2018-2019 LEAP Connect
Operational Technical Report
English Language Arts and Mathematics

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Contents

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INTRODUCTION

Louisiana believes that all students, including those with significant cognitive disabilities, deserve an education that prepares them to be independent and successful in life after high school. Through quality and clear alignment of standards, instructional resources, and assessments, students can achieve academically and leave high school with the requisite skills for lifelong success. The goal is that students will continue to achieve increasingly higher academic outcomes and leave high school capable of pursuing postsecondary options. The purposes of this assessment include, but are not limited to: permitting educators and parents to track student progress toward college, career, and community readiness; measuring students' academic achievement; providing defensible scores that can be used for school accountability decisions and program evaluation; and providing reporting structures that support appropriate interpretation and use of data in support of improving practices that will result in higher student achievement. In 2017, the Louisiana State Board of Elementary and Secondary Education (BESE) adopted the new Louisiana Connectors for students with significant cognitive disabilities, replacing the previous academic standards, the Extended standards. The Louisiana Connectors for Students with Significant Cognitive Disabilities are fully aligned to the Louisiana Student Standards and are not separate from the expectations for all students. Teachers provide inclusion opportunities whenever possible and help students to access grade-level academic content and skills. The Connectors represent the "big ideas" of the content and skills found in the Louisiana Student Standards. Teachers of students with significant cognitive disabilities focus instruction around those Connectors. Alignment and modifications in the test and item format allow students with significant cognitive disabilities who are served under IDEA to participate in academic assessments that are sensitive to measuring progress in their learning. Specific statutes governing this work include R.S. 17:24.4(F) (3) and R.S.17:183.1–17:183.3.

The LEAP Connect assessments are aligned to the K-12 Louisiana Connectors for Students with Significant Cognitive Disabilities and provide built-in supports, which are discussed in more detail in the Test Administration section that follows (under Accommodations). LEAP Connect assessments are alternate assessments for those students who cannot participate in LEAP 2025 assessments with accommodations. The assessments provide access to the statewide assessment system and are intended to measure student progress while participating in high-quality standards-based content. In the spring of 2019, the LEAP Connect assessments replaced the LEAP Alternate Assessments, Level 1 (LAA 1) for English language arts (ELA) and mathematics (Math) in grades 3-11.

TEST CONTENT

The test content used for the LEAP Connect assessments was purchased from edCount Management and developed by the National Center and State Collaborative (NCSC) who initially administered the NCSC Alternate Assessments operationally in 2015. Details regarding the item and test development of the NCSC Alternate Assessments can be found in the *National Center and State Collaborative 2015 Operational Assessment Technical Manual* (NCSC, 2016). As reported by NCSC (NCSC, 2016), care was given to ensure that items sampled grade-level content, incorporated Universal Design of Learning principles, and used response formats appropriate for the testing audience. Additionally NCSC (NCSC, 2016) details their item review process, which incorporated input from content and special education

experts, the pilot test of items to examine student performance and the scoring processes, and a data review to evaluate the technical quality of items.

The LEAP Connect ELA and math assessments are aligned to the Louisiana Student Standards and the Louisiana Connectors. The LEAP Connect assessments, consisting mostly of selected-response items, are written at four levels of complexity, or Tier, and administered online. Test questions are built as item families where each tier in the family addresses both the content complexity and the degree of scaffolding and support provided with the questions. Each item family provides four increasingly complex versions (questions) referred to as
   • Tier 4 (most complex),
   • Tier 3 (less complex than Tier 4),
   • Tier 2 (less complex than Tier 3), and
   • Tier 1 (least complex).

To access the age- and grade-appropriate general curriculum content and to build skills and knowledge in math and ELA, students with significant cognitive disabilities often need adaptations, scaffolds, and supports. During instruction, in response to students' progress in their current level of understanding and with specific use of evidence-based methods of teaching, students gradually move to more complex learning, needing progressively fewer scaffolds and supports. For students to accurately demonstrate what they know and can do, these age- and grade-appropriate adaptations, scaffolds, and supports also need to be present within the assessment process itself. The test questions incorporate important aspects of item design related to both varying levels of cognitive complexity and the degree and type of scaffolds and supports.

The online assessments are designed to be administered one-on-one to students by test administrators. The passages, items, and response options are read to the student by the online testing platform or a test administrator. The LEAP Connect assessments permit student-specific accommodations, such as assistive technology for student response modes.

ELA

The ELA content covered by the LEAP Connect assessments measured foundational reading skills (at grades 3 and 4), writing, vocabulary, and comprehension of varied text types that are age- and grade-appropriate.

Reading items assessed students' developing use of vocabulary and reading skills, using both literary and informational texts in grade-appropriate contexts. The literature items focused on beginning comprehension skills, such as describing characters in a story, as well as more advanced comprehension skills, such as analyzing the development of theme. The informational items focused on evidence pieces, for example, identifying the purpose of charts and diagrams as well as integrating information from multiple sources of information. Writing items assessed students' developing writing skills and focused on different types of writing—narrative, explanatory, or argument—at different grade levels.

All items allowed for responses that were either verbal or nonverbal. Students with clear and consistent oral speech were administered the open-response (OR) foundational reading items (verbal form). Students using communication other than oral speech, such as Augmentative and Alternative Communication (AAC) devices, American Sign Language, braille, or eye gaze were administered selected-response (SR) foundational reading items (nonverbal form).

At grades 3 and 4, foundational reading items included the assessment of early decoding skills (e.g., independently identifying a grade-level word). Students were presented with five foundational reading items. Test administrators indicated in the online test whether students correctly identified the word. Correctly identifying four or five items earned the student one point for the set of items.

Table 1 summarizes the test sessions of the LEAP Connect assessments. Sessions 1 and 2 consisted of literary and informational reading passages, associated selected-response (SR) reading items, and verbal or nonverbal foundational reading items (grades 3 and 4 only). Session 3 consisted of selected-response (SR) writing items. Session 4 consisted of one constructed-response (CR) field-test writing item. Field-test items did not count toward a student's final score, but are used to provide information to help develop future test forms.

Table 1. 2018-2019 ELA LEAP Connect Test Sessions

Test Session	Focus of Session	Grade Level	Type (Number) of Passages	Type (Number) of Operational Items*	Type (Number) of Field Test Items*
Session 1	Reading	Grades 3-4	Literary (2) Informational (1)	SR (16-17); OR (5)	SR (0-5)
		Grade 5	Literary (2) Informational (2)	SR (18-20)	SR (0-5)
		Grades 6-8	Literary (1) Informational (2)	SR (16-17)	SR (0-5)
		Grade 11	Literary (1) Informational (3)	SR (19)	SR (0-5)
Session 2	Reading	Grades 3-4	Literary (1) Informational (1)	SR (9-11); OR (5)	SR (0-5)
		Grade 5	Literary (1) Informational (1)	SR (11-20)	SR (0-5)
		Grades 6-8	Literary (1) Informational (2)	SR (12-16)	SR (0-5)
		Grade 11	Literary (1) Informational (1)	SR (10-13)	SR (0-5)
Session 3	Writing	Grades 3-4	N/A	SR (8-10)	N/A
		Grade 5	N/A	SR (8)	N/A
		Grades 6-8	N/A	SR (9-10)	N/A
		Grade 11	N/A	SR (10)	N/A
Session 4	Writing	Grades 3-4	N/A	N/A	CR (1)
		Grade 5	Literary (1)	N/A	CR (1)
		Grades 6-8	Informational (1)	N/A	CR (1)
		Grade 11	Informational (1)	N/A	CR (1)

*SR = Selected Response; OR = Open Response; CR = Constructed Response

Mathematics

The math content covered by the LEAP Connect assessments in the elementary grades focused on whole number operations and relations, spatial relations, and measurement. In the middle school grades, the focus was on problem solving and reasoning. High school focused on number and quantity as well as Algebra I and Geometry course content. Sessions 1 and 2 consisted of selected-response (SR) items and constructed-response (CR) completion items (in grades 3–5, 8, and 11). The forms included field-test items. Field-test items did not count toward a student's final score, but are used to provide information to help develop future test forms. Table 2 shows the total number of items for each item type by grade.

Table 2. 2018-2019 Mathematics LEAP Connect Test Sessions

Test Session	Grade Level	Type (Number) of Operational Items*	Type (Number) of Field Test Items*
Session 1	Grade 3	SR (19); CR (2)	N/A
	Grade 4	SR (18); CR (2)	SR (2)
	Grade 5	SR (19); CR (1)	SR (1)
	Grade 6	SR (20)	N/A
	Grade 7	SR (20)	SR (1)
	Grade 8	SR (19); CR (1)	N/A
	Grade 11	SR (19); CR (1)	SR (1)
Session 2	Grade 3	SR (18); CR (1-2)	SR (5)
	Grade 4	SR (16); CR (3-4)	SR (5)
	Grade 5	SR (19); CR (1)	SR (4)
	Grade 6	SR (20)	SR (5)
	Grade 7	SR (20)	SR (5)
	Grade 8	SR (19-20); CR (1)	SR (5)
	Grade 11	SR (19); CR (1)	SR (5)

*SR = Selected Response; CR = Constructed Response

TEST ADMINISTRATION

The LEAP Connect assessments are administered as computer-based tests (CBT). The test administrator provides a one-to-one test administration using the online test platform DRC INSIGHT. All passages, items, and response options are designed to be read to the student through text-to-speech or by the test administrator. DRC INSIGHT's standard text-to-speech (TTS) provided students with a consistent audio presentation throughout the test, including test directions, and across all test content. This included INSIGHT's audio follow-along feature, which highlights the text as it is read by the TTS voice.

Procedures and guidelines

The *LEAP Connect Test Administration Manual* was developed to describe the following assessment administration procedural details:

- assessment overview and design;
- test security and student confidentiality;
- participation criteria;

- testing schedule;
- assessment materials;
- administrator responsibilities;
- administration steps (before and after testing);
- student response check; and
- online tools training.

In addition to the test administration manual, the test administrators also received the *Directions for Test Administration* (DTA) for each assessment administered. The DTA provided specific instructions for administration of the test, including scripts with exact wording to be read and instructions on when and how to use additional testing materials.

The LDOE provided professional-development workshops for LEAP Connect test administrators. This training provided an overview of the assessment including the purpose of the LEAP Connect assessments, assessment designs, procedures for administering the assessments, test accommodations, and additional resources regarding the assessments.

Accommodations

The LEAP Connect assessments are designed with several built-in supports, which include:

- reduced length for ELA reading passages;
- pictures and other graphics to help students maintain engagement and better understand the text;
- models to help focus students during the math assessments;
- common geometric shapes and numbers with lower place value on the math assessments;
- audio for all assessment content through computer (TTS) or script for read-aloud by test administrator;
- detailed directions and reference materials for test administrators to provide item-level support;
- untimed test that can be paused and spread throughout the testing window;
- test administrator facilitated supports such as scribing, recording answers, and utilizing manipulatives; and
- test design that allows for both verbal and nonverbal responses.

The student may provide responses to SR and CR items using their preferred mode(s) of communications, determined by the Student Response Check (SRC). The SRC was a 3-question task administered weeks before the actual test administration in the Online Testing Tool (OTT) platform (requires Google Chrome Browser). The student was asked to demonstrate his or her preferred modes(s) of communication. The purpose of the SRC was to ensure that a test administrator could clearly identify which answer a student indicated in response to a SR test item. If the response was not observable, then the TA did not enter the response.

Additional accommodations were applicable if listed on a student's IEP. These included a calculator, assistive technology, large print, paper-based, braille (for grades 3 and 4 foundational reading items only), and "response" accommodation (i.e., "answers recorded" and "transferred answers"). If test accommodations breach test security they invalidate the meaning of the test score and the purpose of each test item.

Further guidance can be found in the *Accommodations and Accessibility Features User Guide*.

Participation requirements and documentation

A student meets the criteria for participation in the LEAP Connect assessments if the student:

- has a disability that significantly impacts cognitive function and/or adaptive behavior and requires extensive modified instruction aligned with the state Louisiana Connectors for Students with Significant Cognitive Disabilities to acquire, maintain, and generalize skills;
- is enrolled in grades 3-8 and 11; and
- meets LEAP Connect assessments participation requirements as determined annually through the Individual Education Plan (IEP).

Annual completion of the LEAP Alternative Assessment Participation Criteria form is required to make assessment decisions. This annual assessment decision must be documented on the student's IEP, and the LEAP Alternative Assessment Participation Criteria form must be attached to the IEP.

Administration schedule

The LEAP Connect assessments are not timed and may be administered over several days or weeks during a multi-week testing window, which is usually from February through mid-March. The 2019 Test Administration window was February 4 through March 15.

Test security

Maintaining the security of all test materials is crucial to preventing the possibility of random or systematic errors, such as unauthorized exposure of test items that would affect the valid interpretation of test scores. Test security procedures are discussed throughout the *LEAP Connect Test Coordinators' Manual* and *LEAP Connect Test Administration Manual*.

Test coordinators and administrators are instructed to keep all test materials in locked storage, except during actual test administration, and access to secure materials must be restricted to authorized individuals only (e.g., test administrators and the school test coordinator). During testing sessions, the test coordinators are directly responsible for test security and must account for all test materials and supervise the test administrators at all times.

REPORTING

Scoring

The LEAP Connect assessments ELA SR items were scored by the online assessment system as correct or incorrect, and the majority of the items contributed a score of 0 or 1 to the content area raw score. The SR items for the Tier 1 Writing multi-part selected-response sets included 4, 5, or 6 items, worth a maximum of two points per set, with full credit being awarded for three or more correct responses and partial credit (one point) being awarded for either one or two correct responses. Students in grades 3 and 4 were administered two sets of Foundational Reading items. These word identification tasks consisted of sets of five items, with each set worth a maximum of one point, awarded for either four or five correct responses. Students with clear and consistent oral speech received the open-response (OR) Foundational Reading items. These students verbally responded to each item within the set and the Test

Administrator recorded either that the student had responded correctly or that the student had responded incorrectly for each item within the set in the online assessment system, which then provided an overall score for the set based on the number of correct responses. Students using communication other than oral speech, such as Augmentative and Alternative Communication devices, American Sign Language, braille, or eye gaze, were administered the SR Foundational Reading items that assessed the same skills as the OR Foundational Reading items in a multiple-choice format. These items were also scored as a set, with four or five correct responses receiving one point.

In mathematics, students were administered SR items worth one point each and constructed-response (CR) items also worth one point each. The CR items required students to construct an answer rather than selecting from response options. Each item was presented to the student in a standardized, scripted sequence of steps that culminated in the Test Administrator scoring the student performance and recording the student score (either correct or incorrect) in the online assessment system.

Reports

Each student who took the LEAP Connect assessments received an individual report detailing:

- content performance score;
- content achievement level; and
- content-specific achievement-level descriptors (ALDs).

This information indicated if a student "passed." If the ALDs were used to interpret the level, specifics regarding the student's ability to perform certain skills in ELA and math were also provided. Results are used to make instructional decisions and to decide what supports are needed for additional learning. Descriptions of the student scores are provided and their appropriate uses found in the *Interpretive Guide: LEAP Connect*.

The following reports are provided to Louisiana schools and districts for LEAP Connect assessments:

- Student Report
- School Roster Report

The reports were made available online in May 2019 in DRC's eDIRECT Assessment Portal to be downloaded and printed by the school system and school.

OPERATIONAL DATA ANALYSES

Classical Item Analyses

Test-Level Statistics

Table 3 summarizes the number of items, total score points, mean and standard deviations of the raw scores, and average form difficulty for each test form at each grade level of the LEAP Connect assessments. Form difficulty was calculated by dividing the raw score of the student by the total score points of the test. The average form difficulty for ELA ranged from 0.54 for the verbal grades 3 and 5 forms to 0.76 on the grade 11 form. Average form difficulty for Math ranged from 0.51 for grade 5 to 0.61 for grade 7.

Table 3. Means and Standard Deviations for Raw Score and Form Difficulty

Content	Grade	N of Items	Total Points	Raw Score		Form Difficulty	
				Mean	Std Dev	Mean	Std Dev
ELA	3 NV	45	46	20.47	5.03	0.65	0.18
	3 V	45	46	12.85	7.47	0.54	0.14
	4 NV	44	45	20.10	5.80	0.63	0.14
	4 V	44	45	13.09	8.21	0.54	0.13
	5	33	34	18.38	6.40	0.66	0.16
	6	34	35	19.86	6.98	0.70	0.13
	7	34	35	19.73	6.42	0.72	0.14
	8	36	37	21.09	6.70	0.72	0.15
	11	33	34	19.91	6.26	0.76	0.17
Math	3	35	35	20.80	6.34	0.55	0.11
	4	33	33	18.14	5.85	0.53	0.13
	5	35	35	16.97	6.77	0.51	0.13
	6	35	35	19.80	7.64	0.60	0.14
	7	34	34	19.93	8.00	0.61	0.13
	8	35	35	19.44	7.96	0.59	0.11
	11	34	34	18.00	7.61	0.56	0.12

Item-Level Statistics

Table 9 presents the number of items, mean, and standard deviations of the item *p*-values and item-total correlations (i.e., item discrimination values) for each test form at each grade level of the ELA and math assessments.

