.7%	0.3%	0.0%	99.7%	
950 to 999	2,253	95.1%	4.9%	0.0%	95.1%	
1000 to 1049	2,419	68.1%	31.9%	0.0%	68.7%	Red/Green cut = 1045
1050 to 1099	1,876	24.2%	75.8%	0.0%	75.8%	
1100 to 1149	1,196	3.1%	95.9%	1.0%	95.9%	
1150 to 1199	463	0.1%	87.6%	12.3%	87.6%	
1200 to 1249	133	0.0%	49.2%	50.8%	61.6%	Green/Blue cut = 1218
1250 to 1299	41	0.0%	9.5%	90.5%	90.5%	
1300 to 1349	12	0.0%	0.5%	99.5%	99.5%	
1350 to 1399	2	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	3	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	2	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	0					
1550 to 1599	1	0.0%	0.0%	>99.9%	>99.9%	
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	1	0.0%	0.0%	>99.9%	>99.9%	
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	11,780					
* Retest assuming no additional instruction						

Table E–60. Retest Classification Percent for Various Scale Score Ranges – Writing Grade 3

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	0					
500 to 549	1	99.7%	0.3%	0.0%	99.7%	
550 to 599	3	80.7%	19.3%	0.0%	80.7%	
600 to 649	2	52.2%	47.8%	0.0%	57.9%	Red/Green cut = 614
650 to 699	4	6.3%	93.3%	0.4%	93.3%	
700 to 749	4	0.5%	95.5%	4.0%	95.5%	
750 to 799	10	0.0%	59.6%	40.4%	62.4%	Green/Blue cut = 787
800 to 849	23	0.0%	14.2%	85.8%	85.8%	
850 to 899	21	0.0%	1.5%	98.5%	98.5%	
900 to 949	16	0.0%	0.0%	>99.9%	>99.9%	
950 to 999	15	0.0%	0.0%	>99.9%	>99.9%	
1000 to 1049	8	0.0%	0.0%	>99.9%	>99.9%	
1050 to 1099	5	0.0%	0.0%	>99.9%	>99.9%	
1100 to 1149	0					
1150 to 1199	0					
1200 to 1249	0					
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–60 (continued). Retest Classification Percent for Various Scale Score Ranges – Writing Grade 3

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	112				
* Retest assuming no additional instruction					

Table E–61. Retest Classification Percent for Various Scale Score Ranges – Writing Grade 4

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	0					
600 to 649	0					
650 to 699	0					
700 to 749	2	34.2%	65.8%	0.0%	65.8%	Red/Green cut = 719
750 to 799	6	7.7%	92.1%	0.2%	92.1%	
800 to 849	4	0.6%	93.2%	6.2%	93.2%	
850 to 899	14	0.0%	68.2%	31.7%	69.3%	Green/Blue cut = 892
900 to 949	22	0.0%	18.4%	81.6%	81.6%	
950 to 999	29	0.0%	2.3%	97.7%	97.7%	
1000 to 1049	14	0.0%	0.1%	99.9%	99.9%	
1050 to 1099	7	0.0%	0.0%	>99.9%	>99.9%	
1100 to 1149	6	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	0					
1200 to 1249	0					
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–61 (continued). Retest Classification Percent for Various Scale Score Ranges – Writing Grade 4

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	104				
* Retest assuming no additional instruction					

Table E–62. Retest Classification Percent for Various Scale Score Ranges – Writing Grade 5

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 200	0					
200 to 249	0					
250 to 299	0					
300 to 349	0					
350 to 399	0					
400 to 449	0					
450 to 499	0					
500 to 549	0					
550 to 599	1	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	1	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	0					
700 to 749	1	83.5%	16.5%	0.0%	83.5%	
750 to 799	1	82.8%	17.2%	0.0%	82.8%	Red/Green cut = 787
800 to 849	6	14.0%	85.9%	0.1%	85.9%	
850 to 899	9	1.7%	96.5%	1.8%	96.5%	
900 to 949	18	0.0%	77.4%	22.6%	77.4%	
950 to 999	26	0.0%	33.8%	66.2%	67.9%	Green/Blue cut = 960
1000 to 1049	32	0.0%	7.1%	92.9%	92.9%	
1050 to 1099	20	0.0%	0.3%	99.7%	99.7%	
1100 to 1149	5	0.0%	0.0%	>99.9%	>99.9%	
1150 to 1199	3	0.0%	0.0%	>99.9%	>99.9%	
1200 to 1249	1	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	0					
1300 to 1349	0					
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					

Table E–62 (continued). Retest Classification Percent for Various Scale Score Ranges – Writing Grade 5

		% Chance in Category if Retested*			
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*
1800 to 1849	0				
1850 to 1899	0				
1900 to 1949	0				
1950 to 1999	0				
>= 2000	0				
TOTAL	124				
* Retest assuming no additional instruction					

Table E–63. Retest Classification Percent for Various Scale Score Ranges – Writing/English Comp. Grade 6

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	13	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	35	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	102	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	150	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	169	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	209	99.0%	1.0%	0.0%	99.0%	
800 to 849	329	87.2%	12.8%	0.0%	87.2%	
850 to 899	377	45.6%	54.4%	0.0%	63.2%	Red/Green cut = 872
900 to 949	490	8.8%	91.1%	0.2%	91.1%	
950 to 999	540	0.5%	95.3%	4.2%	95.3%	
1000 to 1049	446	0.0%	70.0%	29.9%	70.4%	Green/Blue cut = 1045
1050 to 1099	269	0.0%	25.3%	74.7%	74.7%	
1100 to 1149	139	0.0%	3.0%	97.0%	97.0%	
1150 to 1199	39	0.0%	0.1%	99.9%	99.9%	
1200 to 1249	17	0.0%	0.0%	>99.9%	>99.9%	
1250 to 1299	2	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	2	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	3,330					
* Retest assuming no additional instruction						

Table E–64. Retest Classification Percent for Various Scale Score Ranges – Writing/English Comp. Grade 7

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	9	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	47	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	110	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	148	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	185	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	261	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	311	99.7%	0.3%	0.0%	99.7%	
850 to 899	420	94.4%	5.6%	0.0%	94.4%	
900 to 949	621	63.7%	36.3%	0.0%	65.9%	Red/Green cut = 941
950 to 999	809	19.2%	80.7%	0.0%	80.7%	
1000 to 1049	816	1.9%	96.8%	1.3%	96.8%	
1050 to 1099	604	0.0%	84.5%	15.5%	84.5%	
1100 to 1149	342	0.0%	42.4%	57.6%	62.5%	Green/Blue cut = 1114
1150 to 1199	120	0.0%	9.0%	91.0%	91.0%	
1200 to 1249	40	0.0%	0.5%	99.5%	99.5%	
1250 to 1299	6	0.0%	0.0%	>99.9%	>99.9%	
1300 to 1349	3	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	0					
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	4,854					
* Retest assuming no additional instruction						

Table E–65. Retest Classification Percent for Various Scale Score Ranges – Writing/English Comp. Grade 8

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	0					
450 to 499	2	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	5	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	15	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	69	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	102	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	144	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	179	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	252	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	363	99.6%	0.4%	0.0%	99.6%	
900 to 949	590	92.4%	7.6%	0.0%	92.4%	
950 to 999	765	58.2%	41.8%	0.0%	63.5%	Red/Green cut = 985
1000 to 1049	841	15.9%	84.1%	0.0%	84.1%	
1050 to 1099	768	1.3%	96.9%	1.8%	96.9%	
1100 to 1149	499	0.0%	81.7%	18.3%	81.7%	
1150 to 1199	210	0.0%	40.0%	60.0%	62.8%	Green/Blue cut = 1158
1200 to 1249	57	0.0%	7.1%	92.9%	92.9%	
1250 to 1299	23	0.0%	0.4%	99.6%	99.6%	
1300 to 1349	6	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	1	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	0					
1450 to 1499	0					
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	0					
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	4,891					
* Retest assuming no additional instruction						

Table E–66. Retest Classification Percent for Various Scale Score Ranges – English Composition

		% Chance in Category if Retested*				
Scale Score Range	Number of Students	Red	Green	Blue	% Chance in Same Category if Retested*	
< 400	0					
400 to 449	1	>99.9%	0.0%	0.0%	>99.9%	
450 to 499	3	>99.9%	0.0%	0.0%	>99.9%	
500 to 549	23	>99.9%	0.0%	0.0%	>99.9%	
550 to 599	49	>99.9%	0.0%	0.0%	>99.9%	
600 to 649	129	>99.9%	0.0%	0.0%	>99.9%	
650 to 699	171	>99.9%	0.0%	0.0%	>99.9%	
700 to 749	259	>99.9%	0.0%	0.0%	>99.9%	
750 to 799	354	>99.9%	0.0%	0.0%	>99.9%	
800 to 849	439	>99.9%	0.0%	0.0%	>99.9%	
850 to 899	620	99.8%	0.2%	0.0%	99.8%	
900 to 949	968	94.9%	5.1%	0.0%	94.9%	
950 to 999	1,360	66.4%	33.6%	0.0%	67.4%	Red/Green cut = 994
1000 to 1049	2,057	20.6%	79.4%	0.0%	79.4%	
1050 to 1099	2,279	2.1%	96.8%	1.1%	96.8%	
1100 to 1149	1,942	0.1%	86.4%	13.6%	86.4%	
1150 to 1199	1,129	0.0%	45.6%	54.4%	62.4%	Green/Blue cut = 1167
1200 to 1249	636	0.0%	9.2%	90.8%	90.8%	
1250 to 1299	300	0.0%	0.7%	99.3%	99.3%	
1300 to 1349	117	0.0%	0.0%	>99.9%	>99.9%	
1350 to 1399	42	0.0%	0.0%	>99.9%	>99.9%	
1400 to 1449	19	0.0%	0.0%	>99.9%	>99.9%	
1450 to 1499	2	0.0%	0.0%	>99.9%	>99.9%	
1500 to 1549	0					
1550 to 1599	0					
1600 to 1649	1	0.0%	0.0%	>99.9%	>99.9%	
1650 to 1699	0					
1700 to 1749	0					
1750 to 1799	0					
1800 to 1849	0					
1850 to 1899	0					
1900 to 1949	0					
1950 to 1999	0					
>= 2000	0					
TOTAL	12,900					

pennsylvania
DEPARTMENT OF EDUCATION

PENNSYLVANIA
KEYSTONE EXAMS

STANDARD-SETTING TECHNICAL REPORT

ALGEBRA I, BIOLOGY, AND LITERATURE

2011

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CHAPTER ONE: EXECUTIVE SUMMARY

The standard setting for the Pennsylvania Keystone Exams was conducted by Data Recognition Corporation (DRC) using a Bookmark procedure (Lewis, Mitzel, & Green, 1996) during a workshop held in Harrisburg, Pennsylvania, June 23–24, 2011. The purpose of the event was to establish three cut scores for three content areas: Algebra I, Biology, and Literature. The three cut scores place students into four performance levels: *Below Basic*, *Basic*, *Proficient*, and *Advanced*.

The Pennsylvania Department of Education (PDE) recruited panel members from across Pennsylvania and targeted experienced educators, and supplemented with a sample selection of relevant stakeholders with expertise in the content area. The final numbers of participants who checked in and stayed throughout the meeting were 15, 13, and 11 for Algebra I, Biology, and Literature, respectively.

A Bookmark procedure was employed in setting standards for Keystone Exams. After a large group training with all panelists, this process was conducted over three rounds for each content area in separate rooms. Appendix E contains the PowerPoint slides used for the training. Round 1 bookmark placements were made individually and discussion among group members was not permitted. In Round 2, Round 1 results (individual panelist's ratings, table median ratings and the impacts based on panelists' median ratings) were reviewed and discussed in each room. After discussion, the panelists reconsidered their initial placements and adjusted them if needed in order to make their Round 2 placements. The panelists began Round 3 by discussing the Round 2 results. In addition, external reference data including students' performance distributions on Pennsylvania System of School Assessment (PSSA), National Assessment of Educational Progress (NAEP), and Student Achievement Test (SAT) were provided to the panelists. After the discussion, the panelists reexamined their Round 2 placements and made their final placements individually. The external referent data that was presented to the panelists included the following:

- PSSA: Based on the results from grades 6 through 8 and 11 in the spring of 2009.
- NAEP: Based on a sample of in-state students from grade 8 in 2009.
- SAT: Based on grade 11 PSSA examinees in 2009 with SAT scores in 2010 or prior.

Panelists were instructed to review and evaluate the external referent data as a relevant source of information rather than in a directive manner. As part of the group discussion, panelists were encouraged to discuss the relevance of external data to the purpose and goals of this meeting. In addition, the usefulness of such data was part of the survey questionnaire that panelists were asked to fill out at the end of the meeting (see Chapter 5 for a summary of their ratings).
On July 20, 2011, the Pennsylvania Board of Education (Board) approved the scale score cuts based on panelists recommendations for Algebra I, Biology, and Literature. Table 1–1 summarizes the final scale score ranges for each performance level.

