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2016–17 Administration

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Acronyms and Initialisms Used in the California Alternate Assessments for English Language Arts/Literacy and Mathematics Technical Report

Term	Definition
1PL	one-parameter logistic
1PL-IRT	one-parameter item response theory
AA-AAS	alternate achievement standards
AERA	American Educational Research Association
AIR	American Institutes for Research
AIS	average item score
APA	American Psychological Association
CAA	California Alternate Assessments
CAASPP	California Assessment of Student Performance and Progress
CALPADS	California Longitudinal Pupil Achievement Data System
CalTAC	California Technical Assistance Center
CCR	*California Code of Regulations*
CCSS	Common Core State Standards
CDE	California Department of Education
CDS	county/district/school
CI	confidence interval
Connectors	Core Content Connectors
CR	constructed response
CSEM	conditional standard error of measurement
DFA	*Directions for Administration*
DIF	differential item functioning
DLM	Dynamic Learning Maps
EC	*Education Code*
EL	English learner
ELA	English language arts/literacy
eSKM	Enterprise Score Key Management
ETS	Educational Testing Service
EUs	essential understandings
GPCM	general partial credit model
HOSS	highest obtainable scale score
IDEA	Individuals with Disabilities Education Act
IEP	individualized education program
IRT	item response theory
ISAAP	Individual Student Assessment Accessibility Profile
LCI	Learning Characteristics Inventory
LEA	local educational agency
LEP	limited-English-proficient
LOSS	lowest obtainable scale score
LPF	Learning Progression Framework

Term	Definition
MC	multiple choice
MH DIF	Mantel-Haenszel differential item functioning
MST	multistage test
NCME	National Council on Measurement in Education
NCSC	National Center and State Collaborative
OIB	ordered item booklet
ORS	Online Reporting System
OTI	Office of Testing Integrity
PLD	performance level descriptor
QA	quality assurance
QC	quality control
SBE	State Board of Education
SD	standard deviation
SEM	standard error of measurement
SMD	standardized mean difference
SRC	Student Response Check
SSC	Survey of Student Characteristics
SSPI	State Superintendent of Public Instruction
STAIRS	Security and Test Administration Incident Reporting System
TCC	test characteristic curve
TDS	test delivery system
TIF	test information function
TOMS	Test Operations Management System
USC	United States Code

Chapter 1: Introduction

1.1. Background

In October 2013, Assembly Bill 484 established the California Assessment of Student Performance and Progress (CAASPP) as the new student assessment system that replaced the Standardized Testing and Reporting program. The primary purpose of the CAASPP System of assessments is to assist teachers, administrators, and students and their parents/guardians by promoting high-quality teaching and learning through the use of a variety of item types and assessment approaches. These tests provide the foundation for the state's school accountability system.

The online California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics were administered operationally during the 2016–17 CAASPP administration. This assessment is for students whose individualized education program (IEP) teams have determined that a student should take the CAA (CDE, 2017b). (See the participation criteria in subsection *2.4 Participation* for more information.) Note that this technical report focuses on CAAs for ELA and mathematics and *not* the CAA for Science, which is reported upon separately.

During the 2016–17 administration, the overall CAASPP System had the following components:

- Smarter Balanced assessments and tools for the general student population:
  - Summative Assessments—Online assessments for ELA and mathematics in grades three through eight and grade eleven
  - Interim Assessments—Optional resources developed for grades three through eight and grade eleven designed to inform and promote teaching and learning by providing information that can be used to monitor student progress toward mastery of the Common Core State Standards (CCSS) that may be administered to students at any grade level
  - Digital Library—Tools, lesson plans, and practices designed to help teachers utilize formative assessment processes for improved teaching and learning in all grades
- CAAs for ELA and mathematics in grades three through eight and grade eleven for students with significant cognitive disabilities
- Science assessments in grades five, eight, and high school (grades ten, eleven, or twelve; these are the California Science Test and the CAA for Science)
- A primary language assessment, the Standards-based Tests in Spanish for Reading/Language Arts, in grades two through eleven (optional for eligible Spanish-speaking English learners)

More background information about the CAASPP System can be found on the CAASPP Description – *CalEdFacts* Web page at http://www.cde.ca.gov/ta/tg/ai/cefcaaspp.asp.

1.2. Test Purpose

The purpose of the CAA is to ensure students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options. The CAAs for ELA and mathematics are aligned with alternate

achievement standards—called the Core Content Connectors (Connectors)—that are linked to the CCSS. A Connector is a representation of the essential "core" content of a standard in the CCSS. Each content standard is assessed through the Connectors and related essential understandings (EUs). Each EU defines a basic, foundational key idea or concept based on the Connector that builds increasing understanding of the grade-level content under a three-tier structure of item complexity.

Connectors address knowledge and skills that are appropriate and challenging for the student. The student who is eligible for CAAs is learning content, linked to (and derived from) the CCSS, that appropriately breaks the standards into smaller steps.

1.3. Test Content and Design

The CAAs for ELA and mathematics are administered to eligible students in grades three through eight and grade eleven. These CAAs are delivered online through two-stage adaptive multistage testing (MST). A student's final score is calculated by combining the student's performance on items from both stages.

Under the MST design used for the CAAs for ELA and mathematics, sets of items or modules with varying difficulty or complexity levels are presented to match the ability of each student according to her or his performance on the previous set of test items. The primary advantage of the MST over the conventional fixed-form tests is that MST is more efficient because it uses fewer test items to achieve more precise measurement of students' performance. In addition, by providing an ability-appropriate test, MST also encourages a student's engagement during testing, particularly for students with significant cognitive disabilities. These students represent a population with a large range of challenges and ability levels that cannot be effectively targeted by conventional fixed-form tests.

1.4. Intended Population

At each grade level, the CAAs for ELA and mathematics were administered to approximately 5,000 students during the 2016–17 CAASPP administration. All students enrolled in grades three through eight and grade eleven whose IEP designates the use of alternate assessments are required to take part in the CAAs (*California Code of Regulations*, Title 5 [5 *CCR*] Education, Division 1, Chapter 2, Subchapter 3.75, Article 1, Section 851.5[c]). For students with significant cognitive disabilities, the decision to administer the Smarter Balanced Summative Assessments or CAAs is made by their IEP team. Parents/Guardians may submit a written request to have their child opted out from taking any or all parts of the Smarter Balanced Summative Assessments or, as designated, the CAAs. Only students whose parents/guardians submit a written request may opt out of taking the tests (*Education Code [EC]* Section 60615).

English learners (ELs) who are in their first 12 months of attending school in the United States are exempt from taking the ELA portion of the assessment. ELs are defined as follows:

> "English learner students are those students for whom there is a report of a primary language other than English on the state-approved Home Language Survey **and** who, on the basis of the state approved oral language (kindergarten through grade twelve) assessment procedures and literacy (grades three through twelve only), have been determined to lack the clearly defined English language skills of listening comprehension,

speaking, reading, and writing necessary to succeed in the school's regular instructional programs."[1]

EL students within their first 12 months of enrollment in a U.S. school may also participate in the ELA assessment if their parents/guardians elect to do so. These test takers are included in the calculation of the percent of students tested but their scores are excluded from all aggregate calculations.

1.5. Intended Use and Purpose of Test Scores

The results of tests within the CAASPP System, including the CAAs for ELA and mathematics, are used for two primary purposes as described in *EC* sections 60602.5 (a) and (a)(4). (Excerpted from the *EC* Section 60602 Web page at http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=EDC&division=4.&title=2.&part=33.&chapter=5.&article=1 [outside source].)

> "60602.5(a) It is the intent of the Legislature in enacting this chapter to provide a system of assessments of pupils that has the primary purposes of assisting teachers, administrators, and pupils and their parents; improving teaching and learning; and promoting high-quality teaching and learning using a variety of assessment approaches and item types. The assessments, where applicable and valid, will produce scores that can be aggregated and disaggregated for the purpose of holding schools and local educational agencies accountable for the achievement of all their pupils in learning the California academic content standards."
>
> "60602.5(a)(4) Provide information to pupils, parents or guardians, teachers, schools, and local educational agencies on a timely basis so that the information can be used to further the development of the pupil and to improve the educational program."

Sections 60602.5(c) and (d) provide additional information regarding intent and context for the system of assessments:

> "60602.5(c) It is the intent of the Legislature that parents, classroom teachers, other educators, pupil representatives, institutions of higher education, business community members, and the public be involved, in an active and ongoing basis, in the design and implementation of the statewide pupil assessment system and the development of assessment instruments."
>
> "60602.5(d) It is the intent of the Legislature, insofar as is practically feasible and following the completion of annual testing, that the content, test structure, and test items in the assessments that are part of the statewide pupil assessment system become open and transparent to teachers, parents, and pupils, to assist stakeholders in working together to demonstrate improvement in pupil academic achievement. A planned change in annual test content, format, or design should be made available to educators and the public well before the beginning of the school year in which the change will be implemented."

[1] "English Learner (EL) Students (Formerly Known as Limited-English-Proficient or LEP)," from the CDE Glossary of Terms Web page at http://www.cde.ca.gov/ds/sd/cb/glossary.asp.

1.6. Testing Window

For the 2016–17 CAASPP administration, the CAAs were administered from March 20, 2017, through the last day of instruction at the local educational agency (LEA) or the end of the LEA's selected testing window, whichever came first. The last possible testing date was July 17, 2017. This testing window was identical for all LEAs.

Similar to other CAASPP assessments, the CAAs are untimed for test takers. This assessment is administered individually and testing time varies from one student to another, on the basis of factors such as the student's response time and attention span. A student may be tested with the CAA within the LEA's testing window over as many days as required to meet a student's needs (5 *CCR,* Section 855[a][3]).

1.7. Significant Developments for the CAAs in 2016–17

Several significant developments occurred for the 2016–17 administration.

1.7.1. Update to Testing Window Definitions

Pursuant to 5 *CCR* Section 855, the CAA test administration for ELA and mathematics was set up using the same criteria as the test administration for the Smarter Balanced Summative Assessments. CAA tests for ELA and mathematics were available on March 20, 2017, through the last day of instruction at the LEA or end of the LEA's selected testing window, whichever came first. In addition, the selected testing window contained a minimum of 25 instructional days.

1.7.2. Integrated Survey of Student Characteristics (SSC)

The SSC was integrated within the ELA and mathematics tests, with three questions appearing at the end of each test for the test examiner to answer based on the student's interaction during the test.

1.7.3. Student Response Check

A button on the first and fourth test question provided the test examiner the means to end the test, rather than requiring him or her to navigate to the last of items of Stage 1 and end the test.

1.7.4. Redistribution of Test Administration Instructions

The contents of the *CAA Test Administration Manual* were incorporated into the *CAASPP Online Test Administration Manual.* The separate *CAA Online Test Administration Manual* was no longer available.

1.7.5. Introduction of Practice Tests

Online practice tests for all available grade levels in both content areas were made available. Scoring guides were also provided.

1.7.6. Score History in Student Score Reports

Student Score Reports for the CAAs for ELA and mathematics in grades four through eight include the student's score history, with the previous year's results shown alongside the current year's results.

1.7.7. Separation of the Online Reporting System (ORS) from the Completion Status and Roster Management Systems

The online ORS was separate from the Completion Status Reporting and Roster Management systems.

1.8. Groups and Organizations Involved with the CAAs

1.8.1. State Board of Education (SBE)

The SBE is the state agency that establishes educational policy for kindergarten through grade twelve in the areas of standards, instructional materials, assessment, and accountability. The SBE adopts textbooks for kindergarten through grade eight, adopts regulations to implement legislation, and has the authority to grant waivers of the *EC*.

In addition to adopting the rules and regulations for itself, its appointees, and California's public schools, the SBE also is the state educational agency responsible for overseeing California's compliance of the Every Student Succeeds Act and the state's Public School Accountability Act, which measures the academic performance and progress of schools on a variety of academic metrics (CDE, 2016).

1.8.2. California Department of Education (CDE)

The CDE oversees California's public school system, which is responsible for the education of more than 6,200,000 children and young adults in more than 10,500[2] schools. California aims to provide a world-class education for all students, from early childhood to adulthood. The CDE serves the state by innovating and collaborating with educators, school staff, parents/guardians, and community partners which together, as a team, prepares students to live, work, and thrive in a highly connected world.

Within the CDE, it is the Performance, Planning, and Technology Branch that oversees programs promoting innovation and improving student achievement. Programs include oversight of statewide assessments and the collection and reporting of educational data (CDE, 2017c).

1.8.3. California Educators

A variety of California educators, including teachers experienced in teaching students with cognitive disabilities and school administrators, who were selected based on their qualifications, experiences, demographics, and geographic locations, were invited to participate in the entire CAA assessment development process. California educators participated in tasks that included defining the purpose and scope of the assessment, assessment design, item development, standard setting, score reporting, and scoring constructed response items.

1.8.4. Contractors

1.8.4.1. Educational Testing Service

The CDE and the SBE contract with Educational Testing Service (ETS) to develop, administer, and report results of the CAAs. As the prime contractor, ETS has the overall responsibility for working with the CDE to implement and maintain an effective assessment system and to coordinate the work of ETS with its subcontractors. Activities directly conducted by ETS include but are not limited to the following:

- Providing management of the program activities
- Supporting and training counties, LEAs, and direct funded charter schools
- Providing tiered help desk support to LEAs

[2] Retrieved from the CDE Fingertip Facts on Education in California – *CalEdFacts* Web page at https://www.cde.ca.gov/ds/sd/cb/ceffingertipfacts.asp

- Developing all CAA test items
- Constructing, producing, and controlling the quality of CAASPP test forms and related test materials, including grade- and content-specific directions for administration
- Hosting and maintaining a Web site with resources for LEA CAASPP coordinators
- Developing, hosting, and providing support for the Test Operations Management System (TOMS)
- Processing student test assignments
- Producing and distributing score reports
- Developing a score reporting Web site
- Completing all psychometric procedures

1.8.4.2. American Institutes for Research (AIR)

AIR is the subcontractor to ETS for the CAASPP System of online assessments. Activities conducted by AIR include

- providing the AIR proprietary test delivery system (TDS), including the Student Testing Interface, Test Administrator Interface, secure browser, and practice and training tests;
- hosting and providing support for its TDS and the ORS, a component of the overall CAASPP Assessment Delivery System;
- scoring machine-scorable items; and
- providing Level 3 technology help desk support to LEAs.

1.9. Systems Overview and Functionality

1.9.1. Test Operations Management System (TOMS)

TOMS is the password-protected, Web-based system used by LEAs to manage all aspects of CAASPP testing. TOMS serves various functions for the CAAs, including but not limited to the following:

- Managing test administration windows
- Assigning CAA test examiner user roles
- Managing student test assignments and accessibility supports
- Viewing and downloading reports
- Providing a platform for authorized user access to secure materials such as CAA *Directions for Administration,* student data and results, CAASPP user information, and access to the *CAASPP Security and Test Administration Incident Reporting System* form and the Appeals module

TOMS receives student enrollment data and LEA/school hierarchy data from the California Longitudinal Pupil Achievement Data System (CALPADS) via a daily feed. CALPADS is “a longitudinal data system used to maintain individual-level data including student demographics, course data, discipline, assessments, staff assignments, and other data for

state and federal reporting."[3] LEA staff involved in the administration of the CAAs—such as LEA CAASPP coordinators, CAASPP test site coordinators, and test examiners—are assigned varying levels of access to TOMS. For example, only an LEA CAASPP coordinator is given permission to set up the LEA's test administration window; a test examiner cannot download student reports. A description of user roles is explained more extensively in the *2016–17 CAASPP Online Test Administration Manual* (CDE, 2017a).

1.9.2. Test Delivery System (TDS)

The TDS is the means by which the statewide online assessments are delivered to students. Components of the TDS include

- the Test Administrator Interface, the Web browser–based application that allows test examiners to activate student tests;
- the student Testing Interface, on which students take the CAAs for ELA and mathematics using the secure browser and with assistance from the test examiner as needed; and
- the secure browser, the online application through which the Student Testing Interface may be accessed. The secure browser prevents students from accessing other applications during testing.

1.9.3. Practice and Training Tests

Practice tests for each individual grade and content area and training tests suitable for all grade levels in both ELA and mathematics were provided to LEAs to prepare students and LEA staff for the CAAs. Students, teachers, and the public may access them using a Web browser.

These tests simulate the experience of the CAA online assessments and allow students and test examiners to become familiar with the user interface, item formats and functionality, available accessibility resources, and components of the TDS, as well as with the process of starting and completing a testing session. Unlike the summative CAAs for ELA and mathematics, the practice and training tests do not assess standards, gauge student success on the operational test, or produce scores.

1.9.4. Online Reporting System (ORS)

The ORS is the system used by LEAs to view preliminary student results from the CAASPP assessments. The primary purposes of the ORS are for LEAs to access completion data to determine which students need to complete testing or start testing, and for LEAs to access preliminary score reports that can provide data for schools within the LEA. Results in the ORS are preliminary and may not be used for accountability purposes.

1.10. Overview of the Technical Report

This technical report addresses the characteristics of the CAAs for ELA and mathematics administered in spring 2017 and contains nine additional chapters as follows:

- Chapter 2 presents an overview of the processes involved in a testing cycle for the CAAs for ELA and mathematics. This includes item development, test construction, test administration, test participation, generation of test scores, and score reports.

[3] From the CDE California Longitudinal Pupil Achievement Data System (CALPADS) Web page at http://www.cde.ca.gov/ds/sp/cl/.

- Chapter 3 describes the procedures followed during item development; descriptions of various reviews (e.g., item content and bias/sensitivity reviews); and the process of item review.
- Chapter 4 describes the process of test assembly, including the content being measured, the two-stage MST assessment design, as well as the content and psychometric criteria. Also discussed are the routing rules that guided the construction of the CAAs for ELA and mathematics and the preparation of the test forms for the online multistage delivery.
- Chapter 5 details the processes involved in the actual 2016–17 administration, with emphasis on efforts made to ensure the standardization of CAA online testing. It also describes the procedures followed to maintain test security throughout the test administration process.
- Chapter 6 summarizes the standard-setting process that established the base year (2015–16) achievement level scores. Details include the achievement level descriptors, an overview of the standard setting methodology, and the process to establish the threshold scores that define the score ranges for each achievement level for the CAAs for ELA and mathematics. These standard setting processes were based on student testing results from the 2015–16 administration.
- Chapter 7 provides information on the scoring processes and summarizes the types of scores and score reports.
- Chapter 8 summarizes the statistical procedures and results for 2016–17, including
  - classical item analysis,
  - differential item functioning analysis,
  - IRT calibration, linking and scaling,
  - reliability analyses, and
  - analyses of the consistency and accuracy of the achievement-level classifications.

  Chapter 8 concludes with a discussion of the procedures designed to ensure the validity of score uses and interpretations.
- Chapter 9 highlights the quality control processes used at various stages of the 2016–17 CAA administration, including item development, test assignment, test administration, scoring procedures, psychometric analysis processes, and score reporting.
- Chapter 10 presents historical comparisons of various test-level results for the 2015–16 (base year) and the 2016–17 CAA for ELA and mathematics administrations.

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Chapter 2: Overview of California Alternate Assessment (CAA) Processes

This chapter provides an overview of the processes implemented by Educational Testing Service (ETS) during the full testing cycle for the 2016–17 California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics, including test development and administration, score production, and reporting. In addition, test participation, fairness, and accessibility for these CAAs are also described.

2.1. Item Development

CAAs for ELA and mathematics incorporate innovations and best practices from the recent alternate assessment initiatives on a national level, including the National Center and State Collaborative (NCSC) and the Dynamic Learning Maps (DLM). All items developed and used in the 2016–17 CAA administration are appropriate for the grade level, aligned with the Core Content Connectors (Connectors) and their essential understandings (EUs), correspond to the Common Core State Standards (CCSS), and based on the clarifications and guidelines from the Connectors derived from the CCSS.

Similar to the NCSC model, items were developed to three tiers of item complexity. Items were reviewed and revised at various stages during development by a variety of groups, including the California Department of Education (CDE), California educators, and ETS content specialists and item reviewers. Guidelines for bias and sensitivity, accessibility and accommodations, and style helped item developers and reviewers ensure consistency and fairness across the item development process. Detailed information about CAA for ELA and mathematics item development is described in *Chapter 3: Item Development and Review*.

2.1.1. Item Format

The CAAs for ELA and mathematics include the following primary online item formats:

- **Selected response (SR) items—**Students are instructed to select one or more choices to respond. Most CAA items have two or three options; a few items have four options.
- **Constructed response (CR) items—**Students are required to provide a response by writing words or numbers. These items are scored by test examiners at the school based on a rubric.
- **Technology-enhanced items**—Technology beyond simple option selection is incorporated. These items can resemble real-world scenarios, in which students might interact with information using technology.

Table 2.A.1 on page 22 lists the types of technology-enhanced items. The first column contains the types of responses that can be made to test questions; The middle column lists the item type for the response type. The third column describes how the student is expected to use that response type in answering the test item. In this Detailed information on item format is included in subsection *3.1.4 Item Types* in *Chapter 3: Item Development and Review*.

SR items have either one or two points and are machine-scored. There are a small number of CR items in the CAA for ELA, which are also worth either one or two points. Scoring rubrics specific to each CR item are included in the *Directions for Administration* (*DFA*)

(CDE, 2017e) and are used by the test examiners for rating students' responses. All rubric-based human scoring/rating was done by test examiners during the test administration.

2.1.2. Item Specifications

The CAA item specifications provide descriptions of item characteristics that are intended to measure each content standard consistently. They were developed based on the CCSS guidelines and clarifications from the Connectors and EUs. During item development, item developers are provided CAA item specifications and a CAA style guide that contains detailed information about the consistency in item development and item review processes. Refer to subsection *3.1.2 Item Specifications* in Chapter 3 for detailed information about item specifications.

2.1.3. Item Banking

To support sophisticated computer adaptive testing designs, it is necessary to build an item bank where content and statistical attributes of each item shall be included. All the items in the item bank need to be calibrated and linked onto common scales.

The test forms of the 2016–17 CAA for ELA and mathematics administration include both operational items and newly developed, embedded field-test items. The operational items include the following:

- Anchor items from the previous administrations that were already calibrated on a baseline scale and included in the item bank
- Nonanchor operational items that were not calibrated previously and do not have any statistics

After the 2016–17 CAA administration, initial item analyses were implemented and the results were reviewed by ETS psychometric and assessment development staff, who provided recommendations to the CDE on whether the items should be included or excluded from the calibrations. Decisions were made in consultation with the CDE; details of this process are in subsection *8.2 Classical Item Analysis Statistics*.

Next, both the nonanchor operational items and field test items were calibrated and linked through the anchor items to the baseline scales that were established in the 2015–16 administration. Refer to subsection *8.3 Item Response Theory (IRT) Analyses* for calibration and linking. Final item analyses were conducted following the calibration and linking step.

Content experts from ETS and the CDE, as well as selected California educators, reviewed the associated item statistics and evaluated the performance of items during the annual data review meeting. They also reviewed the flagged items—those whose statistics fall beyond expected ranges—and worked to provide plausible explanations for these particular items based on their knowledge of the student population. After the data review meeting, content experts shared overall findings with the CDE and California educators, who also provided their input about the data review results.

With the CDE's approval, the nonanchor operational items and field test items, together with their statistical information, were entered into the item bank for form assembly for future administrations. It is expected that more new items will be developed, field tested, and entered into the item bank after the 2016–17 administration. In this way, the item bank will expand gradually to support the multistage test (MST) design.

2.2. Test Assembly

2.2.1. Test Design

The CAAs for ELA and mathematics use an MST design, which consists of a small number of separate modules that can be assembled to meet a set of specifications for item content and item difficulty. On the basis of their performance on Stage 1, students are routed to an appropriate module of the next stage. With this design, only a few modules need to be selected to match students' abilities, and students with a variety of ability levels can be measured with higher precision and shorter test length.

The general principle of MST is that students within the eligible testing population are experiencing difficulties with the simplest tasks should not continue on with more complex items. Therefore, after the last item in Stage 1, the results from the Stage 1 router identify those students for whom meaningful measurement is unlikely to occur, thus resulting in an early exit from the test. Continuing students are routed to one of three Stage 2 modules appropriate for their ability level.

The MST design for the CAAs for ELA and mathematics uses tiered items, which are developed to three tiers of complexity and organized in the order of increasing complexity and cognitive load. This two-stage adaptive procedure has one common Stage-1 module and three Stage-2 modules (easy, moderate, and hard).

MST is beneficial for the CAA-eligible population, which consists of students with a wide range of cognitive disabilities, in that routing rules are used to direct students to the modules that fit their ability levels and thus minimize the students' test-taking burden and enhance their testing experience. Refer to subsection *4.2 English Language Arts/Literacy and Mathematics Test Design* in *Chapter 4: Test Assembly* for more details about the MST design.

The routing rules that determine whether and how a student would transition from the first to second stage of the test are based on a simulation study in which student ability distributions were estimated for each grade level and subject based on the data collected from the 2015–16 administration. See subsection *4.2.4 Routing Rules for the 2016–17 Administration* in *Chapter 4: Test Assembly* for detailed information about the routing rules.

2.2.2. Test Blueprints

Test blueprints specify the total number of items on each test and the number of items in each content category according to standards. The standards upon which CAA for ELA and mathematics test blueprints are built consist of the Connectors and EUs, both derived from the CCSS. The blueprints were developed with reference to the blueprints authored by the NCSC; California educators were involved in this procedure. The blueprints for the CAAs for ELA and mathematics for grades three through eight and grade eleven were adopted by the State Board of Education (SBE) in June 2015.

The CAA for ELA and mathematics test blueprints are unique to each grade level and content area. These blueprints designate the breakdown first by content category (e.g., ELA) and then by Connectors. Information on each test blueprint includes

- specific ratio of each content category/domain on the overall test;
- specific Connectors to be assessed;
- specific EUs to be assessed; and
- the maximum number of total items.

The CAA blueprints also include a content coverage percentage comparison to the NCSC blueprints upon which the CAA blueprints are based (CDE, 2015a and 2015b).

2.2.3. Test Length

The number of items in each of the CAAs for ELA and mathematics is the same across grades and subjects—there are ten operational items followed by three embedded field-test items in each version at Stage 1 and then 15 items per module at Stage 2. Each student answers 28 items for a complete test. The unique core router at Stage 1 is administered to all students along with one of the five embedded field test versions that are randomly assigned at the school level.

At Stage 2, each of the three modules—easy, moderate, and hard—is tailored to a particular student ability level with appropriate items. Each Stage 2 module consists of approximately 7 to 10 items with prior item statistics and five to eight items without prior statistics. All items with prior statistics in Stage 1 and Stage 2 are potentially used as anchor items in post-equating to link items without prior statistics to the baseline scale. As a result, this test design allows the calibration of approximately 36 new items in each grade-level test that can be potentially entered into the item bank and will support the future operational test administrations.

Refer to subsection *4.2 Test Design* in *Chapter 4: Test Assembly* for more details on test form assembly.

2.2.4. Psychometric Criteria

Psychometric criteria are usually specified for the test form review before the test administration. However, the 2016–17 MST forms did not have test-level statistical properties or characteristics because a number of operational items did not have statistics prior to the 2016–17 administration. Even though final test-level statistical properties were not developed, the psychometric guidelines of item selection and form building were developed during the preliminary review of the assembled test forms for the 2016–17 administration.

Prior to the 2016–17 administration, ETS content and psychometric staff reviewed the assembled forms thoroughly in regard to the following aspects:

- Coverage of blueprints
- Overall test design and statistical properties
- Statistical properties of individual items with prior item statistics
- Number and position of anchor items

Details of the psychometric criteria of form review are included in subsection *4.3 Test Production Process*. Psychometric criteria of items can be found in *Appendix 4.B Statistical Specification for Test Development* of *Chapter 4: Test Assembly*.

2.3. Test Administration

The CAAs for ELA and mathematics are administered online using the secure browser and test delivery system, ensuring a secure, confidential, standardized, consistent, and appropriate administration for students. Each CAA is administered in a one-to-one setting by a trained test examiner, usually the student's teacher. Test examiners and students have an opportunity to use the CAA for ELA and mathematics training and practice tests to gain experience with different types of questions before taking the scored tests.

2.3.1. Test Security and Confidentiality

All tests within the California Assessment of Student Performance and Progress (CAASPP) System are secure. For the CAAs, every person having access to test materials maintains the security and confidentiality of the tests. ETS's internal Code of Ethics requires that all test information, including tangible materials associated with the CAAs (such as test questions and test results), confidential files, processes, and activities are kept secure. To ensure security for all tests that ETS develops or handles, ETS maintains an Office of Testing Integrity (OTI). A detailed description of the OTI and its mission is presented in subsection *5.2.1 ETS's Office of Testing Integrity (OTI)*.

In the pursuit of enforcing secure practices, ETS strives to safeguard the various processes involved in a test development and administration cycle. Those processes are listed next and discussed in detail in Chapter 5.

- Standardization of test security
- Security of electronic files using a firewall
- Transfer of scores via secure data exchange
- Data management
- Statistical analysis
- Student confidentiality
- Student test results

2.3.2. Procedures to Maintain Standardization

ETS takes all necessary measures to ensure the standardization of CAA test administration by individual test examiners. The measures for standardization include, but are not limited to, the aspects described in these subsections.

2.3.2.1. Test Administration

ETS employs processes to ensure the standardization of an administration cycle; these processes are discussed in more detail in *Chapter 5: Test Administration*.

All staff at local educational agencies (LEAs) that are involved in the CAASPP administration, including CAA for ELA and mathematics administration, are provided directions about their responsibilities. Their roles include LEA CAASPP coordinators, CAASPP test site coordinators, and CAA test examiners. The responsibilities of each of the staff members specifically for the CAAs are described in the *2016–17 CAASPP Online Test Administration Manual* (CDE, 2017c).

2.3.2.2. Test Directions

Several series of instructions regarding the CAASPP including CAA administration are compiled in detailed manuals and provided to the LEA staff. Such documents include, but are not limited to, the following:

- ***CAA for ELA and Mathematics Directions for Administration* (*DFA*s)—**A manual that provides the script and directions for administration to be followed exactly by test examiners during a testing session. The secure *DFAs* for the CAAs for ELA and mathematics contain item-specific instructions, and therefore are grade- and version-specific. An example of the CAA *DFA* format and content can be found in the *2016–17 SAMPLE Directions for Administration for the California Alternate Assessments* (CDE, 2017e). (Refer to *5.4.4.1 Directions for Administration* in Chapter 5 for more information.)

- ***CAASPP Online Test Administration Manual*—**A manual that provides test administration procedures and guidelines for LEA CAASPP coordinators, CAASPP test site coordinators, test examiners, and test administrators (CDE, 2017c). (Refer to *5.4.4.2 CAASPP Online Test Administration Manual* in Chapter 5 for more information.)
- ***Test Operations Management System (TOMS) Pre-Administration Guide for CAASPP Testing*—**Manual that provide instructions for TOMS that allow LEA staff, including LEA CAASPP coordinators and CAASPP test site coordinators, to perform a number of tasks including setting up test administrations, adding and managing users, and configuring online student test settings. (CDE, 2017f) (See *5.4.4.3 TOMS Pre-Administration Guide for CAASPP Testing* in Chapter 5 for more information.)

2.4. Participation

The decision to assign a student to take a CAA is made by his or her individualized education program (IEP) team using the information on the CAA Guidance for IEP Teams Web page to make the determination. This Web page describes the CAA and its administration as well as criteria for participation and the students who should be assigned to take this test (CDE, 2017b).

A student must meet all three of the following criteria to participate in the CAA:

1. **A student with a significant cognitive disability.** Review of the student's school records indicates a disability or multiple disabilities that significantly impact intellectual functioning and adaptive behavior essential for someone to live independently and to function safely in daily life.
2. **The student is learning content derived from the California CCSS.** Goals and instruction listed in the IEP for the student are linked to the enrolled grade-level CCSS and address knowledge and skills that are appropriate and challenging for this student.
3. **The student requires extensive, direct individualized instruction and substantial supports to achieve measurable gains in the grade-level and age-appropriate curriculum.** The student:
   a. Requires extensive, repeated, individualized instruction and support that is not of a temporary or transient nature; and
   b. Uses substantially adapted materials and individualized methods of accessing information in alternative ways to acquire, maintain, generalize, demonstrate, and transfer skills across multiple settings.

All students who are eligible to take the CAAs are required to participate. All students who are logged on and presented with at least the first test item are counted as having participated. Students who do not provide a consistent, observable response to the first item are not required to be administered the entire test but are counted as having participated.

Refer to Appendix 2.B regarding the number of participants and the percent of participation of all students and the selected demographic groups for each test during the 2016–17 administration. Note that the data in the *Number Tested* columns includes students whose attemptedness codes indicate completion, partial-completion, and non-completion; these are discussed in subsection *7.1.1 Incomplete/Complete Cases*.

2.5. Fairness and Accessibility

There are several procedures in place to ensure that the CAAs for ELA and mathematics are fair and accessible to all test takers. This subsection provides information on the available accessibility resources for use with the online CAAs for ELA and mathematics. Additionally, information on the differential item functioning (DIF) analysis used to identify items that may function differently across groups of examinees (e.g., gender, ethnicity) is also discussed briefly.

2.5.1. Universal Tools, Designated Supports, and Accommodations

The CAAs are specifically designed for students with significant cognitive disabilities and an IEP that calls for the use of a CAA. Additional resources are sometimes needed for these students. The CDE maintains a list of the universal tools, designated supports, and accommodations that are permitted for use in CAASPP online assessments in its Web document "Matrix One: Universal Tools, Designated Supports, and Accommodations for the CAASPP System" [4] (CDE, 2017d).

Universal tools are available to all CAA students. These resources may be turned on and off when embedded as part of the technology platform for the online CAA assessments on the basis of student preference and selection.

Designated supports are available to CAA students when determined as needed by an educator or team of educators, with parent/guardian and student input as appropriate, or when specified in the student's IEP.

Accommodations must be permitted on CAAs for all eligible students when specified in the student's IEP.

While most of the resources presented for the CAASPP online assessments are accessible for the CAAs, there are a few resources that are not applicable because the CAAs are designed to be given one-on-one in the student's language of instruction, using the student's identified instructional resources.

For CAAs, designated supports and accommodations are assigned to individual students based on their needs. Such assignments are implemented in TOMS by the LEA CAASPP coordinator and/or CAASPP test site coordinator, either through individual assignment in the student's profile in TOMS or by batch upload, where settings were uploaded into TOMS for multiple students. Settings were either selected and entered into a macro-enabled template called the Individual Student Assessment Accessibility Profile (ISAAP) Tool that created an upload file; or entered into a template. These designated supports and accommodations were delivered to the student through the test delivery system at the time of testing.

Appendix 2.C presents the numbers and percentages of students using designated supports, accommodations, or unlisted resources. The use of universal tools is not tracked because they are available to all students in the test delivery system.

2.5.1.1. Resources for Selection of Accessibility Resources

The full list of the universal tools, designated supports, and accommodations that are used in CAASPP online assessments are documented in Matrix One (CDE, 2017d). Most

[4] This technical report is based on the version of Matrix One that was available during the 2016–17 CAASPP administration.

embedded universal tools, designated supports, and accommodations listed in Parts 1 and 2 of Matrix One are available for the CAAs for ELA and mathematics through the online testing interface. Part 3 of Matrix One includes non-embedded universal tools, designated supports, accommodations, and unlisted resources that are available particularly for CAA for ELA and mathematics testing. School-level personnel and IEP teams use Matrix One when deciding how best to support the student's test-taking experience. On the rare occasion when a student has both an IEP and a Section 504 plan, the Section 504 plan also should be referenced for accessibility resources.

In addition to assigning accessibility resources individually and via file upload in TOMS, LEAs had the option of using the ISAAP Tool to assign resources to students. The ISAAP Tool is used by LEAs in conjunction with the Smarter Balanced Assessment Consortium's *Usability, Accessibility, and Accommodations Guidelines* (Smarter Balanced, 2016) and the *Accessibility Guide for CAASPP Online Testing* (CDE, 2017a), as well as with state regulations and policies (such as Matrix One) related to assessment accessibility.

2.5.1.2. Delivery of Accessibility Resources

Universal tools, designated supports, and accommodations can be delivered as either embedded or non-embedded resources. Embedded resources are digitally delivered features or settings available as part of the technology platform for the online CAAs. Examples of embedded resources applicable to the CAAs include masking, color contrast, and print size. Non-embedded resources for the CAAs include magnification, calculator, and scribe.

2.5.1.3. Unlisted Resources

An unlisted resource is an instructional support that a student regularly uses in daily instruction and/or assessment that has not been previously identified as a universal tool, designated support, or accommodation. Matrix One includes an inventory of unlisted resources that have already been identified and are preapproved (CDE, 2017d). During the 2016–17 CAASPP administration, an LEA CAASPP coordinator or a CAASPP test site coordinator had the option to submit a Web form available in TOMS to request such a support for an eligible student. The resource was required to be specified in the eligible student's IEP and only assigned with the CDE's approval.

For an unlisted resource to be approved, it must not change the construct of what is being tested for accountability purposes. If it did, the student received a score with a footnote that the test was administered under conditions that resulted in a score that may not be an accurate representation of the student's achievement. Appendix 2.C presents counts and percentages of students using designated supports, accommodations, and unlisted resources.

2.5.2. Differential Item Functioning (DIF)

DIF analyses are conducted to detect possible test bias by locating items for which one group of students performs significantly better than another group. DIF is a collection of statistical methods utilized to recognize if performance varies across different groups of examinees (e.g., male vs. female or white vs. African-American). If an item performs differentially across student groups, even when students are matched on ability, the item may be measuring something other than the intended construct. Therefore, it is important to identify items flagged for DIF. Content experts and bias/sensitivity experts review these DIF-flagged items and determine the sources and meanings of performance differences. Refer

to subsection *8.5. Differential Item Functioning (DIF)* for DIF analyses, and Appendix 8.D for DIF analysis results.

2.6. Scores

2.6.1. Estimating Ability Scores

The IRT inverse test characteristic curve (TCC) method (Stocking, 1996)—where the student's ability value is estimated to be the value for which the expected number-correct score is equal to the student's number-correct score—is used to estimate students' overall ability parameters. For the purpose of reporting, students' ability estimates (theta scores) are then expressed in three-digit scale scores by applying the appropriate linear transformation for each CAA. Student performance on the reporting scale is designated into one of three achievement levels:

4. Level 1—Alternate
5. Level 2—Alternate
6. Level 3—Alternate

For information regarding score specifications and the establishment of score reporting scales, refer to *Chapter 7: Scoring and Reporting*. For information regarding achievement levels, refer to *Chapter 6: Standard Setting* for a description of the process used to set achievement level standards.

2.6.2. Score Reporting

TOMS is a secure Web site hosted by ETS that allows LEA CAASPP coordinators to download Student Score Reports as PDF files and aggregated results for the LEA. CAA scores can also be viewed through the Online Reporting System (ORS), a secure Web site that provides authorized users with interactive and cumulative online reports for ELA and mathematics at the student, school, and LEA levels. The ORS provides three types of score reports: an individual student score report, a school report, and an LEA report. Refer to subsection *7.3.1 Online Reporting* for details about TOMS and the ORS; and subsection *7.3.3 Types of Score Reports* for the content of each type of score report.

2.6.3. Aggregation Procedures

In order to provide meaningful results to the stakeholders, CAA scores for a given grade and content area are aggregated and generated at the school, LEA or direct funded charter school, county, and state levels. State-level results are available on the Public Reporting Web page at http://caaspp.cde.ca.gov/. The aggregated scores are presented for all students, or selected demographic student groups.

A variety of aggregated score types are also used to check the validity of the scores.

The aggregation procedures used to present CAA results are described in subsection *7.2 Overview of Score Aggregation Procedures*. Aggregated scores that summarize student performance by content area and grade for selected groups of students are provided in Table 7.D.1 through Table 7.D.14 starting on page 165. The tables show the numbers of students with valid scores in each group, scale score means and standard deviations, and percentage in an achievement level. Students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, primary disability, and economic status. Definitions for the demographic groups included in these tables are provided in Table 7.5 on page 99.

2.7. Equating

The purpose of equating using IRT models is to place item difficulty and student ability estimates onto a common theta scale for a given grade and content area. As a result, scores on pathways that include the router and different modules of Stage 2 are statistically adjusted to compensate for any differences in test difficulty; refer to Table 4.1 on page 54 in subsection *4.2.1.3 Pathways* in *Chapter 4: Test Assembly* for details about pathways.

IRT models (Hambleton & Swaminathan, 1985) are used to establish a common scale initially and provide ongoing maintenance of the program. The baseline scale for the CAAs for ELA and mathematics were established by calibrating samples of item response data from the 2015–16 administration to which the item calibrations of the subsequent administrations could be linked. For the 2016–17 administration, the new item parameters are calibrated and placed on the reference scale by using a set of anchor items that are selected from the 2015–16 forms and readministered in 2016–17.

CAA for ELA and mathematics equating has three steps: item calibration, linking, and scaling, as described next. The results of this procedure are further used to support scoring and item banking.

2.7.1. Calibration

A concurrent calibration is implemented to estimate parameters for all 2016–17 items, including embedded field-test items and nonanchor operational items. As a result of the concurrent calibration, the item parameter estimates are placed on a common scale for test items from the same grade and content area.

The concurrent calibration requires either “common items” or “random equivalent groups.” The CAAs for ELA and mathematics MST tests are assembled with common items between modules, which supports the efficiency and accuracy of the concurrent calibrations.

For each CAA for ELA or mathematics in the 2016–17 administration, the 10 operational items in the router of each version at Stage 1 serve as anchor items. The nonanchor operational items in the three Stage 2 modules, as well as the 15 embedded field-test items (in five sets with three items in each set) are estimated in the concurrent calibration. Refer to *4.2.2. English Language Arts/Literacy and Mathematics Test Design* in *Chapter 4: Test Assembly* for the distributions of these items.

Calibration using the IRT models of the one-parameter logistic model (Hambleton and Rogers, 1991) and the corresponding general partial credit model (Muraki, 1992) have been chosen for the CAAs. Additionally, CAA calibration uses flexMIRT® (Cai, 2016) version 3.0 software.

Detailed procedures for the concurrent calibrations are included in subsection *8.3.2.1 Item Calibration*.

2.7.2. Linking

Linking is a procedure where items from different test forms or administrations are placed onto the reference scale so that items can be compared across forms and administrations. Calibration results of the items for each grade-level test in the 2016–17 administration are linked to the reference scale that was established in 2016 by using anchor items and the mean-to-mean linking method.

Refer to subsection *8.3.2.2 Linking the Item Parameters* in *Chapter 8: Analyses* for additional information.

2.7.3. Scaling

Scaling refers to the procedure by which the number-correct scores (raw scores) on each new form are transformed to the scale scores on the reference-year scale, so that the scores of students who take different forms can be compared. Once the new item calibrations for each test are transformed to the reference year scale, the new form number-correct scores (raw scores) can also be transformed to their respective ability (theta) scores. Subsequently, these ability (theta) scores can be transformed to scale scores through linear transformation.

Details of the scaling procedure can be found in subsection *8.3.2.3 Scaling the Scores* of *Chapter 8: Analyses*.

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Appendix 2.A: Item Types

Table 2.A.1 California Alternate Assessment (CAA) Item Types

Response Type	Item Type	Description
Multiple choice (MC) single select	MC	The item generally consists of a stem and list of choices; test taker can select only one choice to respond. May also include a stimulus.
MC multiple selects	MC	The item generally consists of a stem and list of choices; test taker can select two or more choices to respond. May also include a stimulus.
Inline choice list single select	MC	The stem contains a single blank; test taker must fill in the blank by selecting a choice from its corresponding choice list.
Inline choice list multiple select	MC	The stem contains two or more blanks; test taker must fill in each blank by selecting a choice from the corresponding choice lists.
Fraction	Short Constructed Response (CR)	The test taker responds by filling in the numerator and denominator of a fraction.
Numeric	Short CR	The test taker responds by filling in a single entry box with a numeric value. The entry box may be standalone, in line with text, or displayed on top of an image.
Grid single select *	MC	The test taker responds by marking a single cell in a table grid.
Zones single select *	Hot Spot	An item where the answer choices are predefined “hotspots” on an image. When the test taker selects (clicks) on the spot, the selection is highlighted, shaded, or outlined in red. The test taker selects one zone to respond.
Zone multiple select *	Hot Spot	An item where the answer choices are predefined “hotspots” on an image. When the test taker selects (clicks) on the spot, the selection is highlighted, shaded, or outlined in red. The test taker selects two or more zones to respond.

Response Type	Item Type	Description
Match single select *	Drag & Drop	The test taker responds by dragging and dropping a single choice (“source”) into the appropriate location (“target”). For the CAA items, students do not drag items, they simply select (click) the source and then the target area, and the source snaps to the target area. There are four main varieties of this item type: 1. Target Table—text-based sources with targets arranged in table structure 2. Target Passage—text-based sources with targets arranged in paragraphs of text 3. Target Positions—text-based sources with targets arranged on top of an image 4. Image Map—image-based sources, and both sources and targets are arranged on top of an image

Response Type	Item Type	Description
Match multiple select *	Drag & Drop	The test taker responds by dragging and dropping two or more choices ("sources") into the appropriate locations ("targets"). For the CAA items, students do not drag items, they simply select (click) the source and then the target area, and the source snaps to the target area. There are four main varieties: 1. Target Table—text-based sources with targets arranged in table structure 2. Target Passage—text-based sources with targets arranged in paragraphs of text 3. Target Positions—text-based sources with targets arranged on top of an image 4. Image Map—image-based sources, and both sources and targets are arranged on top of an image These varieties allow for following scenarios: • Exact matching (i.e., ordering) • Sources correctly placed in multiple different targets • Reuse sources • Reuse targets • Partial scoring
Bar graph single select *	Short CR	The test taker responds by manipulating a single bar on a graph. Bars can be solid or consist of stacked icons (e.g., dollar signs representing money, stick figures representing people, etc.). Bars can be horizontally or vertically oriented.
Bar graph multiple select *	Short CR	The test taker responds by manipulating two or more bars on a graph. Bars can be solid or consist of stacked icons (e.g., dollar signs representing money, stick figures representing people, etc.). Bars can be horizontally or vertically oriented.
Composite	Composite Objective	Interactions vary depending on which item types were associated. Keys vary depending on which item types were associated.

* Indicates technology-enhanced items

Appendix 2.B: California Alternate Assessment (CAA) Participation

Table 2.B.1 CAA 2016–17 Participation—English Language Arts/Literacy (ELA) Grades Three through Six

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 6: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
All	5,385	5,004	93%	5,817	5,410	93%	5,965	5,533	93%	5,805	5,336	92%
Gender: Male	3,649	3,396	93%	3,968	3,699	93%	4,016	3,729	93%	3,924	3,618	92%
Gender Female	1,736	1,608	93%	1,849	1,711	93%	1,949	1,804	93%	1,881	1,718	91%
Ethnicity: American Indian or Alaska Native	29	26	90%	39	37	95%	35	33	94%	37	29	78%
Ethnicity: Asian	420	392	93%	452	414	92%	464	431	93%	418	387	93%
Ethnicity: Native Hawaiian or Other Pacific Islander	28	24	86%	27	25	93%	33	31	94%	29	26	90%
Ethnicity: Filipino	123	117	95%	128	115	90%	159	147	92%	155	145	94%
Ethnicity: Hispanic or Latino	3,071	2,906	95%	3,379	3,214	95%	3,431	3,257	95%	3,276	3,096	95%
Ethnicity: Black or African American	396	364	92%	432	402	93%	479	439	92%	500	457	91%
Ethnicity: White	1,070	957	89%	1,141	1,010	89%	1,155	1,009	87%	1,188	1,015	85%
Ethnicity: Two or more races	248	218	88%	219	193	88%	209	186	89%	202	181	90%
English proficiency: English only	3,281	3,005	92%	3,453	3,166	92%	3,467	3,157	91%	3,410	3,054	90%
English proficiency: Initially fluent English proficient	49	47	96%	42	37	88%	56	53	95%	83	80	96%
English proficiency: English learner	1,901	1,804	95%	2,090	1,983	95%	2,147	2,040	95%	2,011	1,915	95%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 6: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
English proficiency: Reclassified fluent English proficient	141	139	99%	219	215	98%	285	277	97%	294	283	96%
English proficiency: To be determined	5	4	80%	7	5	71%	4	2	50%	2	1	50%
English proficiency: English proficiency unknown	8	5	63%	6	4	67%	6	4	67%	5	3	60%
Economic status: Not economically disadvantaged	1,904	1,726	91%	2,066	1,844	89%	2,063	1,843	89%	2,162	1,895	88%
Economic status: Economically disadvantaged	3,481	3,278	94%	3,751	3,566	95%	3,902	3,690	95%	3,643	3,441	94%
Primary disability: Intellectual disability	1,748	1,655	95%	1,926	1,831	95%	2,030	1,932	95%	2,154	2,030	94%
Primary disability: Hearing impairment	47	44	94%	52	48	92%	52	48	92%	55	52	95%
Primary disability: Speech or language impairment	228	217	95%	213	200	94%	163	156	96%	145	136	94%
Primary disability: Visual impairment	26	21	81%	33	31	94%	35	28	80%	25	20	80%
Primary disability: Emotional disturbance	33	29	88%	34	32	94%	49	36	73%	49	41	84%
Primary disability: Orthopedic impairment	255	224	88%	283	240	85%	312	261	84%	320	264	83%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 6: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
Primary disability: Other health impairment	312	283	91%	340	309	91%	312	274	88%	305	274	90%
Primary disability: Specific learning disability	374	357	95%	470	454	97%	538	524	97%	455	440	97%
Primary disability: Deaf–blindness	3	2	67%	0	NA	NA	7	7	100%	1	1	100%
Primary disability: Multiple disabilities	282	246	87%	322	279	87%	371	311	84%	296	258	87%
Primary disability: Autism	2,051	1,907	93%	2,115	1,958	93%	2,052	1,916	93%	1,969	1,794	91%
Primary disability: Traumatic brain injury	24	18	75%	26	25	96%	38	34	89%	28	23	82%
Primary disability: Not classified*	2	1	50%	3	3	100%	6	6	100%	3	3	100%

* Disability information was changed or removed after student testing.

Table 2.B.2 CAA 2016–17 Participation—ELA, Grades Seven through Eight and Grade Eleven

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
All	5,807	5,288	91%	5,784	5,247	91%	5,322	4,505	85%
Gender: Male	3,901	3,557	91%	3,830	3,494	91%	3,407	2,879	85%
Gender Female	1,906	1,731	91%	1,954	1,753	90%	1,915	1,626	85%
Ethnicity: American Indian or Alaska Native	35	32	91%	43	39	91%	43	39	91%
Ethnicity: Asian	466	425	91%	450	410	91%	397	338	85%
Ethnicity: Native Hawaiian or Other Pacific Islander	21	18	86%	24	21	88%	34	31	91%
Ethnicity: Filipino	164	151	92%	193	179	93%	180	148	82%
Ethnicity: Hispanic or Latino	3,244	3,029	93%	3,072	2,849	93%	2,793	2,423	87%
Ethnicity: Black or African American	470	414	88%	498	456	92%	496	402	81%
Ethnicity: White	1,233	1,070	87%	1,298	1,114	86%	1,233	1,003	81%
Ethnicity: Two or more races	174	149	86%	206	179	87%	146	121	83%
English proficiency: English only	3,412	3,043	89%	3,474	3,083	89%	3,177	2,646	83%
English proficiency: Initially fluent English proficient	89	83	93%	91	83	91%	95	83	87%
English proficiency: English learner	1,931	1,808	94%	1,806	1,690	94%	1,568	1,350	86%
English proficiency: Reclassified fluent English proficient	365	347	95%	405	384	95%	474	421	89%
English proficiency: To be determined	5	4	80%	2	1	50%	2	1	50%
English proficiency: English proficiency unknown	5	3	60%	6	6	100%	6	4	67%

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
Economic status: Not economically disadvantaged	2,155	1,872	87%	2,266	1,946	86%	2,038	1,646	81%
Economic status: Economically disadvantaged	3,652	3,416	94%	3,518	3,301	94%	3,284	2,859	87%
Primary disability: Intellectual disability	2,239	2,103	94%	2,239	2,075	93%	2,217	1,939	87%
Primary disability: Hearing impairment	57	51	89%	53	50	94%	70	64	91%
Primary disability: Speech or language impairment	121	111	92%	103	95	92%	51	43	84%
Primary disability: Visual impairment	34	29	85%	46	38	83%	46	39	85%
Primary disability: Emotional disturbance	35	25	71%	40	33	83%	56	30	54%
Primary disability: Orthopedic impairment	287	241	84%	294	237	81%	362	293	81%
Primary disability: Other health impairment	313	278	89%	270	240	89%	239	203	85%
Primary disability: Specific learning disability	415	385	93%	376	358	95%	350	302	86%
Primary disability: Deaf–blindness	4	3	75%	8	5	63%	1	0	NA
Primary disability: Multiple disabilities	327	269	82%	368	316	86%	295	229	78%
Primary disability: Autism	1,941	1,764	91%	1,958	1,775	91%	1,594	1,328	83%
Primary disability: Traumatic brain injury	25	20	80%	28	24	86%	36	30	83%
Primary disability: Not classified*	9	9	100%	1	1	100%	5	5	100%

* Disability information was changed or removed after student testing.

Table 2.B.3 CAA 2016–17 Participation—Mathematics, Grades Three through Six

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
All	5,385	4,989	93%	5,817	5,397	93%	5,965	5,544	93%	5,805	5,321	92%
Gender: Male	3,649	3,392	93%	3,968	3,686	93%	4,016	3,740	93%	3,924	3,602	92%
Gender Female	1,736	1,597	92%	1,849	1,711	93%	1,949	1,804	93%	1,881	1,719	91%
Ethnicity: American Indian or Alaska Native	29	26	90%	39	37	95%	35	33	94%	37	30	81%
Ethnicity: Asian	420	391	93%	452	413	91%	464	435	94%	418	388	93%
Ethnicity: Native Hawaiian or Other Pacific Islander	28	24	86%	27	25	93%	33	31	94%	29	24	83%
Ethnicity: Filipino	123	119	97%	128	117	91%	159	149	94%	155	144	93%
Ethnicity: Hispanic or Latino	3,071	2,891	94%	3,379	3,203	95%	3,431	3,264	95%	3,276	3,084	94%
Ethnicity: Black or African American	396	360	91%	432	401	93%	479	437	91%	500	458	92%
Ethnicity: White	1,070	956	89%	1,141	1,006	88%	1,155	1,009	87%	1,188	1,011	85%
Ethnicity: Two or more races	248	222	90%	219	195	89%	209	186	89%	202	182	90%
English proficiency: English only	3,281	3,000	91%	3,453	3,154	91%	3,467	3,152	91%	3,410	3,042	89%
English proficiency: Initially fluent English proficient	49	47	96%	42	37	88%	56	54	96%	83	80	96%
English proficiency: English learner	1,901	1,794	94%	2,090	1,980	95%	2,147	2,054	96%	2,011	1,910	95%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
English proficiency: Reclassified fluent English proficient	141	138	98%	219	214	98%	285	276	97%	294	284	97%
English proficiency: To be determined	5	4	80%	7	6	86%	4	3	75%	2	1	50%
English proficiency: English proficiency unknown	8	6	75%	6	6	100%	6	5	83%	5	4	80%
Economic status: Not economically disadvantaged	1,904	1,726	91%	2,066	1,835	89%	2,063	1,843	89%	2,162	1,887	87%
Economic status: Economically disadvantaged	3,481	3,263	94%	3,751	3,562	95%	3,902	3,701	95%	3,643	3,434	94%
Primary disability: Intellectual disability	1,748	1,641	94%	1,926	1,825	95%	2,030	1,935	95%	2,154	2,021	94%
Primary disability: Hearing impairment	47	44	94%	52	48	92%	52	49	94%	55	53	96%
Primary disability: Speech or language impairment	228	219	96%	213	201	94%	163	157	96%	145	139	96%
Primary disability: Visual impairment	26	21	81%	33	31	94%	35	29	83%	25	19	76%
Primary disability: Emotional disturbance	33	29	88%	34	32	94%	49	35	71%	49	41	84%
Primary disability: Orthopedic impairment	255	224	88%	283	238	84%	312	265	85%	320	263	82%

Student Group	Grade 3: Number Enrolled	Grade 3: Number Tested	Grade 3: Percent Tested	Grade 4: Number Enrolled	Grade 4: Number Tested	Grade 4: Percent Tested	Grade 5: Number Enrolled	Grade 5: Number Tested	Grade 5: Percent Tested	Grade 6: Number Enrolled	Grade 6: Number Tested	Grade 6: Percent Tested
Primary disability: Other health impairment	312	282	90%	340	311	91%	312	280	90%	305	270	89%
Primary disability: Specific learning disability	374	358	96%	470	451	96%	538	521	97%	455	443	97%
Primary disability: Deaf–blindness	3	2	67%	0	NA	NA	7	7	100%	1	1	100%
Primary disability: Multiple disabilities	282	249	88%	322	278	86%	371	308	83%	296	252	85%
Primary disability: Autism	2,051	1,900	93%	2,115	1,955	92%	2,052	1,918	93%	1,969	1,793	91%
Primary disability: Traumatic brain injury	24	18	75%	26	24	92%	38	34	89%	28	23	82%
Primary disability: Not classified*	2	2	100%	3	3	100%	6	6	100%	3	3	100%

* Disability information was changed or removed after student testing.

Table 2.B.4 CAA 2016–17 Participation—Mathematics, Grades Seven through Eight and Grade Eleven

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
All	5,807	5,275	91%	5,784	5,232	90%	5,322	4,496	84%
Gender: Male	3,901	3,546	91%	3,830	3,471	91%	3,407	2,878	84%
Gender Female	1,906	1,729	91%	1,954	1,761	90%	1,915	1,618	84%
Ethnicity: American Indian or Alaska Native	35	32	91%	43	39	91%	43	38	88%
Ethnicity: Asian	466	427	92%	450	408	91%	397	340	86%
Ethnicity: Native Hawaiian or Other Pacific Islander	21	18	86%	24	21	88%	34	29	85%
Ethnicity: Filipino	164	149	91%	193	179	93%	180	150	83%
Ethnicity: Hispanic or Latino	3,244	3,024	93%	3,072	2,840	92%	2,793	2,417	87%
Ethnicity: Black or African American	470	412	88%	498	452	91%	496	402	81%
Ethnicity: White	1,233	1,065	86%	1,298	1,116	86%	1,233	1,000	81%
Ethnicity: Two or more races	174	148	85%	206	177	86%	146	120	82%
English proficiency: English only	3,412	3,028	89%	3,474	3,073	88%	3,177	2,638	83%
English proficiency: Initially fluent English proficient	89	84	94%	91	82	90%	95	82	86%
English proficiency: English learner	1,931	1,810	94%	1,806	1,692	94%	1,568	1,346	86%
English proficiency: Reclassified fluent English proficient	365	345	95%	405	377	93%	474	424	89%
English proficiency: To be determined	5	4	80%	2	2	100%	2	1	50%
English proficiency: English proficiency unknown	5	4	80%	6	6	100%	6	5	83%

Student Group	Grade 7: Number Enrolled	Grade 7: Number Tested	Grade 7: Percent Tested	Grade 8: Number Enrolled	Grade 8: Number Tested	Grade 8: Percent Tested	Grade 11: Number Enrolled	Grade 11: Number Tested	Grade 11: Percent Tested
Economic status: Not economically disadvantaged	2,155	1,862	86%	2,266	1,948	86%	2,038	1,635	80%
Economic status: Economically disadvantaged	3,652	3,413	93%	3,518	3,284	93%	3,284	2,861	87%
Primary disability: Intellectual disability	2,239	2,087	93%	2,239	2,070	92%	2,217	1,937	87%
Primary disability: Hearing impairment	57	52	91%	53	51	96%	70	63	90%
Primary disability: Speech or language impairment	121	113	93%	103	95	92%	51	41	80%
Primary disability: Visual impairment	34	29	85%	46	39	85%	46	39	85%
Primary disability: Emotional disturbance	35	26	74%	40	33	83%	56	31	55%
Primary disability: Orthopedic impairment	287	243	85%	294	237	81%	362	291	80%
Primary disability: Other health impairment	313	277	88%	270	241	89%	239	202	85%
Primary disability: Specific learning disability	415	382	92%	376	357	95%	350	298	85%
Primary disability: Deaf–blindness	4	3	75%	8	5	63%	1	0	NA
Primary disability: Multiple disabilities	327	269	82%	368	315	86%	295	231	78%
Primary disability: Autism	1,941	1,766	91%	1,958	1,764	90%	1,594	1,328	83%
Primary disability: Traumatic brain injury	25	20	80%	28	24	86%	36	30	83%
Primary disability: Not classified*	9	8	89%	1	1	100%	5	5	100%

* Disability information was changed or removed after student testing.

Appendix 2.C: Accessibility

Table 2.C.1 Assignment of Designated Supports and Accommodations—English Language Arts/Literacy (ELA), Grades Three through Six

Accessibility Resource	Grade 3: N	Grade 3: % of Total	Grade 4: N	Grade 4: % of Total	Grade 5: N	Grade 5: % of Total	Grade 6: N	Grade 6: % of Total
Embedded Accommodation—Streamlining	164	3%	225	4%	242	4%	198	4%
Non-Embedded Accommodation—Print on Demand	56	1%	80	1%	96	2%	83	2%
Non-Embedded Accommodation—Alternate Response Options	514	10%	621	11%	661	12%	578	11%
Non-Embedded Accommodation—Read Aloud	1,145	23%	1,272	24%	1,338	24%	1,235	23%
Non-Embedded Accommodation—Unlisted Resources	4	0%	4	0%	13	0%	9	0%
Non-Embedded Accommodation—Scribe	466	9%	555	10%	505	9%	495	9%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	710	14%	613	11%	629	11%	516	10%
Embedded Designated Support—Color Contrast	28	1%	48	1%	54	1%	50	1%
Embedded Designated Support—Masking	235	5%	332	6%	341	6%	381	7%
Embedded Designated Support—Print Size	98	2%	138	3%	152	3%	171	3%
Embedded Designated Support—Permissive Mode	74	1%	98	2%	106	2%	87	2%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA	0	NA
Non-Embedded Designated Support—Color Contrast	53	1%	55	1%	63	1%	48	1%
Non-Embedded Designated Support—Color Overlay	37	1%	41	1%	52	1%	31	1%
Non-Embedded Designated Support—Magnification	120	2%	144	3%	200	4%	191	4%

Accessibility Resource	Grade 3: N	Grade 3: % of Total	Grade 4: N	Grade 4: % of Total	Grade 5: N	Grade 5: % of Total	Grade 6: N	Grade 6: % of Total
Non-Embedded Designated Support—Noise Buffers	344	7%	334	6%	388	7%	345	6%
Non-Embedded Designated Support—Read Aloud	1,217	24%	1,490	28%	1,652	30%	1,506	28%
Non-Embedded Designated Support—Scribe	484	10%	558	10%	599	11%	553	10%
Non-Embedded Designated Support—Separate Setting	1,176	24%	1,398	26%	1,484	27%	1,479	28%
Total Students Tested	**5,004**		**5,410**		**5,533**		**5,336**	

Table 2.C.2 Assignment of Using Designated Supports and Accommodations—ELA, Grades Seven through Eight and Grade Eleven

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Embedded Accommodation—Streamlining	151	3%	177	3%	94	2%
Non-Embedded Accommodation—Print on Demand	107	2%	128	2%	42	1%
Non-Embedded Accommodation—Alternate Response Options	554	10%	516	10%	263	6%
Non-Embedded Accommodation—Read Aloud	1,169	22%	1,214	23%	610	14%
Non-Embedded Accommodation—Unlisted Resources	0	NA	0	NA	9	0%
Non-Embedded Accommodation—Scribe	458	9%	466	9%	221	5%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	448	8%	509	10%	327	7%
Embedded Designated Support—Color Contrast	43	1%	21	0%	45	1%
Embedded Designated Support—Masking	301	6%	350	7%	156	3%
Embedded Designated Support—Print Size	155	3%	145	3%	57	1%
Embedded Designated Support—Permissive Mode	67	1%	93	2%	50	1%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA
Non-Embedded Designated Support—Color Contrast	35	1%	38	1%	19	0%
Non-Embedded Designated Support—Color Overlay	27	1%	31	1%	19	0%
Non-Embedded Designated Support—Magnification	174	3%	165	3%	91	2%
Non-Embedded Designated Support—Noise Buffers	290	5%	288	5%	112	2%
Non-Embedded Designated Support—Read Aloud	1,306	25%	1,389	26%	585	13%

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Non-Embedded Designated Support—Scribe	486	9%	532	10%	239	5%
Non-Embedded Designated Support—Separate Setting	1,301	25%	1,345	26%	659	15%
Total Students Tested	**5,288**		**5,247**		**4,505**	

Table 2.C.3 Assignment of Designated Supports and Accommodations—Mathematics, Grades Three through Six

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Embedded Accommodation—Streamlining	159	3%	223	4%	245	4%	201	4%
Non-Embedded Accommodation—Print on Demand	55	1%	78	1%	96	2%	83	2%
Non-Embedded Accommodation—Alternate Response Options	511	10%	621	12%	659	12%	582	11%
Non-Embedded Accommodation—Unlisted Resources	3	0%	4	0%	13	0%	9	0%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	704	14%	618	11%	633	11%	518	10%
Non-Embedded Accommodation—Abacus	0	NA	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Calculator	0	NA	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Multiplication Table	0	NA	0	NA	0	NA	0	NA
Non-Embedded Accommodation-100s Number Table	244	5%	378	7%	345	6%	259	5%
Embedded Designated Support —Color Contrast	28	1%	47	1%	55	1%	51	1%
Embedded Designated Support—Masking	228	5%	324	6%	339	6%	383	7%
Embedded Designated Support—Print Size	95	2%	132	2%	152	3%	171	3%

Accessibility Resource	Grade 3: N	Grade 3: % of Total Tested	Grade 4: N	Grade 4: % of Total Tested	Grade 5: N	Grade 5: % of Total Tested	Grade 6: N	Grade 6: % of Total Tested
Embedded Designated Support—Permissive Mode	70	1%	91	2%	103	2%	90	2%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA	0	NA
Non-Embedded Designated Support—Color Contrast	52	1%	54	1%	63	1%	48	1%
Non-Embedded Designated Support—Color Overlay	36	1%	40	1%	52	1%	31	1%
Non-Embedded Designated Support—Magnification	115	2%	141	3%	201	4%	193	4%
Non-Embedded Designated Support—Noise Buffers	346	7%	333	6%	387	7%	345	6%
Non-Embedded Designated Support—Read Aloud	1,217	24%	1,494	28%	1,655	30%	1,512	28%
Non-Embedded Designated Support—Scribe	487	10%	559	10%	598	11%	555	10%
Non-Embedded Designated Support—Separate Setting	1,176	24%	1,402	26%	1,491	27%	1,482	28%
Total Students Tested	**4,989**		**5,397**		**5,544**		**5,321**	

Table 2.C.4 Assignment of Designated Supports and Accommodations—Mathematics, Grades Seven through Eight and Grade Eleven

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Embedded Accommodation—Streamlining	152	3%	174	3%	92	2%
Non-Embedded Accommodation—Print on Demand	108	2%	128	2%	42	1%
Non-Embedded Accommodation—Alternate Response Options	554	11%	517	10%	263	6%
Non-Embedded Accommodation—Unlisted Resources	0	NA	0	NA	9	0%
Non-Embedded Accommodation—Additional Instructional Supports for Alternate Assessments	449	9%	510	10%	326	7%
Non-Embedded Accommodation—Abacus	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Calculator	0	NA	0	NA	0	NA
Non-Embedded Accommodation—Multiplication Table	0	NA	0	NA	0	NA
Non-Embedded Accommodation-100s Number Table	291	6%	167	3%	156	3%
Embedded Designated Support—Color Contrast	44	1%	21	0%	44	1%
Embedded Designated Support—Masking	299	6%	345	7%	156	3%
Embedded Designated Support—Print Size	156	3%	142	3%	58	1%
Embedded Designated Support—Permissive Mode	68	1%	96	2%	51	1%
Embedded Designated Support—Turn off Any Universal Tool	0	NA	0	NA	0	NA
Non-Embedded Designated Support—Color Contrast	34	1%	38	1%	19	0%
Non-Embedded Designated Support—Color Overlay	27	1%	31	1%	19	0%
Non-Embedded Designated Support—Magnification	175	3%	167	3%	90	2%

Accessibility Resource	Grade 7: N	Grade 7: % of Total Tested	Grade 8: N	Grade 8: % of Total Tested	Grade 11: N	Grade 11: % of Total Tested
Non-Embedded Designated Support—Noise Buffers	290	6%	283	5%	112	2%
Non-Embedded Designated Support—Read Aloud	1,305	25%	1,388	27%	583	13%
Non-Embedded Designated Support—Scribe	488	9%	533	10%	238	5%
Non-Embedded Embedded Designated Support—Separate Setting	1,304	25%	1,348	26%	657	15%
Total Students Tested	**5,275**		**5,232**		**4,496**	

Chapter 3: Item Development and Review

This chapter provides an overview of the processes implemented by Educational Testing Service (ETS) to develop items for use on the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. These processes include those that are entirely internal to ETS and those that are conducted in coordination with the California Department of Education (CDE) and/or the American Institutes for Research.

The chapter provides a brief description of each process and a summary of the associated specifications. More details about the specifications and the analyses associated with each process are described in other chapters that are referenced in the subsections that follow.

3.1. Item Development and Review

3.1.1. Overview

Each CAA for ELA and mathematics item is developed through a comprehensive cycle and designed to conform to principles of item writing defined by ETS. Each item in the CAA operational item bank was developed to measure a specific Core Content Connector (Connector) or the essential understanding (EU) of a Connector derived from the Common Core State Standards (CCSS). In addition, guidelines for style, fairness, and bias and sensitivity help item developers and reviewers ensure consistency across the item development process.

3.1.2. Item Specifications

ETS maintains item development specifications for the CAAs in ELA and mathematics. These specifications describe the characteristics of the items that should be written to measure each content standard and help ensure that all items developed for CAA measure the content standards consistently. Item writing emphasis is determined in consultation with the CDE.

The specifications include

- a full statement of each CCSS, Connector, and EU;
- a description of the item guidelines expected by tier for each standard;
- sample item stems for some standards;
- a general list of elements to avoid (e.g. for mathematics, the use of certain variables such as m and n in the same item, which can be difficult for students with visual impairments to distinguish);
- a description of the kinds of item stems/formats appropriate to assess each standard;
- a description of appropriate data representations (such as charts, tables, graphs, or other illustrations);
- the content limits of the standard (such as one or two variables, maximum place values of numbers);
- a description of appropriate reading passages or stimulus cards, if applicable; and
- for ELA, guidelines for passages or stimulus cards used to assess reading comprehension, including

- a list of topics to be avoided,
- the acceptable ranges for the number of words on a stimulus card,
- expected use of artwork, and
- the target number of tasks attached to each reading stimulus card.

3.1.3. Item Format

CAA items are designed to engage the target population. ELA and mathematics items are developed with the understanding that a test examiner delivers each item individually to a tested student and assists him or her in navigating through the test and recording the answer to each item. Note that item responses themselves must come from the student and not from prompting by the test examiner.

Students who are able may select responses using a mouse, touchscreen, or other supported input device. In some cases, students need to use other modes of communication, such as eye gaze or gesture, to indicate responses to the test examiner. The test examiner enters these responses into the testing device for the student.

The majority of items are presented in a split-screen format, with a “stimulus” on the left side of the screen and the item to be answered on the right. For ELA items, the stimulus is usually a passage or vocabulary set. For mathematics items, the stimulus is item-specific information or general mathematical knowledge. A selected number of items have a multimedia stimulus, either a short audio file, a video, an animation, or, for students with a visual impairment, alternative text read by the test examiner.

Items developed for the CAAs for ELA and mathematics may be scored as being worth one point or two points.

3.1.4. Item Types

Each Connector or EU may be assessed through one or more of nine available item types. An individual item may consist of one or more of the following:

1. **Multiple Choice (Single Select)—**Item that generally consists of a stem and a list of choices; the student can select only one choice (option) to respond. This type may also include a stimulus. Options use a radio button, but the student can select text or an image to fill in the radio button.
2. **Multiple Choice (Multiple Select)—**Item that generally consists of a stem and a list of choices; the student can select one or more choices (options) to respond. This type may also include a stimulus. Partial/Summative scoring is available. Options use a radio button, but the student can select text or an image to fill in the button.
3. **Inline Choice List (Single Select)—**Item where the stem contains a single blank, and the student must fill the blank by selecting a choice from its corresponding choice list.
4. **Inline Choice List (Multiple Select)—**Item where the stem contains two or more blanks, and the student must fill each blank by selecting a choice from the corresponding choice lists. Partial and summative scoring are available.
5. **Fraction—**Item where the student responds by filling in the numerator and denominator of a fraction.
6. **Numeric—**Item where the student responds by filling in a single entry box with a numeric value. The entry box may be standalone or in-line with text. Keys may be integers, decimals, and/or fractions.

7. **Grid Single Select—**Item where the student responds by marking a single cell in a table grid.
8. **Zone (Single Select)—**Item where the answer choices are predefined “hotspots” on an image. When the student selects (clicks on) the spot, the selection is highlighted, shaded, or outlined in red. The student selects one zone to respond.
9. **Zone (Multiple Select)—**Item where the answer choices are predefined “hotspots” on an image. When the student selects (clicks on) the spot, the selection is highlighted, shaded, or outlined in red. The student selects two or more zones to respond.
10. **Composite Objective—**Item that contains two or more item parts from the machine-scored list (item types 2–6 above); the item score, as a whole, is based on the student’s response to each individual part (machine scored).
11. **Match (Single Select)—**Item where the student responds by dragging and dropping a single choice (“source”) into the appropriate location (“target”).
12. **Match (Multiple Select)—**Item where the student responds by dragging and dropping two or more choices (“sources”) into the appropriate locations (“targets”).
13. **Bar Picturegraph (Single Select)—**Item where the student responds by manipulating a single bar on a graph.
14. **Bar Picturegraph (Multiple Select)—**Item where the student responds by manipulating two or more bars on a graph.

3.1.5. Selection of Item Writers

The items for the CAAs for ELA and mathematics are written by individual item writers with a thorough understanding of the Connectors and EU. Applications for item writing are screened by senior ETS content staff. Only those with strong content and teaching backgrounds are approved for inclusion in the training program for item writing. All item-writing participants are current or former California educators who are particularly knowledgeable about the standards assessed by the CAAs for ELA and mathematics and experienced with the test-taking population.

All item writers meet the following minimum qualifications:

- Possession of a Bachelor’s degree in the relevant content area or in the field of education with special focus on a particular content area; an advanced degree in the relevant content is desirable
- Current teaching experience in California, when possible, especially experience teaching students with cognitive disabilities
- Previous experience or training in writing items for standards-based assessments, including knowledge of the many considerations that are important when developing items for special student populations
- Previous experience or training in writing items in the content areas covered by CAA grades and/or content areas
- Familiarity, understanding, and support of the Connectors

3.2. Item Review Process

3.2.1. Overview

Items developed for the CAA for ELA and mathematics undergo an extensive item review process that is designed to provide the best standards-based assessments possible. This subsection summarizes the item review process that ensures the quality of CAA items.

Item writer submissions are carefully reviewed by ETS assessment specialists, who determine whether or not each item meets the criteria expected for submission, including accuracy and adherence to the item specifications. Items that do not meet minimal criteria are rejected, with notes for future revision submitted to authors. Items that meet the criteria are accepted into the pool and authored into the system.

Once an item is accepted for authoring—that is, once it has been entered into ETS's item bank and formatted for use in an assessment—ETS employs a series of internal reviews. These reviews use established criteria to judge the quality of item content and ensure that each item measures what it is intended to measure. These internal reviews also examine the overall quality of the test items before presentation to the CDE and California educators.

The ETS review process for the CAA includes the following:

1. Content review
2. Editorial review
3. Sensitivity review

Throughout this multistep item review process, the lead content-area assessment specialists and development team members continually evaluate the items in adherence to the rules for item development.

3.2.2. ETS Content Review

Items and stimuli undergo three reviews by content-area assessment specialists. These assessment specialists ensure that the items and stimuli are in compliance with ETS's written guidelines for clarity, style, accuracy, and appropriateness for California students as well as in compliance with the approved item specifications. Assessment specialists reviewed each item in terms of the following characteristics:

- Relevance of each item to the purpose of the test
- Match of each item to the item specifications, including the tier of item complexity
- Match of each item to the principles of quality item writing
- Match of each item to the identified standard or standards
- Difficulty of the item
- Accuracy of the content of the item
- Readability of the item or passage
- Grade-level appropriateness of the item
- Appropriateness of any illustrations, graphs, or figures

Each item is classified with the Connector and/or EU it is intended to measure. The assessment specialists check each item against its classification codes, both to evaluate the correctness of the classification and to ensure that the task posed by the item is relevant to the outcome it was intended to measure. The reviewers can accept the item and classification as written, suggest revisions, or recommend that the item be discarded. These steps occur prior to the CDE's review.

3.2.3. ETS Editorial Review

After the content-area assessment specialists review each item, a group of specially trained editors also review each item in preparation for consideration by the CDE and California educators. The editors check items for clarity, correctness of language, appropriateness of language for the grade level assessed, adherence to the style guidelines, and conformity with accepted item-writing practices.

3.2.4. ETS Sensitivity Review

ETS assessment specialists who are specially trained to identify and eliminate questions that contain content or wording that could be construed to be offensive to or biased against members of specific ethnic, racial, or gender groups conduct the next level of review. These trained staff members review every item before the CDE and formal item reviews.

The review process promotes a general awareness of and responsiveness to the following:

- Diversity of background, cultural tradition, and viewpoints to be found in the test-taking population
- Changing roles and attitudes toward various groups
- Role of language in setting and changing attitudes toward various groups
- Contributions of diverse groups (including ethnic and minority groups, individuals with disabilities, and women) to the history and culture of the United States and the achievements of individuals within these groups
- Item accessibility for English-language learners

3.3. Content Expert Reviews

3.3.1. California Educators as Content Experts

Meetings with California educators are held at the end of the item review process as the final content expert review that items must undergo before being placed on an operational assessment. The California educators fill an advisory role to the CDE and ETS and provide guidance on matters related to item development for the CAAs for ELA and mathematics. These educators are responsible for reviewing all newly developed items for alignment to the California content standards. Meeting participants also review the items for the accuracy of content, clarity of phrasing, and quality. In their examination of test items, participants can raise concerns related to age/grade appropriateness and gender, racial, ethnic, and/or socioeconomic bias.

3.3.2. Composition of Item Review Meetings

California educators participating in item review meetings consist of current and former teachers, resource specialists, administrators, curricular experts, and other education professionals. Minimum qualifications to be invited to participate are

- three or more years of teaching experience in grades kindergarten through twelve and in the relevant content areas (ELA or mathematics),
- bachelor’s or higher degree in a grade or content area related to ELA or mathematics, and
- knowledge and experience with the California content standards in ELA or mathematics.

Preferred qualifications include

- special education credential,
- experience with more than one type of disability, and
- three to five years of experience as a teacher or school administrator with a special education credential.

School administrators, local educational agency (LEA)/county content/program specialists, or university educators must meet the following qualifications to be invited to participate:

- Three or more years of experience as a school administrator, LEA/county content/ program specialist, or university instructor in a grade-specific area;
- Bachelor's or higher degree in a grade-specific; and
- Knowledge of and experience with the California content standards in ELA or mathematics.

Every effort is made to ensure that groups of item reviewers include a wide representation of genders and of the geographic regions and ethnic groups in California. Efforts also are made to ensure representation by members with experience serving California's diverse special education population.

Table 3.1 shows the educational qualifications, present occupation, and credentials of the individuals who participated in CAA item review.

Table 3.1 CAA Item Review Qualifications, by Content Area and Total

Qualification Type	Qualification	ELA	Math	Total
N/A	**Total**	**8**	**8**	**16**
Occupation	Teacher or Program Specialist, Elementary School	3	2	5
Occupation	Teacher or Program Specialist, Middle School	0	2	2
Occupation	Teacher or Program Specialist, High School	5	3	8
Occupation	Other District Personnel	0	0	0
Highest Degree Earned	Bachelor's Degree	1	1	2
Highest Degree Earned	Master's Degree	6	5	11
Highest Degree Earned	Doctorate	1	0	1
K–12 Teaching Credential	Elementary Teaching (multiple subjects)	2	1	3
K–12 Teaching Credential	Secondary Teaching (single subject)	2	1	3
K–12 Teaching Credential	Special Education	6	5	11

Qualification Type	Qualification	ELA	Math	Total
K–12 Teaching Credential	Reading Specialist	0	0	0
K–12 Teaching Credential	English Learner (CLAD, BCLAD)	0	0	0
K–12 Teaching Credential	Administrative	0	0	0
K–12 Teaching Credential	Other	0	0	0

Note: Numbers may not match the totals because members may have multiple occupations or teaching credentials, or are currently working toward earning their highest degree.

Item reviewers are recruited through an application process. Recommendations are solicited from LEAs and county offices of education as well as from the CDE. Applications are reviewed by the ETS assessment directors, who confirm that an applicant's qualifications meet the specified criteria. Applicants who meet the criteria have their information forwarded to the CDE for further review and agreement before invitations to participate are distributed.

3.3.3. Meetings for Review of CAA for ELA and Mathematics Items

ETS content-area assessment specialists facilitate CAA for ELA and mathematics item review meetings. Each meeting begins with a brief training session on how to review items. ETS provides this training, which consists of the following topics:

- Overview of the purpose and scope of the CAA
- Overview of the CAA test design specifications and blueprints
- Analysis of the CAA item specifications
- Overview of criteria for evaluating test items
- Review and evaluation of items for bias and sensitivity issues

The criteria for evaluating items include the following:

- Overall technical quality
- Match to the Connectors
- Match to the construct being assessed by the standard
- Difficulty range
- Clarity
- Correctness of the answer
- Plausibility of the distractors
- Bias and sensitivity factors

Criteria also encompass more global factors, including the quality of the alternative text (that it describes an image in an age- and audience-appropriate manner within the context of the question) and, for ELA, the appropriateness, difficulty, and readability of reading passages. Meeting participants also are trained on how to make recommendations for revising items.

Guidelines for reviewing items are provided by ETS and approved by the CDE. The set of guidelines for reviewing items is summarized next.

Does the item

- have one and only one clearly correct answer for single select items?

- measure the content standard?
- match the test item specifications?
- align with the construct being measured?
- test worthwhile concepts or information?

Is the stimulus, if any, for the item

- required in order to answer the item?
- likely to be interesting to students?
- clearly and correctly labeled?
- Providing all the information needed to answer the item?

3.4. Data Review Meetings

After items have been included in an operational test and administered to students, ETS prepares the items and the associated statistics for review by the CDE and California educators. Review materials include items with their statistical data along with annotated comment sheets for use by reviewers. ETS conducts an introductory training to highlight any new issues and serve as a statistical refresher. Reviewers then make decisions about which items should be included in the item bank for future assembly. If an item is considered problematic and not to be included in the item bank, it will be revised and once again follow the steps in the item development process, including field testing. ETS psychometric and content staff are available to reviewers throughout this process.

Chapter 4: Test Assembly

This chapter provides the details of test assembly, including a description of the content being measured (i.e., test blueprints), the design of the multistage test (MST), and routing rules that guide students from Stage 1 to modules of Stage 2. The process of item selection, final reviews before test production, and the production process (e.g., preparation of the test forms for online test delivery) also are included.

4.1. Test Content Specifications and Test Blueprints

The California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics incorporate innovations and best practices from recent national alternate assessment initiatives, including the National Center and State Collaborative (NCSC) and the Dynamic Learning Maps. All items and tasks are developed to grade-level standards and the Core Content Connectors (Connectors) developed by the NCSC (NCSC, 2014a [reading], 2014b [writing], and 2014c [mathematics]). An essential understanding (EU) is identified for each Connector. EUs define a basic, foundational key idea or concept based on the Connector that builds increasing understanding of the grade-level content.

These Connectors are aligned with the Common Core State Standards (CCSS).

4.1.1. Test Content Specifications

The CAA assesses each CCSS through the NCSC-developed Connectors and EUs derived from the Connectors. These Connectors identify the most salient grade-level, core academic content in ELA and mathematics found in both the CCSS (Common Core State Standards Initiative, 2017) and the Learning Progression Frameworks (LPF) (NCSC, 2015), and illustrate the necessary knowledge and skills required in order to reach the learning targets within the LPF and the CCSS. Additionally, the Connectors focus on the core content, knowledge, and skills needed to help students at each grade level succeed; and identify priorities in each content area to guide the instruction for students in this population and for an alternate assessment. Finally, Connectors provide a foundation that permits teachers, parents/guardians, and the students themselves to help students with significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for post-secondary options (NCSC, 2015).

Each content standard is assessed through the Connectors and related EUs under a three-tier structure of item complexity. Detailed information on the tiered items is provided in subsection *4.2 Test Design*.

4.1.2. Test Blueprints

The CAA test blueprints are unique to each grade level and content area (California Department of Education [CDE], 2015a [ELA] and 2015b [mathematics]). These blueprints designate the breakdown of each assessment, first by Content Category (for ELA) or Domain (for mathematics) and then by Connectors. Information on a test blueprint for a given grade and content area includes

- specific ratio of each Content Category/Domain on overall test,
- specific Connectors to be assessed,
- specific EUs to be assessed, and
- the maximum number of items on a test.