The mean *p*-value is the average of all item *p*-values of a specific grade and content area. The mean item-total correlation is the average of all item biserial correlations of a specific grade and content area.

Table 4. Means and Standard Deviations for *p*-values and Item-Total Correlations

Content	Grade	N of Items	Item *p*-value				Item-Total Correlation			
			Min	Max	Mean	Std Dev	Min	Max	Mean	Std Dev
ELA	3 NV	45	0.34	0.94	0.65	0.17	0.07	0.49	0.29	0.10
	3 V	45	0.26	0.82	0.53	0.14	-0.07	0.46	0.22	0.12
	4 NV	44	0.41	0.89	0.63	0.14	0.03	0.54	0.30	0.12
	4 V	44	0.30	0.82	0.54	0.12	0.03	0.50	0.27	0.10
	5	33	0.33	0.90	0.65	0.16	-0.08	0.47	0.30	0.11
	6	34	0.41	0.95	0.70	0.12	0.04	0.56	0.35	0.13
	7	34	0.45	0.96	0.71	0.13	0.01	0.52	0.33	0.11
	8	36	0.38	0.97	0.72	0.15	0.16	0.49	0.32	0.08
	11	33	0.24	0.97	76	0.16	-0.05	0.58	0.36	0.14
Math	3	35	0.35	0.76	0.55	0.11	0.09	0.49	0.31	0.10
	4	33	0.25	0.80	0.53	0.13	0.10	0.47	0.27	0.11
	5	35	0.29	0.80	0.51	0.13	0.06	0.44	0.25	0.10
	6	35	0.35	0.87	0.60	0.14	0.07	0.46	0.31	0.10
	7	34	0.39	0.92	0.61	0.13	0.22	0.48	0.37	0.07
	8	35	0.34	0.84	0.59	0.11	0.15	0.48	0.35	0.09
	11	34	0.39	0.85	0.56	0.12	0.03	0.53	0.33	0.12

Appendix A presents the item statistics for each item included in the operational test forms by grade for ELA and math. The tables include the item number, item type, maximum point value, adjusted student count (which excludes omits), *p*-value, item-total correlation, omit rates, and the proportion of students at each score point if a CR item or percentage of students selecting each option if an SR item.

p-Value

The *p*-value is a measure of item difficulty. For a selected-response (SR) item, the *p*-value is calculated from the number of students who correctly responded to an item divided by the total number of students who attempted the item. The value is reported as a proportion. For a non-SR item, the *p*-value is calculated from the average score for the item divided by the maximum points possible. This value is also reported as a proportion.

In terms of *p*-values, test scores tend to be more precise when their average *p*-values are in the low-0.50s to mid-0.70s. However, it is important to select items on the basis of content rather than on purely statistical criteria when building a criterion-referenced test.

It is important that one examines the range of *p*-values, not just the average *p*-value, to determine whether a test measures well. It is desirable for the test to measure well throughout the range of skills present at a given grade. That is, it is important that the items measure the performance of both low-scoring and high-scoring students, as well as students in the center of the distribution. Having a range of *p*-values also helps to prevent floor and/or ceiling effects so that the test does not have large numbers of students at the minimum or maximum possible scores. The ELA forms have items with *p*-values ranging from 0.24 to 0.97 across all grade levels. The *p*-values on the math forms range from the 0.25 to 0.92. Such a broad range of *p*-values, which indicates the items measure well throughout the range of skills at a given grade, supports the accuracy of the LEAP Connect test scores.

Item-Total Correlations

An item-total correlation is the correlation between an item and the total test score, where the item score is not included in the total score. It indicates how well an item differentiates between low-scoring and high-scoring students. In general, items with correlations below 0.20 are said to be poorly discriminating. The majority of the items in the LEAP Connect assessment had item-total correlations above this threshold. Any item with an item-total correlation below the 0.20 threshold was further analyzed to ensure that the item was correctly keyed.

Item Response Theory

Item parameters were estimated using the two-parameter logistic (2PL) model for dichotomous (selected-response) items. For details regarding the methodology applied, see the *National Center and State Collaborative 2015 Operational Assessment Technical Manual* (NCSC, 2016).

PERFORMANCE STANDARDS AND SCALING

Cut points for the LEAP Connect assessments in ELA and math were set in August 2015 as part of the National Center and State Collaborative (NCSC) Alternate Assessments. Details of the standard-setting procedures can be found in the standard-setting report (Measured Progress, 2015; please request this report from LDOE) as well as the *National Center and State Collaborative 2015 Operational Assessment Technical Manual* (NCSC, 2016). The cuts established at those meetings will remain fixed unless the standards upon which the LEAP Connect assessments are revised. Table 5 shows the achievement level cuts on the scale score based upon the standard setting.

A fundamental score on any test is the raw score, which is the total score points earned. However, the raw score alone does not present a wide-ranging picture of test performance because it is not on an equal-interval scale and can be interpreted only in terms of a particular set of items. When new test forms are administered in subsequent administrations, other types of scores derived from raw scores should be used to compensate for any differences in item difficulty of the items and to allow direct comparisons of student performance across administrations. These other types of scores are scale scores. Since the LEAP Connect assessments administered by the LDOE in 2019 were intact forms created by NCSC, that scale score system was used. For detailed information regarding the creation and application of the scale, see the *National Center and State Collaborative 2015 Operational Assessment Technical Manual* (NCSC, 2016). The established raw-to-scale-score tables are included in Appendix B of this report. Grades 3 and 4 ELA have verbal and nonverbal forms, which use the same raw-to-scale-score table.

Table 5. ELA and Mathematics Scale-Score Ranges

English Language Arts							
Achievement Level	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 11**
Level 4	1251-1290	1258-1290	1256-1290	1253-1290	1255-1290	1250-1290	1255-1290
Level 3	1240-1250	1240-1257	1240-1255	1240-1252	1240-1254	1240-1249	1240-1254
Level 2	1234-1239	1234-1239	1232-1239	1231-1239	1236-1239	1230-1239	1236-1239
Level 1	1200-1233	1200-1233	1200-1231	1200-1230	1200-1235	1200-1229	1200-1235
Mathematics							
Achievement Level	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 11**
Level 4	1254-1290	1251-1290	1255-1290	1249-1290	1254-1290	1249-1290	1249-1290
Level 3	1240-1253	1240-1250	1240-1254	1240-1248	1240-1253	1240-1248	1240-1248
Level 2	1236-1239	1233-1239	1231-1239	1234-1239	1232-1239	1234-1239	1234-1239
Level 1	1200-1235	1200-1232	1200-1230	1200-1233	1200-1231	1200-1233	1200-1233

TEST RESULTS

Table 6 summarizes the percentages of students at each achievement level across subject and grades. See Appendix C for test results for population categories.

Table 6. Percentage of Students at Achievement Level

English Language Arts							
Achievement Level	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 11**
Level 4	22.67	10.14	21.82	22.85	33.69	35.92	24.54
Level 3	34.55	35.10	38.08	25.24	31.15	20.12	36.81
Level 2	13.16	19.03	25.61	27.75	13.61	26.36	16.15
Level 1	29.62	35.73	14.50	24.16	21.55	17.61	22.50
Mathematics							
Achievement Level	**Grade 3**	**Grade 4**	**Grade 5**	**Grade 6**	**Grade 7**	**Grade 8**	**Grade 11**
Level 4	21.18	22.81	19.76	32.79	34.45	40.40	34.47
Level 3	34.07	33.75	33.02	23.97	29.54	23.92	23.80
Level 2	17.86	16.56	30.72	21.79	24.83	19.20	24.97
Level 1	26.89	26.88	16.51	21.46	11.19	16.48	16.76

RELIABILITY

Test Reliability

The reliability of raw scores by test form was evaluated using Cronbach's (1951) coefficient alpha, which is a lower-bound estimate of test reliability. The reliability coefficient is a ratio of the variance of true test scores to the variance of the total observed scores, with the values ranging from 0 to 1. The closer the value of the reliability coefficient is to 1, the more consistent the scores, where 1 refers to a perfectly consistent test. In general, reliability coefficients that are equal to or greater than 0.8 are considered acceptable for tests of moderate length.

Cronbach's coefficient alpha was computed using the formula

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum_{i=1}^{n} \sigma_i^2}{\sigma_X^2}\right],$$

(1)

where n is the number of items on the test, σ_i^2 is the variance of item i, and σ_X^2 is the variance of the total test score.

Total test reliability measures, such as Cronbach's coefficient alpha and SEM, consider the consistency (i.e., reliability) of performance over all test questions in a given form, the results of which imply how well the questions measure the content domain and could continue to do so over repeated administrations. The number of items in the test influences these statistics; a longer test can be expected to be more reliable than a shorter test.

The reliability coefficients for the LEAP Connect assessment are reported in Table 7. The reliability statistics ranged from 0.89 to 0.95 for all ELA forms. For math, the reliabilities ranged from 0.84 to 0.90. These results indicate acceptable reliability coefficients for the LEAP Connect assessments.

Standard Error of Measurement

The reliability of reported test scores can be characterized by the standard errors associated with the scores. The standard error of measurement (SEM) may be used to determine the range within which a student's true score is likely to fall. An observed score should be regarded not as a student's true score but as an estimate of a student's true score. It is expected that the score a student obtains from a single test administration would fall within one SEM of the student's true score 68% of the time and within approximately two SEMs of the true score 95% of the time. The SEM is an index of the random variability in test scores and is defined as follows:

$$\text{SEM} = SD\sqrt{1 - R_{xx'}},$$

(2)

where SD represents standard deviation of the raw score distribution, and $R_{xx'}$ is estimated by $\hat{\alpha}$ as expressed in Equation 1.

The SEM at the test-form level was computed in raw score metric and is also presented Table 7 for ELA and math.

Table 7. Reliability and SEM

Content Area	Grade	Number of Items	Number of Score Points	SEM	Cronbach's Alpha	N-Count
ELA	3 NV	45	46	2.77	0.90	341
	3 V	45	46	2.84	0.94	206
	4 NV	44	45	2.87	0.90	421
	4 V	44	45	2.79	0.95	220
	5	33	34	2.43	0.89	738
	6	34	35	2.41	0.91	919
	7	34	35	2.36	0.91	1021
	8	36	37	2.41	0.91	994
	11	33	34	2.17	0.92	843
Math	3	35	35	2.60	0.90	543
	4	33	33	2.56	0.87	640
	5	35	35	2.68	0.84	739
	6	35	35	2.57	0.89	918
	7	34	34	2.47	0.90	1018
	8	35	35	2.60	0.89	995
	11	34	34	2.59	0.88	841

Conditional Standard Error of Measurement

In contrast to SEM, conditional standard error of measurement (CSEM) expresses the degree of measurement error in scale score units and is conditioned on the ability of the student. The CSEMs are defined as the reciprocal of the square root of the test information function and can be estimated across all points of the ability continuum (Hambleton & Swaminathan, 1985):

$$\text{CSEM}(\theta_i) = \frac{1}{\sqrt{I(\theta_i)}},$$
(9.3)

where $I(\theta i)$ is the test information function, as a sum of item information function 2, obtained as

$$I(\theta_i) = \sum_j \frac{p'_{ij}(\theta_i)^2}{p_{ij}(\theta_i)q_{ij}(\theta_i)},$$

$$(9.4)$$

where $p'_{ij}(\theta_i)$ is the derivative of $p_{ij}(\theta_i)$ and $q_{ij}(\theta_i) = 1 - p_{ij}(\theta_i)$.

Note that the CSEMs vary in magnitude across the entire range of student ability estimates (i.e., scale scores) and are smaller in the middle of the score distribution and higher at the tails. This pattern is expected when IRT methods are used. The CSEMs at the four cut scores that define the performance levels are presented in presented in Table 8.

Table 8. Conditional Standard Errors of Measurement at Cut Scores

		Level 2		Level 3		Level 4	
Content Area	Grade	Cut Score	CSEM	Cut Score	CSEM	Cut Score	CSEM
ELA	3 NV	1235	3	1240	3	1252	4
	3 V	1235	3	1240	3	1252	4
	4 NV	1234	3	1241	3	1261	7
	4 V	1234	3	1241	3	1261	7
	5	1232	4	1240	4	1258	7
	6	1231	4	1242	5	1255	7
	7	1236	3	1240	4	1255	7
	8	1230	3	1241	5	1250	6
	11	1235	2	1240	3	1252	6
Math	3	1236	4	1241	4	1255	5
	4	1234	5	1240	5	1253	6
	5	1231	5	1242	5	1256	6
	6	1235	4	1241	4	1250	5
	7	1232	5	1241	5	1254	5
	8	1234	5	1241	5	1250	5
	11	1235	5	1242	4	1250	4

Reliability for Subgroups

Reliability estimates for demographic groups based on gender, ethnicity/race, economically disadvantaged status, English learner status, and migrant status were computed and reported in Appendix D for groups with 10 or more students. Results show fairly high reliability indices for all populations, which indicates that the LEAP Connect assessments are not only reliable for the population as a whole but are also reliable for subpopulations.

Classification Accuracy and Consistency

Decision accuracy, or classification accuracy, is defined as the extent to which the actual classifications of test takers into various achievement levels agree with classifications made on the basis of their true scores (Livingston & Lewis, 1995). Decision accuracy refers to the agreement between the observed score and the true score, whereas decision consistency refers to the agreement between two observed scores.

Decision consistency, or classification consistency, is defined as the extent to which the classifications of students in an achievement level agree based on two independent administrations of the test or one administration of two parallel test forms. It is often logistically infeasible, as well as expensive, to obtain data from repeated administrations of a test, be it re-administration of the same test or administration of a parallel form. Therefore, a common practice is to estimate decision consistency from one administration of a test.

The Livingston-Lewis (1995) methodology was used to calculate decision accuracy statistics based on the 2019 LEAP Connect assessment results. The Livingston-Lewis procedure utilizes a beta-binomial model that requires two steps: (1) fitting proportion-correct true scores to a four-parameter beta distribution and (2) using the binomial distribution to estimate classification accuracy and consistency. All calculations for decision accuracy and consistency are based on census data.

Classification consistency and accuracy conditioned on performance level (see Table 9) and on cut score (see Table 10) are presented for the 2019 LEAP Connect assessments. The magnitude of classification consistency and accuracy measures is influenced by several key features of the test design, including the number of items, the location and number of cut scores, the score distribution, and the reliability and associated SEM. For some grades, classification accuracy and consistency conditioned on *Level 4* were low and even at 0.00. One reason for these results is the assessments include few highly difficult items to distinguish *Level 4* from other performance levels, and therefore, there were no students with true score level of *Level 4*, which represents high performing students. As can be seen in Table 9, not including the grades with 0.00, the classification accuracy conditioned on achievement level ranged from 0.40 to 0.95 for ELA and 0.38 to 0.87 for math. Classification consistency conditioned on achievement level ranged from 0.02 to 0.92 for ELA and 0.28 to 0.84 for math. Classification consistency and accuracy at achievement cut points tend to be higher values than those conditioned on performance level.