Table 1–1. Scale Score Range for Each Performance Level

Content Area	Performance Level			
	Below Basic	Basic	Proficient	Advanced
Algebra I	1200–1438	1439–1499	1500–1545	1546–1800
Biology	1200–1459	1460–1499	1500–1548	1549–1800
Literature	1200–1443	1444–1499	1500–1583	1584–1800

CHAPTER TWO: INTRODUCTION

BACKGROUND

The Keystone Exams are end-of-course assessments designed to assess students' performances in the content areas of Algebra I, Algebra II, Biology, Chemistry, Civics and Government, English Composition, Geometry, Literature, U.S. History, and World History. They are offered in both paper/pencil and online formats. The Keystone Exams are one component of Pennsylvania's new system of high school graduation requirements. To receive a diploma, students must also meet local district credit, attendance, and any additional requirements and/or complete a culminating project.

The first operational tests for Algebra I, Biology, and Literature were administered between May 2 and 20, 2011. Performance standards for students were established through a standard-setting process between June 23 and 24, 2011. Performance standards represent the criteria which specify a minimum score a student must achieve on the assessment to be placed into a given performance level. In Pennsylvania, four performance levels (i.e., *Below Basic*, *Basic*, *Proficient*, and *Advanced*) were established. The detailed performance level descriptors (PLDs) can be found in Appendix A.

Cut scores were recommended by panels of educators, meeting in a workshop format, in what is referred to as a standard setting. Panelists' recommendations were taken by the Pennsylvania Department of Education (PDE) to the Board for review. Only the Board can formally set performance expectations as cut scores for Pennsylvania students. This document is intended to provide a summary of the standard setting for Algebra I, Biology, and Literature.

PURPOSE AND OBJECTIVES

A major purpose in the design of the standard-setting workshop for the Keystone Exams is to establish procedures to set the performance cuts for the newly developed End-of-Course Exams and, at the same time, adhere to the framework required by federal guidelines (USED, 2004) for setting performance levels. Federal guidelines (USED, 2004: Sect 2) specify that the setting of performance standards must involve the following elements:

- Formal adoption of performance categories that comprise at least three levels
- Pluralistic representation by education stakeholders, to include, for example, members of the public, school teachers and administrators, special education teachers, etc.
- Performance standards based primarily on expert judgment regarding content-based expectations of student achievement, but includes the consideration of student impact data
- Descriptions of the competencies associated with each performance level

Accordingly, the standard-setting workshop is designed to satisfy the following goals:

- A defensible and federally acceptable standard-setting methodology that emphasizes a content-based approach for recommending the new performance standards
- The incorporation of PLDs developed by Pennsylvania educators into the standard-setting process (The larger goal around the incorporation of PLDs into the process is to help ensure the alignment of Pennsylvania's content standards to performance expectations as established by the recommended cut scores.)

The panelists were informed that the results from this meeting would be presented to the Board for review and possible adoption.

PREPARATION FOR THE STANDARD–SETTING WORKSHOP

PANELIST RECRUITMENT

PDE selected committee members for the Algebra I, Biology, and Literature Standard Setting meeting mostly from members who participated in the May 2010 and April 2011 Performance Level Advisory committees. These committee members were selected as the starting pool because they represented the diversity of the Commonwealth of Pennsylvania, had a mix of teaching and committee experience, and, most importantly, were familiar with the PLDs of Keystone Exams. From this list, PDE selected a subset of 25 members for Algebra I, 25 members for Biology, and 23 members for Literature to serve as eligible candidates. DRC, in collaboration with PDE and its Technical Advisory Committee (TAC), established a target of 15 to 20 participants for each of the Keystone Exams in Algebra I, Biology, and Literature.

Between March and June 2011, a great effort was made to recruit enough panelists to meet the target number of participants. In accordance with federal guidelines for representative committees and TAC's recommendation of recruiting a few committee members with higher education experience, the following background factors were applied in the recruitment decision:

- Gender
- Ethnicity
- Grade level and higher education experience
- Content expertise
- Geographic location
- Specializations
- Experience in developing state academic standards, state assessments, and other related activities

However, due to the unavailability and cancelation of some committee members, a total of 15, 13, and 11 panelists attended the standard-setting workshop for Algebra I, Biology, and Literature, respectively. Table 3–1 contains the summary information about the characteristics of the selected panelists for each content area based on their self-reported responses to the Participant Survey. As can be seen from this table, there were committee members who were minority themselves in the Algebra I and Literature groups. There were also committee members with higher education experience, teaching special education and/or LEP students, working in different regions, and with different years of teaching experience.

Table 3–1. Self-Reported Demographical Composition of Panelists by Content Area

Demographic Information		Algebra I		Biology		Literature	
		N	Percentage	*N*	Percentage	*N*	Percentage
Gender	Male	9	60.0%	5	38.5%	5	45.5%
	Female	6	40.0%	8	61.5%	6	54.5%
Ethnicity	Asian	1	6.7%	0	0.0%	0	0.0%
	American Indian	0	0.0%	0	0.0%	0	0.0%
	Black	1	6.7%	0	0.0%	1	9.1%
	Latino	0	0.0%	0	0.0%	0	0.0%
	Multi-Race	0	0.0%	0	0.0%	0	0.0%
	White	13	86.7%	13	100.0%	10	90.9%
Role	Classroom Teacher	8	53.3%	9	69.2%	4	36.4%
	Educator	3	20.0%	0	0.0%	0	0.0%
	Higher Education Educator	3	20.0%	1	7.7%	4	36.4%
	Other	1	6.7%	3	23.1%	3	27.3%
Special Education	Yes	7	46.7%	7	53.8%	4	36.4%
	No	2	13.3%	4	30.8%	3	27.3%
	N/A	6	40.0%	2	15.4%	4	36.4%
LEP	Yes	4	26.7%	5	38.5%	2	18.2%
	No	4	26.7%	6	46.2%	5	45.5%
	N/A	6	40.0%	2	15.4%	4	36.4%
	Missing	1	6.7%	0	0.0%	0	0.0%
Region	Urban	3	20.0%	2	15.4%	2	18.2%
	Suburban	7	46.7%	5	38.5%	5	45.5%
	Rural	4	26.7%	6	46.2%	3	27.3%
	Other	1	6.7%	0	0.0%	1	9.1%
Experience	Less than 10 years	0	0.0%	5	38.5%	0	0.0%
	10–20 years	4	26.7%	2	15.4%	4	36.4%
	20–30 years	8	53.3%	4	30.8%	3	27.3%
	More than 30 years	3	20.0%	2	15.4%	4	36.4%

ROLES AND RESPONSIBILITIES

A number of people were involved in the Keystone Exams performance standard-setting event including staff from PDE and DRC, as well as the selected panelists. Participants' responsibilities are briefly summarized below.

PDE Staff—Start the event and give an introduction about the Keystone Exams program. During the bookmark placement, they will circulate between the rooms to answer questions relative to assessment, policy, and test content.

Panelists—Make personal investment to the process, share own thoughts, listen to colleagues, and engage in procedures as directed by the room facilitators.

Overall Psychometric Lead—Introduces procedures during training and monitors progress and results during the event.

Room Facilitators—Review procedures, keep panels moving at a pace that will achieve agenda timelines, and explain results.

Content Specialists—Facilitate the PLD reviews and answer questions relevant to test content.

Data Analyst—Enters panelists' bookmark settings and generates results.

Project Management—Works with hotel facility staff and reviews reimbursement procedures.

MATERIALS PREPARATION

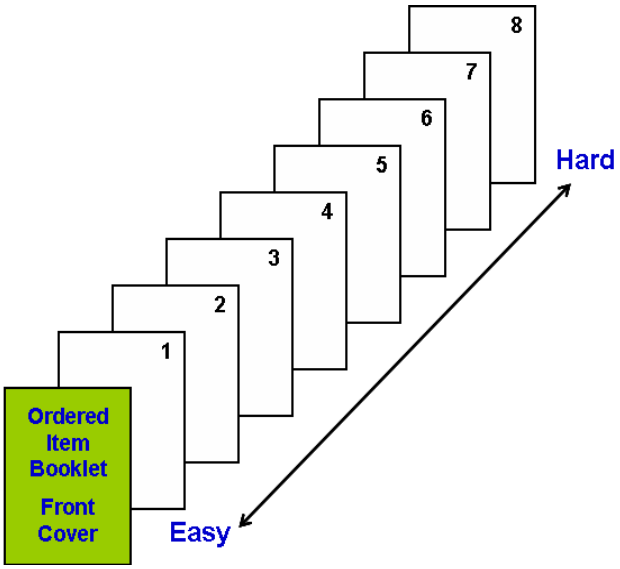
Workshop materials were developed and printed by DRC. The following is a list of materials that were available to panelists during the workshop:

- Item Map
- Item Separation Map
- Ordered Item Booklet (OIB)
- Passages
- Scoring Rubrics
- 2011 Operational Test Form
- PLDs
- Content Standards
- Participant Rating Form
- Participant Survey
- Readiness Form
- Evaluation Form
- Adhesive bookmarks, pens, highlighters, etc.

Item Map. The item map is a summary document displaying relevant information regarding each item. It contains the OIB page number, the original test sequence, item type, key, and content standard. The item map is ordered by difficulty in the same manner as the ordered item booklet. The item separation map is a graphical display of the relative difficulty of each item.

Ordered Item Booklet. The ordered item booklet is composed of all the operational items included in the test given to students in spring 2011. Items are ordered from the easiest to the hardest. Each page contains an item and a page number. For constructed-response (CR) items, each score point with a sample response has a unique location in the OIB. A visual illustration of the OIB is provided in Figure 3-1.

Figure 3-1. Illustration of Ordered Item Booklet



To make sure there was no item difficult gap for the items in an OIB, a few field test items were added to the OIBs. Table 3–2 shows the number of items supplemented into the OIBs by content area.

Table 3–2. Number of Score Points in OIB and Number of Items Supplemented

Content	No. of Score Points in OIB	No. of Items Supplemented
Algebra I	63	3
Biology	69	3
Literature	54	2

PLDs. The Keystone Exams have four performance levels: *Below Basic*, *Basic*, *Proficient*, and *Advanced*. The definitions of these four levels are called performance level descriptors, which describe the set of knowledge, skills, and abilities that students are expected to display in order to be classified into each performance level. The definitions of these PLDs are grounded in the content standards. The PLDs are important information for panelists to consider when they make their judgments. The PLDs used in the standard-setting event can be found in Appendix A.

Participant Rating Form. The participant rating form is designed to collect panelists' placements of OIB page numbers, which can be used to find the cut scores during the data analysis. An example of the participant rating form can be found in Appendix B.

Training Materials and Evaluation Surveys. Training materials (see Appendix B) and surveys (see Appendix C) were developed by DRC staff. The content-specific training materials were developed using items that clone the Algebra I, Biology, or Literature items field tested in fall 2010.

DATA PREPARATION

In Bookmark standard setting (Lewis, Mitzel, & Green, 1996), the locations of items are typically rescaled to produce better alignment with the task of asking panelists what a student should know and be able to do. A probability of 0.67 is often used to find the corresponding item location during rescaling because this probability aligns better with the likelihood panelists use to make their judgment on whether a borderline student should answer the item correctly or receive a score point or higher. For Keystone Exams, the multiple-choice (MC) items were calibrated using the familiar form of the dichotomous Rasch model. The CR items were calibrated using another model in the Rasch family, Master's partial-credit model (Wright & Masters, 1982). The latter model parameterizes each threshold needed to obtain the maximum score on the task. Consequently, there is one item difficulty parameter for each of the n – 1 score transitions (0/1, 1/2, etc.), or thresholds. Using the equated item parameters, the locations of items were rescaled to a response probability of 0.67 (i.e., RP=0.67). For MC items, the item locations were found by solving

$$\Phi_{ni} = \frac{\exp(\beta_n - \delta_i)}{1 + \exp(\beta_n - \delta_i)}$$

for the value of β_n that gives Φ_{ni} =0 .67. Φ_{ni} is the probability that person n scores 1 on item i; β_n is the ability of person n; and δ_i is the difficulty of item i.