More information regarding the alignment of each CAA for ELA and mathematics test with the test blueprints is provided in Table 4.A.1 through Table 4.A.14 in Appendix 4.A.

4.2. Test Design

4.2.1. Multistage Test (MST) Design

As the simplest and most robust form of adaptive testing, an MST design consists of a number of modules. Each module can be assembled to meet a set of specifications such as item content and item difficulty/complexity; see subsection *3.1.2 Item Specifications* for additional information about the item specifications.

Educational Testing Service (ETS) implemented a two-stage MST design for the CAAs for ELA and mathematics. Students with a variety of ability levels, based on their performance on Stage 1, are routed to one of three alternative modules at Stage 2 that is appropriate for their abilities.

This design improves measurement quality and student engagement, particularly for students who represent a diverse population with a wide range of ability levels and whose ability levels may not be appropriately targeted by conventional fixed-form tests. It allows test developers to develop thoughtful test item sets (modules) that maximize the information provided about a student by routing students to test modules appropriate for their ability levels. Such design supports the balance between test standardization and full access to provide a valid measure for each student.

The CAAs for ELA and mathematics test assembly design meets content and psychometric requirements for items and forms. The design contains a number of important features that are descibed in the following subsections.

4.2.1.1. Tiered Items

An important feature of the CAAs for ELA and mathematics MST is the usage of tiered items. Given that the target population encompasses many types of cognitive disabilities and an extremely wide range of abilities, items developed to three tiers of complexity are organized in order of increasing complexity and cognitive load. Items developed at Tier 1, considered the most accessible level, typically rely heavily on graphics. Items developed at Tier 2, considered the middle level, typically use a mix of graphics and text. Items developed at Tier 3, the most challenging level (with increased rigor and difficulty) rely more heavily on text and less on graphics than the lower tiers. Typically:

- A Tier 1 item would provide images with dichotomous answer choices.
- A Tier 2 item would provide three answer choices with fewer images.
- A Tier 3 item would provide three or more answer choices with more complicated text and the fewest images.

As the text complexity increases for higher tier levels, the length of passages in an ELA assessment also increases. Within the same grade level, relatively speaking, a Tier 1 ELA passage contains few sentences with heavy use of graphics. A Tier 2 passage typically contains several sentences with fewer graphics. A Tier 3 passage contains a paragraph or two of text with less reliance on graphics.

4.2.1.2. Modules

Items and passages from each tier are carefully composed into modules for both stages of CAAs for ELA and mathematics delivery. The Stage 1 module consists of a total of 13 items

of which 10 are operational items and 3 are embedded field test items. The operational portion of the Stage 1 module is the router with six Tier 1 items appearing first followed by four Tier 2 items. Five versions of the Stage 1 module were administered where the only difference in the Stage 1 version was the unique embedded field test items. Specifically, each Stage 1 module version had the same operational items but different embedded field test items.

The five versions of the Stage 1 modules are randomly assigned at the school level statewide during online administration. In addition, the Stage 1 router is divided into two sections, Stage 1A and Stage 1B, where Stage 1A consists of the first four operational items, of which all four items are at Tier 1. Stage 1A is the Student Response Check (SRC), whereby a student's testing experience could end if he or she could not orient successfully or provide a consistent response to any of the easiest items administered. Stage 1B consists of the remaining six operational items, of which the first two items are at Tier 1 and the remaining four are at Tier 2. See subsection *4.2.2 English Language Arts/Literacy and Mathematics Test Design* for more information.

At Stage 2, each of the three modules—easy, moderate, and hard—is tailored to a particular student ability level with appropriate item sets. Each Stage 2 module consists of approximately 7 to 10 items with statistics and 5 to 8 items without prior statistics. Due to the small number of items in the existing item bank, there are a small subset of items that are classified as operational even though they have no prior statistics. All items with prior statistics in Stage 1 and Stage 2 are eligible for use as anchor items in post-equating to link all operational items without prior statistics and embedded field test items to the baseline scale.

4.2.1.3. Embedded Field Test

Embedded field testing is a preferred method for building an item bank because the items are administered within an operational test setting. Scores on the field test items are not counted toward student scores. For the 2016–17 CAA for ELA and mathematics administration, sets of three items are embedded in Stage 1. Scores from these items are not included in routing decisions from Stage 1 to Stage 2.

For the CAA Stage 1 router, one core module is administered with 10 operational items that are common across five versions that support five different embedded field test sets of three items each. The five versions of Stage 1 modules are distributed by random assignment at the school level so that a large representative sample of students respond to the field test items embedded in these versions. The random assignment of specific versions ensures that a diverse sample of students take each field test set. The students do not know which items are being field tested and which items are operational; therefore, their motivation is not expected to vary over the two types of items (Patrick & Way, 2008).

4.2.1.4. Pathways

The Stage 1 and Stage 2 module combination administered to any one student is called a "pathway." The pathway varies depending on a student's performance on the items and the routing rules. The two-stage MST design with the Stage 1 router and three modules at Stage 2 generates four possible pathways, including an early exit pathway, defined by a student exit from the test after Stage 1.

The four possible pathways can be regarded as multiple forms of a linear test. Each MST pathway combination of the Stage 1 and Stage 2 modules is shown in Table 4.1.[5]

Table 4.1 Four Effective Unique Forms for Each Grade and Test Configuration

Pathway	Effective Unique Form	Configuration
1.	ABO	Stage 1 items and end the test
2.	ABE	Stage 1 items and Stage 2 easy items
3.	ABM	Stage 1 items and Stage 2 medium items
4.	ABH	Stage 1 items and Stage 2 hard items

4.2.2. English Language Arts/Literacy and Mathematics Test Design

For the 2016–17 CAA administration in ELA and mathematics, most students were required to complete a full-length test: the routing test in Stage 1A and Stage 1B, as well as one of the three modules in Stage 2.

The CAAs are designed as follows:

1. Stage 1
    a. SRC with the four easiest Tier 1 items; router Stage 1A
    b. Two to three items at Tier 1, three to four Tier 2 items, and three embedded field test items; router Stage 1B
2. Stage 2
    a. Module 1—Easy
        - 15 operational items
            - Seven to 10 operational items have statistics from the 2015–16 operational administration
            - Five to eight operational items have no prior statistics
                - Nine items at Tier 1
                - Six items at Tier 2
    b. Module 2—Moderate
        - 15 operational items
            - Seven to 10 operational items have statistics from the 2015–16 operational administration
            - Five to eight operational items have no prior statistics
                - Three items at Tier 1
                - Nine items at Tier 2

[5] Students who answer fewer than four items at Stage 1 are considered as “partial completers”; students who do not answer any items are considered as “non-completers.” “Non-completers” and “partial completers” receive the lowest possible scale score. Therefore, scores of such students are not included in the analysis. See subsection *7.1.1 Incomplete/Complete Cases* for a list of cases where the tests are considered as “incomplete.”

        - Three items at Tier 3

c. Module 3—Hard

- 15 operational items
  - Seven to 10 operational items have statistics from the 2015–16 operational administration
  - Five to eight operational items have no prior statistics
    - Six items at Tier 2
    - Nine items at Tier 3

4.2.2.1. Stage 1 Design

Stage 1A comprises the SRC, which consists of the four easiest items at Tier 1 based on the item response theory (IRT) *b*-parameter values. For students who do not provide an observable, consistent response to the items, test examiners are directed to end the assessment using the [**End Test**] button. These checks occur at the first item and the fourth item. The responsibilities of test examiners regarding these checks can be found in subsection *5.1 Test Administration* in *Chapter 5: Test Administration*.

Students who do not pass the SRC are exited from the test. Stage 1B consists of six operational items with prior statistics. After the last item of Stage 1, the results from the router are used to identify students for whom meaningful measurement is unlikely to occur. These students are exited from the test instead of proceeding to Stage 2. Continuing students are routed to one of the three Stage 2 modules. Refer to subsection *7.1.1 Incomplete/Complete Cases* for the scoring of each situation described above.

4.2.2.2. Stage 2 Design

At Stage 2, the three modules are defined as Module 1 (Easy), Module 2 (Moderate), or Module 3 (Hard). Module 1 consists of approximately nine Tier 1 items and six Tier 2 items. Module 2 consists of approximately three Tier 1 items, nine Tier 2 items, and three Tier 3 items. Module 3 consists of approximately six Tier 2 items and nine Tier 3 items. Students are routed to one of the three modules of Stage 2 based on their performance on the Stage 1 router.

4.2.2.3. Survey of Student Characteristics (SSC)

The SSC includes three questions embedded within the assessment as the last segment of the test. The SSC is not presented for students who do not respond or orient; their testing is terminated at Item 1 or Item 4. The SSC allows a test examiner to describe the student's engagement on the test. The text of the three SSC questions is as follows:

1) Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?
   - ○ Yes
   - ○ No
2) Please indicate your student's mode(s) of communication that was used on this test. (Select all that apply)
   - ☐ Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.
   - ☐ Student provided a verbal response.
   - ☐ Student used gestures or pointed to indicate a response.

- ☐ Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.
- ☐ Student used an assistive/augmentative communication device.
- ☐ Student used eye gaze.
- ☐ Other

3) How engaged was your student with this test you just administered?
   - ○ 0 – not engaged at all
   - ○ 1 – minimally engaged
   - ○ 2 – moderately engaged
   - ○ 3 – fully engaged

The summary of the SSC data results is provided in subsection *8.7.5.1 Survey of Student Characteristics (SSC)*.

4.2.3. Routing Rules for the 2016–17 Administration

Given that the CAA-eligible population consists of students with a wide range of cognitive disabilities, routing rules are used to minimize the test-taking burden on students, in addition to directing students to the modules that fit their ability levels. Students experiencing difficulties with the simplest tasks should not continue with more complex items. Each student should be routed to a module that is appropriate for his or her ability level.

The routing rules for the 2016–17 CAAs for ELA and mathematics administration are illustrated in Table 4.2. The early exit routing rule is designed for students who demonstrate the ability to communicate and provide responses but have significant difficulties successfully completing Tier 1 items. The first threshold, t_1, based on his or her performance on the router portion of Stage 1, determines whether a student would end the test early or continue to one of the three Stage 2 modules. The intent is to end the test early for those students who are most likely to find the second-stage testing more stressful than productive or are otherwise unable to engage with the content. For those students who continue to Stage 2, the remaining thresholds, t_2 and t_3, determine which of the available pathways will be taken.

Table 4.2 Routing Rule Summary for the 2016–17 administration

Condition	Decision
Router score is less than t_1	End the test after Stage 1.
Router score is greater than or equal to t_1 and less than t_2	Continue the test with Module 1 in Stage 2.
Router score is greater than or equal to t_2 and less than t_3	Continue the test with Module 2 in Stage 2.
Router score is greater than or equal to t_3	Continue the test with Module 3 in Stage 2.

The routing thresholds were estimated through a simulation using the 2015–16 CAAs for ELA and mathematics administration data. In this simulation, student ability distributions were estimated for each grade level and content area. Observed ability estimates for all scored students were tabulated and then smoothed through kernel smoothing methods (ETS, 2011). The IRT item parameters used for the simulation evaluation were also estimated from the 2015–16 administration.

Each simulated student was administered all items in the full MST, including the router portion of Stage 1 and all three Stage 2 modules. Following the simulation of each test, aggregated results across all the simulated students were collected, including the true ability, the score on the router portion of Stage 1, and the overall score across all modules in the full MST (a total of 55 items). For the current assessment, an ideal set of the threshold values are chosen to maximize the test reliability, proportion of productive tests, and test information function by ensuring that each student is routed to the most informative Stage 2 module. The final thresholds of routing are determined in consultation with the CDE.

The raw score point values in the router portion of Stage 1 are used by the routing engine in the test delivery system to determine routing pathways for students. The router includes both 1-point and 2-point items, and the router score is the sum of item scores from the 10 operational items in the router. For example, the maximum score points for the Stage 1 for grade five ELA is 14. When a student earns fewer than 4 score points, the student's testing experience ends. When a student earns greater than or equal to 4 and fewer than 9 score points, the student is routed to the easy Stage 2 module. When a student earns greater than or equal to 9 and fewer than 12 score points, the student is routed to the moderate Stage 2 module. When a student earns 12 or more score points, the student is routed to the hard Stage 2 module. The summary of the routing thresholds is presented in Table 4.C.1 and Table 4.C.2 in Appendix 4.C.

4.3. Test Production Process

4.3.1. Psychometric Criteria and Identification of Eligible Items

In addition to the blueprints (CDE, 2015a [ELA] and 2015b [mathematics]) and test design documents, statistical guidelines were developed by the ETS psychometrics team to assist in test assembly. The guidelines include the following:

- The first four items in Stage 1 comprise the SRC, which must have prior item statistics.
- Seven to 10 of the 15 items in each Stage 2 module must have prior item statistics. Items can be shared across the modules in the following ways:
  - Items included in both Easy and Moderate modules are Tier 1 and/or Tier 2 items.
  - Items included in both Moderate and Hard modules are Tier 2 and/or Tier 3 items.
- Any item that has prior item statistics will be used as an anchor item to place the 2016–17 tests onto the baseline scale.
- Any item that was previously administered and requires editing and additional field testing due to a flaw in the item cannot be used as an anchor item. The item sets that require additional field testing should be placed in Stage 2 only.
- Each test pathway with 25 items should conform to the specifications in the test blueprint.

See Appendix 4.B for a description of the statistical specifications used during development of the CAAs for ELA and mathematics.

4.3.2. Selection of Items

From the eligible item pool, test developers select items that, as a whole

- meet the coverage specifications of the test blueprint,
- meet the form-building guidelines developed by the ETS psychometrics team,

- provide for a wide variety of item types, and
- provide for a wide variety of item context.

4.3.3. Verification of Statistics

ETS test developers send the proposed assessment to the ETS psychometrics team for approval. The proposed assessment is reviewed to ensure that all statistical guidelines are met for both individual items and the assessment as a whole.

4.3.4. Content Review of Forms

After psychometric approval, the proposed assessment undergoes two additional content reviews and one editorial review. The form reviewers are content specialists who work on testing programs other than the CAA for ETS, and who thereby are able to bring a set of "fresh eyes" to the review. They are given the appropriate materials to verify the following:

- Verification of item keys
- Identification of possible clueing across the items
- Verification that individual items meet the standard
- Verification of coverage of the standards
- Identification of any possible grammatical or production errors

4.3.5. CDE Review of Forms

Following the ETS content review, all proposed assessments are sent to the CDE for review to ensure the proposed assessments meet CAAs for ELA and mathematics test blueprint requirements and to check there is no clueing between items or statistical issues. The CDE is provided with the following materials:

- Hardcopies of the proposed forms
- Modified form planners
- Comment sheets

Comments from the CDE are resolved during a virtual meeting with the ETS test development team.

4.3.6. Configuration of the Test Delivery System (TDS)

Once all the test reviews are completed and any concerns have been resolved, the official ordered item sequence of the proposed forms are sent to the American Institutes for Research (AIR) for configuration of the test delivery system (TDS).

AIR's TDS supports a variety of item layouts. Most of the item layouts have the stimulus and item response options/response area displayed side by side. In each of these item layouts, both the stimulus and response options have independent scroll bars. Each item undergoes an extensive platform review on different operating systems such as Windows, Linux, and iOS, to ensure that the item looks consistent across all platforms.

The platform review is conducted by a team at AIR consisting of a team leader and several team members. The team leader projects the item as it was approved in ETS and AIR item banks. Each team member is assigned a different platform—hardware device and operating system—and reviews the item to see that it renders as expected. This platform review meeting ensures that all items will be presented consistently to all students regardless of testing device and/or operating system for standardization of the test administration.

Prior to operational deployment, the testing system and content are deployed to a staging server where they are subject to user acceptance testing (UAT) by both ETS and AIR staff. The TDS UAT serves as both a software evaluation and a content approval role.

The UAT procedures followed by the ETS staff include reviewing all items for ELA and mathematics. The possible routing outcomes, in conjunction with the separate grade- and version-specific *CAA Directions for Administration* manuals, are also checked.

Following the UAT by ETS and AIR staff, separate UAT cycles are conducted by the CDE. The UAT review provides the CDE with an opportunity to interact with the exact test that will be administered to the students. The CDE must approve the CAA UAT before the test can be released for administration to students.

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Appendix 4.A: Test Blueprints Alignment by California Alternate Assessment (CAA) Form

Notes:

1. ABO represents Stage 1 Items Only
2. ABE represents Stage 1 + Stage 2 Easy Module
3. ABM represents Stage 1 +Stage 2 Moderate Module
4. ABH refers to Stage 1 + Stage 2 Hard Module

Table 4.A.1 Test Blueprints Alignment by Form—English Language Arts/Literacy (ELA), Grade Three

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	4	40%	7	28%	7	28%	10	40%
Reading: Informational	25%	2	20%	6	24%	6	24%	4	16%
Reading: Vocabulary	9%	1	10%	2	8%	3	12%	2	8%
Reading: Foundation	6%	0	0%	1	4%	2	8%	1	4%
Writing	30%	3	30%	9	36%	7	28%	8	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.2 Test Blueprints Alignment by Form—ELA, Grade Four

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	2	20%	7	28%	7	28%	7	28%
Reading: Informational	25%	3	30%	7	28%	6	24%	6	24%
Reading: Vocabulary	9%	1	10%	2	8%	3	12%	2	8%
Reading: Foundation	6%	1	10%	2	8%	2	8%	2	8%
Writing	30%	3	30%	7	28%	7	28%	8	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.3 Test Blueprints Alignment by Form—ELA, Grade Five

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	30%	1	10%	8	32%	8	32%	8	32%
Reading: Informational	30%	4	40%	7	28%	8	32%	7	28%
Reading: Vocabulary	10%	1	10%	2	8%	2	8%	2	8%
Writing	30%	4	40%	8	32%	7	28%	8	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.4 Test Blueprints Alignment by Form—ELA, Grade Six

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	2	20%	6	24%	5	20%	5	20%
Reading: Informational	40%	5	50%	10	40%	10	40%	11	44%
Reading: Vocabulary	10%	0	0%	3	12%	3	12%	1	4%
Writing	30%	3	30%	6	24%	7	28%	8	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.5 Test Blueprints Alignment by Form—ELA, Grade Seven

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	3	30%	5	20%	5	20%	5	20%
Reading: Informational	40%	3	30%	10	40%	10	40%	10	40%
Reading: Vocabulary	10%	1	10%	3	12%	3	12%	3	12%
Writing	30%	3	30%	7	28%	7	28%	7	28%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.6 Test Blueprints Alignment by Form—ELA, Grade Eight

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	20%	2	20%	5	20%	5	20%	5	20%
Reading: Informational	40%	4	40%	10	40%	10	40%	10	40%
Reading: Vocabulary	10%	1	10%	3	12%	3	12%	2	8%
Writing	30%	3	30%	7	28%	7	28%	8	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.7 Test Blueprints Alignment by Form—ELA, Grade Eleven

Content Category	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Reading: Literary	15%	0	0%	4	16%	4	16%	4	16%
Reading: Informational	45%	7	70%	11	44%	11	44%	11	44%
Reading: Vocabulary	10%	0	0%	3	12%	2	8%	3	12%
Writing	30%	3	30%	7	28%	8	32%	7	28%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.8 Test Blueprints Alignment by Form—Mathematics, Grade Three

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	30%	4	40%	8	32%	8	32%	7	28%
Numbers & Operations in Base Ten	40%	2	40%	5	40%	6	40%	6	40%
Number & Operational - Fractions	40%	2	40%	5	40%	4	40%	4	40%
Measurement & Data	30%	2	20%	5	28%	5	28%	5	32%
Geometry	30%	0	20%	2	28%	2	28%	3	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.9 Test Blueprints Alignment by Form—Mathematics, Grade Four

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	35%	4	40%	9	36%	9	36%	9	36%
Numbers & Operations in Base Ten	30%	0	30%	2	32%	1	32%	2	32%
Number & Operational - Fractions	30%	3	30%	6	32%	7	32%	6	32%
Measurement & Data	35%	1	30%	5	32%	4	32%	4	32%
Geometry	35%	2	30%	3	32%	4	32%	4	32%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.10 Test Blueprints Alignment by Form—Mathematics, Grade Five

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Operational & Algebraic Thinking	10%	1	10%	3	12%	3	12%	3	12%
Numbers & Operations in Base Ten	60%	5	60%	10	60%	9	60%	9	60%
Number & Operational - Fractions	60%	1	60%	5	60%	6	60%	6	60%
Measurement & Data	30%	2	30%	4	28%	5	28%	5	28%
Geometry	30%	1	30%	3	28%	2	28%	2	28%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.11 Test Blueprints Alignment by Form—Mathematics, Grade Six

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Ratios and Proportional Relationships	30%	4	40%	7	28%	7	28%	8	32%
The Number System	30%	3	30%	8	32%	7	28%	8	32%
Expressions and Equations	20%	2	20%	5	20%	5	20%	5	20%
Geometry	10%	1	10%	2	8%	3	12%	2	8%
Statistics & Probability	10%	0	0%	3	12%	3	12%	2	8%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.12 Test Blueprints by Form—Mathematics, Grade Seven

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Ratios and Proportional Relationships	40%	3	30%	10	40%	10	40%	10	40%
The Number System	15%	2	20%	4	16%	3	12%	4	16%
Expressions and Equations	15%	2	20%	4	16%	4	16%	4	16%
Geometry	15%	1	10%	3	12%	5	20%	4	16%
Statistics & Probability	15%	2	20%	4	16%	3	12%	3	12%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.13 Test Blueprints Alignment by Form—Mathematics, Grade Eight

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
The Number System	10%	1	10%	3	12%	2	8%	3	12%
Expressions and Equations	35%	2	50%	4	36%	4	36%	5	36%
Functions	35%	3	50%	5	36%	5	36%	4	36%
Geometry	30%	3	30%	7	28%	8	32%	7	28%
Statistics & Probability	25%	1	10%	6	24%	6	24%	6	24%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Table 4.A.14 Test Blueprints Alignment by Form—Mathematics, Grade Eleven

Domain	% of the blueprint	ABO N	ABO Pct	ABE N	ABE Pct	ABM N	ABM Pct	ABH N	ABH Pct
Number and Quantity: The Real Number System	25%	2	20%	5	24%	2	24%	3	24%
Number and Quantity: Quantities	25%	0	20%	1	24%	4	24%	3	24%
Algebra: Creating Equations	40%	4	50%	6	40%	7	40%	8	40%
Functions: Interpreting Functions	40%	1	50%	4	40%	3	40%	2	40%
Geometry: Similarity, Right Triangles, and Trigonometry	10%	1	10%	3	12%	3	12%	3	12%
Statistics and Probability: Interpreting Categorical and Quantitative Data	25%	2	20%	6	24%	6	24%	6	24%
Total	**100%**	**10**	**100%**	**25**	**100%**	**25**	**100%**	**25**	**100%**

Appendix 4.B: Statistical Specification for 2016–17 Test Development

Test assembly must follow guidelines to ensure the validity and reliability of test scores. These guidelines fall into two major categories: content-related and psychometric guidelines. Content-related guidelines ensure the appropriateness of item content and the alignment to standards. Psychometric guidelines provide specifications on statistical properties of the items, modules, and the entire MST.

The purpose of this specification is to summarize the specific *statistical* properties that were met in when selecting items for the 2016–17 CAAs.

Statistical Properties of Individual Items

Individual items need to satisfy a number of statistical specifications to be usable in the forms.

1. Average Item Score (AIS) Range

Items that are too difficult or too easy, indicated by a low or high AIS, should not be used as they serve little purpose of evaluating test takers' abilities. The acceptable AIS range is generally between .10 and .95 for multiple choice and 1-point items and .2 and 1.90 for 2-point items.

2. Polyserial Correlations

Nondiscriminating items, indicated by a low polyserial correlation value, should not be used. For test assembly, the recommended minimum polyserial correlation value is .20. However, given the limited number of CAA items in the item bank, for the spring 2016–17 administration, items with a polyserial correlation value between .10 and .20 could be included on the CAA forms to ensure complete coverage of the test content.

3. Differential Item Functioning (DIF)

Items analyzed for DIF at ETS are classified into one of three categories, A, B, or C. Classifications of B- or C- indicate DIF is in favor of the reference group; classifications of B+ and C+ indicate DIF is in favor of the focal group. Items that function differentially across different demographic examinee subgroups that have similar overall test performance should not be used.

An item classified into category C shows significant DIF and should not be included in the operational form. If it is necessary to include an item exhibiting C-DIF on a test or if DIF is found on an operational form, the item must be reviewed by a panel that includes members of the focal group(s) affected. The members of the panel should not have a vested interest in the outcome of the decision. If no explanation for the DIF can be found, the item may be scored if in an operational form or may appear on the assembled test. In the latter case, the inclusion of no C-DIF items is preferred because this circumstance is beyond reproach in most cases. Additionally, if an item exhibiting C-DIF must be selected, then a balance with regard to the C-DIF item should be considered; that is, not all C-DIF items should be C- nor all C+ items.

Appendix 4.C: Routing Thresholds

Table 4.C.1 CAA for ELA Routing Thresholds

Test	Stage 1	Stage 2–Easy	Stage 2–Moderate	Stage 2–Hard
ELA 3	R*<4	4 <=R*< 11	11 <=R*< 14	R*>= 14
ELA 4	R*<4	4 <=R*< 9	9 <=R*< 12	R*>= 12
ELA 5	R*<4	4 <=R*< 9	9 <=R*< 12	R*>= 12
ELA 6	R*<4	4 <=R*< 9	9 <=R*< 12	R*>= 12
ELA 7	R*<4	4 <=R*< 9	9 <=R*< 13	R*>= 13
ELA 8	R*<6	6 <=R*< 13	13 <=R*< 16	R*>= 16
ELA 11	R*<4	4<=R*< 9	9 <=R*< 13	R*>= 13

Note: * Indicates the raw score of ten operational items in the router portion of Stage 1.

Table 4.C.2 CAA for Mathematics Routing Thresholds

Test	Stage 1	Stage 2–Easy	Stage 2–Moderate	Stage 2–Hard
Mathematics 3	R*<4	4 <=R*< 7	7 <=R*< 10	R*>= 10
Mathematics 4	R*<4	4 <=R*< 8	8 <=R*< 11	R*>= 11
Mathematics 5	R*<4	4 <=R*< 8	8 <=R*< 11	R*>= 11
Mathematics 6	R*<3	3 <=R*< 7	7 <=R*< 10	R*>= 10
Mathematics 7	R*<4	4 <=R*< 7	7 <=R*< 11	R*>= 11
Mathematics 8	R*<3	3 <=R*< 8	8 <=R*< 12	R*>= 12
Mathematics 11	R*<4	4<=R*< 8	8 <=R*< 10	R*>= 10

Note: * Indicates the raw score of ten operational items in the router portion of Stage 1.

Chapter 5: Test Administration

This chapter provides an overview of the test administration of the 2016–17 California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics and includes a system functionality overview, descriptions of the efforts and measures to ensure test security, procedures to maintain standardization, and procedures for implementation of test accommodations based on the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014, Chapter 6).

5.1. Test Administration

The testing window for the 2016–17 administration of the CAAs was from March 20, 2017, through the last day of instruction at the local educational agency (LEA) or the end of the LEA's selected testing window, whichever came first. Specific test administration schedules within this window were determined locally.

To ensure the 2016–17 test administration was a successful experience for CAA test examiners and students, Educational Testing Service (ETS) provided on-site test administration workshops in various locations throughout California in January and February 2017 and also produced Webcasts and videos for detailed information on California Assessment of Student Performance and Progress (CAASPP) test administration procedures. The on-site workshops included a session dedicated exclusively to the topic of the CAA test administration procedures. In addition, ETS developed and posted a number of test administration resources for schools and LEAs on both the public Web site on caaspp.org and on the secure Test Operations Management System (TOMS) Web site. These resources included detailed information on topics such as technology readiness, test administration, test security, accommodations, using the test delivery system, and general testing rules. One CAA-specific Webcast was presented, to provide training in administering the CAAs.

The 2016–17 CAAs for ELA and mathematics are a two-stage multistage test (MST). Refer to *Chapter 4: Test Assembly* for the details of the MST design. Figure 5.1 presents the components of CAA test administration.

Given that the CAAs are administered to students who have the most significant cognitive disabilities, every individual student is assigned with a test examiner for an one-to-one test administration. Refer to *Chapter 4: Test Assembly* for the details in the MST design. Other special considerations and procedures during administration process are shown in Figure 5.1.

Refer to the Alternative Text for Figure 5.1 for a long description of this figure.

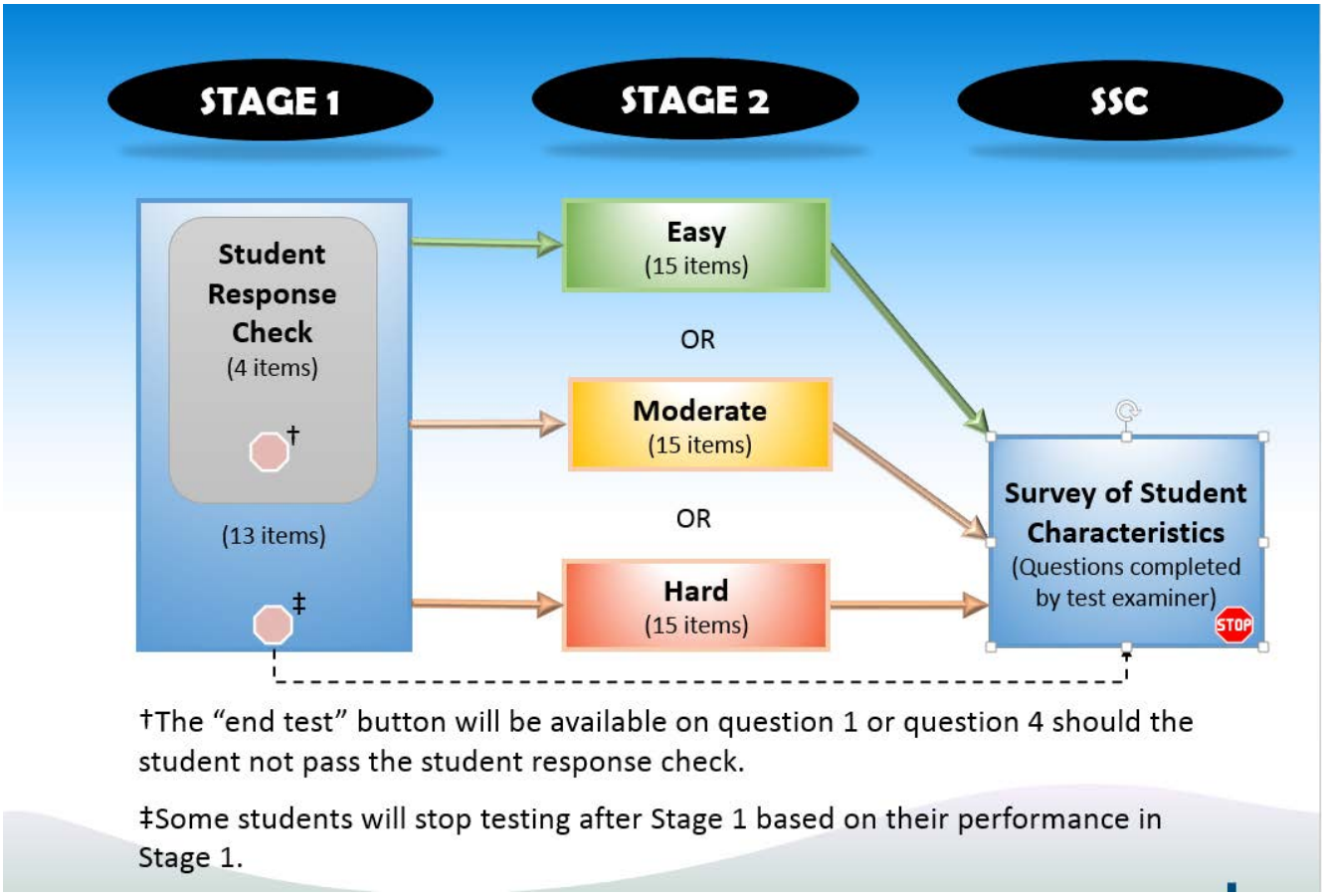

Figure 5.1 Test Components and Administration Process

5.1.1. Administration of the Student Response Check (SRC)

Test examiners respond to the SRC during the first stage of test administration for both the ELA and mathematics assessments to ensure that these CAAs are accessible and students are able to take the test. The SRC is comprised of four questions. The instructions that are provided in the *CAA Directions for Administration* include information on specific behaviors that a test examiner should observe. There are three possible outcomes from administering the first test item.

1. The student demonstrates an observable, consistent response, even though the answer to the item may be incorrect.
2. The student demonstrates an observable, but inconsistent, response.
3. The student does not demonstrate any observable responses.

If the SRC outcome is **1**, the test examiner administers the entire assessment (including the remaining items in Stage 1A and all items in stages 1B and 2).

If the outcome is **2**, the test examiner finishes the next three items and, if a consistent and observable response is elicited through the next three items, the entire assessment is administered.

If the outcome is **3**, the test examiner is instructed not to administer the assessment and ends the test. If, during testing, the student ceases to provide any observable response, the test examiner is instructed to end the test.

5.1.2. Administration of the CAAs for ELA and Mathematics

If the decision is made to continue with the test administration as a result of the SRC, students are given the following opportunities for continuing to the end of the full test or exiting early at the end of Stage 1 as shown in Figure 5.1.

- After completion of the first 10 operational items (Stage 1), the test delivery system (TDS) compares the student's performance against the routing thresholds as shown in Table 4.C.1 (ELA) or Table 4.C.2 (mathematics) and determines whether to direct the student to Stage 2 or end testing and route directly to the Survey of Student Characteristics (SSC).
- After the completion of the full Stage 1, if a minimum score threshold is met to continue with testing, the TDS routes the student to one of the three modules of Stage 2, as shown in Figure 5.1.

5.1.3. Administration of the Survey of Student Characteristics (SSC)

For the final three questions for both the ELA and mathematics assessments, the test examiner is asked to respond to SSC about the student who just tested. These questions are intended to elicit information about a student's characteristics and to explore whether the test examiners' knowledge of students can be used to improve and develop the CAAs for future years. The test examiner completes the SSC on the student's testing device through the CAASPP secure browser. The SSC was not presented for students whose tests were ended early as a result of the student response check.

5.2. Test Security and Confidentiality

For the CAA test administration, every person who works with the assessments, communicates test results, and/or receives testing information is responsible for maintaining the security and confidentiality of the tests, including California Department of Education (CDE) staff, ETS staff, ETS subcontractors, LEA assessment coordinators, school assessment coordinators, students, parents/guardians, teachers, and cooperative educational service agency staff. ETS's Code of Ethics requires that all test information, including tangible materials (such as test items), confidential files (such as those containing personally identifiable student information), and processes related to test administration (such as the configurations of secure servers) are kept secure. To ensure security for all the tests that ETS develops or handles, ETS maintains an Office of Testing Integrity (OTI), which is described in the next subsection.

All tests within the CAASPP System, as well as the confidentiality of student information, should be protected to ensure the validity, reliability, and fairness of the results. As stated in Standard 7.9 (AERA, APA, & NCME, 2014), "The documentation should explain the steps necessary to protect test materials and to prevent inappropriate exchange of information during the test administration session" (p. 128).

This section of the *CAA Technical Report* describes the measures intended to prevent potential test security incidents prior to testing and the actions that were taken to handle security incidents occurring during or after the testing window using the Security and Test Administration Incident Reporting System (STAIRS) process.

5.2.1. ETS's Office of Testing Integrity (OTI)

The OTI is a division of ETS that provides quality assurance services for all testing programs managed by ETS. This division resides in the ETS legal department. The Office of

Professional Standards Compliance at ETS publishes and maintains the *ETS Standards for Quality and Fairness* (2014), which supports the OTI's goals and activities. The *ETS Standards for Quality and Fairness* provides guidelines to help ETS staff design, develop, and deliver technically sound, fair, and beneficial products and services and help the public and auditors evaluate those products and services.

The OTI's mission is to

- minimize any testing security violations that can impact the fairness of testing;
- minimize and investigate any security breach that threatens the validity of the interpretation of test scores; and
- report on security activities.

The OTI helps prevent misconduct on the part of students and administrators, detects potential misconduct through empirically established indicators, and resolves situations involving misconduct in a fair and balanced way that reflects the laws and professional standards governing the integrity of testing. In its pursuit of enforcing secure testing practices, the OTI strives to safeguard the various processes involved in a test development and administration cycle.

5.2.2. Procedures to Maintain Standardization of Test Security

Test security requires the accounting of all secure materials—including online summative test items, and student data—before, during, and after each test administration. The LEA CAASPP coordinator is responsible for keeping all electronic test materials secure, keeping student information confidential, and making sure the CAASPP test site coordinators and test examiners are properly trained regarding security policies and procedures.

The CAASPP test site coordinator is responsible for mitigating test security incidents at the test site and for reporting incidents to the LEA CAASPP coordinator.

The test examiner is responsible for reporting testing incidents to the CAASPP test site coordinator and securely destroying printed and digital media for items and/or passages generated by the print-on-demand feature of the TDS (CDE, 2017a).

The following measures ensured the security of CAASPP System assessments administered in 2016–17:

- LEA CAASPP coordinators and test site coordinators must have signed and submitted a "CAASPP Test Security Agreement for LEA CAASPP coordinators and CAASPP test site coordinators" form to the California Technical Assistance Center before ETS granted the coordinators access to TOMS. (*California Code of Regulations*, Title 5 [5 *CCR*], Education, Division 1, Chapter 2, Subchapter 3.75, Article 1, Section 859[a])
- Anyone having access to the testing materials must have signed and submitted a "Test Security Affidavit for Test Examiners, Test Administrators, Proctors, Translators, Scribes, and Any Other Person Having Access to CAASPP Tests" form to the CAASPP test site coordinator before receiving access to any testing materials. (5 *CCR*, Section 859[c])

In addition, it was the responsibility of every participant in the CAASPP System to report immediately any violation or suspected violation of test security or confidentiality. The CAASPP test site coordinator reported to the LEA CAASPP coordinator. The LEA CAASPP coordinator reported to the CDE within 24 hours of the incident. (5 *CCR*, Section 859[e])

5.2.3. Security of Electronic Files Using a Firewall

A firewall software is currently used to prevent unauthorized entry to files, e-mail, and other organization-specific information. All ETS data exchanges and internal e-mail remain within the ETS firewall at all ETS locations, ranging from Princeton, New Jersey, to San Antonio, Texas, to Concord and Sacramento, California.

All electronic applications that are included in TOMS remain protected by the ETS firewall software at all times. Due to the sensitive nature of the student information processed by TOMS, the firewall plays a significant role in maintaining assurance of confidentiality among the users of this information.

See the subsection *1.9 Systems Overview and Functionality* in *Chapter 1: Introduction* for more information on TOMS.

5.2.4. Transfer of Scores via Secure Data Exchange

Due to the confidential nature of test results, ETS currently uses secure file transfer protocol (SFTP) and encryption for all data file transfers; test data are never sent via e-mail. SFTP is a method for reliable and exclusive routing of files. Files reside on a password-protected server that only authorized users can access. ETS shares an SFTP server with the CDE. On that site, ETS posts Microsoft Word and Excel files, Adobe Acrobat PDFs, or other document files for the CDE to review; the CDE returns reviewed materials in the same manner. Files are deleted upon retrieval.

The SFTP server is used as a conduit for the transfer of files; secure test data are only temporarily stored on the shared SFTP server. Industry-standard secure protocols are used to transfer test content and student data from the ETS internal data center to any external systems.

ETS enters information about the files posted to the SFTP server in a Web form on a SharePoint Web site. A CDE staff member checks this log throughout the day to check the status of deliverables and downloads and deletes the file from the SFTP server when its status shows it has been posted.

5.2.5. Data Management in the Secure Database

ETS currently maintains a secure database to house all student demographic data and assessment results. Information associated with each student has a database relationship to the LEA, school, and grade codes, as these data are collected during operational testing. Only individuals with the appropriate credentials can access these data. ETS builds all interfaces with the most stringent security considerations, including interfaces with data encryption for databases that store test items and student data. ETS applies best and up-to-date security practices, including system-to-system authentication and authorization, in all solution designs.

All stored test content and student data are encrypted. ETS complies with the Family Educational Rights and Privacy Act (20 *United States Code [USC]* § 1232g; 34 *Code of Federal Regulations* Part 99) and the Children's Online Privacy Protection Act (15 USC §§ 6501-6506, P.L. No. 105–277, 112 Stat. 2681–1728).

In TOMS, staff at LEAs and test sites have different levels of access appropriate to the role assigned to them.

5.2.6. Statistical Analysis on Secure Servers

During CAASPP testing, the information technology staff at ETS retrieves data files from the American Institutes for Research and loads them into a database. The ETS Data Quality Services staff extract the data from the database and perform quality control procedures (e.g., the values of all variables are as expected) before passing files to the ETS statistical analysis group. The statistical analysis staff store the files on secure servers. All staff members involved with the data adhere to the ETS Code of Ethics and the ETS Information Protection Policies to prevent any unauthorized access to data.

5.2.7. Student Confidentiality

To meet requirements of the Every Student Succeeds Act as well as state requirements, LEAs must collect demographic data about students' ethnicity, disabilities, parent/guardian education, and so forth during the school year. ETS takes every precaution to prevent any of this information from becoming public or being used for anything other than for testing and score reporting purposes. These procedures are applied to all documents in which student demographic data appear, such as technical reports.

5.2.8. Student Test Results

5.2.8.1. Types of Results

The following deliverables are produced for reporting of the CAAs:

- Preliminary student reports for online assessments in the Online Reporting System (ORS)
- Individual student score reports (printed)
- Internet reports aggregated by content area and state, county, LEA, or test site

5.2.8.2. Security of Results Files

ETS takes measures to protect files and reports that show students' scores and achievement levels. ETS is committed to safeguarding all secure information in its possession from unauthorized access, disclosure, modification, or destruction. ETS has strict information security policies in place to protect the confidentiality of both student and client data. ETS staff access to production databases is limited to personnel with a business need to access the data. User IDs for production systems must be person-specific or for systems use only.

ETS has implemented network controls for routers, gateways, switches, firewalls, network tier management, and network connectivity. Routers, gateways, and switches represent points of access between networks. However, these do not contain mass storage or represent points of vulnerability, particularly for unauthorized access or denial of service.

ETS has many facilities, policies, and procedures to protect computer files. Software and procedures such as firewalls, intrusion detection, and virus control are in place to provide for physical security, data security, and disaster recovery. ETS is certified in the BS 25999-2 standard for business continuity and conducts disaster recovery exercises annually. ETS routinely backs up all data to either disks through deduplication or to tapes, all of which are stored off site.

Access to the ETS Computer Processing Center is controlled by employee and visitor identification badges. The Center is secured by doors that only can be unlocked by the badges of personnel who have functional responsibilities within its secure perimeter. Authorized personnel accompany visitors to the ETS Computer Processing Center at all

times. Extensive smoke detection and alarm systems, as well as a pre-action fire-control system, are installed in the Center.

5.2.8.3. Security of Individual Results

ETS protects individual students' results on both electronic files and paper reports during the following events:

- Scoring
- Transfer of scores by means of secure data exchange
- Reporting
- Posting of aggregate data
- Storage

In addition to protecting the confidentiality of testing materials, ETS's Code of Ethics further prohibits ETS employees from financial misuse, conflicts of interest, and unauthorized appropriation of ETS property and resources. Specific rules are also given to ETS employees and their immediate families who may take a test developed by ETS (e.g., a CAA). The ETS OTI verifies that these standards are followed throughout ETS. This verification is conducted, in part, by periodic on-site security audits of departments, with follow-up reports containing recommendations for improvement.

5.2.9. Security and Test Administration Incident Reporting System (STAIRS) Process

Test security incidents, such as improprieties, irregularities, and breaches, are prohibited behaviors that give a student an unfair advantage or compromise the secure administration of the tests, which, in turn, compromises the reliability and validity of test results (CDE, 2017b). Whether intentional or unintentional, failure by staff or students to comply with security rules constitutes a test security incident. Test security incidents have impacts on scoring and affect students' performance on the test.

LEA CAASPP coordinators and CAASPP test site coordinators must ensure that all test security and summative administration incidents are documented by filling out the secure STAIRS form for reporting, which contains selectable options to guide coordinators in their submittal. After the form is submitted, an e-mail containing a case number and next steps will be sent to the submitter (and to the LEA CAASPP coordinator, if the form is submitted by the CAASPP test site coordinator). Coordinators cannot file an appeal without the case number that is created by submitting the *CAASPP STAIRS* form. The *CAASPP STAIRS* form provides the LEA CAASPP coordinator, the CDE, and the California Technical Assistance Center (CalTAC) with the opportunity to interact and communicate regarding the STAIRS process. (CDE, 2017b)

Incidents are then resolved when the LEA CAASPP coordinator or CAASPP test site coordinator either files an appeal to reset, re-open, invalidate, restore, or grant a grace period extension to a student's test, or by following other instructions in a system-generated e-mail in response to the *STAIRS* form submittal.

The following types of STAIRS reports, as applicable to the CAA, are also forwarded to the CDE:

- Security breach (where secure materials are exposed)
- Accidental access to a summative assessment

- Incorrect Statewide Student Identifier used (intentionally switched)
- Restoring a test that had been reset

Appeals requests are reviewed by the CDE. When a request to submit an appeal has been approved, the coordinator receives a system-generated e-mail with the appeal type that has been approved. The coordinator then returns to TOMS to access the Appeal System, where the appeal is filed (CDE, 2017b).

5.2.9.1. Impropriety

A testing impropriety is an unusual circumstance that has a low impact on the individual or group of students who are testing and has a low risk of potentially affecting student performance on the test, test security, or test validity. An impropriety can be corrected and contained at a local level. An impropriety should be reported to the LEA CAASPP coordinator and CAASPP test site coordinator immediately. The coordinator reported the incident within 24 hours, using the online *CAASPP STAIRS* form.

5.2.9.2. Irregularity

A testing irregularity is an unusual circumstance that impacts an individual or a group of students who are testing and may potentially affect student performance on the test, or impact test security or test validity. These circumstances can be corrected and contained at the local level and submitted in the online Appeals System for resolution. An irregularity must be reported to the LEA CAASPP coordinator and CAASPP test site coordinator immediately. The coordinator reported the irregularity within 24 hours, using the online *CAASPP STAIRS* form.

5.2.9.3. Breach

A testing breach is an event that poses a threat to the validity of the test. Breaches require immediate attention and escalation to the CDE via telephone. Following the call, the CAASPP test site coordinator or LEA CAASPP coordinator must complete the online *CAASPP STAIRS* form within 24 hours. Examples may include such situations as a release of secure materials or a security/system risk. These circumstances have external implications for the CDE and may result in a decision to remove the test item(s) from the available secure item bank. A breach incident was reported to the LEA CAASPP coordinator immediately.

5.2.10. Appeals

For test security incidents reported in STAIRS that result in a need to reset, reopen, invalidate, or restore individual online student assessments, the CDE must approve the request. In most instances, an appeal will be submitted to address a test security breach or irregularity. The LEA CAASPP coordinator or CAASPP test site coordinator may submit appeals in TOMS. All submitted appeals are available for retrieval and review by the appropriate credentialed users within a given organization. However, the view of appeals will be restricted according to the user role as established in TOMS (CDE, 2017c).

Types of appeals available during the 2016–17 CAASPP administration are described in Table 5.1.

Table 5.1 Types of Appeals in CAASPP Testing

Type of Appeal	Description
Reset	Resetting a student's summative assessment removes that assessment from the system and enables the student to start a new assessment from the beginning.
Invalidation	Invalidated summative assessments will be scored and scores will be provided on the Student Score Report with a note that an irregularity occurred. The student(s) will be counted as participating in the calculation of the school's participation rate for federal accountability purposes.
Re-open	Reopening a summative assessment allows a student to access an assessment that has already been submitted.
Restore	Restoring a summative assessment returns an assessment from the Reset status to its prior status. This action can only be performed on assessments that have been reset.

5.3. Processing and Scoring

The CAAs for ELA and mathematics are administered online only and required two Internet-connected devices: a student testing device and a separate device the test examiner uses to start a test session through the Test Administrator Interface. Test examiners also used their device to open a *Directions for Administration (DFA)* document, which is used to guide the student through the test. The CAAs for ELA and mathematics require the installation of CAASPP secure browsers on student testing devices. These are the same secure browsers that are used for the other online CAASPP assessments.

All item types are designed to be machine scorable with the exception of a small subset of constructed response (CR) items. For CR items, item-specific rubrics are included in the *DFAs* to be used by the test examiner for rating a student's response. All rubric-based scoring is conducted and entered into the TDS by the test examiner during test administration. Scoring rubrics are included in the *DFAs*.

5.4. Procedures to Maintain Standardization

The test administration and scoring procedures are designed so that the tests are administered and scored in a standardized manner. ETS takes all necessary measures to ensure the standardization of test administration, as described in this subsection of the technical report.

5.4.1. LEA CAASPP Coordinator

An LEA CAASPP coordinator was designated by the district superintendent at the beginning of the 2016–17 school year. LEAs include public school districts, statewide benefit charter schools, State Board of Education–authorized charter schools, county office of education programs, and direct funded charter schools.

LEA CAASPP coordinators are responsible for ensuring the proper and consistent administration of the assessments that are part of the CAASPP System, including the CAAs. In addition to the responsibilities set forth in 5 *CCR* Section 857, their responsibilities include

- adding CAASPP test site coordinators and test examiners into TOMS;
- training CAASPP test site coordinators and test examiners regarding state requirements and CAA administration as well as security policies and procedures;
- reporting test security incidents (including testing irregularities) to the CDE;
- overseeing test administration activities;
- filing a report of a testing incident in STAIRS; and
- requesting an appeal (if the STAIRS response e-mail indicates that an appeal is warranted).

5.4.2. CAASPP Test Site Coordinator

A CAASPP test site coordinator is designated by the LEA CAASPP coordinator or district superintendent for each test site (*5 CCR* Section 858[a]). A test site coordinator must be an employee of the LEA and must sign a security agreement.

A test site coordinator is responsible for identifying test administrators and ensuring that they have signed CAA Test Security Affidavits (*5 CCR* Section 850[w]). CAASPP test site coordinators' duties may include

- adding test examiners into TOMS;
- entering test settings for students;
- creating testing schedules and procedures for a school consistent with state and LEA policies;
- working with technology staff to ensure secure browsers are installed and any technical issues are resolved;
- monitoring testing progress during the testing window and ensuring all students participate, as appropriate;
- coordinating and verifying the correction of student data errors in the California Longitudinal Pupil Achievement Data System;
- ensuring a student's test session is rescheduled, if necessary;
- addressing testing problems;
- reporting security incidents;
- overseeing administration activities at a school site;
- filing a report of a testing incident in STAIRS; and
- requesting an appeal (if the STAIRS response e-mail indicates that an appeal is warranted).

5.4.3. Test Examiners

Test examiners are identified by CAASPP test site coordinators as individuals who will administer the CAASPP assessments. A test examiner must be a certificated or licensed school staff member (5 *CCR* Section 850[af]).

A test examiner must sign a security affidavit (*5 CCR* Section 859[d]). A test examiner's duties may include

- participating in training by either viewing the online test administration tutorial or attending any locally provided training;
- ensuring the physical conditions of the testing room meet the criteria for a secure test environment;
- administering the CAAs;
- reporting all test security incidents to the test site coordinator and LEA CAASPP coordinator in a manner consistent with state, and LEA policies;
- viewing student information prior to testing to ensure that the correct student receives the proper test with appropriate supports and report potential data errors to test site coordinators and LEA CAASPP coordinators;
- monitoring student progress throughout the test session using the Test Administrator Interface; and
- complying fully with all directions provided in the Directions for Administration for the California Alternate Assessments.

5.4.4. Instructions for Test Examiners and Staff Involved in CAA Administration

5.4.4.1. *Directions for Administration*

Test examiners use a grade-level edition of the *Directions for Administration for the California Alternate Assessments* to administer the CAAs for ELA and mathematics to students. Test examiners must follow all directions and guidelines and read, word-for-word, the instructions to students in the administration script to ensure standardization of test administration. *DFAs* also include scoring rubrics where warranted.

Sample *Directions for Administration for the California Alternate Assessments* to be used in conjunction with the CAA practice and training tests are provided to LEAs as well (2017d, 2017e).

5.4.4.2. *CAASPP Online Test Administration Manual*

The *CAASPP Online Test Administration Manual* (CDE, 2016b) contains information and instructions on overall procedures and guidelines for all LEA and test site staff involved in the administration of online assessments. Sections include the following topics:

- Roles and responsibilities
- Accessibility resources
- Test security
- Responding to testing incidents
- Filing appeals
- Technology infrastructure
- Accessibility supports
- General test administration
- Instructions for steps to take before, during, and after testing

Appendixes include definitions of common terms, item types, descriptions of different aspects of the test and systems associated with the test, and checklists of activities for LEA CAASPP coordinators and CAASPP test site coordinators.

5.4.4.3. *TOMS Pre-Administration Guide for CAASPP Testing*

TOMS is a Web-based application that allows LEA CAASPP coordinators to set up test administrations, add and manage users, and submit online student test settings. Test examiners access TOMS to retrieve *CAA DFAs*.

TOMS modules include the following (CDE, 2017c):

- **Test Administration Setup—**This module allows LEAs to determine and calculate dates for the LEA's 2016–17 administration of the CAA assessments.
- **Adding and Managing Users—**This module allows LEA CAASPP coordinators to add CAASPP test site coordinators and test examiners to TOMS so that the designated user can administer, monitor, and manage the online alternate assessments.
- **Student Test Assignment—**This module allows LEA CAASPP coordinators to designate students to take the alternate assessments.
- **Online Student Test Settings—**This module allows LEA CAASPP coordinators and CAASPP test site coordinators to configure online test settings so students receive the assigned accessibility tools and accommodations for the online alternate assessments.

5.4.4.4. Other System Manuals

Other manuals were created to assist LEA CAASPP coordinators and others with the technological components of the CAASPP System and are listed next.

- ***Technical Specifications and Configuration Guide for CAASPP Online Testing—*** This manual provides information, tools, and recommended configuration details to help technology staff prepare computers and install the secure browser to be used for the online CAASPP assessments (CDE, 2017f).
- ***Security Incidents and Appeals Procedure Guide—***This manual provides information on how to report and submit an appeal to the CDE to reset, reopen, invalidate, or restore individual online student assessments (CDE, 2017b).
- ***Accessibility Guide for CAASPP Online Testing—***This manual provides descriptions of the accessibility features for online tests as well as information about supported hardware and software requirements for administering tests to students using accessibility supports, including those with a braille accommodation using the software Job Access With Speech (JAWS®) tool or a braille embosser (hardware). Students with a braille accommodation are able to take advantage of the adaptive algorithm using the TDS's Enhanced Accessibility Mode and JAWS (CDE, 2017g).

5.5. LEA Training

ETS established and implemented a training plan for LEA assessment staff on all aspects of the assessment program. The CDE and ETS, in collaboration with the CDE Senior Assessment Fellows and other stakeholders as needed, determined the audience, topics, frequency, and mode (in-person, Webcast, videos, modules, etc.) of the training, including such elements as format, participants, and logistics.

ETS conducted 16 in-person pretest workshops and presented five Webcasts for the 2016–17 administration. One Webcast covered topics exclusive to the CAA administration.

Following approval by the CDE, the ancillary materials were posted for each Webcast on the CAASPP Web site at http://www.caaspp.org/training/caaspp/ so the LEAs could download the training materials.

5.5.1. In-person Training

ETS provided a series of in-person trainings. Beginning in January 2017, the first in-person trainings provided were the pretest CAA workshops, which focused on training LEA CAASPP coordinators on how to prepare for administering the CAAs. CAA-specific sessions were provided in each of the pretest workshops. Additionally, a two-session Post-Test Workshop was offered in May and June 2017 with the sessions "Accessing Scores, Reports, Resources, and Tools" and "Analyzing Summative Assessment Results to Inform Teaching and Learning."

5.5.2. Webcasts

ETS provided a series of live Webcasts throughout the school year that were archived and made available for training LEA and test site staff as well as test examiners. Webcast viewers were provided with a method of electronically submitting questions to the presenters during the Webcast. The Webcasts were recorded and archived for on-demand viewing on the CAASPP Summative Assessment Videos and Archived Webcasts Web page at http://www.caaspp.org/training/caaspp/. A CAA-specific Webcast was also posted on the CAASPP CAAs Web page at http://www.caaspp.org/administration/about/caa/. CAASPP Webcasts are available to everyone and require neither preregistration nor a logon account. The CAA Test Administration Webcast provide background information on the CAAs relevant to LEA CAASPP coordinators, CAASPP test site coordinators, and test examiners, as well as instructions on how to prepare for the CAA administration, how to administer the CAAs, and how to train others to administer the CAAs.

5.5.3. Videos and Narrated PowerPoint Presentations

To supplement the in-person workshops and the live Webcast, ETS also produced short "how-to" videos and narrated PowerPoint presentations that were available on the CAASPP Summative Assessment Videos and Archived Webcasts Web page at http://www.caaspp.org/training/caaspp/.

Finally, ETS produces an online module, the CAA Test Examiner Tutorial, designed to teach test examiners on how to administer a CAA for ELA and mathematics. Test examiners are required to complete a training session before administering the CAAs by either completing a local training or completing this stand-alone online training module. This video is available on the CAAs Web page at http://www.caaspp.org/administration/about/caa/.

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Accessibility Information

Alternative Text for Figure 5.1

Displays how the CAA items are routed, with details on Stage 1, Stage 2, and the Survey of Student Characteristics. Stage 1 is the Student Response Check portion, four items of the 13 items overall, which determines which tier the student falls in for Stage 2 (Tier 1, Tier 2, or Tier 3). The [End Test] button will be available on question 1 or question 4 should the student not pass the student response check. Some students will stop testing after Stage 1 based on their performance in Stage 1.

In Stage 2, the student is routed to either the 15 easy items in Tier 1, 15 moderate items in Tier 2, or 15 hard items in Tier 3.

The Survey of Student Characteristics is the last step, which includes questions to be completed by the test examiner. If the student does not pass the SRC, the test examiner can use the [End Test] button to end the test and the student stops testing in Stage 1.

Chapter 6: Standard Setting

This chapter summarizes the standard-setting process through which California Alternate Assessment (CAA) for English language arts/literacy (ELA) and mathematics achievement levels were established. Included are an overview of the standard-setting methodology, a summary of the standard-setting procedure, the description of the performance level descriptors, and the results. The detailed standard-setting information for the CAAs for ELA and mathematics are described in the *Standard-Setting Technical Report for the California Alternate Assessments* (ETS, 2016).

6.1. Background

Standard setting refers to a class of methodologies by which one or more performance threshold scores are used to determine achievement levels. The purpose of the standard-setting process for the CAAs was to collect recommendations from California educators for the placement of the CAA threshold scores for review by the California Department of Education (CDE), with final determination by the State Board of Education (SBE). The content of the CAAs for ELA and mathematics is aligned to the Core Content Connectors (Connectors) that are derived from the Common Core State Standards (CCSS).

Educational Testing Service (ETS) conducted standard-setting workshops in 2016, following the first operational administration of the ELA and mathematics assessments. The Bookmark standard-setting method was applied to all items on each test, by grade. See subsection *6.3 Standard-Setting Methodology* for more information about the Bookmark method.

Through the standard-setting process, input and recommendations on performance standards are solicited from California educators and local educational agencies (LEAs). The CDE reviews the input and recommendations, and the SBE establishes the standards based on these recommendations. There are three achievement levels for each test per grade and content area. In order from low to high performance, these are: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate. Two achievement threshold scores are needed to define the three achievement levels. All scale scores that do not meet the threshold score for the Level 2—Alternate achievement level are assigned to the lowest achievement level, Level 1—Alternate.

6.2. Performance Level Descriptors (PLDs)

The CAAs for ELA and mathematics general (policy) performance level descriptors (PLDs), which were derived from the documents of the National Center and State Collaborative, describe what students at each performance level know and are able to do. General PLDs are short policy descriptors that convey the expectation at a given achievement level.

A team of LEA educators who are familiar with the Connectors and the target student population reviewed the general PLDs for California's target student population. They developed more specific descriptions for each grade and content area using the CAA blueprints and the Connectors as resources. The grade- and content-specific PLDs, together with threshold scores and the assessment results, are accessible to educators, parents, students, and the public (CDE, 2016a and 2016b).

Table 6.1 provides a description of the three general PLDs, with Level 3 reflecting the highest level of achievement (CDE, 2017).

Table 6.1 Three General PLDs and CAAs for ELA and Mathematics Achievement Levels

Level	General Performance Level Descriptors	CAA Achievement Level
3	Students at this level demonstrate **understanding** of core subject matter in the content area. They are actively working with adapted grade-level content that focuses on the essential knowledge and skills and may need occasional prompts and assistance to complete tasks and activities.	Level 3—Alternate
2	Students at this level demonstrate **foundational** understanding of core subject matter in the content area when provided with frequent prompts and supports. They are actively working with adapted grade-level content that focuses on the essential knowledge and skills and may frequently need supports to complete tasks and activities.	Level 2—Alternate
1	Students at this level demonstrate **limited** understanding of adapted grade level content that focuses on much of the basic knowledge and skills, even with extensive supports.	Level 1—Alternate

6.3. Standard-Setting Methodology

For the CAAs for ELA and mathematics, the Bookmark method was used for standard setting. The Bookmark method is an item-mapping procedure that allows multiple performance threshold scores to be set in an efficient manner. This method represents an appropriate balance between statistical rigor and informed opinion, as explained in the following subsection.

6.3.1. Bookmark Method

The Bookmark method (Lewis, et al., 1998; Mitzel, et al., 2001) is a commonly used item-mapping procedure in which test items are ordered from easiest to most difficult based on actual student performance; the ordered items are presented in a booklet known as an ordered item booklet (OIB). The task of each panelist is to place a “bookmark” in the OIB that differentiates item content that a student with just enough content knowledge to be performing at a defined achievement level would likely know from item content that he or she would not likely know. A “bookmark” is placed in the OIB for each item defined at the border of each achievement level. For each CAA, two bookmarks were required to set three achievement levels: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate.

The Bookmark method has its basis in item response theory (IRT) analysis. IRT is used to estimate item difficulties. These estimates are used to order items by student performance and to place item difficulty estimates on the score scale. One benefit of this approach is that once panelists make judgments in the OIB, the difficulty (theta) values associated with each item have a built-in relationship to scale scores, a fact that allows results to be provided to policy makers in the familiar metric of the scale score.

6.4. Standard-Setting Procedures

This subsection describes what occurred prior to and during the standard-setting workshop.

6.4.1. Panelists

Prior to the standard setting, panelists were recruited from across the state to be representative of the educators of CAA-eligible students; panelists were primarily special education teachers. Special efforts were made to assemble panels that were representative of the geographic and socioeconomic diversity of California in general and the CAA educator population in particular. The educators who participated in the standard setting included representatives from across regions in California (north, south, and central) and across gender, race, and ethnic categories. The final selection of panelists invited to the workshops was made by the CDE. The total number of panelists who participated was 68. Of these, 61 teachers have experience in special education, 43 administered the CAAs, and 7 were general education teachers.

6.4.2. Materials

Panelists were provided with a letter describing the purpose and procedures of the standard-setting workshop along with a preworkshop assignment specific to their panel assignment, instructions, a note-taking form, and the links to the general PLDs and the CAA blueprints. During the workshop, panelists received training materials, a draft of list of competencies to develop borderline student definitions, a set of operational materials, and evaluation forms. The set of operational materials included *Directions for Administration* for the assessment, the OIB, bookmark recording forms, and an item map. All references such as the CCSS, the Connectors, and the Essential Understandings were made available for panelists during the workshop. The detailed procedures keeping those materials secure were described in the *Standard Setting Technical Report for the California Alternate Assessments* (ETS, 2016).

6.4.3. Process

Prior to making judgments in the OIB, panelists reviewed and discussed the test blueprints and the SBE-approved PLDs, including the specific PLDs for each level, and then developed borderline student definitions as a group. Two borderline student definitions were developed, Level 2 and Level 3. For example, the borderline Level 2 student is the student at the beginning of Level 2; this student differentiates the knowledge and skills of the highest performing Level 1 student from the lowest performing Level 2 student. Figure 6.1 shows where borderline students are defined. *Refer to the Alternative Text for Figure 6.1 for a long description of this equation.*

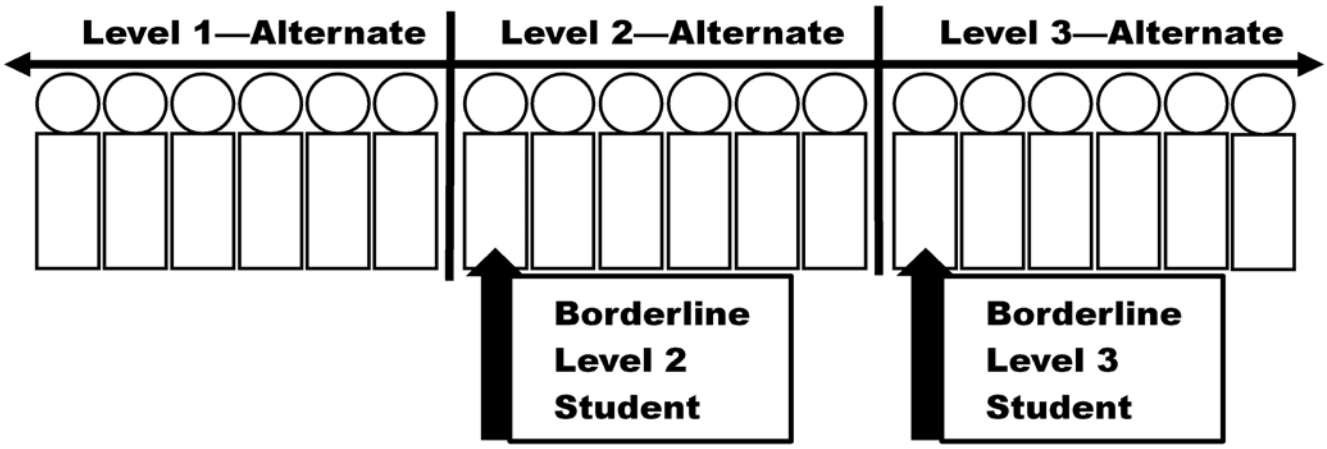

Figure 6.1. Borderline Students

To make judgments and place bookmarks in the OIB, panelists reviewed each item in the OIB in sequence and considered if the student at the beginning of Level 2, known as the borderline Level 2 student, would most likely be able to answer the item correctly. A panelist placed the Level 2 bookmark on the first item encountered in the OIB that he or she believed the borderline Level 2 student would most likely not be able to address because items beyond that point were too difficult for that borderline student. The panelist continued from that point in the OIB and then stopped at the item that the borderline Level 3 student would not likely be able to address (i.e., the item that likely exceeds the content understanding of the borderline Level 3 student). Note that in the Bookmark method, the definition of "most likely" is related to the IRT model. That is, panelists were instructed to think of "most likely" as having a two-thirds likelihood of answering a multiple-choice item correctly. In ordering the items in the OIB, a response probability of 0.67 is employed in the IRT model; thus, the instructions to the panelists and the analytical model are aligned.[6]

The Bookmark process was implemented in three rounds. Each test-specific panel was split up and seated in small groups to facilitate discussion. This table format provided an environment more conducive to panelists' sharing their opinions and rationales, as some panelists may be less inclined to speak or have less opportunity to be heard in a large group. The table format also increased the independence of the threshold-score recommendations, because each table of experts provided its own recommendations, which were then aggregated across the tables.

The final recommended threshold scores were based on the median of panelists' judgment scores. At the conclusion of the workshop, the results were shared with the panelists and the CDE.

As part of the standard-setting process, the CDE analyzed the standard-setting panel's judgments and refined the threshold scores for consistency across all the CAAs for ELA and mathematics grade levels tested. The CDE's recommendations were then presented to the SBE for approval.

[6] In several applications of the Bookmark method, a target probability of two-thirds is used to define "most likely." See, for example, Mitzel, et al. (2001).

6.5. Results of the Standard Setting

The SBE approved the recommendation of the final threshold scores for the CAAs. The recommendations are presented in Table 6.2 (ELA) and Table 6.3 (mathematics). The scales in these tables were presented and used in the standard-setting process. They range from 50 to 350 score points and are more user friendly than the theta metric. The theta score is not used because panelists were not familiar with the concept of theta. As the theta scores range from –6.00 to 6.00 approximately, it was less accessible to panelists as well. As a result, the theta scale was transformed linearly to an arbitrary scale score unique to each grade.

The tables show the percent of students statewide that would be placed at this alternate achievement standard (level) on the basis of the results of the 2015–16 CAASPP administration. Also shown in both tables is the percent of students statewide that would be at and above this alternate achievement standard (level) on the basis of the results of the 2015–16 administration. Finally, the standard-setting threshold score is the minimum standard-setting scale score needed to achieve this alternate achievement standard (level) on the 2015–16 administration of tests. Note that threshold scores were generated solely for the standard-setting process; reporting scales were developed to report scores on the Student Score Report and public reporting.

Table 6.2 SSPI's Recommendations for the Proposed Achievement Standards (Levels) for the CAA for ELA

Grade	% of Students in Level 1	% At or Above Level 1	% of Students in Level 2	Standard-Setting Scale Threshold Score for Level 2	% At or Above in Level 2	% of Students in Level 3	Standard-Setting Scale Threshold Score for Level 3	% At or Above in Level 3
3	54.3	100	24.7	195	45.7	21.0	220	21.0
4	60.6	100	27.8	200	39.4	11.6	225	11.6
5	57.0	100	34.5	200	43.0	8.5	225	8.5
6	57.0	100	36.2	200	43.0	6.8	230	6.8
7	59.4	100	32.2	200	40.6	8.4	225	8.4
8	49.4	100	43.0	195	50.6	7.5	225	7.5
11	46.0	100	46.8	195	54.0	7.1	225	7.1

Table 6.3 SSPI's Recommendations for the Proposed Achievement Standards (Levels) for the CAA for Mathematics

Grade	% of Students in Level 1	% At or Above Level 1	% of Students in Level 2	Standard-Setting Scale Threshold Score for Level 2	% At or Above in Level 2	% of Students in Level 3	Standard-Setting Scale Threshold Score for Level 3	% At or Above in Level 3
3	72.3	100	23.1	205	27.7	4.6	225	4.6
4	70.0	100	25.8	205	30.0	4.3	225	4.3
5	72.8	100	23.0	205	27.2	4.2	225	4.2
6	72.7	100	23.2	205	27.3	4.1	225	4.1
7	70.4	100	24.4	205	29.6	5.2	225	5.2
8	71.1	100	24.5	205	28.9	4.4	225	4.4
11	68.4	100	26.2	205	31.6	5.4	225	5.4

The reporting scale score ranges for each achievement level are presented in Table 7.2 on page 96. The performance threshold score for each level is the lower bound of each scale score range. The scale score ranges do not change from year to year. Once established, they remain unchanged from administration to administration until such time that new performance standards are adopted. Table 7.3 and Table 7.4 on page 96 in Chapter 7 presents the percentages of students meeting each achievement level in the 2015–16 administration of the CAAs for ELA and mathematics.

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Accessibility Information

Alternative Text for Figure 6.1

Graph showing six figures representing students in the Level 1—Alternate group, six figures in the Level 2—Alternate Group, and six figures in the Level 3—Alternate Group with an arrow pointing to the leftmost figure in the level 2 group and a label that says borderline level 2 student; and an arrow pointing to the leftmost figure in the level 3 group and a label that says borderline level 3 student.

Chapter 7: Scoring and Reporting

Student item responses are scored and analyzed in order to determine individual students' scores for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. Based on the analyses of the item responses, individual student scores (i.e., overall scale scores) are calculated and reported. In addition, student test scores are aggregated to produce summary reports for schools and local educational agencies (LEAs). This chapter describes how the various types of student responses are scored for the CAA online assessments, as well as the various types of scores and reports that are generated.

7.1. Student Test Scores

Overall scale scores and achievement levels for the CAAs for ELA and mathematics are reported at the individual student level. In order to obtain these overall scale scores and achievement levels, the ability (theta) scores need to be estimated.

Prior to the test administration, Educational Testing Service (ETS) assessment development staff review each item and to determine the keys and scoring rubrics. The keys and rubrics are provided to the American Institutes for Research (AIR) for implementation in the test delivery system (TDS). After AIR finishes machine scoring of item responses, scores and responses are delivered to ETS. ETS's enterprise score key management (eSKM) system collects and calculates individual students' overall scores (e.g., total raw scores).

ETS uses two parallel scoring systems to produce and verify students' scores: the eSKM scoring system, which receives the individual students' item scores and item responses from AIR and computes individual student scores for the ETS reporting system; and the score computation by ETS's statistical analysis team, which also computes individual student scores based on the same data files but using SAS statistical analysis system software. The scores from the two systems are then compared for the purpose of internal quality control. Any differences in the total raw scores are discussed and resolved. The parallel scoring process ensures the quality and accuracy of scoring and supports the transfer of scores into the database of the student records scoring system, the Test Operations Management System (TOMS).

7.1.1. Incomplete/Complete Cases

Whether a test should be scored or reported depends on the "complete" status of the test and how much of the test was submitted for scoring. Depending on the nature of the missing data, different actions are taken.

As defined in the CAA scoring and reporting specifications, tests are considered "complete" if students respond to a minimum of four items; "partially complete" if students respond to one to three items; and "non-complete" if students log on but do not respond to any item. ETS, in consultation with the California Department of Education (CDE), implemented several rules for identifying an incomplete test; these rules are presented in Table 7.1, which includes the following four specifications:

1. Attemptedness/Participation rules that describe when a test is considered attempted or participated
2. When a test is scored

3. How and when incomplete tests are scored
4. When a score is reported

Table 7.1 Rules for Incomplete Tests

If the student	Classify the student as participating?	Score the student's responses?	Classify the student as attempting the test (test completion status) or is there another status?	Report a score for the student?
Logged on to the test, but answered no items	Yes	Yes, Lowest obtainable scale score (LOSS) for the test	Yes, INC0 (Non-completion)	Yes
Logged on to the test, and answered at least one item but not more than three items	Yes	Yes, Next lowest obtainable scale score for the test (LOSS+1)	Yes, INC1 (Partial completion)	Yes
Logged on to the test and answered at least four items	Yes	Yes	Yes (Completion)	Yes
Did not log on to the test	No	N/A	Not Tested	No
Logged on and answered at least one item with a special condition code (refer to subsection *7.3.2 Special Cases*)	No	N/A	Not Tested	No

7.1.2. Theta Scores

The CAA tests use a two-stage multistage test (MST) design; refer to subsection *4.2 Test Design* in *Chapter 4: Test Assembly* for details about MST design. Based on this design, there are multiple pathways (combinations) of Stage 1 and Stage 2 modules; each pathway consisting of a Stage 1 module and a Stage 2 module is illustrated in Table 4.1 on page 54. Since the tests are not vertically scaled, each test (by grade and subject) has its own theta scale. After all new items are calibrated and equated onto the reference scale, the raw score as a sum of dichotomous and polytomous item scores can be transformed into an ability estimate (theta), by using the IRT inverse test characteristic curve (TCC) method (Stocking, 1996). With this method, the student's estimated ability is the ability value for which the expected raw score is equal to the student's raw score. Refer to subsection *8.3.2 Equating* for equating procedures and the IRT inverse TCC method. Note that the estimation of ability is implemented by using the item parameters that are either in the item bank or from the calibration, and that each pathway has a unique set of item parameters.

When the conversion table from the raw score to theta score is created for each pathway (i.e., each combination of Stage 1 and Stage 2 modules), the theta score of each individual

student can be obtained through the table lookup. Refer to Appendix 7.B for the raw-score-to-theta-score conversion tables.

The overall theta score distributions for each grade and content area are presented in Table 7.A.1 and Table 7.A.2 in Appendix 7.A. To compare the ability distributions across pathways, the estimated theta score distributions for each grade, content area, and test pathway are presented in Table 7.A.3 through Table 7.A.16. The theta distributions show the ability difference between students taking different pathways

7.1.3. Scale Scores for the Total Assessment

The following requirements were used to develop and define the CAAs for ELA and mathematics reporting scale ranges:

1. Each scale score has three digits (e.g., 320, 551, or 780) where the first digit is indicative of the grade being reported. The leading digit is defined by the grade for elementary and middle school, while the high school leading digit is set to "9." The latter two digits present the scale score as derived from the transformation from the raw scores to the scale scores as described in the previous paragraph.
2. Score ranges are grade-specific. For example, the possible scale scores would be 300 to 399 for grade three with the lowest obtainable scale score (LOSS) at 300 and the highest obtainable scale score (HOSS) at 399. For grade four, this range is 400 to 499 with a LOSS of 400 and a HOSS of 499, and so on for the other grades. For grade eleven, the scale ranges from 900 to 999 with a LOSS of 900 and a HOSS of 999.
3. Each threshold score on the scale is the same from year to year. Also, across the grade levels, the last two digits corresponding to the Level 2—Alternate and Level 3—Alternate threshold scores are the same (see subsection *7.1.4 Achievement Levels* for a brief description of alternate achievement levels).
4. Students with incomplete tests, as shown in Table 7.1, have two possible scale scores. If a student logged on to the test system but did not answer any items (INC0), this student would be assigned a scale score of LOSS (e.g., 300 for a third-grade student and 400 for a fourth-grade student). If a student logged on to the TDS and answered one but fewer than four items (INC1), he or she would be assigned a scale score of LOSS+1 (i.e., 301 for a third-grade student and 401 for a fourth-grade student).

For students who complete a CAA, their scale scores cannot be lower than LOSS+3 and cannot be higher than the HOSS. the scale scores determined by the transformations in Table 8.6 are truncated. For example, the scale scores for grade three are truncated at a minimum of 303 and a maximum of 399. As a result, the range of student ability estimates [-6, +6] are transformed to the scale score range [303, 399] for grade three and [403, 499] for grade four. The scale score range for other grades follows the same pattern.

In addition to the special requirements of the CAA reporting scale, an equating procedure is implemented to place scores from different forms or administrations onto the reference scale so that scores could be compared.

First, to express the students' ability estimates in the scale score metric of CAA tests, the inverse TCC procedure is used to translate each possible raw score to an ability estimate

(theta score). Refer to subsection *8.3.2.3.1 Inverse Test Characteristic Curve (TCC) Procedure* for the details of this procedure.

Second, theta scores are transformed linearly to the appropriate CAA for ELA and mathematics scale score scales. Refer to subsection *8.3.2.3.2 Transformation from Theta Scores to Scale Scores* for the details of transformation. The slopes and intercepts for reporting scale scores are presented in Table 8.6. Once the theta scores are transformed, the theta-to-scale score relationship can be mapped to the raw scores.

Finally, the raw-to-scale score conversion tables are established. The complete raw-to-scale score conversion tables for each CAA pathway are presented in Table 7.B.1 through Table 7.B.14 in Appendix 7.B. The raw scores, theta scores, and transformed scale scores as well as the number and percentage of students at each raw score are listed in those tables. Refer to Table 4.A.1 through Table 4.A.14 in *Appendix 4.B: Statistical Specification for 2016–17 Test Development* for pathways of each test.

7.1.4. Achievement Levels

CAA reporting scales classify each student's performance into one of the three achievement levels[7], with Level 1—Alternate indicating the lowest level of performance and Level 3—Alternate indicating the highest level of performance. The range of possible scale scores is divided into three achievement levels. Student test results are reported in the following overall achievement levels:

Level 1—Alternate. Student demonstrates a limited understanding of core concepts in ELA and mathematics.

Level 2—Alternate. Student demonstrates a foundational understanding of core concepts in ELA and mathematics.

Level 3—Alternate. Student demonstrates an understanding of core concepts in ELA and mathematics.

The scale score ranges defining the various achievement levels and grades are presented in Table 7.2.

Table 7.2 CAAs for ELA and Mathematics Reporting Scale Score Ranges for Each Achievement Level and Grade

Grade	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate
3	300–344	345–359	360–399
4	400–444	445–459	460–499
5	500–544	545–559	560–599
6	600–644	645–659	660–699
7	700–744	745–759	760–799
8	800–844	845–859	860–899
11	900–944	945–959	960–999

[7] Detailed information regarding the determination of the achievement levels can be found in the *CAA Standard Setting Technical Report* (ETS, 2016).

7.2. Overview of Score Aggregation Procedures

To provide meaningful results to the stakeholders, test scores for a given grade and content area are aggregated at the school, LEA or direct funded charter school, county, and state levels. The aggregated scores are generated for the selected groups of interest (gender, ethnicity, primary disability, etc.) and for the total population. This subsection contains a description of the types of aggregation that are performed on the CAA for ELA and mathematics summary test scores.

7.2.1. Individual Student Score Distributions and Summary Statistics

Summary statistics that describe student performance on each test are presented in Table 7.3. Included in the table are the number of students taking each test and the means and standard deviations of student scores expressed in terms of both scale scores and theta scores.

Table 7.3 Mean and Standard Deviation of Scale and Theta Scores

Content Area/Grade	Number of Students Tested	Scale Score Mean	Scale Score SD	Theta Score* Mean	Theta Score* SD
ELA 3	5,003	342	26	-0.87	2.60
ELA 4	5,410	439	24	-0.91	2.48
ELA 5	5,533	538	23	-0.96	2.45
ELA 6	5,336	638	20	-0.84	2.21
ELA 7	5,288	736	22	-1.09	2.41
ELA 8	5,247	840	21	-0.95	2.39
ELA 11	4,505	941	22	-0.82	2.37
Mathematics 3	4,989	333	21	-1.13	2.35
Mathematics 4	5,396	433	21	-1.14	2.42
Mathematics 5	5,543	533	21	-1.15	2.40
Mathematics 6	5,321	634	20	-1.11	2.38
Mathematics 7	5,275	733	22	-1.16	2.41
Mathematics 8	5,232	834	21	-1.08	2.40
Mathematics 11	4,496	934	20	-1.02	2.27

* The incomplete cases are not included in the analysis. The number of students who did not complete a test or who did not answer any items is shown in Appendix 7.A, in Table 7.A.1 and Table 7.A.2.

The number and percentage of students at each achievement level for each test is presented in Table 7.4.

Table 7.4 Numbers and Percentages of Students in Achievement Levels

Content Area/Grade	Level 1 N	Level 1 %	Level 2 N	Level 2 %	Level 3 N	Level 3 %
ELA 3	2,639	53	1,107	22	1,257	25
ELA 4	2,929	54	1,593	29	888	16
ELA 5	2,982	54	1,785	32	766	14
ELA 6	2,893	54	1,988	37	455	9

Content Area/Grade	Level 1 N	Level 1 %	Level 2 N	Level 2 %	Level 3 N	Level 3 %
ELA 7	3,108	59	1,493	28	687	13
ELA 8	2,019	38	2,648	50	580	11
ELA 11	1,938	43	1,743	39	824	18
Mathematics 3	3,324	67	1,373	28	292	6
Mathematics 4	3,661	68	1,361	25	374	7
Mathematics 5	3,559	64	1,666	30	318	6
Mathematics 6	3,555	67	1,570	30	196	4
Mathematics 7	3,633	69	1,241	24	401	8
Mathematics 8	3,439	66	1,410	27	383	7
Mathematics 11	2,958	66	1,278	28	260	6

Figure 7.1 presents the percentages of students at each achievement level by grade for ELA.

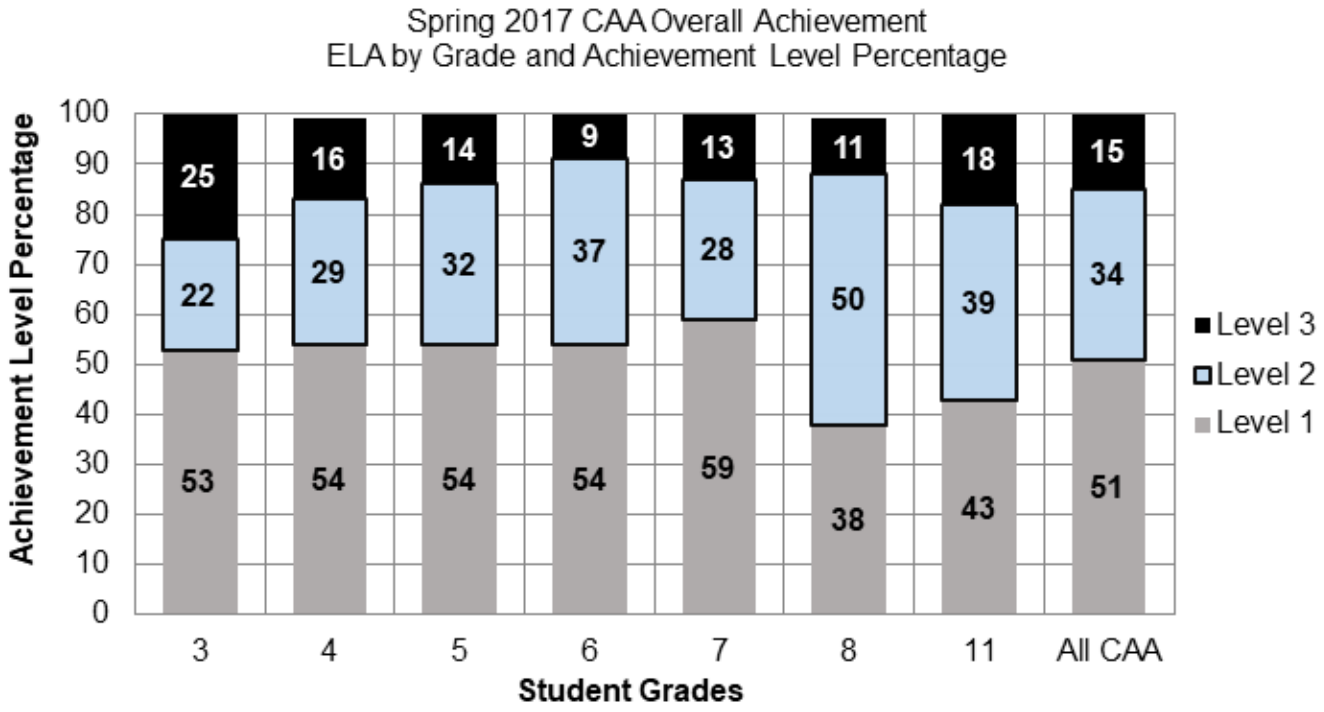

Figure 7.1 Percentage of Students at Each Achievement Level in ELA

Figure 7.2 presents the percentages of students at each achievement level by grade for mathematics.