Table 8. Decision Accuracy and Consistency at Level of Achievement

Content Area	Grade	Accuracy				Consistency			
		Level 1	Level 2	Level 3	Level 4	Level 1	Level 2	Level 3	Level 4
ELA	3 NV	0.81	0.54	0.79	0.79	0.78	0.41	0.69	0.71
	3 V	0.93	0.40	0.89	0.00	0.91	0.34	0.75	0.02
	4 NV	0.84	0.62	0.83	0.63	0.78	0.48	0.74	0.60
	4 V	0.95	0.54	0.86	0.00	0.92	0.42	0.77	0.02
	5	0.85	0.61	0.92	0.00	0.83	0.48	0.64	0.39
	6	0.88	0.64	0.89	0.00	0.85	0.54	0.55	0.39
	7	0.88	0.46	0.59	0.72	0.85	0.33	0.54	0.56
	8	0.88	0.64	0.43	0.81	0.84	0.54	0.36	0.66
	11	0.90	0.51	0.95	0.00	0.87	0.42	0.71	0.27
Math	3	0.87	0.41	0.72	0.77	0.84	0.28	0.62	0.67
	4	0.86	0.38	0.65	0.71	0.83	0.29	0.52	0.60
	5	0.78	0.61	0.67	0.68	0.75	0.45	0.52	0.63
	6	0.85	0.47	0.61	0.84	0.81	0.37	0.45	0.78
	7	0.79	0.60	0.73	0.85	0.76	0.46	0.59	0.82
	8	0.81	0.52	0.57	0.87	0.78	0.37	0.44	0.83
	11	0.81	0.50	0.59	0.85	0.78	0.36	0.44	0.81

Perhaps the most important indices for accountability systems are those for the accuracy and consistency of classification decisions made at specific cut points. To evaluate decisions at specific cut points, the joint distribution of all the performance levels is collapsed into a dichotomized distribution around that specific cut point. As an example, the dichotomization at the cut point between *Level 2* and *Level 3* classifications was formed. The proportion of correct classifications below this particular cut point is equal to the sum of all the cells at the *Level 1* and *Level 2* levels and the proportion of correct classifications above that particular cut point is equal to the sum of all the cells at the *Level 3* and *Level 4* levels.

Table 10 shows that the classification accuracy at the achievement cut points ranged from 0.75 to 0.96 for ELA and 0.86 to 0.94 for math. Classification consistency conditioned at achievement cut points ranged from 0.74 to 0.96 for ELA and from 0.80 to 0.91 for math. The classification accuracy statistics are at or above 0.75, while the classification consistency statistics are at or above 0.74. These results suggest that consistent and accurate performance-level classifications are being made for students in Louisiana based on the LEAP Connect assessments.

Table 9. Decision Accuracy and Consistency at Achievement Cut Points

Content Area	Grade	Accuracy			Consistency		
		Level 1/2	Level 2/3	Level 3/4	Level 1/2	Level 2/3	Level 3/4
ELA	3 NV	0.95	0.93	0.87	0.94	0.90	0.82
	3 V	0.94	0.90	0.95	0.91	0.85	0.94
	4 NV	0.93	0.90	0.93	0.90	0.87	0.90
	4 V	0.93	0.92	0.96	0.91	0.89	0.96
	5	0.95	0.90	0.78	0.92	0.86	0.78
	6	0.94	0.90	0.77	0.92	0.86	0.78
	7	0.95	0.92	0.80	0.92	0.89	0.74
	8	0.95	0.90	0.83	0.93	0.86	0.77
	11	0.95	0.92	0.75	0.94	0.89	0.74
Math	3	0.91	0.89	0.90	0.88	0.85	0.86
	4	0.92	0.89	0.86	0.88	0.85	0.80
	5	0.92	0.86	0.89	0.88	0.81	0.84
	6	0.92	0.88	0.89	0.89	0.85	0.84
	7	0.94	0.89	0.91	0.91	0.86	0.87
	8	0.93	0.89	0.89	0.90	0.85	0.85
	11	0.92	0.87	0.90	0.88	0.83	0.85

VALIDITY

Validity is the process of collecting evidence to support inferences by using the resulting scores from an assessment. In addition to showing reliability for the purpose for which assessment results are intended, results must show evidence of validity.

Validity evidence is created throughout the entire assessment process, from the design of the test to item development to score reporting. Therefore, evidence of validity is found throughout this report. For example, evidence of content validity can be found in the Test Content section where the constructs of the tests are discussed, and validity evidence regarding the consequences of the testing can be found in the Reporting section where information on the proper use of scores is addressed. Validity evidence based on internal structure is presented in the Classical Item Analyses and Reliability sections. Additional pieces of validity regarding the construct of the test are presented in this section.

Construct Validity

Divergent Validity

Construct validity refers to the degree to which the test score is a measure of the psychological characteristic (i.e., construct) of interest. Measures of different constructs should not be highly correlated with each other. Divergent validity is a subtype of construct validity that can be assessed by the extent to which measures of constructs that theoretically should not be related to each other are, in

fact, observed as not related to each other. Typically, correlation coefficients among measures of unrelated or distantly related constructs are examined in support of divergent validity.

To assess the divergent validity of the LEAP Connect assessments, correlations were computed between the ELA, math and science scale scores for students who took more than one content-area alternate assessment in 2019. The science scale scores were from the LAA 1 administration, which was only administered in grades 4, 8 and 11. The correlation coefficients ranged from 0.66 (between math and science in grade 8 and math and science in grade 11) to 0.82 (between ELA and math in grade 3). The correlation coefficients suggest that individual student scores for the subjects are moderately related, indicating that these tests measure a similar knowledge base or general underlying ability but still measure some different traits as planned.

Table 10. Inter-Correlation of Subject Scale Scores

Grade	ELA/Math	ELA/Science	Math/Science
3	0.82		
4	0.74	0.74	0.69
5	0.76		
6	0.77		
7	0.76		
8	0.73	0.68	0.66
11	0.71	0.72	0.66

Item-Total Correlation

An item-total correlation is the correlation between an item *p*-value and the total test score. Conceptually, if an item has a high item-total correlation, it indicates that students who performed well on the test overall got the item correct, and students who performed poorly on the test overall got the item incorrect. That is, the item did a good job in distinguishing between high-achieving and low-achieving students. Presuming that the total test score represents the extent to which a student possesses knowledge of the construct being measured by the test, high item-total correlations indicate that the items on the test require knowledge of the construct in order to be answered correctly. Results of item-total correlation in Appendix A show strong evidence of construct validity for LEAP Connect assessments.

Differential Item Functioning

Care should be taken to ensure that the LEAP Connect assessments are fairly measuring the performance of all population groups. Evidence of group performance can be found in Appendix C – Test Results by Population Categories and Appendix D – Reliability by Population Categories. Additionally, it is important to examine performance of population groups at the item-level.

NCSC (NCSC, 2016) used the standardized differential item functioning (DIF) procedure as referenced by Dorans & Kulick (1986) to evaluate if population groups performed differently, beyond the impact of differences in overall achievement. Few items were reported as performing differently. For details

regarding the DIF analysis and results, see chapter 8 of the *National Center and State Collaborative 2015 Operational Assessment Technical Manual* (NCSC, 2016).

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Appendix A: Classical Item Analysis Results

Item ID	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
956486	MC	1	≥160	0.60	0.41	0.20		0.10	0.48	0.21
956453	MC	1	≥160	0.55	0.36	0.20		0.16	0.20	0.44
956445	MC	1	≥160	0.33	0.16	0.21		0.26	0.22	0.31
956440	MC	1	≥160	0.72	0.24	0.20		0.07	0.16	0.57
956456	MC	1	≥150	0.47	-0.07	0.23		0.18	0.22	0.36
956501	MC	1	≥150	0.28	0.04	0.23		0.17	0.22	0.38
957242	MC	1	≥160	0.48	0.18	0.20		0.38	0.25	0.17
957257	MC	1	≥160	0.59	0.26	0.20		0.13	0.47	0.19
957258	MC	1	≥160	0.63	0.34	0.20		0.07	0.22	0.50
957259	MC	1	≥160	0.50	0.34	0.21		0.39	0.19	0.21
957243	MC	1	≥160	0.55	0.27	0.21		0.43	0.16	0.20
956540	MC	1	≥160	0.45	0.24	0.21		0.18	0.36	0.25
956569	MC	1	≥160	0.35	0.06	0.21		0.17	0.27	0.34
956564	MC	1	≥160	0.33	0.21	0.21		0.26	0.28	0.25
956525	MC	1	≥160	0.44	0.15	0.20		0.14	0.35	0.32
956545	MC	1	≥160	0.61	0.34	0.21		0.11	0.19	0.49
956517	MC	1	≥160	0.41	0.26	0.21		0.32	0.22	0.24
956442	MC	1	≥160	0.64	0.24	0.18		0.52	0.30	
956421	MC	1	≥170	0.82	0.30	0.17		0.15	0.67	
956424	MC	1	≥160	0.79	0.43	0.18		0.17	0.65	
956484	MC	1	≥160	0.50	0.13	0.19		0.40	0.41	
956506	MC	1	≥160	0.36	0.17	0.20		0.29	0.21	0.30
956509	MC	1	≥160	0.55	0.18	0.20		0.17	0.19	0.44
956468	MC	1	≥160	0.59	0.27	0.20		0.13	0.19	0.47
956430	MC	1	≥160	0.68	0.32	0.21		0.11	0.15	0.54
956463	MC	1	≥160	0.58	0.21	0.21		0.08	0.46	0.25
956441	MC	1	≥160	0.39	0.33	0.20		0.15	0.32	0.33
957241	MC	1	≥160	0.61	0.12	0.22		0.18	0.13	0.48
957233	MC	1	≥160	0.53	0.13	0.21		0.42	0.13	0.24
957260	MC	1	≥160	0.56	0.09	0.21		0.21	0.13	0.44
957252	MC	1	≥160	0.41	0.23	0.22		0.19	0.32	0.27
957302	MC	1	≥160	0.51	0.20	0.22		0.40	0.13	0.25
956596	MC	1	≥170	0.76	0.32	0.17		0.20	0.63	
956589	MC	1	≥160	0.52	0.29	0.21		0.41	0.13	0.24
956584	MC	1	≥160	0.52	0.27	0.20		0.18	0.21	0.41
956597	MC	1	≥160	0.53	0.24	0.18		0.17	0.22	0.43
956512	MC	1	≥160	0.59	0.09	0.20		0.47	0.33	

Table A. 1
Item Analysis: Grade 3 Nonverbal ELA

Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
Table A. 1 — Item Analysis: Grade 3 Nonverbal ELA
956518	MC	1	≥160	0.80	0.13	0.20		0.16	0.64	
956516	MC	1	≥160	0.43	0.16	0.20		0.34	0.46	
956508	MC	1	≥160	0.55	0.14	0.20		0.44	0.36	
956510	MC	1	≥160	0.49	-0.06	0.20		0.40	0.41	
956521	MC	1	≥160	0.48	0.12	0.21		0.38	0.40	
GR3_NV_Set 1	CR	1	≥160	0.36	0.46	0.19	0.52	0.29		
GR3_NV_Set 2	CR	1	≥160	0.26	0.35	0.21	0.59	0.20		
GR3_W_Set	CR	2	≥160	0.82	0.33	0.18	0.00	0.29	0.52	

Table A. 2										
Item Analysis: Grade 3 Verbal ELA										
Item ID	**Item Type**	**Max Point**	**Adj N Obs**	*p*- **Value**	**Item Total Correlation**	**Omit Rate**	**0**	**A/1**	**B/2**	**C/3**
956486	MC	1	≥330	0.81	0.42	0.01		0.06	0.81	0.12
956453	MC	1	≥330	0.75	0.18	0.01		0.18	0.07	0.74
956445	MC	1	≥330	0.63	0.38	0.01		0.62	0.09	0.28
956440	MC	1	≥330	0.82	0.31	0.01		0.11	0.08	0.81
956456	MC	1	≥330	0.52	0.10	0.01		0.24	0.23	0.52
956501	MC	1	≥330	0.36	0.25	0.01		0.26	0.36	0.37
956574	MC	1	≥330	0.57	0.25	0.01		0.56	0.43	
956557	MC	1	≥330	0.48	0.28	0.01		0.48	0.52	
956552	MC	1	≥330	0.54	0.21	0.01		0.53	0.46	
956527	MC	1	≥330	0.53	0.28	0.01		0.52	0.47	
956571	MC	1	≥330	0.47	0.25	0.01		0.47	0.52	
956540	MC	1	≥330	0.50	0.32	0.01		0.26	0.49	0.23
956569	MC	1	≥330	0.34	0.12	0.01		0.25	0.33	0.40
956564	MC	1	≥330	0.61	0.45	0.01		0.61	0.18	0.20
956525	MC	1	≥330	0.55	0.36	0.01		0.18	0.55	0.26
956545	MC	1	≥330	0.90	0.42	0.01		0.06	0.04	0.89
956517	MC	1	≥330	0.72	0.49	0.01		0.72	0.11	0.16
956442	MC	1	≥330	0.93	0.32	0.01		0.92	0.07	
956421	MC	1	≥330	0.94	0.34	0.01		0.06	0.94	
956424	MC	1	≥330	0.94	0.46	0.01		0.06	0.93	
956484	MC	1	≥330	0.64	0.07	0.01		0.64	0.35	
956506	MC	1	≥330	0.46	0.28	0.01		0.45	0.22	0.32
956509	MC	1	≥330	0.61	0.08	0.01		0.16	0.22	0.60
956468	MC	1	≥330	0.78	0.43	0.01		0.10	0.11	0.77
956430	MC	1	≥330	0.75	0.18	0.01		0.09	0.15	0.74
956463	MC	1	≥330	0.77	0.29	0.01		0.05	0.76	0.18
956441	MC	1	≥330	0.68	0.45	0.01		0.12	0.67	0.20
956577	MC	1	≥330	0.53	0.21	0.01		0.52	0.47	
956563	MC	1	≥330	0.51	0.25	0.01		0.50	0.48	
956532	MC	1	≥330	0.52	0.24	0.01		0.51	0.48	
956536	MC	1	≥330	0.37	0.24	0.01		0.37	0.62	
956546	MC	1	≥330	0.51	0.25	0.01		0.50	0.48	
956596	MC	1	≥330	0.90	0.35	0.01		0.10	0.89	
956589	MC	1	≥330	0.89	0.38	0.01		0.89	0.04	0.07
956584	MC	1	≥330	0.57	0.26	0.01		0.27	0.15	0.57
956597	MC	1	≥330	0.64	0.36	0.01		0.21	0.14	0.64
956512	MC	1	≥330	0.80	0.35	0.01		0.79	0.20	
956518	MC	1	≥330	0.68	0.13	0.01		0.32	0.67	
956516	MC	1	≥330	0.72	0.26	0.01		0.71	0.28	

Table A. 2 Item Analysis: Grade 3 Verbal ELA										
Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
956508	MC	1	≥330	0.80	0.32	0.01		0.79	0.20	
956510	MC	1	≥330	0.66	0.30	0.01		0.65	0.34	
956521	MC	1	≥330	0.71	0.21	0.01		0.70	0.29	
GR3_V_Set1	CR	1	≥330	0.41	0.30	0.01	0.59	0.40		
GR3_V_Set2	CR	1	≥330	0.37	0.27	0.01	0.62	0.37		
GR3_W_Set	CR	2	≥330	0.93	0.36	0.01	0.01	0.12	0.86	

				Table A. 3 Item Analysis: Grade 4 Non-Verbal ELA						
Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
956165	MC	1	≥170	0.80	0.23	0.19		0.16	0.65	
956177	MC	1	≥170	0.62	0.31	0.19		0.50	0.31	
956170	MC	1	≥170	0.58	0.44	0.19		0.47	0.34	
956158	MC	1	≥170	0.82	0.24	0.20		0.14	0.66	
956154	MC	1	≥170	0.75	0.20	0.20		0.20	0.60	
956169	MC	1	≥170	0.49	0.41	0.20		0.39	0.41	
956153	MC	1	≥170	0.49	0.39	0.20		0.17	0.39	0.24
956139	MC	1	≥170	0.47	0.36	0.22		0.36	0.16	0.26
956144	MC	1	≥170	0.43	0.29	0.20		0.14	0.34	0.32
956127	MC	1	≥170	0.55	0.17	0.21		0.21	0.15	0.43
956142	MC	1	≥170	0.45	0.30	0.20		0.15	0.36	0.28
957292	MC	1	≥170	0.71	0.18	0.21		0.11	0.12	0.56
957293	MC	1	≥170	0.49	0.31	0.21		0.38	0.20	0.20
957278	MC	1	≥170	0.52	0.24	0.21		0.41	0.20	0.18
957280	MC	1	≥170	0.60	0.27	0.21		0.13	0.47	0.19
957282	MC	1	≥170	0.50	0.32	0.21		0.40	0.19	0.20
956042	MC	1	≥170	0.61	0.19	0.21		0.09	0.22	0.48
956028	MC	1	≥170	0.56	0.20	0.21		0.19	0.16	0.44
956033	MC	1	≥170	0.35	0.32	0.21		0.28	0.17	0.34
956043	MC	1	≥170	0.60	0.18	0.21		0.16	0.15	0.47
955988	MC	1	≥170	0.51	0.40	0.21		0.13	0.40	0.25
956024	MC	1	≥170	0.36	0.25	0.21		0.29	0.22	0.28
955985	MC	1	≥170	0.51	0.44	0.21		0.15	0.40	0.24
955976	MC	1	≥170	0.40	0.39	0.20		0.18	0.32	0.30
956029	MC	1	≥170	0.41	0.33	0.19		0.33	0.24	0.24
955990	MC	1	≥170	0.54	0.12	0.18		0.13	0.24	0.44
955970	MC	1	≥170	0.53	0.22	0.19		0.17	0.21	0.43
956022	MC	1	≥170	0.41	0.36	0.19		0.23	0.33	0.25
957294	MC	1	≥170	0.53	0.17	0.20		0.42	0.15	0.23
957284	MC	1	≥170	0.61	0.16	0.20		0.18	0.13	0.49
957286	MC	1	≥170	0.59	0.19	0.19		0.17	0.17	0.47
957289	MC	1	≥170	0.51	0.12	0.19		0.41	0.15	0.24
957295	MC	1	≥170	0.50	0.25	0.19		0.40	0.15	0.26
956113	MC	1	≥170	0.63	0.33	0.18		0.51	0.30	
956102	MC	1	≥170	0.53	0.38	0.19		0.11	0.42	0.27
956106	MC	1	≥170	0.56	0.21	0.19		0.22	0.14	0.45
956116	MC	1	≥170	0.36	0.17	0.19		0.18	0.29	0.33
956124	MC	1	≥170	0.59	0.30	0.20		0.47	0.33	
956071	MC	1	≥170	0.73	0.14	0.19		0.22	0.59	