For CR items, the probability of person n scoring x on item i is

$$\pi_{nix} = \frac{\exp \sum_{j=0}^{x} (\beta_n - \delta_{ij})}{\sum_{k=0}^{m_i} \exp \sum_{j=0}^{k} (\beta_n - \delta_{ij})}, \quad x = 0, 1, \ldots, mi,$$

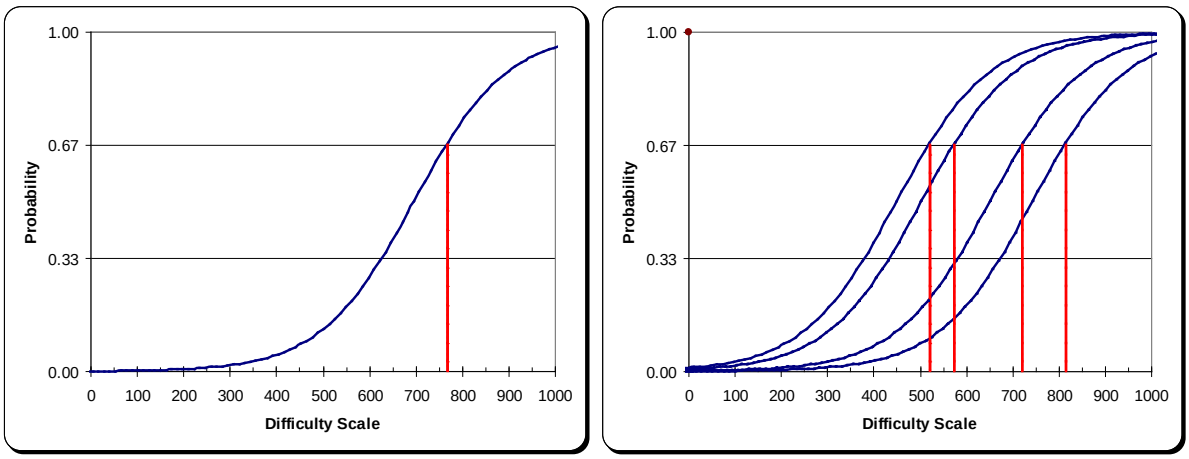
where mi is the number of thresholds and for notational convenience,

$$\exp \sum_{j=0}^{0} (\beta_n - \delta_{ij}) = 1.$$

This equation expresses the probability of person n scoring x on the mi threshold of item i as a function of the person's measure (β_n) and the threshold difficulties (δ_{ij}) of the mi thresholds for item i. The observation x is a count of the successfully completed item thresholds. The item location for a score point is determined by finding the β_n for the person who has a 0.67 probability of earning this score point or higher.

Figure 3–2 shows how the difficulty values of MC items and score values for the CR items were treated in determining their respective OIB placements. For an MC item (left plot), the difficulty is the point on the scale at which the examinees have a 0.67 probability of answering the item correctly. For the CR item (right plot), the four illustrated values (e.g., on a 0–1000 scale) indicate where the examinees have a 0.67 probability of earning a particular score point or higher. The item difficulty for the MC item is 768, and the four threshold values for the CR items are 521, 575, 723, and 815. The value of 521 is the location on the scale where examinees have a 0.67 probability of earning a score of 1 or higher (i.e., 2, 3, or 4). The value of 575 is where examinees have a 0.67 probability of earning a score of 2 or higher (i.e., 3 or 4). The value of 723 is where examinees have a 0.67 probability of earning a score of 3 or 4.

Figure 3–2. Example of Obtaining Item Difficulties for MC and CR Items



OIB PREPARATION

Once the scaled difficulties are obtained, the items can be placed in the OIB in the order of their difficulties. The easiest item is placed in the front of the booklet, whereas the most difficult item is placed at the back. Each CR item appears several times in the OIB, once for each score point except 0.

CHAPTER FOUR: STANDARD–SETTING PROCEDURES

TRAINING

The overall training was conducted the first morning of the meeting. A copy of the agenda for the meeting is provided in Appendix D. The training slides can be found in Appendix E. Participants were informed that they were to:

- be responsible for all secure materials,
- verify their individual placements for each round of judgments, and
- participate in a discussion as a large group.

A content-specific training was conducted after content area groups assembled in different rooms. These training materials included (see Appendices A and B):

- Item Map
- Item Separation Map
- OIBs
- Training Rubrics and/or Passages
- PLDs
- Rating Form

Panelists were told that the process includes iterations (rounds) of individual judgments, group discussions, and opportunities to revise judgments. In addition, impacts were presented (percentage of students in each performance level) based on the large groups' results and external data.

BOOKMARK PROCEDURE

DRC utilized a Bookmark method to set the performance standards. Bookmark is one in a broad category of methods commonly referred to as item mapping, which focus on items rather than examinees. To begin the process, participants were asked to visualize the knowledge and skills of a student who is at the borderline between two performance levels based on the performance level descriptors. Thereafter, participants were given an ordered item booklet (with items ordered from easiest to most difficult) and asked to assess whether this borderline student has a reasonably high probability of answering each item correctly. "Reasonably high" was defined as 0.67. In addition, an item map was presented that contained the response key, the content objective, and item sequence in the test booklets. An item separation map was also presented that showed the relative difficulty of each item. Panelists were given a rating form to record their individual placements for all performance levels in each round. Before each round, panelists were asked to fill out a readiness form in order to proceed.

Round 1. The Bookmark procedure proceeded in three rounds. Round 1 began following the review and discussion of performance level descriptors facilitated by a DRC test development specialist. Participants then reviewed the ordered item booklets independently. During this review, they were asked to determine what academic knowledge, skills, and competencies were required for a barely *Proficient*, *Basic*, or *Advanced* student to respond correctly to each successively more difficult item.

Training by the overall psychometric lead during the bookmark placement session emphasized the following points:

- The bookmark represents a judgment of the divide between items that a student at the borderline of a performance level should master and those that are not necessary to master.
- Bookmark placement should not be thought of as separating two items, but rather two groups of items. In other words, a placement should not hinge on distinctions drawn for adjacent items without some compelling reason, such as a large gap in content difficulty.
- Students with a scaled score at a given cut score should have approximately a 0.67 probability of correctly responding to a MC item or receiving a certain score point and higher for a CR item at the cut score. These same students should have a higher probability of success on easier items (before the bookmark placement) and a lower probability of success on harder items (after the bookmark placement).
- While placing their bookmarks, panelists should consider what students should know and be able to do in the context of the skills implied by the PLDs and the item content.
- Panelists could start with placing the *Basic*/*Proficient* cut point, next the *Below Basic*/*Basic* cut point, and finally the *Proficient*/*Advanced* cut point.

Panelists were asked to record their bookmark placements on the rating form after they filled out a readiness form, which indicated they had completed the training and understood the standard-setting process and their roles. Panelists' judgments were entered into a spreadsheet program. The median ratings of all panelists were calculated. The median placements were treated as the recommended cut scores. In addition, the standard errors associated with the recommended bookmark placements were calculated and associated impact data were determined.

Round 2. Round 2 started with a discussion of the round 1 results. The individual panelists' Round 1 bookmark placements, the median bookmark placements, and the percentage of students in each performance level were presented. Panelists were instructed to verify the ratings entered into the program as correct. Then a large group discussion followed. The panelists could compare their results with others by considering questions such as why they made their Round 1 placements at the locations where they did and what skills and knowledge were required to answer the items. After that, the impact data, based on the median bookmark placement from Round 1 (using the spring 2011 operational test score distributions), were provided to help panelists frame the effects of their judgments. During the Round 2 discussion, there was no attempt by the facilitators to reach consensus.

After the Round 2 discussion, panelists were asked to make a second set of bookmark placements. Before they revised their Round 1 placements, they were asked to fill out the readiness form to make sure they understood how to adjust their placements (if they desired to do so) based on Round 1 information. The judgments were entered into the spreadsheet program to calculate the median cut scores for each table and the full panel. The associated impact data were also calculated.

Round 3. Round 3 began with a discussion of Round 2 results. The same process followed in Round 2 was used. More specifically, the individual panelist's Round 2 bookmark placements, the median bookmark placements from Round 2, and the percentage of students in each performance level were presented. Panelists were instructed to verify the ratings entered into the program as correct. Then a table discussion followed. The panelists could compare their results with others by considering questions such as why they made their Round 2 placements at the locations where they did and what skills and knowledge were required to answer the

questions. The impact data, based on the median bookmark placement from Round 2, were provided to help panelists frame the effects of their judgments.

The Keystone Exams are one component of Pennsylvania's new system of high school graduation requirements. Because of the high stake consequences, the Technical Advisory Committee (TAC) strongly recommended bringing in external impact data to provide panelists with a reference outside of the Keystone Exams. The intent was to achieve reasonableness of results rather than to use the external data in a directive manner. DRC investigated Pennsylvania students' performance on the PSSA, NAEP, and SAT and presented external data as shown in Appendix F before panelists made their round 3 judgments. The panelists were informed of the following points:

- The PSSA and NAEP results were based on students' performance in 2009. The PSSA results were from grades 6–8 and 11. The NAEP results were from grade 8.
- All students in grades 6–8 and 11 in Pennsylvania took the PSSA. A sample that represents the Pennsylvania grade 8 students took the NAEP tests.
- The SAT results were based on the performance of students who took the SAT in 2010 or prior years.
- About 99% of students in the 2010 SAT data file indicated their expected graduation dates were in 2010; most of these students were in grade 11 in 2009. Therefore, the 2010 SAT data and the 2009 PSSA data were matched.
- Based on the matched sample, it was found that students with higher PSSA scores were more likely to take the SAT. To represent the full population in terms of demographics and PSSA scores, the matched sample was weighted by students' demographics and PSSA scores when calculating the impacts.

The Keystone and PSSA results were presented to the panelists first. Panelists were encouraged to compare the impact data and discuss whether the results for Keystone Exams were reasonable. The NAEP results were added next and the SAT results were introduced last for comparison and discussion. While discussing the external data, panelists were reminded that all these tests were created for different purposes and might cover different content standards.

Before panelists provided their final judgments, they were instructed to fill out the readiness form to make sure they understood how to adjust their placements (if they desired to do so) based on the Round 2 information and external impact data. After their individual bookmark placements, panelists filled out the evaluation form. The judgments were entered into the spreadsheet program to calculate the median placements for the full panel. The associated impact data were also calculated. The round 3 results were presented to the panelists for their information after the lunch break.

CHAPTER FIVE: RESULTS

PANELISTS' RECOMMENDATIONS

Table 5–1 provides a summary of each round's median, minimum, and maximum ratings (i.e., bookmark page numbers) of the group.

Table 5–1. Summary of Panelists' Ratings for Each Round

Content Area	Round	Bookmark Page Number								
		Below Basic/Basic			Basic/Proficient			Proficient/Advanced		
		Median	Min.	Max.	Median	Min.	Max.	Median	Min.	Max.
Algebra I	1	11	6	19	28	14	42	45	33	56
	2	11	6	13	26	17	33	42	40	46
	3	11	10	12	26	18	30	46	41	46
Biology	1	9	4	15	26	20	30	56	43	62
	2	8	7	14	24	21	30	54	50	60
	3	8	7	12	22	20	30	54	50	60
Literature	1	8	5	14	27	12	34	47	38	52
	2	9	8	15	23	15	34	46	38	48
	3	9	8	15	25	17	34	48	38	48

CUT POINTS AND STANDARD ERRORS

Each bookmark page number is associated with a bookmark difficulty (i.e., logit value). The logit cut is the bookmark difficulty corresponding to the median OIB page number minus one. The logit cut and the standard error (SE) of median logit based on panelists' round 1 rating were used to establish the 1 and 2 SE confidence intervals. By bracketing the median cut score by 2 SEs, the 95% confidence interval was identified; the confidence interval can be used to estimate the effects of false positives (passing students who may not actually have sufficient knowledge and skills) or false negatives (failing students who do have sufficient knowledge and skills). PDE can use these standard errors to identify the appropriate cut score taking into consideration the variance in the human judgments. Table 5–2 summarizes the logit cuts associated with the round 3 median ratings, median +/-1 SE, and median +/-2 SE. The corresponding impacts (percentages in performance level) are provided in this table as well. Note that BB represents *Below Basic*; B represents *Basic*; P represents *Proficient*; and A represents *Advanced*.

Table 5–2. Summary of Logit Cuts and Impacts

Content Area	Stats	Logit Cut			Percentage in Performance Level (%)				
		BB/B	B/P	P/A	BB	B	P	A	P + A
Algebra I	Median-2SE	-0.7273	0.4291	1.3694	14.7	37.3	30.2	17.8	48.0
	Median-1SE	-0.6181	0.5659	1.5041	17.2	37.8	31.6	13.4	45.0
	Median	-0.5090	0.7027	1.6388	19.8	41.2	27.5	11.5	39.0
	Median+1SE	-0.3999	0.8395	1.7735	22.4	44.4	23.5	9.7	33.2
	Median+2SE	-0.2907	0.9763	1.9082	25.2	47.0	19.7	8.1	27.8
Biology	Median-2SE	-0.5977	0.3098	1.2500	22.5	38.9	27.9	10.7	38.6
	Median-1SE	-0.4933	0.3564	1.3205	28.3	33.1	29.3	9.3	38.6
	Median	-0.3888	0.4029	1.3910	31.4	32.7	27.8	8.1	35.9
	Median+1SE	-0.2843	0.4494	1.4615	34.5	32.2	25.2	8.1	33.3
	Median+2SE	-0.1799	0.4960	1.5320	40.7	26.0	26.4	6.9	33.3
Literature	Median-2SE	-0.6561	0.2338	1.7014	12.4	20.9	46.3	20.4	66.7
	Median-1SE	-0.5545	0.4116	1.9551	14.2	25.3	46.5	14.0	60.5
	Median	-0.4530	0.5894	2.2088	16.2	26.5	48.4	8.9	57.3
	Median+1SE	-0.3515	0.7672	2.4625	18.3	31.4	43.6	6.7	50.3
	Median+2SE	-0.2499	0.9450	2.7162	20.5	36.5	38.2	4.8	43.0

SCALING AND FINAL RESULTS

After reviewing the results in Table 5–2 and considering panelists' discussions at the standard-setting meeting, PDE recommended using the logit cut scores associated with the median of panelists' round 3 ratings for Algebra I and Biology. For Literature, PDE recommended that the logit cuts be placed at the round 3 median plus 1 SE. In effect, this 1 SE adjustment raised student expectations to align more closely with the results from Algebra I and Biology, albeit not as rigorous as those two.