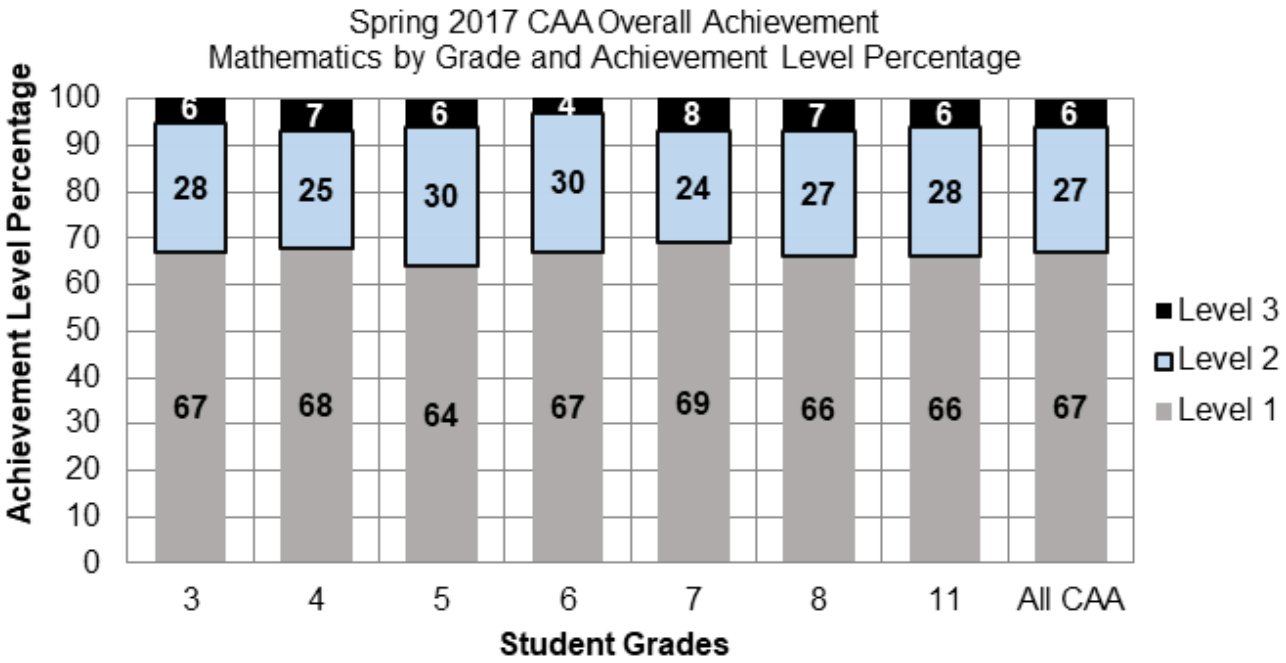

Figure 7.2 Percentage of Students at Each Achievement Level in Mathematics

The selected percentiles of the scale score distributions are presented in Table 7.C.1 and Table 7.C.2 in Appendix 7.C. CAA reporting scale score distribution information for each grade and content area is available in Table 7.C.3 through Table 7.C.16 starting on page 151.

7.2.2. Group Scores

Statistics summarizing student performance by content area and grade for selected groups of students are provided in Appendix 7.D. In Table 7.D.1 through Table 7.D.14, students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, economic status (disadvantaged or not), primary disability, migrant status, and ethnicity by economic status. For each demographic group, the number of students with a valid scale score, scale score means and standard deviations, and the percentage of students in each achievement level are included in the tables.

Table 7.5 provides definitions of the demographic student groups. To protect student privacy, when the number of students in a student group is 10 or fewer, the summary statistics are not reported and are presented as “NA.”

Table 7.5 Demographic Student Groups to Be Reported

Demographic Student Group	Student Groups
Gender	• Male • Female
Ethnicity	• American Indian or Alaska Native • Asian • Native Hawaiian or Other Pacific Islander • Filipino • Hispanic or Latino • Black or African American • White • Two or more races
English-Language Fluency	• English only • Initially fluent English proficient • English learner • Reclassified fluent English proficient • To be determined • English proficiency Unknown
Economic Status	• Not economically disadvantaged • Economically disadvantaged
Primary Disability Type	• Intellectual disability • Hearing Impairment • Speech or language impairment • Visual Impairment • Emotional disturbance • Orthopedic impairment • Other health impairment • Specific learning disability • Deaf-blindness • Multiple disabilities • Autism • Traumatic brain injury • Not classified[8]
Migrant Status	• Eligible for the Title I Part C Migrant Program (Migrant) • Not eligible for the Title I Part C Migrant Program (Nonmigrant)

[8] Disability information was changed or removed after student testing.

7.3. Reports Produced and Scores for Each Report

Score summaries are reported for different purposes for the CAAs for ELA and mathematics online assessments. The four major purposes are to

1. help facilitate conversations between parents/guardians and teachers about student performance;
2. serve as a tool to help parents/guardians and teachers work together to improve student learning;
3. help schools and school districts identify strengths and areas that need improvement in their educational programs; and
4. provide the public and policymakers with information about student achievement.

This subsection provides detailed descriptions of the uses and applications of the California Assessment of Student Performance and Progress (CAASPP) reporting for students. CAAs for ELA and mathematics, as one of the components in CAASPP, are reported through the CAASPP reporting system.

7.3.1. Online Reporting

TOMS is a secure Web site hosted by ETS that permits LEA users to manage the CAASPP online summative assessments and to inform the TDS. This system uses a role-specific design to restrict access to certain tools and applications based on the user's designated role. Specific functions of TOMS include the following:

- Manage user access privileges
- Manage test administration calendars and testing windows
- Manage student test assignments
- Manage and confirm the accuracy of students' test settings (i.e., designated supports and accommodations) prior to testing
- Generate and download various reports

In addition, TOMS communicates with the Online Reporting System (ORS) that provides authorized users with interactive and cumulative online reports for ELA and mathematics at the student, school, and LEA levels. The ORS provides access to two CAASPP functions: Score Reports, which provide preliminary score data for each administered test available in the reporting system; and Completion Status Reports, which provide completion data for students taking the test in the reporting system.

Based on CAA reporting requirements for ELA and mathematics, the ORS generates preliminary summative reports containing information describing student knowledge and skills. The online aggregate reports provide data at the student, classroom, school, and LEA levels and are available to be downloaded in PDF, Excel, and comma-separated value formats.

7.3.2. Special Cases

Student scores are not reported for the following cases:

- Student was absent from the test administration
- Student moved or had a medical emergency during testing
- Student's parent/guardian requested exemption from testing

- Student did not log on to test systems
- Student was administered out-of-grade level tests
- Student was invalidated in the system (not reported in aggregated reporting)

7.3.3. Types of Score Reports

There are three categories of CAASPP reports. The categories and the specific reports within each category are presented in this subsection.

7.3.3.1. Student Score Report

The CAA Student Score Report is the official score report for parents or guardians and describes the student's results, including scale scores and achievement levels, for both ELA and mathematics.

Scores for students who use accommodations or designated supports are reported in the same way as for students without accommodations or designated supports. Detailed information about accessibility supports is described in subsection *2.5.1 Universal Tools, Designated Supports, and Accommodations* in Chapter 2.

LEAs receive printed Student Score Reports and distribute them to parents/guardians and students' schools. This report is also provided in a printable PDF file that the LEA CAASPP coordinator may download from TOMS. CAA Student Score Reports that include individual student results are not distributed beyond the student's school. Further information about the Student Score Report and other reports is provided on the CDE CAASPP Student Score Report Information Web page at https://www.cde.ca.gov/ta/tg/ca/caasppssrinfo.asp.

7.3.3.2. School Reports

The school performance report provides group information by content area, including the school's average scale score and the percentage of students at each achievement level. This report also provides a list of students' scale scores and achievement levels.

The school scale score report is presented as a dashboard to provide group information by content area. It includes a histogram showing the distribution of students' scale scores.

7.3.3.3. District Reports

The district performance report provides school-level information by content area, including the school average scale score and the percentage of students at each achievement level.

This report lists all the proficiency information for each school, including the testing status as shown in subsection *7.3 2 Special Cases*, number of students who completed testing, average scale score, and percentage of students in each achievement level.

The district scale score report is presented as a dashboard to provide cumulative information. A histogram is included to show the frequency of schools with mean scale scores in each score interval.

The CAASPP aggregate reports and student data files for the LEA are available for the LEA CAASPP coordinator to download from TOMS. The LEA CAASPP coordinator forwards the appropriate reports to test sites.

Internet reports are described on the CDE Web site and are accessible to the public online at http://caaspp.cde.ca.gov/.

Preliminary individual student scores are also available to LEAs prior to the release of final reports via electronic reporting, accessed using the ORS. This application permits LEAs to view preliminary results for all tests taken.

7.3.4. Score Report Applications

CAAs for ELA and mathematics test results provide parents or guardians with information about their child's progress. The results are a tool for increasing communication and collaboration between parents or guardians and teachers. These results are one measure of student's academic performance and provide limited information. Like any important measure of student performance, they should be viewed with other available information such as progress on individualized education program goals, assignments, and teacher conferences, and they can be used to communicate with a student's teachers about how to help the student's progress in ELA and mathematics.

Schools may use the CAAs for ELA and mathematics results to help make decisions about how to support student achievement. CAA results, however, should never be used as the only source of information to make important decisions about a child's education.

CAAs for ELA and mathematics results help schools and LEAs identify strengths and weaknesses in their instructional programs. Each year, staff from schools and LEAs examine CAA test results at each grade level and content area tested. Their findings are used to help determine

- The extent to which students are learning the alternate achievement standards,
- Instructional areas that can be improved,
- Teaching strategies that can be developed to address needs of students, and
- Decisions about how to use funds to help ensure that students achieve the alternate achievement standards.

7.3.5. Criteria for Interpreting Individual Test Scores

LEAs may use the CAA results to help inform decisions around instructional needs, but the CAA results should not be used in isolation to make inferences about instructional needs. It is important to remember that results from a single test can provide only limited information. Other relevant information should be considered as well. It is advisable for parents to evaluate their child's strengths and weaknesses in the relevant topics by reviewing classroom work and progress reports in addition to the student's CAAs for ELA and mathematics results. It is also important to note that a student's score in a content area contains measurement error and could vary to some extent if the student were retested.

7.3.6. Criteria for Interpreting Group Score Reports

The information presented in various reports must be interpreted with caution when making performance comparisons. When comparing scale score and achievement-level results, the user is limited to the comparisons within a content area and grade level. The score scales for ELA and mathematics are not comparable to each other, nor are the score scales comparable across grade levels. The user may compare scale scores for the same content area and grade, within a school, between schools, or between a school and its district, its county, or the state. For more details on the criteria for interpreting information provided on the score reports, see the *2016–17 CAASPP Post-Test Guide* (CDE, 2017).

References

California Department of Education. (2017). *2016–17 CAASPP post-test guide: Technical information for student score reports for CAASPP LEA and test site coordinators and research specialists.* Sacramento, CA: California Department of Education. Retrieved from http://www.caaspp.org/rsc/pdfs/CAASPP.post-test_guide.2016-17.pdf

Educational Testing Service. (2016). *Standard-setting technical report for the California Alternate Assessments: English language arts/literacy and mathematics grades three through eight and grade eleven.* Princeton, NJ: Educational Testing Service. Retrieved from http://www.cde.ca.gov/ta/tg/ca/documents/caa16standardsetting.pdf

Stocking, M. L. (1996). An alternative method for scoring adaptive tests. *Journal of Educational and Behavioral Statistics, 21*, 365–389.

Appendix 7.A: Theta Scores (Estimated Ability Values) of Students Taking Each Test

Note: An expression that opens with a parenthesis and closes with a bracket indicates that a value is greater than the first number and is less than or equal to the second number. For example, "(0.5, 2]" indicates a value greater than 0.5 but less than or equal to 2.

Table 7.A.1 Frequency Distribution of Theta for Overall Scores—English Language Arts/Literacy (ELA)

Theta Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Incomplete	826	881	913	770	884	881	712
[–6.0, –6.0]	9	8	4	7	16	2	2
(–6.0, –5.5]	NA	NA	NA	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA	NA	NA	NA
(–5.0, –4.5]	22	NA	28	NA	40	5	NA
(–4.5, –4.0]	56	26	38	19	NA	24	8
(–4.0, –3.5]	73	63	59	NA	55	35	27
(–3.5, –3.0]	14	108	23	48	92	133	35
(–3.0, –2.5]	34	37	28	91	28	19	26
(–2.5, –2.0]	53	39	36	47	50	18	32
(–2.0, –1.5]	112	85	91	89	63	47	91
(–1.5, –1.0]	412	291	323	313	404	132	192
(–1.0, –0.5]	677	616	689	746	628	356	453
(–0.5, 0.0]	661	788	893	842	848	1,182	805
(0.0, 0.5]	513	854	1,000	1,010	989	1,186	884
(0.5, 1.0]	436	726	642	730	557	656	601
(1.0, 1.5]	391	455	400	399	376	394	336
(1.5, 2.0]	303	232	208	147	120	116	177
(2.0, 2.5]	232	89	98	55	80	43	91
(2.5, 3.0]	95	55	39	13	28	10	23
(3.0, 3.5]	NA	41	NA	NA	19	7	9
(3.5, 4.0]	58	NA	19	6	10	NA	1
(4.0, 4.5]	NA	NA	NA	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA	NA	NA	NA
(5.5, 6.0]	26	16	2	4	1	1	NA

Table 7.A.2 Frequency Distribution of Theta for Overall Scores—Mathematics

Theta Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Incomplete	919	1,032	1,021	1,008	1,034	983	754
[–6.0, –6.0]	14	4	16	15	14	9	16
(–6.0, –5.5]	NA	NA	NA	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA	NA	NA	NA
(–4.5, –4.0]	NA	26	NA	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	44	NA	NA	NA	NA
(–3.5, –3.0]	46	53	82	43	43	36	31
(–3.0, –2.5]	108	148	147	NA	86	66	64
(–2.5, –2.0]	162	20	14	121	146	45	108
(–2.0, –1.5]	63	40	63	35	43	35	37
(–1.5, –1.0]	97	114	88	92	85	176	99
(–1.0, –0.5]	396	485	564	380	631	580	387
(–0.5, 0.0]	977	1,169	1,171	1,362	1,097	1,231	1,118
(0.0, 0.5]	1,331	1,500	1,456	1,395	1,160	1,052	1,083
(0.5, 1.0]	584	498	559	674	535	653	614
(1.0, 1.5]	223	172	193	125	240	205	110
(1.5, 2.0]	47	72	71	38	83	108	43
(2.0, 2.5]	12	29	22	18	45	32	12
(2.5, 3.0]	3	15	20	3	11	15	10
(3.0, 3.5]	3	8	7	6	11	4	5
(3.5, 4.0]	2	4	NA	5	8	NA	5
(4.0, 4.5]	NA	NA	1	NA	1	1	NA
(4.5, 5.0]	NA	NA	NA	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA	NA	NA	NA
(5.5, 6.0]	2	7	4	1	2	1	NA

Table 7.A.3 Frequency Distribution of Theta by Pathway for ELA, Grade Three

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	824	2	NA	NA
[–6.0, –6.0]	9	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	22	NA	NA	NA
(–4.5, –4.0]	56	NA	NA	NA
(–4.0, –3.5]	73	NA	NA	NA
(–3.5, –3.0]	5	9	NA	NA
(–3.0, –2.5]	4	30	NA	NA
(–2.5, –2.0]	3	50	NA	NA
(–2.0, –1.5]	4	108	NA	NA
(–1.5, –1.0]	4	401	7	NA
(–1.0, –0.5]	NA	654	23	NA
(–0.5, 0.0]	NA	543	117	1
(0.0, 0.5]	NA	148	332	33
(0.5, 1.0]	NA	33	304	99
(1.0, 1.5]	NA	NA	119	272
(1.5, 2.0]	NA	NA	44	259
(2.0, 2.5]	NA	NA	NA	232
(2.5, 3.0]	NA	NA	NA	95
(3.0, 3.5]	NA	NA	NA	NA
(3.5, 4.0]	NA	NA	NA	58
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	26

Table 7.A.4 Frequency Distribution of Theta by Pathway for ELA, Grade Four

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	881	NA	NA	NA
[–6.0, –6.0]	8	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	26	NA	NA	NA
(–4.0, –3.5]	63	NA	NA	NA
(–3.5, –3.0]	108	NA	NA	NA
(–3.0, –2.5]	8	29	NA	NA
(–2.5, –2.0]	5	34	NA	NA
(–2.0, –1.5]	11	71	3	NA
(–1.5, –1.0]	20	257	14	NA
(–1.0, –0.5]	NA	565	45	6
(–0.5, 0.0]	NA	454	301	33
(0.0, 0.5]	NA	102	608	144
(0.5, 1.0]	NA	9	334	383
(1.0, 1.5]	NA	NA	124	331
(1.5, 2.0]	NA	NA	7	225
(2.0, 2.5]	NA	NA	1	88
(2.5, 3.0]	NA	NA	NA	55
(3.0, 3.5]	NA	NA	NA	41
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	16

Table 7.A.5 Frequency Distribution of Theta by Pathway for ELA, Grade Five

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	913	NA	NA	NA
[–6.0, –6.0]	4	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	28	NA	NA	NA
(–4.5, –4.0]	38	NA	NA	NA
(–4.0, –3.5]	59	NA	NA	NA
(–3.5, –3.0]	6	17	NA	NA
(–3.0, –2.5]	2	26	NA	NA
(–2.5, –2.0]	1	35	NA	NA
(–2.0, –1.5]	2	76	13	NA
(–1.5, –1.0]	NA	314	8	1
(–1.0, –0.5]	NA	609	77	3
(–0.5, 0.0]	NA	473	409	11
(0.0, 0.5]	NA	162	741	97
(0.5, 1.0]	NA	22	464	156
(1.0, 1.5]	NA	1	150	249
(1.5, 2.0]	NA	NA	38	170
(2.0, 2.5]	NA	NA	1	97
(2.5, 3.0]	NA	NA	NA	39
(3.0, 3.5]	NA	NA	NA	NA
(3.5, 4.0]	NA	NA	NA	19
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	2

Table 7.A.6 Frequency Distribution of Theta by Pathway for ELA, Grade Six

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	761	9	NA	NA
[–6.0, –6.0]	7	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	19	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	48	NA	NA	NA
(–3.0, –2.5]	77	14	NA	NA
(–2.5, –2.0]	16	31	NA	NA
(–2.0, –1.5]	6	83	NA	NA
(–1.5, –1.0]	8	259	46	NA
(–1.0, –0.5]	1	435	293	17
(–0.5, 0.0]	NA	175	492	175
(0.0, 0.5]	NA	28	398	584
(0.5, 1.0]	NA	1	181	548
(1.0, 1.5]	NA	NA	16	383
(1.5, 2.0]	NA	NA	2	145
(2.0, 2.5]	NA	NA	NA	55
(2.5, 3.0]	NA	NA	NA	13
(3.0, 3.5]	NA	NA	NA	NA
(3.5, 4.0]	NA	NA	NA	6
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	4

Table 7.A.7 Frequency Distribution of Theta by Pathway for ELA, Grade Seven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	884	NA	NA	NA
[–6.0, –6.0]	16	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	40	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	55	NA	NA	NA
(–3.5, –3.0]	78	14	NA	NA
(–3.0, –2.5]	4	24	NA	NA
(–2.5, –2.0]	3	47	NA	NA
(–2.0, –1.5]	NA	63	NA	NA
(–1.5, –1.0]	3	388	13	NA
(–1.0, –0.5]	NA	562	65	1
(–0.5, 0.0]	NA	490	358	NA
(0.0, 0.5]	NA	96	853	40
(0.5, 1.0]	NA	2	393	162
(1.0, 1.5]	NA	NA	195	181
(1.5, 2.0]	NA	NA	26	94
(2.0, 2.5]	NA	NA	3	77
(2.5, 3.0]	NA	NA	NA	28
(3.0, 3.5]	NA	NA	NA	19
(3.5, 4.0]	NA	NA	NA	10
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.8 Frequency Distribution of Theta by Pathway for ELA, Grade Eight

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	881	NA	NA	NA
[–6.0, –6.0]	2	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	5	NA	NA	NA
(–4.5, –4.0]	24	NA	NA	NA
(–4.0, –3.5]	35	NA	NA	NA
(–3.5, –3.0]	133	NA	NA	NA
(–3.0, –2.5]	5	14	NA	NA
(–2.5, –2.0]	2	16	NA	NA
(–2.0, –1.5]	3	40	4	NA
(–1.5, –1.0]	4	126	2	NA
(–1.0, –0.5]	NA	343	13	NA
(–0.5, 0.0]	NA	1,096	86	NA
(0.0, 0.5]	NA	761	422	3
(0.5, 1.0]	NA	138	491	27
(1.0, 1.5]	NA	4	340	50
(1.5, 2.0]	NA	NA	69	47
(2.0, 2.5]	NA	NA	13	30
(2.5, 3.0]	NA	NA	1	9
(3.0, 3.5]	NA	NA	NA	7
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.9 Frequency Distribution of Theta by Pathway for ELA, Grade Eleven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	712	NA	NA	NA
[–6.0, –6.0]	2	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	8	NA	NA	NA
(–4.0, –3.5]	27	NA	NA	NA
(–3.5, –3.0]	35	NA	NA	NA
(–3.0, –2.5]	6	20	NA	NA
(–2.5, –2.0]	3	29	NA	NA
(–2.0, –1.5]	4	82	5	NA
(–1.5, –1.0]	2	171	19	NA
(–1.0, –0.5]	NA	404	48	1
(–0.5, 0.0]	NA	392	413	NA
(0.0, 0.5]	NA	81	795	8
(0.5, 1.0]	NA	10	537	54
(1.0, 1.5]	NA	NA	251	85
(1.5, 2.0]	NA	NA	117	60
(2.0, 2.5]	NA	NA	44	47
(2.5, 3.0]	NA	NA	1	22
(3.0, 3.5]	NA	NA	NA	9
(3.5, 4.0]	NA	NA	NA	1
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Table 7.A.10 Frequency Distribution of Theta by Pathway for Mathematics, Grade Three

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	919	NA	NA	NA
[–6.0, –6.0]	14	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	46	NA	NA	NA
(–3.0, –2.5]	108	NA	NA	NA
(–2.5, –2.0]	162	NA	NA	NA
(–2.0, –1.5]	11	52	NA	NA
(–1.5, –1.0]	5	77	15	NA
(–1.0, –0.5]	1	325	70	NA
(–0.5, 0.0]	1	476	449	51
(0.0, 0.5]	NA	120	905	306
(0.5, 1.0]	NA	6	142	436
(1.0, 1.5]	NA	NA	9	214
(1.5, 2.0]	NA	NA	1	46
(2.0, 2.5]	NA	NA	NA	12
(2.5, 3.0]	NA	NA	NA	3
(3.0, 3.5]	NA	NA	NA	3
(3.5, 4.0]	NA	NA	NA	2
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	2

Table 7.A.11 Frequency Distribution of Theta by Pathway for Mathematics, Grade Four

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	1,032	NA	NA	NA
[–6.0, –6.0]	4	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	26	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	53	NA	NA	NA
(–3.0, –2.5]	127	21	NA	NA
(–2.5, –2.0]	3	17	NA	NA
(–2.0, –1.5]	4	36	NA	NA
(–1.5, –1.0]	NA	107	7	NA
(–1.0, –0.5]	NA	461	21	3
(–0.5, 0.0]	NA	820	343	6
(0.0, 0.5]	NA	308	1,073	119
(0.5, 1.0]	NA	27	293	178
(1.0, 1.5]	NA	2	35	135
(1.5, 2.0]	NA	NA	6	66
(2.0, 2.5]	NA	NA	NA	29
(2.5, 3.0]	NA	NA	NA	15
(3.0, 3.5]	NA	NA	NA	8
(3.5, 4.0]	NA	NA	NA	4
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	7

Table 7.A.12 Frequency Distribution of Theta by Pathway for Mathematics, Grade Five

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	1,020	1	NA	NA
[–6.0, –6.0]	16	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	44	NA	NA	NA
(–3.5, –3.0]	82	NA	NA	NA
(–3.0, –2.5]	147	NA	NA	NA
(–2.5, –2.0]	3	11	NA	NA
(–2.0, –1.5]	3	60	NA	NA
(–1.5, –1.0]	2	78	8	NA
(–1.0, –0.5]	NA	528	27	9
(–0.5, 0.0]	NA	740	419	12
(0.0, 0.5]	NA	184	1,041	231
(0.5, 1.0]	NA	10	194	355
(1.0, 1.5]	NA	NA	22	171
(1.5, 2.0]	NA	NA	1	70
(2.0, 2.5]	NA	NA	NA	22
(2.5, 3.0]	NA	NA	NA	20
(3.0, 3.5]	NA	NA	NA	7
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	4

Table 7.A.13 Frequency Distribution of Theta by Pathway for Mathematics, Grade Six

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	1,007	1	NA	NA
[–6.0, –6.0]	15	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	43	NA	NA	NA
(–3.0, –2.5]	NA	NA	NA	NA
(–2.5, –2.0]	121	NA	NA	NA
(–2.0, –1.5]	13	22	NA	NA
(–1.5, –1.0]	6	86	NA	NA
(–1.0, –0.5]	7	341	32	NA
(–0.5, 0.0]	1	878	469	14
(0.0, 0.5]	NA	355	877	163
(0.5, 1.0]	NA	18	333	323
(1.0, 1.5]	NA	NA	25	100
(1.5, 2.0]	NA	NA	NA	38
(2.0, 2.5]	NA	NA	NA	18
(2.5, 3.0]	NA	NA	NA	3
(3.0, 3.5]	NA	NA	NA	6
(3.5, 4.0]	NA	NA	NA	5
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.14 Frequency Distribution of Theta by Pathway for Mathematics, Grade Seven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	1,033	1	NA	NA
[–6.0, –6.0]	14	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	43	NA	NA	NA
(–3.0, –2.5]	86	NA	NA	NA
(–2.5, –2.0]	135	11	NA	NA
(–2.0, –1.5]	9	34	NA	NA
(–1.5, –1.0]	5	69	11	NA
(–1.0, –0.5]	3	387	236	5
(–0.5, 0.0]	NA	344	712	41
(0.0, 0.5]	NA	23	775	362
(0.5, 1.0]	NA	NA	90	445
(1.0, 1.5]	NA	NA	7	233
(1.5, 2.0]	NA	NA	NA	83
(2.0, 2.5]	NA	NA	NA	45
(2.5, 3.0]	NA	NA	NA	11
(3.0, 3.5]	NA	NA	NA	11
(3.5, 4.0]	NA	NA	NA	8
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	2

Table 7.A.15 Frequency Distribution of Theta by Pathway for Mathematics, Grade Eight

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	978	5	NA	NA
[–6.0, –6.0]	9	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	36	NA	NA	NA
(–3.0, –2.5]	66	NA	NA	NA
(–2.5, –2.0]	14	31	NA	NA
(–2.0, –1.5]	8	27	NA	NA
(–1.5, –1.0]	8	152	16	NA
(–1.0, –0.5]	4	477	99	NA
(–0.5, 0.0]	1	481	729	20
(0.0, 0.5]	NA	36	762	254
(0.5, 1.0]	NA	NA	249	404
(1.0, 1.5]	NA	NA	8	197
(1.5, 2.0]	NA	NA	NA	108
(2.0, 2.5]	NA	NA	NA	32
(2.5, 3.0]	NA	NA	NA	15
(3.0, 3.5]	NA	NA	NA	4
(3.5, 4.0]	NA	NA	NA	NA
(4.0, 4.5]	NA	NA	NA	1
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	1

Table 7.A.16 Frequency Distribution of Theta by Pathway for Mathematics, Grade Eleven

Theta Score	Early Exit	Easy Pathway	Moderate Pathway	Hard Pathway
Incomplete	754	NA	NA	NA
[–6.0, –6.0]	16	NA	NA	NA
(–6.0, –5.5]	NA	NA	NA	NA
(–5.5, –5.0]	NA	NA	NA	NA
(–5.0, –4.5]	NA	NA	NA	NA
(–4.5, –4.0]	NA	NA	NA	NA
(–4.0, –3.5]	NA	NA	NA	NA
(–3.5, –3.0]	31	NA	NA	NA
(–3.0, –2.5]	64	NA	NA	NA
(–2.5, –2.0]	108	NA	NA	NA
(–2.0, –1.5]	3	34	NA	NA
(–1.5, –1.0]	1	86	12	NA
(–1.0, –0.5]	3	331	41	12
(–0.5, 0.0]	NA	532	482	104
(0.0, 0.5]	NA	91	361	631
(0.5, 1.0]	NA	2	56	556
(1.0, 1.5]	NA	NA	1	109
(1.5, 2.0]	NA	NA	NA	43
(2.0, 2.5]	NA	NA	NA	12
(2.5, 3.0]	NA	NA	NA	10
(3.0, 3.5]	NA	NA	NA	5
(3.5, 4.0]	NA	NA	NA	5
(4.0, 4.5]	NA	NA	NA	NA
(4.5, 5.0]	NA	NA	NA	NA
(5.0, 5.5]	NA	NA	NA	NA
(5.5, 6.0]	NA	NA	NA	NA

Appendix 7.B: Raw Score, Theta, and Scale Score Distributions for Each Pathway on Each Test

Notes:

- An incomplete test was assigned either the lowest obtainable scale score (LOSS) or lowest scale score +1 (LOSS+1).
- When a student was logged on to the test delivery system but did not answer any item, LOSS was assigned as 300 for grade three, 400 for grade four, . . . , 900 for grade 11.
- When a student was logged on and answered fewer than four items, LOSS+1 was assigned, such as 301 for grade three, 401 for grade four, . . . , 901 for grade eleven.
- For those incomplete test cases, raw scores were overwritten as zero and theta scores were not estimated.
- Percentages for some pathways may not sum up to exactly 100 due to rounding.
- In Table 7.B.1 through Table 7.B.14, the pathway indicates the set of modules a given student received:

Pathway	Combination of Modules
Early Exit	Stage 1 (as router) and Exit the test
Easy	Stage 1 (as router) and Stage 2 Easy Module
Moderate	Stage 1 (as router) and Stage 2 Moderate Module
Hard	Stage 1 (as router) and Stage 2 Hard Module

Table 7.B.1 Raw-Score-to-Scale-Score Distribution for ELA, Grade Three

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	300	632	63%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	301	192	19%	NA	301	2	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	303	9	1%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
1	-4.824	303	22	2%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
2	-4.055	303	56	6%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
3	-3.575	303	73	7%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
4	-3.213	303	5	1%	-3.213	303	9	0%	NA	303	NA	NA	NA	305	NA	NA
5	-2.918	304	2	0%	-2.918	304	12	1%	NA	307	NA	NA	NA	310	NA	NA
6	-2.665	308	2	0%	-2.665	308	18	1%	NA	311	NA	NA	NA	314	NA	NA
7	-2.442	311	1	0%	-2.442	311	11	1%	NA	315	NA	NA	NA	318	NA	NA
8	-2.241	314	1	0%	-2.241	314	15	1%	NA	318	NA	NA	NA	321	NA	NA
9	-2.058	317	1	0%	-2.058	317	24	1%	NA	321	NA	NA	NA	324	NA	NA
10	-1.888	320	2	0%	-1.888	320	26	1%	NA	323	NA	NA	NA	327	NA	NA
11	-1.729	322	2	0%	-1.729	322	35	2%	NA	326	NA	NA	NA	329	NA	NA
12	NA	324	NA	NA	-1.578	324	47	2%	-1.322	328	3	0%	NA	332	NA	NA
13	-1.434	326	2	0%	-1.434	326	60	3%	-1.176	330	1	0%	NA	334	NA	NA
14	-1.295	329	2	0%	-1.295	329	92	5%	-1.037	332	3	0%	NA	336	NA	NA
15	NA	331	NA	NA	-1.161	331	110	6%	-0.904	334	2	0%	NA	338	NA	NA
16	NA	333	NA	NA	-1.031	333	139	7%	-0.776	336	5	1%	NA	340	NA	NA
17	NA	334	NA	NA	-0.903	334	157	8%	-0.653	338	6	1%	NA	342	NA	NA
18	NA	336	NA	NA	-0.777	336	168	8%	-0.532	340	10	1%	NA	344	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	338	NA	NA	-0.652	338	155	8%	-0.414	342	12	1%	NA	346	NA	NA
20	NA	340	NA	NA	-0.529	340	174	9%	-0.297	344	31	3%	0.000	348	1	0%
21	NA	342	NA	NA	-0.405	342	169	9%	-0.179	345	37	4%	0.122	350	3	0%
22	NA	344	NA	NA	-0.280	344	139	7%	-0.062	347	37	4%	0.245	352	3	0%
23	NA	346	NA	NA	-0.153	346	136	7%	0.058	349	49	5%	0.369	354	7	1%
24	NA	348	NA	NA	-0.023	348	99	5%	0.181	351	86	9%	0.496	355	20	2%
25	NA	350	NA	NA	0.112	350	66	3%	0.309	353	97	10%	0.626	357	18	2%
26	NA	352	NA	NA	0.254	352	44	2%	0.443	355	100	11%	0.762	359	34	3%
27	NA	354	NA	NA	0.404	354	38	2%	0.586	357	101	11%	0.903	362	47	4%
28	NA	356	NA	NA	0.565	356	20	1%	0.740	359	102	11%	1.053	364	58	5%
29	NA	359	NA	NA	0.742	359	9	0%	0.910	362	101	11%	1.213	366	94	9%
30	NA	362	NA	NA	0.939	362	4	0%	1.101	365	67	7%	1.387	369	120	11%
31	NA	365	NA	NA	NA	365	NA	NA	1.321	368	52	6%	1.579	372	126	12%
32	NA	369	NA	NA	NA	369	NA	NA	1.585	372	29	3%	1.797	375	133	12%
33	NA	374	NA	NA	NA	374	NA	NA	1.918	377	15	2%	2.053	379	119	11%
34	NA	381	NA	NA	NA	381	NA	NA	NA	384	NA	NA	2.371	384	113	11%
35	NA	392	NA	NA	NA	392	NA	NA	NA	395	NA	NA	2.804	390	95	9%
36	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	3.524	399	58	5%
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.000	399	26	2%

Table 7.B.2 Raw-Score-to-Scale-Score Distribution for ELA, Grade Four

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	400	658	58%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	401	223	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	403	8	1%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
1	-4.499	403	26	2%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
2	-3.736	403	63	6%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
3	-3.261	403	108	10%	NA	403	NA	NA	NA	403	NA	NA	NA	404	NA	NA
4	-2.904	403	5	0%	-2.904	403	13	1%	NA	404	NA	NA	NA	409	NA	NA
5	-2.612	406	3	0%	-2.612	406	16	1%	NA	408	NA	NA	NA	414	NA	NA
6	-2.362	410	3	0%	-2.362	410	16	1%	NA	412	NA	NA	NA	417	NA	NA
7	-2.141	413	2	0%	-2.141	413	18	1%	NA	416	NA	NA	NA	420	NA	NA
8	-1.943	416	6	1%	-1.943	416	18	1%	NA	419	NA	NA	NA	423	NA	NA
9	-1.761	419	3	0%	-1.761	419	28	2%	-1.565	422	3	0%	NA	426	NA	NA
10	-1.594	421	2	0%	-1.594	421	25	2%	-1.396	424	6	0%	NA	428	NA	NA
11	-1.437	423	4	0%	-1.437	423	38	3%	-1.240	426	4	0%	NA	430	NA	NA
12	-1.290	426	5	0%	-1.290	426	43	3%	-1.094	429	4	0%	-0.852	432	1	0%
13	-1.151	428	9	1%	-1.151	428	63	4%	-0.956	431	3	0%	-0.723	434	2	0%
14	-1.019	430	2	0%	-1.019	430	113	7%	-0.824	433	10	1%	-0.600	436	3	0%
15	NA	432	NA	NA	-0.892	432	102	7%	-0.698	435	10	1%	-0.482	438	1	0%
16	NA	433	NA	NA	-0.769	433	160	11%	-0.576	436	22	2%	-0.367	439	3	0%
17	NA	435	NA	NA	-0.649	435	153	10%	-0.456	438	40	3%	-0.254	441	6	0%
18	NA	437	NA	NA	-0.531	437	150	10%	-0.338	440	60	4%	-0.142	443	10	1%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	439	NA	NA	-0.416	439	152	10%	-0.221	442	81	6%	-0.031	445	13	1%
20	NA	440	NA	NA	-0.300	440	128	8%	-0.102	443	120	8%	0.080	446	16	1%
21	NA	442	NA	NA	-0.184	442	107	7%	0.018	445	127	9%	0.191	448	29	2%
22	NA	444	NA	NA	-0.067	444	67	4%	0.140	447	171	12%	0.305	450	43	3%
23	NA	446	NA	NA	0.052	446	54	4%	0.267	449	170	12%	0.421	451	56	4%
24	NA	448	NA	NA	0.175	448	23	2%	0.399	451	140	10%	0.541	453	72	5%
25	NA	450	NA	NA	0.304	450	19	1%	0.538	453	133	9%	0.665	455	88	7%
26	NA	452	NA	NA	0.438	452	6	0%	0.686	455	124	9%	0.796	457	111	8%
27	NA	454	NA	NA	0.582	454	6	0%	0.846	458	77	5%	0.935	459	112	8%
28	NA	456	NA	NA	0.737	456	2	0%	1.021	460	71	5%	1.086	461	116	9%
29	NA	459	NA	NA	0.907	459	1	0%	1.216	463	32	2%	1.250	464	123	9%
30	NA	461	NA	NA	NA	461	NA	NA	1.438	467	21	1%	1.434	467	92	7%
31	NA	465	NA	NA	NA	465	NA	NA	1.702	471	7	0%	1.647	470	124	9%
32	NA	469	NA	NA	NA	469	NA	NA	2.030	475	1	0%	1.900	473	101	8%
33	NA	473	NA	NA	NA	473	NA	NA	NA	482	NA	NA	2.219	478	88	7%
34	NA	480	NA	NA	NA	480	NA	NA	NA	493	NA	NA	2.658	485	55	4%
35	NA	491	NA	NA	NA	491	NA	NA	NA	499	NA	NA	3.388	496	41	3%
36	NA	499	NA	NA	NA	499	NA	NA	NA	NA	NA	NA	6.000	499	16	1%

Table 7.B.3 Raw-Score-to Scale-Score Distribution for ELA, Grade Five

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	500	699	66%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	501	214	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	503	4	0%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
1	-4.999	503	28	3%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
2	-4.233	503	38	4%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
3	-3.755	503	59	6%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
4	-3.393	503	5	0%	-3.393	503	5	0%	NA	503	NA	NA	NA	503	NA	NA
5	-3.096	503	1	0%	-3.096	503	12	1%	NA	506	NA	NA	NA	508	NA	NA
6	-2.839	503	1	0%	-2.839	503	9	1%	NA	510	NA	NA	NA	512	NA	NA
7	-2.612	506	1	0%	-2.612	506	17	1%	NA	513	NA	NA	NA	515	NA	NA
8	-2.406	509	1	0%	-2.406	509	13	1%	NA	517	NA	NA	NA	519	NA	NA
9	NA	512	NA	NA	-2.216	512	11	1%	-1.706	519	7	0%	NA	521	NA	NA
10	NA	514	NA	NA	-2.041	514	11	1%	-1.530	522	6	0%	NA	524	NA	NA
11	NA	517	NA	NA	-1.877	517	21	1%	-1.366	525	2	0%	NA	526	NA	NA
12	-1.722	519	2	0%	-1.722	519	21	1%	-1.212	527	3	0%	-1.097	529	1	0%
13	NA	521	NA	NA	-1.576	521	34	2%	-1.065	529	3	0%	NA	531	NA	NA
14	NA	523	NA	NA	-1.436	523	50	3%	-0.925	531	11	1%	NA	533	NA	NA
15	NA	525	NA	NA	-1.301	525	59	3%	-0.789	533	9	0%	-0.691	535	1	0%
16	NA	527	NA	NA	-1.172	527	94	5%	-0.657	535	21	1%	-0.565	537	2	0%
17	NA	529	NA	NA	-1.045	529	111	6%	-0.527	537	36	2%	-0.441	538	2	0%
18	NA	531	NA	NA	-0.922	531	119	7%	-0.400	539	55	3%	NA	540	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	533	NA	NA	-0.800	533	146	8%	-0.274	541	94	5%	-0.197	542	5	1%
20	NA	535	NA	NA	-0.679	535	169	10%	-0.149	543	117	6%	-0.074	544	4	0%
21	NA	537	NA	NA	-0.558	537	175	10%	-0.024	545	143	8%	0.049	546	10	1%
22	NA	538	NA	NA	-0.436	538	137	8%	0.102	547	147	8%	0.175	548	10	1%
23	NA	540	NA	NA	-0.312	540	126	7%	0.231	548	202	11%	0.304	550	35	4%
24	NA	542	NA	NA	-0.185	542	119	7%	0.362	550	208	11%	0.437	552	42	5%
25	NA	544	NA	NA	-0.054	544	91	5%	0.498	552	184	10%	0.574	554	30	4%
26	NA	546	NA	NA	0.081	546	71	4%	0.640	555	177	9%	0.717	556	53	6%
27	NA	548	NA	NA	0.223	548	63	4%	0.790	557	159	8%	0.868	558	73	9%
28	NA	551	NA	NA	0.373	551	28	2%	0.952	559	128	7%	1.027	560	80	9%
29	NA	553	NA	NA	0.533	553	16	1%	1.129	562	83	4%	1.197	563	83	10%
30	NA	556	NA	NA	0.705	556	3	0%	1.328	565	67	4%	1.382	566	86	10%
31	NA	558	NA	NA	0.893	558	3	0%	1.555	568	25	1%	1.586	569	96	11%
32	NA	562	NA	NA	1.101	562	1	0%	1.825	572	13	1%	1.816	572	74	9%
33	NA	565	NA	NA	NA	565	NA	NA	2.161	577	1	0%	2.085	576	52	6%
34	NA	569	NA	NA	NA	569	NA	NA	NA	584	NA	NA	2.416	581	45	5%
35	NA	574	NA	NA	NA	574	NA	NA	NA	595	NA	NA	2.864	588	39	5%
36	NA	581	NA	NA	NA	581	NA	NA	NA	599	NA	NA	3.597	599	19	2%
37	NA	592	NA	NA	NA	592	NA	NA	NA	NA	NA	NA	6.000	599	2	0%
38	NA	599	NA	NA	NA	599	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.4 Raw-Score-to Scale-Score Distribution for ELA, Grade Six

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	600	573	61%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	601	188	20%	NA	601	9	1%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	603	7	1%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
1	-4.176	603	19	2%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
2	-3.437	603	48	5%	NA	603	NA	NA	NA	605	NA	NA	NA	607	NA	NA
3	-2.989	608	68	7%	NA	608	NA	NA	NA	611	NA	NA	NA	612	NA	NA
4	-2.662	612	9	1%	-2.662	612	14	1%	NA	615	NA	NA	NA	616	NA	NA
5	-2.403	615	11	1%	-2.403	615	13	1%	NA	618	NA	NA	NA	619	NA	NA
6	-2.187	618	5	1%	-2.187	618	18	2%	NA	620	NA	NA	NA	622	NA	NA
7	-1.999	620	2	0%	-1.999	620	13	1%	NA	623	NA	NA	NA	624	NA	NA
8	NA	622	NA	NA	-1.831	622	15	1%	NA	625	NA	NA	NA	626	NA	NA
9	-1.679	624	1	0%	-1.679	624	23	2%	-1.476	627	6	0%	NA	628	NA	NA
10	-1.538	626	3	0%	-1.538	626	32	3%	-1.338	628	6	0%	NA	629	NA	NA
11	-1.405	627	3	0%	-1.405	627	53	5%	-1.208	630	16	1%	NA	631	NA	NA
12	-1.278	629	1	0%	-1.278	629	49	5%	-1.084	631	18	1%	-0.982	633	6	0%
13	-1.156	631	2	0%	-1.156	631	69	7%	-0.964	633	20	1%	-0.857	634	3	0%
14	-1.037	632	2	0%	-1.037	632	88	9%	-0.846	634	37	3%	-0.735	636	5	0%
15	-0.921	633	1	0%	-0.921	633	118	11%	-0.732	636	59	4%	-0.615	637	3	0%
16	NA	635	NA	NA	-0.806	635	110	11%	-0.619	637	87	6%	-0.496	639	8	0%
17	NA	636	NA	NA	-0.692	636	116	11%	-0.507	639	90	6%	-0.378	640	11	1%
18	NA	638	NA	NA	-0.578	638	91	9%	-0.395	640	127	9%	-0.260	642	31	2%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	639	NA	NA	-0.464	639	78	8%	-0.284	641	132	9%	-0.142	643	46	2%
20	NA	641	NA	NA	-0.349	641	41	4%	-0.173	643	129	9%	-0.023	645	79	4%
21	NA	642	NA	NA	-0.233	642	28	3%	-0.061	644	104	7%	0.096	646	108	6%
22	NA	644	NA	NA	-0.114	644	28	3%	0.053	646	127	9%	0.217	648	139	7%
23	NA	645	NA	NA	0.007	645	16	2%	0.168	647	117	8%	0.339	649	163	8%
24	NA	647	NA	NA	0.131	647	4	0%	0.287	649	83	6%	0.465	651	174	9%
25	NA	648	NA	NA	0.259	648	7	1%	0.410	650	71	5%	0.594	652	193	10%
26	NA	650	NA	NA	0.392	650	1	0%	0.538	652	68	5%	0.728	654	183	9%
27	NA	652	NA	NA	0.532	652	1	0%	0.673	653	52	4%	0.869	656	172	9%
28	NA	654	NA	NA	NA	654	NA	NA	0.818	655	35	2%	1.019	658	156	8%
29	NA	655	NA	NA	NA	655	NA	NA	0.974	657	26	2%	1.179	660	132	7%
30	NA	658	NA	NA	NA	658	NA	NA	1.146	659	13	1%	1.354	662	95	5%
31	NA	660	NA	NA	NA	660	NA	NA	1.339	662	3	0%	1.549	664	81	4%
32	NA	663	NA	NA	NA	663	NA	NA	1.561	665	2	0%	1.771	667	64	3%
33	NA	666	NA	NA	NA	666	NA	NA	NA	668	NA	NA	2.033	670	36	2%
34	NA	670	NA	NA	NA	670	NA	NA	NA	672	NA	NA	2.360	674	19	1%
35	NA	676	NA	NA	NA	676	NA	NA	NA	678	NA	NA	2.804	680	13	1%
36	NA	685	NA	NA	NA	685	NA	NA	NA	687	NA	NA	3.535	689	6	0%
37	NA	699	NA	NA	NA	699	NA	NA	NA	699	NA	NA	6.000	699	4	0%

Table 7.B.5 Raw-Score-to-Scale-Score Distribution for ELA, Grade Seven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	700	626	58%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	701	258	24%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	703	16	1%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
1	-4.772	703	40	4%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
2	-3.993	703	55	5%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
3	-3.499	703	75	7%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
4	-3.121	703	3	0%	-3.121	703	14	1%	NA	704	NA	NA	NA	706	NA	NA
5	-2.805	703	4	0%	-2.805	703	9	1%	NA	709	NA	NA	NA	711	NA	NA
6	NA	707	NA	NA	-2.530	707	15	1%	NA	713	NA	NA	NA	716	NA	NA
7	-2.283	711	3	0%	-2.283	711	23	1%	NA	717	NA	NA	NA	720	NA	NA
8	NA	714	NA	NA	-2.058	714	24	1%	NA	721	NA	NA	NA	723	NA	NA
9	NA	717	NA	NA	-1.851	717	23	1%	-1.411	724	1	0%	NA	726	NA	NA
10	NA	720	NA	NA	-1.659	720	40	2%	-1.223	727	5	0%	NA	729	NA	NA
11	NA	723	NA	NA	-1.480	723	60	4%	-1.050	729	7	0%	NA	732	NA	NA
12	-1.313	725	1	0%	-1.313	725	82	5%	-0.891	732	10	1%	NA	734	NA	NA
13	-1.157	728	2	0%	-1.157	728	108	6%	-0.742	734	18	1%	-0.560	737	1	0%
14	NA	730	NA	NA	-1.009	730	138	8%	-0.602	736	37	2%	NA	739	NA	NA
15	NA	732	NA	NA	-0.869	732	163	10%	-0.470	738	56	3%	NA	741	NA	NA
16	NA	734	NA	NA	-0.735	734	213	13%	-0.343	740	97	5%	NA	743	NA	NA
17	NA	736	NA	NA	-0.605	736	186	11%	-0.221	742	76	4%	NA	745	NA	NA
18	NA	738	NA	NA	-0.480	738	171	10%	-0.102	743	129	7%	0.103	747	2	0%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	740	NA	NA	-0.356	740	132	8%	0.016	745	157	8%	0.224	748	9	1%
20	NA	741	NA	NA	-0.234	741	115	7%	0.132	747	189	10%	0.344	750	5	1%
21	NA	743	NA	NA	-0.113	743	72	4%	0.249	749	195	10%	0.464	752	24	4%
22	NA	745	NA	NA	0.010	745	51	3%	0.367	751	152	8%	0.585	754	26	4%
23	NA	747	NA	NA	0.134	747	30	2%	0.488	752	160	8%	0.709	756	37	6%
24	NA	749	NA	NA	0.263	749	11	1%	0.612	754	154	8%	0.836	758	46	8%
25	NA	751	NA	NA	0.396	751	4	0%	0.743	756	137	7%	0.967	760	53	9%
26	NA	753	NA	NA	0.535	753	2	0%	0.880	758	102	5%	1.106	762	65	11%
27	NA	755	NA	NA	NA	755	NA	NA	1.027	760	88	5%	1.255	764	63	10%
28	NA	758	NA	NA	NA	758	NA	NA	1.187	763	67	4%	1.415	766	53	9%
29	NA	760	NA	NA	NA	760	NA	NA	1.363	765	40	2%	1.592	769	52	8%
30	NA	763	NA	NA	NA	763	NA	NA	1.562	768	21	1%	1.791	772	42	7%
31	NA	767	NA	NA	NA	767	NA	NA	1.791	772	5	0%	2.021	775	40	7%
32	NA	771	NA	NA	NA	771	NA	NA	2.065	776	2	0%	2.295	779	37	6%
33	NA	776	NA	NA	NA	776	NA	NA	2.409	781	1	0%	2.639	785	28	5%
34	NA	783	NA	NA	NA	783	NA	NA	NA	788	NA	NA	3.107	792	19	3%
35	NA	794	NA	NA	NA	794	NA	NA	NA	799	NA	NA	3.871	799	10	2%
36	NA	799	NA	NA	NA	799	NA	NA	NA	799	NA	NA	6.000	799	1	0%

Table 7.B.6 Raw-Score-to-Scale-Score Distribution for ELA, Grade Eight

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	800	727	66%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	801	154	14%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	803	2	0%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
1	-4.926	803	5	0%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
2	-4.168	803	24	2%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
3	-3.695	803	35	3%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
4	-3.339	806	44	4%	NA	806	NA	NA	NA	804	NA	NA	NA	806	NA	NA
5	-3.045	809	89	8%	NA	809	NA	NA	NA	807	NA	NA	NA	810	NA	NA
6	-2.791	813	4	0%	-2.791	813	5	0%	NA	810	NA	NA	NA	813	NA	NA
7	-2.563	815	1	0%	-2.563	815	9	0%	NA	813	NA	NA	NA	816	NA	NA
8	-2.355	818	1	0%	-2.355	818	11	0%	NA	816	NA	NA	NA	819	NA	NA
9	-2.163	820	1	0%	-2.163	820	5	0%	NA	818	NA	NA	NA	821	NA	NA
10	-1.982	823	1	0%	-1.982	823	14	1%	NA	821	NA	NA	NA	824	NA	NA
11	-1.811	825	1	0%	-1.811	825	10	0%	NA	823	NA	NA	NA	826	NA	NA
12	-1.649	827	1	0%	-1.649	827	16	1%	NA	825	NA	NA	NA	828	NA	NA
13	-1.494	829	1	0%	-1.494	829	15	1%	-1.657	827	4	0%	NA	830	NA	NA
14	-1.347	831	1	0%	-1.347	831	18	1%	NA	829	NA	NA	NA	832	NA	NA
15	-1.205	832	2	0%	-1.205	832	38	2%	-1.354	831	1	0%	NA	834	NA	NA
16	NA	834	NA	NA	-1.069	834	55	2%	-1.209	832	1	0%	NA	836	NA	NA
17	NA	836	NA	NA	-0.939	836	61	2%	NA	834	NA	NA	NA	838	NA	NA
18	NA	837	NA	NA	-0.813	837	68	3%	-0.932	836	4	0%	NA	840	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	839	NA	NA	-0.691	839	87	3%	-0.799	838	2	0%	NA	842	NA	NA
20	NA	840	NA	NA	-0.572	840	127	5%	-0.669	839	3	0%	NA	843	NA	NA
21	NA	842	NA	NA	-0.456	842	167	7%	-0.543	841	4	0%	NA	845	NA	NA
22	NA	843	NA	NA	-0.343	843	175	7%	-0.418	842	7	0%	NA	847	NA	NA
23	NA	845	NA	NA	-0.231	845	217	9%	-0.294	844	18	1%	NA	848	NA	NA
24	NA	846	NA	NA	-0.119	846	266	10%	-0.172	845	21	1%	0.183	850	1	1%
25	NA	847	NA	NA	-0.008	847	271	11%	-0.050	847	40	3%	0.315	851	1	1%
26	NA	849	NA	NA	0.104	849	261	10%	0.074	848	61	4%	0.448	853	1	1%
27	NA	850	NA	NA	0.217	850	210	8%	0.198	850	88	6%	0.585	855	3	2%
28	NA	852	NA	NA	0.333	852	179	7%	0.325	852	114	8%	0.726	857	11	6%
29	NA	853	NA	NA	0.452	853	111	4%	0.456	853	159	11%	0.873	858	13	7%
30	NA	855	NA	NA	0.575	855	81	3%	0.592	855	172	12%	1.027	860	14	8%
31	NA	856	NA	NA	0.704	856	37	1%	0.734	857	178	12%	1.191	862	18	10%
32	NA	858	NA	NA	0.841	858	11	0%	0.884	859	141	10%	1.368	865	18	10%
33	NA	860	NA	NA	0.987	860	9	0%	1.044	861	142	10%	1.560	867	30	17%
34	NA	862	NA	NA	1.145	862	2	0%	1.216	863	115	8%	1.772	870	17	10%
35	NA	864	NA	NA	1.319	864	2	0%	1.404	865	83	6%	2.013	873	15	9%
36	NA	866	NA	NA	NA	866	NA	NA	1.613	868	43	3%	2.296	876	15	9%
37	NA	869	NA	NA	NA	869	NA	NA	1.851	871	26	2%	2.643	881	9	5%
38	NA	873	NA	NA	NA	873	NA	NA	2.129	874	10	1%	3.107	886	7	4%
39	NA	877	NA	NA	NA	877	NA	NA	2.472	878	3	0%	NA	896	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
40	NA	882	NA	NA	NA	882	NA	NA	2.932	884	1	0%	6.000	899	1	1%
41	NA	892	NA	NA	NA	892	NA	NA	NA	893	NA	NA	NA	NA	NA	NA
42	NA	899	NA	NA	NA	899	NA	NA	NA	899	NA	NA	NA	NA	NA	NA

Table 7.B.7 Raw-Score-to-Scale-Score Distribution for ELA, Grade Eleven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	900	588	74%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	901	124	16%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	903	2	0%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
1	-4.454	903	8	1%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
2	-3.688	903	27	3%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
3	-3.209	907	35	4%	NA	907	NA	NA	NA	906	NA	NA	NA	909	NA	NA
4	-2.850	912	4	1%	-2.850	912	9	1%	NA	911	NA	NA	NA	914	NA	NA
5	-2.555	916	2	0%	-2.555	916	11	1%	NA	915	NA	NA	NA	917	NA	NA
6	NA	919	NA	NA	-2.303	919	12	1%	NA	918	NA	NA	NA	921	NA	NA
7	-2.081	921	3	0%	-2.081	921	17	1%	NA	921	NA	NA	NA	924	NA	NA
8	-1.881	924	1	0%	-1.881	924	21	2%	NA	924	NA	NA	NA	926	NA	NA
9	-1.698	926	2	0%	-1.698	926	27	2%	-1.710	926	3	0%	NA	929	NA	NA
10	-1.528	928	1	0%	-1.528	928	34	3%	-1.526	928	2	0%	NA	931	NA	NA
11	-1.370	930	1	0%	-1.370	930	51	4%	-1.354	931	5	0%	NA	933	NA	NA
12	NA	932	NA	NA	-1.221	932	52	4%	-1.191	933	10	0%	NA	935	NA	NA
13	-1.079	934	1	0%	-1.079	934	68	6%	-1.035	935	4	0%	-0.809	937	1	0%
14	NA	936	NA	NA	-0.943	936	93	8%	-0.886	936	11	0%	NA	939	NA	NA
15	NA	937	NA	NA	-0.810	937	104	9%	-0.743	938	9	0%	NA	941	NA	NA
16	NA	939	NA	NA	-0.681	939	115	10%	-0.603	940	28	1%	NA	943	NA	NA
17	NA	941	NA	NA	-0.554	941	92	8%	-0.466	942	58	3%	NA	945	NA	NA
18	NA	942	NA	NA	-0.427	942	125	11%	-0.331	943	77	3%	NA	947	NA	NA

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	944	NA	NA	-0.299	944	100	8%	-0.197	945	123	6%	0.062	948	1	0%
20	NA	945	NA	NA	-0.171	945	85	7%	-0.063	947	155	7%	0.195	950	1	0%
21	NA	947	NA	NA	-0.039	947	82	7%	0.072	948	195	9%	0.326	952	1	0%
22	NA	949	NA	NA	0.096	949	40	3%	0.209	950	190	9%	0.457	953	5	2%
23	NA	950	NA	NA	0.236	950	27	2%	0.348	952	202	9%	0.587	955	7	2%
24	NA	952	NA	NA	0.383	952	14	1%	0.491	954	208	9%	0.719	956	8	3%
25	NA	954	NA	NA	0.538	954	9	1%	0.640	956	187	8%	0.853	958	20	7%
26	NA	956	NA	NA	NA	956	NA	NA	0.796	957	182	8%	0.992	960	19	7%
27	NA	959	NA	NA	0.881	959	1	0%	0.960	960	168	8%	1.138	962	18	6%
28	NA	961	NA	NA	NA	961	NA	NA	1.137	962	140	6%	1.293	964	29	10%
29	NA	964	NA	NA	NA	964	NA	NA	1.329	964	111	5%	1.459	966	38	13%
30	NA	967	NA	NA	NA	967	NA	NA	1.541	967	84	4%	1.642	968	25	9%
31	NA	970	NA	NA	NA	970	NA	NA	1.782	970	33	1%	1.847	971	35	12%
32	NA	975	NA	NA	NA	975	NA	NA	2.063	973	30	1%	2.081	974	25	9%
33	NA	981	NA	NA	NA	981	NA	NA	2.408	978	14	1%	2.359	977	22	8%
34	NA	990	NA	NA	NA	990	NA	NA	2.871	983	1	0%	2.703	981	22	8%
35	NA	999	NA	NA	NA	999	NA	NA	NA	993	NA	NA	3.166	987	9	3%
36	NA	NA	NA	NA	NA	NA	NA	NA	NA	999	NA	NA	3.919	996	1	0%
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	999	NA	NA

Table 7.B.8 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Three

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	300	724	57%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	301	195	15%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	303	14	1%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
1	-3.459	303	46	4%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
2	-2.731	303	108	9%	NA	303	NA	NA	NA	303	NA	NA	NA	303	NA	NA
3	-2.293	303	162	13%	NA	303	NA	NA	NA	303	NA	NA	NA	306	NA	NA
4	-1.975	304	6	0%	-1.975	304	15	1%	NA	308	NA	NA	NA	312	NA	NA
5	-1.722	309	3	0%	-1.722	309	20	2%	NA	313	NA	NA	NA	317	NA	NA
6	-1.512	313	2	0%	-1.512	313	17	2%	NA	317	NA	NA	NA	321	NA	NA
7	-1.331	316	1	0%	-1.331	316	19	2%	-1.112	320	15	1%	NA	325	NA	NA
8	-1.171	319	2	0%	-1.171	319	19	2%	-0.948	324	9	1%	NA	328	NA	NA
9	-1.026	322	2	0%	-1.026	322	39	4%	-0.799	326	19	1%	NA	331	NA	NA
10	NA	325	NA	NA	-0.894	325	58	5%	-0.662	329	19	1%	-0.420	333	3	0%
11	-0.770	327	1	0%	-0.770	327	71	7%	-0.534	331	23	1%	-0.286	336	6	1%
12	NA	329	NA	NA	-0.654	329	83	8%	-0.413	334	63	4%	-0.159	338	14	1%
13	NA	331	NA	NA	-0.543	331	113	11%	-0.298	336	77	5%	-0.037	341	28	3%
14	-0.436	333	1	0%	-0.436	333	109	10%	-0.187	338	140	9%	0.082	343	45	4%
15	NA	335	NA	NA	-0.332	335	106	10%	-0.078	340	169	11%	0.199	345	63	6%
16	NA	337	NA	NA	-0.229	337	89	8%	0.029	342	214	13%	0.314	347	93	9%
17	NA	339	NA	NA	-0.128	339	102	10%	0.135	344	232	15%	0.429	349	105	10%
18	NA	341	NA	NA	-0.027	341	70	7%	0.241	346	179	11%	0.545	352	117	11%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	343	NA	NA	0.075	343	51	5%	0.348	348	175	11%	0.662	354	127	12%
20	NA	345	NA	NA	0.179	345	36	3%	0.458	350	105	7%	0.782	356	101	9%
21	NA	347	NA	NA	0.285	347	21	2%	0.570	352	56	4%	0.905	358	91	8%
22	NA	349	NA	NA	0.394	349	12	1%	0.686	354	49	3%	1.033	361	80	7%
23	NA	351	NA	NA	0.509	351	4	0%	0.809	356	28	2%	1.167	363	65	6%
24	NA	353	NA	NA	0.630	353	2	0%	0.939	359	9	1%	1.311	366	51	5%
25	NA	356	NA	NA	NA	356	NA	NA	1.078	362	5	0%	1.465	369	18	2%
26	NA	358	NA	NA	NA	358	NA	NA	1.231	364	2	0%	1.633	372	31	3%
27	NA	361	NA	NA	NA	361	NA	NA	1.400	368	2	0%	1.822	375	15	1%
28	NA	364	NA	NA	NA	364	NA	NA	1.592	371	1	0%	2.038	380	6	1%
29	NA	368	NA	NA	NA	368	NA	NA	NA	375	NA	NA	2.294	384	6	1%
30	NA	373	NA	NA	NA	373	NA	NA	NA	380	NA	NA	2.614	390	3	0%
31	NA	378	NA	NA	NA	378	NA	NA	NA	387	NA	NA	3.051	399	3	0%
32	NA	386	NA	NA	NA	386	NA	NA	NA	395	NA	NA	3.776	399	2	0%
33	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	6.000	399	2	0%
34	NA	399	NA	NA	NA	399	NA	NA	NA	399	NA	NA	NA	NA	NA	NA

Table 7.B.9 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Four

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	400	822	66%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	401	210	17%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	403	4	0%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
1	-4.109	403	26	2%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
2	-3.347	403	53	4%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
3	-2.873	403	121	10%	NA	403	NA	NA	NA	403	NA	NA	NA	403	NA	NA
4	-2.519	403	6	0%	-2.519	403	21	1%	NA	403	NA	NA	NA	403	NA	NA
5	-2.230	403	3	0%	-2.230	403	17	1%	NA	408	NA	NA	NA	409	NA	NA
6	-1.983	404	2	0%	-1.983	404	8	0%	NA	412	NA	NA	NA	413	NA	NA
7	NA	408	NA	NA	-1.766	408	17	1%	NA	416	NA	NA	NA	417	NA	NA
8	-1.571	412	2	0%	-1.571	412	11	1%	-1.163	419	7	0%	NA	421	NA	NA
9	NA	415	NA	NA	-1.392	415	25	1%	-0.996	423	4	0%	NA	424	NA	NA
10	NA	418	NA	NA	-1.227	418	31	2%	-0.843	425	2	0%	NA	427	NA	NA
11	NA	421	NA	NA	-1.073	421	51	3%	-0.701	428	3	0%	-0.622	430	3	1%
12	NA	424	NA	NA	-0.928	424	74	4%	-0.567	431	12	1%	NA	432	NA	NA
13	NA	426	NA	NA	-0.790	426	93	5%	-0.439	433	33	2%	NA	435	NA	NA
14	NA	429	NA	NA	-0.658	429	130	7%	-0.316	435	62	3%	-0.226	437	1	0%
15	NA	431	NA	NA	-0.530	431	164	9%	-0.197	438	110	6%	-0.104	439	5	1%
16	NA	434	NA	NA	-0.407	434	231	13%	-0.081	440	138	8%	0.015	442	9	2%
17	NA	436	NA	NA	-0.286	436	200	11%	0.034	442	212	12%	0.132	444	14	2%
18	NA	438	NA	NA	-0.168	438	209	12%	0.147	444	209	12%	0.248	446	25	4%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	440	NA	NA	-0.050	440	180	10%	0.261	446	252	14%	0.363	448	27	5%
20	NA	443	NA	NA	0.067	443	126	7%	0.376	448	199	11%	0.480	450	44	8%
21	NA	445	NA	NA	0.184	445	84	5%	0.492	451	201	11%	0.598	453	35	6%
22	NA	447	NA	NA	0.303	447	57	3%	0.611	453	125	7%	0.718	455	50	9%
23	NA	449	NA	NA	0.423	449	41	2%	0.733	455	90	5%	0.842	457	50	9%
24	NA	452	NA	NA	0.547	452	14	1%	0.861	457	54	3%	0.971	460	43	8%
25	NA	454	NA	NA	0.676	454	9	1%	0.994	460	24	1%	1.106	462	55	10%
26	NA	456	NA	NA	0.810	456	3	0%	1.135	463	20	1%	1.249	465	42	7%
27	NA	459	NA	NA	0.951	459	1	0%	1.286	465	8	0%	1.401	468	38	7%
28	NA	462	NA	NA	1.102	462	1	0%	1.448	468	7	0%	1.566	471	29	5%
29	NA	465	NA	NA	1.266	465	1	0%	1.627	472	6	0%	1.747	474	24	4%
30	NA	468	NA	NA	NA	468	NA	NA	NA	476	NA	NA	1.949	478	13	2%
31	NA	472	NA	NA	NA	472	NA	NA	NA	480	NA	NA	2.180	482	16	3%
32	NA	476	NA	NA	NA	476	NA	NA	NA	485	NA	NA	2.452	487	13	2%
33	NA	481	NA	NA	NA	481	NA	NA	NA	491	NA	NA	2.790	494	15	3%
34	NA	488	NA	NA	NA	488	NA	NA	NA	499	NA	NA	3.246	499	8	1%
35	NA	496	NA	NA	NA	496	NA	NA	NA	499	NA	NA	3.990	499	4	1%
36	NA	499	NA	NA	NA	499	NA	NA	NA	499	NA	NA	6.000	499	7	1%
37	NA	499	NA	NA	NA	499	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.10 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Five

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	500	849	64%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	501	171	13%	NA	501	1	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	503	16	1%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
1	-3.723	503	44	3%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
2	-3.001	503	82	6%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
3	-2.564	503	147	11%	NA	503	NA	NA	NA	503	NA	NA	NA	503	NA	NA
4	-2.245	503	3	0%	-2.245	503	11	1%	NA	506	NA	NA	NA	507	NA	NA
5	-1.989	504	3	0%	-1.989	504	15	1%	NA	511	NA	NA	NA	512	NA	NA
6	NA	508	NA	NA	-1.773	508	17	1%	NA	515	NA	NA	NA	516	NA	NA
7	NA	512	NA	NA	-1.584	512	28	2%	NA	519	NA	NA	NA	520	NA	NA
8	NA	515	NA	NA	-1.416	515	18	1%	-1.042	522	8	0%	NA	523	NA	NA
9	-1.262	518	1	0%	-1.262	518	21	1%	-0.885	525	8	0%	NA	526	NA	NA
10	-1.120	520	1	0%	-1.120	520	39	2%	-0.740	527	9	1%	NA	529	NA	NA
11	NA	523	NA	NA	-0.987	523	64	4%	-0.606	530	10	1%	-0.537	531	9	1%
12	NA	525	NA	NA	-0.862	525	71	4%	-0.479	532	27	2%	-0.410	534	2	0%
13	NA	527	NA	NA	-0.744	527	119	7%	-0.360	535	38	2%	-0.289	536	2	0%
14	NA	529	NA	NA	-0.630	529	133	8%	-0.245	537	70	4%	-0.173	538	5	1%
15	NA	532	NA	NA	-0.520	532	141	9%	-0.135	539	123	7%	-0.062	540	3	0%
16	NA	534	NA	NA	-0.414	534	158	10%	-0.028	541	161	9%	0.046	542	19	2%
17	NA	535	NA	NA	-0.310	535	171	11%	0.077	543	219	13%	0.152	544	24	3%
18	NA	537	NA	NA	-0.208	537	156	10%	0.181	545	229	13%	0.255	546	41	5%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	539	NA	NA	-0.107	539	141	9%	0.284	547	247	14%	0.358	548	59	7%
20	NA	541	NA	NA	-0.006	541	114	7%	0.387	549	195	11%	0.461	550	88	10%
21	NA	543	NA	NA	0.095	543	87	5%	0.491	551	151	9%	0.565	552	103	11%
22	NA	545	NA	NA	0.197	545	44	3%	0.597	552	91	5%	0.669	554	105	12%
23	NA	547	NA	NA	0.302	547	37	2%	0.706	555	49	3%	0.776	556	78	9%
24	NA	549	NA	NA	0.410	549	16	1%	0.820	557	37	2%	0.886	558	69	8%
25	NA	551	NA	NA	0.523	551	9	1%	0.938	559	17	1%	1.000	560	55	6%
26	NA	553	NA	NA	NA	553	NA	NA	1.063	561	6	0%	1.119	562	40	4%
27	NA	556	NA	NA	0.769	556	1	0%	1.197	564	13	1%	1.244	565	45	5%
28	NA	558	NA	NA	NA	558	NA	NA	1.341	566	1	0%	1.377	567	31	3%
29	NA	561	NA	NA	NA	561	NA	NA	1.499	569	2	0%	1.519	570	30	3%
30	NA	564	NA	NA	NA	564	NA	NA	NA	573	NA	NA	1.674	573	25	3%
31	NA	568	NA	NA	NA	568	NA	NA	1.872	576	1	0%	1.844	576	15	2%
32	NA	573	NA	NA	NA	573	NA	NA	NA	581	NA	NA	2.034	579	10	1%
33	NA	578	NA	NA	NA	578	NA	NA	NA	586	NA	NA	2.252	584	12	1%
34	NA	586	NA	NA	NA	586	NA	NA	NA	592	NA	NA	2.511	588	13	1%
35	NA	599	NA	NA	NA	599	NA	NA	NA	599	NA	NA	2.834	594	7	1%
36	NA	599	NA	NA	NA	599	NA	NA	NA	599	NA	NA	3.275	599	7	1%
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	599	NA	NA	4.003	599	1	0%
38	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.000	599	4	0%

Table 7.B.11 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Six

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	600	828	68%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	601	179	15%	NA	601	1	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	603	15	1%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
1	-3.118	603	43	4%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
2	-2.406	603	121	10%	NA	603	NA	NA	NA	603	NA	NA	NA	603	NA	NA
3	-1.982	604	8	1%	-1.982	604	9	1%	NA	608	NA	NA	NA	610	NA	NA
4	-1.677	610	5	0%	-1.677	610	13	1%	NA	614	NA	NA	NA	616	NA	NA
5	-1.437	614	2	0%	-1.437	614	26	2%	NA	619	NA	NA	NA	621	NA	NA
6	NA	618	NA	NA	-1.239	618	26	2%	NA	623	NA	NA	NA	625	NA	NA
7	-1.068	621	4	0%	-1.068	621	34	2%	-0.816	626	9	1%	NA	628	NA	NA
8	-0.918	624	2	0%	-0.918	624	35	2%	-0.654	629	10	1%	NA	631	NA	NA
9	-0.782	627	2	0%	-0.782	627	63	4%	-0.508	632	13	1%	NA	633	NA	NA
10	-0.659	629	1	0%	-0.659	629	109	6%	-0.373	634	32	2%	-0.305	636	1	0%
11	-0.544	631	2	0%	-0.544	631	134	8%	-0.248	637	83	5%	-0.187	638	5	1%
12	NA	633	NA	NA	-0.436	633	170	10%	-0.131	639	147	8%	-0.077	640	8	1%
13	NA	635	NA	NA	-0.334	635	198	12%	-0.018	641	207	12%	0.029	642	18	3%
14	-0.236	637	1	0%	-0.236	637	186	11%	0.091	643	251	14%	0.131	644	24	4%
15	NA	639	NA	NA	-0.142	639	168	10%	0.196	645	246	14%	0.230	646	26	4%
16	NA	640	NA	NA	-0.049	640	156	9%	0.300	647	200	12%	0.327	647	42	6%
17	NA	642	NA	NA	0.041	642	119	7%	0.404	649	180	10%	0.424	649	53	8%
18	NA	644	NA	NA	0.131	644	87	5%	0.507	651	145	8%	0.520	651	69	10%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	645	NA	NA	0.221	645	64	4%	0.612	653	80	5%	0.617	653	65	10%
20	NA	647	NA	NA	0.311	647	47	3%	0.719	655	50	3%	0.716	655	81	12%
21	NA	649	NA	NA	0.402	649	24	1%	0.830	657	29	2%	0.818	657	61	9%
22	NA	651	NA	NA	0.496	651	14	1%	0.946	659	29	2%	0.923	659	47	7%
23	NA	652	NA	NA	0.593	652	11	1%	1.068	661	10	1%	1.032	661	38	6%
24	NA	654	NA	NA	0.695	654	3	0%	1.198	664	11	1%	1.148	663	26	4%
25	NA	656	NA	NA	0.802	656	3	0%	1.339	666	3	0%	1.272	665	20	3%
26	NA	658	NA	NA	0.916	658	1	0%	1.494	669	1	0%	1.406	668	16	2%
27	NA	661	NA	NA	NA	661	NA	NA	NA	673	NA	NA	1.552	670	19	3%
28	NA	663	NA	NA	NA	663	NA	NA	NA	676	NA	NA	1.715	673	9	1%
29	NA	666	NA	NA	NA	666	NA	NA	NA	681	NA	NA	1.899	677	10	1%
30	NA	670	NA	NA	NA	670	NA	NA	NA	686	NA	NA	2.114	681	9	1%
31	NA	674	NA	NA	NA	674	NA	NA	NA	693	NA	NA	2.371	686	9	1%
32	NA	679	NA	NA	NA	679	NA	NA	NA	699	NA	NA	2.696	692	3	0%
33	NA	687	NA	NA	NA	687	NA	NA	NA	699	NA	NA	3.141	699	6	1%
34	NA	699	NA	NA	NA	699	NA	NA	NA	699	NA	NA	3.878	699	5	1%
35	NA	699	NA	NA	NA	699	NA	NA	NA	NA	NA	NA	6.000	699	1	0%

Table 7.B.12 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Seven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	700	783	59%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	701	250	19%	NA	701	1	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	703	14	1%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
1	-3.486	703	43	3%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
2	-2.781	703	86	6%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
3	-2.366	703	127	10%	NA	703	NA	NA	NA	703	NA	NA	NA	703	NA	NA
4	-2.069	703	8	1%	-2.069	703	11	1%	NA	709	NA	NA	NA	708	NA	NA
5	-1.838	707	3	0%	-1.838	707	17	2%	NA	713	NA	NA	NA	713	NA	NA
6	-1.647	710	6	0%	-1.647	710	17	2%	NA	717	NA	NA	NA	716	NA	NA
7	-1.485	713	1	0%	-1.485	713	9	1%	-1.142	720	11	1%	NA	720	NA	NA
8	-1.342	716	2	0%	-1.342	716	13	2%	-0.997	723	18	1%	NA	723	NA	NA
9	-1.214	719	1	0%	-1.214	719	19	2%	-0.867	725	27	1%	NA	725	NA	NA
10	-1.098	721	1	0%	-1.098	721	28	3%	-0.747	727	44	2%	NA	727	NA	NA
11	-0.990	723	1	0%	-0.990	723	34	4%	-0.635	729	55	3%	-0.617	730	3	0%
12	-0.889	725	1	0%	-0.889	725	43	5%	-0.529	731	92	5%	-0.503	732	2	0%
13	NA	726	NA	NA	-0.794	726	47	5%	-0.428	733	104	6%	-0.394	734	4	0%
14	NA	728	NA	NA	-0.702	728	65	7%	-0.331	735	135	7%	-0.289	736	6	0%
15	NA	730	NA	NA	-0.614	730	99	11%	-0.237	737	148	8%	-0.186	738	12	1%
16	-0.529	731	1	0%	-0.529	731	99	11%	-0.145	739	154	8%	-0.086	740	19	2%
17	NA	733	NA	NA	-0.445	733	97	11%	-0.055	740	171	9%	0.014	742	37	3%
18	NA	735	NA	NA	-0.363	735	86	10%	0.035	742	182	10%	0.113	743	51	4%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	736	NA	NA	-0.281	736	62	7%	0.124	744	162	9%	0.212	745	83	7%
20	NA	738	NA	NA	-0.199	738	43	5%	0.213	745	155	8%	0.311	747	103	8%
21	NA	739	NA	NA	-0.117	739	38	4%	0.304	747	111	6%	0.411	749	88	7%
22	NA	741	NA	NA	-0.034	741	18	2%	0.395	749	102	6%	0.513	751	126	10%
23	NA	742	NA	NA	0.051	742	9	1%	0.488	750	63	3%	0.617	753	110	9%
24	NA	744	NA	NA	0.137	744	13	2%	0.584	752	41	2%	0.724	755	76	6%
25	NA	746	NA	NA	NA	746	NA	NA	0.684	754	24	1%	0.834	757	65	5%
26	NA	747	NA	NA	0.319	747	1	0%	0.787	756	18	1%	0.948	759	68	5%
27	NA	749	NA	NA	NA	749	NA	NA	0.896	758	7	0%	1.068	761	76	6%
28	NA	751	NA	NA	NA	751	NA	NA	1.012	760	6	0%	1.193	764	61	5%
29	NA	753	NA	NA	NA	753	NA	NA	NA	763	NA	NA	1.327	766	49	4%
30	NA	755	NA	NA	NA	755	NA	NA	1.269	765	1	0%	1.470	769	47	4%
31	NA	758	NA	NA	NA	758	NA	NA	NA	768	NA	NA	1.624	772	31	2%
32	NA	760	NA	NA	NA	760	NA	NA	NA	771	NA	NA	1.792	775	28	2%
33	NA	763	NA	NA	NA	763	NA	NA	NA	774	NA	NA	1.979	778	24	2%
34	NA	767	NA	NA	NA	767	NA	NA	NA	778	NA	NA	2.190	782	25	2%
35	NA	770	NA	NA	NA	770	NA	NA	NA	783	NA	NA	2.434	787	20	2%
36	NA	775	NA	NA	NA	775	NA	NA	NA	789	NA	NA	2.724	792	11	1%
37	NA	781	NA	NA	NA	781	NA	NA	NA	798	NA	NA	3.085	799	11	1%
38	NA	789	NA	NA	NA	789	NA	NA	NA	799	NA	NA	3.574	799	8	1%
39	NA	799	NA	NA	NA	799	NA	NA	NA	799	NA	NA	4.363	799	1	0%
40	NA	799	NA	NA	NA	799	NA	NA	NA	NA	NA	NA	6.000	799	2	0%

Table 7.B.13 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Eight

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	800	799	71%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	801	179	16%	NA	801	5	0%	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	803	9	1%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
1	-3.436	803	36	3%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
2	-2.729	803	66	6%	NA	803	NA	NA	NA	803	NA	NA	NA	803	NA	NA
3	-2.312	803	10	1%	-2.312	803	17	1%	NA	803	NA	NA	NA	803	NA	NA
4	-2.013	804	4	0%	-2.013	804	14	1%	NA	804	NA	NA	NA	809	NA	NA
5	-1.779	808	4	0%	-1.779	808	12	1%	NA	809	NA	NA	NA	813	NA	NA
6	-1.586	812	4	0%	-1.586	812	15	1%	NA	813	NA	NA	NA	817	NA	NA
7	-1.421	815	1	0%	-1.421	815	38	3%	NA	816	NA	NA	NA	821	NA	NA
8	-1.276	817	2	0%	-1.276	817	24	2%	-1.172	819	10	1%	NA	824	NA	NA
9	-1.145	820	3	0%	-1.145	820	37	3%	-1.025	822	6	0%	NA	827	NA	NA
10	-1.026	822	2	0%	-1.026	822	53	4%	-0.891	825	5	0%	NA	829	NA	NA
11	-0.916	824	2	0%	-0.916	824	47	4%	-0.765	827	17	1%	NA	832	NA	NA
12	NA	826	NA	NA	-0.812	826	93	8%	-0.646	829	21	1%	-0.371	834	2	0%
13	NA	828	NA	NA	-0.714	828	115	10%	-0.533	831	56	3%	-0.249	837	3	0%
14	NA	830	NA	NA	-0.619	830	114	9%	-0.424	833	80	4%	-0.129	839	4	0%
15	-0.528	831	2	0%	-0.528	831	108	9%	-0.318	835	117	6%	-0.011	841	11	1%
16	-0.439	833	1	0%	-0.439	833	122	10%	-0.214	837	162	9%	0.106	843	28	3%
17	NA	835	NA	NA	-0.352	835	112	9%	-0.112	839	178	10%	0.222	845	57	6%
18	NA	836	NA	NA	-0.265	836	95	8%	-0.011	841	192	10%	0.339	848	76	7%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	838	NA	NA	-0.179	838	62	5%	0.091	843	235	13%	0.458	850	93	9%
20	NA	840	NA	NA	-0.092	840	51	4%	0.193	845	210	11%	0.579	852	110	11%
21	NA	841	NA	NA	-0.004	841	39	3%	0.296	847	197	11%	0.702	854	103	10%
22	NA	843	NA	NA	0.085	843	15	1%	0.402	849	120	6%	0.830	857	97	9%
23	NA	845	NA	NA	0.177	845	13	1%	0.510	851	99	5%	0.961	859	94	9%
24	NA	846	NA	NA	0.272	846	5	0%	0.622	853	69	4%	1.098	862	74	7%
25	NA	848	NA	NA	0.371	848	2	0%	0.738	855	39	2%	1.241	865	63	6%
26	NA	850	NA	NA	0.475	850	1	0%	0.860	857	25	1%	1.392	867	60	6%
27	NA	852	NA	NA	NA	852	NA	NA	0.990	860	17	1%	1.552	870	48	5%
28	NA	855	NA	NA	NA	855	NA	NA	1.129	862	5	0%	1.724	874	35	3%
29	NA	857	NA	NA	NA	857	NA	NA	1.280	865	1	0%	1.912	877	25	2%
30	NA	860	NA	NA	NA	860	NA	NA	1.445	868	2	0%	2.120	881	19	2%
31	NA	862	NA	NA	NA	862	NA	NA	NA	872	NA	NA	2.355	885	13	1%
32	NA	866	NA	NA	NA	866	NA	NA	NA	876	NA	NA	2.631	891	9	1%
33	NA	870	NA	NA	NA	870	NA	NA	NA	881	NA	NA	2.971	897	6	1%
34	NA	874	NA	NA	NA	874	NA	NA	NA	887	NA	NA	3.429	899	4	0%
35	NA	880	NA	NA	NA	880	NA	NA	NA	895	NA	NA	4.173	899	1	0%
36	NA	889	NA	NA	NA	889	NA	NA	NA	899	NA	NA	6.000	899	1	0%
37	NA	899	NA	NA	NA	899	NA	NA	NA	899	NA	NA	NA	NA	NA	NA
38	NA	899	NA	NA	NA	899	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 7.B.14 Raw-Score-to-Scale-Score Distribution for Mathematics, Grade Eleven

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
NA	NA	900	591	60%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	901	163	17%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
0	-6.000	903	16	2%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
1	-3.479	903	31	3%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
2	-2.739	903	64	7%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
3	-2.296	903	108	11%	NA	903	NA	NA	NA	903	NA	NA	NA	903	NA	NA
4	-1.977	904	1	0%	-1.977	904	5	0%	NA	903	NA	NA	NA	905	NA	NA
5	-1.727	909	1	0%	-1.727	909	14	1%	NA	908	NA	NA	NA	910	NA	NA
6	-1.521	913	1	0%	-1.521	913	15	1%	NA	912	NA	NA	NA	914	NA	NA
7	NA	916	NA	NA	-1.345	916	17	2%	NA	916	NA	NA	NA	918	NA	NA
8	-1.191	919	1	0%	-1.191	919	30	3%	-1.203	919	6	1%	NA	921	NA	NA
9	NA	922	NA	NA	-1.053	922	39	4%	-1.053	922	6	1%	NA	924	NA	NA
10	-0.926	924	2	0%	-0.926	924	50	5%	-0.915	924	6	1%	-0.788	927	4	0%
11	NA	926	NA	NA	-0.809	926	78	7%	-0.786	927	4	0%	-0.658	929	1	0%
12	-0.699	928	1	0%	-0.699	928	97	9%	-0.665	929	9	1%	-0.535	931	7	0%
13	NA	930	NA	NA	-0.594	930	106	10%	-0.548	931	22	2%	-0.419	933	6	0%
14	NA	932	NA	NA	-0.492	932	122	11%	-0.436	933	31	3%	-0.307	936	16	1%
15	NA	934	NA	NA	-0.394	934	118	11%	-0.327	935	82	9%	-0.199	938	28	2%
16	NA	936	NA	NA	-0.297	936	110	10%	-0.219	937	92	10%	-0.094	940	54	4%
17	NA	938	NA	NA	-0.201	938	74	7%	-0.112	939	138	14%	0.010	941	82	6%
18	NA	939	NA	NA	-0.106	939	64	6%	-0.006	941	139	15%	0.113	943	97	7%

Raw Score	Early Exit Theta	Early Exit Scale Score	Early Exit N	Early Exit Percent	Easy Pathway Theta	Easy Pathway Scale Score	Easy Pathway N	Easy Pathway Percent	Moderate Pathway Theta	Moderate Pathway Scale Score	Moderate Pathway N	Moderate Pathway Percent	Hard Pathway Theta	Hard Pathway Scale Score	Hard Pathway N	Hard Pathway Percent
19	NA	941	NA	NA	-0.009	941	44	4%	0.101	943	126	13%	0.215	945	149	10%
20	NA	943	NA	NA	0.090	943	39	4%	0.209	945	112	12%	0.317	947	153	10%
21	NA	945	NA	NA	0.192	945	25	2%	0.319	947	70	7%	0.421	949	150	10%
22	NA	947	NA	NA	0.298	947	18	2%	0.431	949	53	6%	0.526	951	151	10%
23	NA	949	NA	NA	0.409	949	9	1%	0.547	952	38	4%	0.634	953	132	9%
24	NA	951	NA	NA	0.527	951	2	0%	0.667	954	10	1%	0.745	955	114	8%
25	NA	954	NA	NA	NA	954	NA	NA	0.792	956	5	1%	0.861	957	84	6%
26	NA	956	NA	NA	NA	956	NA	NA	0.925	959	3	0%	0.982	960	75	5%
27	NA	959	NA	NA	NA	959	NA	NA	1.067	961	1	0%	1.111	962	47	3%
28	NA	962	NA	NA	NA	962	NA	NA	NA	964	NA	NA	1.249	965	40	3%
29	NA	966	NA	NA	NA	966	NA	NA	NA	967	NA	NA	1.399	968	22	1%
30	NA	971	NA	NA	NA	971	NA	NA	NA	971	NA	NA	1.566	971	16	1%
31	NA	977	NA	NA	NA	977	NA	NA	NA	975	NA	NA	1.754	974	17	1%
32	NA	985	NA	NA	NA	985	NA	NA	NA	980	NA	NA	1.972	978	10	1%
33	NA	999	NA	NA	NA	999	NA	NA	NA	986	NA	NA	2.232	983	12	1%
34	NA	999	NA	NA	NA	999	NA	NA	NA	995	NA	NA	2.561	989	10	1%
35	NA	NA	NA	NA	NA	NA	NA	NA	NA	999	NA	NA	3.012	998	5	0%
36	NA	NA	NA	NA	NA	NA	NA	NA	NA	999	NA	NA	3.755	999	5	0%
37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	999	NA	NA

Appendix 7.C: Scale Scores

Table 7.C.1 Percentiles of Scale Scores in English Language Arts/Literacy (ELA)

Percentile	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
p1	300	400	500	600	700	800	900
p10	300	400	500	600	700	800	900
p20	304	403	509	626	703	809	928
p30	333	432	531	635	730	840	939
p40	338	438	537	639	736	845	943
p50	344	442	542	643	740	847	947
p60	350	447	547	646	745	849	950
p70	357	451	551	649	749	852	954
p80	365	457	557	653	754	855	957
p90	375	467	563	658	762	861	964
p99	399	496	588	670	785	873	978

Table 7.C.2 Percentiles of Scale Scores in Mathematics

Percentile	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
p1	300	400	500	600	700	800	900
p10	300	400	500	600	700	800	900
p20	303	403	503	603	703	803	903
p30	327	429	527	631	726	828	928
p40	335	434	534	637	733	833	935
p50	339	438	539	639	737	837	939
p60	342	442	543	642	741	841	943
p70	346	446	547	645	745	845	945
p80	349	449	550	649	749	850	949
p90	356	455	555	653	757	857	955
p99	372	482	576	670	787	881	974

Note: In Table 7.C.3 through Table 7.C.16, an expression that opens and closes with a bracket indicates that a value is greater than or equal to the first number and is less than or equal to the second number. For example, "[345, 347]" indicates a value greater than or equal to 345 but less than or equal to 347.