	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
Item ID										
956066	MC	1	≥170	0.71	0.03	0.20		0.24	0.57	
956079	MC	1	≥170	0.50	0.19	0.20		0.40	0.40	
GR4_NV_Set1	CR	1	≥170	0.34	0.50	0.21	0.52	0.27		
GR4_NV_Set2	CR	1	≥170	0.30	0.33	0.20	0.56	0.24		
GR4_W_Set	CR	2	≥170	0.74	0.40	0.20	0.02	0.38	0.40	

Table title (above table):

Table A. 3
Item Analysis: Grade 4 Non-Verbal ELA

Item ID	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 4					
					Item Analysis: Grade 4 Verbal ELA					
956165	MC	1	≥410	0.87	0.40	0.01		0.13	0.86	
956177	MC	1	≥410	0.86	0.43	0.01		0.86	0.14	
956170	MC	1	≥410	0.84	0.41	0.01		0.83	0.15	
956158	MC	1	≥410	0.89	0.32	0.01		0.10	0.88	
956154	MC	1	≥410	0.85	0.31	0.01		0.15	0.84	
956169	MC	1	≥410	0.78	0.44	0.01		0.77	0.22	
956153	MC	1	≥410	0.75	0.51	0.02		0.10	0.74	0.14
956139	MC	1	≥410	0.67	0.46	0.02		0.66	0.06	0.26
956144	MC	1	≥410	0.51	0.42	0.01		0.10	0.51	0.38
956127	MC	1	≥410	0.69	0.21	0.01		0.11	0.19	0.68
956142	MC	1	≥410	0.53	0.39	0.01		0.14	0.53	0.31
956229	MC	1	≥410	0.59	0.25	0.01		0.58	0.41	
956198	MC	1	≥410	0.52	0.25	0.01		0.52	0.47	
956228	MC	1	≥410	0.56	0.30	0.01		0.55	0.44	
956214	MC	1	≥410	0.45	0.19	0.01		0.44	0.54	
956212	MC	1	≥410	0.47	0.28	0.01		0.47	0.52	
956042	MC	1	≥410	0.60	0.07	0.01		0.09	0.30	0.59
956028	MC	1	≥410	0.63	0.03	0.02		0.22	0.15	0.62
956033	MC	1	≥410	0.58	0.32	0.02		0.57	0.12	0.29
956043	MC	1	≥410	0.68	0.11	0.02		0.18	0.14	0.67
955988	MC	1	≥410	0.66	0.45	0.01		0.10	0.65	0.24
956024	MC	1	≥410	0.58	0.36	0.01		0.57	0.15	0.26
955985	MC	1	≥410	0.64	0.47	0.01		0.16	0.63	0.19
955976	MC	1	≥410	0.49	0.32	0.01		0.18	0.48	0.32
956029	MC	1	≥410	0.54	0.33	0.01		0.53	0.16	0.29
955990	MC	1	≥410	0.53	0.06	0.01		0.23	0.23	0.53
955970	MC	1	≥410	0.61	0.20	0.01		0.24	0.15	0.60
956022	MC	1	≥410	0.44	0.38	Omit		0.20	0.43	0.36
956232	MC	1	≥410	0.47	0.20	0.01		0.47	0.52	
956216	MC	1	≥410	0.46	0.21	0.01		0.46	0.53	
956224	MC	1	≥410	0.52	0.23	0.01		0.52	0.47	
956202	MC	1	≥410	0.52	0.19	0.01		0.52	0.47	
956223	MC	1	≥410	0.56	0.28	0.01		0.56	0.43	
956113	MC	1	≥410	0.84	0.39	0.00		0.83	0.16	
956102	MC	1	≥410	0.64	0.41	0.01		0.16	0.64	0.19
956106	MC	1	≥410	0.67	0.14	0.00		0.23	0.10	0.67
956116	MC	1	≥410	0.46	0.30	0.01		0.15	0.45	0.38
956124	MC	1	≥410	0.81	0.40	0.01		0.80	0.19	
956071	MC	1	≥410	0.80	0.23	0.01		0.20	0.80	

	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 4						
					Item Analysis: Grade 4 Verbal ELA						
Item ID										
956066	MC	1	≥410	0.74	0.21	0.01		0.25	0.73	
956079	MC	1	≥410	0.70	0.38	0.01		0.69	0.30	
GR4_V_Set1	CR	1	≥410	0.41	0.33	0.01	0.58	0.41		
GR4_V_Set2	CR	1	≥410	0.42	0.28	0.01	0.57	0.42		
GR4_W_Set	CR	2	≥410	0.84	0.54	0.01	0.01	0.28	0.69	

Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
				Table A. 5						
				Item Analysis: Grade 5 ELA						
955784	MC	1	≥700	0.82	0.37	0.05		0.17	0.78	
955788	MC	1	≥700	0.86	0.33	0.04		0.13	0.82	
955792	MC	1	≥700	0.76	0.38	0.05		0.72	0.23	
955786	MC	1	≥700	0.90	0.34	0.05		0.10	0.86	
955785	MC	1	≥700	0.73	0.34	0.05		0.70	0.25	
955718	MC	1	≥700	0.42	-0.08	0.05		0.11	0.44	0.40
955709	MC	1	≥700	0.64	0.38	0.05		0.16	0.60	0.19
955720	MC	1	≥700	0.48	0.27	0.05		0.18	0.46	0.31
955680	MC	1	≥700	0.53	0.18	0.05		0.11	0.34	0.51
955716	MC	1	≥690	0.60	0.41	0.05		0.12	0.26	0.57
955713	MC	1	≥690	0.69	0.33	0.05		0.10	0.20	0.65
955722	MC	1	≥690	0.54	0.32	0.06		0.51	0.18	0.25
955742	MC	1	≥690	0.48	0.30	0.06		0.14	0.45	0.35
955712	MC	1	≥690	0.48	0.41	0.05		0.46	0.23	0.26
955695	MC	1	≥690	0.73	0.38	0.06		0.10	0.15	0.69
955734	MC	1	≥690	0.69	0.27	0.05		0.09	0.21	0.65
955678	MC	1	≥690	0.57	0.31	0.06		0.53	0.19	0.22
955756	MC	1	≥690	0.52	0.16	0.06		0.20	0.25	0.49
955740	MC	1	≥690	0.78	0.42	0.05		0.12	0.09	0.74
955685	MC	1	≥700	0.59	0.27	0.05		0.26	0.13	0.57
955721	MC	1	≥690	0.48	0.12	0.05		0.46	0.16	0.34
955719	MC	1	≥700	0.33	0.09	0.05		0.19	0.32	0.45
955715	MC	1	≥700	0.73	0.42	0.05		0.09	0.17	0.69
955706	MC	1	≥700	0.56	0.28	0.05		0.20	0.53	0.22
955768	MC	1	≥700	0.90	0.33	0.04		0.10	0.86	
955750	MC	1	≥700	0.83	0.43	0.04		0.09	0.08	0.79
955763	MC	1	≥690	0.47	0.30	0.05		0.18	0.45	0.32
955770	MC	1	≥700	0.54	0.24	0.05		0.28	0.15	0.52
955849	MC	1	≥700	0.82	0.26	0.05		0.17	0.79	
955845	MC	1	≥700	0.66	0.28	0.04		0.63	0.32	
955839	MC	1	≥700	0.87	0.25	0.05		0.13	0.83	
955843	MC	1	≥700	0.74	0.31	0.05		0.71	0.25	
GR5_W_Set	CR	2	≥700	0.85	0.47	0.05	0.01	0.26	0.68	

	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
Item ID										
955609	MC	1	≥870	0.70	0.20	0.05		0.08	0.21	0.67
955583	MC	1	≥870	0.64	0.52	0.05		0.61	0.10	0.24
955563	MC	1	≥870	0.72	0.49	0.05		0.06	0.68	0.21
955603	MC	1	≥870	0.59	0.42	0.05		0.57	0.13	0.26
955605	MC	1	≥870	0.71	0.21	0.05		0.04	0.24	0.67
955557	MC	1	≥870	0.80	0.51	0.05		0.76	0.09	0.11
955428	MC	1	≥870	0.65	0.38	0.05		0.17	0.62	0.16
955482	MC	1	≥870	0.41	0.04	0.05		0.16	0.40	0.39
955463	MC	1	≥870	0.61	0.39	0.05		0.09	0.58	0.28
955490	MC	1	≥870	0.49	0.36	0.05		0.46	0.10	0.38
955494	MC	1	≥870	0.61	0.31	0.05		0.58	0.14	0.23
955440	MC	1	≥870	0.73	0.30	0.05		0.11	0.14	0.70
955491	MC	1	≥870	0.95	0.31	0.04		0.05	0.91	
955432	MC	1	≥870	0.75	0.51	0.05		0.71	0.24	
955450	MC	1	≥870	0.85	0.34	0.04		0.14	0.82	
955442	MC	1	≥870	0.91	0.33	0.04		0.09	0.86	
955470	MC	1	≥870	0.81	0.51	0.05		0.77	0.18	
955446	MC	1	≥870	0.80	0.56	0.05		0.77	0.19	
955597	MC	1	≥870	0.52	0.38	0.05		0.17	0.50	0.28
955532	MC	1	≥870	0.67	0.27	0.05		0.12	0.20	0.63
955550	MC	1	≥870	0.57	0.43	0.05		0.12	0.54	0.29
955538	MC	1	≥870	0.63	0.27	0.05		0.17	0.19	0.60
955567	MC	1	≥870	0.81	0.42	0.05		0.07	0.11	0.77
955574	MC	1	≥870	0.65	0.18	0.05		0.13	0.20	0.62
955635	MC	1	≥870	0.73	0.36	0.04		0.70	0.26	
955649	MC	1	≥870	0.52	0.28	0.04		0.49	0.19	0.27
955641	MC	1	≥870	0.70	0.47	0.04		0.11	0.67	0.18
955647	MC	1	≥870	0.57	0.27	0.04		0.55	0.19	0.22
955620	MC	1	≥870	0.78	0.30	0.04		0.21	0.75	
955618	MC	1	≥870	0.72	0.40	0.05		0.69	0.27	
955626	MC	1	≥870	0.82	0.24	0.04		0.18	0.78	
955634	MC	1	≥870	0.64	0.05	0.05		0.34	0.61	
955629	MC	1	≥870	0.72	0.45	0.04		0.69	0.27	
GR6_W_Set	CR	2	≥870	0.91	0.41	0.05	0.01	0.16	0.78	

Table A. 6
Item Analysis: Grade 6 ELA

Item ID	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 7					
					Item Analysis: Grade 7 ELA					
954232	MC	1	≥980	0.72	0.44	0.04		0.10	0.70	0.16
954223	MC	1	≥970	0.79	0.41	0.04		0.76	0.08	0.12
954192	MC	1	≥970	0.68	0.48	0.04		0.12	0.65	0.19
954237	MC	1	≥970	0.63	0.22	0.04		0.14	0.21	0.61
954244	MC	1	≥970	0.50	0.27	0.04		0.32	0.48	0.16
954228	MC	1	≥970	0.73	0.50	0.05		0.09	0.70	0.17
955190	MC	1	≥970	0.55	0.01	0.04		0.52	0.29	0.14
955193	MC	1	≥970	0.48	0.26	0.04		0.30	0.46	0.19
955203	MC	1	≥970	0.62	0.31	0.04		0.24	0.12	0.60
955195	MC	1	≥970	0.60	0.28	0.04		0.14	0.24	0.58
955188	MC	1	≥970	0.60	0.31	0.04		0.19	0.18	0.58
954967	MC	1	≥970	0.91	0.38	0.04		0.09	0.88	
954947	MC	1	≥980	0.82	0.32	0.04		0.17	0.79	
954944	MC	1	≥980	0.81	0.48	0.04		0.78	0.18	
955005	MC	1	≥970	0.83	0.42	0.04		0.80	0.16	
955003	MC	1	≥970	0.93	0.39	0.04		0.07	0.89	
954945	MC	1	≥970	0.87	0.42	0.04		0.83	0.13	
955241	MC	1	≥970	0.74	0.52	0.04		0.13	0.71	0.12
955221	MC	1	≥970	0.70	0.40	0.04		0.67	0.12	0.17
955236	MC	1	≥970	0.68	0.37	0.04		0.15	0.15	0.66
955225	MC	1	≥970	0.59	0.32	0.04		0.27	0.56	0.13
955229	MC	1	≥970	0.65	0.43	0.05		0.14	0.62	0.19
955240	MC	1	≥970	0.65	0.34	0.04		0.23	0.11	0.62
955335	MC	1	≥970	0.90	0.35	0.04		0.87	0.09	
955308	MC	1	≥970	0.69	0.23	0.04		0.06	0.24	0.66
955354	MC	1	≥970	0.45	0.28	0.04		0.20	0.43	0.33
955344	MC	1	≥970	0.59	0.19	0.04		0.23	0.17	0.56
954208	MC	1	≥970	0.57	0.13	0.04		0.54	0.42	
954195	MC	1	≥970	0.85	0.29	0.04		0.14	0.82	
954191	MC	1	≥970	0.77	0.29	0.04		0.22	0.74	
954185	MC	1	≥970	0.73	0.32	0.04		0.70	0.26	
954211	MC	1	≥970	0.74	0.28	0.04		0.71	0.25	
954201	MC	1	≥960	0.85	0.33	0.05		0.14	0.81	
GR7_W_Set	CR	2	≥970	0.96	0.32	0.05	0.00	0.07	0.88	

Item ID	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 8					
					Item Analysis: Grade 8 ELA					
952844	MC	1	≥950	0.56	0.31	0.04		0.54	0.10	0.32
952840	MC	1	≥950	0.77	0.45	0.04		0.74	0.07	0.15
952838	MC	1	≥950	0.68	0.35	0.04		0.65	0.09	0.22
952846	MC	1	≥950	0.77	0.42	0.04		0.07	0.74	0.14
952854	MC	1	≥950	0.83	0.32	0.04		0.09	0.08	0.79
952847	MC	1	≥950	0.75	0.45	0.04		0.72	0.09	0.15
951852	MC	1	≥940	0.51	0.28	0.05		0.18	0.49	0.29
951817	MC	1	≥950	0.65	0.32	0.04		0.20	0.13	0.62
951856	MC	1	≥940	0.63	0.38	0.05		0.60	0.13	0.22
951861	MC	1	≥950	0.66	0.25	0.04		0.16	0.16	0.63
951825	MC	1	≥950	0.59	0.32	0.04		0.56	0.08	0.31
951822	MC	1	≥950	0.92	0.37	0.04		0.08	0.89	
951837	MC	1	≥940	0.62	0.26	0.04		0.37	0.59	
951850	MC	1	≥950	0.72	0.40	0.04		0.69	0.27	
951847	MC	1	≥950	0.88	0.30	0.04		0.12	0.85	
951893	MC	1	≥950	0.91	0.37	0.04		0.09	0.88	
951830	MC	1	≥940	0.67	0.34	0.04		0.65	0.31	
951890	MC	1	≥940	0.85	0.38	0.04		0.14	0.82	
951853	MC	1	≥950	0.88	0.44	0.04		0.11	0.85	
951892	MC	1	≥940	0.75	0.32	0.04		0.15	0.09	0.72
951851	MC	1	≥940	0.38	0.24	0.04		0.11	0.36	0.49
951874	MC	1	≥940	0.60	0.27	0.04		0.25	0.13	0.58
951841	MC	1	≥940	0.61	0.45	0.04		0.19	0.59	0.18
951845	MC	1	≥940	0.38	0.21	0.04		0.37	0.30	0.29
951896	MC	1	≥940	0.74	0.49	0.04		0.71	0.11	0.14
952880	MC	1	≥950	0.91	0.30	0.04		0.09	0.88	
952858	MC	1	≥950	0.69	0.33	0.03		0.67	0.15	0.15
952874	MC	1	≥940	0.72	0.23	0.04		0.21	0.06	0.69
952860	MC	1	≥940	0.45	0.16	0.04		0.42	0.10	0.43
951891	MC	1	≥950	0.78	0.17	0.04		0.22	0.75	
951902	MC	1	≥950	0.82	0.27	0.04		0.17	0.79	
951880	MC	1	≥940	0.88	0.41	0.04		0.84	0.12	
951897	MC	1	≥950	0.61	0.18	0.04		0.59	0.38	
951894	MC	1	≥940	0.77	0.24	0.04		0.22	0.74	
951884	MC	1	≥940	0.92	0.32	0.04		0.08	0.88	
GR8_W_Set	CR	2	≥950	0.97	0.34	0.04	0.00	0.05	0.91	