To avoid the negative values on the logit scale, the scaling constants were determined next to linearly convert the logit values to scaled scores. The scaled cut scores for each performance level were obtained by linearly transforming the logit cuts.

There are different approaches for determining the linear transformation. For Keystone Exams, the linear transformation from logits or Rasch measures to scaled scores were established by anchoring the logit cut for *Basic*/*Proficient* to a scale score 1500 and fixing the slope constant to 50. The intercept constant was calculated next based on the known values 1500, 50, and the logits cut for *Basic*/*Proficient* for each content area. In addition, the bottom of the scale was truncated at the lowest obtainable scale score (LOSS), 1200. The top of the scale score was truncated at the highest obtainable scaled score (HOSS), 1800. The recommended scale score cuts and the corresponding impacts were provided to the Board on July 20, 2011 for approval. Table 5-3 presents the final scaling constants and the Board-approved scale score ranges for each performance level.

Table 5–3. Summary of Scaled-Score Ranges and Scaling Constants

Content Area	Performance Level				Scaling Constants	
	Below Basic	Basic	Proficient	Advanced	Slope	Intercept
Algebra I	1200–1438	1439–1499	1500–1545	1546–1800	50	1464.365
Biology	1200–1459	1460–1499	1500–1548	1549–1800	50	1479.355
Literature	1200–1443	1444–1499	1500–1583	1584–1800	50	1461.140

The Keystones Exams are reported by total and modules. Although the panelists made recommendations based on the total test only, the *Basic*/*Proficient* cut for the total test is applied directly in setting the passing cut score for each module. In this case, the passing scale score cut at module level is 1500.

PANELISTS' EVALUATION RESULTS

The following pages show the percentages of how panelists responded to each of the questions on the algebra I, biology, and literature evaluation forms.

Keystone Exams Standard Setting:
Evaluation Form

The purpose of this evaluation is to obtain your opinions about the standard setting meeting. Your opinion will provide a basis for evaluating the training and the standard-setting process. Please DO NOT put your name on this form. We want your opinions to remain anonymous.

CONTENT AREA: ALGEBRA I

1. How adequate were the materials used during the training in preparing you for your subsequent tasks?

Q1	*N*	Percent
Not Useful	0	0.0%
Partially Useful	0	0.0%
Useful	5	33.3%
Very Useful	10	66.7%

2. How would you rate the amount of time allocated for training?

Q2	*N*	Percent
Too Little Time	0	0.0%
About Right	11	73.3%
Too Much Time	4	26.7%

3. How effective was the Training Facilitator at answering your questions during the training?

Q3	*N*	Percent
Not Effective	4[1]	26.7%
Partially Effective	3	20.0%
Effective	8	53.3%
Very Effective	0	0.0%

4. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials for the standard setting meeting.

Q4	Not Useful		Partially Useful		Useful		Very Useful		Missing	
	N	Percent	*N*	Percent	*N*	Percent	*N*	Percent	*N*	Percent
PLD	0	0.0%	1	6.7%	4	26.7%	10	66.7%	0	0.0%
OIB	0	0.0%	0	0.0%	1	6.7%	14	93.3%	0	0.0%
Item Map	0	0.0%	1	6.7%	2	13.3%	12	80.0%	0	0.0%
Item Separation Map	0	0.0%	2	13.3%	5	33.3%	8	53.3%	0	0.0%
Exemplars	0	0.0%	0	0.0%	8	53.3%	7	46.7%	0	0.0%
Scoring Guides	0	0.0%	1	6.7%	8	53.3%	6	40.0%	0	0.0%
KE Impact	0	0.0%	0	0.0%	6	40.0%	9	60.0%	0	0.0%
PSSA Data and PLD	0	0.0%	4	26.7%	7	46.7%	2	13.3%	2	13.3%
NAEP Data and PLD	0	0.0%	4	26.7%	7	46.7%	2	13.3%	2	13.3%
SAT Data	1	6.7%	3	20.0%	7	46.7%	2	13.3%	2	13.3%

[1] Although four panelists rated the facilitator as in effective at answering their questions, it is important to note that they did indicate satisfaction with the overall psychometric lead who was in the room to answer questions throughout the process.

5. Check the column that most accurately reflects your opinion regarding the amount of time allotted for your judgments during the standard setting meeting?

Q5	Round 1		Round 2		Round 3	
	N	Percent	*N*	Percent	*N*	Percent
Too little time	2	13.3%	0	0.0%	1	6.7%
About right	10	66.7%	12	80.0%	10	66.7%
Too much time	2	13.3%	1	6.7%	2	13.3%
Missing	1	6.7%	2	13.3%	2	13.3%

6. Check the column that most accurately reflects the level of confidence you had in determining the bookmark location for each assessment cut-point in the standard setting process?

Q6	BB/B		B/P		P/A	
	N	Percent	*N*	Percent	*N*	Percent
Not Confident	0	0.0%	0	0.0%	0	0.0%
Partially Confident	2	13.3%	0	0.0%	0	0.0%
Confident	5	33.3%	5	33.3%	4	26.7%
Very Confident	5	33.3%	7	46.7%	8	53.3%
Missing	3	20.0%	3	20.0%	3	20.0%

7. Check the column that most accurately reflects your satisfaction with the following roles during the standard setting process?

Q7	DRC Psychometric		DRC Content Specialist		Other DRC staff	
	N	Percent	*N*	Percent	*N*	Percent
Not Satisfied	0	0.0%	0	0.0%	0	0.0%
Partially Satisfied	1	6.7%	0	0.0%	1	6.7%
Satisfied	4	26.7%	4	26.7%	5	33.3%
Very Satisfied	7	46.7%	8	53.3%	6	40.0%
Missing	3	20.0%	3	20.0%	3	20.0%

8. How confident are you that the processes and methods used for the standard setting meeting will produce valid results?

Q8	*N*	Percent
Not Confident	0	0.0%
Partially Confident	1	6.7%
Confident	8	53.3%
Very Confident	4	26.7%
Missing	2	13.3%

CONTENT AREA: BIOLOGY

1. How adequate were the materials used during the training in preparing you for your subsequent tasks?

Q1	*N*	Percent
Not Useful	0	0.0%
Partially Useful	0	0.0%
Useful	1	7.7%
Very Useful	12	92.3%

2. How would you rate the amount of time allocated for training?

Q2	*N*	Percent
Too Little Time	0	0.0%
About Right	9	69.2%
Too Much Time	4	30.8%

3. How effective was the Training Facilitator at answering your questions during the training?

Q3	*N*	Percent
Not Effective	0	0.0%
Partially Effective	0	0.0%
Effective	1	7.7%
Very Effective	12	92.3%

4. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials for the standard setting meeting.

Q4	Not Useful		Partially Useful		Useful		Very Useful		Missing	
	N	Percent	*N*	Percent	*N*	Percent	*N*	Percent	*N*	Percent
PLD	0	0.0%	0	0.0%	1	7.7%	12	92.3%	0	0.0%
OIB	0	0.0%	0	0.0%	1	7.7%	12	92.3%	0	0.0%
Item Map	0	0.0%	1	7.7%	2	15.4%	9	69.2%	1	7.7%
Item Separation Map	0	0.0%	1	7.7%	3	23.1%	9	69.2%	0	0.0%
Exemplars	0	0.0%	1	7.7%	4	30.8%	8	61.5%	0	0.0%
Scoring Guides	0	0.0%	2	15.4%	4	30.8%	7	53.8%	0	0.0%
KE Impact	0	0.0%	4	30.8%	3	23.1%	6	46.2%	0	0.0%
PSSA Data and PLD	2	15.4%	7	53.8%	3	23.1%	1	7.7%	0	0.0%
NAEP Data and PLD	2	15.4%	8	61.5%	2	15.4%	1	7.7%	0	0.0%
SAT Data	3	23.1%	7	53.8%	2	15.4%	1	7.7%	0	0.0%

5. Check the column that most accurately reflects your opinion regarding the amount of time allotted for your judgments during the standard setting meeting?

Q5	Round 1		Round 2		Round 3	
	N	Percent	*N*	Percent	*N*	Percent
Too little time	0	0.0%	0	0.0%	0	0.0%
About right	11	84.6%	10	76.9%	9	69.2%
Too much time	0	0.0%	1	7.7%	2	15.4%
Missing	2	15.4%	2	15.4%	2	15.4%

6. Check the column that most accurately reflects the level of confidence you had in determining the bookmark location for each assessment cut-point in the standard setting process?

Q6	BB/B		B/P		P/A	
	N	Percent	*N*	Percent	*N*	Percent
Not Confident	0	0.0%	1	7.7%	0	0.0%
Partially Confident	1	7.7%	1	7.7%	0	0.0%
Confident	2	15.4%	2	15.4%	4	30.8%
Very Confident	8	61.5%	7	53.8%	7	53.8%
Missing	2	15.4%	2	15.4%	2	15.4%

7. Check the column that most accurately reflects your satisfaction with the following roles during the standard setting process?

Q7	DRC Psychometric		DRC Content Specialist		Other DRC Staff	
	N	Percent	*N*	Percent	*N*	Percent
Not Satisfied	0	0.0%	0	0.0%	0	0.0%
Partially Satisfied	0	0.0%	0	0.0%	0	0.0%
Satisfied	0	0.0%	0	0.0%	0	0.0%
Very Satisfied	11	84.6%	11	84.6%	11	84.6%
Missing	2	15.4%	2	15.4%	2	15.4%

8. How confident are you that the processes and methods used for the standard setting meeting will produce valid results?

Q8	*N*	Percent
Not Confident	0	0.0%
Partially Confident	1	7.7%
Confident	2	15.4%
Very Confident	8	61.5%
Missing	2	15.4%

CONTENT AREA: LITERATURE

1. How adequate were the materials used during the training in preparing you for your subsequent tasks?

Q1	*N*	Percent
Not Useful	0	0.0%
Partially Useful	0	0.0%
Useful	4	36.4%
Very Useful	7	63.6%

2. How would you rate the amount of time allocated for training?

Q2	*N*	Percent
Too Little Time	0	0.0%
About Right	10	90.9%
Too Much Time	1	9.1%

3. How effective was the Training Facilitator at answering your questions during the training?

Q3	*N*	Percent
Not Effective	0	0.0%
Partially Effective	0	0.0%
Effective	8	72.7%
Very Effective	3	27.3%

4. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials for the standard setting meeting.

Q4	Not Useful		Partially Useful		Useful		Very Useful		Missing	
	N	Percent	*N*	Percent	*N*	Percent	*N*	Percent	*N*	Percent
PLD	0	0.0%	0	0.0%	3	27.3%	8	72.7%	0	0.0%
OIB	0	0.0%	0	0.0%	3	27.3%	8	72.7%	0	0.0%
Item Map	0	0.0%	0	0.0%	4	36.4%	7	63.6%	0	0.0%
Item Separation Map	0	0.0%	1	9.1%	3	27.3%	7	63.6%	0	0.0%
Exemplars	0	0.0%	1	9.1%	4	36.4%	6	54.5%	0	0.0%
Scoring Guides	0	0.0%	1	9.1%	7	63.6%	3	27.3%	0	0.0%
KE Impact	1	9.1%	2	18.2%	5	45.5%	3	27.3%	0	0.0%
PSSA Data and PLD	1	9.1%	1	9.1%	6	54.5%	3	27.3%	0	0.0%
NAEP Data and PLD	1	9.1%	3	27.3%	3	27.3%	3	27.3%	1	9.1%
SAT Data	1	9.1%	4	36.4%	3	27.3%	2	18.2%	1	9.1%

5. Check the column that most accurately reflects your opinion regarding the amount of time allotted for your judgments during the standard setting meeting?

Q5	Round 1		Round 2		Round 3	
	N	Percent	*N*	Percent	*N*	Percent
Too little time	0	0.0%	1	9.1%	2	18.2%
About right	5	45.5%	5	45.5%	4	36.4%
Too much time	2	18.2%	0	0.0%	0	0.0%
Missing	4	36.4%	5	45.5%	5	45.5%

6. Check the column that most accurately reflects the level of confidence you had in determining the bookmark location for each assessment cut-point in the standard setting process?