Table 7.C.3 Frequency Distribution of Overall Scale Scores—ELA, Grade Three

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[300, 302]	826	826	17%	17%
[303, 305]	188	1014	4%	20%
[306, 308]	20	1034	0%	21%
[309, 311]	12	1046	0%	21%
[312, 314]	16	1062	0%	21%
[315, 317]	25	1087	0%	22%
[318, 320]	28	1115	1%	22%
[321, 323]	37	1152	1%	23%
[324, 326]	109	1261	2%	25%
[327, 329]	97	1358	2%	27%
[330, 332]	114	1472	2%	29%
[333, 335]	298	1770	6%	35%
[336, 338]	334	2104	7%	42%
[339, 341]	184	2288	4%	46%
[342, 344]	351	2639	7%	53%
[345, 347]	210	2849	4%	57%
[348, 350]	218	3067	4%	61%
[351, 353]	230	3297	5%	66%
[354, 356]	185	3482	4%	70%
[357, 359]	264	3746	5%	75%
[360, 362]	152	3898	3%	78%
[363, 365]	125	4023	2%	80%
[366, 368]	146	4169	3%	83%
[369, 371]	120	4289	2%	86%
[372, 374]	155	4444	3%	89%
[375, 377]	148	4592	3%	92%
[378, 380]	119	4711	2%	94%
[381, 383]	0	4711	0%	94%
[384, 386]	113	4824	2%	96%
[387, 389]	0	4824	0%	96%
[390, 392]	95	4919	2%	98%
[393, 395]	0	4919	0%	98%
[396, 398]	0	4919	0%	98%
[399, 399]	84	5003	2%	100%

Table 7.C.4 Frequency Distribution of Overall Scale Scores—ELA, Grade Four

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[400, 402]	881	881	16%	16%
[403, 405]	223	1104	4%	20%
[406, 408]	19	1123	0%	21%
[409, 411]	19	1142	0%	21%
[412, 414]	20	1162	0%	21%
[415, 417]	24	1186	0%	22%
[418, 420]	31	1217	1%	22%
[421, 423]	72	1289	1%	24%
[424, 426]	58	1347	1%	25%
[427, 429]	76	1423	1%	26%
[430, 432]	221	1644	4%	30%
[433, 435]	335	1979	6%	37%
[436, 438]	216	2195	4%	41%
[439, 441]	349	2544	6%	47%
[442, 444]	385	2929	7%	54%
[445, 447]	381	3310	7%	61%
[448, 450]	284	3594	5%	66%
[451, 453]	407	4001	8%	74%
[454, 456]	220	4221	4%	78%
[457, 459]	301	4522	6%	84%
[460, 462]	187	4709	3%	87%
[463, 465]	155	4864	3%	90%
[466, 468]	113	4977	2%	92%
[469, 471]	131	5108	2%	94%
[472, 474]	101	5209	2%	96%
[475, 477]	1	5210	0%	96%
[478, 480]	88	5298	2%	98%
[481, 483]	0	5298	0%	98%
[484, 486]	55	5353	1%	99%
[487, 489]	0	5353	0%	99%
[490, 492]	0	5353	0%	99%
[493, 495]	0	5353	0%	99%
[496, 498]	41	5394	1%	100%
[499, 499]	16	5410	0%	100%

Table 7.C.5 Frequency Distribution of Overall Scale Scores—ELA, Grade Five

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[500, 502]	913	913	17%	17%
[503, 505]	162	1075	3%	19%
[506, 508]	18	1093	0%	20%
[509, 511]	14	1107	0%	20%
[512, 514]	22	1129	0%	20%
[515, 517]	21	1150	0%	21%
[518, 520]	30	1180	1%	21%
[521, 523]	90	1270	2%	23%
[524, 526]	61	1331	1%	24%
[527, 529]	212	1543	4%	28%
[530, 532]	130	1673	2%	30%
[533, 535]	346	2019	6%	36%
[536, 538]	352	2371	6%	43%
[539, 541]	275	2646	5%	48%
[542, 544]	336	2982	6%	54%
[545, 547]	371	3353	7%	61%
[548, 550]	518	3871	9%	70%
[551, 553]	270	4141	5%	75%
[554, 556]	263	4404	5%	80%
[557, 559]	363	4767	7%	86%
[560, 562]	164	4931	3%	89%
[563, 565]	150	5081	3%	92%
[566, 568]	111	5192	2%	94%
[569, 571]	96	5288	2%	96%
[572, 574]	87	5375	2%	97%
[575, 577]	53	5428	1%	98%
[578, 580]	0	5428	0%	98%
[581, 583]	45	5473	1%	99%
[584, 586]	0	5473	0%	99%
[587, 589]	39	5512	1%	100%
[590, 592]	0	5512	0%	100%
[593, 595]	0	5512	0%	100%
[596, 598]	0	5512	0%	100%
[599, 599]	21	5533	0%	100%

Table 7.C.6 Frequency Distribution of Overall Scale Scores—ELA, Grade Six

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[600, 602]	770	770	14%	14%
[603, 605]	74	844	1%	16%
[606, 608]	68	912	1%	17%
[609, 611]	0	912	0%	17%
[612, 614]	23	935	0%	18%
[615, 617]	24	959	0%	18%
[618, 620]	38	997	1%	19%
[621, 623]	15	1012	0%	19%
[624, 626]	59	1071	1%	20%
[627, 629]	118	1189	2%	22%
[630, 632]	195	1384	4%	26%
[633, 635]	295	1679	6%	31%
[636, 638]	361	2040	7%	38%
[639, 641]	487	2527	9%	47%
[642, 644]	366	2893	7%	54%
[645, 647]	451	3344	8%	63%
[648, 650]	464	3808	9%	71%
[651, 653]	488	4296	9%	81%
[654, 656]	390	4686	7%	88%
[657, 659]	195	4881	4%	91%
[660, 662]	230	5111	4%	96%
[663, 665]	83	5194	2%	97%
[666, 668]	64	5258	1%	99%
[669, 671]	36	5294	1%	99%
[672, 674]	19	5313	0%	100%
[675, 677]	0	5313	0%	100%
[678, 680]	13	5326	0%	100%
[681, 683]	0	5326	0%	100%
[684, 686]	0	5326	0%	100%
[687, 689]	6	5332	0%	100%
[690, 692]	0	5332	0%	100%
[693, 695]	0	5332	0%	100%
[696, 698]	0	5332	0%	100%
[699, 699]	4	5336	0%	100%

Table 7.C.7 Frequency Distribution of Overall Scale Scores—ELA, Grade Seven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[700, 702]	884	884	17%	17%
[703, 705]	216	1100	4%	21%
[706, 708]	15	1115	0%	21%
[709, 711]	26	1141	0%	22%
[712, 714]	24	1165	0%	22%
[715, 717]	23	1188	0%	22%
[718, 720]	40	1228	1%	23%
[721, 723]	60	1288	1%	24%
[724, 726]	84	1372	2%	26%
[727, 729]	122	1494	2%	28%
[730, 732]	311	1805	6%	34%
[733, 735]	231	2036	4%	39%
[736, 738]	451	2487	9%	47%
[739, 741]	344	2831	7%	54%
[742, 744]	277	3108	5%	59%
[745, 747]	429	3537	8%	67%
[748, 750]	220	3757	4%	71%
[751, 753]	342	4099	6%	78%
[754, 756]	354	4453	7%	84%
[757, 759]	148	4601	3%	87%
[760, 762]	206	4807	4%	91%
[763, 765]	170	4977	3%	94%
[766, 768]	74	5051	1%	96%
[769, 771]	52	5103	1%	97%
[772, 774]	47	5150	1%	97%
[775, 777]	42	5192	1%	98%
[778, 780]	37	5229	1%	99%
[781, 783]	1	5230	0%	99%
[784, 786]	28	5258	1%	99%
[787, 789]	0	5258	0%	99%
[790, 792]	19	5277	0%	100%
[793, 795]	0	5277	0%	100%
[796, 798]	0	5277	0%	100%
[799, 799]	11	5288	0%	100%

Table 7.C.8 Frequency Distribution of Overall Scale Scores—ELA, Grade Eight

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[800, 802]	881	881	17%	17%
[803, 805]	66	947	1%	18%
[806, 808]	44	991	1%	19%
[809, 811]	89	1080	2%	21%
[812, 814]	9	1089	0%	21%
[815, 817]	10	1099	0%	21%
[818, 820]	18	1117	0%	21%
[821, 823]	15	1132	0%	22%
[824, 826]	11	1143	0%	22%
[827, 829]	37	1180	1%	22%
[830, 832]	61	1241	1%	24%
[833, 835]	55	1296	1%	25%
[836, 838]	135	1431	3%	27%
[839, 841]	221	1652	4%	31%
[842, 844]	367	2019	7%	38%
[845, 847]	815	2834	16%	54%
[848, 850]	621	3455	12%	66%
[851, 853]	565	4020	11%	77%
[854, 856]	293	4313	6%	82%
[857, 859]	354	4667	7%	89%
[860, 862]	185	4852	4%	92%
[863, 865]	218	5070	4%	97%
[866, 868]	73	5143	1%	98%
[869, 871]	43	5186	1%	99%
[872, 874]	25	5211	0%	99%
[875, 877]	15	5226	0%	100%
[878, 880]	3	5229	0%	100%
[881, 883]	9	5238	0%	100%
[884, 886]	8	5246	0%	100%
[887, 889]	0	5246	0%	100%
[890, 892]	0	5246	0%	100%
[893, 895]	0	5246	0%	100%
[896, 898]	0	5246	0%	100%
[899, 899]	1	5247	0%	100%

Table 7.C.9 Frequency Distribution of Overall Scale Scores—ELA, Grade Eleven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[900, 902]	712	712	16%	16%
[903, 905]	37	749	1%	17%
[906, 908]	35	784	1%	17%
[909, 911]	0	784	0%	17%
[912, 914]	13	797	0%	18%
[915, 917]	13	810	0%	18%
[918, 920]	12	822	0%	18%
[921, 923]	20	842	0%	19%
[924, 926]	54	896	1%	20%
[927, 929]	37	933	1%	21%
[930, 932]	109	1042	2%	23%
[933, 935]	83	1125	2%	25%
[936, 938]	218	1343	5%	30%
[939, 941]	235	1578	5%	35%
[942, 944]	360	1938	8%	43%
[945, 947]	445	2383	10%	53%
[948, 950]	454	2837	10%	63%
[951, 953]	222	3059	5%	68%
[954, 956]	419	3478	9%	77%
[957, 959]	203	3681	5%	82%
[960, 962]	345	4026	8%	89%
[963, 965]	140	4166	3%	92%
[966, 968]	147	4313	3%	96%
[969, 971]	68	4381	2%	97%
[972, 974]	55	4436	1%	98%
[975, 977]	22	4458	0%	99%
[978, 980]	14	4472	0%	99%
[981, 983]	23	4495	1%	100%
[984, 986]	0	4495	0%	100%
[987, 989]	9	4504	0%	100%
[990, 992]	0	4504	0%	100%
[993, 995]	0	4504	0%	100%
[996, 998]	1	4505	0%	100%
[999, 999]	0	4505	0%	100%

Table 7.C.10 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Three

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[300, 302]	919	919	18%	18%
[303, 305]	351	1270	7%	25%
[306, 308]	0	1270	0%	25%
[309, 311]	23	1293	0%	26%
[312, 314]	19	1312	0%	26%
[315, 317]	20	1332	0%	27%
[318, 320]	36	1368	1%	27%
[321, 323]	41	1409	1%	28%
[324, 326]	86	1495	2%	30%
[327, 329]	174	1669	3%	33%
[330, 332]	136	1805	3%	36%
[333, 335]	282	2087	6%	42%
[336, 338]	326	2413	7%	48%
[339, 341]	369	2782	7%	56%
[342, 344]	542	3324	11%	67%
[345, 347]	392	3716	8%	74%
[348, 350]	397	4113	8%	82%
[351, 353]	179	4292	4%	86%
[354, 356]	305	4597	6%	92%
[357, 359]	100	4697	2%	94%
[360, 362]	85	4782	2%	96%
[363, 365]	67	4849	1%	97%
[366, 368]	53	4902	1%	98%
[369, 371]	19	4921	0%	99%
[372, 374]	31	4952	1%	99%
[375, 377]	15	4967	0%	100%
[378, 380]	6	4973	0%	100%
[381, 383]	0	4973	0%	100%
[384, 386]	6	4979	0%	100%
[387, 389]	0	4979	0%	100%
[390, 392]	3	4982	0%	100%
[393, 395]	0	4982	0%	100%
[396, 398]	0	4982	0%	100%
[399, 399]	7	4989	0%	100%

Table 7.C.11 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Four

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[400, 402]	1032	1032	19%	19%
[403, 405]	261	1293	5%	24%
[406, 408]	17	1310	0%	24%
[409, 411]	0	1310	0%	24%
[412, 414]	13	1323	0%	25%
[415, 417]	25	1348	0%	25%
[418, 420]	38	1386	1%	26%
[421, 423]	55	1441	1%	27%
[424, 426]	169	1610	3%	30%
[427, 429]	133	1743	2%	32%
[430, 432]	179	1922	3%	36%
[433, 435]	326	2248	6%	42%
[436, 438]	520	2768	10%	51%
[439, 441]	323	3091	6%	57%
[442, 444]	570	3661	11%	68%
[445, 447]	418	4079	8%	76%
[448, 450]	311	4390	6%	81%
[451, 453]	375	4765	7%	88%
[454, 456]	152	4917	3%	91%
[457, 459]	105	5022	2%	93%
[460, 462]	123	5145	2%	95%
[463, 465]	71	5216	1%	97%
[466, 468]	45	5261	1%	97%
[469, 471]	29	5290	1%	98%
[472, 474]	30	5320	1%	99%
[475, 477]	0	5320	0%	99%
[478, 480]	13	5333	0%	99%
[481, 483]	16	5349	0%	99%
[484, 486]	0	5349	0%	99%
[487, 489]	13	5362	0%	99%
[490, 492]	0	5362	0%	99%
[493, 495]	15	5377	0%	100%
[496, 498]	0	5377	0%	100%
[499, 499]	19	5396	0%	100%

Table 7.C.12 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Five

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[500, 502]	1021	1021	18%	18%
[503, 505]	321	1342	6%	24%
[506, 508]	17	1359	0%	25%
[509, 511]	0	1359	0%	25%
[512, 514]	28	1387	1%	25%
[515, 517]	18	1405	0%	25%
[518, 520]	62	1467	1%	26%
[521, 523]	72	1539	1%	28%
[524, 526]	79	1618	1%	29%
[527, 529]	261	1879	5%	34%
[530, 532]	187	2066	3%	37%
[533, 535]	369	2435	7%	44%
[536, 538]	233	2668	4%	48%
[539, 541]	542	3210	10%	58%
[542, 544]	349	3559	6%	64%
[545, 547]	598	4157	11%	75%
[548, 550]	358	4515	6%	81%
[551, 553]	354	4869	6%	88%
[554, 556]	233	5102	4%	92%
[557, 559]	123	5225	2%	94%
[560, 562]	101	5326	2%	96%
[563, 565]	58	5384	1%	97%
[566, 568]	32	5416	1%	98%
[569, 571]	32	5448	1%	98%
[572, 574]	25	5473	0%	99%
[575, 577]	16	5489	0%	99%
[578, 580]	10	5499	0%	99%
[581, 583]	0	5499	0%	99%
[584, 586]	12	5511	0%	99%
[587, 589]	13	5524	0%	100%
[590, 592]	0	5524	0%	100%
[593, 595]	7	5531	0%	100%
[596, 598]	0	5531	0%	100%
[599, 599]	12	5543	0%	100%

Table 7.C.13 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Six

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[600, 602]	1008	1008	19%	19%
[603, 605]	196	1204	4%	23%
[606, 608]	0	1204	0%	23%
[609, 611]	18	1222	0%	23%
[612, 614]	28	1250	1%	23%
[615, 617]	0	1250	0%	23%
[618, 620]	26	1276	0%	24%
[621, 623]	38	1314	1%	25%
[624, 626]	46	1360	1%	26%
[627, 629]	185	1545	3%	29%
[630, 632]	149	1694	3%	32%
[633, 635]	400	2094	8%	39%
[636, 638]	276	2370	5%	45%
[639, 641]	686	3056	13%	57%
[642, 644]	499	3555	9%	67%
[645, 647]	625	4180	12%	79%
[648, 650]	257	4437	5%	83%
[651, 653]	384	4821	7%	91%
[654, 656]	137	4958	3%	93%
[657, 659]	167	5125	3%	96%
[660, 662]	48	5173	1%	97%
[663, 665]	57	5230	1%	98%
[666, 668]	19	5249	0%	99%
[669, 671]	20	5269	0%	99%
[672, 674]	9	5278	0%	99%
[675, 677]	10	5288	0%	99%
[678, 680]	0	5288	0%	99%
[681, 683]	9	5297	0%	100%
[684, 686]	9	5306	0%	100%
[687, 689]	0	5306	0%	100%
[690, 692]	3	5309	0%	100%
[693, 695]	0	5309	0%	100%
[696, 698]	0	5309	0%	100%
[699, 699]	12	5321	0%	100%

Table 7.C.14 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Seven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[700, 702]	1034	1034	20%	20%
[703, 705]	289	1323	5%	25%
[706, 708]	20	1343	0%	25%
[709, 711]	23	1366	0%	26%
[712, 714]	10	1376	0%	26%
[715, 717]	15	1391	0%	26%
[718, 720]	31	1422	1%	27%
[721, 723]	82	1504	2%	29%
[724, 726]	118	1622	2%	31%
[727, 729]	164	1786	3%	34%
[730, 732]	296	2082	6%	39%
[733, 735]	426	2508	8%	48%
[736, 738]	271	2779	5%	53%
[739, 741]	400	3179	8%	60%
[742, 744]	454	3633	9%	69%
[745, 747]	453	4086	9%	77%
[748, 750]	253	4339	5%	82%
[751, 753]	277	4616	5%	88%
[754, 756]	118	4734	2%	90%
[757, 759]	140	4874	3%	92%
[760, 762]	82	4956	2%	94%
[763, 765]	62	5018	1%	95%
[766, 768]	49	5067	1%	96%
[769, 771]	47	5114	1%	97%
[772, 774]	31	5145	1%	98%
[775, 777]	28	5173	1%	98%
[778, 780]	24	5197	0%	99%
[781, 783]	25	5222	0%	99%
[784, 786]	0	5222	0%	99%
[787, 789]	20	5242	0%	99%
[790, 792]	11	5253	0%	100%
[793, 795]	0	5253	0%	100%
[796, 798]	0	5253	0%	100%
[799, 799]	22	5275	0%	100%

Table 7.C.15 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Eight

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[800, 802]	983	983	19%	19%
[803, 805]	156	1139	3%	22%
[806, 808]	16	1155	0%	22%
[809, 811]	0	1155	0%	22%
[812, 814]	19	1174	0%	22%
[815, 817]	65	1239	1%	24%
[818, 820]	50	1289	1%	25%
[821, 823]	61	1350	1%	26%
[824, 826]	147	1497	3%	29%
[827, 829]	153	1650	3%	32%
[830, 832]	280	1930	5%	37%
[833, 835]	434	2364	8%	45%
[836, 838]	322	2686	6%	51%
[839, 841]	475	3161	9%	60%
[842, 844]	278	3439	5%	66%
[845, 847]	482	3921	9%	75%
[848, 850]	292	4213	6%	81%
[851, 853]	278	4491	5%	86%
[854, 856]	142	4633	3%	89%
[857, 859]	216	4849	4%	93%
[860, 862]	96	4945	2%	95%
[863, 865]	64	5009	1%	96%
[866, 868]	62	5071	1%	97%
[869, 871]	48	5119	1%	98%
[872, 874]	35	5154	1%	99%
[875, 877]	25	5179	0%	99%
[878, 880]	0	5179	0%	99%
[881, 883]	19	5198	0%	99%
[884, 886]	13	5211	0%	100%
[887, 889]	0	5211	0%	100%
[890, 892]	9	5220	0%	100%
[893, 895]	0	5220	0%	100%
[896, 898]	6	5226	0%	100%
[899, 899]	6	5232	0%	100%

Table 7.C.16 Frequency Distribution of Overall Scale Scores—Mathematics, Grade Eleven

Scale Score	N	Cumulative Frequency	Percent	Cumulative Percent
[900, 902]	754	754	17%	17%
[903, 905]	225	979	5%	22%
[906, 908]	0	979	0%	22%
[909, 911]	15	994	0%	22%
[912, 914]	16	1010	0%	22%
[915, 917]	17	1027	0%	23%
[918, 920]	37	1064	1%	24%
[921, 923]	45	1109	1%	25%
[924, 926]	136	1245	3%	28%
[927, 929]	116	1361	3%	30%
[930, 932]	257	1618	6%	36%
[933, 935]	237	1855	5%	41%
[936, 938]	320	2175	7%	48%
[939, 941]	521	2696	12%	60%
[942, 944]	262	2958	6%	66%
[945, 947]	527	3485	12%	78%
[948, 950]	212	3697	5%	82%
[951, 953]	323	4020	7%	89%
[954, 956]	129	4149	3%	92%
[957, 959]	87	4236	2%	94%
[960, 962]	123	4359	3%	97%
[963, 965]	40	4399	1%	98%
[966, 968]	22	4421	0%	98%
[969, 971]	16	4437	0%	99%
[972, 974]	17	4454	0%	99%
[975, 977]	0	4454	0%	99%
[978, 980]	10	4464	0%	99%
[981, 983]	12	4476	0%	100%
[984, 986]	0	4476	0%	100%
[987, 989]	10	4486	0%	100%
[990, 992]	0	4486	0%	100%
[993, 995]	0	4486	0%	100%
[996, 998]	5	4491	0%	100%
[999, 999]	5	4496	0%	100%

Appendix 7.D: Demographic Summaries

Notes:

- To protect privacy when the number of students in a student group is 10 or fewer, the summary statistics at the test- and reporting-level are not reported and are presented as "NA" in the tables in Appendix 7.D.
- Percentages in these tables may not sum up to 100 due to rounding.

Table 7.D.1 Demographic Summary for ELA, Grade Three

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,003	342	26	53%	22%	25%
Male	3,396	342	27	52%	22%	26%
Female	1,607	341	26	54%	22%	24%
American Indian or Alaska Native	26	353	24	31%	35%	35%
Asian	392	336	24	63%	23%	15%
Native Hawaiian or Other Pacific Islander	24	342	26	54%	21%	25%
Filipino	117	334	24	62%	25%	14%
Hispanic or Latino	2,906	343	27	51%	22%	27%
Black or African American	364	340	26	54%	23%	23%
White	956	342	27	52%	22%	26%
Two or more races	218	339	27	56%	21%	24%
English only	3,004	342	27	52%	22%	26%
Initially fluent English proficient	47	337	23	66%	21%	13%
English learner	1,804	342	26	52%	23%	25%
Reclassified fluent English proficient	139	340	25	58%	22%	20%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,655	338	23	61%	23%	15%
Hearing impairment	44	348	24	39%	34%	27%
Speech or language impairment	217	358	20	24%	29%	47%
Visual impairment	21	326	27	67%	24%	10%
Emotional disturbance	29	362	25	28%	7%	66%
Orthopedic impairment	224	331	30	64%	17%	19%
Other health impairment	283	352	25	36%	26%	38%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Specific learning disability	357	371	18	9%	14%	77%
Deaf-blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	245	320	24	84%	9%	7%
Autism	1,907	340	25	55%	24%	22%
Traumatic brain injury	18	343	29	50%	11%	39%
Not classified	1	NA	NA	NA	NA	NA
Not economically disadvantaged	1,725	336	26	60%	22%	19%
Economically disadvantaged	3,278	344	26	49%	22%	29%
Migrant	44	359	24	32%	23%	45%
Nonmigrant	4,959	341	26	53%	22%	25%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	230	333	24	68%	20%	12%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	82	331	24	66%	23%	11%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	634	337	27	58%	21%	21%
Black or African American (Primary ethnicity—Not economically disadvantaged)	110	334	24	66%	22%	12%
White (Primary ethnicity—Not economically disadvantaged)	549	339	27	56%	22%	22%
Two or more races (Primary ethnicity—Not economically disadvantaged)	105	330	26	63%	24%	13%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	19	353	26	32%	32%	37%
Asian (Primary ethnicity—Economically disadvantaged)	162	340	24	55%	27%	19%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	16	349	24	38%	31%	31%
Filipino (Primary ethnicity—Economically disadvantaged)	35	340	24	51%	29%	20%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,272	344	26	49%	22%	29%
Black or African American (Primary ethnicity—Economically disadvantaged)	254	343	27	49%	24%	28%
White (Primary ethnicity—Economically disadvantaged)	407	346	26	46%	22%	32%
Two or more races (Primary ethnicity—Economically disadvantaged)	113	346	26	49%	18%	34%

Table 7.D.2 Demographic Summary for ELA, Grade Four

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,410	439	24	54%	29%	16%
Male	3,699	439	24	54%	30%	17%
Female	1,711	439	23	55%	29%	16%
American Indian or Alaska Native	37	449	19	30%	43%	27%
Asian	414	434	22	65%	26%	9%
Native Hawaiian or Other Pacific Islander	25	426	21	76%	24%	0%
Filipino	115	433	21	70%	20%	10%
Hispanic or Latino	3,214	440	24	52%	30%	18%
Black or African American	402	438	22	52%	35%	13%
White	1,010	438	24	55%	29%	17%
Two or more races	193	437	23	59%	28%	13%
English only	3,166	438	24	55%	29%	16%
Initially fluent English proficient	37	433	23	65%	24%	11%
English learner	1,983	440	23	52%	30%	17%
Reclassified fluent English proficient	215	440	23	52%	34%	14%
To be determined	5	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	1,831	436	21	61%	30%	9%
Hearing impairment	48	445	21	35%	46%	19%
Speech or language impairment	200	452	17	21%	51%	29%
Visual impairment	31	420	24	74%	16%	10%
Emotional disturbance	32	458	16	19%	34%	47%
Orthopedic impairment	240	427	26	70%	20%	10%
Other health impairment	309	446	24	39%	34%	27%
Specific learning disability	454	463	15	8%	32%	60%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	279	418	21	86%	13%	1%
Autism	1,958	437	22	58%	29%	13%
Traumatic brain injury	25	438	23	44%	36%	20%
Not classified	3	NA	NA	NA	NA	NA
Not economically disadvantaged	1,844	434	23	64%	25%	11%
Economically disadvantaged	3,566	441	23	49%	32%	19%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	36	453	25	39%	17%	44%
Nonmigrant	5,374	439	23	54%	30%	16%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	436	23	64%	27%	9%
Asian (Primary ethnicity—Not economically disadvantaged)	242	432	22	68%	25%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	4	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	74	432	21	69%	24%	7%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	647	433	24	65%	23%	12%
Black or African American (Primary ethnicity—Not economically disadvantaged)	129	432	22	63%	30%	7%
White (Primary ethnicity—Not economically disadvantaged)	627	436	24	61%	25%	14%
Two or more races (Primary ethnicity—Not economically disadvantaged)	110	432	23	63%	29%	8%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	26	455	14	15%	50%	35%
Asian (Primary ethnicity—Economically disadvantaged)	172	436	22	60%	28%	12%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	21	426	22	71%	29%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	41	435	22	71%	12%	17%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,567	441	23	49%	31%	20%
Black or African American (Primary ethnicity—Economically disadvantaged)	273	441	22	47%	37%	16%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	383	443	24	44%	35%	21%
Two or more races (Primary ethnicity—Economically disadvantaged)	83	443	21	53%	28%	19%

Table 7.D.3 Demographic Summary for ELA, Grade Five

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,533	538	23	54%	32%	14%
Male	3,729	539	22	52%	33%	15%
Female	1,804	536	23	57%	30%	12%
American Indian or Alaska Native	33	541	25	48%	30%	21%
Asian	431	533	22	62%	29%	9%
Native Hawaiian or Other Pacific Islander	31	536	24	61%	32%	6%
Filipino	147	535	21	61%	32%	7%
Hispanic or Latino	3,257	539	22	52%	33%	15%
Black or African American	439	536	23	55%	34%	11%
White	1,009	538	23	56%	30%	15%
Two or more races	186	537	23	55%	32%	13%
English only	3,157	538	23	55%	32%	14%
Initially fluent English proficient	53	529	21	75%	21%	4%
English learner	2,040	539	22	53%	33%	14%
Reclassified fluent English proficient	277	540	22	50%	34%	16%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	1,932	536	20	61%	31%	8%
Hearing impairment	48	544	17	42%	46%	13%
Speech or language impairment	156	552	15	26%	49%	24%
Visual impairment	28	525	23	71%	21%	7%
Emotional disturbance	36	549	26	42%	22%	36%
Orthopedic impairment	261	525	26	69%	21%	9%
Other health impairment	274	545	21	34%	43%	23%
Specific learning disability	524	560	15	10%	42%	48%
Deaf-blindness	7	NA	NA	NA	NA	NA
Multiple disabilities	311	517	21	86%	12%	3%
Autism	1,916	537	22	57%	33%	11%
Traumatic brain injury	34	535	26	50%	38%	12%
Not classified	6	NA	NA	NA	NA	NA
Not economically disadvantaged	1,843	534	23	62%	29%	9%
Economically disadvantaged	3,690	540	22	50%	34%	16%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	50	549	21	42%	28%	30%
Nonmigrant	5,483	538	23	54%	32%	14%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	540	32	45%	27%	27%
Asian (Primary ethnicity—Not economically disadvantaged)	260	532	22	65%	29%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	12	542	27	58%	33%	8%
Filipino (Primary ethnicity—Not economically disadvantaged)	95	532	21	66%	28%	5%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	637	533	23	62%	30%	8%
Black or African American (Primary ethnicity—Not economically disadvantaged)	138	536	23	56%	34%	10%
White (Primary ethnicity—Not economically disadvantaged)	590	535	23	62%	26%	12%
Two or more races (Primary ethnicity—Not economically disadvantaged)	100	533	24	61%	31%	8%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	542	21	50%	32%	18%
Asian (Primary ethnicity—Economically disadvantaged)	171	536	23	58%	30%	12%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	19	531	22	63%	32%	5%
Filipino (Primary ethnicity—Economically disadvantaged)	52	540	21	52%	38%	10%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,620	541	22	49%	34%	17%
Black or African American (Primary ethnicity—Economically disadvantaged)	301	537	23	55%	34%	11%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	419	542	22	47%	35%	18%
Two or more races (Primary ethnicity—Economically disadvantaged)	86	543	21	48%	34%	19%

Table 7.D.4 Demographic Summary for ELA, Grade Six

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,336	638	20	54%	37%	9%
Male	3,618	638	20	54%	38%	9%
Female	1,718	638	20	55%	37%	8%
American Indian or Alaska Native	29	645	20	31%	55%	14%
Asian	387	633	20	65%	32%	4%
Native Hawaiian or Other Pacific Islander	26	635	22	50%	46%	4%
Filipino	145	635	18	68%	30%	3%
Hispanic or Latino	3,096	638	20	53%	39%	9%
Black or African American	457	639	18	55%	36%	8%
White	1,015	639	20	53%	36%	11%
Two or more races	181	637	20	58%	33%	9%
English only	3,054	638	20	54%	37%	9%
Initially fluent English proficient	80	633	19	73%	24%	4%
English learner	1,915	638	19	54%	38%	8%
Reclassified fluent English proficient	283	640	19	51%	41%	8%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Intellectual disability	2,030	637	18	60%	35%	5%
Hearing impairment	52	638	16	60%	40%	0%
Speech or language impairment	136	651	10	20%	61%	19%
Visual impairment	20	629	22	75%	20%	5%
Emotional disturbance	41	649	16	27%	46%	27%
Orthopedic impairment	264	627	23	69%	27%	4%
Other health impairment	274	647	17	29%	55%	15%
Specific learning disability	440	656	9	8%	60%	32%
Deaf-blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	258	620	22	81%	17%	2%
Autism	1,794	637	19	59%	35%	6%
Traumatic brain injury	23	628	24	61%	30%	9%
Not classified	3	NA	NA	NA	NA	NA
Not economically disadvantaged	1,895	634	20	62%	32%	6%
Economically disadvantaged	3,441	640	19	50%	40%	10%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	34	642	20	41%	47%	12%
Nonmigrant	5,302	638	20	54%	37%	9%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	10	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	238	633	20	66%	31%	3%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	12	635	26	42%	50%	8%
Filipino (Primary ethnicity—Not economically disadvantaged)	105	633	18	69%	30%	1%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	685	633	21	61%	33%	6%
Black or African American (Primary ethnicity—Not economically disadvantaged)	130	633	20	67%	27%	6%
White (Primary ethnicity—Not economically disadvantaged)	610	636	20	60%	32%	8%
Two or more races (Primary ethnicity—Not economically disadvantaged)	105	634	21	65%	30%	6%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	19	652	15	16%	63%	21%
Asian (Primary ethnicity—Economically disadvantaged)	149	634	20	62%	32%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	14	635	19	57%	43%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	40	638	17	65%	28%	8%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,411	640	19	50%	40%	10%
Black or African American (Primary ethnicity—Economically disadvantaged)	327	641	18	51%	40%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	405	642	19	42%	43%	14%
Two or more races (Primary ethnicity—Economically disadvantaged)	76	641	17	49%	38%	13%

Table 7.D.5 Demographic Summary for ELA, Grade Seven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,288	736	22	59%	28%	13%
Male	3,557	737	22	58%	29%	13%
Female	1,731	736	22	61%	26%	13%
American Indian or Alaska Native	32	743	23	47%	31%	22%
Asian	425	733	21	68%	24%	8%
Native Hawaiian or Other Pacific Islander	18	726	25	78%	11%	11%
Filipino	151	737	23	57%	30%	13%
Hispanic or Latino	3,029	737	22	57%	29%	13%
Black or African American	414	736	22	60%	28%	12%
White	1,070	737	23	58%	27%	15%
Two or more races	149	734	22	64%	24%	12%
English only	3,043	737	22	58%	28%	14%
Initially fluent English proficient	83	732	23	64%	27%	10%
English learner	1,808	736	22	60%	28%	12%
Reclassified fluent English proficient	347	739	21	59%	27%	15%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA
Intellectual disability	2,103	736	20	61%	29%	10%
Hearing impairment	51	739	16	57%	37%	6%
Speech or language impairment	111	750	16	32%	39%	29%
Visual impairment	29	721	26	79%	7%	14%
Emotional disturbance	25	749	13	32%	52%	16%
Orthopedic impairment	241	726	25	72%	20%	8%
Other health impairment	278	745	21	42%	34%	24%
Specific learning disability	385	756	16	20%	39%	41%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	269	717	21	86%	12%	2%
Autism	1,764	735	21	63%	27%	11%
Traumatic brain injury	20	740	19	50%	40%	10%
Not classified	9	NA	NA	NA	NA	NA
Not economically disadvantaged	1,872	734	23	65%	24%	11%
Economically disadvantaged	3,416	738	22	55%	31%	14%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	30	747	14	33%	53%	13%
Nonmigrant	5,258	736	22	59%	28%	13%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	740	21	45%	36%	18%
Asian (Primary ethnicity—Not economically disadvantaged)	239	732	20	69%	24%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	93	736	24	61%	25%	14%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	624	733	23	67%	24%	9%
Black or African American (Primary ethnicity—Not economically disadvantaged)	131	731	24	70%	18%	11%
White (Primary ethnicity—Not economically disadvantaged)	683	735	23	63%	24%	13%
Two or more races (Primary ethnicity—Not economically disadvantaged)	83	734	22	67%	20%	12%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	21	744	24	48%	29%	24%
Asian (Primary ethnicity—Economically disadvantaged)	186	733	22	66%	25%	10%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Economically disadvantaged)	58	738	21	50%	40%	10%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,405	738	22	55%	31%	14%
Black or African American (Primary ethnicity—Economically disadvantaged)	283	738	21	55%	33%	12%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	387	741	23	50%	32%	19%
Two or more races (Primary ethnicity—Economically disadvantaged)	66	734	22	59%	29%	12%

Table 7.D.6 Demographic Summary for ELA, Grade Eight

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,247	840	21	38%	50%	11%
Male	3,494	840	21	38%	50%	12%
Female	1,753	839	22	40%	50%	10%
American Indian or Alaska Native	39	847	17	21%	64%	15%
Asian	410	836	23	44%	48%	8%
Native Hawaiian or Other Pacific Islander	21	843	20	38%	52%	10%
Filipino	179	838	21	41%	50%	9%
Hispanic or Latino	2,849	840	21	37%	52%	11%
Black or African American	456	839	22	40%	49%	11%
White	1,114	840	22	41%	46%	13%
Two or more races	179	841	21	35%	52%	13%
English only	3,083	840	22	39%	49%	12%
Initially fluent English proficient	83	834	21	55%	40%	5%
English learner	1,690	840	21	37%	53%	10%
Reclassified fluent English proficient	384	841	21	35%	53%	12%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	2,075	840	20	38%	54%	8%
Hearing impairment	50	846	14	30%	58%	12%
Speech or language impairment	95	853	11	18%	57%	25%
Visual impairment	38	828	26	55%	34%	11%
Emotional disturbance	33	850	19	18%	55%	27%
Orthopedic impairment	237	826	24	65%	29%	5%
Other health impairment	240	845	19	28%	53%	19%
Specific learning disability	358	856	11	8%	60%	32%
Deaf-blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	316	821	24	69%	27%	3%
Autism	1,775	840	21	39%	51%	10%
Traumatic brain injury	24	844	22	29%	50%	21%
Not classified	1	NA	NA	NA	NA	NA
Not economically disadvantaged	1,946	836	23	46%	45%	9%
Economically disadvantaged	3,301	842	20	34%	53%	12%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	34	849	16	24%	59%	18%
Nonmigrant	5,213	840	21	39%	50%	11%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	17	845	18	24%	59%	18%
Asian (Primary ethnicity—Not economically disadvantaged)	223	836	23	43%	48%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	133	838	21	41%	50%	9%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	627	836	23	46%	45%	9%
Black or African American (Primary ethnicity—Not economically disadvantaged)	155	833	23	49%	46%	5%
White (Primary ethnicity—Not economically disadvantaged)	690	838	23	46%	43%	11%
Two or more races (Primary ethnicity—Not economically disadvantaged)	93	836	22	47%	46%	6%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	849	16	18%	68%	14%
Asian (Primary ethnicity—Economically disadvantaged)	187	836	23	44%	47%	9%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	13	847	18	31%	54%	15%
Filipino (Primary ethnicity—Economically disadvantaged)	46	838	22	41%	50%	9%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,222	842	20	34%	54%	11%
Black or African American (Primary ethnicity—Economically disadvantaged)	301	842	21	35%	50%	15%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	424	844	20	32%	52%	16%
Two or more races (Primary ethnicity—Economically disadvantaged)	86	847	19	21%	58%	21%

Table 7.D.7 Demographic Summary for ELA, Grade Eleven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	4,505	941	22	43%	39%	18%
Male	2,879	942	21	42%	38%	19%
Female	1,626	940	22	44%	40%	16%
American Indian or Alaska Native	39	939	21	46%	44%	10%
Asian	338	936	22	53%	37%	10%
Native Hawaiian or Other Pacific Islander	31	941	20	42%	35%	23%
Filipino	148	939	22	43%	45%	11%
Hispanic or Latino	2,423	942	21	42%	40%	18%
Black or African American	402	941	21	45%	38%	17%
White	1,003	943	22	41%	36%	24%
Two or more races	121	938	23	49%	34%	17%
English only	2,646	941	22	43%	37%	20%
Initially fluent English proficient	83	930	24	61%	28%	11%
English learner	1,350	940	21	43%	42%	15%
Reclassified fluent English proficient	421	945	19	36%	42%	22%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	1,939	941	20	45%	41%	14%
Hearing impairment	64	943	20	30%	55%	16%
Speech or language impairment	43	956	11	9%	42%	49%
Visual impairment	39	929	27	59%	26%	15%
Emotional disturbance	30	957	13	13%	30%	57%
Orthopedic impairment	293	930	26	62%	23%	15%
Other health impairment	203	952	19	19%	43%	37%
Specific learning disability	302	958	13	10%	38%	52%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	229	924	24	68%	27%	5%
Autism	1,328	941	21	45%	40%	15%
Traumatic brain injury	30	947	22	30%	37%	33%
Not classified	5	NA	NA	NA	NA	NA
Not economically disadvantaged	1,646	939	23	47%	36%	17%
Economically disadvantaged	2,859	943	21	41%	40%	19%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	19	948	14	26%	58%	16%
Nonmigrant	4,486	941	22	43%	39%	18%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	13	936	26	46%	46%	8%
Asian (Primary ethnicity—Not economically disadvantaged)	183	937	22	51%	37%	12%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	108	938	21	44%	45%	10%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	509	938	23	47%	37%	16%
Black or African American (Primary ethnicity—Not economically disadvantaged)	129	939	23	51%	32%	17%
White (Primary ethnicity—Not economically disadvantaged)	630	941	23	45%	34%	21%
Two or more races (Primary ethnicity—Not economically disadvantaged)	67	935	25	54%	30%	16%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	26	941	19	46%	42%	12%
Asian (Primary ethnicity—Economically disadvantaged)	155	935	22	54%	37%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	24	945	15	38%	42%	21%
Filipino (Primary ethnicity—Economically disadvantaged)	40	942	22	40%	45%	15%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	1,914	943	21	41%	41%	18%
Black or African American (Primary ethnicity—Economically disadvantaged)	273	942	21	42%	40%	18%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	373	947	20	34%	38%	28%
Two or more races (Primary ethnicity—Economically disadvantaged)	54	942	19	43%	39%	19%

Table 7.D.8 Demographic Summary for Mathematics, Grade Three

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	4,989	333	21	67%	28%	6%
Male	3,392	333	21	66%	28%	6%
Female	1,597	332	21	68%	27%	5%
American Indian or Alaska Native	26	339	18	54%	46%	0%
Asian	391	329	21	79%	16%	5%
Native Hawaiian or Other Pacific Islander	24	333	21	71%	25%	4%
Filipino	119	328	22	70%	29%	2%
Hispanic or Latino	2,891	334	21	64%	30%	6%
Black or African American	360	333	21	67%	28%	5%
White	956	332	21	68%	26%	6%
Two or more races	222	331	22	71%	21%	8%
English only	3,000	333	21	67%	28%	6%
Initially fluent English proficient	47	329	20	77%	21%	2%
English learner	1,794	333	21	66%	28%	6%
Reclassified fluent English proficient	138	332	19	70%	25%	4%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	1,641	330	20	74%	23%	3%
Hearing impairment	44	342	18	50%	36%	14%
Speech or language impairment	219	344	16	46%	41%	13%
Visual impairment	21	322	24	76%	14%	10%
Emotional disturbance	29	343	20	41%	48%	10%
Orthopedic impairment	224	324	23	76%	18%	6%
Other health impairment	282	340	19	55%	37%	9%
Specific learning disability	358	351	12	28%	54%	18%
Deaf-blindness	2	NA	NA	NA	NA	NA
Multiple disabilities	249	316	20	86%	13%	1%
Autism	1,900	332	21	69%	26%	5%
Traumatic brain injury	18	331	21	56%	39%	6%
Not classified	2	NA	NA	NA	NA	NA
Not economically disadvantaged	1,726	329	22	72%	23%	5%
Economically disadvantaged	3,263	335	20	64%	30%	6%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	45	343	18	42%	44%	13%
Nonmigrant	4,944	333	21	67%	27%	6%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	7	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	231	327	21	82%	13%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	84	326	22	70%	27%	2%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	634	330	22	69%	26%	5%
Black or African American (Primary ethnicity—Not economically disadvantaged)	108	327	23	75%	20%	5%
White (Primary ethnicity—Not economically disadvantaged)	548	330	22	71%	24%	5%
Two or more races (Primary ethnicity—Not economically disadvantaged)	106	326	22	77%	19%	4%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	19	339	18	58%	42%	0%
Asian (Primary ethnicity—Economically disadvantaged)	160	331	21	74%	21%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	16	342	18	56%	38%	6%
Filipino (Primary ethnicity—Economically disadvantaged)	35	332	20	69%	31%	0%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,257	335	21	63%	31%	7%
Black or African American (Primary ethnicity—Economically disadvantaged)	252	335	20	63%	32%	5%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	408	336	20	64%	29%	7%
Two or more races (Primary ethnicity—Economically disadvantaged)	116	335	21	66%	23%	11%

Table 7.D.9 Demographic Summary for Mathematics, Grade Four

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,396	433	21	68%	25%	7%
Male	3,685	433	21	67%	25%	7%
Female	1,711	433	21	69%	25%	6%
American Indian or Alaska Native	37	443	16	57%	30%	14%
Asian	413	430	22	73%	19%	7%
Native Hawaiian or Other Pacific Islander	25	424	22	72%	28%	0%
Filipino	117	428	21	74%	23%	3%
Hispanic or Latino	3,202	434	21	67%	26%	7%
Black or African American	401	433	21	70%	24%	6%
White	1,006	433	21	68%	25%	7%
Two or more races	195	432	22	70%	24%	6%
English only	3,153	432	22	69%	24%	7%
Initially fluent English proficient	37	425	21	89%	5%	5%
English learner	1,980	435	21	65%	27%	7%
Reclassified fluent English proficient	214	436	21	67%	24%	9%
To be determined	6	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	1,825	431	19	75%	22%	3%
Hearing impairment	48	439	18	54%	38%	8%
Speech or language impairment	201	443	17	54%	35%	11%
Visual impairment	31	418	22	87%	13%	0%
Emotional disturbance	32	445	13	47%	41%	13%
Orthopedic impairment	238	423	23	80%	16%	5%
Other health impairment	311	440	20	57%	32%	12%
Specific learning disability	451	452	14	26%	48%	26%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	278	416	19	91%	8%	1%
Autism	1,954	432	21	70%	24%	6%
Traumatic brain injury	24	437	18	58%	38%	4%
Not classified	3	NA	NA	NA	NA	NA
Not economically disadvantaged	1,834	429	21	76%	20%	5%
Economically disadvantaged	3,562	435	21	64%	28%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	36	447	24	53%	22%	25%
Nonmigrant	5,360	433	21	68%	25%	7%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	434	18	91%	0%	9%
Asian (Primary ethnicity—Not economically disadvantaged)	241	428	22	77%	17%	7%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	4	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	75	426	21	75%	24%	1%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	641	428	21	78%	19%	4%
Black or African American (Primary ethnicity—Not economically disadvantaged)	129	428	21	76%	22%	2%
White (Primary ethnicity—Not economically disadvantaged)	621	430	21	73%	22%	5%
Two or more races (Primary ethnicity—Not economically disadvantaged)	112	428	22	77%	18%	5%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	26	448	13	42%	42%	15%
Asian (Primary ethnicity—Economically disadvantaged)	172	433	22	69%	23%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	21	424	23	71%	29%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	42	432	21	74%	21%	5%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,561	436	21	64%	28%	8%
Black or African American (Primary ethnicity—Economically disadvantaged)	272	435	21	67%	26%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	385	437	21	59%	31%	10%
Two or more races (Primary ethnicity—Economically disadvantaged)	83	436	21	61%	31%	7%

Table 7.D.10 Demographic Summary for Mathematics, Grade Five

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,543	533	21	64%	30%	6%
Male	3,739	534	21	62%	31%	7%
Female	1,804	531	21	68%	28%	4%
American Indian or Alaska Native	33	537	19	52%	42%	6%
Asian	435	530	21	69%	27%	4%
Native Hawaiian or Other Pacific Islander	31	530	21	68%	32%	0%
Filipino	149	533	21	68%	26%	5%
Hispanic or Latino	3,263	534	21	63%	32%	6%
Black or African American	437	532	21	68%	27%	6%
White	1,009	533	22	64%	29%	7%
Two or more races	186	532	22	71%	23%	6%
English only	3,151	533	21	65%	28%	6%
Initially fluent English proficient	54	526	19	78%	20%	2%
English learner	2,054	533	21	63%	32%	5%
Reclassified fluent English proficient	276	534	20	60%	36%	4%
To be determined	3	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,935	532	19	68%	29%	3%
Hearing impairment	49	544	15	45%	49%	6%
Speech or language impairment	157	543	15	43%	50%	7%
Visual impairment	29	526	25	66%	24%	10%
Emotional disturbance	35	551	25	37%	37%	26%
Orthopedic impairment	265	521	23	78%	19%	3%
Other health impairment	280	539	20	53%	40%	7%
Specific learning disability	521	550	14	32%	49%	18%
Deaf-blindness	7	NA	NA	NA	NA	NA
Multiple disabilities	308	516	21	85%	14%	1%
Autism	1,917	532	21	68%	26%	5%
Traumatic brain injury	34	531	24	62%	29%	9%
Not classified	6	NA	NA	NA	NA	NA
Not economically disadvantaged	1,843	530	22	69%	26%	5%
Economically disadvantaged	3,700	535	21	62%	32%	6%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	50	542	20	50%	36%	14%
Nonmigrant	5,493	533	21	64%	30%	6%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	536	24	36%	55%	9%
Asian (Primary ethnicity—Not economically disadvantaged)	262	530	22	70%	26%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	12	529	22	75%	25%	0%
Filipino (Primary ethnicity—Not economically disadvantaged)	97	530	22	74%	22%	4%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	637	530	22	68%	27%	4%
Black or African American (Primary ethnicity—Not economically disadvantaged)	136	529	21	71%	26%	4%
White (Primary ethnicity—Not economically disadvantaged)	588	531	22	68%	27%	5%
Two or more races (Primary ethnicity—Not economically disadvantaged)	100	528	23	77%	18%	5%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	538	17	59%	36%	5%
Asian (Primary ethnicity—Economically disadvantaged)	173	530	21	69%	28%	3%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	19	531	21	63%	37%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	52	539	18	58%	35%	8%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,626	535	20	61%	33%	6%
Black or African American (Primary ethnicity—Economically disadvantaged)	301	533	22	66%	27%	7%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	421	537	21	58%	32%	10%
Two or more races (Primary ethnicity—Economically disadvantaged)	86	537	21	64%	29%	7%

Table 7.D.11 Demographic Summary for Mathematics, Grade Six

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,321	634	20	67%	30%	4%
Male	3,602	634	20	66%	30%	4%
Female	1,719	632	20	69%	28%	2%
American Indian or Alaska Native	30	639	18	63%	30%	7%
Asian	388	631	22	71%	26%	4%
Native Hawaiian or Other Pacific Islander	24	629	21	71%	29%	0%
Filipino	144	630	19	75%	24%	1%
Hispanic or Latino	3,084	634	20	67%	29%	4%
Black or African American	458	634	20	66%	30%	4%
White	1,011	635	20	64%	31%	4%
Two or more races	182	633	20	63%	34%	3%
English only	3,042	633	20	67%	29%	4%
Initially fluent English proficient	80	629	21	73%	26%	1%
English learner	1,910	633	20	67%	29%	4%
Reclassified fluent English proficient	284	637	20	62%	34%	4%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	2,021	633	19	70%	29%	2%
Hearing impairment	53	638	19	45%	45%	9%
Speech or language impairment	139	642	14	58%	37%	4%
Visual impairment	19	625	22	74%	26%	0%
Emotional disturbance	41	645	16	39%	49%	12%
Orthopedic impairment	263	622	22	79%	18%	3%
Other health impairment	270	640	18	61%	33%	6%
Specific learning disability	443	648	14	39%	48%	13%
Deaf-blindness	1	NA	NA	NA	NA	NA
Multiple disabilities	252	617	21	87%	12%	0%
Autism	1,793	633	20	68%	28%	3%
Traumatic brain injury	23	620	20	78%	22%	0%
Not classified	3	NA	NA	NA	NA	NA
Not economically disadvantaged	1,887	630	21	72%	24%	4%
Economically disadvantaged	3,434	635	19	64%	32%	4%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	34	640	18	53%	44%	3%
Nonmigrant	5,287	633	20	67%	29%	4%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	11	630	22	55%	45%	0%
Asian (Primary ethnicity—Not economically disadvantaged)	241	630	22	73%	22%	4%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	104	629	19	78%	22%	0%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	675	629	21	73%	23%	3%
Black or African American (Primary ethnicity—Not economically disadvantaged)	130	628	21	78%	18%	5%
White (Primary ethnicity—Not economically disadvantaged)	610	633	21	68%	27%	5%
Two or more races (Primary ethnicity—Not economically disadvantaged)	106	631	21	68%	28%	4%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	19	643	14	68%	21%	11%
Asian (Primary ethnicity—Economically disadvantaged)	147	632	21	67%	31%	3%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	14	632	19	71%	29%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	40	634	17	68%	30%	3%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,409	635	19	65%	31%	4%
Black or African American (Primary ethnicity—Economically disadvantaged)	328	637	18	61%	35%	4%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	401	637	19	59%	37%	3%
Two or more races (Primary ethnicity—Economically disadvantaged)	76	636	18	57%	41%	3%

Table 7.D.12 Demographic Summary for Mathematics, Grade Seven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,275	733	22	69%	24%	8%
Male	3,546	733	22	68%	24%	8%
Female	1,729	731	21	71%	23%	6%
American Indian or Alaska Native	32	736	22	66%	22%	13%
Asian	427	730	22	72%	22%	6%
Native Hawaiian or Other Pacific Islander	18	726	24	78%	11%	11%
Filipino	149	734	22	66%	22%	12%
Hispanic or Latino	3,024	733	22	68%	24%	8%
Black or African American	412	732	22	71%	21%	8%
White	1,065	732	22	70%	23%	7%
Two or more races	148	730	22	71%	21%	8%
English only	3,028	733	22	69%	24%	7%
Initially fluent English proficient	84	728	22	76%	20%	4%
English learner	1,810	732	22	68%	24%	8%
Reclassified fluent English proficient	345	735	22	67%	23%	10%
To be determined	4	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA
Intellectual disability	2,087	731	20	75%	21%	4%
Hearing impairment	52	747	16	35%	42%	23%
Speech or language impairment	113	745	18	42%	42%	16%
Visual impairment	29	715	21	86%	14%	0%
Emotional disturbance	26	739	14	73%	19%	8%
Orthopedic impairment	243	721	23	82%	14%	4%
Other health impairment	277	739	20	58%	31%	10%
Specific learning disability	382	752	18	32%	39%	29%
Deaf-blindness	3	NA	NA	NA	NA	NA
Multiple disabilities	269	714	20	91%	8%	1%
Autism	1,766	732	22	69%	24%	8%
Traumatic brain injury	20	732	24	65%	25%	10%
Not classified	8	NA	NA	NA	NA	NA
Not economically disadvantaged	1,862	730	22	73%	21%	6%
Economically disadvantaged	3,413	734	21	67%	25%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	29	741	18	48%	45%	7%
Nonmigrant	5,246	732	22	69%	23%	8%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	10	NA	NA	NA	NA	NA
Asian (Primary ethnicity—Not economically disadvantaged)	239	730	22	74%	22%	5%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	91	735	23	67%	21%	12%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	622	730	22	72%	22%	6%
Black or African American (Primary ethnicity—Not economically disadvantaged)	132	725	22	81%	14%	5%
White (Primary ethnicity—Not economically disadvantaged)	678	730	22	73%	21%	6%
Two or more races (Primary ethnicity—Not economically disadvantaged)	82	730	24	67%	21%	12%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	740	22	64%	18%	18%
Asian (Primary ethnicity—Economically disadvantaged)	188	731	23	70%	22%	8%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	10	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Economically disadvantaged)	58	734	21	64%	24%	12%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,402	734	21	67%	25%	8%
Black or African American (Primary ethnicity—Economically disadvantaged)	280	735	22	66%	25%	9%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	387	735	21	65%	27%	9%
Two or more races (Primary ethnicity—Economically disadvantaged)	66	731	20	76%	21%	3%

Table 7.D.13 Demographic Summary for Mathematics, Grade Eight

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	5,232	834	21	66%	27%	7%
Male	3,471	834	21	65%	27%	8%
Female	1,761	833	21	66%	27%	6%
American Indian or Alaska Native	39	837	21	56%	33%	10%
Asian	408	832	22	70%	22%	8%
Native Hawaiian or Other Pacific Islander	21	836	19	57%	43%	0%
Filipino	179	831	21	72%	23%	4%
Hispanic or Latino	2,840	834	21	64%	29%	7%
Black or African American	452	833	22	66%	26%	8%
White	1,116	833	21	68%	24%	8%
Two or more races	177	834	22	63%	28%	10%
English only	3,073	833	21	66%	26%	7%
Initially fluent English proficient	82	828	21	77%	18%	5%
English learner	1,692	834	21	65%	28%	7%
Reclassified fluent English proficient	377	836	21	60%	31%	9%
To be determined	2	NA	NA	NA	NA	NA
English proficiency unknown	6	NA	NA	NA	NA	NA
Intellectual disability	2,070	833	19	70%	26%	4%
Hearing impairment	51	844	19	43%	41%	16%
Speech or language impairment	95	849	13	34%	51%	16%
Visual impairment	39	821	24	79%	13%	8%
Emotional disturbance	33	842	19	58%	33%	9%
Orthopedic impairment	237	820	21	83%	16%	1%
Other health impairment	241	840	19	53%	38%	9%
Specific learning disability	357	852	14	28%	47%	24%
Deaf-blindness	5	NA	NA	NA	NA	NA
Multiple disabilities	315	817	22	85%	13%	2%
Autism	1,764	834	21	67%	25%	8%
Traumatic brain injury	24	843	24	46%	38%	17%
Not classified	1	NA	NA	NA	NA	NA
Not economically disadvantaged	1,948	830	22	71%	22%	6%
Economically disadvantaged	3,284	836	20	63%	30%	8%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	33	845	18	39%	42%	18%
Nonmigrant	5,199	834	21	66%	27%	7%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	17	833	20	65%	29%	6%
Asian (Primary ethnicity—Not economically disadvantaged)	223	832	23	70%	21%	9%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	8	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	134	831	21	71%	25%	4%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	632	830	22	71%	22%	7%
Black or African American (Primary ethnicity—Not economically disadvantaged)	152	828	22	68%	29%	3%
White (Primary ethnicity—Not economically disadvantaged)	690	831	21	72%	22%	6%
Two or more races (Primary ethnicity—Not economically disadvantaged)	92	827	22	75%	18%	7%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	22	839	22	50%	36%	14%
Asian (Primary ethnicity—Economically disadvantaged)	185	831	22	70%	23%	6%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	13	838	18	54%	46%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	45	831	21	76%	20%	4%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	2,208	836	20	62%	31%	7%
Black or African American (Primary ethnicity—Economically disadvantaged)	300	836	21	65%	25%	10%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	426	837	20	61%	28%	11%
Two or more races (Primary ethnicity—Economically disadvantaged)	85	840	20	49%	38%	13%

Table 7.D.14 Demographic Summary for Mathematics, Grade Eleven

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
All Valid Scores	4,496	934	20	66%	28%	6%
Male	2,878	934	20	64%	30%	6%
Female	1,618	932	20	69%	26%	5%
American Indian or Alaska Native	38	932	20	68%	29%	3%
Asian	340	930	21	71%	22%	6%
Native Hawaiian or Other Pacific Islander	29	936	18	55%	45%	0%
Filipino	150	933	22	65%	28%	7%
Hispanic or Latino	2,417	934	20	66%	29%	5%
Black or African American	402	934	21	67%	26%	7%
White	1,000	934	20	63%	30%	7%
Two or more races	120	932	21	68%	27%	5%
English only	2,638	933	20	66%	28%	6%
Initially fluent English proficient	82	927	23	76%	22%	2%
English learner	1,346	933	20	67%	28%	5%
Reclassified fluent English proficient	424	938	19	58%	34%	8%
To be determined	1	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA
Intellectual disability	1,937	933	19	70%	26%	4%
Hearing impairment	63	938	20	62%	27%	11%
Speech or language impairment	41	949	12	32%	59%	10%
Visual impairment	39	921	23	79%	18%	3%
Emotional disturbance	31	946	11	52%	39%	10%
Orthopedic impairment	291	923	22	80%	16%	3%
Other health impairment	202	943	18	42%	46%	12%
Specific learning disability	298	949	13	33%	51%	16%
Deaf-blindness	0	NA	NA	NA	NA	NA
Multiple disabilities	231	918	21	84%	15%	1%
Autism	1,328	935	20	65%	29%	6%
Traumatic brain injury	30	939	22	73%	17%	10%
Not classified	5	NA	NA	NA	NA	NA
Not economically disadvantaged	1,635	932	21	68%	27%	5%
Economically disadvantaged	2,861	935	20	65%	29%	6%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
Migrant	19	943	10	53%	47%	0%
Nonmigrant	4,477	934	20	66%	28%	6%
American Indian or Alaska Native (Primary ethnicity—Not economically disadvantaged)	13	931	22	62%	38%	0%
Asian (Primary ethnicity—Not economically disadvantaged)	184	932	22	68%	23%	9%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Not economically disadvantaged)	6	NA	NA	NA	NA	NA
Filipino (Primary ethnicity—Not economically disadvantaged)	108	932	21	67%	30%	4%
Hispanic or Latino (Primary ethnicity—Not economically disadvantaged)	504	931	20	69%	27%	4%
Black or African American (Primary ethnicity—Not economically disadvantaged)	130	933	21	65%	28%	6%
White (Primary ethnicity—Not economically disadvantaged)	623	932	21	67%	28%	5%
Two or more races (Primary ethnicity—Not economically disadvantaged)	67	931	22	70%	24%	6%
American Indian or Alaska Native (Primary ethnicity—Economically disadvantaged)	25	933	19	72%	24%	4%
Asian (Primary ethnicity—Economically disadvantaged)	156	929	21	76%	21%	3%
Native Hawaiian or Other Pacific Islander (Primary ethnicity—Economically disadvantaged)	23	941	12	52%	48%	0%
Filipino (Primary ethnicity—Economically disadvantaged)	42	935	23	62%	24%	14%
Hispanic or Latino (Primary ethnicity—Economically disadvantaged)	1,913	935	19	65%	29%	6%
Black or African American (Primary ethnicity—Economically disadvantaged)	272	934	22	68%	24%	7%

Student Group	Number Tested	Mean Scale Score	SD of Scale Scores	Percent in Achievement Level 1—Alternate	Percent in Achievement Level 2—Alternate	Percent in Achievement Level 3—Alternate
White (Primary ethnicity—Economically disadvantaged)	377	938	19	57%	34%	10%
Two or more races (Primary ethnicity—Economically disadvantaged)	53	934	20	66%	30%	4%

Chapter 8: Analyses

This chapter summarizes the item- and test-level statistics from the analyses conducted for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics administered during the 2016–17 California Assessment of Student Performance and Progress (CAASPP) administration.

8.1. Background

This chapter provides information on the psychometric analyses of the 2016–17 CAA operational data. It describes the data samples used for the statistical analyses and presents the results of the item and test analyses, such as classical item analyses, differential item functioning (DIF), and item calibration. It includes explanations for all statistical procedures implemented during the psychometric analyses, including item response theory (IRT) calibration, equating and scaling, reliability estimates, standard errors of measurement, and decision consistency and accuracy of the achievement-level classifications. Information on the procedures designed to ensure the validity of score uses and interpretations is also provided.

8.1.1. Summary of the Analyses

Each of these sets of analyses is presented in the body of the text and in the associated appendixes.

1. **Classical Item Analyses (IA).** Classical item analysis for the CAAs for ELA and mathematics is discussed in subsection *8.2 Classical Item Analysis Statistics*. Appendix 8.A presents results of the classical item analyses, including item difficulty indices, item-total correlation coefficient, and the distribution of score points for the dichotomous and polytomous items. In addition, the item type and associated item flags are also provided.
2. **Item Response Theory (IRT) Analyses.** IRT analyses, including calibration, equating and scaling for the CAAs for ELA and mathematics are elaborated in subsection *8.3 Item Response Theory (IRT) Analyses*. Appendix 8.B includes the scatterplots showing the relationship between 2015–16 item difficulty parameter estimates (*b*-value) and spring 2016–17 item difficulty parameter estimates (*b*-value) for the common item set after transforming the 2016–17 estimates onto the reference scale from the 2015–16 administration. Appendix 8.C includes summaries of the equated item difficulty parameter estimates (*b*-value) for all of the items in each test. For polytomous items, partial credit step values (*d*-values) are also provided.
3. **Omission and Completion Analyses.** The omit rate and item difficulty information for the CAAs for ELA and mathematics is presented in subsection *8.4 Omission and Completion Rates*, and the results of omission and completion analyses are presented in Appendix 8.D. These analyses examine whether the items with high omit rates are systematically more difficult than items with low omit rates. Table 8.D.17 through Table 8.D.24 in Appendix 8.D, and starting on page 394, present the total number of items answered by students in each performance level.
4. **Differential Item Functioning (DIF) Analyses.** DIF analysis for the CAAs for ELA and mathematics is described in subsection *8.5 Differential Item Functioning (DIF)*. Appendix 8.E presents the results of the DIF analyses for all items with sufficient student samples. The distributions of items across DIF categories are listed.

5. **Reliability Analyses.** Reliability estimation for the CAAs for ELA and mathematics is illustrated in subsection *8.6 Reliability Analyses*. Table 8.F.1 through Table 8.F.14 in Appendix 8.F provide results of the reliability analyses of total test scores for the population as a whole and for selected student groups of interest (e.g., gender, ethnicity, etc.). Table 8.F.15 through Table 8.F.28, starting on page 444, present the score conversion tables with the conditional standard errors of measurement (CSEM) for the reporting scale scores of each pathway. Table 8.F.29 through Table 8.F.56, starting on page 473, present statistics describing the decision accuracy and decision consistency of the performance classifications.
6. **Validity Evidence.** Validity evidence related to the CAAs for ELA and mathematics is discussed in subsection *8.7 Validity Evidence*. Table 8.G.1 through Table 8.G.4 in Appendix 8.G, starting on page 479, present distributions of the observed testing time to complete the total test for each content area. Table 8.G.5 through Table 8.G.11, starting on page 486, present correlations between ELA and mathematics scores calculated for all students and for demographic student groups of interest.

8.1.2. Samples for the Analyses

In general, analyses included in the technical report are based on all valid students' scores in the tested population. The actual data sample used depends on the time that data source becomes available as well as the information contained in the data in order to meet the analysis timeline.

The classical item analyses (Appendix 8.A), IRT analyses (Appendix 8.B and Appendix 8.C), and item-level DIF analyses (Appendix 8.E) were based on the data file available in early June 2017 (i.e., the analysis sample). All other analyses, such as the reliability analyses, used the final version of the production data file for student reports, which became available in October 2017. Both data sources include all valid student scores. A small number of student scores were excluded from the final production data as a result of the data validation process. Students who did not answered any items (non-completion) or answered fewer than four items (partial completion) were excluded from the analysis sample for both classical item analysis and item calibration. See subsection *7.1.1 Incomplete/ Complete Cases* for a list of cases where the tests are considered as "incomplete," and subsection *7.3.2 Special Cases* for a list of cases where the scores are not reported.

Table 8.1 shows small differences in student counts between the two data sources, i.e., the analysis sample and the final production data file. The sample data are representative of the population. Final production data files were received at a later time than the analysis sample and thus contained a larger number of students with more coverage of demographic student groups than the analysis sample.

Table 8.1 CAA 2016–17 Analyses Data Sources

Content Area/Grade	Analyses Sample Completers	Analyses Sample Partial Completers	Analyses Sample Non-Completers	Analyses Sample Total No. Tested	Final Data Completers	Final Data Partial Completers	Final Data Non-Completers	Final Data Total No. Tested
ELA 3	4,114	193	64	4,371	4,177	194	632	5,003
ELA 4	4,457	222	62	4,741	4,529	223	658	5,410
ELA 5	4,577	215	61	4,853	4,620	214	699	5,533
ELA 6	4,511	198	54	4,763	4,566	197	573	5,336
ELA 7	4,356	259	94	4,709	4,404	258	626	5,288
ELA 8	4,333	157	78	4,568	4,366	154	727	5,247
ELA 11	3,774	125	74	3,973	3,793	124	588	4,505
Mathematics 3	3,997	188	76	4,261	4,070	195	724	4,989
Mathematics 4	4,308	207	84	4,599	4,364	210	822	5,396
Mathematics 5	4,476	172	72	4,720	4,522	172	849	5,543
Mathematics 6	4,252	176	90	4,518	4,313	180	828	5,321
Mathematics 7	4,202	249	122	4,573	4,241	251	783	5,275
Mathematics 8	4,200	185	101	4,486	4,249	184	799	5,232
Mathematics 11	3,716	159	81	3,956	3,742	163	591	4,496

Note: Students who do not answer any items are considered "non-completers." Students who answer more than one item, but fewer than four items, are considered "partial completers." Students who answer at least four items are considered "completers."

8.2. Classical Item Analysis Statistics

Classical item analyses are conducted to evaluate the performance of all operational test items with respect to item difficulty, item discrimination, and student performance on key-based selected-response or dichotomous items and rubric-based constructed-response items or polytomous items. Due to the nature of the multistage test (MST) design, routing rules present the items in each Stage 2 module to a group of students instead of to all students. The combination of Stage 1 and Stage 2 modules produces multiple linear test forms. Pathways of these forms are provided in Table 4.1. As a result, item analyses must be conducted on each pathway.

8.2.1. Description of Classical Item Analysis Statistics

The classical item analyses include the computing of item difficulty indices and the item-total correlation indices. Flagging rules associated with these statistics identify items that are not performing as expected. The omit rate of each item, the proportion of test takers choosing each distractor, the correlation of each distractor with the total score, and the distribution of each score point for the polytomous items are also included in the classical item analyses. Some classical item analyses, such as item-total correlation and DIF analysis, require a criterion variable—typically, the total raw score. However, using the total raw score as a

criterion variable for the CAAs for ELA and mathematics is not possible because of the MST design, in which different students take different combinations of modules. To circumvent these issues and provide the best available criterion score, the student's theta score is used as the criterion score. Refer to subsection *8.3 Item Response Theory (IRT) Analyses*, which provides a description of the methods used to compute theta scores.

8.2.1.1. Classical Item Difficulty Indices (*p*-value and Average Item Score)

For dichotomous items, item difficulty is indicated by the *p*-value, which is the proportion of students who answer an item correctly. The range of *p*-values is from 0.00 to 1.00. Items with higher *p*-values are easier items; those with lower *p*-values are more difficult items. Dichotomous items are flagged for review if their *p*-values are above 0.95 (i.e., too easy) or below 0.33 (i.e., too difficult).

The formula for *p*-value for dichotomous item is:

$$p\text{–}value_{dich} = \frac{\sum X_{ic}}{N_i}, \tag{8.1}$$

See the Alternative Text for Equation 8.1 for a description of this equation.

where,

x_{ic} is the score received for a given dichotomous item i for student j, and

N_i is the total number of students who were presented with item i.

For polytomous items, difficulty is indicated by the average item score (AIS). The AIS can range from 0.00 to the maximum total possible points for an item. Desired AIS values for polytomous items generally fall within the range of 30 percent to 80 percent of the maximum obtainable item score; items with values outside this range are flagged for review. To facilitate interpretation, the AIS values for polytomous items are often expressed as the proportion of the maximum possible score, which is analogous to the *p*-values of dichotomous items.

For polytomous items, the *p-value* is defined as:

$$p\text{–}value_{poly} = \frac{\sum X_{ij}}{N_i \times Max(X_i)}, \tag{8.2}$$

See the Alternative Text for Equation 8.2 for a description of this equation.

where,

X_{ij} is the score received for a given polytomous item i for student j,

$Max\ (X_i)$ is the maximum score for item i, and

N_i is the total number of students who were presented with item i.

8.2.1.2. Item-Total Correlation

An item-total correlation describes the relationship between students' performance on a specific item and their performance on the total test.

In general, the item-total correlation ranges from –1.0 (for a perfect negative relationship) to 1.0 (for a perfect positive relationship). A relatively high positive item-total correlation is desired, as it indicates that students with higher scores on the test tended to perform better

on the item than students with lower test scores. A negative item-total correlation typically signifies a problem with the item, because it indicates that students with low scores on the test are getting higher scores on the item than students with high scores on the test.

Because the product-moment correlation is limited by the distributions of the variables being correlated, the item discrimination index used in these analyses is a variation of the biserial correlation (for dichotomous items) or the polyserial correlation (for polytomous items). This statistic is an estimate of the correlation between the criterion and an unobservable continuous variable assumed to determine performance on the item. The criterion—in this case, the student's theta score—is the ability value for which the expected total score is equal to the student's total score. The estimation formula is

$$r_{polyreg} = \frac{\hat{\beta} s_{tot}}{\sqrt{\hat{\beta}^2 s_{tot}^2 + 1}} \tag{8.3}$$

See the Alternative Text for Equation 8.3 for a description of this equation.

where,

s_{tot} is the standard deviation of the criterion (the students' theta scores), and

$\hat{\beta}$ is the estimated slope of the regression of the unobservable continuous variable (assumed to account for the item response) on the criterion.

There are as many regressions as the number of boundaries between item scores with all regressions for the same item sharing a common slope, *β*. For a polytomous item with *k* possible score values, there are *k*-1 regressions. Beta (*β*) is the slope for all *k*-1 regressions.

Desired values for this correlation are positive and larger than 0.20. Negative item-total correlations indicate that low-ability students obtain higher scores on the item than high-ability students, an indication that the scoring key may be incorrect. Items with item-total correlations below 0.20 were flagged for review.

Note that "not presented" items are treated as blank in the response data file.

8.2.1.3. Distribution of Item Scores

For polytomous items, examination of the distribution of scores helps to show how well the items performed. If no students receive the highest possible score, the item may not be functioning as expected. The item may be confusing, poorly worded, or just unexpectedly difficult; the scoring rubric may be flawed; and/or students may not have had the opportunity to learn the content tested by the item. If all or most students score at the extreme ends of the distribution—students receive either full credit or zero credit, but no partial credit—there may be problems with the item or the rubric.

Items with a low percentage (i.e., <1%) of students obtaining any possible item score were flagged. Such items may pose problems during the IRT calibrations. They need to be carefully reviewed and may need to be excluded from the item calibration analyses.

8.2.2. Summary of Classical Item Analysis Flagging Criteria

Items are flagged for review if the item analysis yields any of the following results:

1. The *p*-value is above 0.95 for dichotomous items or above 0.80 for polytomous items.

2. The *p*-value is below 0.33 for dichotomous items or below 0.30 for polytomous items.
3. Item-total correlation (r-polyserial) is below 0.20.
4. Among the highest-performing students (the top 20 percent), the number of students choosing any distractor is greater than the number choosing the key.
5. The omit rate is above 5 percent for dichotomous items or above 20 percent for polytomous items.

Also refer to Note 2 of Appendix 8.A for the flagging symbols, descriptions, and their criteria.

ETS's psychometric staff and content assessment development staff carefully reviewed each of the flagged items and summarized the results for the California Department of Education (CDE), with recommendations for subsequent analyses. These results are also entered into the item bank and used by the assessment development team for test assembly for future operational administrations.

8.2.3. Classical Item Analysis Results Summary

This subsection presents tables of the classical item analysis results for the 2016–17 test items. Table 8.2 and Table 8.3 present *p*-value and item-total correlation information by grade and subject for each module as well as the number of unique items in each test.

Detailed results of the item analyses for each item by grade and subject are presented in Appendix 8.A. The item statistics, including AIS, *p*-value, polyserial correlation, statistical flagging criteria, and item type are listed in those tables. The distribution of item scores on each polytomous item is presented in Table 8.A.15 through Table 8.A.28.

Table 8.2 Classical Item Statistics for Each Module for ELA

Module	No. of Unique Items	Max No. of Students	Mean *p*-value[a]	Minimum *p*-value	Maximum *p*-value	Mean Item-Total Polyserial Correlation
Grade 3 Total:	43	4,114	0.67	0.29	0.96	0.61
Grade 3 Stage 1 router	10	4,114	0.64	0.45	0.77	0.68
Grade 3 Stage 2 easy	15	1,955	0.59	0.29	0.77	0.56
Grade 3 Stage 2 moderate	15	933	0.75	0.57	0.96	0.62
Grade 3 Stage 2 hard	15	1,054	0.68	0.35	0.90	0.59
Grade 4 Total:	48	4,457	0.60	0.30	0.85	0.54
Grade 4 Stage 1 router	10	4,457	0.66	0.49	0.80	0.59
Grade 4 Stage 2 easy	15	1,502	0.50	0.31	0.69	0.53
Grade 4 Stage 2 moderate	15	1,427	0.66	0.46	0.85	0.61
Grade 4 Stage 2 hard	15	1,301	0.57	0.30	0.83	0.48

Module	No. of Unique Items	Max No. of Students	Mean *p*-value[a]	Minimum *p*-value	Maximum *p*-value	Mean Item-Total Polyserial Correlation
Grade 5 Total:	49	4,577	0.60	0.24	0.88	0.53
Grade 5 Stage 1 router	10	4,577	0.61	0.31	0.80	0.52
Grade 5 Stage 2 easy	15	1,722	0.54	0.24	0.75	0.54
Grade 5 Stage 2 moderate	15	1,882	0.68	0.41	0.88	0.57
Grade 5 Stage 2 hard	15	837	0.59	0.31	0.75	0.51
Grade 6 Total:	50	4,511	0.52	0.13	0.88	0.50
Grade 6 Stage 1 router	10	4,511	0.65	0.37	0.88	0.53
Grade 6 Stage 2 easy	15	1,026	0.41	0.13	0.69	0.51
Grade 6 Stage 2 moderate	15	1,409	0.56	0.37	0.78	0.47
Grade 6 Stage 2 hard	15	1,907	0.51	0.18	0.75	0.52
Grade 7 Total:	55	4,356	0.54	0.11	0.87	0.50
Grade 7 Stage 1 router	10	4,356	0.60	0.46	0.81	0.57
Grade 7 Stage 2 easy	15	1,669	0.44	0.29	0.76	0.48
Grade 7 Stage 2 moderate	15	1,885	0.64	0.22	0.87	0.54
Grade 7 Stage 2 hard	15	613	0.51	0.11	0.82	0.44
Grade 8 Total:	46	4,333	0.63	0.29	0.89	0.46
Grade 8 Stage 1 router	10	4,333	0.67	0.37	0.84	0.48
Grade 8 Stage 2 easy	15	2,522	0.55	0.31	0.72	0.42
Grade 8 Stage 2 moderate	15	1,428	0.65	0.34	0.89	0.50
Grade 8 Stage 2 hard	15	175	0.63	0.29	0.87	0.46
Grade 11 Total:	49	3,774	0.59	0.22	0.94	0.50
Grade 11 Stage 1 router	10	3,774	0.68	0.57	0.81	0.53
Grade 11 Stage 2 easy	15	1,187	0.47	0.22	0.73	0.51
Grade 11 Stage 2 moderate	15	2,214	0.68	0.45	0.94	0.49
Grade 11 Stage 2 hard	15	285	0.55	0.29	0.73	0.48

[a.] Each module is taken by different groups of students, so modules are not comparable

Table 8.3 Classical Item Statistics for Each Module for Mathematics

Module	No. of Unique Items	Max No. of Students	Mean *p*-value[a]	Minimum *p*-value	Maximum *p*–value	Mean item-total Polyserial Correlation
Grade 3 Total:	53	3,997	0.46	0.31	0.74	0.45
Grade 3 Stage 1 router	10	3,997	0.58	0.34	0.74	0.45
Grade 3 Stage 2 easy	15	1,040	0.44	0.31	0.71	0.49
Grade 3 Stage 2 moderate	15	1,561	0.44	0.31	0.64	0.46
Grade 3 Stage 2 hard	15	1,058	0.43	0.32	0.57	0.40
Grade 4 Total:	53	4,308	0.50	0.18	0.79	0.47
Grade 4 Stage 1 router	10	4,308	0.56	0.39	0.79	0.47
Grade 4 Stage 2 easy	15	1,774	0.46	0.24	0.69	0.43
Grade 4 Stage 2 moderate	15	1,757	0.54	0.36	0.79	0.60
Grade 4 Stage 2 hard	15	563	0.44	0.18	0.76	0.36
Grade 5 Total:	54	4,476	0.46	0.20	0.79	0.45
Grade 5 Stage 1 router	10	4,476	0.57	0.40	0.79	0.50
Grade 5 Stage 2 easy	15	1,597	0.46	0.26	0.66	0.46
Grade 5 Stage 2 moderate	15	1,695	0.45	0.25	0.67	0.52
Grade 5 Stage 2 hard	15	889	0.40	0.20	0.56	0.34
Grade 6 Total:	52	4,252	0.43	0.03	0.65	0.44
Grade 6 Stage 1 router	10	4,252	0.52	0.37	0.65	0.42
Grade 6 Stage 2 easy	15	1,688	0.43	0.35	0.57	0.43
Grade 6 Stage 2 moderate	15	1,709	0.42	0.20	0.62	0.52
Grade 6 Stage 2 hard	15	666	0.37	0.03	0.52	0.36
Grade 7 Total:	53	4,202	0.45	0.08	0.72	0.49
Grade 7 Stage 1 router	10	4,202	0.55	0.41	0.70	0.51
Grade 7 Stage 2 easy	15	861	0.43	0.22	0.56	0.49
Grade 7 Stage 2 moderate	15	1,818	0.46	0.08	0.72	0.52
Grade 7 Stage 2 hard	15	1,235	0.39	0.27	0.51	0.46
Grade 8 Total:	52	4,200	0.47	0.23	0.74	0.45
Grade 8 Stage 1 router	10	4,200	0.55	0.39	0.74	0.50
Grade 8 Stage 2 easy	15	1,194	0.42	0.26	0.54	0.49
Grade 8 Stage 2 moderate	15	1,843	0.45	0.23	0.63	0.47
Grade 8 Stage 2 hard	15	1,028	0.47	0.25	0.67	0.39

Module	No. of Unique Items	Max No. of Students	Mean *p*-value[a]	Minimum *p*-value	Maximum *p*–value	Mean item-total Polyserial Correlation
Grade 11 Total:	52	3,716	0.47	0.15	0.79	0.42
Grade 11 Stage 1 router	10	3,716	0.61	0.32	0.74	0.50
Grade 11 Stage 2 easy	15	1,070	0.41	0.27	0.58	0.43
Grade 11 Stage 2 moderate	15	942	0.43	0.15	0.79	0.44
Grade 11 Stage 2 hard	15	1,478	0.44	0.26	0.71	0.35

8.3. Item Response Theory (IRT) Analyses

IRT is built upon the item response function, which describes the probability of a given response as a function of a person's true ability. IRT can be used to implement item calibrations, link item parameters, and scale test scores across different forms or test administrations, evaluate item performance, build an item bank, and assemble test forms.