	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 9					
					Item Analysis: Grade 11 ELA					
Item ID										
984806	MC	1	≥800	0.83	0.37	0.04		0.80	0.16	
984824	MC	1	≥810	0.86	0.42	0.04		0.83	0.13	
984800	MC	1	≥800	0.79	0.28	0.05		0.20	0.75	
984810	MC	1	≥800	0.83	0.50	0.05		0.79	0.16	
984830	MC	1	≥800	0.93	0.32	0.05		0.06	0.89	
984792	MC	1	≥800	0.77	0.39	0.05		0.73	0.22	
984832	MC	1	≥800	0.86	0.45	0.05		0.82	0.14	
984803	MC	1	≥800	0.75	0.36	0.05		0.24	0.71	
984918	MC	1	≥800	0.71	0.58	0.05		0.67	0.07	0.21
984922	MC	1	≥800	0.71	0.39	0.05		0.16	0.11	0.68
984924	MC	1	≥800	0.80	0.43	0.05		0.09	0.10	0.76
984915	MC	1	≥790	0.77	0.46	0.05		0.12	0.73	0.10
984916	MC	1	≥800	0.77	0.51	0.05		0.08	0.74	0.14
984742	MC	1	≥800	0.35	0.12	0.05		0.33	0.29	0.34
984757	MC	1	≥800	0.42	-0.05	0.05		0.29	0.26	0.40
984758	MC	1	≥790	0.24	0.10	0.05		0.23	0.30	0.42
984745	MC	1	≥800	0.57	0.22	0.05		0.16	0.25	0.54
984749	MC	1	≥790	0.71	0.55	0.05		0.67	0.11	0.16
984752	MC	1	≥790	0.70	0.35	0.05		0.12	0.16	0.66
984872	MC	1	≥800	0.93	0.39	0.03		0.07	0.89	
984868	MC	1	≥800	0.92	0.41	0.04		0.08	0.88	
984863	MC	1	≥800	0.84	0.53	0.04		0.81	0.15	
984857	MC	1	≥800	0.87	0.50	0.04		0.83	0.13	
994406	MC	1	≥800	0.75	0.18	0.03		0.24	0.73	
994414	MC	1	≥800	0.75	0.43	0.04		0.11	0.72	0.14
994425	MC	1	≥790	0.57	0.33	0.04		0.12	0.55	0.29
984901	MC	1	≥790	0.85	0.47	0.04		0.82	0.14	
984907	MC	1	≥790	0.90	0.27	0.04		0.09	0.87	
984899	MC	1	≥790	0.73	0.16	0.04		0.26	0.70	
984877	MC	1	≥790	0.66	0.33	0.04		0.63	0.32	
984883	MC	1	≥790	0.84	0.32	0.04		0.15	0.81	
984887	MC	1	≥790	0.81	0.44	0.04		0.77	0.19	
GR11_W_Set	CR	2	≥790	0.97	0.33	0.05	0.00	0.05	0.89	

	Item	Max	Adj N		Item Total	Omit				
Item ID	Type	Point	Obs	*p*- Value	Correlation	Rate	0	A/1	B/2	C/3
947196	MC	1	≥500	0.72	0.35	0.06		0.67	0.27	
947227	MC	1	≥500	0.59	0.26	0.07		0.55	0.38	
947121	MC	1	≥500	0.72	0.15	0.07		0.26	0.67	
947213	MC	1	≥500	0.75	0.36	0.07		0.70	0.23	
947242	MC	1	≥500	0.76	0.37	0.08		0.14	0.08	0.70
947171	MC	1	≥490	0.40	0.29	0.08		0.26	0.37	0.29
947203	MC	1	≥490	0.51	0.22	0.08		0.27	0.18	0.47
947179	MC	1	≥490	0.70	0.42	0.08		0.65	0.13	0.14
947147	MC	1	≥490	0.38	0.25	0.09		0.35	0.19	0.37
947100	MC	1	≥490	0.61	0.37	0.08		0.19	0.17	0.56
947111	MC	1	≥490	0.46	0.38	0.09		0.21	0.42	0.29
947065	MC	1	≥490	0.55	0.37	0.09		0.50	0.16	0.25
947154	MC	1	≥490	0.52	0.29	0.09		0.25	0.19	0.48
947126	MC	1	≥490	0.57	0.33	0.09		0.15	0.52	0.24
947236	MC	1	≥490	0.35	0.09	0.09		0.30	0.32	0.29
947072	MC	1	≥490	0.58	0.42	0.08		0.53	0.19	0.20
947208	MC	1	≥490	0.46	0.35	0.08		0.25	0.42	0.25
947144	MC	1	≥490	0.57	0.27	0.09		0.20	0.20	0.52
947132	MC	1	≥490	0.45	0.35	0.09		0.26	0.41	0.24
947113	MC	1	≥490	0.45	0.46	0.09		0.41	0.50	
947063	MC	1	≥500	0.70	0.35	0.07		0.65	0.27	
947137	MC	1	≥500	0.63	0.33	0.07		0.58	0.34	
947062	MC	1	≥500	0.64	0.37	0.08		0.59	0.33	
947220	MC	1	≥490	0.70	0.44	0.08		0.15	0.12	0.64
947175	MC	1	≥490	0.39	0.21	0.09		0.30	0.36	0.25
947101	MC	1	≥490	0.60	0.39	0.08		0.16	0.21	0.55
947095	MC	1	≥490	0.59	0.39	0.08		0.54	0.16	0.22
947223	MC	1	≥490	0.44	0.11	0.09		0.28	0.23	0.40
947091	MC	1	≥490	0.54	0.39	0.08		0.18	0.50	0.24
947159	MC	1	≥490	0.44	0.35	0.08		0.23	0.40	0.29
947210	MC	1	≥490	0.57	0.22	0.08		0.20	0.20	0.52
947184	MC	1	≥490	0.45	0.11	0.09		0.26	0.24	0.41
947232	MC	1	≥490	0.52	0.18	0.09		0.18	0.26	0.47
947115	MC	1	≥490	0.40	0.19	0.09		0.37	0.20	0.34
947087	MC	1	≥490	0.53	0.49	0.09		0.48	0.42	

Table A. 10
Item Analysis: Grade 3 Math

<td colspan="11" align="center">**Table A. 11** Item Analysis: Grade 4 Math</td>
Item ID	**Item Type**	**Max Point**	**Adj N Obs**	***p*- Value**	**Item Total Correlation**	**Omit Rate**	**0**	**A/1**	**B/2**	**C/3**
947326	MC	1	≥590	0.80	0.21	0.07		0.75	0.18	
947420	MC	1	≥580	0.65	0.29	0.08		0.32	0.60	
947385	MC	1	≥580	0.70	0.16	0.08		0.64	0.28	
947449	MC	1	≥580	0.75	0.30	0.08		0.23	0.69	
947434	MC	1	≥580	0.35	0.17	0.08		0.29	0.32	0.30
947370	MC	1	≥580	0.48	0.11	0.08		0.44	0.25	0.24
947365	MC	1	≥590	0.64	0.34	0.08		0.18	0.15	0.59
947364	MC	1	≥580	0.55	0.36	0.09		0.23	0.18	0.50
947381	MC	1	≥580	0.48	0.15	0.09		0.43	0.16	0.32
947285	MC	1	≥580	0.47	0.16	0.08		0.23	0.25	0.43
947430	MC	1	≥580	0.53	0.31	0.09		0.28	0.15	0.48
947405	MC	1	≥580	0.39	0.17	0.08		0.17	0.35	0.39
947345	MC	1	≥580	0.52	0.42	0.09		0.26	0.18	0.47
947338	MC	1	≥580	0.54	0.14	0.09		0.49	0.18	0.24
947442	MC	1	≥580	0.52	0.41	0.09		0.26	0.18	0.47
947320	MC	1	≥580	0.28	0.26	0.09		0.25	0.66	
947356	MC	1	≥580	0.53	0.32	0.09		0.26	0.17	0.48
947350	MC	1	≥580	0.52	0.40	0.09		0.48	0.44	
947398	MC	1	≥580	0.59	0.10	0.08		0.54	0.37	
947332	MC	1	≥580	0.65	0.13	0.08		0.59	0.33	
947316	MC	1	≥580	0.57	0.15	0.08		0.52	0.39	
947371	MC	1	≥580	0.59	0.34	0.09		0.22	0.15	0.54
947277	MC	1	≥580	0.34	0.35	0.08		0.31	0.61	
947252	MC	1	≥580	0.42	0.25	0.08		0.33	0.20	0.39
947315	MC	1	≥580	0.25	0.15	0.08		0.23	0.69	
947362	MC	1	≥580	0.52	0.44	0.09		0.25	0.19	0.48
947292	MC	1	≥570	0.50	0.42	0.09		0.27	0.18	0.46
947378	MC	1	≥580	0.65	0.36	0.09		0.17	0.15	0.59
947341	MC	1	≥580	0.53	0.24	0.09		0.25	0.18	0.49
947353	MC	1	≥580	0.54	0.47	0.09		0.24	0.17	0.50
947281	MC	1	≥570	0.50	0.33	0.09		0.30	0.16	0.45
947307	MC	1	≥570	0.54	0.26	0.09		0.23	0.19	0.49
947333	MC	1	≥570	0.72	0.35	0.09		0.66	0.26	

Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
				Table A. 12						
				Item Analysis: Grade 5 Math						
947552	MC	1	≥700	0.80	0.34	0.05		0.77	0.19	
947499	MC	1	≥700	0.73	0.37	0.05		0.70	0.25	
947474	MC	1	≥700	0.70	0.24	0.05		0.28	0.67	
947766	MC	1	≥700	0.64	0.32	0.05		0.60	0.35	
947731	MC	1	≥690	0.55	0.19	0.06		0.18	0.24	0.52
947523	MC	1	≥700	0.50	0.32	0.05		0.19	0.48	0.28
947516	MC	1	≥690	0.42	0.15	0.06		0.22	0.40	0.33
947544	MC	1	≥690	0.60	0.30	0.06		0.17	0.21	0.56
947735	MC	1	≥690	0.33	0.12	0.06		0.27	0.31	0.37
947526	MC	1	≥690	0.46	0.25	0.06		0.44	0.22	0.29
947554	MC	1	≥690	0.53	0.27	0.06		0.16	0.50	0.28
947534	MC	1	≥690	0.59	0.23	0.06		0.20	0.18	0.56
947732	MC	1	≥690	0.42	0.30	0.06		0.26	0.39	0.29
947559	MC	1	≥690	0.55	0.16	0.06		0.21	0.21	0.52
947572	MC	1	≥690	0.59	0.27	0.06		0.21	0.17	0.55
947742	MC	1	≥690	0.30	0.10	0.06		0.29	0.37	0.29
947727	MC	1	≥690	0.37	0.15	0.06		0.21	0.35	0.38
947757	MC	1	≥690	0.54	0.21	0.06		0.20	0.23	0.51
947492	MC	1	≥690	0.29	0.39	0.06		0.27	0.67	
947529	MC	1	≥700	0.76	0.38	0.05		0.72	0.23	
947479	MC	1	≥700	0.67	0.35	0.05		0.64	0.31	
947563	MC	1	≥700	0.66	0.16	0.05		0.33	0.63	
947537	MC	1	≥700	0.56	0.44	0.05		0.54	0.19	0.22
947550	MC	1	≥690	0.47	0.26	0.05		0.45	0.24	0.26
947511	MC	1	≥690	0.55	0.41	0.05		0.52	0.23	0.20
947540	MC	1	≥690	0.56	0.20	0.05		0.20	0.22	0.53
947767	MC	1	≥690	0.50	0.29	0.06		0.47	0.22	0.25
947527	MC	1	≥690	0.42	0.06	0.06		0.33	0.21	0.40
947468	MC	1	≥690	0.50	0.26	0.05		0.25	0.23	0.47
947764	MC	1	≥690	0.51	0.29	0.05		0.48	0.19	0.28
947464	MC	1	≥690	0.47	0.20	0.05		0.24	0.27	0.44
947566	MC	1	≥690	0.34	0.12	0.05		0.32	0.28	0.34
947570	MC	1	≥690	0.34	0.19	0.05		0.32	0.27	0.36
947465	MC	1	≥690	0.29	0.40	0.06		0.28	0.66	
947453	MC	1	≥690	0.46	0.17	0.05		0.28	0.23	0.43

Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
					Table A. 13					
					Item Analysis: Grade 6 Math					
947920	MC	1	≥870	0.77	0.28	0.05		0.22	0.73	
947904	MC	1	≥870	0.64	0.29	0.05		0.60	0.35	
947975	MC	1	≥870	0.82	0.26	0.05		0.17	0.78	
947824	MC	1	≥870	0.68	0.27	0.05		0.31	0.64	
947860	MC	1	≥870	0.61	0.21	0.05		0.19	0.18	0.58
947966	MC	1	≥870	0.53	0.40	0.05		0.50	0.22	0.22
947771	MC	1	≥860	0.53	0.40	0.05		0.14	0.50	0.31
947828	MC	1	≥860	0.54	0.31	0.06		0.51	0.20	0.24
947873	MC	1	≥860	0.73	0.42	0.06		0.16	0.09	0.69
947810	MC	1	≥860	0.53	0.34	0.05		0.26	0.50	0.18
947952	MC	1	≥860	0.65	0.45	0.05		0.16	0.62	0.17
947782	MC	1	≥860	0.55	0.33	0.06		0.52	0.19	0.23
947914	MC	1	≥860	0.54	0.45	0.06		0.21	0.51	0.22
947916	MC	1	≥860	0.44	0.15	0.06		0.42	0.22	0.31
947871	MC	1	≥860	0.36	0.26	0.06		0.14	0.34	0.46
947770	MC	1	≥860	0.64	0.37	0.06		0.18	0.15	0.61
947874	MC	1	≥860	0.48	0.20	0.06		0.29	0.20	0.46
947783	MC	1	≥860	0.44	0.25	0.06		0.21	0.41	0.32
947830	MC	1	≥860	0.55	0.36	0.06		0.28	0.52	0.15
947932	MC	1	≥860	0.62	0.40	0.06		0.58	0.14	0.22
947857	MC	1	≥870	0.81	0.36	0.05		0.77	0.18	
948106	MC	1	≥870	0.87	0.34	0.05		0.12	0.83	
947817	MC	1	≥870	0.80	0.27	0.05		0.19	0.77	
947793	MC	1	≥870	0.64	0.30	0.05		0.20	0.14	0.61
947885	MC	1	≥860	0.54	0.22	0.05		0.51	0.24	0.19
947939	MC	1	≥870	0.52	0.35	0.05		0.50	0.25	0.20
947877	MC	1	≥860	0.36	0.07	0.05		0.44	0.16	0.34
947922	MC	1	≥860	0.73	0.30	0.05		0.10	0.16	0.69
947887	MC	1	≥860	0.39	0.20	0.05		0.37	0.27	0.30
947870	MC	1	≥860	0.76	0.44	0.05		0.14	0.08	0.72
947957	MC	1	≥860	0.54	0.44	0.05		0.27	0.51	0.17
947954	MC	1	≥860	0.71	0.46	0.05		0.13	0.67	0.15
947832	MC	1	≥860	0.35	0.14	0.05		0.42	0.20	0.33
947823	MC	1	≥860	0.69	0.29	0.05		0.15	0.15	0.65
947888	MC	1	≥860	0.57	0.41	0.05		0.18	0.54	0.23