Q6	BB/B		B/P		P/A	
	N	Percent	*N*	Percent	*N*	Percent
Not Confident	0	0.0%	0	0.0%	0	0.0%
Partially Confident	0	0.0%	0	0.0%	0	0.0%
Confident	3	27.3%	6	54.5%	3	27.3%
Very Confident	4	36.4%	1	9.1%	4	36.4%
Missing	4	36.4%	4	36.4%	4	36.4%

7. Check the column that most accurately reflects your satisfaction with the following roles during the standard setting process?

Q7	DRC Psychometric		DRC Content Specialist		Other DRC staff	
	N	Percent	*N*	Percent	*N*	Percent
Not Satisfied	0	0.0%	0	0.0%	0	0.0%
Partially Satisfied	3	27.3%	0	0.0%	0	0.0%
Satisfied	2	18.2%	2	18.2%	3	27.3%
Very Satisfied	1	9.1%	4	36.4%	3	27.3%
Missing	5	45.5%	5	45.5%	5	45.5%

8. How confident are you that the processes and methods used for the standard setting meeting will produce valid results?

Q8	*N*	Percent
Not Confident	0	0.0%
Partially Confident	1	9.1%
Confident	4	36.4%
Very Confident	1	9.1%
Not Sure	1	9.1%
Missing	4	36.4%

CHAPTER SIX: REFERENCES

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Chapter Six: References

APPENDIX A: PERFORMANCE LEVEL DESCRIPTORS

Algebra I—Biology—Literature	PERFORMANCE LEVEL DESCRIPTORS—JULY 2011		
	Basic	Proficient	Advanced
Algebra I	**An Algebra I student performing at this level solves simple mathematical problems by applying fundamental skills and procedures in Algebra I.**	**An Algebra I student performing at this level demonstrates an understanding of the skills, concepts, and procedures in Algebra I and is able to model and solve real-world problems.**	**An Algebra I student performing at this level demonstrates an in-depth understanding of the skills, concepts, and procedures in Algebra I and is able to model, analyze, solve, and evaluate complex problems, including real-world problems.**
	Students performing at this level demonstrate these abilities by identifying and simplifying operations with real numbers and expressions and by solving and graphing simple linear equations and linear inequalities. They identify solutions of simple linear systems of equations (including solving by graphing) and inequalities, and they identify characteristics of functions and writing equations of functions by substitution, including the use of coordinate geometry. Student use data analysis to answer fundamental questions.	Students performing at this level demonstrate these abilities by simplifying, using properties, and performing operations with real numbers and expressions and by solving, graphing, writing, and interpreting linear equations and linear inequalities. Students solve linear systems of equations and interpret graphically linear systems of inequalities. They identify, use, describe, graph, write, and convert between multiple representations of functions, including the use of coordinate geometry. Students use data analysis to analyze, calculate, interpret, and make predictions.	Students performing at this level demonstrate these abilities by justifying the use of properties involving operations with real numbers and simplifying complex expressions and by justifying reasoning when solving complex linear equations and linear inequalities and interpreting the results. They write, solve, and graph linear systems of equations and inequalities and interpreting the results, and they interpret and make predictions using functions, including the use of coordinate geometry. Students use data analysis to analyze, calculate, interpret, and make predictions based on multiple sets of data.
Biology	**A Biology student performing at this level demonstrates a partial conceptual understanding of science content and the application of skills and processes related to biological concepts.**	**A Biology student performing at this level demonstrates a general conceptual understanding of science content and the application of skills and processes related to biological concepts.**	**A Biology student performing at this Level demonstrates a thorough conceptual understanding of science content and the application of skills and processes related to biological concepts.**
	Students performing at this level demonstrate these abilities by recognizing scientific thinking, tools, and technologies in the study of biology. They identify the chemical basis and characteristics of life, and they recognize a simple structure and function relationship within a level of biological organization. Students define homeostasis and cellular transport, and they identify basic energy transformations in photosynthesis and cellular respiration. They recognize the steps of the cell cycle and the mechanisms and patterns of inheritance. Students use scientific processes to identify evidence that can describe evolutionary theory, and they recognize ecological organization and fundamental interactions within the biosphere.	Students performing at this level demonstrate these abilities by applying scientific thinking, processes, tools, and technologies in the study of biology. They describe the chemical basis and characteristics of life and the relationships between structure and function at various levels of biological organization. Students explain mechanisms involved in homeostasis and cellular transport, and they describe the energy transformations in photosynthesis and cellular respiration. They compare the processes of mitosis and meiosis, and they describe how genetic information can be inherited, expressed, and altered. Students apply scientific processes to analyze evidence that can explain the mechanisms of evolutionary theory, and they describe ecological organization, biotic and abiotic components, and interactions within the biosphere.	Students performing at this level demonstrate these abilities by evaluating the application of scientific reasoning, inventions, tools, and new technologies in the study of biology. They analyze the chemical basis and characteristics of life, and they make predictions based on relationships between structure and function at various levels of biological organization. Students recognize and interpret connections between life processes such as homeostasis, cellular transport, photosynthesis, and cellular respiration and their inter-related effects on organisms. They evaluate the processes and outcomes of mitosis and meiosis, and they predict how genetic information could be inherited, expressed, and altered. Students apply scientific processes to interpret evidence that can explain the mechanisms of evolutionary theory, and they explain ecological interdependencies and cause and effect relationships within the biosphere.
Literature	**A Literature student performing at this level demonstrates some use of reading strategies to comprehend fiction and nonfiction.**	**A Literature student performing at this level demonstrates a consistent use of effective reading strategies to comprehend fiction and nonfiction.**	**A Literature student performing at this level demonstrates a thorough use of sophisticated reading strategies to comprehend fiction and nonfiction.**
	Students performing at this level consistently demonstrate a partial understanding of fiction and nonfiction within and between texts. They use limited reading skills and strategies to construct meaning. Students demonstrate comprehension through the use of word meanings, contextual clues, and literary terms. They demonstrate some understanding of text structures and the content of graphics. Students identify and explain the author's purpose and techniques.	Students performing at this level consistently demonstrate an adequate understanding of fiction and nonfiction within and between texts. They construct meaning by applying appropriate reading strategies and knowledge of literary terms, structures, and genres. Students make and support reasonable assertions and draw conclusions based on textual and contextual evidence. They analyze the author's purpose and techniques, including the effects on the reader.	Students performing at this level consistently demonstrate a thorough understanding of fiction and nonfiction. They use in-depth knowledge of literature to construct original interpretations, draw insightful conclusions, and make connections within, between, and beyond texts. Students demonstrate subtle literary and conceptual understanding of texts and analyze the contexts in which they were written. They demonstrate a sophisticated understanding of style, structure, genre, and purpose.

Appendix A: Performance Level Descriptors

APPENDIX B: TRAINING MATERIALS

SAMPLE TRAINING ITEM MAP

Keystone Exams Standard Setting: Algebra I
Training Item Map

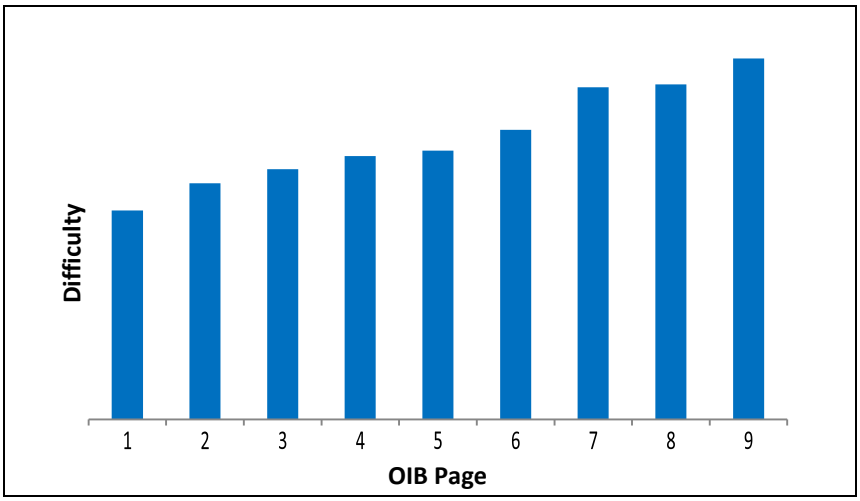
Name: **Binder Number:**

OIB Page	Session	Test Sequence	Item Type	Key	Standard	Notes
1	1	27	CR	1/4	A1.1.2	
2	1	27	CR	2/4	A1.1.2	
3	1	27	CR	3/4	A1.1.2	
4	1	4	MC	D	A1.2.2.1.3	
5	1	11	MC	C	A1.2.3.1.1	
6	1	1	MC	C	A1.1.1.5.2	
7	1	3	MC	A	A1.1.3.1.1	
8	1	21	MC	B	A1.1.1.1.2	
9	1	27	CR	4/4	A1.1.2	

SAMPLE TRAINING ITEM SEPARATION MAP

Keystone Exams Standard Setting: Algebra I
Training Item Separation Map

Name: **Binder Number:**



SAMPLE TRAINING RATING FORM

Keystone Exams Standard Setting: Algebra I
Training Participant Rating Form

Name: **Binder Number:**

Round	Below Basic/ Basic Bookmark on Page #	Basic/ Proficient Bookmark on Page #	Proficient/ Advanced Bookmark on Page #
Round 1	3	6	9
Round 2			
Round 3			

APPENDIX C: EVALUATION FORMS

PARTICIPANT SURVEY

Keystone Exams Standard Setting: Algebra I/Biology/Literature
Participant Survey

Thank you for completing this survey. We are required to gather this information to demonstrate the level of expertise of the participants in our standard setting events. Please clearly mark your responses.

1. Gender:

o Female o Male

2. Ethnicity:

o Amer. Indian/ Alaskan Native o Asian (not Hispanic) o Black/ African American (not Hispanic) o Hispanic (Any Race) o Native Hawaiian/Pacific Islander (not Hispanic) o Multi-Racial (not Hispanic) o White/Caucasian (not Hispanic)

3. Current Assignment:

o Classroom Teacher o Educator (Non-Teacher) o Other (Please Specify):_____

If you are a Classroom Teacher, do you teach Special Education students?

o Yes o No

If you are a Classroom Teacher, do you teach LEP students?

o Yes o No

If "other" please provide additional information below (occupation, interest in education, etc.)

4. Work Setting:

o Urban o Suburban o Rural

5. District/College Name:_____

6. How many years (total) have you been teaching?

7. Please list the grades and number of years taught at each grade for your subject.

8. Please describe your professional development in the subject in the past two years. You may continue on the back if necessary.

READINESS FORM

Keystone Exams Standard Setting: Algebra I/Biology/Literature
Readiness Form

Name: _____ **Binder Number: _____**

PLEASE COMPLETE QUESTIONS 1 AND/OR 2 BEFORE STARTING ROUND 1.

1. I have completed the orientation and training and understand the purpose of the standard setting event. I also am clear of my role in this event and understand what I am being asked to do. I am ready to start Round 1.

o o _____
YES NO Your Initials

If you answered NO, please raise your hand and ask the facilitator for additional help or training.

NOTE: YOU ONLY NEED TO ANSWER QUESTION 2 IF YOU SAID 'NO' TO QUESTION 1.

2. I have received additional help and training. I now clearly understand my role and the task that I am being asked to do. I am now ready to begin Round 1.

o o _____
YES NO Your Initials

COMPLETE QUESTIONS 3 AND/OR 4 BEFORE STARTING ROUND 2.

3. I understand the data that was shown to me from Round 1. I have a clear understanding of how to use that information to guide my Round 2 ratings. I am ready to start Round 2.

o o _____
YES NO Your Initials

If you answered NO, please raise your hand and ask the facilitator for additional help or training.

NOTE: YOU ONLY NEED TO ANSWER QUESTION 4 IF YOU SAID 'NO' TO QUESTION 3.

4. I have received additional help and training. I now clearly understand the data shown to me and know how to use that information to guide my Round 2 ratings. I am now ready to begin Round 2.

o o _____
YES NO Your Initials

COMPLETE QUESTIONS 5 AND/OR 6 BEFORE STARTING ROUND 3.

5. I understand the data that was shown to me from Round 2. I have a clear understanding of how to use that information in combination with the information I received after Round 1 to guide my Round 3 ratings. I understand that this will be my final rating. I am ready to start Round 3.

o o _____
YES NO Your Initials

If you answered NO, please raise your hand and ask the facilitator for additional help or training.

NOTE: YOU ONLY NEED TO ANSWER QUESTION 6 IF YOU SAID 'NO' TO QUESTION 5.

6. I have received additional help and training. I now clearly understand the data shown to me and know how to use that information to guide my Round 3 ratings. I am now ready to begin Round 3.

o o _____
YES NO Your Initials

EVALUATION FORM

Keystone Exams Standard Setting: Algebra I/Biology/Literature
Evaluation Form

The purpose of this evaluation is to obtain your opinions about the standard setting meeting. You opinion will provide a basis for evaluating the training and the standard setting process. Please DO NOT put your name on this form. We want your opinions to remain anonymous.