This section describes how IRT models are used in CAA tests for calibrating items, linking item parameters onto the reference scale (i.e., the 2015–16 baseline scale), and scaling the test scores from different forms onto a common scale so that they can be compared. The topics, such as IRT data file preparation and IRT model, are also covered in this section.

8.3.1. IRT Models

The one-parameter item response theory model (1PL-IRT) is used for the CAAs for ELA and mathematics item calibration and was selected in consultation with the CDE. In particular, the generalized partial credit model (GPCM) (Muraki, 1992) restricted for 1PL-IRT is applied to both dichotomous and polytomous items. The mathematical form of the GPCM is the following:

$$P_{ih}(\theta_j) = \begin{cases} \dfrac{\exp(\sum_{v=1}^{h} Da_i(\theta_j - b_i + d_{iv}))}{1 + \sum_{c=1}^{n_i} \exp(\sum_{v=1}^{c} Da_i(\theta_j - b_i + d_{iv}))}, & \text{if score } h = 1, 2, ..., n_i \\ \dfrac{1}{1 + \sum_{c=1}^{n_i} \exp(\sum_{v=1}^{c} Da_i(\theta_j - b_i + d_{iv}))}, & \text{if score } h = 0 \end{cases}, \quad (8.4)$$

See the Alternative Text for Equation 8.4 for a description of this equation.

where,

$P_{ih}(\theta_j)$ is the probability of student with proficiency θ_j obtaining score h on item i;

n_i is the maximum number of score points for item i;

a_i is the discrimination parameter and is fixed to 0.588 for every item;

b_i is the location parameter for item i;

d_{iv} is the category parameter for item i on score v; and

D is a scaling constant of 1.7 that makes the logistic model approximate the normal ogive model.

When $n_i = 1$, equation 8.4 becomes an expression of the 1-parameter logistic model for dichotomous items.

8.3.2. Equating

Equating the test forms from 2016–17 to the 2015–16 baseline scales was a new task in 2016–17. Equating is a procedure where test scores from different test forms that are assembled based on the same specifications are placed onto the reference scale so that scores from different test administrations can be compared directly. The 2016–17 CAAs for ELA and mathematics in grades three through eight and grade eleven are equated to a calibrated item pool for each grade using a common-item nonequivalent groups design (Kolen & Brennan, 2004). The "base," or "reference," calibrations for the CAA were established by analyses of samples of data from the 2015–16 administration, after which the test forms of the subsequent administrations could be linked to the reference scales through common items. The equating procedure for the CAAs for ELA and mathematics has three steps: item calibration, linking and scaling.

8.3.2.1. Item Calibration

After the 2016–17 CAA administration, the items of each test (grade and subject) were calibrated concurrently with previous items from that test, using all available data. Previous studies show that compared with separate calibration, concurrent calibration is more accurate when the data fit the item response theory (IRT) model (Kim & Cohen, 1998; Hanson & Béguin, 2002). In consultation with the CDE and its CAASPP Technical Advisory Group, a single-group concurrent calibration approach is used for item calibration of the CAAs for ELA and mathematics.

The 10 operational items in the router at Stage 1 serve as common items between the pathways for the concurrent calibration. The nonanchor operational items in the three Stage 2 modules, as well as the embedded field-test items are calibrated onto the existing IRT scale in this concurrent calibration. Refer to *4.2.2. English Language Arts/Literacy and Mathematics Test Design* in *Chapter 4: Test Assembly* for the distributions of these items in modules. As stated in subsection *8.3.1 IRT Models*, the one-parameter logistic (1PL) model (Hambleton, Swaminathan, & Rogers, 1991) and the corresponding general partial credit model (GPCM) (Muraki, 1992) are jointly used to concurrently calibrate dichtomously and polytomously scored items. The software flexMIRT® (Cai, 2016) version 3.0 is used for calibration.

8.3.2.1.1 Data Preparation

Prior to IRT calibration analyses, ETS psychometricians review the results of the classical item analyses to decide whether any items are of poor quality and need to be removed from calibration. The results are also reviewed by ETS content experts and the CDE. The decision to remove items from calibration were made in consultation with the CDE. For the 2016–17 administration of the CAAs for ELA and mathematics, no items were excluded from the calibration analyses.

For IRT calibration, scored item response data are used to create the IRT analysis input data files for each grade and content area, including responses to items during both Stage 1 and Stage 2. For each possible form (i.e., pathway), there are 28 items in total, with 13 items from Stage 1 and 15 items from Stage 2. The IRT analysis input data file is a sparse matrix, because each student completed only one of the four possible forms (refer to Table 4.1 for the list of forms). Similar to the classical item analyses, “omit” items are treated as incorrect and “not-presented” items are treated as blank.

8.3.2.1.2 Description of the Calibration Procedure

FlexMIRT® (Cai, 2016), a multilevel and multiple-group IRT software package for item analysis and test scoring, is used for CAA item calibration analysis. FlexMIRT is used because it is known as one of the most flexible IRT software programs, which can fit a variety of IRT models onto both single-level and multilevel data. In addition, flexMIRT can be used for item calibration of mixed item formats consisting of dichotomous and polytomous items.

The calibration procedure used by FlexMIRT is as follows:

1. Receive test form planners and create the item mapping files.
2. Receive data.
3. Run complete item analysis and create the sparse matrices.
4. Create the item analysis summary information workbooks.
5. Create the flexMIRT control files.
6. Run FlexMIRT and evaluate the results.

The procedure described here was followed to calibrate the 2016–17 student response data using flexMIRT for each grade and subject.

1. Prepare and format the input data files as required by flexMIRT.
2. Prepare flexMIRT control files and specify the IRT models and analyses. The 1PL-IRT and the corresponding partial credit model are used.
3. Evaluate the flexMIRT output to examine whether every execution of flexMIRT analysis reaches satisfactory convergence.
4. Review the item parameter estimates to examine whether these estimates are reasonable.
    a. At the form level, the summary statistics for the *b*-parameter estimates (location difficulty) and *d*-parameter estimates (step difficulty) are examined, including the mean, standard deviation, median, minimum, maximum, and goodness-of-fit.
    b. At the item level, statistics of individual items are examined, including item difficulty estimates, model-fit statistics, and the order-of-step parameters.

5. Items that do not perform as expected are flagged. All flagged items are discussed thoroughly with the CDE to decide whether those items should be removed from calibration or whether the scoring categories need to be collapsed.

As a result of consultation with the CDE, no items used during the 2016–17 CAA administration were removed from the analysis and no categories were collapsed.

The calibration process was paralleled by two ETS psychometricians to ensure quality and accuracy of results. Specifically, two psychometricians independently created flexMIRT control files and ran the same input data files and compare the results. Any differences in the output were discussed and resolved. Refer to subsection *9.3 Quality Control of Psychometric Processes* for more details of this procedure.

8.3.2.2. Linking the Item Parameters

The new items in the 2016–17 CAA tests for grades three through eight and grade eleven are linked to a calibrated item pool using a common-item nonequivalent groups design (Kolen & Brennan, 2004). The “base” or “reference” scales for the CAA were established by analyses samples of data from the 2015–16 administration. The 2016–17 items were placed on the reference 2015–16 scale by using a set of linking items (i.e., anchor set) selected from the 2015–16 calibrated item pool and readministrated in 2016–17 for each grade.

After IRT calibration was performed with the 2016–17 items, the complete set of anchor items was used to calculate the linking constants to place the 2016–17 items parameters onto the 2015–16 scale by using the mean-to-mean method described in the next subsection. The linking process was carried out iteratively by inspecting differences between the transformed new and reference estimates for the anchor items and by removing items for which the item difficulty estimates changed significantly; this is called the robust-z procedure. Robust-z is also described in more detail in a subsequent subsection.

8.3.2.2.1. Mean-to-Mean Transformation

The item difficulty estimates from the 2016–17 calibration may not be comparable to those from the 2015–16 calibration. The 2016–17 difficulty estimates need to be transformed onto the reference scale in order to make them comparable to the 2015–16 estimates. The anchor items included in both calibrations, 2015–16 and 2016–17, provided the data needed to determine this transformation.

The mean-to-mean transformation assumes the 2015–16 and 2016–17 difficulty values differ by a constant; that is, the 2015–16 and 2016–17 difficulty values can be made comparable by adding the same number for all items. If this assumption is correct, that number is the difference between the means of the 2015–16 and 2016–17 difficulty values for the anchor items.

An iterative procedure is implemented to calculate the linking constants using common items across 2015–16 administration and 2016–17 administration. For each iteration of linking constants computation, the procedure described in subsection *8.3.2.2.2 Robust-Z Procedure* is intended to inspect the differences between the transformed new (2016–17) and reference estimates (2015–16) for the anchor items, and removing anchor items for which the item difficulty estimates changed significantly.

There are nine steps involved in making mean-to-mean transformation.

1. Identify the anchor items between the 2015–16 administration and 2016–17 administration.

2. Obtain the item difficulty parameters (*b*-values) of these anchor items from the 2015–16 administration which are on the reference scale.
3. Obtain the item difficulty parameters (*b*-values) of these anchor items from the calibration of the 2016–17 administration.
4. Calculate the average item difficulty for the anchor set on the reference scale.
5. Calculate the average item difficulty for the anchor set from the calibration from the 2016–17 administration.
6. Obtain the transformation constant by taking the difference between the two average item difficulties (*b*-values), using the average item difficulty for the anchor set on the reference scale subtracting the average item difficulty for the anchor set from the calibration of the 2016–17 administration.
7. Obtain a set of adjusted item difficulty parameters (*b*-values) by applying the linking constant to the item difficulty parameters of the anchor items from the 2016–17 administration. For the first iteration, the anchor set includes all anchor items; while for the following iterations, the anchor set includes the remaining anchor items.
8. Remove anchor items by following the procedure as described in subsection *8.3.2.2.2 Robust-Z Procedure*. For the first iteration, the anchor set includes all anchor items, while for the following iterations, the anchor set includes the remaining anchor items after removing unstable anchors one-by-one.
9. Repeat steps 1 through 8 until no more items are identified with significant differences between the adjusted new and reference item difficulty parameter values.

Table 8.4 shows a summary of the procedure described previously, which includes the number of anchor items at the beginning, the number of anchor items that are removed as a result of mean-to-mean transformation and robust-z procedure, the remaining anchor items, and the linking constants of the final iteration of each test.

Table 8.4 Final Linking Summary

Content Area/Grade	Number of Items in Initial Anchor Set	Number of Items Removed from the	Number of Items in Final Linking Set	Linking Constant
ELA 3	25	0	25	0.1477
ELA 4	29	5	24	0.1244
ELA 5	26	5	21	0.0681
ELA 6	28	5	23	0.0108
ELA 7	34	4	30	-0.0454
ELA 8	27	5	22	0.1105
ELA 11	28	5	23	0.1424

Content Area/Grade	Number of Items in Initial Anchor Set	Number of Items Removed from the	Number of Items in Final Linking Set	Linking Constant
Mathematics 3	33	6	27	0.0228
Mathematics 4	32	6	26	0.0273
Mathematics 5	31	6	25	0.0110
Mathematics 6	33	6	27	0.0562
Mathematics 7	31	6	25	0.0077
Mathematics 8	29	5	24	0.0313
Mathematics 11	28	5	23	0.0013

Table 8.5 presents the summary statistics of the final equating/linking results after items with unstable parameters are detected and removed from the anchor set. The statistics provided include the number of the remaining items in the final anchor set, the minimum, maximum and the average of the item difficulty parameters of the anchor set in the 2015–16 administration, the minimum, maximum, and the average of the equated/linked item difficulty parameters of the 2016–17 administration, the difference between the average item difficulty in 2015–16, and the average equated item difficulty in 2016–17, as well as the criteria for judging the differences, the reference of which is available in subsection *8.3.2.2.2 Robust-Z Procedure*.

Table 8.5 Equated Item Parameter Results

Content Area/Grade	N items	2015–16 baseline scale Average b-parameter	2015–16 baseline scale Minimum b-parameter	2015–16 baseline scale Maximum b-parameter	Equated item parameters of 2016–17 Average b-parameter	Equated item parameters of 2016–17 Minimum b-parameter	Equated item parameters of 2016–17 Minimum *b*-parameter Maximum b-parameter	Difference of Average b-parameters	Criteria for the acceptable difference
ELA 3	25	-0.762	-1.601	0.817	-0.762	-1.825	1.287	0.000	< 0.1
ELA 4	29	-0.259	-1.532	1.140	-0.326	-1.624	1.160	0.066	< 0.1
ELA 5	26	-0.200	-1.270	1.040	-0.256	-1.686	1.497	0.056	< 0.1
ELA 6	28	-0.285	-2.022	0.933	-0.324	-1.715	1.191	0.038	< 0.1
ELA 7	34	-0.034	-1.819	2.334	-0.086	-1.909	2.531	0.052	< 0.1
ELA 8	27	-0.288	-2.065	1.005	-0.308	-1.684	1.507	0.020	< 0.1

Content Area/Grade	N items	2015–16 baseline scale Average b-parameter	2015–16 baseline scale Minimum b-parameter	2015–16 baseline scale Maximum b-parameter	Equated item parameters of 2016–17 Average b-parameter	Equated item parameters of 2016–17 Minimum b-parameter	Equated item parameters of 2016–17 Minimum *b*-parameter Maximum b-parameter	Difference of Average b-parameters	Criteria for the acceptable difference
ELA 11	28	-0.341	-1.402	0.972	-0.330	-1.589	1.534	-0.010	< 0.1
Mathematics 3	33	0.205	-1.043	1.159	0.234	-1.091	1.351	-0.029	< 0.1
Mathematics 4	32	0.260	-1.096	1.270	0.193	-1.374	1.355	0.066	< 0.1
Mathematics 5	31	0.115	-1.066	1.209	0.153	-1.201	1.781	-0.038	< 0.1
Mathematics 6	33	0.283	-0.629	1.377	0.249	-0.609	1.356	0.034	< 0.1
Mathematics 7	31	0.065	-0.619	0.803	0.081	-0.750	0.918	-0.015	< 0.1
Mathematics 8	29	0.208	-0.853	1.941	0.241	-1.124	1.949	-0.034	< 0.1
Mathematics 11	28	0.024	-1.131	1.105	0.042	-1.106	1.262	-0.018	< 0.1

For the 2016–17 CAA administration, 20 embedded field-test items were administered for each content and grade. The field-test items were included in 2016–17 item concurrent calibration with the operational items. All field-test item parameters were then equated to the 2015–16 base scale by applying the linking constants in Table 8.4.

8.3.2.2.2. Robust-Z Procedure

To take into account the possibility that one or more anchor items might not meet the assumption of a common 2015–16/2016–17 difficulty difference for all items, ETS identified those items, removed them from the analysis, and re-estimated the difficulty difference. The procedure for identifying those anchor items was an outlier detection procedure based on the “robust-z” statistic (Huynh, 2000; Huynh & Rawls, 2009). In this application, robust-z was applied to the distribution of the 2015–16/2016–17 difficulty difference for the anchor items.

$$z = \frac{|D - Md_D|}{0.74 \times IQR} \tag{8.5}$$

See the Alternative Text for Equation 8.5 for a description of this equation.

where,

D is the difference between the reference and transformed new item difficulty of an anchor item,

Md_D is the median of a distribution of D for all anchor items, and

IQR is the interquartile range of a distribution of D for all anchor items, which is defined as the difference between the third quartile (Q3) and the first quartile (Q1) when all the D values are rank-ordered.

A large value of this statistic for any anchor item indicates that the 2015–16/2016–17 difficulty difference for that item differed substantially from the 2015–16/2016–17 difficulty differences of the other anchor items.

The criterion for removing anchor items is that the robust-z value is greater than 1.645. One anchor item is removed at each iteration of item inspection. The following criteria are evaluated after each iteration:

- The correlation between the 2015–16 and 2016–17 difficulty estimates for the anchor sets should be no less than .95
- The ratio of standard deviations of the 2015–16 and 2016–17 difficulty estimates for the anchor items should be between .95 and 1.1

After each iteration, the mean difficulty difference of the anchor sets between the 2015–16 and the 2016–17 administrations was recomputed from the remaining anchor items. In addition, to evaluate the stability of anchor item difficulty levels, several drag-and-drop items that did not function as expected during the spring 2017 administration in relation to the spring 2016 administration were ultimately removed from the anchor item set. Finally, ETS discussed the psychometric characteristics of the final anchor item set with the CDE and received approval from the CDE. Removed anchor items are not used to generate the linking constants but are still included in calibration and deriving raw-to-theta conversions.

Figure 8.B.1 through Figure 8.B.14 in Appendix 8.B provide scatterplots that show the relationship between two sets of item parameters from 2015–16 and 2016–17 calibrations for the anchor set. The scatterplots of the removed anchor items are also included.

8.3.2.3. Scaling the Scores

The number-correct scores (raw scores) on each new form are transformed to scale scores on the reference scale (i.e., the 2015–16 baseline scale) by a three-step procedure. First, the new item difficulty estimates for each test are transformed to the reference year scale, as described in subsection *8.3.2.2.1 Mean-to-Mean Transformation*. Then, the new form number-correct scores (raw scores) are transformed to ability (theta) scores on the reference scale by the inverse test characteristic curve procedure described in subsection 8.3.2.3.1. Finally, these ability (theta) scores are transformed to scale scores through the linear transformation described in subsection 8.3.2.3.2. The requirements that are particularly applied to the CAA reporting scale are also listed in subsection 8.3.2.3.3.

8.3.2.3.1. Inverse Test Characteristic Curve (TCC) Procedure

After all the item difficulty estimates are transformed to the reference scale derived from the 2015–16 administration, students' overall ability estimates can be derived from the input data file that was described in subsection *8.3.2.1.1 Data Preparation*, through the IRT inverse TCC method (Stocking, 1996). This method transforms the sum of the student's item scores into an ability estimate. That estimate is the value that makes the sum of the expected scores on the items administered to the student equal to the sum of the scores that the student actually received on those items.

The TCC expresses the expected total score on a set of items as a function of the student's ability, which is shown in Equation 8.6:

$$\xi(\theta) = \sum_{i=1}^{ndich} P_i(\theta) + \sum_{j=1}^{npoly} \sum_{x=1}^{m} s_{xj} P_{xj}(\theta) \tag{8.6}$$

See the Alternative Text for Equation 8.6 for a description of this equation.

where,

ndich is the number of dichotomous items in the test,

$P_i(\theta)$ is the probability of a correct response to item i at ability θ on the dichotomous item in Equation 8.4,

npoly is the number of polytomous items in the test,

m is the number of score categories for each polytomous item,

s_{xj} is the value for score category x for the polytomous item j,

$Pxj(\theta)$ is the probability that an examinee with ability θ obtains score s_x on the polytomous item j in Equation 8.4, and

$\xi(\theta)$ is the corresponding expected total score.

8.3.2.3.2. Transformation from Theta Scores to Scale Scores

Students' ability estimates (theta scores) were expressed in the scale score metric by applying the appropriate linear transformation with the applicable slope and intercept for each CAA form as described by Equation 8.7. The scale score transformations are integrated with the scale score threshold for Level 2 and Level 3 that were approved by California State Board of Education (SBE) after standard setting. Table 6.2 on page 88 and Table 6.3 on page 89 show the standard setting threshold scores.

$$Scale\ Score = Intercept + Slope \times \hat{\theta} \tag{8.7}$$

where,

$\hat{\theta}$ represents student ability.

See the Alternative Text for Equation 8.7 for a description of this equation.

The slope and intercept are calculated in equations 8.8 and 8.9 for the Level 2—Alternate and Level 3—Alternate thresholds that were set as 45 and 60, respectively.

$$\text{Slope} = \frac{60-45}{\hat{\theta}_{Level3} - \hat{\theta}_{Level2}} \tag{8.8}$$

See the Alternative Text for Equation 8.8 for a description of this equation.

$$\text{Intercept} = 60 - \hat{\theta}_{Level3} \times \left(\frac{60-45}{\hat{\theta}_{Level3} - \hat{\theta}_{Level2}} \right) \tag{8.9}$$

See the Alternative Text for Equation 8.9 for a description of this equation.

where,

$\hat{\theta}_{Level3}$ represents the threshold score for Level 3—Alternate on the theta scale, and

$\hat{\theta}_{Level2}$ represents the threshold score for Level 2—Alternate on the theta scale.

The slopes and intercepts for each grade and content are shown in Table 8.6. Also refer to subsection *7.1.3 Scale Scores for the Total Assessment* for the special requirements for the CAA reporting scale.

Table 8.6 Slopes and Intercepts That Convert Theta Score to Reporting Scale Scores

Content Area/Grade	Threshold Theta Score for Level 2—Alternate	Threshold Theta Score for Level 3—Alternate	Reporting Scale Score for Level 2—Alternate	Reporting Scale Score for Level 3—Alternate	Slope	Intercept
ELA 3	-0.2	0.8	45	60	15.00	48.0
ELA 4	0.0	1.0	45	60	15.00	45.0
ELA 5	0.0	1.0	45	60	15.00	45.0
ELA 6	0.0	1.2	45	60	12.50	45.0
ELA 7	0.0	1.0	45	60	15.00	45.0
ELA 8	-0.2	1.0	45	60	12.50	47.5
ELA 11	-0.2	1.0	45	60	12.50	47.5
Mathematics 3	0.2	1.0	45	60	18.75	41.3
Mathematics 4	0.2	1.0	45	60	18.75	41.3
Mathematics 5	0.2	1.0	45	60	18.75	41.3
Mathematics 6	0.2	1.0	45	60	18.75	41.3
Mathematics 7	0.2	1.0	45	60	18.75	41.3
Mathematics 8	0.2	1.0	45	60	18.75	41.3
Mathematics 11	0.2	1.0	45	60	18.75	41.3

The 2016–17 student ability estimates that are derived from the IRT models using the equated item parameters are converted to the established score scales using the procedures and conversion constants described previously. The scale scores can be found through the raw-to-scale score conversion tables presented in Table 7.B.1 through Table 7.B.14 in Appendix 7.B.

8.3.3. Summaries of Equated IRT b-Parameters

Once the 2016–17 IRT *b*-parameters are placed on the 2015–16 baseline scale for CAAs in all grade levels for ELA and mathematics, analyses are performed to assess the overall test difficulty and the distribution of item difficulty.

The overall summary of the equated IRT *b*-value estimates for 2016–17 CAAs for ELA and mathematics calibration is shown in Table 8.7. The mean, standard deviation (SD), minimum, and maximum values are presented, in addition to the number of items for each test.

Table 8.7 IRT Equated Parameter Estimates for All ELA and Mathematics Items

Content Area/Grade	Number of Items	Average of *b*-value	SD *b*-value	Minimum *b*-value	Maximum *b*–value
ELA 3	58	-0.5103	0.7821	-1.8255	1.3158
ELA 4	63	-0.1880	0.6824	-1.6244	1.1600
ELA 5	64	-0.3682	0.8385	-1.6857	1.4970
ELA 6	65	-0.1266	0.8128	-1.7151	2.1512
ELA 7	69	-0.1618	0.8582	-1.9090	2.5313
ELA 8	61	-0.3070	0.7979	-1.7319	1.8404
ELA 11	64	-0.0628	0.8529	-1.5894	2.0384
Mathematics 3	68	0.3043	0.6670	-1.3023	2.5491
Mathematics 4	68	0.2860	0.7877	-1.3743	2.7705
Mathematics 5	69	0.2955	0.8122	-1.3863	2.6024
Mathematics 6	67	0.4238	0.6704	-0.6092	3.5589
Mathematics 7	68	0.1981	0.7117	-1.1962	3.2705
Mathematics 8	67	0.2627	0.7799	-1.3928	2.7478
Mathematics 11	67	0.1521	0.7245	-1.1060	2.3065

Table 8.C.1 through Table 8.C.14 in Appendix 8.C provide the equated IRT difficulty and step parameter estimates at the item level for each grade level for ELA and mathematics. Table 8.C.15 on page 346 and Table 8.C.16 on page 348 present the summary statistics (i.e., mean, SD, minimum, maximum, and median) of the IRT *b*-values for all items in the test and also present the summary statistics of equated IRT *b*-value by tier level (see subsection *4.2.1.1 Tiered Items* for discussion of tier levels). In addition, the distributions of the equated IRT *b*-values of all operational items and embedded field-test items conditional on test stage and item tier level are provided in Table 8.C.17 through Table 8.C.30, which start on page 350.

8.3.4. Evaluation of Equating

As described in subsection *8.3.2 Equating*, calibrations for the 2016–17 CAAs for ELA and mathematics were linked to the reference scale of 2015–16 through mean-to-mean transformation. To evaluate the equating procedures, two indices were used for CAA: the ratio of the standard deviations (RSD) of the two sets of item difficulty estimates for the anchor items (i.e., the 2015–16 and 2016–17 estimates), and the correlation (CORR) between the two sets of item difficulty estimates for the anchor items (Huynh, 2009). If the correlation (CORR) is at least 0.95 and the RSD is between 0.9 and 1.1, the equating results are considered acceptable and all anchor items are regarded as stable in the linking process.

Table 8.8 presents the number of anchor items at the beginning of equating, the number of items removed from the anchor set, the correlation between the final set of the transformed new (2016–17) and reference (2015–16) difficulty estimates for the anchor items, and the RSD between final set of the transformed new (2016–17) and reference (2015–16) item parameters for anchor items.

Table 8.8 Evaluation of Anchor Set (Common Items) Between 2016–17 and 2015–16

Content Area/Grade	Number of Items in Initial Equating Set (Anchor Set)	Number of Items Removed from the Equating Set	Number of Items in Final Equating Set	Correlation Between 2015–16 Item Parameters and 2016–17 Item Parameters	RSD* of Item Parameters Between 2015–16 and 2016–17
ELA 3	25	0	25	0.95	0.86
ELA 4	29	5	24	0.98	1.00
ELA 5	26	5	21	0.97	0.87
ELA 6	28	5	23	0.98	0.93
ELA 7	34	4	30	0.96	0.91
ELA 8	27	5	22	0.98	1.02
ELA 11	28	5	23	0.89	0.93
Mathematics 3	33	6	27	0.99	0.97
Mathematics 4	32	6	26	0.94	0.97
Mathematics 5	31	6	25	0.98	0.91
Mathematics 6	33	6	27	0.99	1.05
Mathematics 7	31	6	25	0.95	0.87
Mathematics 8	29	5	24	0.98	0.92
Mathematics 11	28	5	23	0.97	0.98

8.4. Omission and Completion Rates

8.4.1. Omit Rates

For both dichotomous and polytomous items, examining item omission and completion is useful for identifying potential problems with test features such as testing time and item/test layout. Typically, given that students have an adequate amount of testing time, approximately 95 percent of students should attempt to answer each question on the test. Two types of missing responses are possible for CAAs for ELA and mathematics:

1. An item is considered “omit”: An item that has been seen but has not been answered (i.e., left blank) in the middle of an administered assessment wherein the student has viewed and responded to successive items.
2. An item is considered “not presented” or “omitted-by-design”: A set of items that are not presented to the student. For example, students may experience significant cognitive challenges on the Stage 1 items and finish the test at the end of Stage 1 without moving on to Stage 2. For these early exit cases, all items in Stage 2 are “not presented” and treated as incorrect when calculating an overall score.

Table 8.D.1 through Table 8.D.14 in Appendix 8.D provide the item omit rates. Overall, students assigned to the easy Stage 2 module had higher omit rates on items administered to them than students assigned to other modules had on their items. This pattern suggests that students with the most severe cognitive disabilities experienced significant challenges completing a version of the CAA that consisted primarily of the most accessible content.

The items with high omit rates were flagged. Omit rates for polytomous items tended to be higher than for dichotomous items. Overall, the omit rate for flagging individual items was 5 percent for selected-response items and 20 percent for constructed-response items. An omit response was scored as zero and was included in the N-count for that item (i.e., the number of students who answered the item) when calculating item statistics. A response that is considered omit-by-design was not scored and not included in the N-count for the item.

Table 8.D.1 through Table 8.D.14 present the relationship between the omit rate and IRT item difficulty for each item. Table 8.D.15 and Table 8.D.16 present the average number of omitted items for each form and the number of items in each module for each form.

8.4.2. Completion Rates

Completion rates indicate the proportion of students who complete a certain number of items on the test. A student's record for the test is not considered complete unless the student answered at least four items.

Table 8.D.17 through Table 8.D.24 present the distribution of total number of answered items by performance level. Most students answered all 28 items, including the three embedded field-test items.

8.5. Differential Item Functioning (DIF)

DIF analyses were conducted for 2016–17 CAA items with sufficient sample sizes. The sample size requirements for the DIF analyses were 400 in the combined focal and reference groups and 100 in the smaller of the two groups. These sample sizes are based on standard operating procedures with respect to DIF analyses at ETS.

If an item performs differentially across identifiable student groups—e.g., gender or ethnicity—when students are matched on ability, the item may be measuring something other than the intended construct (i.e., possible evidence of DIF). It is important, however, to recognize that item performance differences flagged for DIF might be related to actual differences in relevant knowledge or skills (i.e., item impact) or statistical Type I error, which might falsely assert DIF exists for an item. As a result, DIF statistics are used to identify *potential* item bias. Subsequent reviews by content experts and bias/sensitivity experts are required to determine the source and meaning of performance differences.

8.5.1. Dichotomous Items

The Mantel-Haenszel (MH) DIF statistic was calculated for dichotomous items (Mantel & Haenszel, 1959; Holland & Thayer, 1985). Using the IRT theta score as the criterion score, students in each theta score category in the focal group (e.g., females) are compared with examinees in the same theta score category in the reference group (e.g., males). The common odds ratio is estimated across all categories of matched student ability using the formula in Equation 8.10 (Dorans & Holland, 1993). The resulting estimate is interpreted as the relative likelihood of success on a particular item for members of two groups when matched on ability.

$$\alpha_{MH} = \frac{\left(\sum_m R_{rm} \frac{W_{fm}}{N_{tm}}\right)}{\left(\sum_m R_{fm} \frac{W_{rm}}{N_{tm}}\right)} \tag{8.10}$$

See the Alternative Text for Equation 8.10 for a description of this equation.

where,

m = the number of score categories,

R_{rm} = the number of students in the reference group who answer the item correctly,

W_{fm} = the number of students in the focal group who answer the item incorrectly,

R_{fm} = the number of students in the focal group who answer the item correctly,

W_{rm} = the number of students in the reference group who answer the item incorrectly, and

N_{tm} = the total number of students.

To facilitate the interpretation of MH results, the common odds ratio is frequently transformed to the delta scale using the following formula (Holland & Thayer, 1988):

$$\text{MH D-DIF} = -2.35 \ln\left[\alpha_{MH}\right] \tag{8.11}$$

See the Alternative Text for Equation 8.11 for a description of this equation.

Positive values indicate DIF in favor of the focal group—i.e., positive DIF items are differentially easier for the focal group—whereas negative values indicate DIF in favor of the reference group (i.e., negative DIF item are differentially easier for the reference group).

8.5.2. Polytomous Items

The standardization DIF (Dorans & Schmitt, 1993; Zwick, Thayer & Mazzeo, 1997; Dorans, 2013), in conjunction with the Mantel chi-square statistic (Mantel, 1963; Mantel & Haenszel, 1959), is used to identify polytomous items with DIF. The standardized mean difference (SMD) compares the item means of the two groups after adjusting for differences in the distribution of students across the values of the matching variable and is calculated using the following formula:

$$SMD = \frac{\sum_{m=1}^{M} N_{fm} \times E_f(Y \mid X = m)}{\sum_{m=1}^{M} N_{fm}} - \frac{\sum_{m=1}^{M} N_{fm} \times E_r(Y \mid X = m)}{\sum_{m=1}^{M} N_{fm}} = \frac{\sum_{m=1}^{M} D_m}{\sum_{m=1}^{M} N_{fm}} \tag{8.12}$$

See the Alternative Text for Equation 8.12 for a description of this equation.

where,

X = the criterion score,

Y = the item score,

M = the number of score categories on X,

N_{rm} = the number of students in the reference group in score category m,

N_{fm} = the number of students in the focal group in score category m,

E_r = the expected item score for the reference group, and

E_f = the expected item score for the focal group.

A positive SMD value means that, conditional on the criterion score, the focal group has a higher mean item score than the reference group. In contrast, a negative SMD value means that, conditional upon the criterion score, the focal group has a lower mean item score than the reference group.

8.5.3. Classification

Based on the DIF statistics and significance tests, items are classified into three categories and assigned values of A, B, or C. Category A items contain negligible DIF, Category B items exhibit slight to moderate DIF, and Category C items possess moderate to large DIF values.

The flagging criteria for dichotomous items are presented in Table 8.9; the flagging criteria for polytomous items are provided in Table 8.10.

Table 8.9 DIF Categories for Dichotomous Items

DIF Category	Criteria
A (negligible)	• Absolute value of MH D-DIF is not significantly different from zero, or is less than one. • Positive values are classified as “A+” and negative values as “A-.”
B (moderate)	• Absolute value of MH D-DIF is significantly different from zero but not from one, and is at least one; OR • Absolute value of MH D-DIF is significantly different from one, but is less than 1.5. • Positive values are classified as “B+” and negative values as “B-.”
C (large)	• Absolute value of MH D-DIF is significantly different from one, and is at least 1.5. • Positive values are classified as “C+” and negative values as “C-.”

Table 8.10 DIF Categories for Polytomous Items

DIF Category	Criteria
A (negligible)	• Mantel Chi-square *p value* > 0.05 or |SMD/SD| ≤ 0.17
B (moderate)	• Mantel Chi-square *p value* < 0.05 or 0.17< |SMD/SD| ≤ 0.25
C (large)	• Mantel Chi-square *p value* < 0.05 or |SMD/*SD*| > 0.25

Note: *SMD* = standardized DIF; SD = total group standard deviation of item score.

DIF analyses were conducted on each test for designated comparison groups defined on the basis of demographic variables, including gender, race/ethnicity, and primary disabilities. These comparison groups are specified in Table 8.11.

Table 8.11 Student Groups for DIF Comparison

DIF Type	Reference Group	Focal Group
Gender	Male	• Female
Race/Ethnicity	White	• American Indian or Alaska Native * • Asian • Black or African American • Filipino • Hispanic or Latino • Native Hawaiian or Other Pacific Islander * • Two or more races
Disability	Intellectual Disability	• Autism • Deaf-blindness * • Emotional disturbance * • Hearing Impairment * • Multiple disabilities • Orthopedic impairment • Other health impairment • Specific learning disability • Speech or language impairment • Traumatic brain injury * • Visual Impairment*

* DIF analysis was not performed due to insufficient sample sizes.

The DIF results can be found in Appendix 8.E. In the DIF results tables, data in the *N* column show the number of item occurrences with sufficient sample sizes to be included in DIF analyses. In addition, "–" indicates that the DIF analysis did not classify any items in the particular DIF category, while "NA" indicates that the DIF analysis was not performed due to insufficient sample size. Note that "NA" occurs mostly for items at Stage 2 due to the small sample sizes for easy and hard modules at Stage 2.

8.6. Reliability Analyses

Reliability is the extent to which differences in test scores reflect true differences in the knowledge, ability, or the skill being tested rather than fluctuations due to chance. Thus, reliability is the consistency of the scores across conditions that can be assumed to differ at random, especially which form of the test the student is administered. In statistical terms, the variance in the distributions of test scores—essentially, the differences among individuals—is due partly to real differences in the knowledge, skill, or ability being tested (true variance) and due partly to random errors in the measurement process (error variance). The reliability coefficient is an estimate of the proportion of the total variance that is true variance.

Reliability coefficients usually range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely individuals are to obtain very similar scores upon repeated testing occasions if the students do not change in their level of the knowledge or skills measured by the test.

There are several different ways of estimating reliability. One type of reliability estimate reported here is an internal-consistency estimate, which is derived from analysis of the consistency of the performance of individuals across items within a test.

The standard error of measurement (SEM) is a measure of the extent to which students' scores tend to differ from their true scores. The larger the SEM, the more the variability of a student's observed scores across repeated testing. Observed scores with large SEMs pose a challenge to the valid interpretation of a single test score.

Also reported for CAA is the reliability of classification, which is an estimate of the proportion of students who are accurately and consistently classified into achievement levels. There are two kinds of classification reliability statistics: decision accuracy and decision consistency. Decision accuracy is the agreement between the classifications actually made and the classifications that would be made if the test scores were perfectly reliable. Decision consistency is the agreement between the classifications that would be made on two different forms of the test.

8.6.1. Internal Consistency Reliability

In classical test theory, the reliability coefficient can be defined as the squared correlation between the observed score and the true score, which is equal to the correlation between parallel observed scores (Lord and Novick, 1968, p.61). In applied settings, the requirement of repeated administrations is impractical, and methodologies estimating reliability from relationships among student performances on items within a single test form are often used. Coefficient alpha (Cronbach, 1951) is among the most common of these methodologies.

These reliability indices are not directly applicable to an MST scenario because each student takes one of the four pathways based on his or her ability. Therefore, an IRT-based approach called marginal reliability (Green, Bock, Humphreys, Linn, & Reckase, 1984) is used to estimate the reliability of MST scores. The estimates of reliability coefficients reported here are for item response model-based ability estimates. Because the scale score is a linear transformation of the ability estimate, the reliability coefficient of the ability estimates will also apply to the scale scores based on them.

This reliability coefficient for theta estimates, $\rho_{\hat{\theta}\hat{\theta}'}$ is defined, based on the single test administration, as shown in Equation 8.13:

$$\rho_{\hat{\theta}\hat{\theta}'} = 1 - \frac{M_{SEM^2_{\hat{\theta}}}}{s^2_{\hat{\theta}}} \tag{8.13}$$

See the Alternative Text for Equation 8.13 for a description of this equation.

where,

$\hat{\theta}$ is an ability estimate (i.e., theta score),

$S^2_{\hat{\theta}}$ is the measure of variance in ability estimates, and

$M_{SEM^2_{\hat{\theta}}}$ is an average of the squared CSEM (i.e., error variances) at each value of the ability estimate.

8.6.2. Standard Error of Measurement (SEM)

The SEM provides a measure of score instability in the scale score metric. The SEM is the square root of the error variance in the scores, i.e., the standard deviation of the distribution of the differences between students' observed scores and their true scores. The SEM is calculated by:

$$SEM = s_t\sqrt{1-\rho_{\hat{\theta}\hat{\theta}'}} \tag{8.14}$$

See the Alternative Text for Equation 8.14 for a description of this equation.

where,

$\rho_{\hat{\theta}\hat{\theta}'}$ is the reliability estimated in Equation 8.13, and

s_t is the standard deviation of the total score (either theta or scale score).

The SEM is useful in determining the confidence interval (CI) that likely captures a student's true score. A student's true score can be thought of as the score a student would earn over an infinite number of independent administrations of the test. Across those administrations, approximately 95 percent of the time, a student's true score will fall between the range of observed score of –1.96 SEMs to observed score of +1.96 SEMs (Crocker & Algina, 1986). For example, if a student's observed score on a given test equals 345 points, and the SEM equals 5, one can be 95 percent confident that the student's true score lies between 335 and 355 points (i.e., 345 $\pm$ 10).

Table 8.12 presents the total score reliability for theta, and the mean, SD, and SEM of both thetas and scale scores for each of the 14 tests, along with the number of student results upon which those analyses are performed. Note that the reliability is for the whole test on the theta score scale.

Table 8.12 Summary Statistics for Scale Scores, Theta Scores, and Reliability

Content Area/Grade	No. of Students	Reliability	Scale Score Mean	Scale Score SD	Scale Score SEM	Theta Score Mean	Theta Score SD	Theta Score SEM
ELA 3	4,177	0.89	349.82	20.81	7.05	0.09	1.54	0.52
ELA 4	4,529	0.87	446.06	17.88	6.44	0.04	1.33	0.48
ELA 5	4,620	0.88	545.64	16.35	5.59	0.01	1.23	0.42
ELA 6	4,566	0.86	644.42	13.00	4.91	-0.05	1.08	0.41
ELA 7	4,404	0.89	743.64	16.55	5.46	-0.15	1.28	0.42
ELA 8	4,366	0.87	847.88	13.05	4.71	0.02	1.07	0.39
ELA 11	3,793	0.85	948.99	13.22	5.07	0.11	1.07	0.41
Mathematics 3	4,070	0.81	340.13	15.90	6.88	-0.12	1.02	0.44
Mathematics 4	4,364	0.84	441.03	15.56	6.17	-0.07	1.03	0.41
Mathematics 5	4,522	0.84	540.52	15.74	6.35	-0.11	1.05	0.42
Mathematics 6	4,313	0.73	641.29	13.34	6.90	-0.04	0.85	0.44
Mathematics 7	4,241	0.84	740.42	16.67	6.59	-0.10	1.05	0.42
Mathematics 8	4,249	0.81	841.48	15.05	6.50	-0.02	0.92	0.40
Mathematics 11	3,742	0.80	940.29	14.79	6.68	-0.10	0.96	0.43

The reliabilities and SEMs of the CAAs for ELA and mathematics were also examined for various student groups from the population. Table 8.F.1 through Table 8.F.14 present the reliabilities for the student groups based on gender, ethnicity, English-language fluency, economic status, migrant status, and primary disability.

8.6.3. Standard Error of Measurement (SEM) for Theta Scores

For the CAAs for ELA and mathematics, theta scores are obtained through an IRT inverse test characteristic curve approach. The test information function (TIF) is the sum of information from each item on the test. The SEM is the standard deviation of the distribution of theta scores that the student would earn under different testing conditions. In IRT, the only differences taken into account in the SEM are those associated with different sets of items that could be presented to the student. In the framework of IRT, the SEM is the reciprocal of the square root of the test information function (TIF) based on the items taken by each student. The SEM for a student with proficiency θj is:

$$SEM(\theta_j) = \frac{1}{\sqrt{I(\theta_j)}} \tag{8.15}$$

See the Alternative Text for Equation 8.15 for a description of this equation.

where,

$I(\theta_j)$ is the test information for student j, and is calculated as

$$I(\theta_j) = \sum_{i=1}^{n} I_i(\theta_j) \ , \tag{8.16}$$

See the Alternative Text for Equation 8.16 for a description of this equation.

where,

$I_i(\theta_j)$ is the item information of item i for student j.

When item information is based on the GPCM for both dichotomous and polytomous items for the one-parameter model, it is calculated as

$$I_i(\theta_j) = [s_{i2}(\theta_j) - s_i^2(\theta_j)] \tag{8.17}$$

See the Alternative Text for Equation 8.17 for a description of this equation.

where,

$s_i(\theta_j)$ is the expected item score for item i on a theta score θ_j calculated as

$$s_i(\theta_j) = \sum_{h=0}^{n_i} h p_{ih}(\theta_j) \ , \tag{8.18}$$

See the Alternative Text for Equation 8.18 for a description of this equation.

and

$$s_{i2}(\theta_j) = \sum_{h=0}^{n_i} h^2 p_{ih}(\theta_j) \tag{8.19}$$

See the Alternative Text for Equation 8.19 for a description of this equation.

where,

$p_{ih}(\theta_j)$ is the probability of an examinee with θ_j getting score h on item i, the computation of which is shown in Equation 8.4 on page 215, and

n_i is the maximum number of score points for item i.

The theta score and theta CSEM are shown in Table 8.F.15 through Table 8.F.28.

8.6.4. Conditional Standard Errors of Measurement (CSEM) for Scale Scores

CSEMs for scale scores are computed by transforming CSEMs of theta scores onto the reporting scale. Refer to subsection *8.3.2.3.2 Transformation from Theta Scores to Scale Scores* for scaling factors of transformation. A student's CSEM under the IRT framework is equal to the reciprocal of the square root of the TIF multiplied by the scaling factor a:

$$\mathrm{CSEM(SS)} = \frac{1}{\sqrt{\mathrm{I}\left(\hat{\theta}\right)}} a \tag{8.20}$$

See the Alternative Text for Equation 8.20 for a description of this equation.

where,

$SS = a \times \theta + b$,

$\mathrm{CSEM}(SS)$ is the conditional standard error of measurement on scale score scale,

$I(\hat{\theta})$ is the test information function at ability level $\hat{\theta}$ as shown in equations 8.17, 8.18, and 8.19, and

a is the scaling factor (the slope) needed to transform theta to the scale score metric.

The value of a varies by content area (see the slope values in Table 8.6).

CSEMs vary across the scale, and are typically smaller in scale score units toward the center of the scale where more items are located, whereas larger at the extreme ends of the scale. When a test has cut scores, it is important to provide CSEMs at the cut scores. Table 8.13 presents the scale score CSEMs at the lowest score required for a student to be classified in the Level 2—Alternate and Level 3—Alternate achievement levels for each CAA.

Table 8.13 Scale Score CSEM at Achievement-Level Threshold

Content Area/Grade	Level 2—Alternate Scale Score Threshold	Level 2—Alternate CSEM	Level 3—Alternate Scale Score Threshold	Level 3—Alternate CSEM
ELA 3	345	5	360	6
ELA 4	445	5	460	6
ELA 5	545	5	560	6
ELA 6	645	4	660	5
ELA 7	745	5	760	6
ELA 8	845	4	860	5
ELA 11	945	5	960	5
Mathematics 3	345	6	360	7
Mathematics 4	445	6	460	6
Mathematics 5	545	6	560	6
Mathematics 6	645	6	660	6
Mathematics 7	745	6	760	6
Mathematics 8	845	6	860	7
Mathematics 11	945	6	960	7

The scale score and scale score CSEM are shown in Table 8.F.15 through Table 8.F.28.

8.6.5. Decision Classification Analyses

When an assessment uses achievement levels as the primary method to report test results, accuracy and consistency of decisions become key indicators about the quality of the assessment.

The methodology used for estimating the reliability of classification decisions described in Livingston and Lewis (1995) is implemented using the Educational Testing Service (ETS)-proprietary computer program RELCLASS-COMP (Version 4.14).

Decision accuracy describes the extent to which students are classified in the same way as they would be on the basis of the average of all possible forms of a test. Decision accuracy answers the question of how closely the actual classification of students, based on their single-form scores, agrees with the classification that would be made on the basis of their true scores, if their true scores could somehow be known.

Decision consistency describes the extent to which students are classified in the same way as they would be on the basis of a single form of a test other than the one for which data are available. Decision consistency answers the question of what the agreement is between the classifications based on two nonoverlapping, equally difficult forms of the test.

Reliability of classification at a cut score is estimated by combining the multivariate distribution at any particular cut score into a two-by-two table indicating whether the students are above or below the cut score and summing the entries in the diagonal. For both decision accuracy and decision consistency, the estimated proportion of classifications with exact agreement is the sum of the entries in the diagonal of a contingency table representing the multivariate distribution (see Figure 8.1 and Figure 8.2). Decision consistency values are always lower than the corresponding decision accuracy values because in decision consistency, both of the classifications of the student are based on scores that depend on which form of the test the student took. In decision accuracy, only one of the classifications is based on a score that can vary in this way.

True status on all-forms average	Does not reach an achievement level	Reaches an achievement level
Does not reach an achievement level	Correct classification	Misclassification
Reaches an achievement level	Misclassification	Correct classification

Figure 8.1 Decision Accuracy for Reaching an Achievement Level on the All-Forms Average

Decision made on the form taken	Does not reach an achievement level	Reaches an achievement level
Does not reach an achievement level	Correct classification	Misclassification
Reaches an achievement level	Misclassification	Correct classification

Figure 8.2 Decision Consistency for Reaching an Achievement Level on a Hypothetical Alternate Form

The results of these analyses are presented in Table 8.F.29 through Table 8.F.55 in Appendix 8.F. Included are the contingency tables for both accuracy and consistency of the various achievement-level classifications.

8.7. Validity Evidence

Validity refers to the degree to which each interpretation or use of a test score is supported by the accumulated evidence (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014; ETS, 2014). It constitutes the central notion underlying the development, administration, scoring, and the uses and interpretations of test scores. The validation process does not rely on a single study or gathering only one type of evidence. Rather, validation involves multiple investigations and different kinds of supporting evidence (AERA, APA, & NCME, 2014; Cronbach, 1971; ETS, 2014; Kane, 2006). It begins with the test design and is implicit throughout the entire assessment process, which includes item development and field testing, analyses of items, test scaling and linking, scoring, reporting, and score usage.

In this subsection, the evidence gathered is presented to support the intended uses and interpretations of scores for the CAA. This subsection is organized primarily around the

principles prescribed by AERA, APA, and NCME's *Standards for Educational and Psychological Testing* (2014). These *Standards* require a clear definition of the purpose of the test, a description of the constructs to be assessed, and the population to be assessed, as well as how the scores are to be interpreted and used. Since many aspects of the CAASPP System are still under development at the time of this report, future possible research is mentioned, when appropriate, throughout this subsection.

The *Standards* identify five kinds of evidence that can provide support for score interpretations and uses:

1. Evidence based on test content
2. Evidence based on relations to other variables
3. Evidence based on response processes
4. Evidence based on internal structure
5. Evidence based on the consequences of testing

The next subsection defines the purpose of the CAAs, followed by a description and discussion of the kinds of validity evidence that have been gathered.

8.7.1. Evidence in the Design of the CAAs

8.7.1.1. Purpose

The CAAs are designed to assess the students with the most significant cognitive disabilities and whose individualized education program (IEP) team has designated the use of an alternate assessment on the statewide summative assessments. The goals of the CAAs are to ensure that students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options.

8.7.1.2. The Constructs to Be Measured

The CAAs for ELA and mathematics are designed to show how well students perform relative to the Core Content Connectors (Connectors) for ELA and mathematics, which were developed by the National Center and State Collaborative (NCSC). These Connectors are content targets linked to the Common Core State Standards (CCSS) and yet are less complex than the CCSS, focusing on the main academic content in each subject and grade level.

The Connectors illustrate the necessary knowledge and skills needed to reach the learning targets within the CCSS and the knowledge and skills needed at each grade level. The Connectors identify priorities in each content area to guide instruction for students in this population and for the alternate assessment.

Test blueprints are used to measure the Connectors. They also provide an operational definition of the construct to which each set of standards refers and define the following for each content area:

- Subject to be assessed
- Tasks to be presented
- Administration instructions to be given
- Rules used to score student responses

The test blueprints control as many aspects of the measurement procedure as possible so that the testing conditions will remain the same over test administrations (Cronbach, 1971) in order to minimize construct irrelevant score variance (Messick, 1989).

ETS developed all CAA for ELA and mathematics test items to conform to the SBE-approved Connectors and test blueprints (CDE, 2015a [ELA] and 2015b [mathematics]).

8.7.1.3. The Interpretations and Uses of the Scores

Overall student performance expressed as scale scores are generated for the CAAs for ELA and mathematics. The total score is also used to classify students in terms of their achievement level in the content area by grade.

The grade- and content-specific achievement level descriptors describe what students at each achievement level know and can do, by grade and content area. The achievement level descriptors reflect the level of expectation on students' performance, the specific content reflected in the CCSS and the Connectors, as well as the essential understandings (EUs). California educators gathered to develop the grade- and content-specific achievement level descriptors using the general PLDs, which provided the number of reporting levels and the general definition of each reporting level. The importance of the grade- and content-specific PLDs is that they define the knowledge or skill expectations at each achievement level on a functional basis, define the standards as they apply to threshold scores, and give standardized meaning to scores or score ranges.

A description of the uses and applications of the CAA for ELA and mathematics results is presented in *Chapter 7: Scoring and Reporting*. Additional information can be found in the *2016–17 CAASPP Post-Test Guide* (CDE, 2016b).

The CAA test results have four primary purposes:

1. Help facilitate conversations between parents/guardians and teachers about student performance
2. Serve as a tool to help parents/guardians and teachers work together to improve student learning
3. Help staff from schools and local educational agencies identify strengths and areas that need improvement in their educational programs
4. Provide the public and policymakers with information about student achievement

More detailed descriptions regarding score use can be found in the *Education Code* Section 60602 Web page at http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=EDC&division=4.&title=2.&part=33.&chapter=5.&article=1 (outside source).

8.7.1.4. Intended Test Population

Only eligible students may participate in the administration of the CAAs. Any student identified for alternate testing takes CAAs. IEP teams "shall determine when a child with a significant cognitive disability shall participate in an alternate assessment aligned with the alternate academic achievement standards."[9]

8.7.2. Evidence Based on Test Content

Evidence based on test content refers to traditional forms of content validity evidence, such as the rating of test specifications and test items (Crocker, Miller, & Franks, 1989; Sireci, 1998), as well as alignment methods for educational tests that evaluate the interactions

[9] S. 1177—114th Congress: Every Student Succeeds Act. 2015. Title 1, Part A, Subpart 1, Section 1111(b)(2)(D)(ii)(I)

between curriculum frameworks, testing, and instruction (Rothman, Slattery, Vranek, & Resnick, 2002; Bhola, Impara & Buckendahl, 2003; Martone & Sireci, 2009).

With MST test design, an additional dimension of content validity evidence is to ensure that the pathways and combination of two stages produce forms for individual students who conform to the test blueprint. The extent to which test forms administered in 2016–17 meet the blueprints is provided in *Chapter 4: Test Assembly*, and in Table 4.A.1 through Table 4.A.14.

8.7.2.1. Description of the State Standards

The CAAs for ELA and mathematics are aligned with the alternate achievement standards, the Connectors, for ELA and mathematics. The purpose of the Connectors is to ensure that students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for postsecondary options. The Connectors illustrate the necessary knowledge and skills needed to reach the learning targets within the CCSS and the knowledge and skills needed in each grade. They also identify priorities in each content area to guide the instruction for students in this population and for the alternate assessment (NCSC, 2014a [Reading], 2014b [Writing], and 2014c [mathematics]).

8.7.2.2. Item Specifications

Item specifications describe the characteristics of items that are written to measure each content standard. The specifications for ELA and mathematics are described in *Chapter 3: Item Development and Review*.

8.7.2.3. Module Selection and Pathway

The routing rules for the stages are designed to cover the alternate content standards-based blueprints in the assembly of MST forms. The general module routing approach is based on the routing rules (refer to *Chapter 4: Test Assembly*) that evaluates a module's contribution to each of these measures:

1. A measure of content match to the blueprint
2. A measure of overall test information
3. A measure of content complexity (tier)

8.7.2.4. Assessment Blueprints

The CAA test blueprints describe the content of the ELA and mathematics assessments for all grades tested and how that content is assessed. The test blueprints address the basic core content domains, the CCSS, the Connectors, and the essential understanding for each standard. Each test is described by a single blueprint. The degree to which test forms administered in 2016–17 meet the blueprint is provided in *Chapter 4: Test Assembly* and in Table 4.A.1 through Table 4.A.14.

8.7.2.5. Form Assembly Process

The content standards, blueprints, and routing rules are the basis for choosing items and modules for each assessment. Additionally, item difficulty, and the content complexity of item, are provided to evaluate the statistical characteristics of the form. Refer to *Chapter 4: Test Assembly* for information on the test assembly process.

8.7.3. Evidence Based on Response Processes

Validity evidence based on response processes refers to "evidence concerning the fit between the construct and the detailed nature of performance or response actually engaged in by students" (AERA et al., 2014, p. 12). This type of evidence generally includes documentation of activities such as

- systematic observations of test response behavior,
- showing the relationships of items intended to require demonstrations or applications of knowledge and skills to other measures that require similar levels of cognitive complexity in the content (i.e., teacher ratings of student performance), and
- evaluation of the reasoning processes students employ when solving test items (Embretson, 1983; Messick, 1989).

This type of evidence is used to confirm that the CAAs are measuring the cognitive skills that are intended as the objects of measurement and are used by students to respond to the items, for example, the Survey of Student Characteristics (SSC) and Student Response Check described in *5.1 Test Administration* in Chapter 5. Also, use of the SSC is planned as part of a research agenda, and the goal is to improve routing during the future administrations.

8.7.3.1. Analysis of Testing Time

Testing times for each administration can be evaluated for consistency by examining the expected response processes for the items presented to students. The length of time it takes students to complete a test is collected and analyzed to build a profile describing what a typical testing event looks like for each content area and grade. In addition, variability in testing time is investigated to determine whether a student's testing time should be viewed as unusual or irregular. It should be noted that the CAAs for ELA and mathematics are untimed tests.

The students with no item response and students who didn't answer at least four items were removed from these analyses. The remaining testing population is partitioned into quartiles based on scale scores. These quartile groupings are not the same as the achievement levels.

Descriptive statistics of the time required to complete the total test are computed for each of the four quartile groups by content area and grade level.

Some cases of extremely long testing time may be attributed to students with special needs taking longer to complete the tests, or the test not being closed down properly. With that being said, the results should be interpreted with caution. The medians (50th percentile) are more meaningful in the interpretation of the time comparisons because medians are less impacted by the extreme values than means.

Table 8.G.1 and Table 8.G.2, which start on page 479, provide the descriptive statistics for ELA and mathematics testing time for each test pathway, respectively. These tables include total testing time and percentile information for each test pathway. Table 8.G.3 and Table 8.G.4 present total testing time and percentile information at each student performance quartile level. The unit of testing time is minutes; for example, in Table 8.G.3, the median of the testing time for the first quartile group (Q1) of ELA grade three is 18.57 minutes.

Overall, students in the lowest quartile level (Q1) have shorter testing times than students in the other quartile groups. The median total testing time generally increases as the quartile level increases from Q1 to Q4. ELA shows longer testing times than mathematics.

8.7.4. Evidence Based on Internal Structure

Internal structure evidence evaluates the strength or salience of the major dimensions underlying an assessment using indices of measurement precision such as DIF analysis,

test reliability, decision accuracy and consistency, generalizability coefficients, conditional and unconditional SEMs, and TIFs.

8.7.4.1. Differential Item Functioning (DIF)

DIF analyses were conducted to assess differences in the item performance of groups of students who differ in their demographic characteristics. For both ELA and mathematics, few items were identified as having significant levels of DIF. See subsection *8.5 Differential Item Functioning* for a description the DIF analyses and Appendix 8.E, where the results of the DIF analyses are reported.

8.7.4.2. Overall Reliability Estimates

The results of reliability analyses on the theta scores and scale score for each test are presented in Table 8.12. The results indicate that the reliability estimates for all tests are moderately high, ranging from 0.73 to 0.89.

8.7.4.3. Student Groups Reliability Estimates

The reliabilities are also examined for various student groups. The student groups considered were based on gender, ethnicity, economic status, primary disability, migrant status, and English-language fluency. Reliability estimates and SEM information for the theta scores are reported for each student group in Table 8.F.1 through Table 8.F.14.

8.7.4.4. Reliability of Performance Classifications

The methodology used for estimating the reliability of classification decisions is described with the decision classification analyses in subsection *8.6.5 Decision Classification Analyses*. The results of these analyses are presented in Table 8.F.29 through Table 8.F.55 in Appendix 8.F.

8.7.4.5. Correlations between Content Area Test Scores

The degree to which students' content area test scores correlate as expected provides evidence that those scores are measuring the intended constructs. Table 8.14 provides the correlations between scores on the ELA and mathematics tests and the number of students on which these correlations are based. Sample sizes for the individual tests are shown on the left. The correlations are provided in the upper right and are based on all students with valid scale scores for both tests and are provided by grade, and the sample sizes are shown on the lower right in bold font.

Table 8.14 Correlations Between ELA and Mathematics for All Students

Content Area/Grade	Number of Students	Correlation and Sample Size
ELA 3	4,177	0.60
Mathematics 3	4,070	**3,981**
ELA 4	4,529	0.58
Mathematics 4	4,364	**4,289**
ELA 5	4,620	0.55
Mathematics 5	4,522	**4,445**
ELA 6	4,566	0.48
Mathematics 6	4,313	**4,239**
ELA 7	4,404	0.61
Mathematics 7	4,241	**4,134**

Content Area/Grade	Number of Students	Correlation and Sample Size
ELA 8	4,366	0.58
Mathematics 8	4,249	**4,151**
ELA 11	3,793	0.61
Mathematics 11	3,742	**3,645**

Notes:

- Numbers in **bold** font are the sample sizes to calculate the correlations.
- R denotes the correlation coefficient.

Results for these students appear to be consistent with expectations. In general, students' ELA scores correlated moderately with their mathematics scores.

Table 8.G.5 through Table 8.G.11 starting on page 486 in Appendix 8.G provide the content area test score correlations by gender, ethnicity, English-language fluency, economic status, and migrant status. Similar patterns of correlations were found between students' ELA and mathematics results within the student groups.

Note that the correlations are reported only for groups of more than 10 students. Correlations between scores on any two content area tests where 10 or fewer students took the tests are expressed as "NA."

8.7.5. Evidence Based on Relationship to Other Variables

Evidence based on *relations to other variables* can be evaluated using the correlation between the CAAs for ELA and mathematics assessment results and variables related to students, as well as the correlation between the CAAs for ELA and mathematics scores with teacher judgments of student readiness for the next grade level. This type of evidence is essential for supporting the validity of certain inferences based on scores from the CAA and the SSC.

Table 8.15 presents the relationship between the CAA for ELA and mathematics scale scores and the level of test engagement reported by teachers on a Likert scale of 0–3 in the final question of the SSC. Refer to subsection *8.7.5.1 Survey of Student Characteristics* for additional information.

During the 2016–17 CAAs for ELA and mathematics administration, the correlations between scale scores and the test engagement range from .54 to .62 for ELA and from .38 to .52 for mathematics. All correlations are significant, with $p<.01$.

Results show a moderately strong correlation between the test engagement and student achievement (scale scores) across all tests; in particular, the correlation in ELA is stronger than that in mathematics. In addition, the correlations for grade three in both ELA and mathematics seem to be the highest among all grades. As is shown by their test engagement, high school students seem to have the highest level of test engagement, on average, than other grades.

Table 8.15 Correlations between Scale Scores and SSC Test Engagement Response

Content Area/Grade	SS_Mean	Resp_Mean	SS_SD	Resp_SD	N	Correlation
ELA 3	349.02	2.10	21.68	0.87	4,171	.62*
ELA 4	445.63	2.10	18.52	0.87	4,482	.59*
ELA 5	545.02	2.16	17.17	0.85	4,622	.55*
ELA 6	643.95	2.13	13.98	0.86	4,529	.58*
ELA 7	742.84	2.11	17.58	0.88	4,421	.57*
ELA 8	847.31	2.22	14.22	0.87	4,356	.54*
ELA 11	947.95	2.36	15.02	0.86	3,831	.59*
Mathematics 3	339.08	1.98	17.05	0.90	4,092	.52*
Mathematics 4	440.10	2.06	16.60	0.89	4,399	.49*
Mathematics 5	539.77	2.10	16.55	0.88	4,543	.41*
Mathematics 6	640.47	2.13	14.57	0.88	4,329	.38*
Mathematics 7	739.24	2.10	17.84	0.91	4,309	.50*
Mathematics 8	840.44	2.14	16.36	0.89	4,292	.52*
Mathematics 11	939.23	2.32	16.04	0.87	3,802	.50*

Note: * $p<0.01$

8.7.5.1. Survey of Student Characteristics (SSC)

The purpose of the SSC is to elicit information from teachers regarding the student's characteristics. The SSC focuses on the characteristics of the student's disability as well as types and level of engagement.

The SSC includes three selected questions from the Learner Characteristics Inventory (LCI) (Kearns, Kleinert, Kleinert, & Towles, 2006), with two of these questions on the student's preferable means of responding to the CAAs in ELA and mathematics respectively. The LCI for alternate assessments based on alternate achievement standards (AA-AAS) were developed by the National Alternate Assessment Center to gather data on characteristics of students taking alternate assessments.

The purposes of LCI are to identify the learner characteristic patterns across grades and years, provide validity evidence regarding the population, and support the use of the AA-AAS for this population. The survey was completed by teachers of students who took the CAAs. Three survey questionnaires and the summary of responses are presented in Table 8.G.12 and Table 8.G.13 for ELA and mathematics respectively. In general, the percent of respondents for each survey category is similar across grades and content areas. The key findings from the survey results are summarized next.

- For either ELA or mathematics, 9 to 13 percent of test examiners for each grade reported that they ended the test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days.
- The majority of the test examiners—over 50 percent for each grade of either ELA or mathematics—reported that their students communicated by using a mouse, touch screen, and/or a computer keyboard to enter responses directly in the system.

- When asked the level of engagement of students in ELA assessments, 32 to 48 percent of the test examiners reported that students were fully engaged, and 22 to 30 percent reported that students were moderately engaged for each grade.
- When asked the level of engagement in mathematics assessments, 28 to 46 percent of the text examiners reported that students were fully engaged in ELA test, and 23 to 29 percent reported that students were moderately engaged.

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Accessibility Information

Alternative Text for Equation 8.1

P value sub dich equals the fraction with the numerator the sum of X sub ic and the denominator N sub I end fraction

Alternative Text for Equation 8.2

P value sub poly equals the fraction with the numerator X sub ij and the denominator N sub i times Max of X sub I end fraction

Alternative Text for Equation 8.3

r sub polyreg equals the fraction Beta hat times S sub tot divided by the square root of Beta hat squared times s sub tot squared plus 1

Alternative Text for Equation 8.4

P sub ih of theta sub j equals:

The numerator exp open parenthesis the sum from v equals 1 to h of Da sub i open parenthesis theta sub j minus b sub I plus d sub iv close parenthesis close parenthesis divided by the denominator open parenthesis 1 plus the sum from c equals 1 to n sub I exp open parenthesis the sum from v equals 1 to c of Da sub I open parenthesis theta sub j minus b sub I plus d sub iv close parenthesis close parenthesis close parenthesis, if score h equals 1, 2, …, n sub i

P sub ih of theta sub j equals:

1 divided by the denominator open parenthesis 1 plus the sum from c equals 1 to n sub I exp open parenthesis the sum from v equals 1 to c of Da sub I open parenthesis theta sub j minus b sub I plus d sub iv close parenthesis close parenthesis close parenthesis, if score h equals 0

Alternative Text for Equation 8.5

Z equals the numerator open absolute symbol, D subtracts Md sub D, close absolute symbol, divided by the denominator of 0.74 times IQR

Alternative Text for Equation 8.6

Epsilon of theta equals the sum from i equals 1 to ndich of P sub i of theta plus the sum from j equals 1 to npoly times the sum of x equals 1 to m of s sub xj times P sub xj of theta

Alternative Text for Equation 8.7

Scale score equals intercept plus slope times theta-hat

Alternative Text for Equation 8.8

Slope equals the numerator 60 minus 45 divided by the denominator theta sub Level 3 minus theta-hat sub Level 2

Alternative Text for Equation 8.9

Intercept equals 60 minus theta-hat sub Level 3 times open parenthesis the numerator 60 minus 45 divided by the denominator theta-hat sub Level 3 minus theta-hat sub Level 2 close parenthesis

Alternative Text for Equation 8.10

Alpha sub MH equals the numerator open parenthesis the sum sub m of R sub rm times W sub fm divided by N sub tm close parenthesis divided by the denominator open parenthesis the sum sub m of R sub fm times W sub rm divided by N sub tm closed parenthesis

Alternative Text for Equation 8.11

MH D - DIF equals negative 2.35 times the natural logarithm open bracket alpha sub MH close bracket

Alternative Text for Equation 8.12

SMD equals the fraction with numerator the sum from m equals 1 to M of N sub fm times E sub f of Y from X equals m and denominator the sum from m equals 1 to M of N sub fm end fraction minus the fraction with numerator the sum from m equals 1 to M of N sub fm times E sub r of Y from X equals m and denominator the sum from m equals 1 to M of N sub fm end fraction equals the fraction with the numerator the sum from m equals 1 to M of D sub fm and the denominator m equals1 to M of N suf fm end fraction.

Alternative Text for Equation 8.13

Rho sub theta hat theta hat prime equals 1 minus M sub SEM squared sub theta hat divided by s squared sub theta hat

Alternative Text for Equation 8.14

SEM equals s sub t times the square root of 1 minus rho of theta hat theta hat prime

Alternative Text for Equation 8.15

SEM of Theta sub j equals 1 divided by the square root of I of theta sub j

Alternative Text for Equation 8.16

I of theta sub j equals the sum from I equals 1 to n of I sub I of theta sub j

Alternative Text for Equation 8.17

I sub i of theta sub j equals open bracket s sub i2 of theta sub j minus s sub i squared of theta sub j

Alternative Text for Equation 8.18

S sub i of Theta sub j equals the sum from h equals zero to n of h times p sub ih of Theta sub j

Alternative Text for Equation 8.19

S sub i2 of Theta sub j equals the sum from h equals zero to n sub i of h squared times p sub ih of Theta sub j

Alternative Text for Equation 8.20

CSEM of SS equals 1 times a divided by the square root of I of theta hat

Appendix 8.A: Classical Item Analyses

Note 1: In Table 8.A.1 through Table 8.A.28, the value in the *Item Use* column indicates the item use for analysis.

Item Use	Description
E	Operational items with the prior statistics. Items are used for linking
O	Operational items without the prior statistics
P	Field test items

Note 2: Items with poor statistics are flagged. Refer to the table, next, for a description of each flag and possible values that will appear in the *Flag* column in Table 8.A.1 through Table 8.A.14.

Flag	Description	Criteria
A	Indicates low average item score (AIS) /low *p*-value (difficult item)	Dichotomous item: *p*-value < 0.33 Polytomous item: AIS < 30 percent of maximum possible score points
H	Indicates high average item score (AIS) /high *p*-value (easy item)	Dichotomous item: *p*-value > 0.95 Polytomous item: AIS > 80 percent of maximum possible score points
Rpoly	Indicates low correlation with the criterion Item – Total Correlation < 0.20	Polyserial < 0.20
O	Indicates high percent of omits/not responding	Dichotomous item: %omit > 5% Polytomous item: %omit > 20%
D	Indicates high ability students select distractor	Dichotomous item: High scoring students tend to select distractor over correct option Polytomous item: High scoring students tend to score lower than at the top score level (0 score for completion item, 0 or 1 for 2-point item)

Table 8.A.1 Average Item Score and Polyserial for English Language Arts/Literacy (ELA), Grade Three

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW3020095T1	E	1.54	0.64		2	ZoneMS Discrete
CLTR3020055T1	E	0.62	0.65		1	MCSS Member
CLTR3020054T1	E	0.71	0.68		1	MCSS Member
CLTW3020056T1	E	1.25	0.73		2	MCMA - Member
CLTR3020105T1	E	0.71	0.77		1	MCSS Discrete
CLTW3020096T1	E	1.21	0.69		2	ZoneMS Discrete
CLTR3020159T2	E	1.31	0.70		2	ZoneMS Discrete
CLTR3020142T2	E	1.05	0.70		2	MCMA - Member
CLTR3020140T2	E	1.42	0.71		2	ZoneMS Member
CLTR3020141T2	E	0.45	0.55		1	MCSS Member
CLTR3020057T1-M	O	1.22	0.58		2	ZoneMS Member
CLTR3020058T1	E	0.72	0.56		1	MCSS Member
CLTR3020059T1	E	1.52	0.55		2	MCMA - Member
CLTR3020170T1	O	0.81	0.54		2	MCMA - Member
CLTR3020169T1	O	1.19	0.61		2	ZoneMS Member
CLTW3020171T1-M	O	0.29	0.61	A	1	MCMS Member
CLTW3020108T1	E	0.71	0.43		1	ZoneSS Discrete
CLTW3020107T1	E	0.68	0.52	O	1	MCSS Discrete
CLTW3020162T2	E	0.71	0.54		1	MCSS Discrete
CLTR3020143T2	E	0.77	0.80		1	MCSS Discrete
CLTR3030112T2	O	0.64	0.62	O	1	MCSS Discrete
CLTW3020146T2	E	1.29	0.65		2	ZoneMS Discrete
CLTR3030068T2	O	0.40	0.32	O	1	MCSS Member
CLTR3030067T2	O	0.35	0.53	O	1	MCSS Member
CLTW3030069T2	O	0.52	0.56	O	1	MCSS Member
CLTR3020051T1	E	0.83	0.64		1	MCSS Member
CLTR3020052T1	E	0.90	0.65		1	MCSS Member
CLTR3020053T1-M	O	0.77	0.59		1	MatchSS Member
CLTR3020160T2	E	1.45	0.56		2	MCMA - Discrete
CLTW3020145T2-M	O	1.54	0.55		2	MatchMS Member
CLTR3020166T3	E	1.29	0.40		2	ZoneMS Member
CLTR3020167T3	E	0.78	0.73		1	MCMS Member
CLTR3020168T3	E	1.41	0.71		2	MCMA - Member
CLTW3030113T2	O	1.73	0.72	H	2	MatchMS Discrete
CLTR3030158T3	O	0.96	0.53	H	1	MCSS Member
CLTR3030159T3	O	0.57	0.57		1	MCSS Member
CLTW3030160T3	O	1.23	0.75		2	MCSS Partial Credit Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW3020403T3	E	1.18	0.66		2	MCSS Partial Credit Member
CLTR3020400T3	E	0.86	0.61		1	MCSS Discrete
CLTR3020005T3	O	0.95	0.48		1	MCSS Member
CLTW3020006T3	O	0.60	0.63		1	ZoneMS Member
CLTR3020004T3	O	1.67	0.53	H	2	ZoneMS Member
CLTR3030168T3	O	0.81	0.60		1	MCSS Discrete
CLTR3030004T1	P	0.61	0.75	O	1	MCSS Member
CLTR3030005T1	P	0.70	0.70	O	1	MCSS Member
CLTW3030006T1	P	1.07	0.80		2	MCMA - Member
CLTR3030165T3	P	0.57	0.72	O	1	MCSS Discrete
CLTR3030111T2	P	1.42	0.77		2	MCMA - Discrete
CLTR3030060T2	P	0.51	0.78		1	MCSS Member
CLTR3030080T2	P	0.44	0.75	O	1	MCSS Member
CLTR3030081T2	P	0.52	0.55	O	1	MCSS Member
CLTW3030082T2	P	1.23	0.75		2	ZoneMS Member
CLTR3030017T1	P	0.69	0.44		1	ZoneSS Member
CLTR3030018T1	P	0.64	0.77	O	1	MCSS Member
CLTW3030019T1	P	0.67	0.68	O	1	MCSS Member
CLTR3030135T1	P	0.65	0.73		1	MCSS Member
CLTW3030030T1	P	1.01	0.68		2	MatchMS Discrete
CLTR3030167T3	P	1.20	0.55		2	MCMA - Discrete

Table 8.A.2 Average Item Score and Polyserial for ELA, Grade Four

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR4020239T1	E	0.80	0.59		1	MCSS Discrete
CLTR4020256T1	E	0.67	0.66		1	MCSS Member
CLTR4020257T1	E	1.59	0.68		2	ZoneMS Member
CLTR4020258T1	E	1.32	0.59		2	MCMA - Member
CLTR4020308T1	E	0.65	0.54		1	MCSS Discrete
CLTW4020138T2	E	0.62	0.44		1	MCSS Discrete
CLTW4020086T2	E	1.16	0.67		2	MCSS Partial Credit Member
CLTR4020116T2	E	0.67	0.64		1	MCSS Member
CLTR4020117T2	E	1.34	0.53		2	ZoneMS Member
CLTW4020118T2	E	0.49	0.53		1	MCSS Member
CLTR4020241T1	E	0.31	0.24	D A	1	MCSS Member
CLTR4020242T1	E	1.21	0.65		2	ZoneMS Member
CLTW4020243T1	E	0.32	0.34	A O	1	MCSS Member
CLTR4020304T1	E	0.59	0.57		1	MCSS Member
CLTR4020305T1	E	1.35	0.66		2	ZoneMS Member
CLTW4020306T1	E	1.30	0.59		2	ZoneMS Member
CLTR4030172T1	O	0.97	0.62		2	ZoneMS Member
CLTW4020240T1-M	O	1.07	0.63		2	MatchMS Member
CLTR4020237T1	O	0.69	0.50	O	1	MCSS Discrete
CLTR4020137T2	E	0.52	0.52		1	MCSS Discrete
CLTR4020085T2	E	0.61	0.77		1	MatchMS Discrete
CLTW4020139T2	E	0.46	0.40	O	1	MCSS Discrete
CLTR4030023T2	O	0.36	0.42	O	1	MCSS Member
CLTR4030024T2	O	0.91	0.60		2	ZoneMS Member
CLTR4030025T2	O	0.61	0.46		2	MCMA - Member
CLTR4020119T2	E	0.30	0.32	A	1	MCSS Member
CLTR4020120T2	E	1.04	0.23		2	ZoneMS Member
CLTW4020121T2	E	0.44	0.44		1	ZoneSS Member
CLTR4020084T2	O	0.83	0.31		1	MCSS Discrete
CLTR4020083T2	O	0.41	0.38		1	MCSS Discrete
CLTR4030014T2	O	0.68	0.39		1	MCSS Member
CLTW4030015T2	O	0.48	0.57		1	MCSS Member
CLTW4030016T2	O	0.91	0.49		2	MCSS Partial Credit Member
CLTR4020448T3	E	0.51	0.44		1	MCSS Member
CLTR4020449T3	E	1.45	0.64		2	ZoneMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR4020450T3	E	1.44	0.59		2	MCMA - Member
CLTR4030020T2	O	0.78	0.58		1	MCSS Member
CLTR4030021T2	O	1.44	0.49		2	ZoneMS Member
CLTW4030022T2	O	0.69	0.59		1	MCSS Member
CLTR4020245T3	E	0.70	0.59		1	MCSS Member
CLTR4020244T3-M	O	1.14	0.72		2	MatchMS Member
CLTW4020246T3	E	1.20	0.58		2	MCSS Partial Credit Member
CLTR4030089T3	O	0.57	0.68		1	MCSS Member
CLTR4030090T3	O	1.25	0.54		2	ZoneMS Member
CLTR4030091T3	O	1.38	0.62		2	MCMA - Member
CLTW4020135T3	E	1.54	0.67		2	MCSS Partial Credit Member
CLTW4020131T3	E	0.77	0.68		1	MCSS Discrete
CLTR4030137T3	O	1.69	0.75	H	2	ZoneMS Member
CLTR4030235T1	P	0.65	0.71		1	ZoneSS Member
CLTR4030236T1	P	1.27	0.56		2	ZoneMS Member
CLTW4030237T1	P	0.32	0.21	A O	1	MCSS Member
CLTR4030086T3	P	0.44	0.40	O	1	MCSS Member
CLTR4030087T3	P	0.94	0.60		2	ZoneMS Member
CLTW4030088T3	P	0.43	0.34		1	ZoneSS Member
CLTR4030176T1	P	0.78	0.46	O	1	MCSS Member
CLTR4030177T1	P	1.53	0.72		2	ZoneMS Member
CLTR4030178T1	P	1.09	0.64		2	MCMA - Member
CLTR4030170T1	P	0.57	0.65		1	MCSS Member
CLTR4030138T3	P	1.03	0.58		2	ZoneMS Member
CLTW4030132T3	P	0.38	0.34	O	1	MCSS Member
CLTR4030131T3	P	0.40	0.52	O	1	MCSS Discrete
CLTR4030130T3	P	0.46	0.63	O	1	MCSS Member
CLTW4030133T3	P	0.76	0.70		2	MCSS Partial Credit Member

Table 8.A.3 Average Item Score and Polyserial for ELA, Grade Five

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR5020314T1	E	0.66	0.53		1	MCSS Discrete
CLTR5020327T1	E	0.69	0.68		1	MCSS Member
CLTR5020328T1	E	1.41	0.43		2	ZoneMS Member
CLTW5020329T1	E	0.55	0.54		1	MCSS Member
CLTW5020317T1	E	1.59	0.65		2	ZoneMS Discrete
CLTR5020316T1	E	1.41	0.59		2	MCMA - Discrete
CLTR5020253T2	E	0.60	0.54		1	MCSS Member
CLTR5020254T2	E	1.42	0.51		2	ZoneMS Member
CLTW5020255T2	E	0.31	0.33	A	1	MCSS Member
CLTW5020347T2	E	0.35	0.37		1	MCSS Discrete
CLTR5020315T1	E	1.20	0.61		2	ZoneMS Discrete
CLTR5020311T1	E	0.69	0.65		1	MCSS Member
CLTR5020312T1	E	0.50	0.58		1	MCSS Member
CLTW5020313T1-M	O	1.50	0.71		2	MatchMS Member
CLTR5020333T1	O	0.29	0.28	D A	1	MCSS Discrete
CLTR5020334T1	O	1.33	0.61		2	ZoneMS Discrete
CLTR5020452T1-M	O	0.43	0.39	O	1	MCSS Member
CLTR5020453T1-M	O	1.44	0.69		2	ZoneMS Member
CLTW5020454T1-M	O	1.10	0.62		2	ZoneMS Member
CLTR5020047T2	E	1.19	0.62		2	ZoneMS Discrete
CLTW5020343T2	E	1.25	0.60		2	ZoneMS Discrete
CLTR5020340T2	E	0.32	0.39	A O	1	MCSS Discrete
CLTR5020346T2	E	1.00	0.50		2	MCMA - Discrete
CLTR5030185T2	O	1.39	0.60		2	ZoneMS Member
CLTW5030187T2	O	0.24	0.29	D A O	1	MCSS Member
CLTR5020342T2	E	0.97	0.38		2	MCMA - Discrete
CLTR5020338T2	E	0.70	0.73		1	MCSS Member
CLTR5020337T2	E	0.63	0.67		1	MCSS Member
CLTW5020339T2	E	1.43	0.40		2	ZoneMS Member
CLTR5030182T2	O	0.31	0.33	A	1	MCSS Member
CLTR5030179T2	O	0.67	0.56		1	MCSS Member
CLTR5030180T2	O	1.45	0.44		2	ZoneMS Member
CLTW5030181T2	O	0.34	0.48	O	1	MCSS Member
CLTR5030183T2	O	1.47	0.59		2	ZoneMS Member
CLTR5020074T3	E	1.05	0.58		2	MCMA - Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR5030077T3	O	1.18	0.35		2	ZoneMS Member
CLTR5030140T3	O	0.57	0.27		1	MCSS Member
CLTR5030189T2	O	1.70	0.46	H	2	ZoneMS Member
CLTR5030188T2	O	0.81	0.65		1	MCSS Member
CLTW5030190T2	O	1.53	0.55		2	ZoneMS Member
CLTR5020038T3	E	0.41	0.44		1	MCMS Member
CLTR5020039T3	E	0.47	0.49		1	MCSS Member
CLTW5020040T3	E	0.87	0.59		2	MCSS Partial Credit Member
CLTR5020073T3	E	0.66	0.68		1	MCSS Discrete
CLTR5020075T3	O	1.75	0.63	H	2	MCMA - Discrete
CLTR5030043T3	O	0.67	0.50		1	MCSS Member
CLTR5030044T3	O	1.77	0.67	H	2	MatchMS Member
CLTW5030045T3	O	1.38	0.58		2	MCSS Partial Credit Member
CLTR5030076T3	O	1.37	0.46		2	ZoneMS Member
CLTR5030122T1	P	0.53	0.55		1	MCSS Member
CLTR5030123T1	P	0.90	0.53		2	MCMA - Member
CLTW5030124T1	P	1.50	0.62		2	MatchMS Member
CLTR5030154T1	P	1.52	0.71		2	ZoneMS Member
CLTR5030186T2	P	1.37	0.44		2	ZoneMS Discrete
CLTR5030184T2	P	0.58	0.44		1	MCSS Member
CLTR5030039T3	P	0.43	0.46		1	MCMS Member
CLTR5030040T3	P	1.13	0.46		2	ZoneMS Member
CLTW5030041T3	P	0.34	0.39	O	1	MCSS Member
CLTW5030157T1	P	0.80	0.29		1	MCSS Member
CLTR5030156T1	P	1.55	0.70		2	ZoneMS Discrete
CLTR5030155T1	P	1.32	0.53		2	ZoneMS Member
CLTR5030144T1	P	0.45	0.25		1	MCSS Member
CLTR5030078T3	P	1.47	0.62		2	ZoneMS Discrete
CLTW5030079T3	P	0.50	0.57		1	MatchMS Member