				Table A. 14 Item Analysis: Grade 7 Math						
Item ID	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
948031	MC	1	≥970	0.79	0.22	0.04		0.76	0.20	
948066	MC	1	≥970	0.87	0.31	0.04		0.84	0.12	
948003	MC	1	≥970	0.92	0.26	0.04		0.08	0.88	
948123	MC	1	≥970	0.71	0.25	0.04		0.68	0.28	
948144	MC	1	≥970	0.62	0.36	0.04		0.20	0.59	0.16
948049	MC	1	≥970	0.72	0.43	0.04		0.12	0.14	0.69
948024	MC	1	≥970	0.51	0.40	0.04		0.25	0.23	0.48
948083	MC	1	≥970	0.49	0.41	0.05		0.30	0.19	0.47
948015	MC	1	≥970	0.51	0.34	0.05		0.29	0.49	0.18
948139	MC	1	≥970	0.44	0.29	0.05		0.28	0.25	0.42
948067	MC	1	≥970	0.62	0.47	0.05		0.19	0.18	0.59
948054	MC	1	≥970	0.56	0.38	0.05		0.19	0.53	0.23
948122	MC	1	≥970	0.51	0.39	0.04		0.27	0.19	0.49
948094	MC	1	≥970	0.50	0.28	0.05		0.47	0.23	0.25
948157	MC	1	≥970	0.59	0.47	0.05		0.57	0.25	0.14
948018	MC	1	≥970	0.78	0.38	0.05		0.08	0.12	0.75
948129	MC	1	≥970	0.56	0.45	0.05		0.20	0.54	0.22
948091	MC	1	≥960	0.58	0.43	0.05		0.55	0.20	0.20
948078	MC	1	≥960	0.48	0.42	0.05		0.46	0.24	0.26
948047	MC	1	≥970	0.75	0.32	0.04		0.24	0.72	
947973	MC	1	≥970	0.77	0.37	0.04		0.22	0.74	
948137	MC	1	≥970	0.70	0.27	0.04		0.67	0.29	
947982	MC	1	≥970	0.68	0.43	0.04		0.17	0.65	0.14
948062	MC	1	≥970	0.65	0.46	0.04		0.18	0.15	0.63
948138	MC	1	≥970	0.62	0.40	0.04		0.13	0.59	0.23
948156	MC	1	≥960	0.55	0.41	0.05		0.29	0.52	0.14
948120	MC	1	≥960	0.57	0.45	0.05		0.54	0.16	0.24
948023	MC	1	≥960	0.73	0.35	0.05		0.07	0.18	0.70
948130	MC	1	≥960	0.45	0.29	0.05		0.43	0.26	0.26
948038	MC	1	≥960	0.64	0.48	0.05		0.61	0.16	0.19
948065	MC	1	≥960	0.54	0.43	0.05		0.52	0.19	0.24
948064	MC	1	≥960	0.54	0.40	0.05		0.25	0.19	0.51
948112	MC	1	≥960	0.53	0.45	0.05		0.25	0.51	0.19
948110	MC	1	≥960	0.39	0.30	0.05		0.37	0.25	0.33

	Item Type	Max Point	Adj N Obs	p- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
Item ID										
948202	MC	1	≥950	0.78	0.30	0.04		0.21	0.75	
948261	MC	1	≥950	0.66	0.32	0.04		0.63	0.33	
948215	MC	1	≥950	0.57	0.16	0.04		0.41	0.55	
948258	MC	1	≥950	0.62	0.44	0.04		0.60	0.36	
948206	MC	1	≥950	0.64	0.42	0.05		0.15	0.61	0.19
948298	MC	1	≥950	0.56	0.48	0.05		0.54	0.18	0.24
948313	MC	1	≥940	0.54	0.40	0.05		0.17	0.51	0.27
948241	MC	1	≥940	0.59	0.36	0.05		0.56	0.23	0.17
948281	MC	1	≥940	0.52	0.38	0.05		0.50	0.24	0.22
948226	MC	1	≥950	0.74	0.32	0.05		0.11	0.14	0.70
948211	MC	1	≥940	0.45	0.26	0.05		0.32	0.43	0.21
948204	MC	1	≥940	0.63	0.42	0.05		0.60	0.16	0.18
948214	MC	1	≥940	0.53	0.43	0.05		0.28	0.51	0.16
948201	MC	1	≥940	0.53	0.31	0.05		0.25	0.19	0.51
948230	MC	1	≥940	0.52	0.15	0.05		0.20	0.26	0.49
948176	MC	1	≥940	0.34	0.17	0.05		0.32	0.21	0.42
948305	MC	1	≥940	0.43	0.36	0.05		0.41	0.29	0.25
948309	MC	1	≥940	0.61	0.43	0.05		0.22	0.58	0.15
948250	MC	1	≥940	0.52	0.43	0.05		0.28	0.49	0.18
948216	MC	1	≥940	0.59	0.40	0.05		0.55	0.39	
948165	MC	1	≥940	0.80	0.37	0.04		0.77	0.19	
948277	MC	1	≥940	0.84	0.30	0.04		0.16	0.80	
948162	MC	1	≥940	0.70	0.19	0.04		0.29	0.67	
948257	MC	1	≥940	0.58	0.44	0.04		0.55	0.23	0.17
948330	MC	1	≥940	0.56	0.38	0.05		0.25	0.53	0.17
948310	MC	1	≥930	0.60	0.45	0.05		0.57	0.21	0.18
948254	MC	1	≥930	0.50	0.34	0.05		0.29	0.47	0.19
948231	MC	1	≥930	0.59	0.28	0.05		0.20	0.19	0.56
948314	MC	1	≥930	0.42	0.15	0.05		0.40	0.26	0.30
948304	MC	1	≥930	0.51	0.39	0.05		0.22	0.49	0.25
948225	MC	1	≥930	0.63	0.47	0.05		0.60	0.20	0.16
948262	MC	1	≥930	0.60	0.36	0.05		0.57	0.20	0.18
948222	MC	1	≥930	0.73	0.43	0.05		0.07	0.69	0.19
948297	MC	1	≥930	0.48	0.30	0.05		0.46	0.23	0.26
948228	MC	1	≥930	0.60	0.35	0.05		0.57	0.38	

Table A. 15
Item Analysis: Grade 8 Math

	Item Type	Max Point	Adj N Obs	*p*- Value	Item Total Correlation	Omit Rate	0	A/1	B/2	C/3
Item ID										
985116	MC	1	≥800	0.84	0.30	0.05		0.80	0.15	
984985	MC	1	≥800	0.85	0.29	0.05		0.14	0.81	
985095	MC	1	≥800	0.73	0.20	0.04		0.26	0.70	
985038	MC	1	≥800	0.56	0.16	0.05		0.54	0.41	
985106	MC	1	≥790	0.45	0.11	0.06		0.22	0.30	0.42
985117	MC	1	≥790	0.57	0.35	0.05		0.20	0.54	0.20
984988	MC	1	≥790	0.44	0.18	0.06		0.41	0.37	0.16
985495	MC	1	≥790	0.53	0.29	0.06		0.27	0.17	0.50
985017	MC	1	≥790	0.54	0.42	0.06		0.19	0.51	0.24
985052	MC	1	≥790	0.57	0.47	0.06		0.23	0.54	0.17
985492	MC	1	≥780	0.53	0.40	0.06		0.23	0.21	0.49
985053	MC	1	≥780	0.50	0.35	0.06		0.47	0.27	0.20
985120	MC	1	≥780	0.49	0.48	0.06		0.24	0.46	0.24
985102	MC	1	≥780	0.60	0.48	0.06		0.23	0.56	0.15
984999	MC	1	≥780	0.45	0.37	0.06		0.27	0.42	0.24
985108	MC	1	≥780	0.60	0.28	0.07		0.56	0.18	0.19
985015	MC	1	≥780	0.51	0.36	0.07		0.19	0.27	0.48
985113	MC	1	≥780	0.47	0.36	0.07		0.31	0.19	0.44
984983	MC	1	≥780	0.44	0.03	0.07		0.41	0.52	
985060	MC	1	≥790	0.76	0.27	0.05		0.73	0.23	
985124	MC	1	≥780	0.72	0.24	0.05		0.27	0.68	
985081	MC	1	≥790	0.81	0.29	0.05		0.78	0.18	
985484	MC	1	≥780	0.51	0.33	0.05		0.21	0.48	0.25
985482	MC	1	≥780	0.52	0.39	0.05		0.19	0.26	0.49
984982	MC	1	≥780	0.40	0.36	0.05		0.16	0.38	0.40
985132	MC	1	≥780	0.54	0.30	0.05		0.51	0.26	0.18
985025	MC	1	≥780	0.51	0.35	0.05		0.20	0.27	0.48
985020	MC	1	≥780	0.58	0.51	0.05		0.22	0.18	0.55
985010	MC	1	≥780	0.39	0.31	0.06		0.24	0.37	0.34
985084	MC	1	≥780	0.64	0.41	0.06		0.15	0.19	0.61
985107	MC	1	≥780	0.54	0.53	0.06		0.20	0.51	0.23
985026	MC	1	≥780	0.61	0.40	0.05		0.20	0.58	0.17
985097	MC	1	≥780	0.48	0.38	0.06		0.30	0.19	0.45
984993	MC	1	≥780	0.47	0.14	0.06		0.44	0.50	
985116	MC	1	≥800	0.84	0.30	0.05		0.80	0.15	

Table A. 16
Item Analysis: Grade 11 Math

Appendix B: Raw-Score-to-Scale Score Conversion Tables*

Table B. 1 Raw-Score-to-Scale Score Conversion with Standard Error of Measurement: Grade 3				
	ELA		**Math**	
Raw Score	**Scale Score**	**SEM**	**Scale Score**	**SEM**
0	1200	22	1200	25
1	1200	16	1200	18
2	1200	11	1200	13
3	1206	8	1206	10
4	1211	6	1211	8
5	1215	5	1215	7
6	1218	5	1219	6
7	1220	4	1222	6
8	1222	4	1224	5
9	1224	4	1227	5
10	1226	3	1229	5
11	1228	3	1231	5
12	1230	3	1232	4
13	1231	3	1234	4
14	1233	3	1236	4
15	1235	3	1237	4
16	1236	3	1239	4
17	1238	3	1241	4
18	1240	3	1242	4
19	1242	3	1244	4
20	1244	3	1245	4
21	1246	3	1247	4
22	1248	3	1249	4
23	1250	3	1251	5
24	1252	4	1253	5
25	1256	5	1255	5
26	1260	6	1257	6
27	1267	9	1260	6
28	1278	14	1263	7
29	1289	20	1267	8
30	1290	20	1271	9
31			1277	10
32			1284	12
33			1290	16
34			1290	17
35			1290	17

*Verbal and nonverbal forms use the same rs ss tables.

	ELA		Math	
Table B. 2 Raw-Score-to-Scale Score Conversion with Standard Error of Measurement: Grade 4				
Raw Score	**Scale Score**	**SEM**	**Scale Score**	**SEM**
0	1200	25	1200	26
1	1200	19	1200	20
2	1200	15	1200	15
3	1200	10	1200	11
4	1206	8	1207	9
5	1211	6	1212	8
6	1214	5	1216	7
7	1218	5	1219	7
8	1220	4	1222	6
9	1222	4	1225	6
10	1224	3	1227	6
11	1226	3	1230	5
12	1228	3	1232	5
13	1229	3	1234	5
14	1231	3	1236	5
15	1233	3	1238	5
16	1234	3	1240	5
17	1236	3	1242	5
18	1237	3	1244	5
19	1239	3	1246	5
20	1241	3	1248	5
21	1243	3	1250	5
22	1245	3	1253	6
23	1247	3	1255	6
24	1249	4	1258	6
25	1252	4	1261	7
26	1256	6	1265	8
27	1261	7	1269	8
28	1269	11	1274	10
29	1281	16	1280	11
30	1288	20	1288	14
31	1290	20	1290	15
32			1290	15
33			1290	15

*Verbal and nonverbal forms use the same rs ss tables.

Table B. 3 Raw-Score-to-Scale Score Conversion with Standard Error of Measurement: Grade 5				
	ELA		Math	
Raw Score	Scale Score	SEM	Scale Score	SEM
0	1200	27	1200	32
1	1200	19	1200	26
2	1200	13	1200	21
3	1205	9	1200	17
4	1210	7	1200	12
5	1214	6	1207	10
6	1217	5	1213	8
7	1220	5	1217	7
8	1222	4	1220	7
9	1224	4	1224	6
10	1226	4	1226	6
11	1228	4	1229	5
12	1230	4	1231	5
13	1232	4	1233	5
14	1233	4	1236	5
15	1235	4	1238	5
16	1236	4	1239	5
17	1238	4	1242	5
18	1240	4	1244	5
19	1242	4	1246	5
20	1244	5	1248	5
21	1247	5	1251	5
22	1250	6	1253	6
23	1253	6	1256	6
24	1258	7	1258	6
25	1263	9	1261	7
26	1270	11	1265	7
27	1280	15	1268	8
28	1290	20	1273	9
29	1290	20	1279	11
30	1290	20	1286	13
31			1290	16
32			1290	16
33			1290	16
34			1290	16
35			1290	16

*Verbal and nonverbal forms use the same rs ss tables.

	ELA		Math	
	Table B. 4 **Raw-Score-to-Scale Score Conversion with Standard Error of Measurement:** **Grade 6**			
Raw Score	**Scale Score**	**SEM**	**Scale Score**	**SEM**
0	1200	23	1200	23
1	1200	16	1200	18
2	1200	10	1200	12
3	1204	7	1204	9
4	1209	6	1209	8
5	1212	5	1213	7
6	1214	4	1217	6
7	1217	4	1220	5
8	1219	4	1222	5
9	1220	4	1224	5
10	1222	4	1226	5
11	1224	3	1228	4
12	1225	3	1230	4
13	1227	3	1231	4
14	1228	3	1233	4
15	1229	3	1235	4
16	1231	4	1236	4
17	1232	4	1238	4
18	1234	4	1239	4
19	1236	4	1241	4
20	1238	4	1242	4
21	1239	4	1244	4
22	1242	5	1246	5
23	1244	5	1248	5
24	1247	6	1250	5
25	1251	6	1252	5
26	1255	7	1255	6
27	1261	9	1257	6
28	1271	13	1261	7
29	1287	21	1265	8
30	1290	21	1269	9
31			1275	11
32			1283	13
33			1290	17
34			1290	17
35			1290	17

*Verbal and nonverbal forms use the same rs ss tables.

	ELA		Math	
Raw Score	**Scale Score**	**SEM**	**Scale Score**	**SEM**
0	1200	25	1200	21
1	1200	17	1200	15
2	1201	11	1200	11
3	1209	8	1207	9
4	1214	6	1212	7
5	1217	5	1216	7
6	1220	4	1219	6
7	1222	4	1222	6
8	1224	3	1224	5
9	1226	3	1226	5
10	1227	3	1228	5
11	1229	3	1230	5
12	1230	3	1232	5
13	1231	3	1234	5
14	1233	3	1236	5
15	1234	3	1238	5
16	1236	3	1239	5
17	1237	3	1241	5
18	1238	3	1243	5
19	1240	4	1245	5
20	1242	4	1246	5
21	1245	4	1248	5
22	1247	5	1250	5
23	1250	6	1252	5
24	1255	7	1254	5
25	1259	8	1257	6
26	1266	10	1259	6
27	1277	14	1262	6
28	1290	20	1265	7
29	1290	20	1269	8
30			1273	9
31			1279	11
32			1287	15
33			1290	16
34			1290	16

Table B. 5
Raw-Score-to-Scale Score Conversion with Standard Error of Measurement:
Grade 7

*Verbal and nonverbal forms use the same rs ss tables.