1. How adequate were the materials used during the training in preparing you for your subsequent tasks?

o Not Useful o Partially o Useful o Very Useful

2. How would you rate the amount of time allocated for training?

o Too Little o About Right o Too Much

3. How effective was the Training Facilitator at answering your questions during the training?

o Not Effective o Partially o Effective o Very Effective

4. Please provide us with any suggestions you have for ways to improve our training in the space provided below.

5. Check the column that most accurately reflects your opinion regarding the usefulness of the following materials for the standard setting meeting.

Materials	Not Useful	Partially Useful	Useful	Very Useful
Performance Level Descriptors (PLD)	o	o	o	o
Ordered Item Booklet	o	o	o	o
Item Map	o	o	o	o
Item Separation Map	o	o	o	o
Exemplars of Student Responses	o	o	o	o
Scoring Guides/Rubrics	o	o	o	o
Impact Data Based on Keystone Exams Results	o	o	o	o
PSSA Data and PLD	o	o	o	o
NAEP Data and PLD	o	o	o	o
SAT Data	o	o	o	o

6. Check the column that most accurately reflects your opinion regarding the amount of time allotted for your judgments during the standard setting meeting?

Time Allotted	Too Little Time	About Right	Too Much Time
Round 1	o	o	o
Round 2	o	o	o
Round 3	o	o	o

7. Check the column that most accurately reflects the level of confidence you had in determining the bookmark location for each assessment cut-point in the standard setting process?

Cut-point Location	Not Confident	Partially	Confident	Very Confident
Below Basic/Basic	o	o	o	o
Basic/Proficient	o	o	o	o
Proficient/Advanced	o	o	o	o

8. Check the column that most accurately reflects your satisfaction with the following roles during the standard setting process?

Role	Not Satisfied	Partially Satisfied	Satisfied	Very Satisfied
DRC Psychometric Facilitator	o	o	o	o
DRC Content Specialists	o	o	o	o
Other DRC Staff	o	o	o	o

9. How confident are you that the processes and methods used for the standard setting meeting will produce valid results?

o	o	o	o
Not Confident	Partially	Confident	Very Confident

Thank you for participating in the standard setting meeting. If you have further comments or suggestions for ways to improve the standard setting meeting, please do so in the space provided below. All comments will remain anonymous.

Appendix C: Evaluation Forms

Appendix D: Agenda

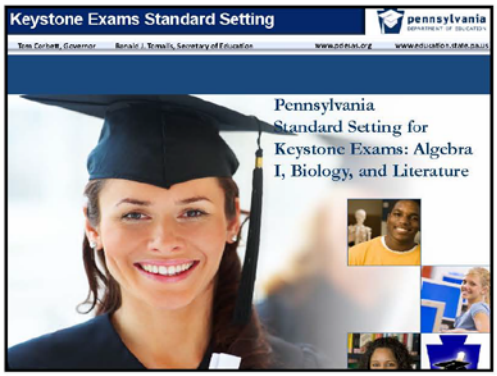
AGENDA

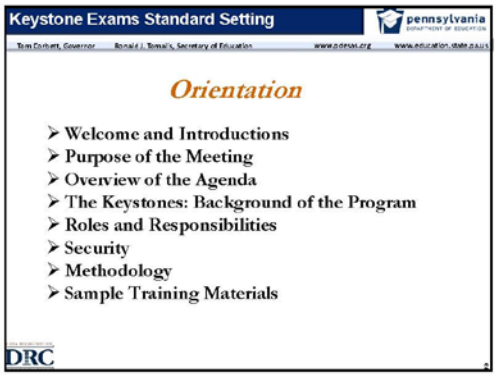
Thursday, June 23, 2011	
7:30 am – 8:30 am	Registration and Breakfast
8:30 am – 8:45 am	Welcome, Introduction to Standard Setting PDE Introductions and Overview of Program DRC Introductions
8:45 am – 10:00 am	Large Group Training General Introduction and Overview of the Standard Setting Event Examples of Documents, and Forms. Completion of Administrative Forms: Security, Confidentiality, Emergency
10:00 am – 10:15 am	Breakout: Algebra I, Biology, and Literature
10:15 am – 12:00 pm	Panelists Introductions Individual Panelists Take and Reflect on the Operational Test
12:00 pm – 1:00 pm	Lunch
1:00 pm – 2:30 pm	Presentation and Review of PLDs
2:30 pm – 3:30 pm	Procedures Practice on Sample Items Answer Questions about the Procedure
3:30 pm – 4:30 pm	Readiness Form Round 1 – Individual Placement of Bookmark
4:30 pm – 5:00 pm	Data Analysis Sign Out for Secure Materials Meeting Adjourned
Friday, June 24, 2011	
7:30 am – 8:30 am	Breakfast
8:30 am – 10:00 am	Sign in for Secure Materials Verification of Round 1 Results, Review of Round 1 Results, KE Impact Data, and Group Discussion Readiness Form Round 2 – Individual Placement, Revised
10:00 am – 10:30 am	Break for Data Analysis
10:30 am – 12:00 am	Verification of Round 2 Results, Review of Round 2 Results, KE Impact Data, External Impact Data Discussion, and Group Discussion
12:00 pm – 1:00 pm	Lunch
1:00 pm – 1:30 pm	Continue Group Discussion
1:30 am – 2:00 pm	Readiness Form Round 3 – Individual Placement, Final Wrap-up and Secure Materials Standard Setting Evaluation
2:00 am – 2:30 pm	Break for Data Analysis
2:30 pm – 3:00 pm	Review of Round 3 Results; Meeting Adjourned

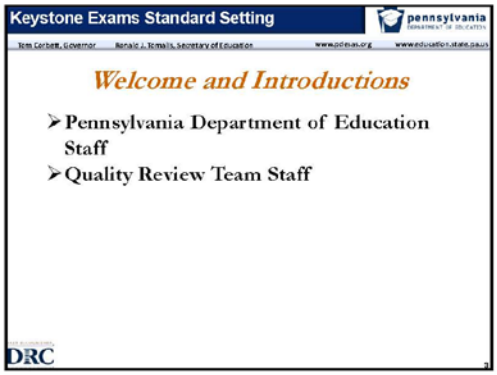
Appendix D

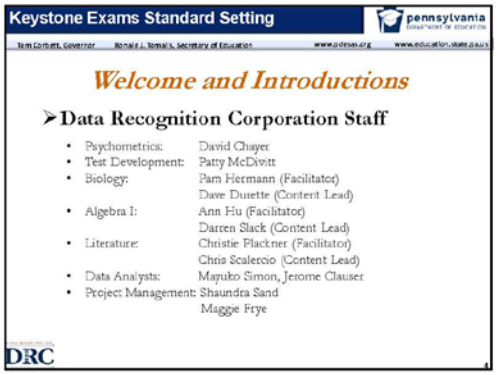
Meeting Rooms*						
Registration	**Breakfast**	**General Session**	**Algebra I**	**Biology**	**Literature**	**Lunch**
Outside Central A	Heritage Room	Heritage Room	Central Ballroom A	Central Ballroom B	Central Ballroom C	Heritage Room

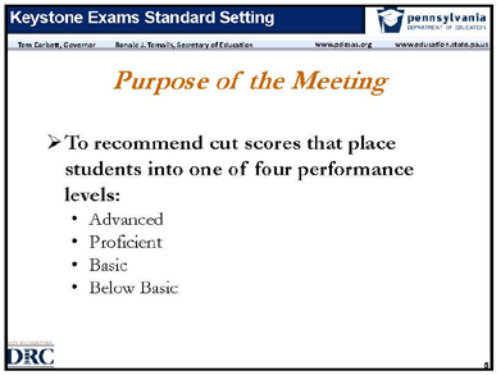
TRAINING PRESENTATION

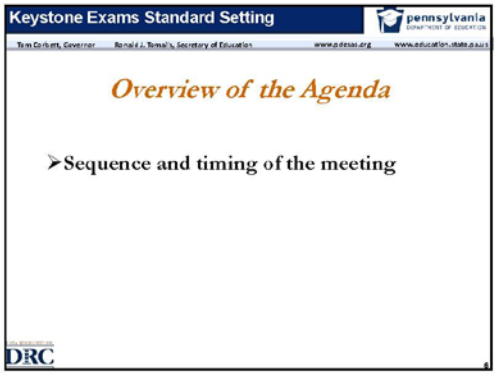


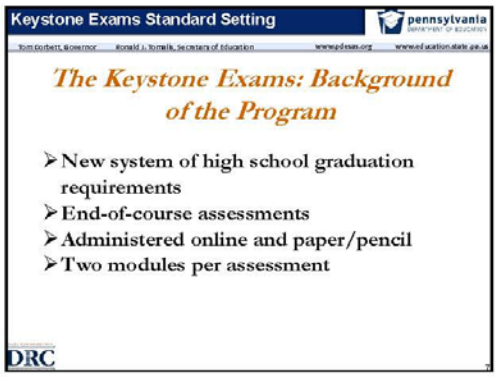


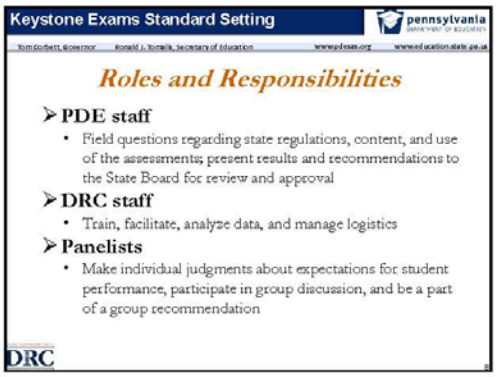




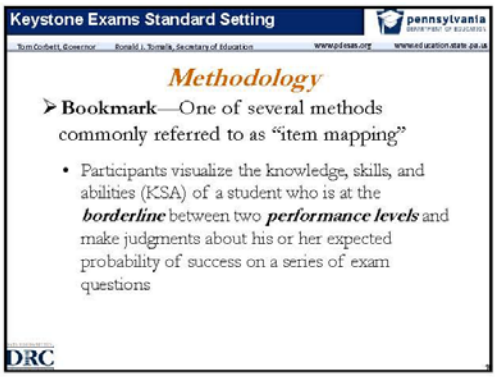


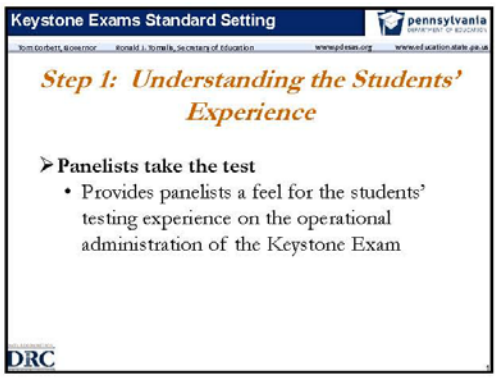


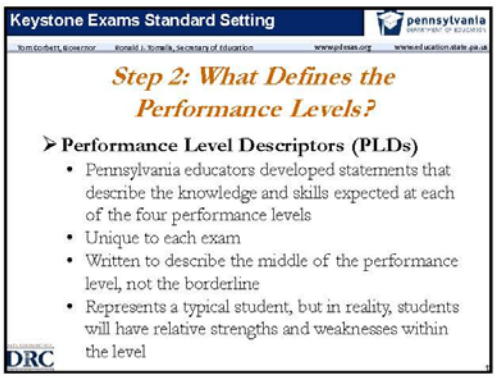

Keystone Exams Standard Setting
pennsylvania
The Keystone Exams: Background of the Program
New system of high school graduation requirements
End-of-course assessments
Administered online and paper/pencil
Two modules per assessment
DRC


Keystone Exams Standard Setting
pennsylvania
Roles and Responsibilities
PDE staff
Field questions regarding state regulations, content, and use of the assessments; present results and recommendations to the State Board for review and approval
DRC staff
Train, facilitate, analyze data, and manage logistics
Panelists
Make individual judgments about expectations for student performance, participate in group discussion, and be a part of a group recommendation
DRC

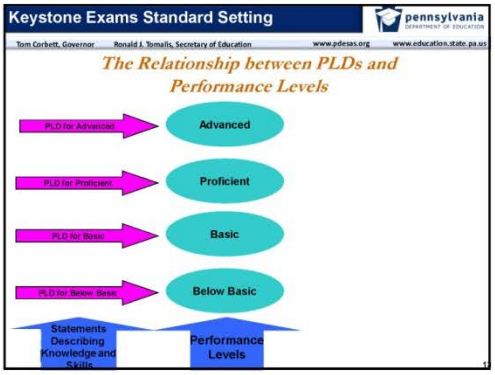
Keystone Exams Standard Setting
pennsylvania
Security
Check In
Confidentiality agreement
Throughout Day
Distribution of materials
All materials stay in room, including notes
Notify the room facilitator for unscheduled breaks
No discussion outside of room
Check Out
Turn in your materials
DRC