Table 8.A.4 Average Item Score and Polyserial for ELA, Grade Six

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR6020097T1	E	1.77	0.60	H	2	MCMA - Discrete
CLTR6020150T1	E	1.66	0.67	H	2	MCMA - Member
CLTR6020151T1	E	0.82	0.32		1	MCSS Member
CLTW6020152T1	E	0.37	0.22		1	MCSS Member
CLTW6020104T1	E	1.39	0.56		2	ZoneMS Discrete
CLTR6020099T1	E	1.44	0.68		2	MCMA - Discrete
CLTR6020200T2	E	0.65	0.59		1	MCSS Member
CLTW6020201T2	E	0.82	0.49		2	MCSS Partial Credit Member
CLTR6020199T2	E	0.68	0.66		1	MCSS Member
CLTR6020203T2	E	0.82	0.55		2	MatchMS Discrete
CLTR6030010T1	O	0.50	0.46	O	1	MCSS Member
CLTR6030011T1	O	0.38	0.34	A	2	MatchMS Member
CLTW6030012T1	O	0.25	0.24	A	1	ZoneSS Member
CLTR6020113T1	E	0.81	0.55		2	MCMA - Member
CLTR6020115T1	E	0.24	0.39	A O	1	MCSS Member
CLTR6020114T1	E	0.69	0.50	O	1	MCSS Member
CLTW6030202T1	O	0.54	0.51		1	MatchMS Member
CLTR6020101T1	O	0.29	0.52	A O	1	MCSS Discrete
CLTR6020098T1	E	1.00	0.58		2	ZoneMS Discrete
CLTR6020204T2	E	1.16	0.66		2	ZoneMS Discrete
CLTR6020197T2	E	0.36	0.46	O	1	MCSS Member
CLTR6020196T2	E	0.89	0.62		2	ZoneMS Member
CLTW6020198T2-M	O	0.13	0.56	A	1	MatchMS Member
CLTR6020202T2	O	1.15	0.66		2	ZoneMS Discrete
CLTR6020423T2	O	0.45	0.57	O	1	MCSS Discrete
CLTR6020063T1	E	0.72	0.63		1	MCSS Member
CLTR6020064T1-M	O	0.86	0.69		2	MatchMS Member
CLTR6020065T1	E	0.90	0.56		2	MCMA - Member
CLTR6020184T2	E	1.01	0.44		2	ZoneMS Member
CLTW6020186T2	E	0.47	0.35		1	MCSS Member
CLTR6020185T2	E	0.75	0.60		1	MCSS Member
CLTW6030206T2	O	0.40	0.53		1	MatchSS Member
CLTR6030073T2	O	0.53	0.59		1	MCSS Member
CLTR6030074T2	O	0.18	0.36	A	1	MCMS Member
CLTW6030075T2	O	1.34	0.59		2	MatchMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW6020208T2	E	0.56	0.45		1	MCSS Discrete
CLTR6020420T3	E	1.20	0.60		2	ZoneMS Discrete
CLTR6030204T3	O	0.40	0.35		1	MCSS Member
CLTR6030205T3	O	1.05	0.42		2	ZoneMS Member
CLTR6030147T2	O	0.46	0.45		1	MCSS Member
CLTR6030148T2	O	1.55	0.61		2	ZoneMS Member
CLTW6030149T2	O	0.61	0.28		1	MatchSS Member
CLTR6020398T3	E	0.50	0.29		1	MCSS Member
CLTW6020399T3	E	1.11	0.54		2	MCSS Partial Credit Member
CLTR6020397T3	E	0.40	0.45		1	MCSS Member
CLTW6020424T3	E	0.37	0.36		1	MCSS Discrete
CLTR6030200T3	O	0.71	0.26		1	MCSS Member
CLTR6030199T3	O	1.26	0.65		2	ZoneMS Member
CLTW6030201T3	O	1.08	0.61		2	MCSS Partial Credit Member
CLTR6020206T3	O	0.51	0.57		1	MCSS Discrete
CLTR6030030T1	P	1.49	0.58		2	MCMA - Member
CLTR6030031T1	P	0.80	0.59	O	1	MCSS Member
CLTW6030032T1	P	1.28	0.69		2	ZoneMS Member
CLTR6030064T1	P	0.62	0.69	O	1	MCSS Member
CLTR6030065T1	P	0.27	0.28	D A O	1	MCSS Member
CLTW6030066T1	P	1.11	0.71		2	MatchMS Member
CLTR6030083T2	P	1.34	0.55		2	ZoneMS Member
CLTR6030084T2	P	0.30	0.42	A O	1	MCSS Member
CLTW6030085T2	P	1.09	0.54		2	MatchMS Member
CLTW6030196T3	P	0.91	0.63		2	MCSS Partial Credit Member
CLTR6030194T3	P	0.45	0.40	O	1	MCSS Member
CLTR6030195T3	P	0.13	0.15	A Rpoly	1	MCMS Member
CLTR6030203T1	P	0.69	0.68		1	MCSS Member
CLTR6030197T2	P	0.44	0.24		1	ZoneSS Member
CLTW6030198T2	P	0.39	0.58		1	MatchSS Discrete

Table 8.A.5 Average Item Score and Polyserial for ELA, Grade Seven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTW7020385T1	E	0.81	0.55		1	MCSS Discrete
CLTR7020010T1	E	0.49	0.36		1	MCSS Member
CLTR7020011T1	E	0.67	0.62		1	MCSS Member
CLTR7020012T1	E	0.92	0.63		2	MCMA - Member
CLTR7020382T1	E	1.36	0.67		2	ZoneMS Discrete
CLTW7020386T1	E	1.36	0.62		2	ZoneMS Discrete
CLTR7020427T2	E	1.17	0.54		2	ZoneMS Member
CLTW7020429T2	E	0.47	0.59	O	1	MCSS Member
CLTR7020428T2	E	0.50	0.42		1	MCSS Member
CLTR7020368T2	E	1.31	0.66		2	ZoneMS Discrete
CLTR7020411T1	E	0.76	0.49	O	1	MCSS Member
CLTR7020410T1	E	0.38	0.59	O	1	MCSS Member
CLTW7020412T1	E	1.00	0.63		2	ZoneMS Member
CLTR7020379T1	E	1.17	0.49		2	ZoneMS Discrete
CLTR7030252T1	O	0.75	0.45	O	1	MCSS Member
CLTR7030253T1	O	0.29	0.41	A O	1	MCSS Member
CLTW7030254T1	O	1.11	0.48		2	ZoneMS Member
CLTR7020383T1	O	0.87	0.59		2	MCMA - Discrete
CLTW7030256T1	O	0.30	0.52	A O	1	MCSS Member
CLTR7020378T2	E	0.63	0.47		2	MCMA - Member
CLTR7020377T2	E	0.30	0.42	A O	1	MCSS Member
CLTR7020376T2	E	0.35	0.48	O	1	MCSS Member
CLTR7020369T2	O	0.34	0.52	O	1	MCSS Discrete
CLTR7030241T2	O	0.38	0.27	O	1	MCSS Member
CLTW7020375T2	E	0.75	0.46		2	MCSS Partial Credit Member
CLTR7020008T1	E	1.64	0.58	H	2	ZoneMS Member
CLTR7020009T1	E	0.45	0.50		1	MCSS Member
CLTW7020007T1	E	0.59	0.53		1	MCSS Member
CLTR7020153T2	E	0.45	0.20		1	MCSS Member
CLTR7020154T2	E	0.66	0.45		1	MCSS Member
CLTWT020155T2	E	0.99	0.41		2	MCSS Partial Credit Member
CLTR7030046T2	O	0.58	0.51		1	MCSS Member
CLTR7030047T2	O	1.09	0.51		2	ZoneMS Member
CLTR7030048T2	O	0.93	0.46		2	MCMA - Member
CLTW7030053T2	O	0.58	0.33		1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR7020370T2	O	0.48	0.41		1	MCSS Discrete
CLTR7020372T2	O	1.20	0.61		2	MCMA - Discrete
CLTW7020350T3	E	0.98	0.48		2	MCSS Partial Credit Member
CLTR7020348T3	E	0.38	0.31		1	MCSS Member
CLTR7020349T3	E	0.11	0.28	A	1	MCMS Member
CLTR7020158T2	E	1.45	0.42		2	MCSS Partial Credit Member
CLTR7020156T2	E	0.62	0.36		1	MCSS Member
CLTR7020157T2	E	0.55	0.55		1	MCSS Member
CLTR7030054T2	O	0.87	0.63		1	MCSS Member
CLTR7030055T2	O	0.68	0.64		1	MCSS Member
CLTW7030056T2	O	1.35	0.59		2	MatchMS Member
CLTR7020357T3	E	1.23	0.60		2	MCMA - Member
CLTW7020359T3	E	0.72	0.44		1	MCSS Member
CLTR7020358T3	E	0.22	0.35	A	1	MCMS Member
CLTR7020364T3	E	1.30	0.45		2	ZoneMS Discrete
CLTR7030098T3	O	1.25	0.59		2	ZoneMS Member
CLTR7030099T3	O	0.62	0.55		1	MCSS Member
CLTW7030100T3	O	0.58	0.69		1	MCSS Member
CLTR7020365T3	O	1.46	0.68		2	MCMA - Discrete
CLTW7030134T3	O	0.77	0.50		1	MCSS Member
CLTR7020380T1	P	0.80	0.32		1	MCSS Discrete
CLTR7020381T1	P	0.49	0.62		1	MCSS Discrete
CLTW7030251T3	P	0.73	0.65		1	MCSS Member
CLTW7020384T1	P	0.33	0.49		1	MCSS Discrete
CLTR7030255T1	P	0.50	0.68		1	ZoneSS Member
CLTR7030257T1	P	1.47	0.59		2	ZoneMS Member
CLTR7030258T1	P	0.52	0.42	O	1	MCSS Member
CLTW7030259T1	P	0.76	0.75	O	1	MCSS Member
CLTR7030244T1	P	1.28	0.64		2	ZoneMS Member
CLTR7030243T1	P	1.61	0.74	H	2	MCMA - Member
CLTR7030245T1	P	0.56	0.63	O	1	MCSS Member
CLTR7030070T2	P	1.17	0.58		2	ZoneMS Member
CLTR7030071T2	P	0.52	0.54	O	1	MCSS Member
CLTW7030072T2	P	0.58	0.69	O	1	MCSS Member

Table 8.A.6 Average Item Score and Polyserial for ELA, Grade Eight

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR8020446T1	E	1.53	0.57		2	ZoneMS Discrete
CLTR8020394T1	E	1.28	0.44		2	ZoneMS Member
CLTR8020395T1	E	0.75	0.25		1	MCSS Member
CLTW8020396T1	E	1.21	0.51		2	ZoneMS Member
CLTW8020388T1	E	1.41	0.47		2	ZoneMS Discrete
CLTW8020390T1	E	0.84	0.46		1	MCSS Discrete
CLTR8020321T2	E	1.54	0.68		2	ZoneMS Member
CLTR8020322T2	E	0.37	0.28		1	MCSS Member
CLTR8020323T2	E	1.15	0.66		2	MCMA - Member
CLTR8020288T2	E	1.30	0.51		2	ZoneMS Discrete
CLTR8020284T1	E	0.62	0.20		2	MCMA - Member
CLTR8020282T1	E	1.39	0.59		2	ZoneMS Member
CLTR8020283T1	E	0.41	0.40		1	MCSS Member
CLTR8020447T1	E	1.20	0.28		2	ZoneMS Discrete
CLTR8020210T1	O	0.56	0.12	Rpoly	1	MCSS Member
CLTR8020211T1	O	0.61	0.46		1	MCSS Member
CLTW8020212T1	O	0.72	0.35		1	MCSS Member
CLTW8030212T1	O	1.04	0.37		2	ZoneMS Discrete
CLTR8020289T2	O	1.25	0.49		2	ZoneMS Discrete
CLTR8020292T2	E	1.02	0.61		2	MCMA - Member
CLTR8020293T2-M	O	1.20	0.57		2	MatchMS Member
CLTR8020294T2	E	1.09	0.41		2	ZoneMS Member
CLTR8020290T2	E	0.50	0.52	O	1	MCSS Discrete
CLTW8030224T2	O	1.06	0.53		2	ZoneMS Member
CLTW8030219T2	O	1.12	0.45		2	MCSS Partial Credit Member
CLTW8020389T1	E	1.55	0.37		2	ZoneMS Discrete
CLTR8030210T1	O	0.87	0.13	Rpoly	1	MCSS Member
CLTW8020262T2	E	0.29	0.20	D A Rpoly	1	MCSS Discrete
CLTW8020261T2	O	1.66	0.66	H	2	ZoneMS Discrete
CLTR8030218T2	O	1.38	0.53		2	ZoneMS Member
CLTR8030216T2	O	1.41	0.52		2	ZoneMS Member
CLTR8030217T2	O	0.75	0.55		1	MCSS Member
CLTR8020439T3	E	1.31	0.60		2	ZoneMS Discrete
CLTW8030121T3	O	1.42	0.42		2	ZoneMS Member
CLTR8030120T3	O	0.37	0.60		1	MCMS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTR8020285T2	E	0.68	0.46		1	MCSS Member
CLTR8020286T2	E	0.67	0.35		1	MCSS Member
CLTW8020287T2-M	O	0.34	0.37		1	MatchMS Member
CLTR8020291T2	E	1.78	0.57	H	2	ZoneMS Discrete
CLTW8020069T3	E	0.57	0.38		1	MCSS Discrete
CLTR8020066T3	E	1.29	0.43		2	ZoneMS Member
CLTR8020068T3	E	1.47	0.65		2	MCMA - Member
CLTR8020067T3	E	0.59	0.51		1	MCSS Member
CLTR8030008T3	O	0.71	0.59		1	MCMS Member
CLTR8030007T3	O	1.45	0.52		2	ZoneMS Member
CLTW8030009T3	O	1.30	0.43		2	ZoneMS Member
CLTR8030103T1	P	1.35	0.51		2	MCMA - Member
CLTR8030102T1	P	0.58	0.42		1	MCSS Member
CLTR8030101T1	P	1.38	0.64		2	MCMA - Member
CLTR8030207T2	P	0.45	0.22		1	MCSS Member
CLTR8030208T2	P	1.14	0.51		2	ZoneMS Member
CLTW8030209T2	P	0.45	0.38	O	1	MCSS Member
CLTR8030059T3	P	1.10	0.39		2	MCMA - Member
CLTR8030057T3	P	1.26	0.56		2	ZoneMS Member
CLTR8030058T3	P	0.22	0.62	A	1	MCMS Member
CLTR8030213T2	P	1.43	0.59		2	ZoneMS Member
CLTR8030214T2	P	0.54	0.34		1	MCSS Member
CLTW8030215T2	P	1.09	0.37		2	ZoneMS Member
CLTR8030104T1	P	0.84	0.45		1	MCSS Member
CLTR8030105T1	P	1.19	0.44		2	MCMA - Member
CLTW8030106T1	P	0.75	0.56	O	1	MCSS Member

Table 8.A.7 Average Item Score and Polyserial for ELA, Grade Eleven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTWH020236T1	E	1.56	0.58		2	ZoneMS Discrete
CLTRH020227T1	E	0.81	0.58		1	MCSS Member
CLTRH020228T1	E	1.13	0.43		2	ZoneMS Member
CLTWH020229T1	E	0.71	0.74		1	MCSS Member
CLTRH020033T1	E	1.28	0.49		2	ZoneMS Discrete
CLTRH020034T1	E	0.76	0.20	Rpoly	1	MCSS Discrete
CLTRH020217T2	E	0.71	0.56		1	MCSS Member
CLTRH020218T2	E	1.15	0.39		2	ZoneMS Member
CLTWH020219T2	E	0.57	0.65		1	MCSS Member
CLTRH020216T2	E	0.65	0.68		1	MCSS Discrete
CLTRH020233T1	E	0.73	0.56		1	MCSS Discrete
CLTRH020230T1	E	0.40	0.45	O	1	MCSS Member
CLTRH020231T1	E	0.56	0.55		1	MCSS Member
CLTWH020232T1	E	1.13	0.63		2	ZoneMS Member
CLTRH020234T1	O	1.14	0.57		2	MCMA - Discrete
CLTWH030052T1	O	0.22	0.32	D A O	1	MCSS Member
CLTRH030038T1	O	0.63	0.52		2	MCMA - Member
CLTRH030037T1	O	0.99	0.63		2	ZoneMS Member
CLTRH030036T1	O	0.39	0.44	O	1	MCSS Member
CLTRH020188T2-M	O	0.46	0.43		1	MatchMS Member
CLTRH020189T2	E	1.39	0.54		2	MCMA - Member
CLTRH020187T2	E	0.29	0.66	A	1	MCMS Member
CLTRH020223T2	E	0.45	0.45	O	1	MCSS Discrete
CLTWH030153T2	O	0.27	0.32	A O	1	MCSS Member
CLTWH020226T2	O	1.16	0.60		2	ZoneMS Discrete
CLTWH030151T1	O	0.50	0.37		1	MCSS Member
CLTRH020032T1-M	O	1.12	0.40		2	MatchMS Member
CLTRH020191T2	E	1.43	0.45		2	ZoneMS Member
CLTRH020190T2-M	O	1.46	0.37		2	MatchMS Member
CLTRH020192T2	E	0.39	0.34		1	MCSS Member
CLTRH020225T2	E	0.61	0.61		1	MCSS Discrete
CLTRH020224T2	O	1.09	0.49		2	MCMA - Discrete
CLTRH020276T3	E	1.23	0.64		2	ZoneMS Discrete
CLTWH030230T3	O	0.31	0.23	A	1	MCMS Member
CLTWH030231T3	O	0.59	0.58		1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTRH020220T2	E	0.94	0.36		1	MCSS Member
CLTRH020221T2	E	0.77	0.53		1	MCSS Member
CLTWH020222T2	E	1.80	0.50	H	2	ZoneMS Member
CLTRH030093T2	O	1.74	0.57	H	2	ZoneMS Member
CLTRH030092T2	O	0.71	0.36		1	MCSS Member
CLTRH030094T2	O	1.54	0.67		2	MCMA - Member
CLTRH020266T3	E	0.53	0.42		1	MCSS Member
CLTWH020268T3	E	0.45	0.44		1	MCSS Member
CLTRH020267T3	E	1.27	0.46		2	ZoneMS Member
CLTWH020433T3	E	0.98	0.40		2	MCSS Partial Credit Member
CLTRH020431T3-M	O	1.44	0.48		2	MCMA - Discrete
CLTRH030227T3	O	1.35	0.73		2	MCMA - Member
CLTRH030225T3	O	0.45	0.47		1	MCMS Member
CLTRH030226T3	O	1.28	0.42		2	ZoneMS Member
CLTRH030117T1	P	0.73	0.66		1	MCSS Member
CLTRH030118T1	P	0.46	0.48		1	MCSS Member
CLTWH030119T1	P	1.23	0.66		2	MatchMS Member
CLTRH030266T2	P	1.56	0.57		2	ZoneMS Member
CLTRH030267T2	P	1.30	0.51		2	ZoneMS Member
CLTWH030268T2	P	0.40	0.48	O	1	MCSS Member
CLTRH030221T3	P	0.50	0.45	O	1	MCSS Member
CLTWH030222T3	P	1.08	0.55		2	MCSS Partial Credit Member
CLTRH030220T3	P	0.16	0.52	A	1	MCMS Member
CLTRH030034T1	P	1.38	0.53		2	ZoneMS Member
CLTRH030033T1	P	1.03	0.51		2	ZoneMS Member
CLTWH030035T1	P	0.34	0.36		1	MCSS Member
CLTRH030150T1	P	0.61	0.75		1	MCSS Member
CLTWH030146T2	P	0.49	0.54		1	MCSS Member
CLTRH030229T3	P	0.21	0.44	A	1	MCMS Member

Table 8.A.8 Average Item Score and Polyserial for Mathematics, Grade Three

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM3020004T1	E	0.74	0.45		1	MCSS Discrete
CLTM3020210T1	E	0.71	0.28		1	MCSS Discrete
CLTM3020186T1	E	0.71	0.39		1	MCSS Discrete
CLTM3020018T1	E	0.64	0.33		1	MCSS Discrete
CLTM3020059T1	E	0.65	0.45		1	MCSS Discrete
CLTM3020171T1	E	0.95	0.59		2	MCMA - Discrete
CLTM3020054T2	E	0.68	0.31		2	MCMA - Discrete
CLTM3020002T2	E	0.82	0.50		2	InLineChoicelistMS Discrete
CLTM3020060T2	E	0.49	0.52	O	1	MCSS Discrete
CLTM3020063T2	E	1.25	0.67		2	MCMA - Discrete
CLTM3020001T1	E	0.88	0.52		2	MCMA - Discrete
CLTM3020010T1	E	1.02	0.59		2	MCMA - Discrete
CLTM3020174T1	E	0.48	0.52	O	1	MCSS Discrete
CLTM3030563T1	O	0.32	0.26	D A O	1	MCSS Member
CLTM3030569T1	O	1.00	0.57		2	Composite - Member
CLTM3030581T1	O	0.79	0.54		2	InLineChoicelistMS Member
CLTM3030578T1	O	0.56	0.51	O	1	MCSS Discrete
CLTM3030594T1	O	0.71	0.59	O	1	MCSS Member
CLTM3030500T1	O	0.47	0.41		1	ZoneSS Discrete
CLTM3020202T2	E	0.37	0.48	O	1	MCSS Discrete
CLTM3020057T2	E	0.46	0.39	O	1	MCSS Discrete
CLTM3020011T2	E	0.83	0.70		2	InLineChoicelistMS Discrete
CLTM3020066T2	E	0.32	0.46	A O	1	MCSS Discrete
CLTM3030564T2	O	0.32	0.46	A	1	ZoneMS Discrete
CLTM3030501T2	O	0.31	0.39	A O	1	MCSS Member
CLTM3020201T1	E	0.37	0.21	D	1	MCSS Discrete
CLTM3030572T1	O	0.74	0.50		2	Composite - Member
CLTM3030506T1	O	0.57	0.44		1	ZoneSS Member
CLTM3020014T2	E	0.44	0.42		1	MCSS Discrete
CLTM3020172T2	E	0.90	0.43		2	MCMA - Discrete
CLTM3020008T2	E	0.40	0.32	O	1	MCSS Discrete
CLTM3020175T2	E	0.39	0.28		1	MCSS Discrete
CLTM3030582T2	O	1.04	0.43		2	MatchMS Discrete
CLTM3020168T2	E	0.35	0.37		1	MCSS Discrete
CLTM3020204T2	E	0.32	0.42	A	1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM3030567T2	O	0.49	0.49		1	MCSS Member
CLTM3030583T3	O	0.77	0.39		2	MCMS Member
CLTM3020015T3	E	0.42	0.43		1	MCSS Discrete
CLTM3020003T3	E	0.94	0.42		2	MCMA - Discrete
CLTM3020208T2	E	0.49	0.58		1	MCSS Discrete
CLTM3020005T2	E	0.36	0.46		1	MCSS Discrete
CLTM3030579T2	O	0.64	0.59		1	MCSS Discrete
CLTM3030573T2	O	1.22	0.69		2	MatchMS Member
CLTM3030504T2	O	0.61	0.17	Rpoly	2	Composite - Member
CLTM3020061T3	E	0.47	0.41		1	MCSS Discrete
CLTM3020009T3	E	0.31	0.24	A	1	MCSS Discrete
CLTM3020067T3	E	0.36	0.49		1	MCSS Discrete
CLTM3020203T3	E	0.36	0.48		1	MCSS Discrete
CLTM3020064T3	E	0.80	0.52		2	MCMA - Discrete
CLTM3030502T3	O	0.61	0.47		1	MCSS Member
CLTM3030580T3	O	0.46	0.59		1	MCSS Member
CLTM3030571T3	O	0.75	0.40		2	InLineChoicelistMS Member
CLTM3030565T3	O	0.48	0.33		1	MCSS Member
CLTM3030503T1	P	0.99	0.48		2	Composite - Member
CLTM3030497T3	P	0.09	0.58	A	1	Numeric Discrete
CLTM3030592T2	P	0.98	0.35		2	ZoneMS Member
CLTM3030505T3	P	0.63	0.37		2	InLineChoicelistMS Discrete
CLTM3030499T2	P	0.76	0.41		2	Composite - Member
CLTM3030566T1	P	0.67	0.58		1	MCSS Discrete
CLTM3030710T3	P	0.61	0.40		2	InLineChoicelistMS Member
CLTM3030570T2	P	0.50	0.44	A	2	InLineChoicelistMS Member
CLTM3030591T1	P	1.17	0.59		2	ZoneMS Member
CLTM3030590T2	P	0.66	0.31		2	Composite - Member
CLTM3030568T3	P	0.36	0.48	O	1	MCSS Member
CLTM3030498T1	P	0.92	0.47		2	Composite - Member
CLTM3030496T2	P	0.25	0.44	A O	1	MCSS Member
CLTM3030702T1	P	1.04	0.46		2	Composite - Member
CLTM3030574T3	P	0.43	0.73	A	2	BarPicturegraphMS Member

Table 8.A.9 Average Item Score and Polyserial for Mathematics, Grade Four

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM4020246T1	E	0.70	0.40		1	MCSS Discrete
CLTM4020252T1	E	0.57	0.23		1	MCSS Discrete
CLTM4020177T1	E	1.33	0.54		2	ZoneMS Discrete
CLTM4020255T1	E	0.79	0.49		1	MCSS Discrete
CLTM4020249T1	E	0.97	0.55		2	ZoneMS Discrete
CLTM4020231T1	E	1.16	0.45		2	ZoneMS Discrete
CLTM4020190T2	E	0.39	0.45		1	MCSS Discrete
CLTM4020229T2	E	0.87	0.51		2	InLineChoicelistMS Discrete
CLTM4020247T2	E	0.49	0.49		1	MCSS Discrete
CLTM4020256T2	E	0.50	0.58		1	MCSS Discrete
CLTM4020189T1	E	0.53	0.45		1	MCSS Discrete
CLTM4020243T1	E	0.45	0.36		1	MCSS Discrete
CLTM4020219T1	E	0.47	0.23		1	MCSS Discrete
CLTM4020216T1	E	0.76	0.40		2	MCMA - Discrete
CLTM4030671T1	O	1.10	0.55		2	ZoneMS Member
CLTM4030484T1	O	0.87	0.57		2	InLineChoicelistMS Member
CLTM4030475T1	O	1.38	0.55		2	ZoneMS Discrete
CLTM4030481T1	O	0.62	0.36		1	MCSS Member
CLTM4030490T1	O	0.48	0.38		1	MCSS Member
CLTM4020178T2	E	0.98	0.62		2	InLineChoicelistMS Discrete
CLTM4030479T2	O	0.62	0.51		2	Composite - Member
CLTM4020250T2	E	0.98	0.49		2	ZoneMS Discrete
CLTM4030651T2	O	0.49	0.46	A	2	Composite - Member
CLTM4020220T2	E	0.30	0.26	D A O	1	MCSS Discrete
CLTM4030616T2	O	0.47	0.31	O	1	MCSS Member
CLTM4030647T1	O	0.35	0.29		1	MCSS Member
CLTM4030478T1	O	1.22	0.55		2	MCMA - Member
CLTM4020244T2	E	0.26	0.13	D A Rpoly	1	MCSS Discrete
CLTM4020253T2	E	0.37	0.41		1	MCSS Discrete
CLTM4020211T2	E	0.44	0.36	A	2	MatchMS Discrete
CLTM4030491T2	O	0.34	0.26		1	MCSS Member
CLTM4030476T2	O	1.51	0.56		2	MatchMS Member
CLTM4030485T2	O	0.93	0.03	Rpoly	2	InLineChoicelistMS Member
CLTM4030482T2	O	0.65	0.43		1	MCSS Member
CLTM4030648T2	O	0.18	0.37	D A	1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM4020257T3	E	0.72	0.44		1	MCSS Discrete
CLTM4020251T3	E	0.83	0.43		2	MCMA - Discrete
CLTM4020221T3	E	0.40	0.25		1	MCSS Discrete
CLTM4020217T2	E	1.12	0.75		2	MatchMS Discrete
CLTM4020241T2	E	0.72	0.66		1	MCSS Discrete
CLTM4030669T2	O	0.39	0.43		1	MCSS Member
CLTM4020235T2	O	0.36	0.64		1	MCSS Discrete
CLTM4030494T2	O	1.20	0.51		2	Composite - Member
CLTM4030672T2	O	1.06	0.47		2	ZoneMS Discrete
CLTM4020230T3	E	1.09	0.66		2	ZoneMS Discrete
CLTM4020242T3	E	0.40	0.53		1	MCSS Discrete
CLTM4020194T3	E	0.37	0.33		1	MCSS Discrete
CLTM4020227T3	E	1.57	0.83		2	BarPicturegraphMS Discrete
CLTM4020254T3	E	0.54	0.49		1	MCSS Discrete
CLTM4020191T3	E	0.51	0.61		1	MCSS Discrete
CLTM4020245T3	E	0.52	0.52		1	MCSS Discrete
CLTM4030486T3	O	1.29	0.68		2	InLineChoicelistMS Member
CLTM4030480T3	O	1.31	0.83		2	BarPicturegraphMS Member
CLTM4030493T1	P	0.98	0.50		2	ZoneMS Member
CLTM4030673T3	P	0.33	0.16	A Rpoly	2	Composite - Discrete
CLTM4030649T3	P	0.28	0.17	D A Rpoly	1	MCSS Member
CLTM4030650T1	P	1.32	0.74		2	InLineChoicelistMS Member
CLTM4030670T3	P	0.21	0.26	D A O	1	MCSS Member
CLTM4030492T3	P	0.07	0.52	A	1	BarPicturegraphSS Member
CLTM4030612T1	P	1.51	0.69		2	ZoneMS Discrete
CLTM4030477T3	P	0.62	0.62		2	BarPicturegraphMS Member
CLTM4030483T3	P	0.50	0.41		1	MCSS Member
CLTM4030668T1	P	0.43	0.25		1	MCSS Member
CLTM4030495T3	P	0.85	0.56		2	InLineChoicelistMS Member
CLTM4030617T3	P	0.32	0.34	A	1	MCSS Member
CLTM4030615T1	P	0.60	0.49		1	InLineChoicelistSS Member
CLTM4030613T2	P	1.05	0.41		2	InLineChoicelistMS Member
CLTM4030652T3	P	0.52	0.44	A	2	InLineChoicelistMS Member

Table 8.A.10 Average Item Score and Polyserial for Mathematics, Grade Five

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM5020195T1	E	1.58	0.48		2	ZoneMS Discrete
CLTM5020180T1	E	0.75	0.55		1	MCSS Discrete
CLTM5020354T1	E	0.74	0.55		1	MCSS Discrete
CLTM5020345T1	E	0.70	0.54		1	MCSS Discrete
CLTM5020183T1	E	1.21	0.41		2	ZoneMS Discrete
CLTM5020340T1	E	0.84	0.55		2	MCMA - Discrete
CLTM5020341T2	E	0.90	0.59		2	MCMA - Discrete
CLTM5020214T2	E	0.40	0.37		1	MCSS Discrete
CLTM5020265T2	E	0.40	0.42		1	MCSS Discrete
CLTM5020262T2	E	0.47	0.57		1	MCSS Discrete
CLTM5020213T1	E	0.66	0.35		1	ZoneSS Discrete
CLTM5030575T1	O	0.82	0.49		2	Composite - Member
CLTM5030557T1	O	0.60	0.32		1	MCSS Member
CLTM5020165T1	E	0.48	0.40	O	1	MCSS Discrete
CLTM5020404T1	E	0.52	0.29	O	1	MCSS Discrete
CLTM5020357T1	E	1.07	0.54		2	ZoneMS Discrete
CLTM5020261T1	E	0.48	0.56	O	1	MCSS Discrete
CLTM5030458T1	O	1.09	0.49		2	ZoneMS Discrete
CLTM5030707T1	O	0.59	0.51	A	2	MCMA - Member
CLTM5020196T2	E	1.09	0.62		2	ZoneMS Discrete
CLTM5030607T2	O	0.92	0.49		2	Composite - Member
CLTM5020405T2	E	0.84	0.56		2	MCMA - Discrete
CLTM5030561T2	O	0.26	0.35	A	1	InLineChoicelistSS Member
CLTM5030610T2	O	0.46	0.48	O	1	MCSS Member
CLTM5030456T2	O	0.30	0.46	A	1	ZoneSS Member
CLTM5020360T1	E	0.46	0.35		1	MCSS Discrete
CLTM5030700T1	O	0.56	0.19	Rpoly	1	MCSS Member
CLTM5030675T1	O	0.86	0.50		2	MCMA - Member
CLTM5030558T2	O	0.20	0.20	D A	1	MCSS Member
CLTM5020346T2	E	0.30	0.39	A	1	MCSS Discrete
CLTM5030464T2	O	1.06	0.42		2	InLineChoicelistMS Member
CLTM5020259T2	E	0.34	0.29		1	MCSS Discrete
CLTM5020184T2	E	0.88	0.53		2	MCMA - Discrete
CLTM5030677T2	O	0.55	0.36	A	2	InLineChoicelistMS Member
CLTM5020358T2	E	0.91	0.43		2	MCMA - Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM5020361T2	E	0.39	0.20		1	MCSS Discrete
CLTM5030701T2	O	0.26	0.25	D A	1	MCSS Discrete
CLTM5020269T3	E	0.92	0.42		2	ZoneMS Discrete
CLTM5020359T3	E	1.11	0.37		2	ZoneMS Discrete
CLTM5030674T3	O	0.56	0.26	A	2	InLineChoicelistMS Member
CLTM5030459T2	O	0.93	0.54		2	Composite - Member
CLTM5030576T2	O	1.24	0.66		2	Composite - Member
CLTM5030462T2	O	0.85	0.50		2	Composite - Member
CLTM5020343T2	E	0.25	0.36	A	1	InLineChoicelistSS Discrete
CLTM5020181T2	E	0.41	0.56		1	MCSS Discrete
CLTM5020356T3	E	0.53	0.40		1	MCSS Discrete
CLTM5020344T3	E	0.40	0.51		1	MCSS Discrete
CLTM5020362T3	E	0.28	0.58	A	1	MCSS Discrete
CLTM5020215T3	E	0.36	0.48		1	Graph Discrete
CLTM5030465T3	O	1.35	0.55		2	ZoneMS Member
CLTM5030608T3	O	0.98	0.40		2	MatchMS Member
CLTM5030577T3	O	1.07	0.56		2	Composite - Member
CLTM5030460T3	O	0.56	0.54	A	2	Composite - Member
CLTM5030678T3	O	1.06	0.68		2	MatchMS Member
CLTM5030463T1	P	1.33	0.60		2	Composite - Member
CLTM5030611T3	P	0.30	0.17	A Rpoly	1	MatchSS Member
CLTM5030560T1	P	0.45	0.10	D Rpoly	1	MCSS Member
CLTM5030676T1	P	1.11	0.59		2	ZoneMS Member
CLTM5030709T3	P	0.91	0.37		2	Composite - Member
CLTM5030457T3	P	0.22	0.52	A	1	Graph Member
CLTM5030708T2	P	0.83	0.32		2	Composite - Member
CLTM5030703T3	P	0.36	0.15	Rpoly O	1	MCSS Member
CLTM5030455T1	P	0.66	0.61	O	1	MCSS Member
CLTM5030609T1	P	0.78	0.58		1	MCSS Member
CLTM5030562T3	P	0.23	<0.01	A Rpoly	1	InLineChoicelistSS Member
CLTM5030559T3	P	0.08	0.58	A	1	Numeric Member
CLTM5030461T1	P	0.85	0.46		2	MCMS Member
CLTM5020349T2	P	0.27	0.37	A	1	MCSS Discrete
CLTM5020338T1	P	1.34	0.54		2	ZoneMS Discrete

Table 8.A.11 Average Item Score and Polyserial for Mathematics, Grade Six

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM6020198T1	E	0.65	0.41		1	MCSS Discrete
CLTM6020284T1	E	0.65	0.39		1	MCSS Discrete
CLTM6020293T1	E	0.64	0.47		1	ZoneSS Discrete
CLTM6020427T1	E	0.62	0.35		1	MCSS Discrete
CLTM6020363T1	E	0.76	0.40		2	MCMA - Discrete
CLTM6020432T1	E	0.74	0.40		2	MCMA - Discrete
CLTM6020285T2	E	0.55	0.46		1	MCSS Discrete
CLTM6020315T2	E	1.08	0.55		2	MatchMS Discrete
CLTM6020291T2	E	0.88	0.32		2	MCMA - Discrete
CLTM6020041T2	E	0.40	0.48		1	MCSS Discrete
CLTM6020320T1	E	0.48	0.35		1	MCSS Discrete
CLTM6020435T1	E	0.82	0.36		2	ZoneMS Discrete
CLTM6020366T1	E	0.71	0.45		2	MCMA - Discrete
CLTM6020037T1	E	0.49	0.32	O	1	MCSS Discrete
CLTM6020097T1	E	0.46	0.47		1	ZoneMS Discrete
CLTM6030685T1	O	0.57	0.45	O	1	MCSS Member
CLTM6020314T1	E	0.77	0.47		2	MCMA - Discrete
CLTM6030469T1	O	1.00	0.54		2	InLineChoicelistMS Member
CLTM6030679T1	O	0.36	0.26	O	1	MCSS Member
CLTM6020425T2	E	0.43	0.37		1	MCSS Discrete
CLTM6020433T2	E	0.81	0.55		2	MCMA - Discrete
CLTM6020364T2	E	0.76	0.57		2	MCMA - Discrete
CLTM6030683T2	O	0.44	0.47		1	InLineChoicelistSS Discrete
CLTM6030599T2	O	0.42	0.43		1	MatchSS Member
CLTM6030636T2	O	0.38	0.41	O	1	MCSS Discrete
CLTM6030472T1	O	0.52	0.31		1	MCSS Member
CLTM6020094T1	E	0.90	0.40		2	ZoneMS Discrete
CLTM6030686T2	O	0.24	0.09	D A Rpoly	1	MCSS Member
CLTM6030622T2	O	0.40	0.36		1	MCSS Member
CLTM6020095T2	E	0.80	0.38		2	MCMA - Discrete
CLTM6020199T2	E	0.43	0.40		1	MCSS Discrete
CLTM6020321T2	E	0.26	0.34	D A	1	MCSS Discrete
CLTM6020436T2	E	0.54	0.60	A	2	ZoneMS Discrete
CLTM6030467T2	O	0.57	0.33	A	2	InLineChoicelistMS Member
CLTM6020429T3	E	0.48	0.34		1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM6020200T3	E	0.49	0.34		1	ZoneSS Discrete
CLTM6030681T3	O	0.03	0.24	A	1	Numeric Member
CLTM6030602T2	O	0.69	0.42		2	InLineChoicelistMS Member
CLTM6030596T2	O	0.29	0.58	A	1	MCSS Member
CLTM6030680T2	O	0.23	0.38	A	1	InLineChoicelistSS Member
CLTM6030473T2	O	0.44	0.46		1	MCSS Discrete
CLTM6030619T2	O	0.87	0.53		2	InLineChoicelistMS Member
CLTM6020294T2	E	0.49	0.65		1	ZoneSS Discrete
CLTM6020434T3	E	1.21	0.60		2	ZoneMS Discrete
CLTM6030687T3	O	0.43	0.42		1	ZoneSS Member
CLTM6030623T3	O	0.20	0.29	D A	1	MCSS Member
CLTM6030684T3	O	0.62	0.69		1	ZoneSS Discrete
CLTM6020096T3	E	1.02	0.68		2	MCMA - Discrete
CLTM6020289T3	E	0.92	0.52		2	MCMA - Discrete
CLTM6020042T3	E	0.51	0.77		1	MCSS Discrete
CLTM6020368T3	E	0.78	0.48		2	InLineChoicelistMS Discrete
CLTM6020039T3	E	0.86	0.46		2	InLineChoicelistMS Discrete
CLTM6030618T1	P	1.21	0.55		2	MCMA - Member
CLTM6030474T3	P	0.38	0.49		1	MCSS Member
CLTM6030600T3	P	0.19	0.70	A	1	Numeric Member
CLTM6030601T1	P	1.00	0.54		2	Composite - Member
CLTM6030595T1	P	0.50	0.32		1	MCSS Member
CLTM6030468T3	P	0.76	0.41		2	ZoneMS Member
CLTM6030635T1	P	0.51	0.48		1	MCSS Member
CLTM6030603T3	P	0.80	0.59		2	InLineChoicelistMS Member
CLTM6030620T3	P	0.89	0.54		2	InLineChoicelistMS Member
CLTM6030466T1	P	0.90	0.51		2	MCMA - Member
CLTM6030470T2	P	0.69	0.22		2	InLineChoicelistMS Member
CLTM6030637T3	P	0.40	0.28		1	MCSS Member
CLTM6030598T1	P	0.52	0.48		1	MCSS Member
CLTM6030621T1	P	0.55	0.35		1	MCSS Member
CLTM6030682T1	P	0.56	0.40		1	MCSS Member

Table 8.A.12 Average Item Score and Polyserial for Mathematics, Grade Seven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM7020047T1	E	1.40	0.50		2	MCMA - Discrete
CLTM7020085T1	E	0.66	0.46		1	MCSS Discrete
CLTM7020091T1	E	1.38	0.64		2	ZoneMS Discrete
CLTM7020299T1	E	0.65	0.34		1	MCSS Discrete
CLTM7020088T1	E	0.92	0.47		2	MCMA - Discrete
CLTM7020323T1	E	0.48	0.49		1	MCSS Discrete
CLTM7020032T2	E	0.48	0.65		1	MCSS Discrete
CLTM7020089T2	E	0.98	0.44		2	ZoneMS Discrete
CLTM7020330T2	E	0.89	0.56		2	ZoneMS Discrete
CLTM7020282T2	E	0.82	0.57		2	InLineChoicelistMS Discrete
CLTM7020280T1	E	0.56	0.45	O	1	MCSS Discrete
CLTM7020326T1	E	1.03	0.54		2	MatchMS Discrete
CLTM7020296T1	E	0.48	0.42	O	1	MCSS Discrete
CLTM7020372T1	E	0.84	0.52		2	MatchMS Discrete
CLTM7030509T1	O	0.92	0.57		2	InLineChoicelistMS Member
CLTM7030512T1	O	0.76	0.50		2	InLineChoicelistMS Member
CLTM7030694T1	O	0.56	0.56	O	1	MCSS Member
CLTM7030519T2	O	0.53	0.49	A	2	InLineChoicelistMS Member
CLTM7030587T1	O	0.52	0.51	O	1	MCSS Discrete
CLTM7020092T2	E	0.89	0.65		2	ZoneMS Discrete
CLTM7020370T2	E	0.37	0.40	O	1	MCSS Discrete
CLTM7020048T2	E	0.91	0.51		2	ZoneMS Discrete
CLTM7030518T1	O	0.83	0.40		2	MCMA - Member
CLTM7030522T2	O	0.74	0.51		2	ZoneMS Member
CLTM7020448T2	O	0.22	0.36	D A O	1	MCSS Discrete
CLTM7020418T1	E	0.87	0.29		2	MCMA - Discrete
CLTM7020281T1	E	0.80	0.57		2	MCMA - Discrete
CLTM7030653T1	O	0.51	0.49		1	MCSS Discrete
CLTM7020297T2	E	0.42	0.46		1	InLineChoicelistSS Discrete
CLTM7020373T2	E	0.87	0.54		2	InLineChoicelistMS Discrete
CLTM7020327T2	E	0.75	0.38		2	MCMA - Discrete
CLTM7020449T2	E	0.41	0.48		1	MCSS Discrete
CLTM7030695T2	O	0.27	0.29	A	1	MCSS Member
CLTM7030510T2	O	0.90	0.54		2	InLineChoicelistMS Member
CLTM7030689T2	O	0.37	0.39		1	MCSS Member

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM7030692T2	O	0.30	0.41	A	1	MCSS Member
CLTM7030513T2	O	0.54	0.49	A	2	ZoneMS Member
CLTM7020301T3	E	0.35	0.52	O	1	MCSS Discrete
CLTM7020049T3	E	0.84	0.42		2	InLineChoicelistMS Discrete
CLTM7020090T3	E	0.75	0.62		2	MatchMS Discrete
CLTM7030585T2	O	0.98	0.39		2	ZoneMS Member
CLTM7030516T2	O	1.09	0.65		2	InLineChoicelistMS Member
CLTM7020419T2	E	0.84	0.46		2	InLineChoicelistMS Discrete
CLTM7030588T2	O	0.52	0.53		1	MCSS Member
CLTM7020374T3	E	1.04	0.62		2	MatchMS Discrete
CLTM7020087T3	E	0.48	0.48		1	MatchSS Discrete
CLTM7020093T3	E	0.84	0.44		2	InLineChoicelistMS Discrete
CLTM7020283T3	E	1.15	0.48		2	InLineChoicelistMS Discrete
CLTM7030654T2	O	0.72	0.60		1	MCSS Member
CLTM7030693T3	O	0.62	0.46		1	MCSS Member
CLTM7030690T3	O	0.17	0.62	A	1	Numeric Member
CLTM7030696T3	O	0.08	0.53	A	1	Numeric Member
CLTM7030514T3	O	0.94	0.43		2	InLineChoicelistMS Discrete
CLTM7020329T1	P	1.32	0.65		2	ZoneMS Discrete
CLTM7030705T2	P	0.33	0.36		1	MCSS Member
CLTM7020450T3	P	0.27	0.23	D A O	1	MCSS Discrete
CLTM7020050T1	P	0.75	0.56		1	MCSS Discrete
CLTM7030704T1	P	0.62	0.49	O	1	MCSS Member
CLTM7030511T3	P	1.02	0.53		2	ZoneMS Member
CLTM7030584T1	P	1.00	0.42		2	Composite - Member
CLTM7030688T1	P	0.68	0.51		1	MCSS Member
CLTM7030586T3	P	0.77	0.28		2	InLineChoicelistMS Member
CLTM7030515T1	P	1.10	0.50		2	InLineChoicelistMS Member
CLTM7030521T1	P	0.86	0.42		2	MCMA - Member
CLTM7030589T3	P	0.33	0.37		1	InLineChoicelistSS Member
CLTM7030691T1	P	0.64	0.51		1	MCSS Member
CLTM7030517T3	P	0.72	0.23		2	InLineChoicelistMS Discrete
CLTM7030520T3	P	0.94	0.45		2	InLineChoicelistMS Member

Table 8.A.13 Average Item Score and Polyserial for Mathematics, Grade Eight

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM8020079T1	E	0.70	0.43		1	MCSS Discrete
CLTM8020028T1	E	1.37	0.62		2	InLineChoicelistMS Discrete
CLTM8020302T1	E	0.74	0.41		1	MCSS Discrete
CLTM8020378T1	E	1.22	0.49		2	MCMA - Discrete
CLTM8020387T1	E	0.45	0.44		1	ZoneSS Discrete
CLTM8020277T1	E	1.05	0.47		2	MCMA - Discrete
CLTM8020276T2	E	0.87	0.58		2	InLineChoicelistMS Discrete
CLTM8020080T2	E	0.77	0.48		2	InLineChoicelistMS Discrete
CLTM8020029T2	E	1.19	0.58		2	InLineChoicelistMS Discrete
CLTM8020416T2	E	0.77	0.48		2	InLineChoicelistMS Discrete
CLTM8020278T1	E	0.52	0.41	O	1	MCSS Discrete
CLTM8020415T1	E	0.82	0.56		2	MCMA - Discrete
CLTM8020376T2	E	0.50	0.63		1	MatchSS Discrete
CLTM8020082T1	E	0.36	0.45		1	ZoneSS Discrete
CLTM8020388T1	E	0.47	0.36	O	1	MCSS Discrete
CLTM8020391T1	E	0.84	0.67		2	MCMA - Discrete
CLTM8030535T1	O	1.05	0.60		2	MCMA - Member
CLTM8030538T1	O	0.97	0.59		2	MCMA - Member
CLTM8030524T1	O	0.54	0.59	O	1	MatchSS Discrete
CLTM8020452T2	E	0.37	0.47		1	ZoneSS Discrete
CLTM8030528T2	O	0.90	0.50		2	InLineChoicelistMS Member
CLTM8030660T2	O	0.26	0.21	D A O	1	MCSS Discrete
CLTM8030698T2	O	0.39	0.40	O	1	MCSS Member
CLTM8030625T2	O	0.33	0.39	O	1	MCSS Member
CLTM8020305T1	E	0.66	0.48		2	MCMA - Discrete
CLTM8030659T1	O	0.67	0.41		1	MCSS Member
CLTM8030624T1	O	0.56	0.42		1	ZoneSS Discrete
CLTM8030697T1	O	0.62	0.42		1	MCSS Discrete
CLTM8020069T2	E	0.25	0.23	A	1	ZoneSS Discrete
CLTM8020303T2	E	0.38	0.21		1	ZoneSS Discrete
CLTM8020026T2	E	0.44	0.33		1	MCSS Discrete
CLTM8030531T2	O	0.96	0.50		2	InLineChoicelistMS Member
CLTM8030539T2	O	0.94	0.48		2	InLineChoicelistMS Member
CLTM8030525T2	O	0.44	0.49		1	InLineChoicelistSS Member
CLTM8020083T2	E	0.46	0.47		1	InLineChoicelistSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTM8030536T2	O	0.95	0.42		2	InLineChoicelistMS Member
CLTM8020084T3	E	0.44	0.33		1	InLineChoicelistSS Discrete
CLTM8020307T3	E	0.72	0.51		2	InLineChoicelistMS Discrete
CLTM8030529T3	O	1.13	0.16	Rpoly	2	InLineChoicelistMS Member
CLTM8030663T2	O	0.55	0.62		1	MCSS Member
CLTM8030639T2	O	0.63	0.67		1	MCSS Member
CLTM8030711T2	O	0.60	0.50		1	ZoneSS Member
CLTM8030657T2	O	0.33	0.29	A	1	MCSS Discrete
CLTM8020396T3	E	0.23	0.24	A	1	InLineChoicelistSS Discrete
CLTM8020417T3	E	0.88	0.41		2	InLineChoicelistMS Discrete
CLTM8020414T3	E	0.29	0.39	A	1	MCSS Discrete
CLTM8020279T3	E	0.53	0.37		1	MCSS Discrete
CLTM8020027T3	E	0.39	0.54		1	MCSS Discrete
CLTM8030532T3	O	0.96	0.49		2	InLineChoicelistMS Member
CLTM8030540T3	O	0.85	0.45		2	InLineChoicelistMS Member
CLTM8030526T3	O	0.45	0.42		1	MCSS Discrete
CLTM8030537T3	O	0.96	0.51		2	InLineChoicelistMS Member
CLTM8030638T1	P	0.74	0.51		1	MCSS Discrete
CLTM8030533T1	P	0.45	0.44		1	ZoneSS Discrete
CLTM8030664T3	P	0.12	0.68	A	1	Numeric Member
CLTM8030656T1	P	0.56	0.28	O	1	MCSS Member
CLTM8030699T3	P	0.07	0.63	A	1	Numeric Member
CLTM8030534T3	P	0.36	0.45		1	ZoneSS Member
CLTM8020453T3	P	0.35	0.45		1	ZoneSS Discrete
CLTM8030530T1	P	1.04	0.33		2	MCMA - Member
CLTM8030658T3	P	0.33	0.75		1	Numeric Member
CLTM8020332T1	P	0.79	0.43		1	MCSS Discrete
CLTM8030527T1	P	1.18	0.60		2	MCMA - Member
CLTM8030640T3	P	0.29	0.68	A	1	Numeric Member
CLTM8020412T1	P	0.60	0.36		1	MCSS Discrete
CLTM8030661T3	P	0.42	0.09	Rpoly	1	ZoneMS Discrete
CLTM8030626T3	P	0.21	0.14	A Rpoly	1	ZoneSS Member

Table 8.A.14 Average Item Score and Polyserial for Mathematics, Grade Eleven

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTMH020019T1	E	0.74	0.40		1	MCSS Discrete
CLTMH020272T1	E	0.73	0.49		1	MCSS Discrete
CLTMH020447T1	E	0.64	0.66		1	ZoneSS Discrete
CLTMH020043T1	E	0.63	0.65		1	ZoneSS Discrete
CLTMH020073T1	E	1.39	0.64		2	MatchMS Discrete
CLTMH020409T1	E	1.20	0.51		2	MCMA - Discrete
CLTMH020398T2	E	1.34	0.52		2	ZoneMS Discrete
CLTMH020385T2	E	0.88	0.41		2	MCMA - Discrete
CLTMH020071T2	E	0.32	0.17	A Rpoly	1	MatchMS Discrete
CLTMH020020T2	E	0.64	0.50		1	MCSS Discrete
CLTMH020022T1	E	0.55	0.41		1	MCSS Discrete
CLTMH020308T1	E	0.45	0.59		1	ZoneSS Discrete
CLTMH020311T1	E	0.47	0.29		1	MatchSS Discrete
CLTMH020076T1	E	0.33	0.41	A	1	ZoneSS Discrete
CLTMH020068T1	E	0.52	0.44		1	MCSS Discrete
CLTMH020406T1	E	0.78	0.39		2	MCMA - Discrete
CLTMH030641T1	O	0.87	0.51		2	MCMA - Member
CLTMH030554T1	O	0.74	0.47		2	MCMA - Member
CLTMH030712T1	O	0.31	0.54	A	1	ZoneSS Member
CLTMH020077T2	E	0.27	0.29	A	1	ZoneSS Discrete
CLTMH030628T2	O	0.33	0.53	O	1	MCSS Member
CLTMH030548T2	O	0.29	0.30	A O	1	MCSS Discrete
CLTMH030542T2	O	0.39	0.29		1	ZoneMS Discrete
CLTMH030645T2	O	1.16	0.61		2	InLineChoicelistMS Member
CLTMH030555T2	O	0.81	0.36		2	InLineChoicelistMS Member
CLTMH020335T1	E	0.44	0.24		1	MCSS Discrete
CLTMH030553T1	O	0.71	0.46		1	MCSS Discrete
CLTMH030541T1	O	0.55	0.36		1	MCSS Discrete
CLTMH020382T2	E	0.57	0.42	A	2	MCMA - Discrete
CLTMH020402T2	E	0.85	0.41		2	InLineChoicelistMS Discrete
CLTMH020407T2	E	0.83	0.49		2	MCMA - Discrete
CLTMH030713T2	O	0.29	0.22	A	1	MCSS Discrete
CLTMH030666T2	O	1.41	0.52		2	InLineChoicelistMS Member
CLTMH030633T2	O	0.26	0.26	D A	1	MCSS Member
CLTMH030631T2	O	0.37	0.30		1	MCSS Discrete

Item ID	Item Use	AIS	Polyserial	Flag	Maximum Score Points	Item Type
CLTMH030546T2	O	0.85	0.36		2	ZoneMS Member
CLTMH020383T3	E	0.89	0.38		2	ZoneMS Discrete
CLTMH020045T3	E	0.54	0.35		1	MCSS Discrete
CLTMH030547T3	O	0.89	0.19	Rpoly	2	Composite - Member
CLTMH020270T2	E	0.48	0.40		1	MCSS Discrete
CLTMH030642T2	O	1.12	0.42		2	InLineChoicelistMS Member
CLTMH030551T2	O	1.58	0.55		2	ZoneMS Member
CLTMH020044T2	E	0.33	0.34	A	1	MCSS Discrete
CLTMH020078T3	E	0.30	0.29	A	1	ZoneSS Discrete
CLTMH020313T3	E	0.46	0.38		1	MCSS Discrete
CLTMH020403T3	E	0.82	0.41		2	InLineChoicelistMS Discrete
CLTMH030643T3	O	0.84	0.34		2	InLineChoicelistMS Member
CLTMH030543T3	O	0.41	0.46		1	MCSS Discrete
CLTMH030714T3	O	0.31	0.38	A	1	MCSS Discrete
CLTMH030667T3	O	1.02	0.66		2	BarPicturegraphMS Member
CLTMH030552T3	O	1.25	0.53		2	InLineChoicelistMS Member
CLTMH030634T3	O	0.15	0.57	A	1	Numeric Discrete
CLTMH030550T1	P	0.86	0.37		2	MCMA - Discrete
CLTMH020397T1	P	1.08	0.56		2	MCMA - Discrete
CLTMH030544T3	P	0.10	0.63	A	1	Numeric Discrete
CLTMH030549T1	P	0.58	0.49		1	MCSS Member
CLTMH030632T3	P	0.44	0.32		1	MCSS Discrete
CLTMH030556T3	P	0.99	0.44		2	InLineChoicelistMS Member
CLTMH030630T1	P	0.58	0.57		1	ZoneSS Discrete
CLTMH030629T3	P	0.14	0.81	A	1	Numeric Discrete
CLTMH030646T3	P	0.80	0.72		2	BarPicturegraphMS Member
CLTMH030644T1	P	1.22	0.71		2	MatchMS Member
CLTMH020336T2	P	0.57	0.59		1	ZoneMS Discrete
CLTMH020337T3	P	0.59	0.34		1	MCSS Discrete
CLTMH030665T1	P	1.25	0.62		2	MatchMS Member
CLTMH030545T1	P	1.03	0.31		2	MCMA - Member
CLTMH020381T1	P	1.19	0.53		2	MCMA - Discrete

Note: In Table 8.A.15 through Table 8.A.28, the columns *Score 0, Score 1,* and *Score 2* indicate the possible scores for the item.

Table 8.A.15 Distribution of Item Scores for ELA, Grade Three

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTW3020095T1	E	2	3%	34%	60%	3%
CLTW3020056T1	E	2	32%	7%	59%	2%
CLTW3020096T1	E	2	6%	56%	33%	5%
CLTR3020159T2	E	2	5%	51%	40%	5%
CLTR3020142T2	E	2	37%	15%	45%	4%
CLTR3020140T2	E	2	2%	48%	47%	3%
CLTR3020057T1-M	O	2	5%	57%	33%	5%
CLTR3020059T1	E	2	17%	7%	73%	4%
CLTR3020170T1	O	2	43%	20%	31%	7%
CLTR3020169T1	O	2	4%	59%	30%	8%
CLTW3020171T1-M	O	1	66%	29%	NA	5%
CLTW3020108T1	E	1	10%	71%	NA	19%
CLTW3020146T2	E	2	3%	53%	38%	6%
CLTR3020053T1-M	O	1	18%	77%	NA	5%
CLTR3020160T2	E	2	21%	10%	67%	2%
CLTW3020145T2-M	O	2	4%	31%	61%	3%
CLTR3020166T3	E	2	4%	59%	35%	2%
CLTR3020167T3	E	1	19%	78%	NA	3%
CLTR3020168T3	E	2	21%	12%	65%	3%
CLTW3030113T2	O	2	7%	9%	82%	2%
CLTW3030160T3	O	2	25%	23%	50%	2%
CLTW3020403T3	E	2	26%	27%	45%	2%
CLTW3020006T3	O	1	40%	60%	NA	1%
CLTR3020004T3	O	2	1%	31%	68%	0%
CLTW3030006T1	P	2	37%	8%	49%	5%
CLTR3030111T2	P	2	22%	6%	68%	4%
CLTW3030082T2	P	2	10%	39%	42%	9%
CLTR3030017T1	P	1	14%	69%	NA	17%
CLTW3030030T1	P	2	24%	29%	36%	11%
CLTR3030167T3	P	2	29%	12%	54%	6%

Table 8.A.16 Distribution of Item Scores for ELA, Grade Four

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTR4020257T1	E	2	3%	32%	64%	1%
CLTR4020258T1	E	2	29%	8%	62%	2%
CLTW4020086T2	E	2	26%	17%	50%	7%
CLTR4020117T2	E	2	4%	52%	41%	3%
CLTR4020242T1	E	2	5%	55%	33%	7%
CLTR4020305T1	E	2	3%	51%	42%	4%
CLTW4020306T1	E	2	6%	51%	40%	4%
CLTR4030172T1	O	2	15%	56%	21%	8%
CLTW4020240T1-M	O	2	13%	38%	35%	14%
CLTR4020085T2	E	1	32%	61%	NA	6%
CLTR4030024T2	O	2	10%	56%	17%	16%
CLTR4030025T2	O	2	48%	16%	23%	14%
CLTR4020120T2	E	2	21%	46%	29%	4%
CLTW4020121T2	E	1	53%	44%	NA	3%
CLTW4030016T2	O	2	32%	32%	29%	6%
CLTR4020449T3	E	2	2%	46%	50%	3%
CLTR4020450T3	E	2	18%	12%	66%	4%
CLTR4030021T2	O	2	2%	44%	50%	4%
CLTR4020244T3-M	O	2	33%	17%	48%	1%
CLTW4020246T3	E	2	12%	51%	35%	2%
CLTR4030090T3	O	2	7%	56%	35%	3%
CLTR4030091T3	O	2	22%	11%	63%	3%
CLTW4020135T3	E	2	12%	17%	69%	3%
CLTR4030137T3	O	2	3%	22%	73%	2%
CLTR4030235T1	P	1	26%	65%	NA	9%
CLTR4030236T1	P	2	6%	52%	38%	5%
CLTR4030087T3	P	2	14%	55%	19%	12%
CLTW4030088T3	P	1	45%	43%	NA	12%
CLTR4030177T1	P	2	2%	29%	62%	7%
CLTR4030178T1	P	2	34%	9%	50%	6%
CLTR4030138T3	P	2	19%	48%	28%	5%
CLTW4030133T3	P	2	43%	24%	26%	7%

Table 8.A.17 Distribution of Item Scores for ELA, Grade Five

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTR5020328T1	E	2	4%	47%	47%	2%
CLTW5020317T1	E	2	3%	32%	64%	1%
CLTR5020316T1	E	2	21%	14%	63%	2%
CLTR5020254T2	E	2	2%	49%	46%	2%
CLTR5020315T1	E	2	4%	64%	28%	4%
CLTW5020313T1-M	O	2	9%	20%	65%	7%
CLTR5020334T1	O	2	4%	50%	41%	5%
CLTR5020453T1-M	O	2	2%	35%	55%	8%
CLTW5020454T1-M	O	2	6%	61%	25%	9%
CLTR5020047T2	E	2	3%	63%	28%	6%
CLTW5020343T2	E	2	6%	52%	37%	5%
CLTR5020346T2	E	2	36%	16%	42%	6%
CLTR5030185T2	O	2	3%	42%	48%	6%
CLTR5020342T2	E	2	45%	11%	43%	1%
CLTW5020339T2	E	2	4%	47%	48%	2%
CLTR5030180T2	O	2	2%	41%	52%	6%
CLTR5030183T2	O	2	2%	45%	51%	2%
CLTR5020074T3	E	2	40%	12%	47%	2%
CLTR5030077T3	O	2	4%	69%	25%	2%
CLTR5030189T2	O	2	0%	28%	71%	1%
CLTW5030190T2	O	2	2%	38%	58%	3%
CLTR5020038T3	E	1	59%	41%	NA	1%
CLTW5020040T3	E	2	38%	30%	28%	3%
CLTR5020075T3	O	2	8%	6%	84%	2%
CLTR5030044T3	O	2	1%	15%	81%	3%
CLTW5030045T3	O	2	12%	27%	56%	6%
CLTR5030076T3	O	2	3%	53%	42%	2%
CLTR5030123T1	P	2	42%	16%	37%	5%
CLTW5030124T1	P	2	0%	36%	57%	7%
CLTR5030154T1	P	2	4%	35%	58%	2%
CLTR5030186T2	P	2	3%	53%	42%	2%
CLTR5030039T3	P	1	51%	43%	NA	7%
CLTR5030040T3	P	2	6%	58%	27%	8%
CLTR5030156T1	P	2	3%	33%	61%	3%
CLTR5030155T1	P	2	4%	54%	39%	3%
CLTR5030078T3	P	2	3%	40%	53%	4%
CLTW5030079T3	P	1	43%	50%	NA	7%

Table 8.A.18 Distribution of Item Scores for ELA, Grade Six

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTR6020097T1	E	2	8%	4%	87%	2%
CLTR6020150T1	E	2	14%	4%	81%	1%
CLTW6020104T1	E	2	4%	47%	46%	2%
CLTR6020099T1	E	2	22%	7%	68%	2%
CLTW6020201T2	E	2	32%	36%	23%	9%
CLTR6020203T2	E	2	47%	15%	33%	4%
CLTR6030011T1	O	2	61%	20%	9%	10%
CLTW6030012T1	O	1	58%	25%	NA	17%
CLTR6020113T1	E	2	44%	22%	30%	5%
CLTW6030202T1	O	1	36%	54%	NA	10%
CLTR6020098T1	E	2	12%	59%	21%	9%
CLTR6020204T2	E	2	7%	48%	34%	11%
CLTR6020196T2	E	2	10%	67%	11%	12%
CLTW6020198T2-M	O	1	74%	13%	NA	13%
CLTR6020202T2	O	2	6%	49%	33%	12%
CLTR6020064T1-M	O	2	49%	11%	38%	3%
CLTR6020065T1	E	2	41%	22%	34%	3%
CLTR6020184T2	E	2	22%	51%	25%	2%
CLTW6030206T2	O	1	53%	40%	NA	7%
CLTR6030074T2	O	1	75%	18%	NA	7%
CLTW6030075T2	O	2	10%	34%	50%	6%
CLTR6020420T3	E	2	9%	56%	32%	3%
CLTR6030205T3	O	2	11%	63%	21%	5%
CLTR6030148T2	O	2	3%	34%	61%	3%
CLTW6030149T2	O	1	36%	61%	NA	3%
CLTW6020399T3	E	2	20%	37%	37%	5%
CLTR6030199T3	O	2	13%	41%	43%	3%
CLTW6030201T3	O	2	21%	36%	36%	7%
CLTR6030030T1	P	2	15%	11%	69%	5%
CLTW6030032T1	P	2	9%	41%	43%	7%
CLTW6030066T1	P	2	11%	47%	32%	10%
CLTR6030083T2	P	2	4%	45%	44%	7%
CLTW6030085T2	P	2	14%	48%	30%	7%
CLTW6030196T3	P	2	27%	31%	30%	12%
CLTR6030195T3	P	1	79%	13%	NA	9%
CLTR6030197T2	P	1	49%	44%	NA	8%
CLTW6030198T2	P	1	54%	39%	NA	6%

Table 8.A.19 Distribution of Item Scores for ELA, Grade Seven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTR7020012T1	E	2	47%	10%	41%	2%
CLTR7020382T1	E	2	5%	50%	43%	2%
CLTW7020386T1	E	2	5%	50%	43%	2%
CLTR7020427T2	E	2	4%	64%	26%	5%
CLTR7020368T2	E	2	3%	54%	38%	4%
CLTW7020412T1	E	2	5%	79%	10%	5%
CLTR7020379T1	E	2	5%	61%	28%	6%
CLTW7030254T1	O	2	7%	57%	27%	9%
CLTR7020383T1	O	2	46%	12%	38%	5%
CLTR7020378T2	E	2	49%	20%	22%	10%
CLTW7020375T2	E	2	33%	28%	24%	16%
CLTR7020008T1	E	2	0%	32%	66%	1%
CLTWT020155T2	E	2	23%	44%	27%	5%
CLTR7030047T2	O	2	19%	44%	32%	4%
CLTR7030048T2	O	2	40%	20%	37%	3%
CLTR7020372T2	O	2	33%	11%	55%	2%
CLTW7020350T3	E	2	23%	41%	29%	7%
CLTR7020349T3	E	1	86%	11%	NA	3%
CLTR7020158T2	E	2	7%	31%	57%	5%
CLTW7030056T2	O	2	12%	34%	50%	4%
CLTR7020357T3	E	2	32%	11%	56%	1%
CLTR7020358T3	E	1	77%	22%	NA	1%
CLTR7020364T3	E	2	3%	63%	34%	1%
CLTR7030098T3	O	2	11%	48%	38%	2%
CLTR7020365T3	O	2	21%	12%	67%	0%
CLTR7030255T1	P	1	42%	50%	NA	9%
CLTR7030257T1	P	2	4%	28%	60%	9%
CLTR7030244T1	P	2	4%	48%	40%	9%
CLTR7030243T1	P	2	11%	4%	78%	7%
CLTR7030070T2	P	2	5%	56%	31%	9%

Table 8.A.20 Distribution of Item Scores for ELA, Grade Eight

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTR8020446T1	E	2	3%	38%	58%	1%
CLTR8020394T1	E	2	4%	62%	33%	1%
CLTW8020396T1	E	2	6%	64%	29%	1%
CLTW8020388T1	E	2	3%	51%	45%	1%
CLTR8020321T2	E	2	4%	35%	59%	2%
CLTR8020323T2	E	2	35%	10%	53%	2%
CLTR8020288T2	E	2	3%	56%	37%	4%
CLTR8020284T1	E	2	58%	18%	22%	2%
CLTR8020282T1	E	2	4%	49%	45%	2%
CLTR8020447T1	E	2	4%	67%	26%	2%
CLTW8030212T1	O	2	17%	53%	25%	4%
CLTR8020289T2	O	2	3%	60%	33%	5%
CLTR8020292T2	E	2	36%	17%	43%	5%
CLTR8020293T2-M	O	2	12%	42%	39%	7%
CLTR8020294T2	E	2	6%	69%	20%	5%
CLTW8030224T2	O	2	8%	65%	21%	6%
CLTW8030219T2	O	2	22%	25%	43%	10%
CLTW8020389T1	E	2	1%	42%	57%	1%
CLTW8020261T2	O	2	1%	30%	68%	1%
CLTR8030218T2	O	2	7%	43%	48%	3%
CLTR8030216T2	O	2	1%	49%	46%	4%
CLTR8020439T3	E	2	8%	51%	40%	1%
CLTW8030121T3	O	2	1%	52%	45%	2%
CLTR8030120T3	O	1	61%	37%	NA	2%
CLTW8020287T2-M	O	1	65%	34%	NA	1%
CLTR8020291T2	E	2	0%	19%	79%	1%
CLTR8020066T3	E	2	5%	60%	34%	1%
CLTR8020068T3	E	2	18%	12%	67%	2%
CLTR8030008T3	O	1	27%	71%	NA	2%
CLTR8030007T3	O	2	2%	46%	49%	2%
CLTW8030009T3	O	2	3%	58%	36%	2%
CLTR8030103T1	P	2	21%	15%	60%	4%
CLTR8030101T1	P	2	24%	5%	67%	4%
CLTR8030208T2	P	2	6%	61%	26%	6%
CLTR8030059T3	P	2	34%	11%	49%	5%
CLTR8030057T3	P	2	2%	54%	36%	8%
CLTR8030058T3	P	1	71%	22%	NA	7%
CLTR8030213T2	P	2	2%	43%	50%	5%
CLTW8030215T2	P	2	6%	69%	20%	5%
CLTR8030105T1	P	2	25%	21%	49%	5%

Table 8.A.21 Distribution of Item Scores for ELA, Grade Eleven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTWH020236T1	E	2	3%	31%	62%	4%
CLTRH020228T1	E	2	10%	63%	25%	2%
CLTRH020033T1	E	2	4%	60%	34%	2%
CLTRH020218T2	E	2	5%	70%	22%	3%
CLTWH020232T1	E	2	6%	60%	26%	7%
CLTRH020234T1	O	2	30%	15%	50%	6%
CLTRH030038T1	O	2	52%	16%	24%	9%
CLTRH030037T1	O	2	9%	60%	20%	12%
CLTRH020188T2-M	O	1	48%	46%	NA	6%
CLTRH020189T2	E	2	23%	8%	66%	4%
CLTRH020187T2	E	1	67%	29%	NA	4%
CLTWH020226T2	O	2	8%	59%	28%	4%
CLTRH020032T1-M	O	2	16%	52%	30%	2%
CLTRH020191T2	E	2	2%	49%	47%	2%
CLTRH020190T2-M	O	2	0%	49%	48%	2%
CLTRH020224T2	O	2	38%	11%	49%	2%
CLTRH020276T3	E	2	13%	47%	38%	2%
CLTWH030230T3	O	1	67%	31%	NA	2%
CLTWH020222T2	E	2	0%	16%	82%	1%
CLTRH030093T2	O	2	2%	21%	76%	0%
CLTRH030094T2	O	2	15%	12%	71%	1%
CLTRH020267T3	E	2	6%	58%	35%	1%
CLTWH020433T3	E	2	24%	44%	27%	6%
CLTRH020431T3-M	O	2	22%	9%	67%	1%
CLTRH030227T3	O	2	26%	8%	64%	3%
CLTRH030225T3	O	1	53%	45%	NA	2%
CLTRH030226T3	O	2	4%	60%	34%	2%
CLTWH030119T1	P	2	10%	39%	42%	9%
CLTRH030266T2	P	2	3%	31%	62%	4%
CLTRH030267T2	P	2	4%	49%	41%	7%
CLTWH030222T3	P	2	16%	34%	37%	12%
CLTRH030220T3	P	1	79%	16%	NA	5%
CLTRH030034T1	P	2	5%	45%	46%	3%
CLTRH030033T1	P	2	10%	63%	20%	7%
CLTRH030229T3	P	1	75%	21%	NA	4%

Table 8.A.22 Distribution of Item Scores for Mathematics, Grade Three

Item ID	Item use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM3020171T1	E	2	41%	19%	38%	2%
CLTM3020054T2	E	2	56%	11%	28%	4%
CLTM3020002T2	E	2	25%	51%	15%	8%
CLTM3020063T2	E	2	29%	7%	59%	5%
CLTM3020001T1	E	2	44%	13%	38%	6%
CLTM3020010T1	E	2	36%	14%	44%	6%
CLTM3030569T1	O	2	19%	44%	28%	9%
CLTM3030581T1	O	2	29%	36%	22%	14%
CLTM3030500T1	O	1	38%	47%	NA	14%
CLTM3020011T2	E	2	32%	27%	28%	13%
CLTM3030564T2	O	1	48%	32%	NA	20%
CLTM3030572T1	O	2	39%	39%	17%	5%
CLTM3030506T1	O	1	36%	57%	NA	7%
CLTM3020172T2	E	2	39%	23%	34%	4%
CLTM3030582T2	O	2	18%	39%	32%	10%
CLTM3030583T3	O	2	24%	64%	6%	5%
CLTM3020003T3	E	2	42%	10%	42%	6%
CLTM3030573T2	O	2	24%	23%	49%	4%
CLTM3030504T2	O	2	52%	31%	15%	2%
CLTM3020064T3	E	2	49%	17%	32%	3%
CLTM3030571T3	O	2	38%	42%	16%	3%
CLTM3030503T1	P	2	25%	42%	28%	5%
CLTM3030497T3	P	1	81%	9%	NA	11%
CLTM3030592T2	P	2	14%	63%	18%	5%
CLTM3030505T3	P	2	38%	43%	10%	9%
CLTM3030499T2	P	2	30%	50%	13%	8%
CLTM3030710T3	P	2	40%	36%	13%	11%
CLTM3030570T2	P	2	47%	30%	10%	13%
CLTM3030591T1	P	2	12%	44%	36%	8%
CLTM3030590T2	P	2	35%	50%	8%	7%
CLTM3030498T1	P	2	23%	47%	23%	8%
CLTM3030702T1	P	2	24%	35%	34%	7%
CLTM3030574T3	P	2	57%	14%	14%	14%

Table 8.A.23 Distribution of Item Scores for Mathematics, Grade Four

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM4020177T1	E	2	7%	49%	42%	2%
CLTM4020249T1	E	2	21%	45%	26%	8%
CLTM4020231T1	E	2	9%	63%	27%	2%
CLTM4020229T2	E	2	23%	52%	18%	8%
CLTM4020216T1	E	2	54%	12%	32%	2%
CLTM4030671T1	O	2	5%	70%	20%	5%
CLTM4030484T1	O	2	32%	28%	29%	11%
CLTM4030475T1	O	2	4%	44%	47%	5%
CLTM4020178T2	E	2	24%	31%	34%	11%
CLTM4030479T2	O	2	41%	40%	11%	8%
CLTM4020250T2	E	2	11%	70%	14%	5%
CLTM4030651T2	O	2	48%	37%	6%	9%
CLTM4030478T1	O	2	32%	12%	55%	1%
CLTM4020211T2	E	2	62%	28%	8%	2%
CLTM4030476T2	O	2	17%	11%	70%	2%
CLTM4030485T2	O	2	30%	42%	25%	2%
CLTM4020251T3	E	2	47%	20%	32%	2%
CLTM4020217T2	E	2	31%	25%	44%	1%
CLTM4030494T2	O	2	16%	45%	37%	1%
CLTM4030672T2	O	2	13%	65%	21%	2%
CLTM4020230T3	E	2	15%	60%	25%	1%
CLTM4020227T3	E	2	12%	17%	70%	1%
CLTM4030486T3	O	2	23%	22%	53%	2%
CLTM4030480T3	O	2	24%	18%	56%	2%
CLTM4030493T1	P	2	18%	60%	19%	4%
CLTM4030673T3	P	2	70%	20%	6%	4%
CLTM4030650T1	P	2	10%	31%	51%	9%
CLTM4030492T3	P	1	84%	7%	NA	9%
CLTM4030612T1	P	2	2%	37%	57%	3%
CLTM4030477T3	P	2	47%	27%	18%	8%
CLTM4030495T3	P	2	34%	37%	24%	5%
CLTM4030615T1	P	1	33%	60%	NA	7%
CLTM4030613T2	P	2	25%	31%	37%	7%
CLTM4030652T3	P	2	51%	32%	10%	7%

Table 8.A.24 Distribution of Item Scores for Mathematics, Grade Five

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM5020195T1	E	2	8%	24%	67%	1%
CLTM5020183T1	E	2	19%	35%	43%	3%
CLTM5020340T1	E	2	50%	13%	35%	1%
CLTM5020341T2	E	2	48%	12%	39%	2%
CLTM5020213T1	E	1	29%	66%	NA	5%
CLTM5030575T1	O	2	31%	43%	19%	6%
CLTM5020357T1	E	2	17%	46%	31%	7%
CLTM5030458T1	O	2	16%	49%	30%	5%
CLTM5030707T1	O	2	59%	12%	24%	6%
CLTM5020196T2	E	2	16%	45%	32%	7%
CLTM5030607T2	O	2	23%	47%	22%	7%
CLTM5020405T2	E	2	48%	8%	38%	7%
CLTM5030561T2	O	1	65%	26%	NA	9%
CLTM5030456T2	O	1	54%	30%	NA	16%
CLTM5030675T1	O	2	43%	22%	32%	2%
CLTM5030464T2	O	2	11%	66%	20%	3%
CLTM5020184T2	E	2	40%	26%	31%	3%
CLTM5030677T2	O	2	49%	41%	7%	3%
CLTM5020358T2	E	2	44%	16%	38%	3%
CLTM5020269T3	E	2	28%	45%	23%	4%
CLTM5020359T3	E	2	20%	42%	34%	4%
CLTM5030674T3	O	2	45%	45%	5%	4%
CLTM5030459T2	O	2	27%	49%	22%	2%
CLTM5030576T2	O	2	14%	44%	40%	2%
CLTM5030462T2	O	2	35%	39%	23%	3%
CLTM5020343T2	E	1	71%	25%	NA	3%
CLTM5020215T3	E	1	59%	36%	NA	6%
CLTM5030465T3	O	2	4%	51%	42%	3%
CLTM5030608T3	O	2	23%	48%	25%	5%
CLTM5030577T3	O	2	26%	34%	36%	3%
CLTM5030460T3	O	2	53%	32%	12%	3%
CLTM5030678T3	O	2	32%	25%	41%	3%
CLTM5030463T1	P	2	15%	33%	50%	3%
CLTM5030611T3	P	1	66%	30%	NA	5%
CLTM5030676T1	P	2	11%	57%	27%	5%
CLTM5030709T3	P	2	28%	44%	23%	5%
CLTM5030457T3	P	1	78%	22%	NA	0%
CLTM5030708T2	P	2	31%	43%	20%	6%

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM5030562T3	P	1	72%	23%	NA	5%
CLTM5030559T3	P	1	84%	8%	NA	8%
CLTM5030461T1	P	2	27%	56%	14%	3%
CLTM5020338T1	P	2	9%	45%	45%	2%

Table 8.A.25 Distribution of Item Scores for Mathematics, Grade Six

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM6020293T1	E	1	34%	64%	NA	2%
CLTM6020363T1	E	2	56%	10%	33%	1%
CLTM6020432T1	E	2	56%	10%	32%	2%
CLTM6020315T2	E	2	30%	27%	40%	3%
CLTM6020291T2	E	2	48%	12%	38%	2%
CLTM6020435T1	E	2	32%	46%	18%	4%
CLTM6020366T1	E	2	50%	21%	25%	3%
CLTM6020097T1	E	1	48%	46%	NA	6%
CLTM6020314T1	E	2	47%	20%	28%	5%
CLTM6030469T1	O	2	29%	25%	38%	8%
CLTM6020433T2	E	2	45%	20%	30%	5%
CLTM6020364T2	E	2	47%	19%	29%	6%
CLTM6030683T2	O	1	48%	44%	NA	8%
CLTM6030599T2	O	1	47%	42%	NA	11%
CLTM6020094T1	E	2	23%	59%	15%	2%
CLTM6020095T2	E	2	52%	12%	34%	2%
CLTM6020436T2	E	2	61%	16%	19%	4%
CLTM6030467T2	O	2	46%	41%	8%	5%
CLTM6020200T3	E	1	45%	49%	NA	6%
CLTM6030681T3	O	1	90%	3%	NA	7%
CLTM6030602T2	O	2	42%	37%	16%	5%
CLTM6030680T2	O	1	74%	23%	NA	3%
CLTM6030619T2	O	2	34%	41%	23%	2%
CLTM6020294T2	E	1	48%	49%	NA	3%
CLTM6020434T3	E	2	25%	25%	48%	2%
CLTM6030687T3	O	1	51%	43%	NA	7%
CLTM6030684T3	O	1	30%	62%	NA	9%
CLTM6020096T3	E	2	42%	11%	45%	2%
CLTM6020289T3	E	2	43%	17%	38%	2%
CLTM6020368T3	E	2	40%	34%	22%	4%
CLTM6020039T3	E	2	30%	46%	20%	4%
CLTM6030618T1	P	2	34%	9%	56%	2%
CLTM6030600T3	P	1	75%	19%	NA	6%
CLTM6030601T1	P	2	26%	38%	31%	5%
CLTM6030468T3	P	2	23%	65%	6%	7%
CLTM6030603T3	P	2	32%	44%	18%	6%
CLTM6030620T3	P	2	32%	36%	27%	6%
CLTM6030466T1	P	2	46%	16%	37%	2%
CLTM6030470T2	P	2	39%	46%	11%	3%

Table 8.A.26 Distribution of Item Scores for Mathematics, Grade Seven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM7020047T1	E	2	25%	9%	65%	1%
CLTM7020091T1	E	2	25%	3%	68%	5%
CLTM7020088T1	E	2	46%	14%	39%	1%
CLTM7020089T2	E	2	15%	65%	16%	3%
CLTM7020330T2	E	2	43%	11%	39%	7%
CLTM7020282T2	E	2	33%	37%	23%	8%
CLTM7020326T1	E	2	21%	35%	34%	10%
CLTM7020372T1	E	2	27%	43%	21%	9%
CLTM7030509T1	O	2	26%	36%	28%	10%
CLTM7030512T1	O	2	34%	27%	24%	15%
CLTM7030519T2	O	2	43%	38%	8%	11%
CLTM7020092T2	E	2	40%	3%	43%	14%
CLTM7020048T2	E	2	33%	23%	34%	10%
CLTM7030518T1	O	2	42%	10%	37%	11%
CLTM7030522T2	O	2	24%	56%	9%	11%
CLTM7020418T1	E	2	43%	24%	32%	2%
CLTM7020281T1	E	2	52%	12%	34%	2%
CLTM7020297T2	E	1	54%	42%	NA	4%
CLTM7020373T2	E	2	27%	53%	17%	3%
CLTM7020327T2	E	2	48%	22%	26%	3%
CLTM7030510T2	O	2	28%	44%	23%	5%
CLTM7030513T2	O	2	45%	42%	6%	7%
CLTM7020049T3	E	2	35%	36%	24%	5%
CLTM7020090T3	E	2	41%	33%	21%	5%
CLTM7030585T2	O	2	18%	62%	18%	2%
CLTM7030516T2	O	2	29%	30%	39%	1%
CLTM7020419T2	E	2	38%	36%	24%	2%
CLTM7020374T3	E	2	22%	49%	28%	2%
CLTM7020087T3	E	1	49%	48%	NA	3%
CLTM7020093T3	E	2	37%	39%	23%	2%
CLTM7020283T3	E	2	20%	40%	37%	2%
CLTM7030690T3	O	1	81%	17%	NA	2%
CLTM7030696T3	O	1	88%	8%	NA	5%
CLTM7030514T3	O	2	24%	53%	21%	3%
CLTM7020329T1	P	2	27%	3%	64%	6%
CLTM7030511T3	P	2	17%	55%	24%	4%
CLTM7030584T1	P	2	20%	50%	25%	4%
CLTM7030586T3	P	2	33%	44%	16%	6%
CLTM7030515T1	P	2	28%	22%	44%	6%

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM7030521T1	P	2	45%	14%	36%	5%
CLTM7030589T3	P	1	59%	33%	NA	7%
CLTM7030517T3	P	2	40%	37%	18%	5%
CLTM7030520T3	P	2	23%	50%	22%	5%

Table 8.A.27 Distribution of Item Scores for Mathematics, Grade Eight

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM8020028T1	E	2	9%	38%	50%	3%
CLTM8020378T1	E	2	32%	11%	55%	1%
CLTM8020387T1	E	1	51%	45%	NA	4%
CLTM8020277T1	E	2	37%	17%	44%	2%
CLTM8020276T2	E	2	32%	41%	23%	4%
CLTM8020080T2	E	2	33%	45%	16%	6%
CLTM8020029T2	E	2	21%	29%	45%	5%
CLTM8020416T2	E	2	34%	46%	16%	5%
CLTM8020415T1	E	2	44%	16%	33%	6%
CLTM8020376T2	E	1	42%	50%	NA	8%
CLTM8020082T1	E	1	46%	36%	NA	18%
CLTM8020391T1	E	2	42%	16%	34%	8%
CLTM8030535T1	O	2	34%	10%	47%	8%
CLTM8030538T1	O	2	36%	11%	43%	10%
CLTM8030524T1	O	1	26%	54%	NA	20%
CLTM8020452T2	E	1	57%	37%	NA	6%
CLTM8030528T2	O	2	18%	49%	21%	12%
CLTM8020305T1	E	2	49%	10%	28%	12%
CLTM8030624T1	O	1	36%	56%	NA	8%
CLTM8020069T2	E	1	72%	25%	NA	3%
CLTM8020303T2	E	1	55%	38%	NA	7%
CLTM8030531T2	O	2	27%	43%	27%	3%
CLTM8030539T2	O	2	27%	46%	24%	3%
CLTM8030525T2	O	1	53%	44%	NA	3%
CLTM8020083T2	E	1	51%	46%	NA	3%
CLTM8030536T2	O	2	33%	32%	31%	3%
CLTM8020084T3	E	1	52%	44%	NA	4%
CLTM8020307T3	E	2	45%	32%	20%	3%
CLTM8030529T3	O	2	18%	44%	34%	3%
CLTM8030711T2	O	1	35%	60%	NA	5%
CLTM8020396T3	E	1	75%	23%	NA	1%
CLTM8020417T3	E	2	26%	56%	16%	2%
CLTM8030532T3	O	2	24%	50%	23%	3%
CLTM8030540T3	O	2	34%	43%	21%	3%
CLTM8030537T3	O	2	23%	53%	21%	2%
CLTM8030533T1	P	1	47%	45%	NA	8%
CLTM8030664T3	P	1	82%	12%	NA	6%
CLTM8030699T3	P	1	85%	7%	NA	8%
CLTM8030534T3	P	1	54%	36%	NA	11%
CLTM8020453T3	P	1	59%	35%	NA	6%

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTM8030530T1	P	2	38%	11%	46%	4%
CLTM8030658T3	P	1	61%	33%	NA	6%
CLTM8030527T1	P	2	30%	17%	51%	2%
CLTM8030640T3	P	1	68%	29%	NA	4%
CLTM8030661T3	P	1	55%	42%	NA	3%
CLTM8030626T3	P	1	71%	21%	NA	8%

Table 8.A.28 Distribution of Item Scores for Mathematics, Grade Eleven

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTMH020447T1	E	1	29%	64%	NA	7%
CLTMH020043T1	E	1	35%	63%	NA	2%
CLTMH020073T1	E	2	26%	2%	68%	4%
CLTMH020409T1	E	2	33%	9%	55%	3%
CLTMH020398T2	E	2	5%	50%	42%	2%
CLTMH020385T2	E	2	47%	11%	39%	3%
CLTMH020071T2	E	1	64%	32%	NA	4%
CLTMH020308T1	E	1	40%	45%	NA	15%
CLTMH020311T1	E	1	45%	47%	NA	8%
CLTMH020076T1	E	1	59%	33%	NA	8%
CLTMH020406T1	E	2	52%	7%	35%	5%
CLTMH030641T1	O	2	48%	7%	40%	5%
CLTMH030554T1	O	2	51%	13%	30%	6%
CLTMH030712T1	O	1	60%	31%	NA	9%
CLTMH020077T2	E	1	61%	27%	NA	11%
CLTMH030542T2	O	1	54%	39%	NA	6%
CLTMH030645T2	O	2	20%	18%	49%	12%
CLTMH030555T2	O	2	23%	50%	15%	12%
CLTMH020382T2	E	2	64%	12%	22%	1%
CLTMH020402T2	E	2	27%	49%	18%	6%
CLTMH020407T2	E	2	50%	14%	34%	1%
CLTMH030666T2	O	2	19%	13%	64%	4%
CLTMH030546T2	O	2	22%	64%	10%	4%
CLTMH020383T3	E	2	21%	63%	13%	3%
CLTMH030547T3	O	2	27%	49%	20%	5%
CLTMH030642T2	O	2	18%	47%	32%	2%
CLTMH030551T2	O	2	2%	35%	62%	2%
CLTMH020078T3	E	1	63%	30%	NA	7%
CLTMH020403T3	E	2	36%	42%	20%	3%
CLTMH030643T3	O	2	32%	47%	19%	3%
CLTMH030667T3	O	2	39%	13%	44%	4%
CLTMH030552T3	O	2	15%	40%	43%	2%
CLTMH030634T3	O	1	82%	15%	NA	3%
CLTMH030550T1	P	2	45%	17%	35%	4%
CLTMH020397T1	P	2	36%	14%	47%	3%
CLTMH030544T3	P	1	80%	10%	NA	10%
CLTMH030556T3	P	2	22%	46%	26%	6%
CLTMH030630T1	P	1	34%	58%	NA	8%
CLTMH030629T3	P	1	78%	14%	NA	8%
CLTMH030646T3	P	2	44%	15%	32%	8%

Item ID	Item Use	Max Points	Score 0	Score 1	Score 2	Blank
CLTMH030644T1	P	2	32%	1%	60%	6%
CLTMH020336T2	P	1	40%	57%	NA	3%
CLTMH030665T1	P	2	33%	1%	62%	4%
CLTMH030545T1	P	2	39%	12%	45%	4%
CLTMH020381T1	P	2	31%	13%	53%	3%

Appendix 8.B: Item Parameters for the Equating Set

Graphs

For Figure 8.B.1 through Figure 8.B.14, the X-axis presents IRT *b*-parameter from the 2015–16 base scale. The Y-axis presents the IRT *b*-parameter from the 2016–17 calibration. A square indicates that an item was dropped from the anchor set by robust-z statistics. An asterisk indicates that an item was dropped from the anchor set because the drag-and-drop functionality differences across administrations.