	ELA		Math	
	Table B. 6			
	Raw-Score-to-Scale Score Conversion with Standard Error of Measurement:			
	Grade 8			
	ELA		**Math**	
Raw Score	**Scale Score**	**SEM**	**Scale Score**	**SEM**
0	1200	21	1200	25
1	1200	15	1200	19
2	1200	10	1200	14
3	1202	8	1203	11
4	1207	6	1209	9
5	1211	5	1214	8
6	1213	5	1218	7
7	1216	4	1221	6
8	1218	4	1224	6
9	1220	4	1226	5
10	1221	4	1228	5
11	1223	3	1230	5
12	1224	3	1232	5
13	1226	3	1234	5
14	1227	3	1236	5
15	1229	3	1238	5
16	1230	3	1239	5
17	1232	4	1241	5
18	1234	4	1243	5
19	1235	4	1244	5
20	1237	4	1246	5
21	1239	4	1248	5
22	1241	5	1250	5
23	1244	5	1251	5
24	1247	6	1253	5
25	1250	6	1256	5
26	1254	7	1258	6
27	1259	8	1260	6
28	1265	10	1263	7
29	1274	13	1267	7
30	1290	20	1271	8
31	1290	20	1275	9
32			1282	11
33			1290	15
34			1290	16
35			1290	16

*Verbal and nonverbal forms use the same rs ss tables.

Table B. 7 Raw-Score-to-Scale Score Conversion with Standard Error of Measurement: Grade 11				
	ELA		Math	
Raw Score	Scale Score	SEM	Scale Score	SEM
0	1200	28	1200	24
1	1201	13	1200	17
2	1212	7	1202	11
3	1217	5	1209	9
4	1220	4	1214	8
5	1222	3	1218	7
6	1224	3	1221	6
7	1226	3	1224	6
8	1227	3	1227	5
9	1228	2	1229	5
10	1229	2	1231	5
11	1230	2	1233	5
12	1231	2	1235	5
13	1233	2	1237	4
14	1234	2	1238	4
15	1235	2	1239	4
16	1236	2	1242	4
17	1237	2	1243	4
18	1238	3	1245	4
19	1239	3	1246	4
20	1241	3	1248	4
21	1243	3	1250	4
22	1245	4	1252	5
23	1248	4	1253	5
24	1252	6	1255	5
25	1258	8	1258	5
26	1270	14	1260	6
27	1290	30	1262	6
28	1290	30	1265	6
29			1269	7
30			1273	8
31			1279	10
32			1288	2
33			1290	16
34			1290	16

*Verbal and nonverbal forms use the same rs ss tables.

Appendix C: Test Results by Population Categories

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥540	29.62	13.16	34.55	22.67	57.22	1240.24	16.44
Gender	Female	≥180	30.77	15.93	31.87	21.43	53.30	1239.64	16.15
	Male	≥360	29.04	11.78	35.89	23.29	59.18	1240.54	16.59
Ethnicity	Hispanic/Latino	≥40	29.55	20.45	29.55	20.45	50.00	1237.82	15.45
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥270	32.85	14.44	36.82	15.88	52.71	1238.89	16.04
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥200	24.88	9.76	32.68	32.68	65.37	1242.86	16.95
	Two or More Races	≥10	30.77	7.69	30.77	30.77	61.54	1241.92	14.15
Economic Status	Not Economically Disadvantaged	≥80	28.09	12.36	31.46	28.09	59.55	1242.13	15.65
	Economically Disadvantaged	≥440	29.57	13.32	35.67	21.44	57.11	1239.79	16.43
EL Status	Non-EL	≥530	29.51	12.97	34.77	22.74	57.52	1240.29	16.51
	EL	≥10	33.33	20.00	26.67	20.00	46.67	1238.67	14.06
Migrant Status	Non-migrant	≥540	29.62	13.16	34.55	22.67	57.22	1240.24	16.44
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 1
Performance Results: ELA Grade 3

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥640	35.73	19.03	35.10	10.14	45.24	1238.82	17.99
Gender	Female	≥220	36.49	20.72	33.33	9.46	42.79	1237.52	18.03
	Male	≥410	35.32	18.14	36.04	10.50	46.54	1239.51	17.96
Ethnicity	Hispanic/Latino	≥40	27.08	20.83	43.75	8.33	52.08	1241.69	15.72
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥350	32.21	19.61	38.66	9.52	48.18	1239.58	17.55
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥210	42.40	17.51	28.57	11.52	40.09	1237.00	19.19
	Two or More Races	<10	NR	NR	NR	NR	NR	NR	NR
Economic Status	Not Economically Disadvantaged	≥100	45.71	20.95	25.71	7.62	33.33	1235.89	15.58
	Economically Disadvantaged	≥520	33.91	18.77	36.40	10.92	47.32	1239.41	18.55
EL Status	Non-EL	≥620	35.57	19.30	34.93	10.21	45.14	1238.83	17.94
	EL	≥10	42.86	7.14	42.86	7.14	50.00	1238.36	21.08
Migrant Status	Non-migrant	≥640	35.73	19.03	35.10	10.14	45.24	1238.82	17.99
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 2
Performance Results: ELA Grade 4

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥730	14.50	25.61	38.08	21.82	59.89	1244.52	18.29
Gender	Female	≥270	14.44	25.56	37.78	22.22	60.00	1245.20	18.48
	Male	≥460	14.53	25.64	38.25	21.58	59.83	1244.12	18.19
Ethnicity	Hispanic/Latino	≥40	17.07	17.07	43.90	21.95	65.85	1244.68	16.64
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥390	14.10	24.10	38.97	22.82	61.79	1245.25	18.30
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥270	14.44	28.15	37.04	20.37	57.41	1243.60	18.87
	Two or More Races	≥10	16.67	44.44	22.22	16.67	38.89	1241.17	13.24
Economic Status	Not Economically Disadvantaged	≥110	15.65	27.83	43.48	13.04	56.52	1241.10	16.91
	Economically Disadvantaged	≥610	14.36	25.45	37.03	23.16	60.20	1245.01	18.44
EL Status	Non-EL	≥720	14.72	25.58	37.69	22.01	59.70	1244.48	18.37
	EL	≥10	0.00	27.27	63.64	9.09	72.73	1246.73	12.80
Migrant Status	Non-migrant	≥730	14.50	25.61	38.08	21.82	59.89	1244.52	18.29
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 3
Performance Results: ELA Grade 5

			Percent by Achievement Level					Scale Score	
Table C. 4 **Performance Results: ELA Grade 6**									
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥910	24.16	27.75	25.24	22.85	48.10	1242.05	18.77
Gender	Female	≥290	30.95	25.85	22.79	20.41	43.20	1238.96	18.66
	Male	≥620	20.96	28.64	26.40	24.00	50.40	1243.50	18.65
Ethnicity	Hispanic/Latino	≥40	24.44	26.67	31.11	17.78	48.89	1241.18	18.57
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥500	20.68	28.43	24.65	26.24	50.89	1244.19	19.43
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥340	29.62	26.98	25.51	17.89	43.40	1238.92	17.50
	Two or More Races	≥20	19.05	14.29	28.57	38.10	66.67	1245.38	19.49
Economic Status	Not Economically Disadvantaged	≥160	37.13	29.94	17.37	15.57	32.93	1236.40	18.06
	Economically Disadvantaged	≥730	21.11	27.33	26.93	24.63	51.56	1243.32	18.74
EL Status	Non-EL	≥900	24.31	27.40	25.19	23.09	48.29	1242.07	18.82
	EL	≥10	14.29	50.00	28.57	7.14	35.71	1240.71	15.68
Migrant Status	Non-migrant	≥910	24.26	27.65	25.14	22.95	48.09	1242.06	18.80
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

			Percent by Achievement Level					Scale Score	
Table C. 5 Performance Results: ELA Grade 7									
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥1,020	21.55	13.61	31.15	33.69	64.84	1246.85	18.28
Gender	Female	≥340	23.75	12.32	30.50	33.43	63.93	1246.14	19.40
	Male	≥680	20.44	14.26	31.47	33.82	65.29	1247.20	17.70
Ethnicity	Hispanic/Latino	≥40	25.00	14.58	37.50	22.92	60.42	1241.67	18.60
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	≥10	35.71	21.43	42.86	0.00	42.86	1239.00	8.54
	Black or African American	≥580	21.43	13.44	30.78	34.35	65.14	1247.53	.
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥350	21.47	13.56	29.10	35.88	64.97	1246.56	17.81
	Two or More Races	≥10	7.14	7.14	57.14	28.57	85.71	1251.64	16.78
Economic Status	Not Economically Disadvantaged	≥150	26.97	19.74	25.66	27.63	53.29	1242.66	17.04
	Economically Disadvantaged	≥860	20.70	12.56	32.44	34.30	66.74	1247.45	18.35
EL Status	Non-EL	≥1,000	21.51	13.58	30.92	33.99	64.92	1246.92	18.34
	EL	≥10	25.00	16.67	50.00	8.33	58.33	1240.75	10.38
Migrant Status	Non-migrant	≥1,020	21.57	13.63	31.18	33.63	64.80	1246.84	18.29
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

			Percent by Achievement Level					Scale Score	
Table C. 6									
Performance Results: ELA Grade 8									
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥990	17.61	26.36	20.12	35.92	56.04	1244.12	18.39
Gender	Female	≥320	19.63	26.48	19.94	33.96	53.89	1242.83	18.47
	Male	≥670	16.64	26.30	20.21	36.85	57.06	1244.73	18.33
Ethnicity	Hispanic/Latino	≥30	12.50	28.13	18.75	40.63	59.38	1247.69	17.62
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	≥10	40.00	40.00	0.00	20.00	20.00	1234.70	17.72
	Black or African American	≥540	15.71	27.91	22.74	33.64	56.38	1243.60	17.14
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥380	19.64	24.29	17.05	39.02	56.07	1244.71	19.70
	Two or More Races	≥10	26.67	13.33	6.67	53.33	60.00	1250.47	26.97
Economic Status	Not Economically Disadvantaged	≥150	22.01	26.42	18.87	32.70	51.57	1241.51	18.14
	Economically Disadvantaged	≥820	16.81	26.36	20.31	36.52	56.83	1244.56	18.40
EL Status	Non-EL	≥980	17.71	26.42	20.14	35.73	55.87	1244.05	18.39
	EL	<10	NR	NR	NR	NR	NR	NR	NR
Migrant Status	Non-migrant	≥990	17.62	26.28	20.14	35.95	56.09	1244.13	18.39
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥920	22.50	16.15	36.81	24.54	61.36	1246.29	18.42
Gender	Female	≥300	24.03	16.23	35.39	24.35	59.74	1245.54	18.20
	Male	≥620	21.74	16.10	37.52	24.64	62.16	1246.66	18.53
Ethnicity	Hispanic/Latino	≥30	21.88	18.75	37.50	21.88	59.38	1244.25	19.97
	American Indian or AK Native	≥10	20.00	30.00	20.00	30.00	50.00	1244.50	23.36
	Asian	≥10	18.18	18.18	45.45	18.18	63.64	1247.27	13.21
	Black or African American	≥510	26.41	15.15	37.48	20.97	58.45	1244.78	17.13
	Native Hawaiian or Other Pacific Islander	<10							
	White	≥350	17.14	17.43	36.00	29.43	65.43	1248.43	19.84
	Two or More Races	≥10	18.18	0.00	36.36	45.45	81.82	1255.09	19.39
Economic Status	Not Economically Disadvantaged	≥130	22.73	20.45	39.39	17.42	56.82	1243.87	17.12
	Economically Disadvantaged	≥690	21.65	15.73	36.80	25.83	62.63	1247.26	18.06
EL Status	Non-EL	≥910	22.63	16.10	36.89	24.37	61.26	1246.17	18.37
	EL	≥10	10.00	20.00	30.00	40.00	70.00	1257.00	20.71
Migrant Status	Non-migrant	≥920	22.55	16.18	36.79	24.49	61.27	1246.23	18.38
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 7
Performance Results: ELA Grade 11

			Percent by Achievement Level					Scale Score	
Table C. 8									
Performance Results: Mathematics Grade 3									
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥540	26.89	17.86	34.07	21.18	55.25	1242.13	18.23
Gender	Female	≥180	27.62	22.65	32.04	17.68	49.72	1241.13	17.14
	Male	≥360	26.52	15.47	35.08	22.93	58.01	1242.63	18.75
Ethnicity	Hispanic/Latino	≥40	27.27	13.64	45.45	13.64	59.09	1240.18	15.47
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥270	31.02	19.34	29.93	19.71	49.64	1240.88	17.97
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥200	21.57	17.16	36.76	24.51	61.27	1244.19	19.34
	Two or More Races	≥10	23.08	7.69	38.46	30.77	69.23	1245.31	11.24
Economic Status	Not Economically Disadvantaged	≥80	26.97	19.10	30.34	23.60	53.93	1242.96	17.43
	Economically Disadvantaged	≥440	26.82	17.95	34.77	20.45	55.23	1241.88	18.41
EL Status	Non-EL	≥520	26.89	17.99	34.09	21.02	55.11	1242.05	18.36
	EL	≥10	26.67	13.33	33.33	26.67	60.00	1244.93	12.82
Migrant Status	Non-migrant	≥540	26.89	17.86	34.07	21.18	55.25	1242.13	18.23
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥640	26.88	16.56	33.75	22.81	56.56	1240.32	18.02
Gender	Female	≥220	29.86	15.84	30.32	23.98	54.30	1239.78	19.16
	Male	≥410	25.30	16.95	35.56	22.20	57.76	1240.61	17.41
Ethnicity	Hispanic/Latino	≥40	16.67	20.83	31.25	31.25	62.50	1245.52	17.26
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥350	23.88	19.94	33.43	22.75	56.18	1240.46	17.69
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥210	32.72	10.14	35.94	21.20	57.14	1239.01	18.98
	Two or More Races	<10	NR	NR	NR	NR	NR	NR	NR
Economic Status	Not Economically Disadvantaged	≥100	29.52	20.95	34.29	15.24	49.52	1238.56	14.62
	Economically Disadvantaged	≥520	26.68	15.74	33.40	24.18	57.58	1240.56	18.70
EL Status	Non-EL	≥620	26.68	16.61	34.03	22.68	56.71	1240.31	17.96
	EL	≥10	35.71	14.29	21.43	28.57	50.00	1240.64	21.52
Migrant Status	Non-migrant	≥640	26.88	16.56	33.75	22.81	56.56	1240.32	18.02
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 9
Performance Results: Mathematics Grade 4

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥730	16.51	30.72	33.02	19.76	52.77	1242.49	17.62
Gender	Female	≥270	15.56	30.00	34.07	20.37	54.44	1243.01	16.96
	Male	≥460	17.06	31.13	32.41	19.40	51.81	1242.20	18.00
Ethnicity	Hispanic/Latino	≥40	12.20	29.27	41.46	17.07	58.54	1242.05	17.56
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥390	14.36	33.33	31.54	20.77	52.31	1243.11	17.43
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥270	18.82	28.78	34.32	18.08	52.40	1241.78	18.11
	Two or More Races	≥10	33.33	16.67	38.89	11.11	50.00	1237.78	12.10
Economic Status	Not Economically Disadvantaged	≥110	18.26	32.17	36.52	13.04	49.57	1239.46	15.91
	Economically Disadvantaged	≥610	16.29	30.78	32.25	20.68	52.93	1242.92	17.85
EL Status	Non-EL	≥720	16.62	30.77	32.83	19.78	52.61	1242.49	17.71
	EL	≥10	9.09	27.27	45.45	18.18	63.64	1242.64	10.73
Migrant Status	Non-migrant	≥730	16.51	30.72	33.02	19.76	52.77	1242.49	17.62
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 10
Performance Results: Mathematics Grade 5