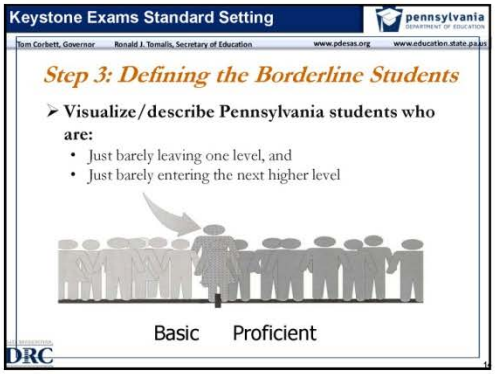

Keystone Exams Standard Setting
pennsylvania
Methodology
Bookmark—One of several methods commonly referred to as "item mapping"
Participants visualize the knowledge, skills, and abilities (KSA) of a student who is at the borderline between two performance levels and make judgments about his or her expected probability of success on a series of exam questions
DRC

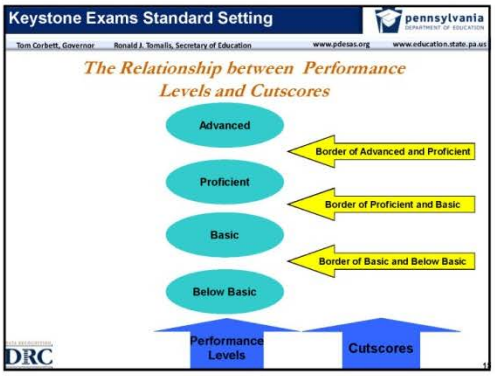

Keystone Exams Standard Setting
pennsylvania
Step 1: Understanding the Students' Experience
Panelists take the test
Provides panelists a feel for the students' testing experience on the operational administration of the Keystone Exam
DRC

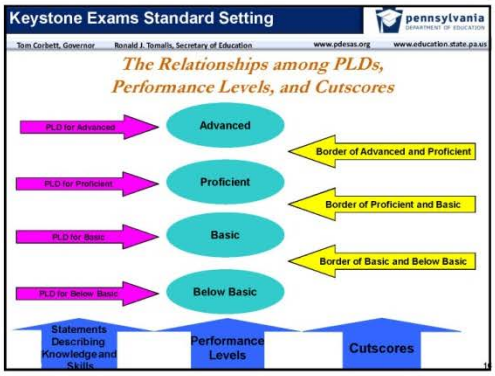

Keystone Exams Standard Setting
pennsylvania
Step 2: What Defines the Performance Levels?
Performance Level Descriptors (PLDs)
Pennsylvania educators developed statements that describe the knowledge and skills expected at each of the four performance levels
Unique to each exam
Written to describe the middle of the performance level, not the borderline
Represents a typical student, but in reality, students will have relative strengths and weaknesses within the level
DRC

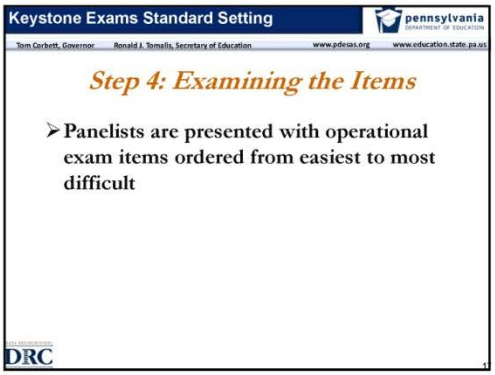
Appendix E

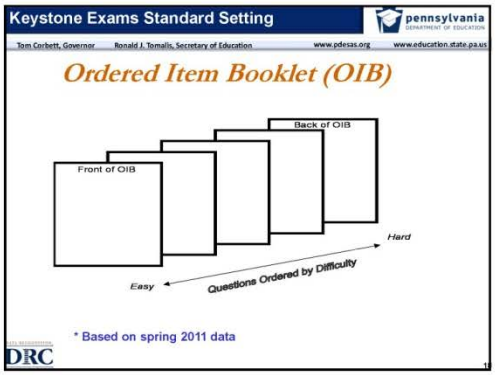

Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
The Relationship between PLDs and Performance Levels
PLD for Advanced
Advanced
PLD for Proficient
Proficient
PLD for Basic
Basic
PLD for Below Basic
Below Basic
Statements Describing Knowledge and Skills
Performance Levels


Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
Step 3: Defining the Borderline Students
Visualize/describe Pennsylvania students who are:
Just barely leaving one level, and
Just barely entering the next higher level
Basic
Proficient
DRC


Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
The Relationship between Performance Levels and Cutscores
Advanced
Border of Advanced and Proficient
Proficient
Border of Proficient and Basic
Basic
Border of Basic and Below Basic
Below Basic
Performance Levels
Cutscores
DRC


Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
The Relationships among PLDs, Performance Levels, and Cutscores
PLD for Advanced
Advanced
Border of Advanced and Proficient
PLD for Proficient
Proficient
Border of Proficient and Basic
PLD for Basic
Basic
Border of Basic and Below Basic
PLD for Below Basic
Below Basic
Statements Describing Knowledge and Skills
Performance Levels
Cutscores


Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
Step 4: Examining the Items
Panelists are presented with operational exam items ordered from easiest to most difficult
DRC


Keystone Exams Standard Setting
pennsylvania
Tom Corbett, Governor
Ronald J. Tomalis, Secretary of Education
www.pdesas.org
www.education.state.pa.us
Ordered Item Booklet (OIB)
Back of OIB
Front of OIB
Hard
Easy
Questions Ordered by Difficulty
* Based on spring 2011 data
DRC

Keystone Exams Standard Setting

Item Types within the OIB

- Multiple-choice (MC) items are presented one per page, with a bold number in the top, right-hand corner of the page
- Constructed response (CR) items are presented one score point per page (except for the zero score point)
  - Each score point will include a student exemplar
  - Scoring guides are provided

DRC

Keystone Exams Standard Setting

Step 5: Placing the Bookmarks

- Go through the OIB page by page and assess whether a borderline *Proficient* student, according to the PLDs, has a sufficient probability of answering each item correctly
  - For MC items, sufficient is .67 probability of responding correctly
  - For CR items, sufficient is .67 probability of that score point or higher

DRC

Keystone Exams Standard Setting

Step 5: Placing the Bookmarks (cont.)

- If your judgment is "yes," turn the page and make the same judgment about the next more difficult item
- Continue until you reach an item that the borderline *Proficient* student should *not* have a .67 chance of answering correctly
- Key Point: Place your bookmark (post-it) on this page and mark it on the Participant Rating Form

DRC

Keystone Exams Standard Setting

Step 5: Placing the Bookmarks (cont.)

- Region of Uncertainty
  - Do not:
    - Search for a perfect item
    - Avoid items that you don't like
  - Do:
    - Search for several items that are all probable choices
    - Use the provided item separation chart to see if the items are similar in difficulty
  - If you continue to struggle:
    - Consider selecting an item toward the middle (or a little higher) within your probable item set

DRC

Keystone Exams Standard Setting

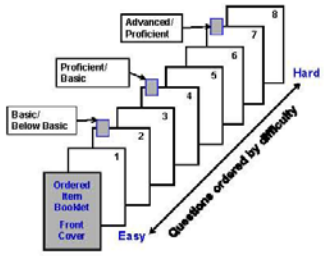
Sequence of Bookmark Judgments

- You will be asked to place three bookmarks in the OIB in the following order:
  - First: Barely Proficient
  - Second: Barely Advanced
  - Last: Barely Basic

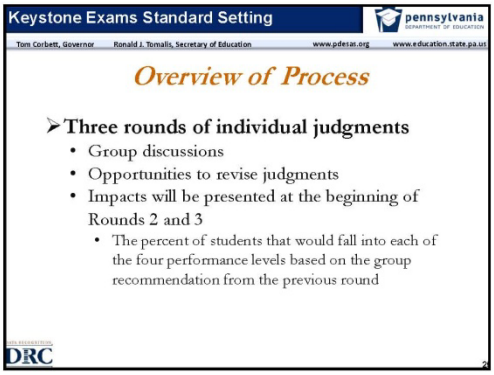
DRC

Keystone Exams Standard Setting

Placing Multiple Bookmarks



DRC


Keystone Exams Standard Setting
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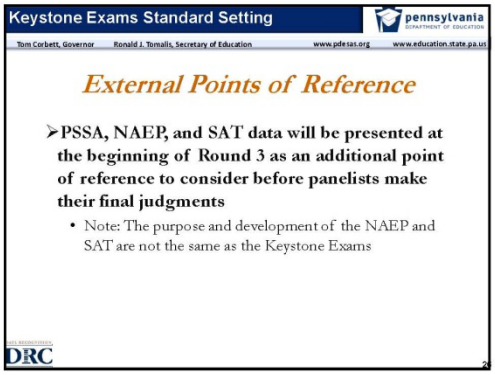
www.education.state.pa.us
Overview of Process
Three rounds of individual judgments
Group discussions
Opportunities to revise judgments
Impacts will be presented at the beginning of Rounds 2 and 3
The percent of students that would fall into each of the four performance levels based on the group recommendation from the previous round
DRC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External Points of Reference
PSSA, NAEP, and SAT data will be presented at the beginning of Round 3 as an additional point of reference to consider before panelists make their final judgments
Note: The purpose and development of the NAEP and SAT are not the same as the Keystone Exams
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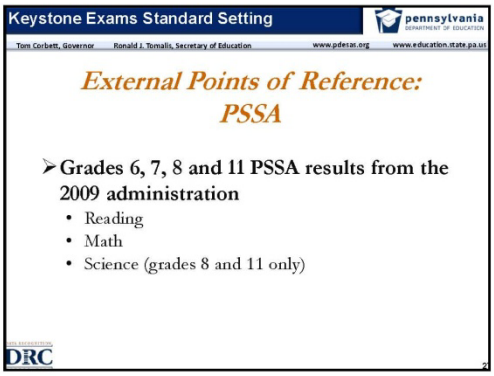
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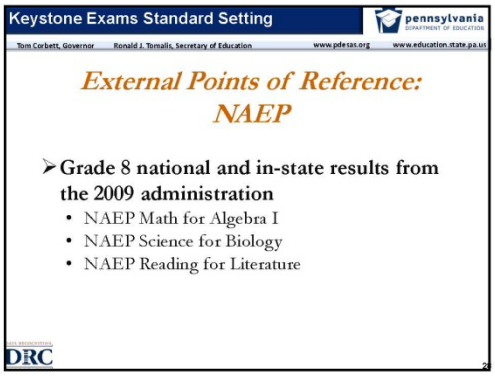
External Points of Reference: PSSA
Grades 6, 7, 8 and 11 PSSA results from the 2009 administration
Reading
Math
Science (grades 8 and 11 only)
DRC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External Points of Reference: NAEP
Grade 8 national and in-state results from the 2009 administration
NAEP Math for Algebra I
NAEP Science for Biology
NAEP Reading for Literature
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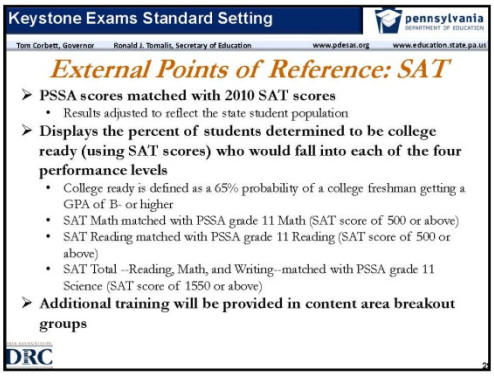
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External Points of Reference: SAT
PSSA scores matched with 2010 SAT scores
Results adjusted to reflect the state student population
Displays the percent of students determined to be college ready (using SAT scores) who would fall into each of the four performance levels
College ready is defined as a 65% probability of a college freshman getting a GPA of B- or higher
SAT Math matched with PSSA grade 11 Math (SAT score of 500 or above)
SAT Reading matched with PSSA grade 11 Reading (SAT score of 500 or above)
SAT Total --Reading, Math, and Writing--matched with PSSA grade 11 Science (SAT score of 1550 or above)
Additional training will be provided in content area breakout groups
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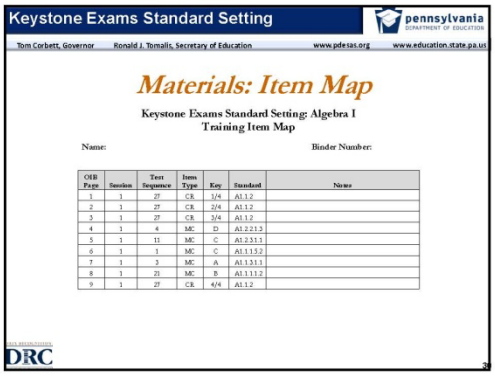
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Materials: Item Map
Keystone Exams Standard Setting: Algebra I
Training Item Map
Name:
Binder Number:
OIB Page
Session
Test Sequence
Item Type
Key
Standard
Notes
DRC

Appendix E

Keystone Exams Standard Setting

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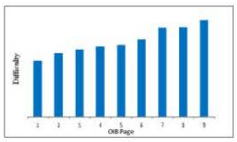
Materials: Item Separation Map

Keystone Exams Standard Setting: Algebra I
Training Item Separation Map

Name: Binder Number:



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Keystone Exams Standard Setting