Data for these graphs are presented in Table 8.B.1 through Table 8.B.14.

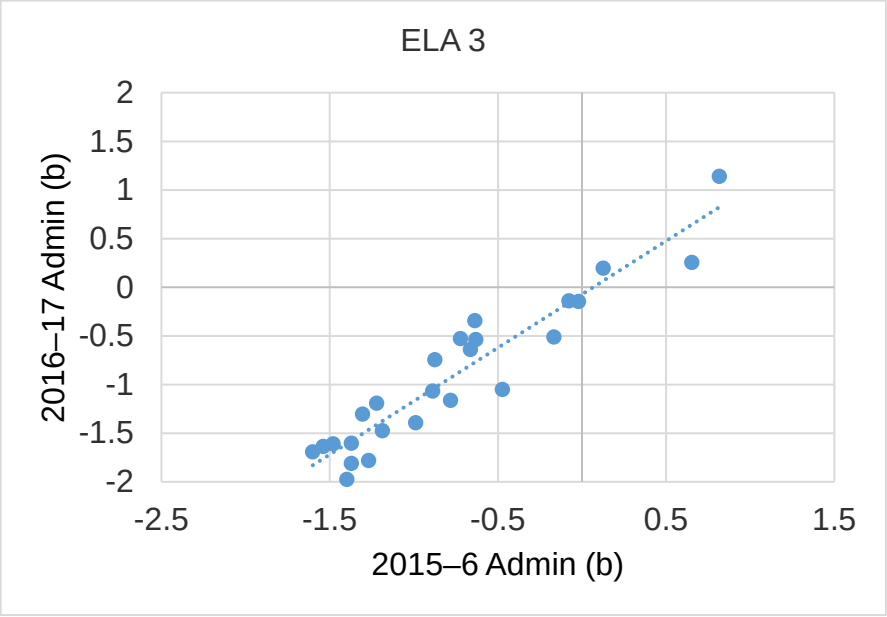

Figure 8.B.1 *B*-Parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Three

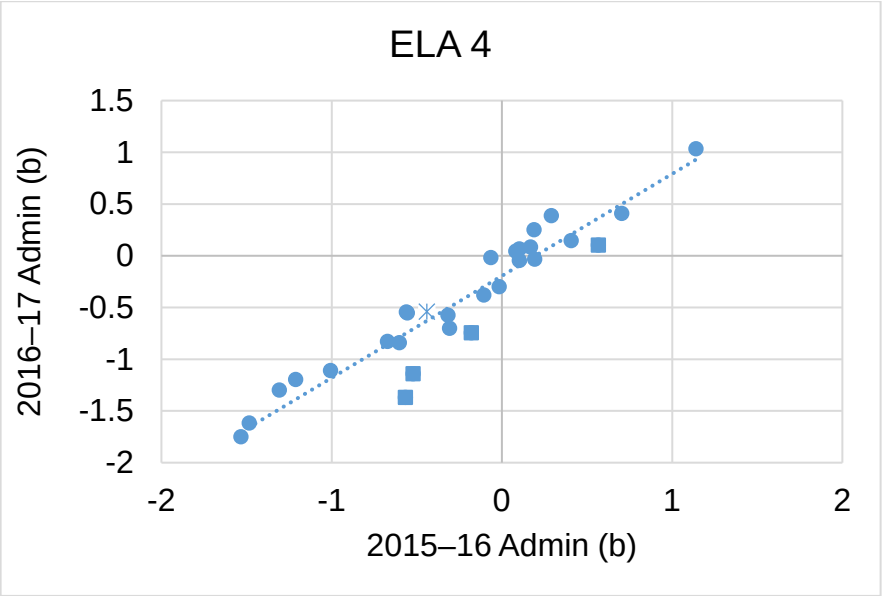

Figure 8.B.2 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Four

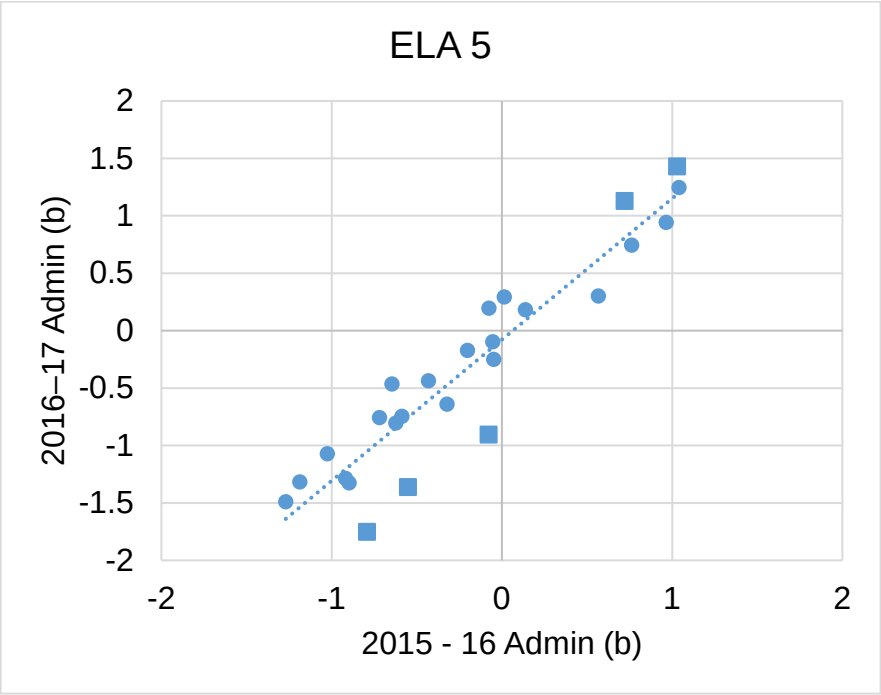

Figure 8.B.3 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Five

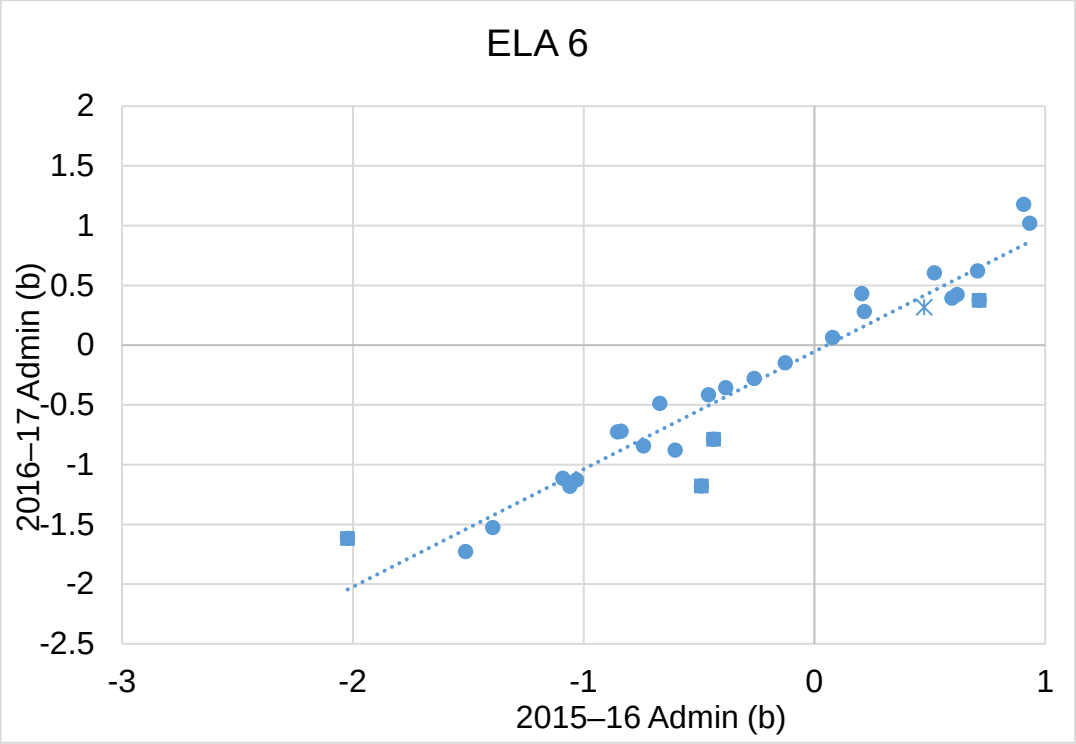

Figure 8.B.4 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Six

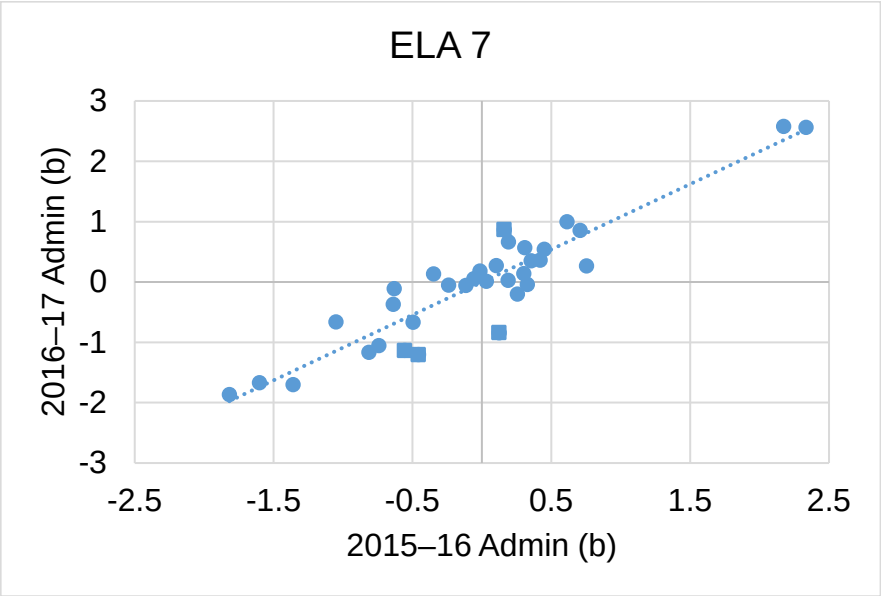

Figure 8.B.5 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Seven

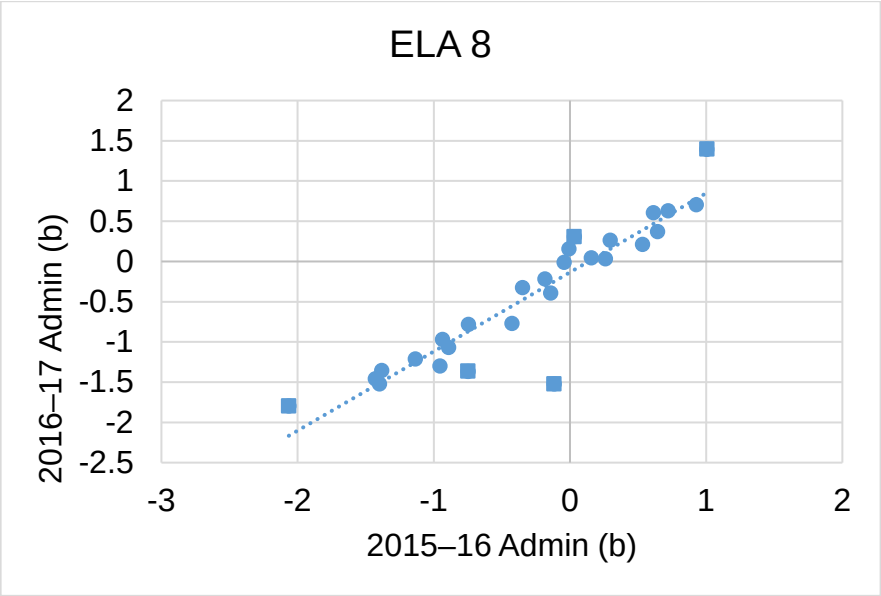

Figure 8.B.6 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Eight

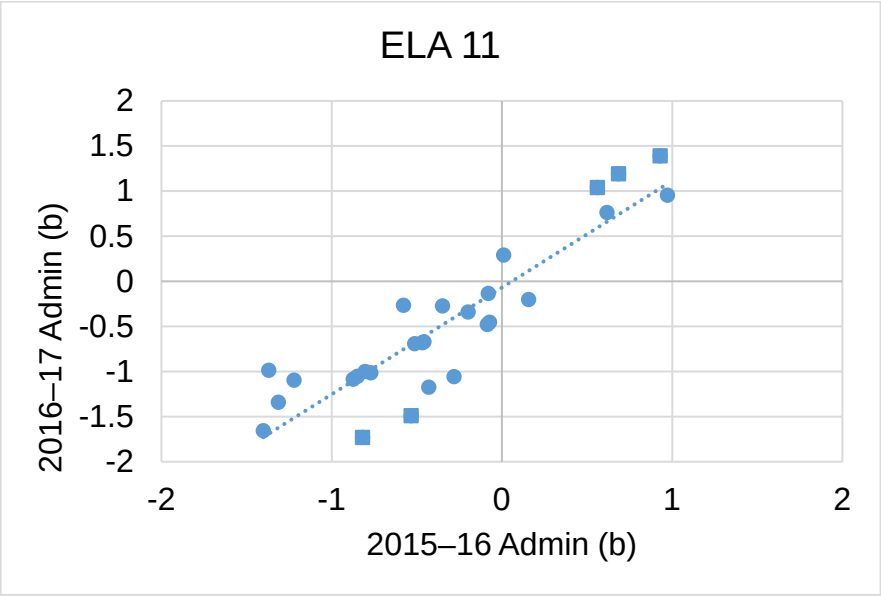

Figure 8.B.7 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Eleven

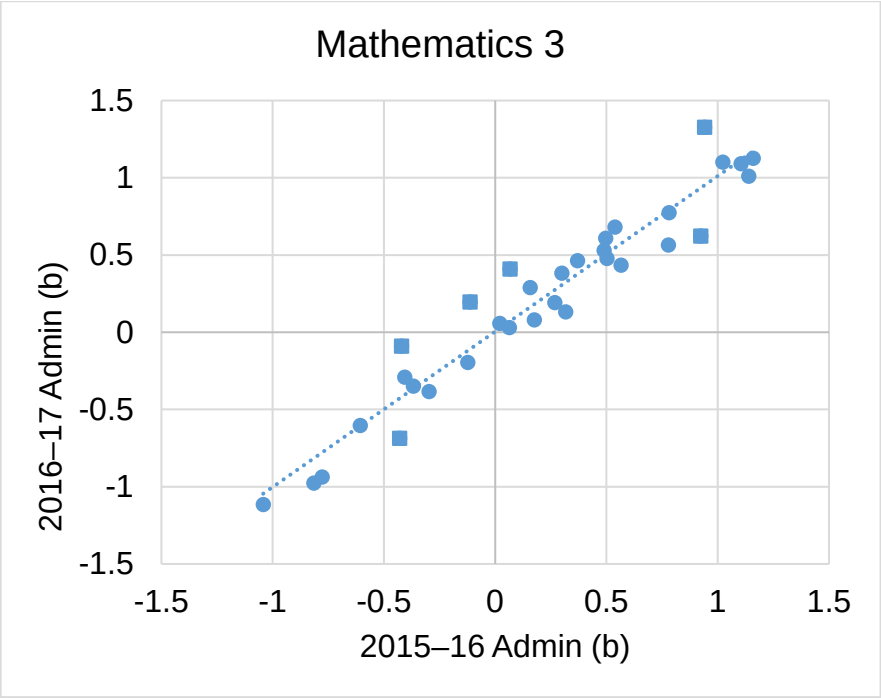

Figure 8.B.8 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Three

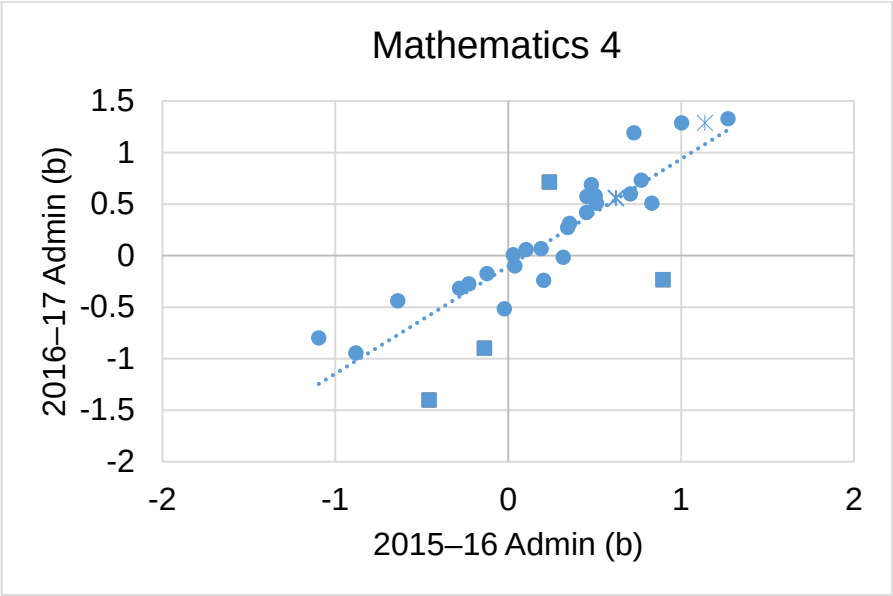

Figure 8.B.9 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Four

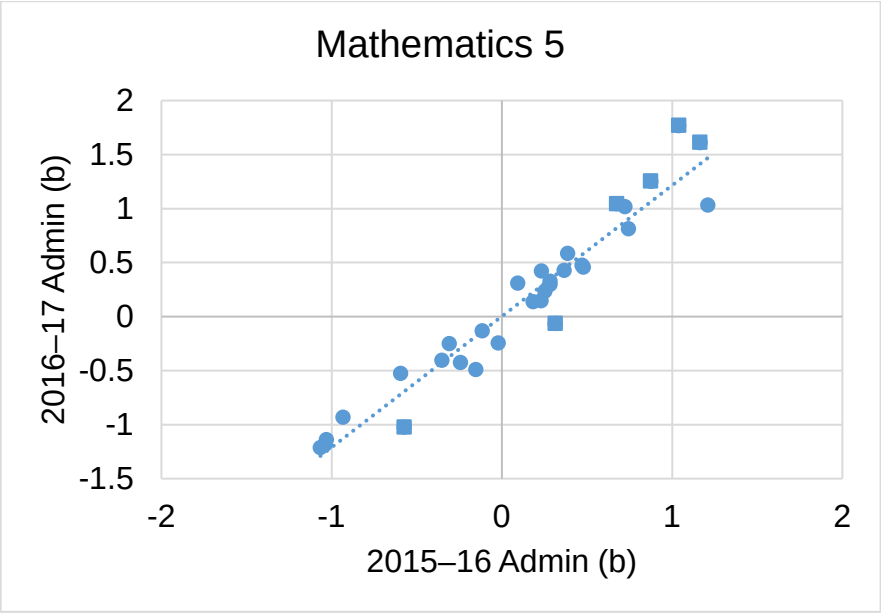

Figure 8.B.10 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Five

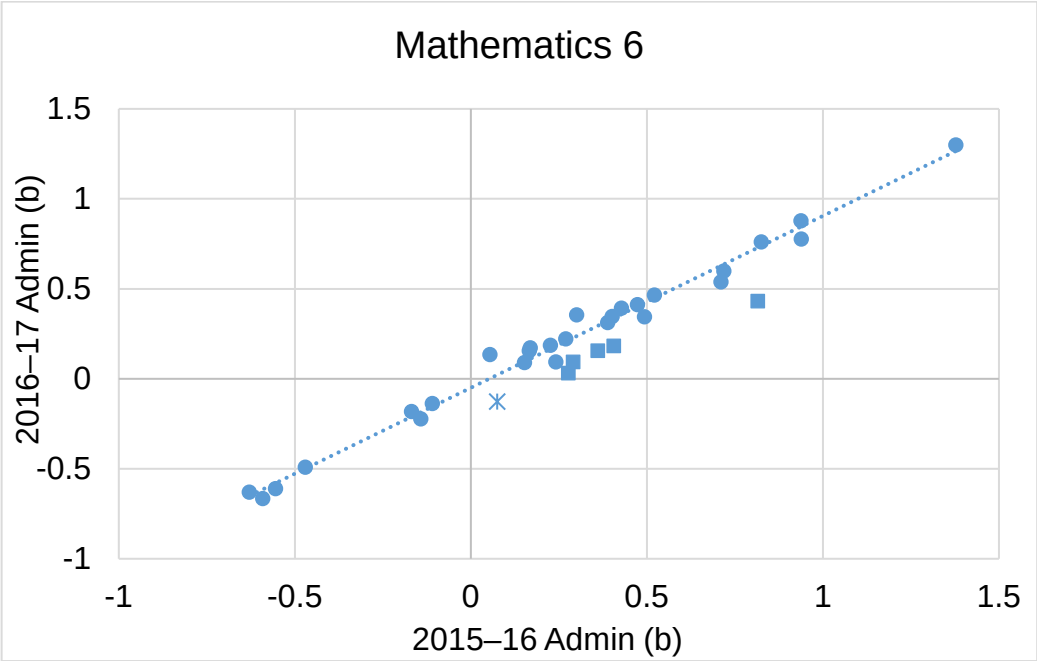

Figure 8.B.11 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Six

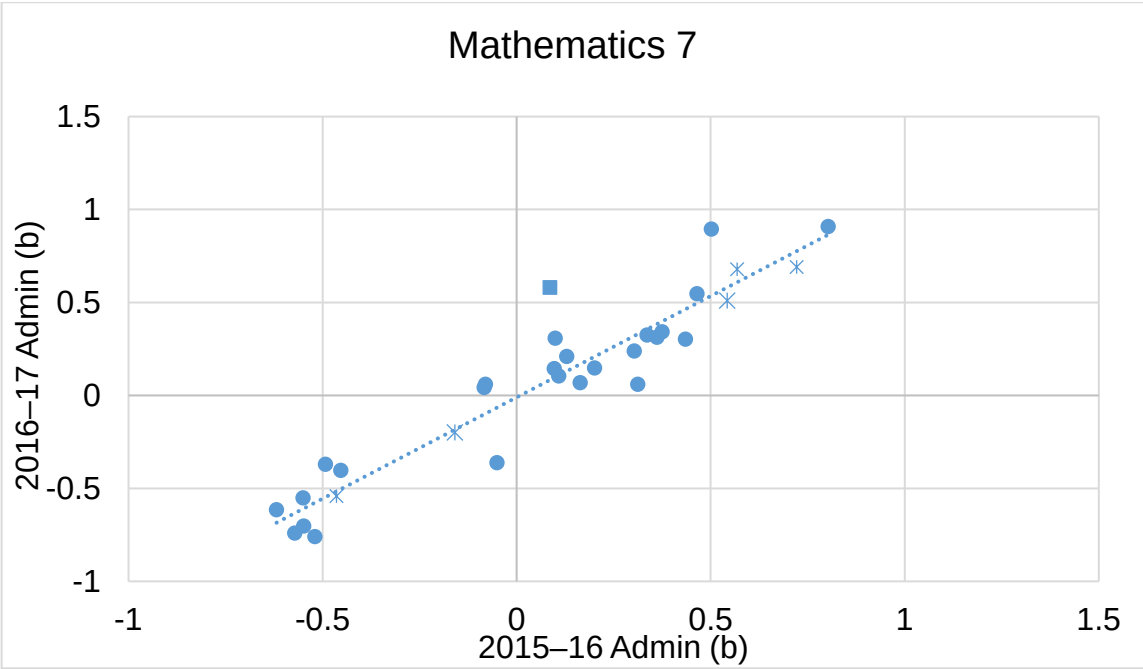

Figure 8.B.12 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Seven

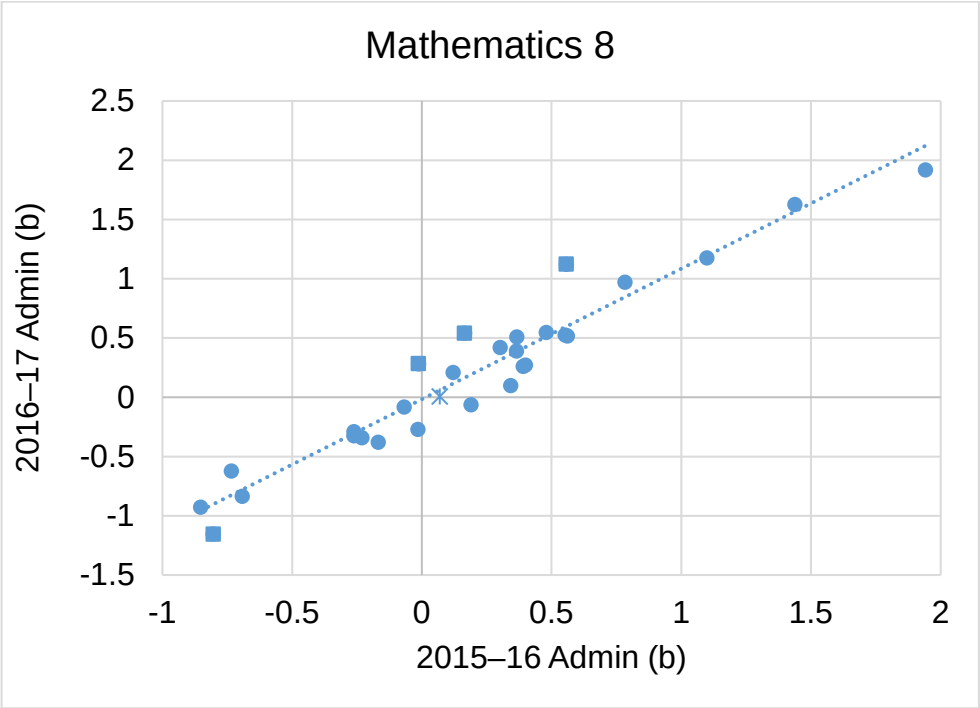

Figure 8.B.13 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Eight

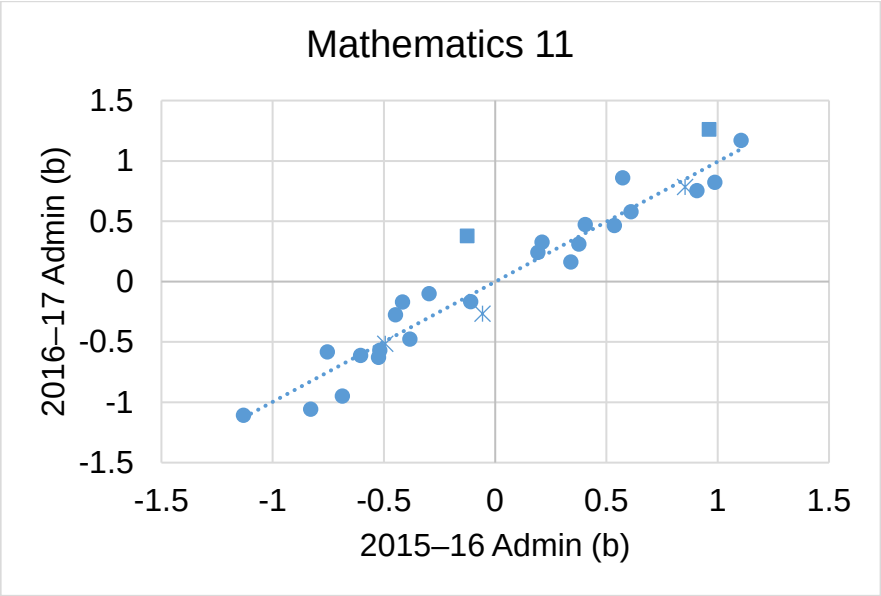

Figure 8.B.14 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Eleven

Data for Graphs

Table 8.B.1 through Table 8.B.14 contain the data that are used to create the scatterplots in Figure 8.B.1 through Figure 8.B.14.

Table 8.B.1 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Three

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.6	-1.7
-0.7	-0.6
-1.2	-1.2
-0.6	-0.5
-0.8	-1.2
-0.9	-0.7
-0.1	-0.1
-1.5	-1.6
0.7	0.3
-0.9	-1.1
-1.4	-1.8
-1.5	-1.6
-1.4	-1.6
-1.3	-1.8
-1.2	-1.5
-0.5	-1.1
-1.3	-1.3
-1.0	-1.4
-1.4	-2.0
-0.6	-0.3
0.0	-0.1
-0.7	-0.5
0.1	0.2
-0.2	-0.5
0.8	1.1

Table 8.B.2 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Four

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.48	-1.62
-0.67	-0.83
-1.53	-1.75
-0.56	-0.55
-0.18	NA
-0.60	-0.84
-1.01	-1.11
0.10	0.07
-0.32	-0.57
-0.02	-0.30
-0.31	-0.70
-0.57	NA
-0.52	NA
0.41	0.15
-1.31	-1.30
0.57	NA
0.19	0.25
-0.44	NA
0.19	-0.03
1.14	1.04
0.08	0.04
0.29	0.39
0.17	0.08
-1.21	-1.20
-0.56	-0.54
-0.06	-0.02
0.70	0.41
-0.11	-0.38
0.10	-0.04

Table 8.B.3 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Five

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.72	-0.76
-0.08	NA
-0.92	-1.29
-0.05	-0.25
-0.59	-0.75
-0.79	NA
-0.65	-0.46
-1.27	-1.49
0.97	0.94
0.76	0.74
-1.02	-1.07
-0.20	-0.17
-0.55	NA
-0.08	0.20
-1.19	-1.32
-0.32	-0.64
-0.90	-1.33
-0.43	-0.44
-0.05	-0.10
-0.62	-0.81
0.01	0.29
0.14	0.18
1.03	NA
0.72	NA
1.04	1.25
0.57	0.30

Table 8.B.4 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Six

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.39	-1.52
-1.06	-1.18
-1.51	-1.73
0.71	0.62
-0.49	NA
-0.85	-0.72
-0.84	-0.72
0.60	0.40
-0.74	-0.84
0.48	NA
-0.67	-0.49
0.62	0.43
-2.02	-1.62
-0.44	-0.79
-0.13	-0.15
-0.46	-0.41
-1.03	-1.13
-1.09	-1.11
0.08	0.06
-0.38	-0.36
0.22	0.28
0.21	0.43
-0.60	-0.88
-0.26	-0.28
0.91	1.18
0.52	0.61
0.71	0.38
0.93	1.02

Table 8.B.5 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Seven

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.60	-1.67
-0.06	0.06
0.12	NA
-0.35	0.13
-0.56	NA
-0.46	NA
-0.50	-0.67
0.30	0.14
0.19	0.03
-0.74	-1.06
-1.82	-1.86
-0.63	-0.11
-1.05	-0.66
-0.81	-1.17
0.26	-0.20
0.33	-0.04
0.75	0.27
0.03	0.01
-1.36	-1.70
0.45	0.54
-0.11	-0.06
0.31	0.57
-0.64	-0.37
0.35	0.35
0.42	0.36
0.71	0.85
2.33	2.56
0.10	0.27
0.19	0.66
0.61	1.00
-0.24	-0.05
0.16	NA
-0.01	0.18
2.17	2.58

Table 8.B.6 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Eight

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.40	-1.52
-0.89	-1.07
-1.14	-1.21
-0.75	-0.78
-0.75	NA
-2.06	NA
-1.43	-1.46
0.61	0.61
-0.18	-0.22
-0.94	-0.97
0.64	0.38
-1.38	-1.35
-0.01	0.16
-0.43	-0.77
-0.04	-0.01
-0.35	-0.32
0.26	0.04
-0.12	NA
1.01	NA
-0.14	-0.39
0.53	0.21
0.30	0.27
-0.96	-1.30
0.16	0.05
0.03	NA
0.72	0.63
0.93	0.71

Table 8.B.7 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of ELA, Grade Eleven

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.53	-1.49
-1.40	-1.66
-0.07	-0.45
-0.85	-1.05
-0.28	-1.06
-1.31	-1.34
-0.77	-1.01
-0.46	-0.67
-0.20	-0.34
-0.51	-0.69
-0.35	-0.27
-1.37	-0.98
-1.22	-1.09
-0.43	-1.17
-0.47	-0.68
0.97	0.96
-0.09	-0.48
-0.87	-1.09
0.62	0.76
0.16	-0.20
-0.58	-0.27
-0.82	NA
-0.08	-0.14
-0.80	-1.00
0.56	NA
0.93	NA
0.01	0.29
0.69	NA

Table 8.B.8 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Three

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.04	-1.11
-0.82	-0.98
-0.61	-0.60
-0.78	-0.94
-0.43	NA
0.18	0.08
0.06	0.03
0.57	0.44
-0.37	-0.35
0.50	0.48
-0.41	-0.29
-0.30	-0.38
-0.12	-0.19
-0.11	NA
0.07	0.41
0.02	0.06
-0.42	NA
0.50	0.61
0.16	0.29
0.49	0.53
1.14	1.01
0.54	0.68
0.37	0.46
0.27	0.19
0.30	0.38
0.32	0.13
0.78	0.56
1.10	1.09
0.92	NA
1.16	1.13
1.02	1.10
0.94	NA
0.78	0.78

Table 8.B.9 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Four

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.88	-0.94
-0.46	NA
-0.28	-0.32
-0.14	NA
0.19	0.07
-0.02	-0.52
0.10	0.06
0.83	0.51
0.36	0.31
0.32	-0.02
0.04	-0.10
0.34	0.27
-0.64	-0.44
-0.12	-0.18
0.03	0.01
0.71	0.60
-0.23	-0.28
1.00	1.29
0.77	0.73
1.14	NA
0.45	0.42
0.50	0.58
-1.10	-0.80
0.62	NA
0.90	NA
0.51	0.51
0.48	0.69
1.27	1.33
0.73	1.19
0.20	-0.24
0.24	NA
0.45	0.57

Table 8.B.10 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Five

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.07	-1.21
-1.03	-1.14
-1.04	-1.18
-0.93	-0.93
0.25	0.24
-0.35	-0.40
0.23	0.15
0.18	0.14
0.23	0.42
0.48	0.46
-0.24	-0.42
-0.02	-0.24
-0.31	-0.25
-0.15	-0.49
-0.57	NA
-0.12	-0.13
-0.60	-0.52
0.09	0.31
0.39	0.59
0.74	0.82
0.72	1.02
0.28	0.33
0.37	0.43
0.28	0.30
0.31	NA
1.04	NA
1.21	1.04
0.47	0.48
0.67	NA
1.16	NA
0.87	NA

Table 8.B.11 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Six

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.63	-0.63
-0.59	-0.67
-0.56	-0.61
-0.47	-0.49
0.39	0.31
0.49	0.35
0.47	0.41
-0.14	-0.22
0.36	0.16
0.08	NA
0.24	0.09
-0.17	-0.18
-0.11	-0.14
0.15	0.09
0.23	0.19
0.05	0.14
0.27	0.22
0.28	NA
0.29	NA
0.30	0.36
1.38	1.30
0.43	0.39
0.40	0.35
0.82	0.76
0.17	0.16
0.41	NA
0.71	0.54
0.81	NA
0.94	0.78
0.72	0.60
0.17	0.17
0.52	0.47
0.94	0.88

Table 8.B.12 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Seven

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.62	-0.61
-0.55	-0.70
-0.57	-0.74
-0.55	-0.55
-0.08	0.06
0.11	0.11
0.31	0.06
0.38	0.34
0.20	0.15
0.16	0.07
-0.52	-0.76
-0.45	-0.40
-0.16	NA
-0.46	NA
-0.08	0.04
-0.49	-0.37
-0.05	-0.36
0.10	0.15
0.13	0.21
0.36	0.31
0.34	0.33
0.47	0.55
0.10	0.31
0.09	NA
0.30	0.24
0.57	NA
0.50	0.90
0.44	0.30
0.80	0.91
0.54	NA
0.72	NA

Table 8.B.13 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Eight

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-0.85	-0.93
-0.80	NA
-0.69	-0.83
-0.26	-0.33
-0.07	-0.08
0.12	0.21
-0.23	-0.34
0.39	0.26
0.55	0.53
0.56	0.52
-0.17	-0.38
-0.73	-0.62
-0.02	-0.27
-0.26	-0.29
0.19	-0.06
0.34	0.10
0.37	0.39
0.07	NA
0.40	0.27
0.30	0.42
1.10	1.18
0.48	0.55
-0.01	NA
0.37	0.51
0.56	NA
1.44	1.63
0.17	NA
1.94	1.92
0.78	0.97

Table 8.B.14 *B*-parameters from 2015–16 and 2016–17 for the Equating Set of Mathematics, Grade Eleven

***B*-parameter from 2015–16**	***B*-parameter from 2016–17**
-1.13	-1.11
-0.61	-0.61
-0.52	-0.57
-0.83	-1.06
-0.45	-0.27
-0.49	NA
0.34	0.16
0.85	NA
-0.52	-0.63
-0.69	-0.95
-0.30	-0.10
-0.42	-0.17
-0.06	NA
-0.12	NA
-0.38	-0.47
-0.76	-0.58
0.99	0.82
0.19	0.24
0.21	0.33
0.54	0.47
0.57	0.86
-0.11	-0.16
0.38	0.31
1.10	1.17
0.40	0.47
0.91	0.75
0.61	0.58
0.96	NA

Appendix 8.C: IRT Analyses Results

Note: For Table 8.C.1 through Table 8.C.14, “NA” in the *d*-values and *d*-values *Standard Error (SE)* columns indicates that the item is a 1-point item with no *d*-value. The colon (:) is used to separate the two *d*-values.

Table 8.C.1 Item Response Theory (IRT) Item Difficulty for English Language Arts/ Literacy (ELA), Grade Three

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTW3020095T1	-1.5447	0.04	1.0289 : -1.0289	0.0443 : 0.0443
CLTR3020055T1	-0.4901	0.04	NA	NA
CLTR3020054T1	-1.0439	0.05	NA	NA
CLTW3020056T1	-0.3905	0.03	-1.4641 : 1.4641	0.0638 : 0.0638
CLTR3020105T1	-1.0144	0.05	NA	NA
CLTW3020096T1	-0.5964	0.04	1.5805 : -1.5805	0.0377 : 0.0377
CLTR3020159T2	-0.9207	0.04	1.4946 : -1.4946	0.0407 : 0.0407
CLTR3020142T2	0.0098	0.03	-0.6368 : 0.6368	0.0471 : 0.0471
CLTR3020140T2	-1.4873	0.05	1.7135 : -1.7135	0.0503 : 0.0503
CLTR3020141T2	0.4019	0.04	NA	NA
CLTR3020057T1-M	-1.3102	0.05	1.3514 : -1.3514	0.0553 : 0.0553
CLTR3020058T1	-1.6639	0.06	NA	NA
CLTR3020059T1	-1.4615	0.04	-1.5076 : 1.5076	0.093 : 0.093
CLTR3020170T1	-0.3234	0.04	-0.5124 : 0.5124	0.06 : 0.06
CLTR3020169T1	-1.1947	0.05	1.3515 : -1.3515	0.0537 : 0.0537
CLTW3020171T1-M	0.3541	0.06	NA	NA
CLTW3020108T1	-1.6335	0.06	NA	NA
CLTW3020107T1	-1.4551	0.06	NA	NA
CLTW3020162T2	-0.9032	0.05	NA	NA
CLTR3020143T2	-1.3273	0.05	NA	NA
CLTR3030112T2	-0.9164	0.05	NA	NA
CLTW3020146T2	-1.1547	0.05	1.3552 : -1.3552	0.048 : 0.048
CLTR3030068T2	0.1726	0.05	NA	NA
CLTR3030067T2	0.4296	0.05	NA	NA
CLTW3030069T2	-0.3867	0.05	NA	NA
CLTR3020051T1	-1.2439	0.10	NA	NA
CLTR3020052T1	-1.8255	0.12	NA	NA
CLTR3020053T1-M	-0.7968	0.09	NA	NA
CLTR3020160T2	-0.1945	0.05	-1.2309 : 1.2309	0.1143 : 0.1143
CLTW3020145T2-M	-0.7502	0.07	0.5624 : -0.5624	0.0893 : 0.0893
CLTR3020166T3	0.0018	0.06	1.7447 : -1.7447	0.0608 : 0.0608
CLTR3020167T3	-0.3790	0.07	NA	NA
CLTR3020168T3	0.3446	0.04	-0.9564 : 0.9564	0.0733 : 0.0733
CLTW3030113T2	0.1767	0.07	-0.8457 : 0.8457	0.1166 : 0.1166
CLTR3030158T3	-1.7640	0.16	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR3030159T3	1.3158	0.07	NA	NA
CLTW3030160T3	1.2073	0.05	-0.2963 : 0.2963	0.0757 : 0.0757
CLTW3020403T3	1.2872	0.05	-0.0788 : 0.0788	0.0714 : 0.0714
CLTR3020400T3	-0.3618	0.10	NA	NA
CLTR3020005T3	-1.4808	0.14	NA	NA
CLTW3020006T3	1.1767	0.07	NA	NA
CLTR3020004T3	-0.7660	0.16	1.5076 : -1.5076	0.1641 : 0.1641
CLTR3030168T3	0.0001	0.09	NA	NA
CLTR3030004T1	-0.4131	0.08	NA	NA
CLTR3030005T1	-0.8911	0.08	NA	NA
CLTW3030006T1	0.0356	0.05	-1.2459 : 1.2459	0.1147 : 0.1147
CLTR3030165T3	-0.2229	0.09	NA	NA
CLTR3030111T2	-0.7043	0.06	-1.6347 : 1.6347	0.1632 : 0.1632
CLTR3030060T2	0.1032	0.09	NA	NA
CLTR3030080T2	0.4280	0.09	NA	NA
CLTR3030081T2	-0.0126	0.08	NA	NA
CLTW3030082T2	-0.5083	0.07	0.8242 : -0.8242	0.0798 : 0.0798
CLTR3030017T1	-0.9457	0.09	NA	NA
CLTR3030018T1	-0.6692	0.10	NA	NA
CLTW3030019T1	-0.8266	0.10	NA	NA
CLTR3030135T1	-0.7379	0.10	NA	NA
CLTW3030030T1	0.0213	0.06	0.2245 : -0.2245	0.0858 : 0.0858
CLTR3030167T3	-0.3523	0.05	-0.9211 : 0.9211	0.1191 : 0.1191

Table 8.C.2 IRT Item Difficulty for ELA, Grade Four

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR4020239T1	-1.4936	0.04	NA	NA
CLTR4020256T1	-0.7034	0.04	NA	NA
CLTR4020257T1	-1.6244	0.04	0.9705 : -0.9705	0.0478 : 0.0478
CLTR4020258T1	-0.4286	0.03	-1.3559 : 1.3559	0.056 : 0.056
CLTR4020308T1	-0.6205	0.04	NA	NA
CLTW4020138T2	-0.4492	0.04	NA	NA
CLTW4020086T2	-0.1731	0.03	-0.5579 : 0.5579	0.0412 : 0.0412
CLTR4020116T2	-0.7168	0.04	NA	NA
CLTR4020117T2	-0.9859	0.04	1.4682 : -1.4682	0.0405 : 0.0405
CLTW4020118T2	0.1919	0.04	NA	NA
CLTR4020241T1	0.2701	0.06	NA	NA
CLTR4020242T1	-1.1729	0.06	1.2032 : -1.2032	0.0623 : 0.0623
CLTW4020243T1	0.2272	0.06	NA	NA
CLTR4020304T1	-0.5766	0.05	NA	NA
CLTR4020305T1	-1.2457	0.05	1.3478 : -1.3478	0.0535 : 0.0535
CLTW4020306T1	-1.0151	0.04	1.1658 : -1.1658	0.0469 : 0.0469
CLTR4030172T1	-0.5258	0.05	1.0942 : -1.0942	0.0554 : 0.0554
CLTW4020240T1-M	-0.7262	0.04	0.3565 : -0.3565	0.0557 : 0.0557
CLTR4020237T1	-1.4825	0.07	NA	NA
CLTR4020137T2	0.0916	0.04	NA	NA
CLTR4020085T2	-0.4163	0.05	NA	NA
CLTW4020139T2	0.3750	0.05	NA	NA
CLTR4030023T2	0.0455	0.06	NA	NA
CLTR4030024T2	-0.3695	0.05	1.1215 : -1.1215	0.0556 : 0.0556
CLTR4030025T2	0.0156	0.04	-0.6902 : 0.6902	0.0735 : 0.0735
CLTR4020119T2	1.1600	0.06	NA	NA
CLTR4020120T2	0.1683	0.04	0.6642 : -0.6642	0.054 : 0.054
CLTW4020121T2	0.5131	0.06	NA	NA
CLTR4020084T2	-1.4738	0.08	NA	NA
CLTR4020083T2	0.6517	0.06	NA	NA
CLTR4030014T2	-0.5549	0.06	NA	NA
CLTW4030015T2	0.3193	0.06	NA	NA
CLTW4030016T2	0.4125	0.04	0.0752 : -0.0752	0.0584 : 0.0584
CLTR4020448T3	0.2080	0.06	NA	NA
CLTR4020449T3	-1.0720	0.07	1.2589 : -1.2589	0.0804 : 0.0804
CLTR4020450T3	-0.4172	0.04	-0.9842 : 0.9842	0.0838 : 0.0838
CLTR4030020T2	-0.3542	0.07	NA	NA
CLTR4030021T2	-0.1798	0.07	1.1301 : -1.1301	0.0765 : 0.0765
CLTW4030022T2	0.1890	0.07	NA	NA
CLTR4020245T3	0.1061	0.07	NA	NA
CLTR4020244T3-M	0.8227	0.04	-0.6887 : 0.6887	0.0759 : 0.0759
CLTW4020246T3	0.5352	0.05	1.0059 : -1.0059	0.0602 : 0.0602

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR4030089T3	0.7411	0.07	NA	NA
CLTR4030090T3	0.3006	0.06	1.3148 : -1.3148	0.0647 : 0.0647
CLTR4030091T3	0.4418	0.04	-1.0757 : 1.0757	0.0895 : 0.0895
CLTW4020135T3	0.0798	0.05	-0.4657 : 0.4657	0.0808 : 0.0808
CLTW4020131T3	-0.2544	0.08	NA	NA
CLTR4030137T3	-0.6476	0.08	0.4269 : -0.4269	0.0951 : 0.0951
CLTR4030235T1	-0.5088	0.08	NA	NA
CLTR4030236T1	-0.6126	0.07	1.3099 : -1.3099	0.0739 : 0.0739
CLTW4030237T1	1.1320	0.07	NA	NA
CLTR4030086T3	0.3452	0.08	NA	NA
CLTR4030087T3	0.2362	0.06	1.294 : -1.294	0.0753 : 0.0753
CLTW4030088T3	0.3813	0.08	NA	NA
CLTR4030176T1	-1.3805	0.09	NA	NA
CLTR4030177T1	-1.2851	0.08	0.6388 : -0.6388	0.0949 : 0.0949
CLTR4030178T1	-0.0325	0.05	-1.2498 : 1.2498	0.1181 : 0.1181
CLTR4030170T1	-0.2318	0.08	NA	NA
CLTR4030138T3	0.0280	0.06	0.9308 : -0.9308	0.0712 : 0.0712
CLTW4030132T3	0.6861	0.08	NA	NA
CLTR4030131T3	0.4896	0.08	NA	NA
CLTR4030130T3	0.2187	0.08	NA	NA
CLTW4030133T3	0.5033	0.06	-0.1144 : 0.1144	0.0872 : 0.0872

Table 8.C.3 IRT Item Difficulty for ELA, Grade Five

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR5020314T1	-0.6889	0.04	NA	NA
CLTR5020327T1	-0.8366	0.04	NA	NA
CLTR5020328T1	-1.2184	0.04	1.3637 : -1.3637	0.0398 : 0.0398
CLTW5020329T1	-0.1828	0.04	NA	NA
CLTW5020317T1	-1.6857	0.04	1.016 : -1.016	0.0478 : 0.0478
CLTR5020316T1	-0.6790	0.03	-0.702 : 0.702	0.0451 : 0.0451
CLTR5020253T2	-0.3951	0.04	NA	NA
CLTR5020254T2	-1.4227	0.05	1.625 : -1.625	0.0471 : 0.0471
CLTW5020255T2	1.0113	0.04	NA	NA
CLTW5020347T2	0.8120	0.04	NA	NA
CLTR5020315T1	-1.2950	0.06	1.6676 : -1.6676	0.0653 : 0.0653
CLTR5020311T1	-1.0028	0.04	NA	NA
CLTR5020312T1	-0.1029	0.04	NA	NA
CLTW5020313T1-M	-1.0656	0.03	-0.2363 : 0.2363	0.0468 : 0.0468
CLTR5020333T1	0.3946	0.06	NA	NA
CLTR5020334T1	-1.4915	0.06	1.1762 : -1.1762	0.0654 : 0.0654
CLTR5020452T1-M	-0.2645	0.06	NA	NA
CLTR5020453T1-M	-1.5765	0.06	0.5887 : -0.5887	0.0661 : 0.0661
CLTW5020454T1-M	-0.8924	0.05	1.3736 : -1.3736	0.0572 : 0.0572
CLTR5020047T2	-1.2499	0.06	1.5992 : -1.5992	0.0648 : 0.0648
CLTW5020343T2	-1.2580	0.05	1.1261 : -1.1261	0.0599 : 0.0599
CLTR5020340T2	0.2654	0.06	NA	NA
CLTR5020346T2	-0.5709	0.03	-0.7815 : 0.7815	0.0677 : 0.0677
CLTR5030185T2	-1.5360	0.06	0.8721 : -0.8721	0.0652 : 0.0652
CLTW5030187T2	0.6706	0.06	NA	NA
CLTR5020342T2	0.3609	0.03	-1.2592 : 1.2592	0.075 : 0.075
CLTR5020338T2	-0.3674	0.05	NA	NA
CLTR5020337T2	-0.0274	0.05	NA	NA
CLTW5020339T2	-0.7374	0.05	1.2854 : -1.2854	0.0548 : 0.0548
CLTR5030182T2	1.1937	0.05	NA	NA
CLTR5030179T2	-0.4549	0.06	NA	NA
CLTR5030180T2	-0.7938	0.05	0.8789 : -0.8789	0.0601 : 0.0601
CLTW5030181T2	1.0246	0.05	NA	NA
CLTR5030183T2	-1.1573	0.07	1.3628 : -1.3628	0.0781 : 0.0781
CLTR5020074T3	0.2498	0.03	-1.2052 : 1.2052	0.0736 : 0.0736
CLTR5030077T3	-0.4435	0.06	1.8916 : -1.8916	0.0644 : 0.0644
CLTR5030140T3	0.0207	0.05	NA	NA
CLTR5030189T2	-1.2262	0.17	1.2939 : -1.2939	0.1774 : 0.1774
CLTR5030188T2	-0.5094	0.10	NA	NA
CLTW5030190T2	-0.3594	0.09	1.0037 : -1.0037	0.1044 : 0.1044
CLTR5020038T3	1.4970	0.08	NA	NA
CLTR5020039T3	1.1969	0.08	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTW5020040T3	1.3132	0.05	0.0444 : -0.0444	0.079 : 0.079
CLTR5020073T3	0.3694	0.09	NA	NA
CLTR5020075T3	-0.2786	0.07	-1.3236 : 1.3236	0.1524 : 0.1524
CLTR5030043T3	0.3287	0.08	NA	NA
CLTR5030044T3	-0.6602	0.09	-0.0786 : 0.0786	0.1283 : 0.1283
CLTW5030045T3	0.3633	0.06	0.0272 : -0.0272	0.0852 : 0.0852
CLTR5030076T3	-0.1409	0.09	1.4783 : -1.4783	0.0985 : 0.0985
CLTR5030122T1	0.0472	0.07	NA	NA
CLTR5030123T1	0.3404	0.04	-0.7318 : 0.7318	0.091 : 0.091
CLTW5030124T1	-1.2145	0.08	0.9502 : -0.9502	0.0914 : 0.0914
CLTR5030154T1	-1.3106	0.08	0.9221 : -0.9221	0.0969 : 0.0969
CLTR5030186T2	-1.1949	0.09	1.631 : -1.631	0.0979 : 0.0979
CLTR5030184T2	-0.2462	0.08	NA	NA
CLTR5030039T3	0.3650	0.08	NA	NA
CLTR5030040T3	-0.4114	0.07	1.419 : -1.419	0.075 : 0.075
CLTW5030041T3	0.7578	0.08	NA	NA
CLTW5030157T1	-1.5255	0.09	NA	NA
CLTR5030156T1	-1.4687	0.09	0.8901 : -0.8901	0.0979 : 0.0979
CLTR5030155T1	-1.0489	0.08	1.5393 : -1.5393	0.0892 : 0.0892
CLTR5030144T1	0.2300	0.07	NA	NA
CLTR5030078T3	-1.4024	0.09	1.1779 : -1.1779	0.0956 : 0.0956
CLTW5030079T3	0.0150	0.08	NA	NA

Table 8.C.4 IRT Item Difficulty for ELA, Grade Six

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR6020097T1	-1.5136	0.03	-1.7407 : 1.7407	0.0829 : 0.0829
CLTR6020150T1	-1.1694	0.03	-1.9644 : 1.9644	0.0811 : 0.0811
CLTR6020151T1	-1.7151	0.05	NA	NA
CLTW6020152T1	0.6329	0.04	NA	NA
CLTW6020104T1	-1.1655	0.04	1.2694 : -1.2694	0.0399 : 0.0399
CLTR6020099T1	-0.7141	0.03	-1.4763 : 1.4763	0.0596 : 0.0596
CLTR6020200T2	-0.7084	0.04	NA	NA
CLTW6020201T2	0.4071	0.03	0.4033 : -0.4033	0.0338 : 0.0338
CLTR6020199T2	-0.8319	0.04	NA	NA
CLTR6020203T2	0.3272	0.02	-0.7857 : 0.7857	0.0463 : 0.0463
CLTR6030010T1	-0.7726	0.07	NA	NA
CLTR6030011T1	0.4240	0.06	-0.0876 : 0.0876	0.0911 : 0.0911
CLTW6030012T1	0.3759	0.08	NA	NA
CLTR6020113T1	-0.4761	0.05	-0.4438 : 0.4438	0.0805 : 0.0805
CLTR6020115T1	0.4364	0.08	NA	NA
CLTR6020114T1	-1.6057	0.08	NA	NA
CLTW6030202T1	-0.9484	0.07	NA	NA
CLTR6020101T1	0.2034	0.08	NA	NA
CLTR6020098T1	-0.7761	0.06	1.1733 : -1.1733	0.0688 : 0.0688
CLTR6020204T2	-1.1152	0.06	0.7739 : -0.7739	0.071 : 0.071
CLTR6020197T2	-0.1344	0.07	NA	NA
CLTR6020196T2	-0.4020	0.07	1.5756 : -1.5756	0.0745 : 0.0745
CLTW6020198T2-M	1.2097	0.10	NA	NA
CLTR6020202T2	-1.1218	0.06	0.8134 : -0.8134	0.0702 : 0.0702
CLTR6020423T2	-0.1348	0.05	NA	NA
CLTR6020063T1	-1.1021	0.07	NA	NA
CLTR6020064T1-M	0.1060	0.04	-1.2945 : 1.2945	0.0911 : 0.0911
CLTR6020065T1	0.0754	0.04	-0.4405 : 0.4405	0.0664 : 0.0664
CLTR6020184T2	0.2923	0.03	0.9031 : -0.9031	0.0357 : 0.0357
CLTW6020186T2	0.4442	0.04	NA	NA
CLTR6020185T2	-0.8673	0.05	NA	NA
CLTW6030206T2	0.3570	0.06	NA	NA
CLTR6030073T2	-0.2144	0.06	NA	NA
CLTR6030074T2	1.5317	0.07	NA	NA
CLTW6030075T2	-0.7380	0.05	0.3105 : -0.3105	0.0615 : 0.0615
CLTW6020208T2	-0.3444	0.06	NA	NA
CLTR6020420T3	-0.2671	0.04	1.2389 : -1.2389	0.0394 : 0.0394
CLTR6030204T3	0.3530	0.06	NA	NA
CLTR6030205T3	-0.2296	0.05	1.3858 : -1.3858	0.0573 : 0.0573
CLTR6030147T2	0.7668	0.05	NA	NA
CLTR6030148T2	-0.7555	0.06	0.7485 : -0.7485	0.0661 : 0.0661
CLTW6030149T2	0.1368	0.05	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR6020398T3	0.6168	0.05	NA	NA
CLTW6020399T3	0.3878	0.04	0.3405 : -0.3405	0.0505 : 0.0505
CLTR6020397T3	1.0329	0.05	NA	NA
CLTW6020424T3	1.1909	0.05	NA	NA
CLTR6030200T3	-0.3798	0.06	NA	NA
CLTR6030199T3	0.0457	0.04	0.5729 : -0.5729	0.0505 : 0.0505
CLTW6030201T3	0.4540	0.04	0.2499 : -0.2499	0.0509 : 0.0509
CLTR6020206T3	0.5602	0.05	NA	NA
CLTR6030030T1	-0.8255	0.05	-0.9166 : 0.9166	0.1107 : 0.1107
CLTR6030031T1	-1.5474	0.09	NA	NA
CLTW6030032T1	-0.6208	0.06	0.7654 : -0.7654	0.0753 : 0.0753
CLTR6030064T1	-0.6146	0.08	NA	NA
CLTR6030065T1	1.1143	0.08	NA	NA
CLTW6030066T1	-0.3057	0.06	0.8944 : -0.8944	0.0684 : 0.0684
CLTR6030083T2	-0.8162	0.07	1.0229 : -1.0229	0.0843 : 0.0843
CLTR6030084T2	1.0199	0.08	NA	NA
CLTW6030085T2	-0.1345	0.06	0.8978 : -0.8978	0.0733 : 0.0733
CLTW6030196T3	0.1807	0.05	0.1117 : -0.1117	0.0777 : 0.0777
CLTR6030194T3	0.2520	0.08	NA	NA
CLTR6030195T3	2.1512	0.11	NA	NA
CLTR6030203T1	-0.9579	0.08	NA	NA
CLTR6030197T2	0.2528	0.07	NA	NA
CLTW6030198T2	0.4561	0.08	NA	NA

Table 8.C.5 IRT Item Difficulty for ELA, Grade Seven

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTW7020385T1	-1.7163	0.05	NA	NA
CLTR7020010T1	0.0108	0.04	NA	NA
CLTR7020011T1	-0.8847	0.04	NA	NA
CLTR7020012T1	0.0892	0.03	-1.199 : 1.199	0.052 : 0.052
CLTR7020382T1	-1.1810	0.04	1.3864 : -1.3864	0.0406 : 0.0406
CLTW7020386T1	-1.2499	0.04	1.4598 : -1.4598	0.0416 : 0.0416
CLTR7020427T2	-0.7112	0.04	1.7919 : -1.7919	0.0389 : 0.0389
CLTW7020429T2	0.0950	0.04	NA	NA
CLTR7020428T2	-0.0191	0.04	NA	NA
CLTR7020368T2	-1.1009	0.04	1.5451 : -1.5451	0.0424 : 0.0424
CLTR7020411T1	-1.9090	0.07	NA	NA
CLTR7020410T1	-0.1567	0.06	NA	NA
CLTW7020412T1	-0.7061	0.06	2.2166 : -2.2166	0.0659 : 0.0659
CLTR7020379T1	-1.2117	0.06	1.411 : -1.411	0.0599 : 0.0599
CLTR7030252T1	-1.8489	0.07	NA	NA
CLTR7030253T1	0.2864	0.06	NA	NA
CLTW7030254T1	-0.9860	0.05	1.1617 : -1.1617	0.0542 : 0.0542
CLTR7020383T1	-0.4905	0.04	-1.1926 : 1.1926	0.0793 : 0.0793
CLTW7030256T1	0.1976	0.06	NA	NA
CLTR7020378T2	-0.0859	0.04	-0.4368 : 0.4368	0.0654 : 0.0654
CLTR7020377T2	0.2218	0.06	NA	NA
CLTR7020376T2	-0.0325	0.06	NA	NA
CLTR7020369T2	0.0329	0.06	NA	NA
CLTR7030241T2	-0.1520	0.06	NA	NA
CLTW7020375T2	-0.2457	0.04	-0.0599 : 0.0599	0.0573 : 0.0573
CLTR7020008T1	-1.7480	0.10	1.2688 : -1.2688	0.1013 : 0.1013
CLTR7020009T1	0.4981	0.05	NA	NA
CLTW7020007T1	-0.1029	0.05	NA	NA
CLTR7020153T2	0.5212	0.05	NA	NA
CLTR7020154T2	-0.4165	0.06	NA	NA
CLTWT020155T2	0.3081	0.04	0.6109 : -0.6109	0.0488 : 0.0488
CLTR7030046T2	-0.0747	0.05	NA	NA
CLTR7030047T2	0.0943	0.04	0.6094 : -0.6094	0.0477 : 0.0477
CLTR7030048T2	0.3912	0.03	-0.5652 : 0.5652	0.0596 : 0.0596
CLTW7030053T2	-0.0429	0.05	NA	NA
CLTR7020370T2	0.3664	0.05	NA	NA
CLTR7020372T2	0.0011	0.03	-1.2793 : 1.2793	0.0771 : 0.0771
CLTW7020350T3	0.3166	0.04	0.4585 : -0.4585	0.0494 : 0.0494
CLTR7020348T3	0.8082	0.05	NA	NA
CLTR7020349T3	2.5152	0.08	NA	NA
CLTR7020158T2	0.2269	0.08	0.3611 : -0.3611	0.1007 : 0.1007
CLTR7020156T2	0.6171	0.09	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR7020157T2	0.9544	0.09	NA	NA
CLTR7030054T2	-0.8406	0.13	NA	NA
CLTR7030055T2	0.3443	0.10	NA	NA
CLTW7030056T2	0.4529	0.07	0.3712 : -0.3712	0.0927 : 0.0927
CLTR7020357T3	0.8212	0.06	-1.2008 : 1.2008	0.1326 : 0.1326
CLTW7020359T3	0.1346	0.10	NA	NA
CLTR7020358T3	2.5313	0.11	NA	NA
CLTR7020364T3	-0.0979	0.13	1.9582 : -1.9582	0.1307 : 0.1307
CLTR7030098T3	0.5380	0.08	0.9405 : -0.9405	0.0909 : 0.0909
CLTR7030099T3	0.6547	0.10	NA	NA
CLTW7030100T3	0.8024	0.09	NA	NA
CLTR7020365T3	0.4458	0.06	-1.0161 : 1.0161	0.1342 : 0.1342
CLTW7030134T3	-0.1520	0.11	NA	NA
CLTR7020380T1	-1.6637	0.09	NA	NA
CLTR7020381T1	0.0322	0.07	NA	NA
CLTW7030251T3	-1.1959	0.08	NA	NA
CLTW7020384T1	0.7465	0.08	NA	NA
CLTR7030255T1	-0.0462	0.08	NA	NA
CLTR7030257T1	-1.0895	0.06	0.3846 : -0.3846	0.0851 : 0.0851
CLTR7030258T1	-0.0594	0.07	NA	NA
CLTW7030259T1	-1.3544	0.09	NA	NA
CLTR7030244T1	-0.8271	0.08	1.1456 : -1.1456	0.0877 : 0.0877
CLTR7030243T1	-1.1719	0.07	-1.9524 : 1.9524	0.199 : 0.199
CLTR7030245T1	-0.3321	0.09	NA	NA
CLTR7030070T2	-0.6505	0.07	1.3612 : -1.3612	0.0775 : 0.0775
CLTR7030071T2	-0.1899	0.08	NA	NA
CLTW7030072T2	-0.4747	0.08	NA	NA

Table 8.C.6 IRT Item Difficulty for ELA, Grade Eight

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR8020446T1	-1.4083	0.04	1.0993 : -1.0993	0.0476 : 0.0476
CLTR8020394T1	-0.9574	0.04	1.8075 : -1.8075	0.0447 : 0.0447
CLTR8020395T1	-1.0981	0.04	NA	NA
CLTW8020396T1	-0.6707	0.04	1.7083 : -1.7083	0.0398 : 0.0398
CLTW8020388T1	-1.2530	0.05	1.5245 : -1.5245	0.0481 : 0.0481
CLTW8020390T1	-1.6844	0.05	NA	NA
CLTR8020321T2	-1.3467	0.04	0.9374 : -0.9374	0.0482 : 0.0482
CLTR8020322T2	0.7200	0.04	NA	NA
CLTR8020323T2	-0.1057	0.02	-1.3428 : 1.3428	0.0532 : 0.0532
CLTR8020288T2	-0.8583	0.04	1.498 : -1.498	0.0424 : 0.0424
CLTR8020284T1	0.4857	0.03	-0.5857 : 0.5857	0.0549 : 0.0549
CLTR8020282T1	-1.2434	0.05	1.2377 : -1.2377	0.0563 : 0.0563
CLTR8020283T1	0.2695	0.05	NA	NA
CLTR8020447T1	-0.6578	0.04	1.8289 : -1.8289	0.0442 : 0.0442
CLTR8020210T1	-0.3697	0.05	NA	NA
CLTR8020211T1	-0.5774	0.05	NA	NA
CLTW8020212T1	-1.1281	0.05	NA	NA
CLTW8030212T1	-0.2025	0.03	0.9276 : -0.9276	0.0417 : 0.0417
CLTR8020289T2	-0.8583	0.05	1.5002 : -1.5002	0.0523 : 0.0523
CLTR8020292T2	0.1008	0.02	-0.7799 : 0.7799	0.0441 : 0.0441
CLTR8020293T2-M	-0.2869	0.03	0.5783 : -0.5783	0.0345 : 0.0345
CLTR8020294T2	-0.2131	0.04	1.7158 : -1.7158	0.0391 : 0.0391
CLTR8020290T2	0.1464	0.04	NA	NA
CLTW8030224T2	-0.3156	0.04	1.4587 : -1.4587	0.046 : 0.046
CLTW8030219T2	-0.2960	0.03	-0.2667 : 0.2667	0.0468 : 0.0468
CLTW8020389T1	-1.4108	0.12	1.6575 : -1.6575	0.1224 : 0.1224
CLTR8030210T1	-1.4101	0.08	NA	NA
CLTW8020262T2	1.5069	0.06	NA	NA
CLTW8020261T2	-1.4273	0.11	1.2063 : -1.2063	0.1201 : 0.1201
CLTR8030218T2	-0.3339	0.05	0.8187 : -0.8187	0.0645 : 0.0645
CLTR8030216T2	-0.6301	0.07	1.2761 : -1.2761	0.0766 : 0.0766
CLTR8030217T2	-0.5766	0.07	NA	NA
CLTR8020439T3	-0.2779	0.06	1.1073 : -1.1073	0.064 : 0.064
CLTW8030121T3	-0.8332	0.08	1.6178 : -1.6178	0.0888 : 0.0888
CLTR8030120T3	1.1815	0.06	NA	NA
CLTR8020285T2	0.3234	0.17	NA	NA
CLTR8020286T2	0.3783	0.18	NA	NA
CLTW8020287T2-M	1.8404	0.17	NA	NA
CLTR8020291T2	-1.1878	0.37	0.8311 : -0.8311	0.4074 : 0.4074
CLTW8020069T3	0.8169	0.17	NA	NA
CLTR8020066T3	0.1583	0.19	1.5767 : -1.5767	0.2045 : 0.2045
CLTR8020068T3	0.4197	0.11	-1.0211 : 1.0211	0.2458 : 0.2458

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTR8020067T3	0.7422	0.17	NA	NA
CLTR8030008T3	0.1523	0.19	NA	NA
CLTR8030007T3	-0.1716	0.21	1.2465 : -1.2465	0.2369 : 0.2369
CLTW8030009T3	0.1298	0.19	1.523 : -1.523	0.2134 : 0.2134
CLTR8030103T1	-0.4772	0.05	-0.7906 : 0.7906	0.0947 : 0.0947
CLTR8030102T1	-0.2720	0.07	NA	NA
CLTR8030101T1	-0.4624	0.05	-2.0177 : 2.0177	0.1532 : 0.1532
CLTR8030207T2	0.3155	0.07	NA	NA
CLTR8030208T2	-0.3334	0.07	1.4306 : -1.4306	0.0785 : 0.0785
CLTW8030209T2	0.3265	0.08	NA	NA
CLTR8030059T3	0.0048	0.04	-1.1611 : 1.1611	0.1088 : 0.1088
CLTR8030057T3	-0.5982	0.07	1.2521 : -1.2521	0.0819 : 0.0819
CLTR8030058T3	1.5253	0.09	NA	NA
CLTR8030213T2	-0.9948	0.08	1.0158 : -1.0158	0.096 : 0.096
CLTR8030214T2	-0.0289	0.08	NA	NA
CLTW8030215T2	-0.2057	0.08	1.7702 : -1.7702	0.0865 : 0.0865
CLTR8030104T1	-1.7319	0.10	NA	NA
CLTR8030105T1	-0.2256	0.05	-0.4188 : 0.4188	0.087 : 0.087
CLTW8030106T1	-1.1489	0.09	NA	NA

Table 8.C.7 IRT Item Difficulty for ELA, Grade Eleven

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTWH020236T1	-1.3459	0.04	0.7724 : -0.7724	0.0473 : 0.0473
CLTRH020227T1	-1.5140	0.05	NA	NA
CLTRH020228T1	-0.3112	0.04	1.5806 : -1.5806	0.0367 : 0.0367
CLTWH020229T1	-0.9116	0.05	NA	NA
CLTRH020033T1	-0.9145	0.04	1.7571 : -1.7571	0.0459 : 0.0459
CLTRH020034T1	-1.1990	0.05	NA	NA
CLTRH020217T2	-0.8724	0.04	NA	NA
CLTRH020218T2	-0.5292	0.04	2.0294 : -2.0294	0.0427 : 0.0427
CLTWH020219T2	-0.1969	0.04	NA	NA
CLTRH020216T2	-0.5492	0.04	NA	NA
CLTRH020233T1	-1.0316	0.05	NA	NA
CLTRH020230T1	-0.1290	0.07	NA	NA
CLTRH020231T1	-0.8423	0.07	NA	NA
CLTWH020232T1	-0.9516	0.06	1.336 : -1.336	0.0655 : 0.0655
CLTRH020234T1	-0.7695	0.04	-0.8972 : 0.8972	0.087 : 0.087
CLTWH030052T1	0.7921	0.08	NA	NA
CLTRH030038T1	0.0154	0.04	-0.7427 : 0.7427	0.0861 : 0.0861
CLTRH030037T1	-0.5459	0.06	1.2582 : -1.2582	0.0625 : 0.0625
CLTRH030036T1	-0.0715	0.07	NA	NA
CLTRH020188T2-M	0.2857	0.04	NA	NA
CLTRH020189T2	-0.5382	0.03	-1.4849 : 1.4849	0.0672 : 0.0672
CLTRH020187T2	1.0986	0.05	NA	NA
CLTRH020223T2	-0.3356	0.07	NA	NA
CLTWH030153T2	0.5187	0.07	NA	NA
CLTWH020226T2	-0.4176	0.04	1.4091 : -1.4091	0.0399 : 0.0399
CLTWH030151T1	0.4320	0.05	NA	NA
CLTRH020032T1-M	0.1362	0.04	0.9873 : -0.9873	0.0445 : 0.0445
CLTRH020191T2	-0.9434	0.06	1.4578 : -1.4578	0.0669 : 0.0669
CLTRH020190T2-M	-1.1816	0.08	1.6419 : -1.6419	0.0805 : 0.0805
CLTRH020192T2	0.9061	0.05	NA	NA
CLTRH020225T2	-0.0585	0.05	NA	NA
CLTRH020224T2	0.3048	0.03	-1.2182 : 1.2182	0.0685 : 0.0685
CLTRH020276T3	-0.1239	0.04	0.8353 : -0.8353	0.0474 : 0.0474
CLTWH030230T3	1.2713	0.05	NA	NA
CLTWH030231T3	0.1437	0.05	NA	NA
CLTRH020220T2	-1.5894	0.26	NA	NA
CLTRH020221T2	0.0071	0.16	NA	NA
CLTWH020222T2	-0.8565	0.25	0.4724 : -0.4724	0.2895 : 0.2895
CLTRH030093T2	-0.8060	0.24	0.7467 : -0.7467	0.2735 : 0.2735
CLTRH030092T2	0.3294	0.15	NA	NA
CLTRH030094T2	0.4254	0.10	-0.881 : 0.881	0.1959 : 0.1959
CLTRH020266T3	1.1820	0.14	NA	NA
CLTWH020268T3	1.5344	0.13	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTRH020267T3	0.4344	0.14	1.4689 : -1.4689	0.152 : 0.152
CLTWH020433T3	1.3337	0.10	0.5945 : -0.5945	0.123 : 0.123
CLTRH020431T3-M	0.6426	0.09	-1.2792 : 1.2792	0.2147 : 0.2147
CLTRH030227T3	0.8097	0.09	-1.5654 : 1.5654	0.2319 : 0.2319
CLTRH030225T3	1.5036	0.14	NA	NA
CLTRH030226T3	0.2912	0.16	1.6545 : -1.6545	0.1711 : 0.1711
CLTRH030117T1	-0.9899	0.09	NA	NA
CLTRH030118T1	0.3472	0.08	NA	NA
CLTWH030119T1	-0.3691	0.06	0.6101 : -0.6101	0.0751 : 0.0751
CLTRH030266T2	-1.3576	0.10	0.7922 : -0.7922	0.1129 : 0.1129
CLTRH030267T2	-0.6885	0.08	1.1761 : -1.1761	0.0903 : 0.0903
CLTWH030268T2	0.6434	0.09	NA	NA
CLTRH030221T3	0.2004	0.08	NA	NA
CLTWH030222T3	0.0281	0.06	0.3216 : -0.3216	0.0804 : 0.0804
CLTRH030220T3	2.0384	0.11	NA	NA
CLTRH030034T1	-0.9459	0.08	1.1235 : -1.1235	0.0907 : 0.0907
CLTRH030033T1	0.0369	0.07	1.5289 : -1.5289	0.0788 : 0.0788
CLTWH030035T1	0.8977	0.08	NA	NA
CLTRH030150T1	-0.4662	0.09	NA	NA
CLTWH030146T2	0.1457	0.08	NA	NA
CLTRH030229T3	1.5952	0.10	NA	NA

Table 8.C.8 IRT Item Difficulty for Mathematics, Grade Three

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM3020004T1	-1.0912	0.04	NA	NA
CLTM3020210T1	-0.9525	0.04	NA	NA
CLTM3020186T1	-0.9135	0.04	NA	NA
CLTM3020018T1	-0.5809	0.04	NA	NA
CLTM3020059T1	-0.6635	0.04	NA	NA
CLTM3020171T1	0.1037	0.02	-0.6217 : 0.6217	0.0432 : 0.0432
CLTM3020054T2	0.5006	0.02	-1.1562 : 1.1562	0.0529 : 0.0529
CLTM3020002T2	0.4588	0.03	0.9652 : -0.9652	0.0349 : 0.0349
CLTM3020060T2	0.0540	0.04	NA	NA
CLTM3020063T2	-0.3260	0.02	-1.6953 : 1.6953	0.0644 : 0.0644
CLTM3020001T1	-0.1717	0.04	-1.1496 : 1.1496	0.097 : 0.097
CLTM3020010T1	-0.3611	0.04	-1.0654 : 1.0654	0.0935 : 0.0935
CLTM3020174T1	-0.2670	0.07	NA	NA
CLTM3030563T1	0.4468	0.07	NA	NA
CLTM3030569T1	-0.3371	0.05	0.5476 : -0.5476	0.0652 : 0.0652
CLTM3030581T1	0.0348	0.05	0.2461 : -0.2461	0.0672 : 0.0672
CLTM3030578T1	-0.6070	0.07	NA	NA
CLTM3030594T1	-1.3023	0.08	NA	NA
CLTM3030500T1	-0.2280	0.07	NA	NA
CLTM3020202T2	0.2194	0.07	NA	NA
CLTM3020057T2	0.0814	0.04	NA	NA
CLTM3020011T2	-0.0659	0.05	-0.2043 : 0.2043	0.0728 : 0.0728
CLTM3020066T2	0.4321	0.07	NA	NA
CLTM3030564T2	0.4321	0.07	NA	NA
CLTM3030501T2	0.4969	0.07	NA	NA
CLTM3020201T1	0.6312	0.06	NA	NA
CLTM3030572T1	0.5725	0.04	0.4193 : -0.4193	0.0552 : 0.0552
CLTM3030506T1	-0.2246	0.06	NA	NA
CLTM3020014T2	0.3137	0.06	NA	NA
CLTM3020172T2	0.2161	0.03	-0.4186 : 0.4186	0.0634 : 0.0634
CLTM3020008T2	0.4863	0.06	NA	NA
CLTM3020175T2	0.5534	0.06	NA	NA
CLTM3030582T2	0.0024	0.04	0.3309 : -0.3309	0.0532 : 0.0532
CLTM3020168T2	0.7053	0.06	NA	NA
CLTM3020204T2	1.0348	0.05	NA	NA
CLTM3030567T2	0.1147	0.06	NA	NA
CLTM3030583T3	0.8774	0.06	1.6264 : -1.6264	0.0651 : 0.0651
CLTM3020015T3	0.4053	0.06	NA	NA
CLTM3020003T3	0.1549	0.03	-1.398 : 1.398	0.0856 : 0.0856
CLTM3020208T2	0.5875	0.07	NA	NA
CLTM3020005T2	1.1154	0.07	NA	NA
CLTM3030579T2	-0.0720	0.07	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM3030573T2	0.1923	0.05	-0.3754 : 0.3754	0.0752 : 0.0752
CLTM3030504T2	1.2352	0.05	0.1692 : -0.1692	0.0724 : 0.0724
CLTM3020061T3	0.6473	0.07	NA	NA
CLTM3020009T3	1.3506	0.07	NA	NA
CLTM3020067T3	1.1241	0.07	NA	NA
CLTM3020203T3	1.1500	0.07	NA	NA
CLTM3020064T3	0.7987	0.04	-0.8026 : 0.8026	0.085 : 0.085
CLTM3030502T3	0.0673	0.07	NA	NA
CLTM3030580T3	0.7073	0.07	NA	NA
CLTM3030571T3	1.0396	0.05	0.5702 : -0.5702	0.0676 : 0.0676
CLTM3030565T3	0.6313	0.07	NA	NA
CLTM3030503T1	0.0708	0.05	0.5139 : -0.5139	0.065 : 0.065
CLTM3030497T3	2.5491	0.12	NA	NA
CLTM3030592T2	0.0920	0.06	1.374 : -1.374	0.0665 : 0.0665
CLTM3030505T3	0.9643	0.07	0.8552 : -0.8552	0.0885 : 0.0885
CLTM3030499T2	0.6469	0.06	0.953 : -0.953	0.0809 : 0.0809
CLTM3030566T1	-0.6822	0.09	NA	NA
CLTM3030710T3	0.8128	0.06	0.4891 : -0.4891	0.0815 : 0.0815
CLTM3030570T2	1.0552	0.07	0.3646 : -0.3646	0.0898 : 0.0898
CLTM3030591T1	-0.3792	0.06	0.6742 : -0.6742	0.0751 : 0.0751
CLTM3030590T2	0.9080	0.08	1.1827 : -1.1827	0.0935 : 0.0935
CLTM3030568T3	0.5859	0.09	NA	NA
CLTM3030498T1	0.1212	0.06	0.7567 : -0.7567	0.0803 : 0.0803
CLTM3030496T2	1.2079	0.09	NA	NA
CLTM3030702T1	-0.0560	0.05	0.2404 : -0.2404	0.0813 : 0.0813
CLTM3030574T3	0.9854	0.07	-0.7002 : 0.7002	0.1186 : 0.1186