Table C. 11									
Performance Results: Mathematics Grade 6									
			Percent by Achievement Level					**Scale Score**	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥910	21.46	21.79	23.97	32.79	56.75	1244.26	17.82
Gender	Female	≥290	27.55	20.07	26.19	26.19	52.38	1241.13	18.13
	Male	≥620	18.59	22.60	22.92	35.90	58.81	1245.73	17.50
Ethnicity	Hispanic/Latino	≥40	28.89	22.22	20.00	28.89	48.89	1241.62	17.29
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	<10	NR	NR	NR	NR	NR	NR	NR
	Black or African American	≥500	18.33	21.91	24.50	35.26	59.76	1245.96	18.09
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥340	25.22	22.58	23.17	29.03	52.20	1241.92	17.31
	Two or More Races	≥20	23.81	9.52	33.33	33.33	66.67	1244.86	18.52
Economic Status	Not Economically Disadvantaged	≥160	30.54	22.16	19.76	27.54	47.31	1239.77	18.13
	Economically Disadvantaged	≥730	19.38	21.95	24.53	34.15	58.67	1245.31	17.73
EL Status	Non-EL	≥900	21.35	22.01	23.67	32.96	56.64	1244.25	17.84
	EL	≥10	28.57	7.14	42.86	21.43	64.29	1245.21	17.38
Migrant Status	Non-migrant	≥910	21.44	21.77	23.96	32.82	56.78	1244.26	17.85
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 12 Performance Results: Mathematics Grade 7									
			Percent by Achievement Level					**Scale Score**	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥1,010	11.19	24.83	29.54	34.45	63.98	1248.75	19.82
Gender	Female	≥340	15.29	23.53	30.29	30.88	61.18	1246.99	20.55
	Male	≥670	9.13	25.48	29.16	36.23	65.39	1249.63	19.39
Ethnicity	Hispanic/Latino	≥40	16.67	33.33	27.08	22.92	50.00	1240.79	19.24
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	≥10	14.29	14.29	28.57	42.86	71.43	1249.29	15.37
	Black or African American	≥580	10.92	26.62	27.99	34.47	62.46	1249.31	20.00
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥350	11.30	20.90	31.36	36.44	67.80	1249.02	19.96
	Two or More Races	≥10	0.00	28.57	57.14	14.29	71.43	1245.64	8.40
Economic Status	Not Economically Disadvantaged	≥150	11.18	25.00	34.21	29.61	63.82	1245.89	19.12
	Economically Disadvantaged	≥850	11.32	24.62	28.59	35.47	64.06	1249.25	19.93
EL Status	Non-EL	≥1,000	11.13	24.75	29.42	34.69	64.12	1248.80	19.91
	EL	≥10	15.38	30.77	38.46	15.38	53.85	1244.54	10.52
Migrant Status	Non-migrant	≥1,010	11.20	24.85	29.57	34.38	63.95	1248.73	19.82
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥990	16.48	19.20	23.92	40.40	64.32	1246.54	18.50
Gender	Female	≥320	17.76	19.94	26.17	36.14	62.31	1244.75	18.45
	Male	≥670	15.88	18.84	22.85	42.43	65.28	1247.40	18.47
Ethnicity	Hispanic/Latino	≥30	6.25	18.75	28.13	46.88	75.00	1250.81	14.95
	American Indian or AK Native	<10	NR	NR	NR	NR	NR	NR	NR
	Asian	≥10	10.00	10.00	40.00	40.00	80.00	1248.80	15.69
	Black or African American	≥540	16.97	21.96	21.96	39.11	61.07	1246.21	17.84
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥380	17.05	16.28	25.58	41.09	66.67	1246.46	19.57
	Two or More Races	≥10	13.33	6.67	33.33	46.67	80.00	1249.40	21.11
Economic Status	Not Economically Disadvantaged	≥150	17.61	20.75	25.79	35.85	61.64	1245.79	20.09
	Economically Disadvantaged	≥820	16.43	18.96	23.43	41.18	64.61	1246.61	18.19
EL Status	Non-EL	≥980	16.48	19.31	23.96	40.24	64.21	1246.51	18.51
	EL	<10	NR	NR	NR	NR	NR	NR	NR
Migrant Status	Non-migrant	≥990	16.50	19.11	23.94	40.44	64.39	1246.56	18.50
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 13
Performance Results: Mathematics Grade 8

			Percent by Achievement Level					Scale Score	
Category	**Group**	**Student Count**	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Levels 3 & 4**	**Mean**	**Std Dev**
State		≥930	16.76	24.97	23.80	34.47	58.27	1244.83	18.24
Gender	Female	≥300	21.04	27.51	20.71	30.74	51.46	1243.83	18.31
	Male	≥620	14.65	23.73	25.32	36.31	61.62	1245.33	18.21
Ethnicity	Hispanic/Latino	≥30	12.12	21.21	45.45	21.21	66.67	1242.97	17.64
	American Indian or AK Native	≥10	9.09	45.45	18.18	27.27	45.45	1240.55	16.00
	Asian	≥10	0.00	40.00	40.00	20.00	60.00	1246.10	11.54
	Black or African American	≥510	16.60	27.80	23.75	31.85	55.60	1243.90	17.43
	Native Hawaiian or Other Pacific Islander	<10	NR	NR	NR	NR	NR	NR	NR
	White	≥350	18.41	20.40	20.96	40.23	61.19	1246.42	19.59
	Two or More Races	≥10	8.33	16.67	41.67	33.33	75.00	1246.33	18.94
Economic Status	Not Economically Disadvantaged	≥130	20.61	24.43	26.72	28.24	54.96	1244.69	18.95
	Economically Disadvantaged	≥690	14.60	25.72	23.12	36.56	59.68	1245.71	17.42
EL Status	Non-EL	≥920	16.83	24.92	23.73	34.52	58.25	1244.79	18.23
	EL	≥10	10.00	30.00	30.00	30.00	60.00	1248.80	20.07
Migrant Status	Non-migrant	≥930	16.79	25.03	23.74	34.44	58.18	1244.78	18.20
	Migrant	<10	NR	NR	NR	NR	NR	NR	NR

Table C. 14
Performance Results: Mathematics Grade 11

Appendix D: Reliability by Population Categories

Table D. 1 Reliability by Population Categories: ELA Grade 3 Nonverbal Form				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥340	2.77	0.90
Gender	Female	≥120	2.75	0.91
	Male	≥210	2.78	0.89
Ethnicity	Hispanic/Latino	≥20	2.91	0.86
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥170	2.78	0.90
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥120	2.72	0.89
	Two or More Races	<10	NR	NR
Economic Status	Not Economically Disadvantaged	≥50	2.78	0.88
	Economically Disadvantaged	≥270	2.77	0.90
EL Status	Non-EL	≥320	2.76	0.90
	EL	≥10	2.98	0.89
Migrant Status	Non-migrant	≥340	2.77	0.90
	Migrant	<10	NR	NR

Category	Group	Student Count	SEM	Cronbach's Alpha
Table D. 2				
Reliability by Population Categories: ELA Grade 3 Verbal Form				
State		≥200	2.84	0.94
Gender	Female	≥50	2.85	0.94
	Male	≥140	2.84	0.94
Ethnicity	Hispanic/Latino	≥10	2.85	0.93
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥100	2.89	0.93
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥70	2.79	0.95
	Two or More Races	<10	NR	NR
Economic Status	Not Economically Disadvantaged	≥30	2.92	0.93
	Economically Disadvantaged	≥160	2.82	0.94
EL Status	Non-EL	≥200	2.84	0.94
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥200	2.84	0.94
	Migrant	<10	NR	NR

Table D. 3 Reliability by Population Categories: ELA Grade 4 Nonverbal Form				
Category	Group	Student Count	SEM	Cronbach's Alpha
State		≥420	2.87	0.90
Gender	Female	≥140	2.92	0.89
	Male	≥270	2.85	0.90
Ethnicity	Hispanic/Latino	≥20	3.10	0.88
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥260	2.89	0.88
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥120	2.79	0.92
	Two or More Races	<10	NR	NR
Economic Status	Not Economically Disadvantaged	≥50	2.88	0.90
	Economically Disadvantaged	≥350	2.86	0.90
EL Status	Non-EL	≥410	2.86	0.90
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥420	2.87	0.90
	Migrant	<10	NR	NR

Table D. 4 Reliability by Population Categories: ELA Grade 4 Verbal Form				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥220	2.79	0.95
Gender	Female	≥70	2.78	0.94
	Male	≥140	2.80	0.95
Ethnicity	Hispanic/Latino	≥20	2.96	0.91
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥90	2.73	0.95
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥90	2.79	0.94
	Two or More Races	<10	NR	NR
Economic Status	Not Economically Disadvantaged	≥50	3.00	0.91
	Economically Disadvantaged	≥160	2.73	0.95
EL Status	Non-EL	≥210	2.79	0.95
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥220	2.79	0.95
	Migrant	<10	NR	NR

	Table D. 5 Reliability by Population Categories: ELA Grade 5			
Category	Group	Student Count	SEM	Cronbach's Alpha
State		≥730	2.43	0.89
Gender	Female	≥270	2.41	0.89
	Male	≥460	2.44	0.89
Ethnicity	Hispanic/Latino	≥40	2.44	0.89
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥390	2.42	0.88
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥270	2.44	0.90
	Two or More Races	≥10	2.48	0.81
Economic Status	Not Economically Disadvantaged	≥110	2.53	0.89
	Economically Disadvantaged	≥610	2.41	0.89
EL Status	Non-EL	≥720	2.43	0.89
	EL	≥10	2.42	0.67
Migrant Status	Non-migrant	≥730	2.43	0.89
	Migrant	<10	NR	NR

Table D. 6 Reliability by Population Categories: ELA Grade 6				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥910	2.41	0.91
Gender	Female	≥290	2.42	0.93
	Male	≥620	2.40	0.90
Ethnicity	Hispanic/Latino	≥40	2.39	0.91
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥500	2.37	0.91
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥340	2.48	0.91
	Two or More Races	≥20	2.11	0.95
Economic Status	Not Economically Disadvantaged	≥160	2.49	0.92
	Economically Disadvantaged	≥730	2.39	0.91
EL Status	Non-EL	≥900	2.41	0.91
	EL	≥10	2.57	0.79
Migrant Status	Non-migrant	≥910	2.41	0.91
	Migrant	<10	NR	NR

		Student Count	SEM	Cronbach's Alpha
Table D. 7 **Reliability by Population Categories: ELA Grade 7**
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥1,020	2.36	0.91
Gender	Female	≥340	2.31	0.93
	Male	≥680	2.39	0.90
Ethnicity	Hispanic/Latino	≥40	2.40	0.93
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.64	0.76
	Black or African American	≥580	2.34	0.91
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥350	2.37	0.91
	Two or More Races	≥10	2.28	0.76
Economic Status	Not Economically Disadvantaged	≥150	2.43	0.91
	Economically Disadvantaged	≥860	2.35	0.91
EL Status	Non-EL	≥1,000	2.35	0.91
	EL	≥10	2.54	0.83
Migrant Status	Non-migrant	≥1,020	2.36	0.91
	Migrant	<10	NR	NR

Table D. 8 Reliability by Population Categories: ELA Grade 8				
Category	Group	Student Count	SEM	Cronbach's Alpha
State		≥990	2.41	0.91
Gender	Female	≥320	2.41	0.92
	Male	≥670	2.41	0.90
Ethnicity	Hispanic/Latino	≥30	2.36	0.86
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.54	0.94
	Black or African American	≥540	2.44	0.90
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥380	2.38	0.92
	Two or More Races	≥10	2.18	0.95
Economic Status	Not Economically Disadvantaged	≥150	2.54	0.91
	Economically Disadvantaged	≥820	2.38	0.91
EL Status	Non-EL	≥980	2.41	0.91
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥990	2.41	0.91
	Migrant	<10	NR	NR

Table D. 9 Reliability by Population Categories: ELA Grade 11				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥840	2.17	0.92
Gender	Female	≥270	2.26	0.91
	Male	≥570	2.13	0.92
Ethnicity	Hispanic/Latino	≥20	2.16	0.94
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.26	0.82
	Black or African American	≥460	2.23	0.92
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥320	2.09	0.93
	Two or More Races	≥10	1.96	0.88
Economic Status	Not Economically Disadvantaged	≥130	2.23	0.92
	Economically Disadvantaged	≥690	2.16	0.92
EL Status	Non-EL	≥830	2.17	0.92
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥840	2.17	0.92
	Migrant	<10	NR	NR

Table D. 10 Reliability by Population Categories: Mathematics Grade 3				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥540	2.60	0.90
Gender	Female	≥180	2.63	0.88
	Male	≥360	2.58	0.90
Ethnicity	Hispanic/Latino	≥40	2.69	0.87
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥270	2.60	0.89
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥200	2.56	0.90
	Two or More Races	≥10	2.75	0.82
Economic Status	Not Economically Disadvantaged	≥80	2.62	0.89
	Economically Disadvantaged	≥440	2.59	0.90
EL Status	Non-EL	≥520	2.59	0.90
	EL	≥10	2.72	0.84
Migrant Status	Non-migrant	≥540	2.60	0.90
	Migrant	<10	NR	NR

Table D. 11 Reliability by Population Categories: Mathematics Grade 4				
Category	Group	Student Count	SEM	Cronbach's Alpha
State		≥640	2.56	0.87
Gender	Female	≥220	2.53	0.89
	Male	≥410	2.58	0.86
Ethnicity	Hispanic/Latino	≥40	2.69	0.83
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥350	2.55	0.87
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥210	2.54	0.89
	Two or More Races	<10	NR	NR
Economic Status	Not Economically Disadvantaged	≥100	2.67	0.81
	Economically Disadvantaged	≥520	2.54	0.88
EL Status	Non-EL	≥620	2.56	0.87
	EL	≥10	2.68	0.89
Migrant Status	Non-migrant	≥640	2.56	0.87
	Migrant	<10	NR	NR

Category	Group	Student Count	SEM	Cronbach's Alpha
Table D. 12 Reliability by Population Categories: Mathematics Grade 5				
State		≥730	2.68	0.84
Gender	Female	≥270	2.68	0.83
	Male	≥460	2.68	0.85
Ethnicity	Hispanic/Latino	≥40	2.64	0.85
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥390	2.68	0.84
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥270	2.69	0.85
	Two or More Races	≥10	2.69	0.73
Economic Status	Not Economically Disadvantaged	≥110	2.74	0.82
	Economically Disadvantaged	≥610	2.67	0.85
EL Status	Non-EL	≥720	2.68	0.84
	EL	≥10	2.73	0.67
Migrant Status	Non-migrant	≥730	2.68	0.84
	Migrant	<10	NR	NR

Category	Group	Student Count	SEM	Cronbach's Alpha
Table D. 13 — **Reliability by Population Categories: Mathematics Grade 6**				
State		≥910	2.57	0.89
Gender	Female	≥290	2.58	0.90
	Male	≥620	2.57	0.88
Ethnicity	Hispanic/Latino	≥40	2.56	0.89
	American Indian or AK Native	<10	NR	NR
	Asian	<10	NR	NR
	Black or African American	≥500	2.56	0.88
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥340	2.60	0.89
	Two or More Races	≥20	2.57	0.89
Economic Status	Not Economically Disadvantaged	≥160	2.57	0.90
	Economically Disadvantaged	≥730	2.57	0.88
EL Status	Non-EL	≥900	2.57	0.89
	EL	≥10	2.56	0.88
Migrant Status	Non-migrant	≥910	2.57	0.89
	Migrant	<10	NR	NR

Table D. 14				
Reliability by Population Categories: Mathematics Grade 7				
Category	Group	Student Count	SEM	Cronbach's Alpha
State		≥1,010	2.47	0.90
Gender	Female	≥340	2.46	0.91
	Male	≥670	2.48	0.90
Ethnicity	Hispanic/Latino	≥40	2.52	0.91
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.60	0.86
	Black or African American	≥580	2.45	0.91
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥350	2.47	0.91
	Two or More Races	≥10	2.66	0.63
Economic Status	Not Economically Disadvantaged	≥150	2.50	0.90
	Economically Disadvantaged	≥850	2.46	0.91
EL Status	Non-EL	≥1,000	2.47	0.91
	EL	≥10	2.72	0.75
Migrant Status	Non-migrant	≥1,010	2.47	0.90
	Migrant	<10	NR	NR

Table D. 15 Reliability by Population Categories: Mathematics Grade 8				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥990	2.60	0.89
Gender	Female	≥320	2.62	0.89
	Male	≥670	2.60	0.89
Ethnicity	Hispanic/Latino	≥30	2.63	0.83
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.39	0.90
	Black or African American	≥540	2.62	0.89
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥380	2.58	0.90
	Two or More Races	≥10	2.51	0.92
Economic Status	Not Economically Disadvantaged	≥150	2.64	0.90
	Economically Disadvantaged	≥820	2.59	0.89
EL Status	Non-EL	≥980	2.60	0.89
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥990	2.60	0.89
	Migrant	<10	NR	NR

		Student		Cronbach's
Table D. 16				
Reliability by Population Categories: Mathematics Grade 11				
Category	**Group**	**Student Count**	**SEM**	**Cronbach's Alpha**
State		≥840	2.59	0.88
Gender	Female	≥270	2.59	0.89
	Male	≥570	2.59	0.88
Ethnicity	Hispanic/Latino	≥20	2.60	0.87
	American Indian or AK Native	<10	NR	NR
	Asian	≥10	2.72	0.78
	Black or African American	≥460	2.62	0.87
	Native Hawaiian or Other Pacific Islander	<10	NR	NR
	White	≥320	2.54	0.90
	Two or More Races	≥10	2.65	0.77
Economic Status	Not Economically Disadvantaged	≥130	2.52	0.90
	Economically Disadvantaged	≥690	2.61	0.88
EL Status	Non-EL	≥830	2.59	0.88
	EL	<10	NR	NR
Migrant Status	Non-migrant	≥840	2.59	0.88
	Migrant	<10	NR	NR