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Materials: Rating Form

Keystone Exams Standard Setting: Algebra I
Training Participant Rating Form

Name: Binder Number:

Round	Below Basic /Basic Bookmark on Page #	Basic /Proficient Bookmark on Page #	Proficient/ Advanced Bookmark on Page #
Round 1	3	6	9
Round 2			
Round 3			

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Panelist Rating

Name	Table	Round 1 BB/B	B/P	P/A
Participant1	1	8	21	46
Participant2	1	8	15	43
Participant3	1	9	19	34
Participant4	1	10	25	45
Participant5	1	8	21	39
Participant6	1	11	21	41
Participant7	1	10	20	43
Participant8	1	9	19	41
Participant9	1	12	25	31
Participant10	1	14	21	41
Participant11	1	7	23	44
Participant12	1	6	14	20
Participant13	1	6	24	37
Participant14	1	8	29	29
Participant15	1	9	23	44
Participant16	1	9	27	46
Participant17	1	10	23	39
Participant18	1	8	15	29
Participant19	1	7	17	38
Table Median		9	21	41

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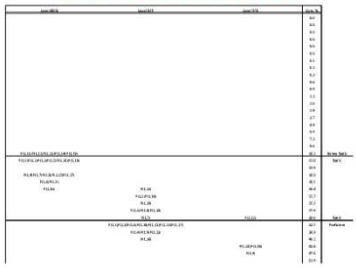
Panelist Distribution



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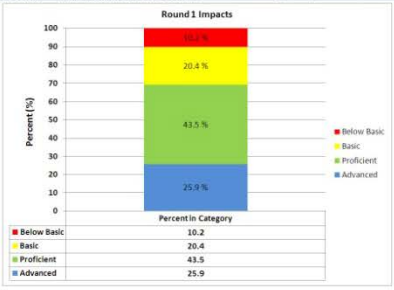

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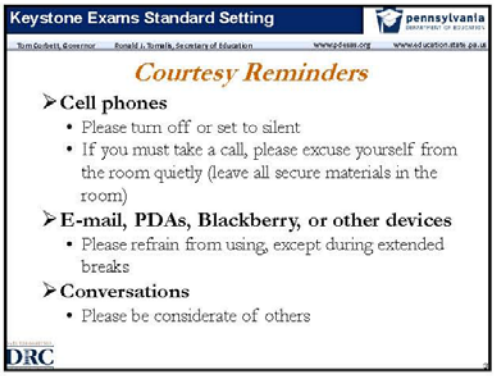
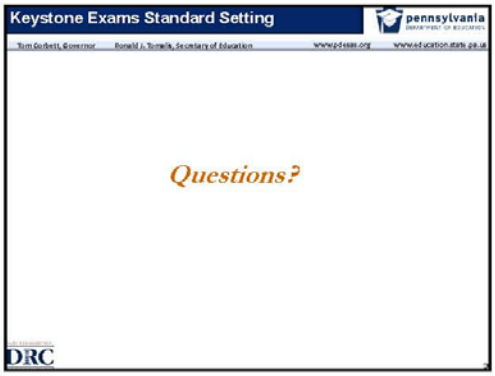
Comments and Observations

- 3 x 5 index cards will be on each table
- Any comments or observations you wish to convey that are outside the scope of this meeting may be written on index cards
- Cards will be collected, reviewed by DRC staff, and summarized for PDE

DRC

Appendix E

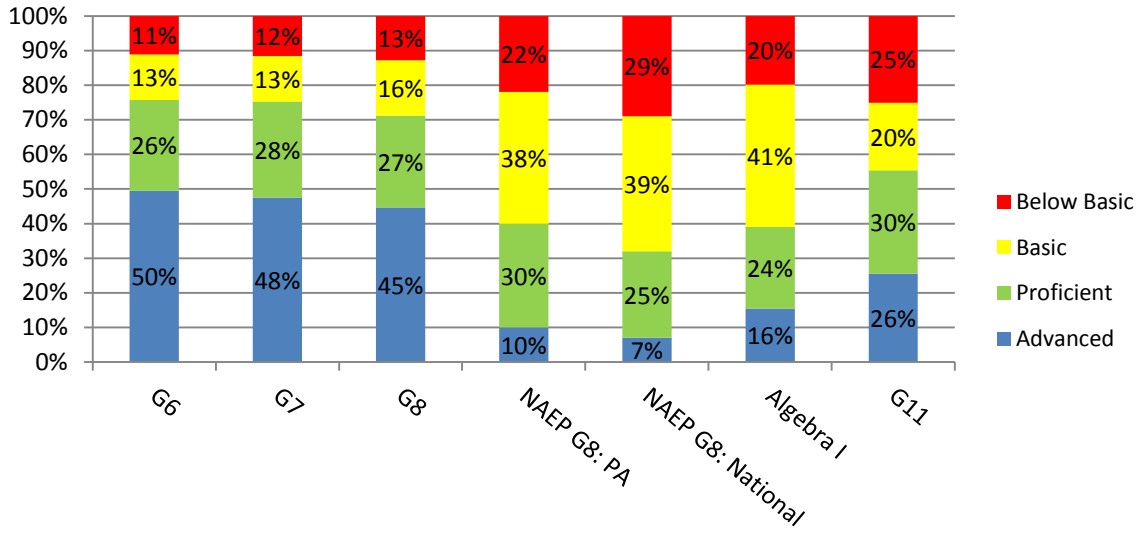

Keystone Exams Standard Setting
pennsylvania
Courtesy Reminders
Cell phones
Please turn off or set to silent
If you must take a call, please excuse yourself from the room quietly (leave all secure materials in the room)
E-mail, PDAs, Blackberry, or other devices
Please refrain from using, except during extended breaks
Conversations
Please be considerate of others
DRC


Keystone Exams Standard Setting
pennsylvania
Questions?
DRC

Appendix E

EXTERNAL DATA

ALGEBRA I

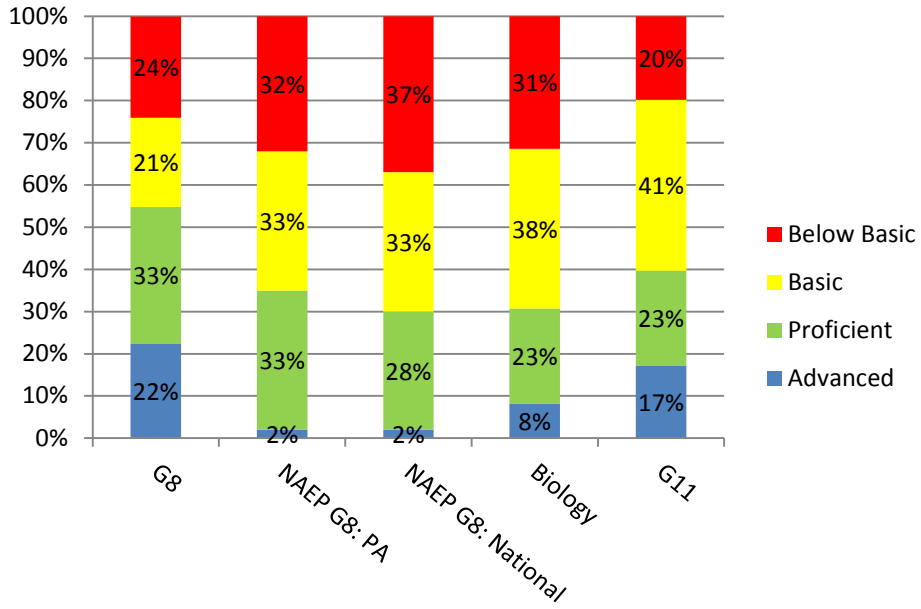


Performance Level	PSSA			NAEP Math		KE	PSSA
	G6	G7	G8	NAEP G8: PA	NAEP G8: National	Algebra I	G11
Below Basic	11.1%	11.6%	12.8%	22.0%	29.0%	19.8%	25.1%
Basic	13.2%	13.1%	16.0%	38.0%	39.0%	41.2%	19.5%
Proficient	26.2%	27.8%	26.6%	30.0%	25.0%	23.5%	29.8%
Advanced	49.5%	47.5%	44.7%	10.0%	7.0%	15.5%	25.5%
Below Basic + Basic	24.3%	24.7%	28.8%	60.0%	68.0%	61.0%	44.8%
Proficient + Advanced	**75.7%**	**75.3%**	**71.3%**	**40.0%**	**32.0%**	**39.0%**	**55.3%**
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0 %
Total N	128,421	132,803	135,909	3,600	161,700	93,703	135,676

College Ready - Yes
Projected
0.9%
7.8%
42.2%
91.2%
4.0%
64.9%
38.1%
61,118

SAT Math: College Ready - Yes	
PA	National
51.7%	54.0%
65,426	N/A

BIOLOGY

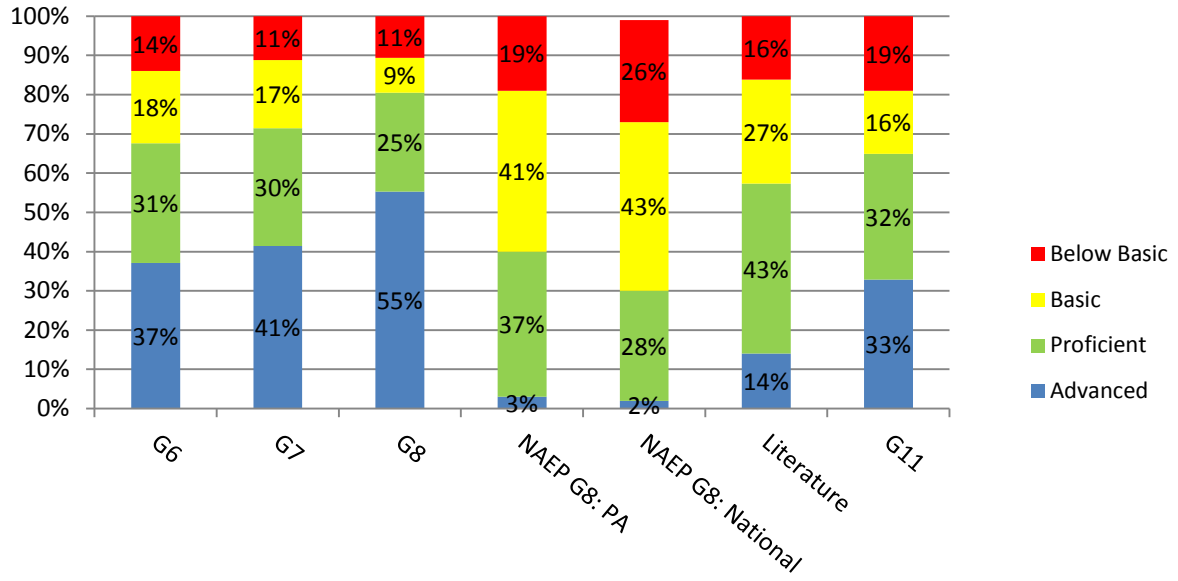


Performance Level	PSSA	NAEP Science		KE	PSSA
	G8	NAEP G8: PA	NAEP G8: National	Biology	G11
Below Basic	24.0%	32.0%	37.0%	31.4%	19.8%
Basic	21.1%	33.0%	33.0%	37.9%	40.5%
Proficient	32.5%	33.0%	28.0%	22.6%	22.5%
Advanced	22.3%	2.0%	2.0%	8.1%	17.2%
Below Basic + Basic	45.1%	65.0%	70.0%	69.3%	60.3%
Proficient + Advanced	**54.8%**	**35.0%**	**30.0%**	**30.7%**	**39.7%**
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%
Total N	134,969	3,600	151,100	46,394	131,534

College Ready - Yes
Projected
1.4%
9.1%
45.9%
86.6%
6.6%
63.8%
29.4%
60,311

SAT Total: College Ready - Yes	
PA	National
38.7%	43.0%
65,426	N/A

LITERATURE



Performance Level	PSSA			NAEP Reading		KE	PSSA
	G6	G7	G8	NAEP G8: PA	NAEP G8: National	Literature	G11
Below Basic	14.0%	11.2%	10.6%	19.0%	26.0%	16.2%	19.0%
Basic	18.4%	17.4%	8.9%	41.0%	43.0%	26.5%	16.0%
Proficient	30.5%	30.0%	25.2%	37.0%	28.0%	43.3%	32.1%
Advanced	37.1%	41.4%	55.3%	3.0%	2.0%	14.0%	32.9%
Below Basic + Basic	32.4%	28.6%	19.5%	60.0%	69.0%	42.7%	35.1%
Proficient + Advanced	**67.6%**	**71.4%**	**80.5%**	**40.0%**	**30.0%**	**57.3%**	**64.9%**
Total Percent	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total N	128,284	132,641	135,739	3,500	160,900	42,292	135,470

College Ready - Yes
Projected
1.2%
4.7%
24.8%
76.7%
2.7%
51.1%
34.5%
61,081

SAT Critical Reading: College Ready - Yes	
PA	National
46.4%	50.0%
65,426	N/A