Table 8.C.9 IRT Item Difficulty for Mathematics, Grade Four

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM4020246T1	-0.9167	0.04	NA	NA
CLTM4020252T1	-0.2894	0.03	NA	NA
CLTM4020177T1	-0.8724	0.03	1.1248 : -1.1248	0.0369 : 0.0369
CLTM4020255T1	-1.3743	0.04	NA	NA
CLTM4020249T1	0.0950	0.03	0.6603 : -0.6603	0.0323 : 0.0323
CLTM4020231T1	-0.4892	0.03	1.4902 : -1.4902	0.0349 : 0.0349
CLTM4020190T2	0.5339	0.04	NA	NA
CLTM4020229T2	0.3392	0.03	0.9706 : -0.9706	0.0327 : 0.0327
CLTM4020247T2	0.0857	0.03	NA	NA
CLTM4020256T2	0.0092	0.04	NA	NA
CLTM4020189T1	-0.4114	0.05	NA	NA
CLTM4020243T1	-0.0743	0.05	NA	NA
CLTM4020219T1	-0.1486	0.05	NA	NA
CLTM4020216T1	0.3008	0.02	-1.1727 : 1.1727	0.0536 : 0.0536
CLTM4030671T1	-0.6656	0.05	1.7273 : -1.7273	0.0579 : 0.0579
CLTM4030484T1	-0.0695	0.03	-0.1287 : 0.1287	0.0541 : 0.0541
CLTM4030475T1	-1.1847	0.05	0.8617 : -0.8617	0.0597 : 0.0597
CLTM4030481T1	-0.7759	0.05	NA	NA
CLTM4030490T1	-0.2059	0.05	NA	NA
CLTM4020178T2	-0.2477	0.03	-0.0274 : 0.0274	0.0529 : 0.0529
CLTM4030479T2	0.5422	0.04	0.6243 : -0.6243	0.0557 : 0.0557
CLTM4020250T2	0.0350	0.03	1.6558 : -1.6558	0.0386 : 0.0386
CLTM4030651T2	0.9547	0.05	0.8033 : -0.8033	0.0657 : 0.0657
CLTM4020220T2	0.6243	0.06	NA	NA
CLTM4030616T2	-0.1423	0.05	NA	NA
CLTM4030647T1	0.8327	0.06	NA	NA
CLTM4030478T1	-0.0919	0.03	-1.1501 : 1.1501	0.0752 : 0.0752
CLTM4020244T2	1.3134	0.06	NA	NA
CLTM4020253T2	0.7582	0.05	NA	NA
CLTM4020211T2	1.3122	0.05	0.272 : -0.272	0.0642 : 0.0642
CLTM4030491T2	0.9114	0.05	NA	NA
CLTM4030476T2	-0.5346	0.04	-1.0943 : 1.0943	0.079 : 0.079
CLTM4030485T2	0.3280	0.04	0.462 : -0.462	0.0494 : 0.0494
CLTM4030482T2	-0.4293	0.06	NA	NA
CLTM4030648T2	1.7766	0.07	NA	NA
CLTM4020257T3	-0.7716	0.06	NA	NA
CLTM4020251T3	0.4462	0.03	-0.6055 : 0.6055	0.0626 : 0.0626
CLTM4020221T3	0.6056	0.05	NA	NA
CLTM4020217T2	0.5821	0.06	-0.2569 : 0.2569	0.1038 : 0.1038
CLTM4020241T2	-0.2089	0.11	NA	NA
CLTM4030669T2	1.2502	0.10	NA	NA
CLTM4020235T2	1.4215	0.10	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM4030494T2	0.3600	0.07	0.7101 : -0.7101	0.0918 : 0.0918
CLTM4030672T2	0.5973	0.08	1.4602 : -1.4602	0.0934 : 0.0934
CLTM4020230T3	0.5349	0.08	1.2713 : -1.2713	0.0917 : 0.0917
CLTM4020242T3	1.2182	0.10	NA	NA
CLTM4020194T3	1.3554	0.10	NA	NA
CLTM4020227T3	-0.2114	0.08	-0.4526 : 0.4526	0.1264 : 0.1264
CLTM4020254T3	0.6002	0.09	NA	NA
CLTM4020191T3	0.7382	0.10	NA	NA
CLTM4020245T3	0.7152	0.09	NA	NA
CLTM4030486T3	0.3083	0.06	-0.344 : 0.344	0.1067 : 0.1067
CLTM4030480T3	0.3089	0.07	-0.636 : 0.636	0.1165 : 0.1165
CLTM4030493T1	0.1210	0.06	1.2527 : -1.2527	0.0664 : 0.0664
CLTM4030673T3	1.5149	0.07	0.1176 : -0.1176	0.0976 : 0.0976
CLTM4030649T3	1.1080	0.07	NA	NA
CLTM4030650T1	-0.6131	0.06	0.1885 : -0.1885	0.0824 : 0.0824
CLTM4030670T3	1.4736	0.09	NA	NA
CLTM4030492T3	2.7705	0.15	NA	NA
CLTM4030612T1	-1.3616	0.09	0.9652 : -0.9652	0.1008 : 0.1008
CLTM4030477T3	0.7191	0.06	0.0374 : -0.0374	0.0837 : 0.0837
CLTM4030483T3	0.0339	0.07	NA	NA
CLTM4030668T1	0.3281	0.07	NA	NA
CLTM4030495T3	0.3136	0.05	0.3303 : -0.3303	0.0756 : 0.0756
CLTM4030617T3	0.8212	0.08	NA	NA
CLTM4030615T1	-0.4177	0.08	NA	NA
CLTM4030613T2	-0.0854	0.05	0.032 : -0.032	0.0807 : 0.0807
CLTM4030652T3	1.0442	0.07	0.4708 : -0.4708	0.0925 : 0.0925

Table 8.C.10 IRT Item Difficulty for Mathematics, Grade Five

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM5020195T1	-1.2010	0.03	0.1586 : -0.1586	0.0414 : 0.0414
CLTM5020180T1	-1.1694	0.04	NA	NA
CLTM5020354T1	-1.1252	0.04	NA	NA
CLTM5020345T1	-0.9179	0.04	NA	NA
CLTM5020183T1	-0.3920	0.02	0.2763 : -0.2763	0.0335 : 0.0335
CLTM5020340T1	0.2483	0.02	-1.0492 : 1.0492	0.0475 : 0.0475
CLTM5020341T2	0.1592	0.02	-1.1836 : 1.1836	0.0494 : 0.0494
CLTM5020214T2	0.4351	0.03	NA	NA
CLTM5020265T2	0.4695	0.03	NA	NA
CLTM5020262T2	0.1500	0.03	NA	NA
CLTM5020213T1	-1.0115	0.06	NA	NA
CLTM5030575T1	0.0293	0.04	0.5641 : -0.5641	0.0532 : 0.0532
CLTM5030557T1	-0.7683	0.06	NA	NA
CLTM5020165T1	-0.2379	0.06	NA	NA
CLTM5020404T1	-0.4118	0.05	NA	NA
CLTM5020357T1	-0.4768	0.04	0.6388 : -0.6388	0.0528 : 0.0528
CLTM5020261T1	-0.2327	0.06	NA	NA
CLTM5030458T1	-0.5184	0.04	0.779 : -0.779	0.0519 : 0.0519
CLTM5030707T1	0.2535	0.04	-1.1338 : 1.1338	0.0816 : 0.0816
CLTM5020196T2	-0.5120	0.04	0.593 : -0.593	0.0526 : 0.0526
CLTM5030607T2	-0.1660	0.04	0.6818 : -0.6818	0.0517 : 0.0517
CLTM5020405T2	-0.1185	0.03	-1.7131 : 1.7131	0.0972 : 0.0972
CLTM5030561T2	0.7400	0.06	NA	NA
CLTM5030610T2	-0.1691	0.06	NA	NA
CLTM5030456T2	0.5470	0.06	NA	NA
CLTM5020360T1	0.3224	0.05	NA	NA
CLTM5030700T1	-0.0838	0.05	NA	NA
CLTM5030675T1	0.3495	0.03	-0.4675 : 0.4675	0.0629 : 0.0629
CLTM5030558T2	1.5898	0.06	NA	NA
CLTM5020346T2	1.0291	0.06	NA	NA
CLTM5030464T2	-0.0296	0.05	1.4463 : -1.4463	0.0539 : 0.0539
CLTM5020259T2	0.8274	0.05	NA	NA
CLTM5020184T2	0.3411	0.03	-0.2712 : 0.2712	0.0599 : 0.0599
CLTM5030677T2	1.2042	0.05	0.8062 : -0.8062	0.0623 : 0.0623
CLTM5020358T2	0.4415	0.03	-0.8815 : 0.8815	0.0568 : 0.0568
CLTM5020361T2	0.5984	0.05	NA	NA
CLTM5030701T2	1.2096	0.06	NA	NA
CLTM5020269T3	0.3102	0.04	0.5864 : -0.5864	0.0502 : 0.0502
CLTM5020359T3	-0.0508	0.04	0.4691 : -0.4691	0.051 : 0.051
CLTM5030674T3	1.3197	0.06	1.0908 : -1.0908	0.0666 : 0.0666
CLTM5030459T2	0.7956	0.06	0.8081 : -0.8081	0.0699 : 0.0699
CLTM5030576T2	0.1309	0.06	0.6598 : -0.6598	0.0731 : 0.0731

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM5030462T2	0.9271	0.05	0.4078 : -0.4078	0.0712 : 0.0712
CLTM5020343T2	1.7806	0.08	NA	NA
CLTM5020181T2	1.0462	0.08	NA	NA
CLTM5020356T3	0.4896	0.07	NA	NA
CLTM5020344T3	1.0561	0.08	NA	NA
CLTM5020362T3	1.6230	0.09	NA	NA
CLTM5020215T3	1.2649	0.08	NA	NA
CLTM5030465T3	-0.3232	0.07	1.1765 : -1.1765	0.0864 : 0.0864
CLTM5030608T3	0.6870	0.05	0.7164 : -0.7164	0.0698 : 0.0698
CLTM5030577T3	0.5194	0.05	0.156 : -0.156	0.0741 : 0.0741
CLTM5030460T3	1.5057	0.06	0.3332 : -0.3332	0.0822 : 0.0822
CLTM5030678T3	0.5326	0.05	-0.3128 : 0.3128	0.0797 : 0.0797
CLTM5030463T1	-0.5650	0.05	0.26 : -0.26	0.0746 : 0.0746
CLTM5030611T3	0.9846	0.07	NA	NA
CLTM5030560T1	0.2670	0.07	NA	NA
CLTM5030676T1	-0.2705	0.06	1.1922 : -1.1922	0.0745 : 0.0745
CLTM5030709T3	0.2334	0.05	0.6506 : -0.6506	0.0711 : 0.0711
CLTM5030457T3	1.4138	0.09	NA	NA
CLTM5030708T2	0.3347	0.05	0.6094 : -0.6094	0.0718 : 0.0718
CLTM5030703T3	0.6206	0.07	NA	NA
CLTM5030455T1	-0.7292	0.08	NA	NA
CLTM5030609T1	-1.3863	0.09	NA	NA
CLTM5030562T3	1.3288	0.08	NA	NA
CLTM5030559T3	2.6024	0.13	NA	NA
CLTM5030461T1	0.3742	0.06	1.1848 : -1.1848	0.0739 : 0.0739
CLTM5020349T2	1.0415	0.08	NA	NA
CLTM5020338T1	-0.8771	0.07	0.9073 : -0.9073	0.0801 : 0.0801

Table 8.C.11 IRT Item Difficulty for Mathematics, Grade Six

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM6020198T1	-0.5739	0.04	NA	NA
CLTM6020284T1	-0.6092	0.04	NA	NA
CLTM6020293T1	-0.5540	0.04	NA	NA
CLTM6020427T1	-0.4354	0.03	NA	NA
CLTM6020363T1	0.3689	0.02	-1.3468 : 1.3468	0.0532 : 0.0532
CLTM6020432T1	0.4016	0.02	-1.3502 : 1.3502	0.0538 : 0.0538
CLTM6020285T2	-0.1663	0.04	NA	NA
CLTM6020315T2	-0.0716	0.02	-0.2043 : 0.2043	0.0368 : 0.0368
CLTM6020291T2	0.2121	0.02	-1.2263 : 1.2263	0.0503 : 0.0503
CLTM6020041T2	0.4686	0.04	NA	NA
CLTM6020320T1	-0.0813	0.05	NA	NA
CLTM6020435T1	0.1912	0.04	0.6579 : -0.6579	0.0515 : 0.0515
CLTM6020366T1	0.2421	0.03	-0.4742 : 0.4742	0.0679 : 0.0679
CLTM6020037T1	-0.1257	0.05	NA	NA
CLTM6020097T1	0.1495	0.04	NA	NA
CLTM6030685T1	-0.4923	0.05	NA	NA
CLTM6020314T1	0.1470	0.03	-0.5682 : 0.5682	0.0731 : 0.0731
CLTM6030469T1	-0.1828	0.03	-0.3549 : 0.3549	0.0578 : 0.0578
CLTM6030679T1	0.4300	0.05	NA	NA
CLTM6020425T2	0.2781	0.04	NA	NA
CLTM6020433T2	0.0883	0.03	-0.616 : 0.616	0.0716 : 0.0716
CLTM6020364T2	0.1495	0.03	-0.6861 : 0.6861	0.0741 : 0.0741
CLTM6030683T2	0.0575	0.05	NA	NA
CLTM6030599T2	0.1553	0.05	NA	NA
CLTM6030636T2	0.3374	0.05	NA	NA
CLTM6030472T1	0.0482	0.05	NA	NA
CLTM6020094T1	0.4122	0.04	1.1627 : -1.1627	0.0514 : 0.0514
CLTM6030686T2	1.3206	0.06	NA	NA
CLTM6030622T2	0.5666	0.05	NA	NA
CLTM6020095T2	0.4032	0.03	-1.2536 : 1.2536	0.078 : 0.078
CLTM6020199T2	0.4495	0.05	NA	NA
CLTM6020321T2	1.3561	0.05	NA	NA
CLTM6020436T2	0.8178	0.04	-0.7213 : 0.7213	0.0689 : 0.0689
CLTM6030467T2	1.1297	0.05	0.7495 : -0.7495	0.0607 : 0.0607
CLTM6020429T3	0.2395	0.05	NA	NA
CLTM6020200T3	0.2129	0.05	NA	NA
CLTM6030681T3	3.5589	0.14	NA	NA
CLTM6030602T2	0.7254	0.04	0.3526 : -0.3526	0.0539 : 0.0539
CLTM6030596T2	1.4977	0.10	NA	NA
CLTM6030680T2	1.8262	0.10	NA	NA
CLTM6030473T2	0.8166	0.08	NA	NA
CLTM6030619T2	0.8060	0.06	0.4606 : -0.4606	0.0818 : 0.0818

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM6020294T2	0.5948	0.09	NA	NA
CLTM6020434T3	0.2276	0.05	-0.2925 : 0.2925	0.0944 : 0.0944
CLTM6030687T3	0.8616	0.08	NA	NA
CLTM6030623T3	1.9644	0.10	NA	NA
CLTM6030684T3	0.0530	0.09	NA	NA
CLTM6020096T3	0.5219	0.05	-1.3468 : 1.3468	0.129 : 0.129
CLTM6020289T3	0.6559	0.05	-0.8217 : 0.8217	0.1079 : 0.1079
CLTM6020042T3	0.4874	0.09	NA	NA
CLTM6020368T3	0.9335	0.06	0.1896 : -0.1896	0.0855 : 0.0855
CLTM6020039T3	0.8326	0.06	0.6631 : -0.6631	0.0809 : 0.0809
CLTM6030618T1	-0.1726	0.04	-1.5407 : 1.5407	0.1234 : 0.1234
CLTM6030474T3	0.5890	0.08	NA	NA
CLTM6030600T3	1.6001	0.10	NA	NA
CLTM6030601T1	0.0291	0.05	0.3101 : -0.3101	0.0703 : 0.0703
CLTM6030595T1	0.0105	0.07	NA	NA
CLTM6030468T3	0.9296	0.08	1.7597 : -1.7597	0.0911 : 0.0911
CLTM6030635T1	0.0150	0.08	NA	NA
CLTM6030603T3	0.4792	0.06	0.6486 : -0.6486	0.0764 : 0.0764
CLTM6030620T3	0.2641	0.05	0.2361 : -0.2361	0.0761 : 0.0761
CLTM6030466T1	0.1532	0.04	-0.9227 : 0.9227	0.1011 : 0.1011
CLTM6030470T2	0.7450	0.06	0.8298 : -0.8298	0.0812 : 0.0812
CLTM6030637T3	0.4412	0.08	NA	NA
CLTM6030598T1	-0.0402	0.07	NA	NA
CLTM6030621T1	-0.1431	0.07	NA	NA
CLTM6030682T1	-0.2121	0.07	NA	NA

Table 8.C.12 IRT Item Difficulty for Mathematics, Grade Seven

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM7020047T1	-0.6060	0.02	-1.3125 : 1.3125	0.0562 : 0.0562
CLTM7020085T1	-0.7316	0.04	NA	NA
CLTM7020091T1	-0.5423	0.02	-2.5309 : 2.5309	0.0926 : 0.0926
CLTM7020299T1	-0.6947	0.04	NA	NA
CLTM7020088T1	0.1133	0.02	-0.9919 : 0.9919	0.0472 : 0.0472
CLTM7020323T1	0.0684	0.04	NA	NA
CLTM7020032T2	0.0685	0.04	NA	NA
CLTM7020089T2	0.0766	0.03	1.509 : -1.509	0.034 : 0.034
CLTM7020330T2	0.1565	0.02	-1.2738 : 1.2738	0.0522 : 0.0522
CLTM7020282T2	0.3514	0.03	0.3786 : -0.3786	0.034 : 0.034
CLTM7020280T1	-0.7504	0.08	NA	NA
CLTM7020326T1	-0.5340	0.05	0.1402 : -0.1402	0.0742 : 0.0742
CLTM7020296T1	-0.3936	0.08	NA	NA
CLTM7020372T1	-0.1807	0.05	0.5179 : -0.5179	0.0731 : 0.0731
CLTM7030509T1	-0.3524	0.05	0.234 : -0.234	0.0736 : 0.0736
CLTM7030512T1	-0.1085	0.05	-0.1686 : 0.1686	0.0821 : 0.0821
CLTM7030694T1	-0.7560	0.08	NA	NA
CLTM7030519T2	0.5597	0.07	0.6962 : -0.6962	0.0886 : 0.0886
CLTM7030587T1	-0.5838	0.08	NA	NA
CLTM7020092T2	-0.3609	0.04	-2.6494 : 2.6494	0.2012 : 0.2012
CLTM7020370T2	0.0516	0.08	NA	NA
CLTM7020048T2	-0.3536	0.05	-0.4219 : 0.4219	0.0839 : 0.0839
CLTM7030518T1	-0.2779	0.05	-1.393 : 1.393	0.1173 : 0.1173
CLTM7030522T2	0.2115	0.07	1.2242 : -1.2242	0.0814 : 0.0814
CLTM7020448T2	0.8449	0.09	NA	NA
CLTM7020418T1	0.1534	0.03	-0.3874 : 0.3874	0.059 : 0.059
CLTM7020281T1	0.2190	0.03	-1.1473 : 1.1473	0.0732 : 0.0732
CLTM7030653T1	-0.0737	0.05	NA	NA
CLTM7020297T2	0.3161	0.05	NA	NA
CLTM7020373T2	0.5554	0.03	1.0128 : -1.0128	0.0391 : 0.0391
CLTM7020327T2	0.3343	0.03	-0.4477 : 0.4477	0.0609 : 0.0609
CLTM7020449T2	0.3208	0.05	NA	NA
CLTM7030695T2	1.0101	0.06	NA	NA
CLTM7030510T2	0.1562	0.04	0.5503 : -0.5503	0.0487 : 0.0487
CLTM7030689T2	0.4891	0.05	NA	NA
CLTM7030692T2	0.8493	0.06	NA	NA
CLTM7030513T2	1.1391	0.06	0.9674 : -0.9674	0.0643 : 0.0643
CLTM7020301T3	0.5874	0.06	NA	NA
CLTM7020049T3	0.2478	0.04	0.2482 : -0.2482	0.0503 : 0.0503
CLTM7020090T3	0.6856	0.03	0.216 : -0.216	0.042 : 0.042
CLTM7030585T2	0.6770	0.05	1.3307 : -1.3307	0.0606 : 0.0606
CLTM7030516T2	0.4599	0.04	-0.0001 : 0.0001	0.0643 : 0.0643

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM7020419T2	0.9036	0.04	0.2845 : -0.2845	0.062 : 0.062
CLTM7030588T2	0.5332	0.06	NA	NA
CLTM7020374T3	0.5176	0.05	0.7971 : -0.7971	0.0593 : 0.0593
CLTM7020087T3	0.6970	0.06	NA	NA
CLTM7020093T3	0.9176	0.04	0.4033 : -0.4033	0.0607 : 0.0607
CLTM7020283T3	0.3117	0.04	0.4663 : -0.4663	0.0604 : 0.0604
CLTM7030654T2	-0.3805	0.07	NA	NA
CLTM7030693T3	0.0742	0.06	NA	NA
CLTM7030690T3	2.3386	0.09	NA	NA
CLTM7030696T3	3.2705	0.12	NA	NA
CLTM7030514T3	0.7554	0.05	0.945 : -0.945	0.0587 : 0.0587
CLTM7020329T1	-0.4143	0.04	-2.5472 : 2.5472	0.1887 : 0.1887
CLTM7030705T2	0.7931	0.07	NA	NA
CLTM7020450T3	1.0902	0.08	NA	NA
CLTM7020050T1	-1.1962	0.09	NA	NA
CLTM7030704T1	-0.5345	0.08	NA	NA
CLTM7030511T3	-0.0734	0.06	1.096 : -1.096	0.0754 : 0.0754
CLTM7030584T1	0.0182	0.05	0.8949 : -0.8949	0.0698 : 0.0698
CLTM7030688T1	-0.7987	0.08	NA	NA
CLTM7030586T3	0.5491	0.05	0.7465 : -0.7465	0.0729 : 0.0729
CLTM7030515T1	-0.1753	0.05	-0.4035 : 0.4035	0.0918 : 0.0918
CLTM7030521T1	0.2005	0.05	-0.9436 : 0.9436	0.1097 : 0.1097
CLTM7030589T3	0.7584	0.08	NA	NA
CLTM7030691T1	-0.6811	0.08	NA	NA
CLTM7030517T3	0.5080	0.05	0.4273 : -0.4273	0.0775 : 0.0775
CLTM7030520T3	0.0864	0.06	0.8809 : -0.8809	0.0729 : 0.0729

Table 8.C.13 IRT Item Difficulty for Mathematics, Grade Eight

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM8020079T1	-0.8966	0.04	NA	NA
CLTM8020028T1	-0.8037	0.03	0.6202 : -0.6202	0.0368 : 0.0368
CLTM8020302T1	-1.1239	0.04	NA	NA
CLTM8020378T1	-0.2938	0.02	-1.1792 : 1.1792	0.0508 : 0.0508
CLTM8020387T1	0.2397	0.04	NA	NA
CLTM8020277T1	-0.0508	0.02	-0.7321 : 0.7321	0.0432 : 0.0432
CLTM8020276T2	0.2925	0.03	0.5332 : -0.5332	0.0338 : 0.0338
CLTM8020080T2	0.5495	0.03	0.7697 : -0.7697	0.0344 : 0.0344
CLTM8020029T2	-0.3115	0.02	0.0214 : -0.0214	0.0367 : 0.0367
CLTM8020416T2	0.5573	0.03	0.7963 : -0.7963	0.0336 : 0.0336
CLTM8020278T1	-0.5899	0.07	NA	NA
CLTM8020415T1	-0.2399	0.04	-0.8614 : 0.8614	0.0869 : 0.0869
CLTM8020376T2	0.0363	0.05	NA	NA
CLTM8020082T1	0.1308	0.07	NA	NA
CLTM8020388T1	-0.3486	0.06	NA	NA
CLTM8020391T1	-0.2601	0.04	-0.8639 : 0.8639	0.0883 : 0.0883
CLTM8030535T1	-0.5449	0.04	-1.3618 : 1.3618	0.1019 : 0.1019
CLTM8030538T1	-0.4417	0.04	-1.2593 : 1.2593	0.0977 : 0.0977
CLTM8030524T1	-0.6649	0.06	NA	NA
CLTM8020452T2	0.4211	0.04	NA	NA
CLTM8030528T2	-0.2810	0.05	0.7539 : -0.7539	0.0609 : 0.0609
CLTM8030660T2	0.6108	0.07	NA	NA
CLTM8030698T2	-0.0115	0.07	NA	NA
CLTM8030625T2	0.2284	0.07	NA	NA
CLTM8020305T1	-0.0319	0.04	-1.2983 : 1.2983	0.1012 : 0.1012
CLTM8030659T1	-0.6834	0.05	NA	NA
CLTM8030624T1	-0.1933	0.05	NA	NA
CLTM8030697T1	-0.4630	0.05	NA	NA
CLTM8020069T2	1.2064	0.06	NA	NA
CLTM8020303T2	0.5780	0.05	NA	NA
CLTM8020026T2	0.3022	0.05	NA	NA
CLTM8030531T2	0.1299	0.04	0.4796 : -0.4796	0.048 : 0.048
CLTM8030539T2	0.1772	0.04	0.6311 : -0.6311	0.0479 : 0.0479
CLTM8030525T2	0.3068	0.05	NA	NA
CLTM8020083T2	0.4510	0.04	NA	NA
CLTM8030536T2	0.1482	0.03	0.0135 : -0.0135	0.051 : 0.051
CLTM8020084T3	0.3134	0.05	NA	NA
CLTM8020307T3	0.5389	0.04	0.1171 : -0.1171	0.0525 : 0.0525
CLTM8030529T3	-0.1984	0.04	0.5711 : -0.5711	0.0485 : 0.0485
CLTM8030663T2	0.4902	0.07	NA	NA
CLTM8030639T2	0.1436	0.07	NA	NA
CLTM8030711T2	0.2655	0.07	NA	NA

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTM8030657T2	1.4535	0.07	NA	NA
CLTM8020396T3	1.9486	0.08	NA	NA
CLTM8020417T3	1.0029	0.06	1.1115 : -1.1115	0.0658 : 0.0658
CLTM8020414T3	1.6584	0.08	NA	NA
CLTM8020279T3	0.5718	0.07	NA	NA
CLTM8020027T3	1.1538	0.07	NA	NA
CLTM8030532T3	0.7762	0.05	0.8393 : -0.8393	0.0654 : 0.0654
CLTM8030540T3	0.9945	0.05	0.5735 : -0.5735	0.0655 : 0.0655
CLTM8030526T3	0.8916	0.07	NA	NA
CLTM8030537T3	0.7811	0.05	0.9423 : -0.9423	0.0646 : 0.0646
CLTM8030638T1	-1.1330	0.08	NA	NA
CLTM8030533T1	0.2592	0.07	NA	NA
CLTM8030664T3	2.1912	0.11	NA	NA
CLTM8030656T1	-0.2439	0.08	NA	NA
CLTM8030699T3	2.7478	0.15	NA	NA
CLTM8030534T3	0.6471	0.08	NA	NA
CLTM8020453T3	0.7187	0.08	NA	NA
CLTM8030530T1	-0.0026	0.04	-1.2729 : 1.2729	0.1147 : 0.1147
CLTM8030658T3	0.8175	0.09	NA	NA
CLTM8020332T1	-1.3928	0.10	NA	NA
CLTM8030527T1	-0.2572	0.05	-0.6893 : 0.6893	0.0996 : 0.0996
CLTM8030640T3	1.0414	0.09	NA	NA
CLTM8020412T1	-0.4735	0.08	NA	NA
CLTM8030661T3	0.3359	0.07	NA	NA
CLTM8030626T3	1.4302	0.09	NA	NA

Table 8.C.14 IRT Item Difficulty for Mathematics, Grade Eleven

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTMH020019T1	-1.1058	0.04	NA	NA
CLTMH020272T1	-1.0545	0.04	NA	NA
CLTMH020447T1	-0.6080	0.04	NA	NA
CLTMH020043T1	-0.5668	0.04	NA	NA
CLTMH020073T1	-0.5145	0.02	-3.1935 : 3.1935	0.1364 : 0.1364
CLTMH020409T1	-0.2735	0.02	-1.4461 : 1.4461	0.0606 : 0.0606
CLTMH020398T2	-0.9469	0.04	1.1667 : -1.1667	0.0418 : 0.0418
CLTMH020385T2	0.1661	0.02	-1.2497 : 1.2497	0.0557 : 0.0557
CLTMH020071T2	0.7834	0.04	NA	NA
CLTMH020020T2	-0.6261	0.04	NA	NA
CLTMH020022T1	-0.5794	0.07	NA	NA
CLTMH020308T1	-0.1677	0.07	NA	NA
CLTMH020311T1	-0.2659	0.07	NA	NA
CLTMH020076T1	0.3775	0.07	NA	NA
CLTMH020068T1	-0.4733	0.07	NA	NA
CLTMH020406T1	-0.0973	0.04	-1.7285 : 1.7285	0.1234 : 0.1234
CLTMH030641T1	-0.2105	0.04	-1.7612 : 1.7612	0.1261 : 0.1261
CLTMH030554T1	-0.0194	0.04	-1.1144 : 1.1144	0.0994 : 0.0994
CLTMH030712T1	0.4627	0.07	NA	NA
CLTMH020077T2	0.8244	0.05	NA	NA
CLTMH030628T2	0.3467	0.07	NA	NA
CLTMH030548T2	0.5742	0.07	NA	NA
CLTMH030542T2	0.0849	0.07	NA	NA
CLTMH030645T2	-0.5994	0.04	-0.7058 : 0.7058	0.0824 : 0.0824
CLTMH030555T2	0.0653	0.05	0.8547 : -0.8547	0.0661 : 0.0661
CLTMH020335T1	0.2436	0.07	NA	NA
CLTMH030553T1	-0.9523	0.08	NA	NA
CLTMH030541T1	-0.2306	0.07	NA	NA
CLTMH020382T2	0.8632	0.03	-1.0475 : 1.0475	0.0661 : 0.0661
CLTMH020402T2	0.3287	0.05	0.7627 : -0.7627	0.0693 : 0.0693
CLTMH020407T2	0.4675	0.03	-0.9665 : 0.9665	0.0613 : 0.0613
CLTMH030713T2	0.9130	0.08	NA	NA
CLTMH030666T2	-0.5704	0.05	-1.0402 : 1.0402	0.1039 : 0.1039
CLTMH030633T2	1.0711	0.08	NA	NA
CLTMH030631T2	0.5521	0.07	NA	NA
CLTMH030546T2	0.4716	0.06	1.4468 : -1.4468	0.076 : 0.076
CLTMH020383T3	0.3139	0.06	1.3273 : -1.3273	0.0713 : 0.0713
CLTMH020045T3	-0.1637	0.07	NA	NA
CLTMH030547T3	0.2317	0.05	0.7411 : -0.7411	0.0672 : 0.0672
CLTMH020270T2	0.4760	0.06	NA	NA
CLTMH030642T2	0.1377	0.04	0.7086 : -0.7086	0.0539 : 0.0539
CLTMH030551T2	-1.1060	0.07	0.9168 : -0.9168	0.0841 : 0.0841

Item ID	*b*-value	*b*-value SE	*d*-values	*d*-values SE
CLTMH020044T2	1.1733	0.06	NA	NA
CLTMH020078T3	1.2625	0.06	NA	NA
CLTMH020313T3	0.5809	0.06	NA	NA
CLTMH020403T3	0.7563	0.04	0.5006 : -0.5006	0.055 : 0.055
CLTMH030643T3	0.7451	0.04	0.7223 : -0.7223	0.0548 : 0.0548
CLTMH030543T3	0.7788	0.06	NA	NA
CLTMH030714T3	1.2306	0.06	NA	NA
CLTMH030667T3	0.3698	0.03	-1.0715 : 1.0715	0.0776 : 0.0776
CLTMH030552T3	-0.0988	0.04	0.4608 : -0.4608	0.0571 : 0.0571
CLTMH030634T3	2.1859	0.08	NA	NA
CLTMH030550T1	0.2192	0.04	-0.7535 : 0.7535	0.1004 : 0.1004
CLTMH020397T1	-0.1124	0.04	-0.9376 : 0.9376	0.1072 : 0.1072
CLTMH030544T3	2.3065	0.12	NA	NA
CLTMH030549T1	-0.3473	0.09	NA	NA
CLTMH030632T3	0.2320	0.08	NA	NA
CLTMH030556T3	0.0371	0.06	0.6604 : -0.6604	0.08 : 0.08
CLTMH030630T1	-0.3373	0.08	NA	NA
CLTMH030629T3	1.9879	0.12	NA	NA
CLTMH030646T3	0.3146	0.05	-0.8634 : 0.8634	0.1065 : 0.1065
CLTMH030644T1	-0.2886	0.05	-3.429 : 3.429	0.3244 : 0.3244
CLTMH020336T2	-0.3163	0.08	NA	NA
CLTMH020337T3	-0.3827	0.08	NA	NA
CLTMH030665T1	-0.3534	0.05	-3.6101 : 3.6101	0.3681 : 0.3681
CLTMH030545T1	-0.0715	0.04	-1.2013 : 1.2013	0.1225 : 0.1225
CLTMH020381T1	-0.3039	0.05	-1.0439 : 1.0439	0.1169 : 0.1169

Table 8.C.15 IRT Item Difficulty Summary by the Content Complexity (Tier) for ELA

Test	Tier Set	Number of Items	Mean *b*-value	SD *b*-value	Minimum *b*-value	Maximum *b*-value	Median *b*-value
Grade 3	Tier 1-Op	17	-1.0373	0.5884	-1.8255	0.3541	-1.1947
Grade 3	Tier 2-Op	14	-0.4893	0.6573	-1.4873	0.4296	-0.5684
Grade 3	Tier 3-Op	12	0.0485	1.0654	-1.7640	1.3158	0.0010
Grade 3	All Operational Items	43	-0.5559	0.8732	-1.8255	1.3158	-0.7502
Grade 3	Tier 1-FT	8	-0.5533	0.3940	-0.9457	0.0356	-0.7035
Grade 3	Tier 2-FT	5	-0.1388	0.4615	-0.7043	0.4280	-0.0126
Grade 3	Tier 3-FT	2	-0.2876	0.0915	-0.3523	-0.2229	-0.2876
Grade 3	All Field-test Items	15	-0.3797	0.4222	-0.9457	0.4280	-0.4131
Grade 4	Tier 1-Op	14	-0.7942	0.5897	-1.6244	0.2701	-0.7148
Grade 4	Tier 2-Op	22	-0.0700	0.5821	-1.4738	1.1600	0.0305
Grade 4	Tier 3-Op	12	0.0703	0.5726	-1.0720	0.8227	0.1570
Grade 4	All Operational Items	48	-0.2462	0.6737	-1.6244	1.1600	-0.2171
Grade 4	Tier 1-FT	7	-0.4171	0.8476	-1.3805	1.1320	-0.5088
Grade 4	Tier 2-FT	NA	NA	NA	NA	NA	NA
Grade 4	Tier 3-FT	8	0.3610	0.2035	0.0280	0.6861	0.3632
Grade 4	All Field-test Items	15	-0.0021	0.7000	-1.3805	1.1320	0.2187
Grade 5	Tier 1-Op	15	-0.8392	0.5971	-1.6857	0.3946	-0.8924
Grade 5	Tier 2-Op	22	-0.3058	0.8594	-1.5360	1.1937	-0.4250
Grade 5	Tier 3-Op	12	0.3180	0.6977	-0.6602	1.4970	0.2893
Grade 5	All Operational Items	49	-0.3163	0.8513	-1.6857	1.4970	-0.3951
Grade 5	Tier 1-FT	8	-0.7438	0.8037	-1.5255	0.3404	-1.1317
Grade 5	Tier 2-FT	2	-0.7205	0.6708	-1.1949	-0.2462	-0.7205
Grade 5	Tier 3-FT	5	-0.1352	0.8295	-1.4024	0.7578	0.0150
Grade 5	All Field-test Items	15	-0.5378	0.7992	-1.5255	0.7578	-0.4114
Grade 6	Tier 1-Op	18	-0.5391	0.7793	-1.7151	0.6329	-0.7433
Grade 6	Tier 2-Op	21	-0.0902	0.7367	-1.1218	1.5317	-0.1348
Grade 6	Tier 3-Op	11	0.3423	0.5140	-0.3798	1.1909	0.3878
Grade 6	All Operational Items	50	-0.1567	0.7731	-1.7151	1.5317	-0.1346
Grade 6	Tier 1-FT	7	-0.5368	0.8241	-1.5474	1.1143	-0.6208
Grade 6	Tier 2-FT	5	0.1556	0.6847	-0.8162	1.0199	0.2528
Grade 6	Tier 3-FT	3	0.8613	1.1177	0.1807	2.1512	0.2520
Grade 6	All Field-test Items	15	-0.0263	0.9562	-1.5474	2.1512	-0.1345

Test	Tier Set	Number of Items	Mean *b*-value	SD *b*-value	Minimum *b*-value	Maximum *b*-value	Median *b*-value
Grade 7	Tier 1-Op	18	-0.7284	0.7988	-1.9090	0.4981	-0.7954
Grade 7	Tier 2-Op	25	0.0362	0.4589	-1.1009	0.9544	0.0329
Grade 7	Tier 3-Op	12	0.7765	0.8810	-0.1520	2.5313	0.5963
Grade 7	All Operational Items	55	-0.0525	0.8725	-1.9090	2.5313	0.0108
Grade 7	Tier 1-FT	10	-0.5766	0.7599	-1.6637	0.7465	-0.5796
Grade 7	Tier 2-FT	3	-0.4384	0.2324	-0.6505	-0.1899	-0.4747
Grade 7	Tier 3-FT	1	-1.1959	NA	-1.1959	-1.1959	-1.1959
Grade 7	All Field-test Items	14	-0.5912	0.6646	-1.6637	0.7465	-0.5626
Grade 8	Tier 1-Op	16	-0.8323	0.6287	-1.6844	0.4857	-1.0278
Grade 8	Tier 2-Op	20	-0.1711	0.8514	-1.4273	1.8404	-0.2915
Grade 8	Tier 3-Op	10	0.2318	0.5887	-0.8332	1.1815	0.1553
Grade 8	All Operational Items	46	-0.3135	0.8234	-1.6844	1.8404	-0.3058
Grade 8	Tier 1-FT	6	-0.7197	0.5964	-1.7319	-0.2256	-0.4698
Grade 8	Tier 2-FT	6	-0.1535	0.4917	-0.9948	0.3265	-0.1173
Grade 8	Tier 3-FT	3	0.3106	1.0943	-0.5982	1.5253	0.0048
Grade 8	All Field-test Items	15	-0.2872	0.7408	-1.7319	1.5253	-0.2720
Grade 11	Tier 1-Op	17	-0.5389	0.6515	-1.5140	0.7921	-0.7695
Grade 11	Tier 2-Op	21	-0.2380	0.6974	-1.5894	1.0986	-0.3356
Grade 11	Tier 3-Op	11	0.8203	0.5818	-0.1239	1.5344	0.8097
Grade 11	All Operational Items	49	-0.1048	0.8278	-1.5894	1.5344	-0.1239
Grade 11	Tier 1-FT	7	-0.2127	0.6879	-0.9899	0.8977	-0.3691
Grade 11	Tier 2-FT	4	-0.3142	0.8864	-1.3576	0.6434	-0.2714
Grade 11	Tier 3-FT	4	0.9655	1.0020	0.0281	2.0384	0.8978
Grade 11	All Field-test Items	15	0.0744	0.9474	-1.3576	2.0384	0.0369

Table 8.C.16 IRT Item Difficulty Summary by the Content Complexity (Tier) for Mathematics

Test	Tier Set	Number of Items	Mean *b*-value	SD *b*-value	Minimum *b*-value	Maximum *b*-value	Median *b*-value
Grade 3	Tier 1-Op	18	-0.3284	0.5540	-1.3023	0.6312	-0.3021
Grade 3	Tier 2-Op	23	0.3812	0.3892	-0.3260	1.2352	0.4321
Grade 3	Tier 3-Op	12	0.7461	0.3964	0.0673	1.3506	0.7530
Grade 3	All Operational Items	53	0.2228	0.6141	-1.3023	1.3506	0.2194
Grade 3	Tier 1-FT	5	-0.1851	0.3394	-0.6822	0.1212	-0.0560
Grade 3	Tier 2-FT	5	0.7820	0.4377	0.0920	1.2079	0.9080
Grade 3	Tier 3-FT	5	1.1795	0.7821	0.5859	2.5491	0.9643
Grade 3	All Field-test Items	15	0.5921	0.7837	-0.6822	2.5491	0.6469
Grade 4	Tier 1-Op	17	-0.3730	0.5558	-1.3743	0.8327	-0.2894
Grade 4	Tier 2-Op	24	0.5072	0.6238	-0.5346	1.7766	0.5380
Grade 4	Tier 3-Op	12	0.4873	0.5697	-0.7716	1.3554	0.5675
Grade 4	All Operational Items	53	0.2203	0.7109	-1.3743	1.7766	0.3083
Grade 4	Tier 1-FT	5	-0.3887	0.6655	-1.3616	0.3281	-0.4177
Grade 4	Tier 2-FT	1	-0.0854	NA	-0.0854	-0.0854	-0.0854
Grade 4	Tier 3-FT	9	1.0888	0.7970	0.0339	2.7705	1.0442
Grade 4	All Field-test Items	15	0.5180	1.0092	-1.3616	2.7705	0.3281
Grade 5	Tier 1-Op	19	-0.3475	0.5809	-1.2010	0.7400	-0.3920
Grade 5	Tier 2-Op	23	0.5516	0.5924	-0.5120	1.7806	0.4695
Grade 5	Tier 3-Op	12	0.7446	0.6161	-0.3232	1.6230	0.6098
Grade 5	All Operational Items	54	0.2781	0.7491	-1.2010	1.7806	0.3163
Grade 5	Tier 1-FT	7	-0.4552	0.6292	-1.3863	0.3742	-0.5650
Grade 5	Tier 2-FT	2	0.6881	0.4998	0.3347	1.0415	0.6881
Grade 5	Tier 3-FT	6	1.1973	0.8180	0.2334	2.6024	1.1567
Grade 5	All Field-test Items	15	0.3582	1.0366	-1.3863	2.6024	0.3347
Grade 6	Tier 1-Op	17	-0.0390	0.3761	-0.6092	0.4300	0.0482
Grade 6	Tier 2-Op	22	0.5910	0.5426	-0.1663	1.8262	0.4591
Grade 6	Tier 3-Op	13	0.8743	0.9425	0.0530	3.5589	0.6559
Grade 6	All Operational Items	52	0.4559	0.7133	-0.6092	3.5589	0.3532
Grade 6	Tier 1-FT	8	-0.0450	0.1227	-0.2121	0.1532	-0.0148
Grade 6	Tier 2-FT	2	0.6670	0.1103	0.5890	0.7450	0.6670
Grade 6	Tier 3-FT	5	0.7429	0.5384	0.2641	1.6001	0.4792
Grade 6	All Field-test Items	15	0.3125	0.4983	-0.2121	1.6001	0.1532

Test	Tier Set	Number of Items	Mean *b*-value	SD *b*-value	Minimum *b*-value	Maximum *b*-value	Median *b*-value
Grade 7	Tier 1-Op	18	-0.3351	0.3355	-0.7560	0.2190	-0.3730
Grade 7	Tier 2-Op	24	0.3737	0.4158	-0.3805	1.1391	0.3428
Grade 7	Tier 3-Op	11	0.9457	0.9732	0.0742	3.2705	0.6856
Grade 7	All Operational Items	53	0.2517	0.7235	-0.7560	3.2705	0.2115
Grade 7	Tier 1-FT	7	-0.4525	0.4927	-1.1962	0.2005	-0.5345
Grade 7	Tier 2-FT	1	0.7931	NA	0.7931	0.7931	0.7931
Grade 7	Tier 3-FT	7	0.3577	0.5183	-0.4143	1.0902	0.5080
Grade 7	All Field-test Items	15	0.0087	0.6560	-1.1962	1.0902	0.0182
Grade 8	Tier 1-Op	18	-0.4033	0.3595	-1.1239	0.2397	-0.3951
Grade 8	Tier 2-Op	22	0.3520	0.4050	-0.3115	1.4535	0.2974
Grade 8	Tier 3-Op	12	0.8694	0.5693	-0.1984	1.9486	0.8364
Grade 8	All Operational Items	52	0.2100	0.6514	-1.1239	1.9486	0.2028
Grade 8	Tier 1-FT	7	-0.4634	0.5969	-1.3928	0.2592	-0.2572
Grade 8	Tier 2-FT	NA	NA	NA	NA	NA	NA
Grade 8	Tier 3-FT	8	1.2412	0.8344	0.3359	2.7478	0.9295
Grade 8	All Field-test Items	15	0.4457	1.1294	-1.3928	2.7478	0.3359
Grade 11	Tier 1-Op	18	-0.3354	0.4492	-1.1058	0.4627	-0.2697
Grade 11	Tier 2-Op	22	0.2477	0.6485	-1.1060	1.1733	0.4071
Grade 11	Tier 3-Op	12	0.6827	0.6529	-0.1637	2.1859	0.6630
Grade 11	All Operational Items	52	0.1463	0.6974	-1.1060	2.1859	0.1989
Grade 11	Tier 1-FT	8	-0.1994	0.2009	-0.3534	0.2192	-0.2963
Grade 11	Tier 2-FT	1	-0.3163	NA	-0.3163	-0.3163	-0.3163
Grade 11	Tier 3-FT	6	0.7492	1.1139	-0.3827	2.3065	0.2733
Grade 11	All Field-test Items	15	0.1722	0.8379	-0.3827	2.3065	-0.1124

Note: In Table 8.C.17 through Table 8.C.30, an expression that opens with a parenthesis and closes with a bracket indicates that a value is greater than the first number and is less than or equal to the second number. For example, "(0.5, 2]" indicates a value greater than 0.5 but less than or equal to 2.

Table 8.C.17 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Three

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	1	NA	NA	NA
(–1.8, –1.6]	NA	NA	2	NA	1	NA
(–1.6, –1.4]	1	1	2	NA	1	NA
(–1.4, –1.2]	NA	NA	2	1	NA	NA
(–1.2, –1.0]	2	NA	1	1	NA	NA
(–1.0, –0.8]	NA	1	NA	2	NA	3
(–0.8, –0.6]	NA	NA	1	1	1	3
(–0.6, –0.4]	2	NA	NA	NA	NA	2
(–0.4, –0.2]	1	NA	1	1	2	2
(–0.2, 0.0]	NA	NA	NA	1	NA	1
(0.0, 0.2]	NA	1	NA	2	2	3
(0.2, 0.4]	NA	NA	1	NA	1	NA
(0.4, 0.6]	NA	1	NA	1	NA	1
(0.6, 0.8]	NA	NA	NA	NA	NA	NA
(0.8, 1.0]	NA	NA	NA	NA	NA	NA
(1.0, 1.2]	NA	NA	NA	NA	1	NA
(1.2, 1.4]	NA	NA	NA	NA	3	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.18 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Four

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	1	NA	NA	NA	NA	NA
(–1.6, –1.4]	1	NA	1	1	NA	NA
(–1.4, –1.2]	NA	NA	1	NA	NA	2
(–1.2, –1.0]	NA	NA	2	NA	1	NA
(–1.0, –0.8]	NA	1	NA	NA	NA	NA
(–0.8, –0.6]	2	1	1	NA	1	1
(–0.6, –0.4]	1	1	2	2	1	1
(–0.4, –0.2]	NA	NA	NA	2	1	1
(–0.2, 0.0]	NA	1	NA	1	NA	1
(0.0, 0.2]	NA	1	NA	5	2	1
(0.2, 0.4]	NA	NA	2	2	2	4
(0.4, 0.6]	NA	NA	NA	2	2	2
(0.6, 0.8]	NA	NA	NA	1	1	1
(0.8, 1.0]	NA	NA	NA	NA	1	NA
(1.0, 1.2]	NA	NA	NA	1	NA	1
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.19 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Five

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	1	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	1	2	1	NA	3
(–1.4, –1.2]	1	NA	1	3	NA	2
(–1.2, –1.0]	NA	NA	2	1	NA	2
(–1.0, –0.8]	1	NA	1	NA	NA	NA
(–0.8, –0.6]	2	NA	NA	2	NA	NA
(–0.6, –0.4]	NA	NA	NA	3	NA	1
(–0.4, –0.2]	NA	1	1	2	NA	1
(–0.2, 0.0]	1	NA	1	1	NA	NA
(0.0, 0.2]	NA	NA	NA	NA	NA	2
(0.2, 0.4]	NA	NA	1	2	4	3
(0.4, 0.6]	NA	NA	NA	NA	NA	NA
(0.6, 0.8]	NA	NA	NA	1	NA	1
(0.8, 1.0]	NA	1	NA	NA	NA	NA
(1.0, 1.2]	NA	1	NA	2	1	NA
(1.2, 1.4]	NA	NA	NA	NA	1	NA
(1.4, 1.6]	NA	NA	NA	NA	1	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.20 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Six

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	1	NA	1	NA	NA	NA
(–1.6, –1.4]	1	NA	NA	NA	NA	1
(–1.4, –1.2]	NA	NA	NA	NA	NA	NA
(–1.2, –1.0]	2	NA	1	2	NA	NA
(–1.0, –0.8]	NA	1	1	1	NA	3
(–0.8, –0.6]	1	1	2	2	NA	2
(–0.6, –0.4]	NA	NA	1	1	NA	NA
(–0.4, –0.2]	NA	NA	NA	2	3	1
(–0.2, 0.0]	NA	NA	NA	2	NA	1
(0.0, 0.2]	NA	NA	2	1	1	1
(0.2, 0.4]	NA	1	2	2	2	2
(0.4, 0.6]	NA	1	2	1	2	1
(0.6, 0.8]	1	NA	NA	1	1	NA
(0.8, 1.0]	NA	NA	NA	NA	NA	NA
(1.0, 1.2]	NA	NA	NA	NA	2	2
(1.2, 1.4]	NA	NA	NA	1	NA	NA
(1.4, 1.6]	NA	NA	NA	1	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	1
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.21 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Seven

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	2	NA	NA	NA
(–1.8, –1.6]	1	NA	1	NA	NA	1
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	1	NA	1	NA	NA	1
(–1.2, –1.0]	1	1	NA	NA	NA	3
(–1.0, –0.8]	1	NA	1	1	NA	1
(–0.8, –0.6]	NA	1	1	NA	NA	1
(–0.6, –0.4]	NA	NA	1	1	NA	1
(–0.4, –0.2]	NA	NA	NA	1	NA	1
(–0.2, 0.0]	NA	1	2	5	2	3
(0.0, 0.2]	2	1	1	3	1	1
(0.2, 0.4]	NA	NA	1	6	1	NA
(0.4, 0.6]	NA	NA	1	2	2	NA
(0.6, 0.8]	NA	NA	NA	1	1	1
(0.8, 1.0]	NA	NA	NA	1	3	NA
(1.0, 1.2]	NA	NA	NA	NA	NA	NA
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	2	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.22 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Eight

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	1	NA	NA	NA	NA	1
(–1.6, –1.4]	1	NA	2	1	NA	NA
(–1.4, –1.2]	1	1	1	NA	NA	NA
(–1.2, –1.0]	1	NA	1	1	NA	1
(–1.0, –0.8]	1	1	NA	1	1	1
(–0.8, –0.6]	1	NA	1	1	NA	NA
(–0.6, –0.4]	NA	NA	1	1	NA	3
(–0.4, –0.2]	NA	NA	2	5	1	4
(–0.2, 0.0]	NA	1	NA	NA	1	1
(0.0, 0.2]	NA	NA	NA	2	3	1
(0.2, 0.4]	NA	NA	1	2	NA	2
(0.4, 0.6]	NA	NA	1	NA	1	NA
(0.6, 0.8]	NA	1	NA	NA	1	NA
(0.8, 1.0]	NA	NA	NA	NA	1	NA
(1.0, 1.2]	NA	NA	NA	NA	1	NA
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	1	NA	1
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	1	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.23 Distribution of IRT Item Difficulty by Stage and Tier Set—ELA, Grade Eleven

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	1	NA	NA	1	NA	NA
(–1.4, –1.2]	1	NA	NA	NA	NA	1
(–1.2, –1.0]	1	NA	1	1	NA	NA
(–1.0, –0.8]	2	1	2	3	NA	2
(–0.8, –0.6]	NA	NA	1	NA	NA	1
(–0.6, –0.4]	NA	2	1	2	NA	1
(–0.4, –0.2]	1	NA	NA	1	NA	1
(–0.2, 0.0]	NA	1	2	1	1	NA
(0.0, 0.2]	NA	NA	2	1	1	3
(0.2, 0.4]	NA	NA	NA	3	1	2
(0.4, 0.6]	NA	NA	1	2	1	NA
(0.6, 0.8]	NA	NA	1	NA	1	1
(0.8, 1.0]	NA	NA	NA	1	1	1
(1.0, 1.2]	NA	NA	NA	1	1	NA
(1.2, 1.4]	NA	NA	NA	NA	2	NA
(1.4, 1.6]	NA	NA	NA	NA	2	1
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	1
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.24 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Three

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	NA	NA	1	NA	NA	NA
(–1.2, –1.0]	1	NA	NA	NA	NA	NA
(–1.0, –0.8]	2	NA	NA	NA	NA	NA
(–0.8, –0.6]	1	NA	1	NA	NA	1
(–0.6, –0.4]	1	NA	NA	NA	NA	NA
(–0.4, –0.2]	NA	1	5	NA	NA	1
(–0.2, 0.0]	NA	NA	1	2	NA	1
(0.0, 0.2]	1	1	1	4	2	3
(0.2, 0.4]	NA	NA	NA	3	NA	NA
(0.4, 0.6]	NA	2	2	6	1	1
(0.6, 0.8]	NA	NA	1	1	4	1
(0.8, 1.0]	NA	NA	NA	NA	1	4
(1.0, 1.2]	NA	NA	NA	2	3	1
(1.2, 1.4]	NA	NA	NA	1	1	1
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	1
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.25 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Four

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	1	NA	NA	NA	NA	1
(–1.2, –1.0]	NA	NA	1	NA	NA	NA
(–1.0, –0.8]	2	NA	NA	NA	NA	NA
(–0.8, –0.6]	NA	NA	2	NA	1	1
(–0.6, –0.4]	1	NA	1	2	NA	1
(–0.4, –0.2]	1	NA	1	2	1	NA
(–0.2, 0.0]	NA	NA	4	1	NA	1
(0.0, 0.2]	1	2	NA	1	NA	2
(0.2, 0.4]	NA	1	1	2	2	2
(0.4, 0.6]	NA	1	NA	3	2	NA
(0.6, 0.8]	NA	NA	NA	2	4	1
(0.8, 1.0]	NA	NA	1	2	NA	1
(1.0, 1.2]	NA	NA	NA	NA	NA	2
(1.2, 1.4]	NA	NA	NA	3	2	NA
(1.4, 1.6]	NA	NA	NA	1	NA	2
(1.6, 1.8]	NA	NA	NA	1	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.26 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Five

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	1	NA	NA	NA	NA	1
(–1.2, –1.0]	2	NA	1	NA	NA	NA
(–1.0, –0.8]	1	NA	NA	NA	NA	1
(–0.8, –0.6]	NA	NA	1	NA	NA	1
(–0.6, –0.4]	NA	NA	3	1	NA	1
(–0.4, –0.2]	1	NA	2	NA	1	1
(–0.2, 0.0]	NA	NA	1	4	1	NA
(0.0, 0.2]	NA	2	1	1	NA	NA
(0.2, 0.4]	1	NA	3	1	1	4
(0.4, 0.6]	NA	2	NA	3	3	NA
(0.6, 0.8]	NA	NA	1	1	1	1
(0.8, 1.0]	NA	NA	NA	2	NA	1
(1.0, 1.2]	NA	NA	NA	2	1	1
(1.2, 1.4]	NA	NA	NA	2	2	1
(1.4, 1.6]	NA	NA	NA	1	1	1
(1.6, 1.8]	NA	NA	NA	1	1	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	1
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.27 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Six

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	NA	NA	NA	NA	NA	NA
(–1.2, –1.0]	NA	NA	NA	NA	NA	NA
(–1.0, –0.8]	NA	NA	NA	NA	NA	NA
(–0.8, –0.6]	1	NA	NA	NA	NA	NA
(–0.6, –0.4]	3	NA	1	NA	NA	NA
(–0.4, –0.2]	NA	NA	NA	NA	NA	1
(–0.2, 0.0]	NA	2	3	NA	NA	3
(0.0, 0.2]	NA	NA	4	4	1	4
(0.2, 0.4]	1	1	1	2	3	1
(0.4, 0.6]	1	1	2	4	2	3
(0.6, 0.8]	NA	NA	NA	1	1	1
(0.8, 1.0]	NA	NA	NA	2	4	1
(1.0, 1.2]	NA	NA	NA	1	NA	NA
(1.2, 1.4]	NA	NA	NA	2	NA	NA
(1.4, 1.6]	NA	NA	NA	1	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	1
(1.8, 2.0]	NA	NA	NA	1	1	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA
(3.4, 3.6]	NA	NA	NA	NA	1	NA

Table 8.C.28 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Seven

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	NA	NA	NA	NA	NA	NA
(–1.2, –1.0]	NA	NA	NA	NA	NA	1
(–1.0, –0.8]	NA	NA	NA	NA	NA	NA
(–0.8, –0.6]	3	NA	2	NA	NA	2
(–0.6, –0.4]	1	NA	2	NA	NA	2
(–0.4, –0.2]	NA	NA	3	3	NA	NA
(–0.2, 0.0]	NA	NA	3	NA	NA	2
(0.0, 0.2]	2	3	1	2	1	2
(0.2, 0.4]	NA	1	1	4	2	1
(0.4, 0.6]	NA	NA	NA	5	2	2
(0.6, 0.8]	NA	NA	NA	1	3	2
(0.8, 1.0]	NA	NA	NA	3	1	NA
(1.0, 1.2]	NA	NA	NA	2	NA	1
(1.2, 1.4]	NA	NA	NA	NA	NA	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	NA
(2.2, 2.4]	NA	NA	NA	NA	1	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	1	NA

Table 8.C.29 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Eight

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	NA	NA	NA	NA	NA	1
(–1.2, –1.0]	1	NA	NA	NA	NA	1
(–1.0, –0.8]	2	NA	NA	NA	NA	NA
(–0.8, –0.6]	NA	NA	2	NA	NA	NA
(–0.6, –0.4]	NA	NA	4	NA	NA	1
(–0.4, –0.2]	1	1	3	1	NA	2
(–0.2, 0.0]	1	NA	2	1	1	1
(0.0, 0.2]	NA	NA	1	5	NA	NA
(0.2, 0.4]	1	1	NA	4	1	2
(0.4, 0.6]	NA	2	NA	4	2	NA
(0.6, 0.8]	NA	NA	NA	1	2	2
(0.8, 1.0]	NA	NA	NA	NA	2	1
(1.0, 1.2]	NA	NA	NA	NA	2	1
(1.2, 1.4]	NA	NA	NA	1	NA	NA
(1.4, 1.6]	NA	NA	NA	1	NA	1
(1.6, 1.8]	NA	NA	NA	NA	1	NA
(1.8, 2.0]	NA	NA	NA	NA	1	NA
(2.0, 2.2]	NA	NA	NA	NA	NA	1
(2.2, 2.4]	NA	NA	NA	NA	NA	NA
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	1
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Table 8.C.30 Distribution of IRT Item Difficulty by Stage and Tier Set—Mathematics, Grade Eleven

b-value	Stage 1 Tier 1	Stage 1 Tier 2	Stage 2 Tier 1	Stage 2 Tier 2	Stage 2 Tier 3	Field-test Items
(–3.0, –2.8]	NA	NA	NA	NA	NA	NA
(–2.8, –2.6]	NA	NA	NA	NA	NA	NA
(–2.6, –2.4]	NA	NA	NA	NA	NA	NA
(–2.4, –2.2]	NA	NA	NA	NA	NA	NA
(–2.2, –2.0]	NA	NA	NA	NA	NA	NA
(–2.0, –1.8]	NA	NA	NA	NA	NA	NA
(–1.8, –1.6]	NA	NA	NA	NA	NA	NA
(–1.6, –1.4]	NA	NA	NA	NA	NA	NA
(–1.4, –1.2]	NA	NA	NA	NA	NA	NA
(–1.2, –1.0]	2	NA	NA	1	NA	NA
(–1.0, –0.8]	NA	1	1	NA	NA	NA
(–0.8, –0.6]	1	1	NA	NA	NA	NA
(–0.6, –0.4]	2	NA	2	2	NA	NA
(–0.4, –0.2]	1	NA	3	NA	NA	7
(–0.2, 0.0]	NA	NA	3	NA	2	2
(0.0, 0.2]	NA	1	NA	3	NA	1
(0.2, 0.4]	NA	NA	2	2	3	3
(0.4, 0.6]	NA	NA	1	5	1	NA
(0.6, 0.8]	NA	1	NA	NA	3	NA
(0.8, 1.0]	NA	NA	NA	3	NA	NA
(1.0, 1.2]	NA	NA	NA	2	NA	NA
(1.2, 1.4]	NA	NA	NA	NA	2	NA
(1.4, 1.6]	NA	NA	NA	NA	NA	NA
(1.6, 1.8]	NA	NA	NA	NA	NA	NA
(1.8, 2.0]	NA	NA	NA	NA	NA	1
(2.0, 2.2]	NA	NA	NA	NA	1	NA
(2.2, 2.4]	NA	NA	NA	NA	NA	1
(2.4, 2.6]	NA	NA	NA	NA	NA	NA
(2.6, 2.8]	NA	NA	NA	NA	NA	NA
(2.8, 3.0]	NA	NA	NA	NA	NA	NA
(3.0, 3.2]	NA	NA	NA	NA	NA	NA
(3.2, 3.4]	NA	NA	NA	NA	NA	NA

Appendix 8.D: Omission and Completion Rates

Note: In Table 8.D.1 through Table 8.D.14, the value in the *Position* column indicates the item location in the module and version.

Table 8.D.1 Item Difficulties and Omit Rate—English Language Arts/Literacy (ELA), Grade Three

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTW3020095T1	ZoneMS Discrete	0.77	-1.54	3%
CLTR3020055T1	MCSS Member	0.62	-0.49	2%
CLTR3020054T1	MCSS Member	0.71	-1.04	2%
CLTW3020056T1	MCMA - Member	0.62	-0.39	2%
CLTR3020105T1	MCSS Discrete	0.71	-1.01	1%
CLTW3020096T1	ZoneMS Discrete	0.60	-0.60	5%
CLTR3020159T2	ZoneMS Discrete	0.65	-0.92	5%
CLTR3020142T2	MCMA - Member	0.53	0.01	4%
CLTR3020140T2	ZoneMS Member	0.71	-1.49	3%
CLTR3020141T2	MCSS Member	0.45	0.40	3%
CLTR3020057T1-M	ZoneMS Member	0.61	-1.31	5%
CLTR3020058T1	MCSS Member	0.72	-1.66	4%
CLTR3020059T1	MCMA - Member	0.76	-1.46	4%
CLTR3020170T1	MCMA - Member	0.40	-0.32	7%
CLTR3020169T1	ZoneMS Member	0.59	-1.19	8%
CLTW3020171T1-M	MCMS Member	0.29	0.35	5%
CLTW3020108T1	ZoneSS Discrete	0.71	-1.63	19%
CLTW3020107T1	MCSS Discrete	0.68	-1.46	6%
CLTW3020162T2	MCSS Discrete	0.71	-0.90	4%
CLTR3020143T2	MCSS Discrete	0.77	-1.33	4%
CLTR3030112T2	MCSS Discrete	0.64	-0.92	7%
CLTW3020146T2	ZoneMS Discrete	0.64	-1.15	6%
CLTR3030068T2	MCSS Member	0.40	0.17	7%
CLTR3030067T2	MCSS Member	0.35	0.43	11%
CLTW3030069T2	MCSS Member	0.52	-0.39	9%
CLTR3020051T1	MCSS Member	0.83	-1.24	2%
CLTR3020052T1	MCSS Member	0.90	-1.83	2%
CLTR3020053T1-M	MatchSS Member	0.77	-0.80	5%
CLTR3020160T2	MCMA - Discrete	0.72	-0.19	2%
CLTW3020145T2-M	MatchMS Member	0.77	-0.75	3%
CLTR3020166T3	ZoneMS Member	0.65	0.00	2%
CLTR3020167T3	MCMS Member	0.78	-0.38	3%
CLTR3020168T3	MCMA - Member	0.70	0.34	3%
CLTW3030113T2	MatchMS Discrete	0.87	0.18	2%
CLTR3030158T3	MCSS Member	0.96	-1.76	1%
CLTR3030159T3	MCSS Member	0.57	1.32	1%
CLTW3030160T3	MCSS Partial Credit Member	0.61	1.21	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTW3020403T3	MCSS Partial Credit Member	0.59	1.29	2%
CLTR3020400T3	MCSS Discrete	0.86	-0.36	1%
CLTR3020005T3	MCSS Member	0.95	-1.48	2%
CLTW3020006T3	ZoneMS Member	0.60	1.18	1%
CLTR3020004T3	ZoneMS Member	0.83	-0.77	0%
CLTR3030168T3	MCSS Discrete	0.81	0.00	0%
CLTR3030004T1	MCSS Member	0.61	-0.41	5%
CLTR3030005T1	MCSS Member	0.70	-0.89	6%
CLTW3030006T1	MCMA - Member	0.53	0.04	5%
CLTR3030165T3	MCSS Discrete	0.57	-0.22	6%
CLTR3030111T2	MCMA - Discrete	0.71	-0.70	4%
CLTR3030060T2	MCSS Member	0.51	0.10	3%
CLTR3030080T2	MCSS Member	0.44	0.43	6%
CLTR3030081T2	MCSS Member	0.52	-0.01	9%
CLTW3030082T2	ZoneMS Member	0.61	-0.51	9%
CLTR3030017T1	ZoneSS Member	0.69	-0.95	17%
CLTR3030018T1	MCSS Member	0.64	-0.67	6%
CLTW3030019T1	MCSS Member	0.67	-0.83	8%
CLTR3030135T1	MCSS Member	0.65	-0.74	5%
CLTW3030030T1	MatchMS Discrete	0.51	0.02	11%
CLTR3030167T3	MCMA - Discrete	0.60	-0.35	6%

Table 8.D.2 Item Difficulties and Omit Rate—ELA, Grade Four

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR4020239T1	MCSS Discrete	0.80	-1.49	1%
CLTR4020256T1	MCSS Member	0.67	-0.70	1%
CLTR4020257T1	ZoneMS Member	0.80	-1.62	1%
CLTR4020258T1	MCMA - Member	0.66	-0.43	2%
CLTR4020308T1	MCSS Discrete	0.65	-0.62	1%
CLTW4020138T2	MCSS Discrete	0.62	-0.45	3%
CLTW4020086T2	MCSS Partial Credit Member	0.58	-0.17	7%
CLTR4020116T2	MCSS Member	0.67	-0.72	3%
CLTR4020117T2	ZoneMS Member	0.67	-0.99	3%
CLTW4020118T2	MCSS Member	0.49	0.19	3%
CLTR4020241T1	MCSS Member	0.31	0.27	4%
CLTR4020242T1	ZoneMS Member	0.60	-1.17	7%
CLTW4020243T1	MCSS Member	0.32	0.23	7%
CLTR4020304T1	MCSS Member	0.59	-0.58	4%
CLTR4020305T1	ZoneMS Member	0.67	-1.25	4%
CLTW4020306T1	ZoneMS Member	0.65	-1.02	4%
CLTR4030172T1	ZoneMS Member	0.49	-0.53	8%
CLTW4020240T1-M	MatchMS Member	0.54	-0.73	14%
CLTR4020237T1	MCSS Discrete	0.69	-1.48	7%
CLTR4020137T2	MCSS Discrete	0.52	0.09	4%
CLTR4020085T2	MatchMS Discrete	0.61	-0.42	6%
CLTW4020139T2	MCSS Discrete	0.46	0.37	8%
CLTR4030023T2	MCSS Member	0.36	0.05	11%
CLTR4030024T2	ZoneMS Member	0.46	-0.37	16%
CLTR4030025T2	MCMA - Member	0.31	0.02	14%
CLTR4020119T2	MCSS Member	0.30	1.16	3%
CLTR4020120T2	ZoneMS Member	0.52	0.17	4%
CLTW4020121T2	ZoneSS Member	0.44	0.51	3%
CLTR4020084T2	MCSS Discrete	0.83	-1.47	2%
CLTR4020083T2	MCSS Discrete	0.41	0.65	2%
CLTR4030014T2	MCSS Member	0.68	-0.55	2%
CLTW4030015T2	MCSS Member	0.48	0.32	3%
CLTW4030016T2	MCSS Partial Credit Member	0.45	0.41	6%
CLTR4020448T3	MCSS Member	0.51	0.21	3%
CLTR4020449T3	ZoneMS Member	0.72	-1.07	3%
CLTR4020450T3	MCMA - Member	0.72	-0.42	4%
CLTR4030020T2	MCSS Member	0.78	-0.35	1%
CLTR4030021T2	ZoneMS Member	0.72	-0.18	4%
CLTW4030022T2	MCSS Member	0.69	0.19	4%
CLTR4020245T3	MCSS Member	0.70	0.11	1%
CLTR4020244T3-M	MatchMS Member	0.57	0.82	1%
CLTW4020246T3	MCSS Partial Credit Member	0.60	0.54	2%
CLTR4030089T3	MCSS Member	0.57	0.74	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR4030090T3	ZoneMS Member	0.63	0.30	3%
CLTR4030091T3	MCMA - Member	0.69	0.44	3%
CLTW4020135T3	MCSS Partial Credit Member	0.77	0.08	3%
CLTW4020131T3	MCSS Discrete	0.77	-0.25	2%
CLTR4030137T3	ZoneMS Member	0.85	-0.65	2%
CLTR4030235T1	ZoneSS Member	0.65	-0.51	9%
CLTR4030236T1	ZoneMS Member	0.64	-0.61	5%
CLTW4030237T1	MCSS Member	0.32	1.13	7%
CLTR4030086T3	MCSS Member	0.44	0.35	7%
CLTR4030087T3	ZoneMS Member	0.47	0.24	12%
CLTW4030088T3	ZoneSS Member	0.43	0.38	12%
CLTR4030176T1	MCSS Member	0.78	-1.38	7%
CLTR4030177T1	ZoneMS Member	0.77	-1.29	7%
CLTR4030178T1	MCMA - Member	0.55	-0.03	6%
CLTR4030170T1	MCSS Member	0.57	-0.23	3%
CLTR4030138T3	ZoneMS Member	0.52	0.03	5%
CLTW4030132T3	MCSS Member	0.38	0.69	7%
CLTR4030131T3	MCSS Discrete	0.40	0.49	5%
CLTR4030130T3	MCSS Member	0.46	0.22	6%
CLTW4030133T3	MCSS Partial Credit Member	0.38	0.50	7%

Table 8.D.3 Item Difficulties and Omit Rate—ELA, Grade Five

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR5020314T1	MCSS Discrete	0.66	-0.69	1%
CLTR5020327T1	MCSS Member	0.69	-0.84	1%
CLTR5020328T1	ZoneMS Member	0.70	-1.22	2%
CLTW5020329T1	MCSS Member	0.55	-0.18	1%
CLTW5020317T1	ZoneMS Discrete	0.80	-1.69	1%
CLTR5020316T1	MCMA - Discrete	0.70	-0.68	2%
CLTR5020253T2	MCSS Member	0.60	-0.40	2%
CLTR5020254T2	ZoneMS Member	0.71	-1.42	2%
CLTW5020255T2	MCSS Member	0.31	1.01	2%
CLTW5020347T2	MCSS Discrete	0.35	0.81	2%
CLTR5020315T1	ZoneMS Discrete	0.60	-1.29	4%
CLTR5020311T1	MCSS Member	0.69	-1.00	2%
CLTR5020312T1	MCSS Member	0.50	-0.10	3%
CLTW5020313T1-M	MatchMS Member	0.75	-1.07	7%
CLTR5020333T1	MCSS Discrete	0.29	0.39	4%
CLTR5020334T1	ZoneMS Discrete	0.66	-1.49	5%
CLTR5020452T1-M	MCSS Member	0.43	-0.26	7%
CLTR5020453T1-M	ZoneMS Member	0.72	-1.58	8%
CLTW5020454T1-M	ZoneMS Member	0.55	-0.89	9%
CLTR5020047T2	ZoneMS Discrete	0.60	-1.25	6%
CLTW5020343T2	ZoneMS Discrete	0.63	-1.26	5%
CLTR5020340T2	MCSS Discrete	0.32	0.27	6%
CLTR5020346T2	MCMA - Discrete	0.50	-0.57	6%
CLTR5030185T2	ZoneMS Member	0.69	-1.54	6%
CLTW5030187T2	MCSS Member	0.24	0.67	9%
CLTR5020342T2	MCMA - Discrete	0.48	0.36	1%
CLTR5020338T2	MCSS Member	0.70	-0.37	1%
CLTR5020337T2	MCSS Member	0.63	-0.03	2%
CLTW5020339T2	ZoneMS Member	0.71	-0.74	2%
CLTR5030182T2	MCSS Member	0.31	1.19	3%
CLTR5030179T2	MCSS Member	0.67	-0.45	3%
CLTR5030180T2	ZoneMS Member	0.72	-0.79	6%
CLTW5030181T2	MCSS Member	0.34	1.02	6%
CLTR5030183T2	ZoneMS Member	0.74	-1.16	2%
CLTR5020074T3	MCMA - Discrete	0.52	0.25	2%
CLTR5030077T3	ZoneMS Member	0.59	-0.44	2%
CLTR5030140T3	MCSS Member	0.57	0.02	3%
CLTR5030189T2	ZoneMS Member	0.85	-1.23	1%
CLTR5030188T2	MCSS Member	0.81	-0.51	2%
CLTW5030190T2	ZoneMS Member	0.76	-0.36	3%
CLTR5020038T3	MCMS Member	0.41	1.50	1%
CLTR5020039T3	MCSS Member	0.47	1.20	1%
CLTW5020040T3	MCSS Partial Credit Member	0.43	1.31	3%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR5020073T3	MCSS Discrete	0.66	0.37	1%
CLTR5020075T3	MCMA - Discrete	0.87	-0.28	2%
CLTR5030043T3	MCSS Member	0.67	0.33	2%
CLTR5030044T3	MatchMS Member	0.88	-0.66	3%
CLTW5030045T3	MCSS Partial Credit Member	0.69	0.36	6%
CLTR5030076T3	ZoneMS Member	0.69	-0.14	2%
CLTR5030122T1	MCSS Member	0.53	0.05	3%
CLTR5030123T1	MCMA - Member	0.45	0.34	5%
CLTW5030124T1	MatchMS Member	0.75	-1.21	7%
CLTR5030154T1	ZoneMS Member	0.76	-1.31	2%
CLTR5030186T2	ZoneMS Discrete	0.69	-1.19	2%
CLTR5030184T2	MCSS Member	0.58	-0.25	2%
CLTR5030039T3	MCMS Member	0.43	0.37	7%
CLTR5030040T3	ZoneMS Member	0.56	-0.41	8%
CLTW5030041T3	MCSS Member	0.34	0.76	6%
CLTW5030157T1	MCSS Member	0.80	-1.53	3%
CLTR5030156T1	ZoneMS Discrete	0.77	-1.47	3%
CLTR5030155T1	ZoneMS Member	0.66	-1.05	3%
CLTR5030144T1	MCSS Member	0.45	0.23	2%
CLTR5030078T3	ZoneMS Discrete	0.73	-1.40	4%
CLTW5030079T3	MatchMS Member	0.50	0.02	7%

Table 8.D.4 Item Difficulties and Omit Rate—ELA, Grade Six

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR6020097T1	MCMA - Discrete	0.88	-1.51	2%
CLTR6020150T1	MCMA - Member	0.83	-1.17	1%
CLTR6020151T1	MCSS Member	0.82	-1.72	1%
CLTW6020152T1	MCSS Member	0.37	0.63	3%
CLTW6020104T1	ZoneMS Discrete	0.70	-1.17	2%
CLTR6020099T1	MCMA - Discrete	0.72	-0.71	2%
CLTR6020200T2	MCSS Member	0.65	-0.71	3%
CLTW6020201T2	MCSS Partial Credit Member	0.41	0.41	9%
CLTR6020199T2	MCSS Member	0.68	-0.83	3%
CLTR6020203T2	MatchMS Discrete	0.41	0.33	4%
CLTR6030010T1	MCSS Member	0.50	-0.77	7%
CLTR6030011T1	MatchMS Member	0.19	0.42	10%
CLTW6030012T1	ZoneSS Member	0.25	0.38	17%
CLTR6020113T1	MCMA - Member	0.41	-0.48	5%
CLTR6020115T1	MCSS Member	0.24	0.44	13%
CLTR6020114T1	MCSS Member	0.69	-1.61	8%
CLTW6030202T1	MatchMS Member	0.54	-0.95	10%
CLTR6020101T1	MCSS Discrete	0.29	0.20	11%
CLTR6020098T1	ZoneMS Discrete	0.50	-0.78	9%
CLTR6020204T2	ZoneMS Discrete	0.58	-1.12	11%
CLTR6020197T2	MCSS Member	0.36	-0.13	12%
CLTR6020196T2	ZoneMS Member	0.45	-0.40	12%
CLTW6020198T2-M	MatchMS Member	0.13	1.21	13%
CLTR6020202T2	ZoneMS Discrete	0.58	-1.12	12%
CLTR6020423T2	MCSS Discrete	0.45	-0.13	8%
CLTR6020063T1	MCSS Member	0.72	-1.10	2%
CLTR6020064T1-M	MatchMS Member	0.43	0.11	3%
CLTR6020065T1	MCMA - Member	0.45	0.08	3%
CLTR6020184T2	ZoneMS Member	0.50	0.29	2%
CLTW6020186T2	MCSS Member	0.47	0.44	3%
CLTR6020185T2	MCSS Member	0.75	-0.87	3%
CLTW6030206T2	MatchSS Member	0.40	0.36	7%
CLTR6030073T2	MCSS Member	0.53	-0.21	4%
CLTR6030074T2	MCMS Member	0.18	1.53	7%
CLTW6030075T2	MatchMS Member	0.67	-0.74	6%
CLTW6020208T2	MCSS Discrete	0.56	-0.34	4%
CLTR6020420T3	ZoneMS Discrete	0.60	-0.27	3%
CLTR6030204T3	MCSS Member	0.40	0.35	5%
CLTR6030205T3	ZoneMS Member	0.52	-0.23	5%
CLTR6030147T2	MCSS Member	0.46	0.77	2%
CLTR6030148T2	ZoneMS Member	0.78	-0.76	3%
CLTW6030149T2	MatchSS Member	0.61	0.14	3%
CLTR6020398T3	MCSS Member	0.50	0.62	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTW6020399T3	MCSS Partial Credit Member	0.56	0.39	5%
CLTR6020397T3	MCSS Member	0.40	1.03	4%
CLTW6020424T3	MCSS Discrete	0.37	1.19	2%
CLTR6030200T3	MCSS Member	0.71	-0.38	2%
CLTR6030199T3	ZoneMS Member	0.63	0.05	3%
CLTW6030201T3	MCSS Partial Credit Member	0.54	0.45	7%
CLTR6020206T3	MCSS Discrete	0.51	0.56	2%
CLTR6030030T1	MCMA - Member	0.74	-0.83	5%
CLTR6030031T1	MCSS Member	0.80	-1.55	5%
CLTW6030032T1	ZoneMS Member	0.64	-0.62	7%
CLTR6030064T1	MCSS Member	0.62	-0.61	5%
CLTR6030065T1	MCSS Member	0.27	1.11	7%
CLTW6030066T1	MatchMS Member	0.55	-0.31	10%
CLTR6030083T2	ZoneMS Member	0.67	-0.82	7%
CLTR6030084T2	MCSS Member	0.30	1.02	6%
CLTW6030085T2	MatchMS Member	0.54	-0.13	7%
CLTW6030196T3	MCSS Partial Credit Member	0.46	0.18	12%
CLTR6030194T3	MCSS Member	0.45	0.25	10%
CLTR6030195T3	MCMS Member	0.13	2.15	9%
CLTR6030203T1	MCSS Member	0.69	-0.96	3%
CLTR6030197T2	ZoneSS Member	0.44	0.25	8%
CLTW6030198T2	MatchSS Discrete	0.39	0.46	6%

Table 8.D.5 Item Difficulties and Omit Rate—ELA, Grade Seven

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTW7020385T1	MCSS Discrete	0.81	-1.72	1%
CLTR7020010T1	MCSS Member	0.49	0.01	1%
CLTR7020011T1	MCSS Member	0.67	-0.88	1%
CLTR7020012T1	MCMA - Member	0.46	0.09	2%
CLTR7020382T1	ZoneMS Discrete	0.68	-1.18	2%
CLTW7020386T1	ZoneMS Discrete	0.68	-1.25	2%
CLTR7020427T2	ZoneMS Member	0.59	-0.71	5%
CLTW7020429T2	MCSS Member	0.47	0.09	7%
CLTR7020428T2	MCSS Member	0.50	-0.02	4%
CLTR7020368T2	ZoneMS Discrete	0.65	-1.10	4%
CLTR7020411T1	MCSS Member	0.76	-1.91	6%
CLTR7020410T1	MCSS Member	0.38	-0.16	8%
CLTW7020412T1	ZoneMS Member	0.50	-0.71	5%
CLTR7020379T1	ZoneMS Discrete	0.58	-1.21	6%
CLTR7030252T1	MCSS Member	0.75	-1.85	8%
CLTR7030253T1	MCSS Member	0.29	0.29	9%
CLTW7030254T1	ZoneMS Member	0.55	-0.99	9%
CLTR7020383T1	MCMA - Discrete	0.43	-0.49	5%
CLTW7030256T1	MCSS Member	0.30	0.20	7%
CLTR7020378T2	MCMA - Member	0.32	-0.09	10%
CLTR7020377T2	MCSS Member	0.30	0.22	9%
CLTR7020376T2	MCSS Member	0.35	-0.03	8%
CLTR7020369T2	MCSS Discrete	0.34	0.03	8%
CLTR7030241T2	MCSS Member	0.38	-0.15	9%
CLTW7020375T2	MCSS Partial Credit Member	0.37	-0.25	16%
CLTR7020008T1	ZoneMS Member	0.82	-1.75	1%
CLTR7020009T1	MCSS Member	0.45	0.50	1%
CLTW7020007T1	MCSS Member	0.59	-0.10	2%
CLTR7020153T2	MCSS Member	0.45	0.52	2%
CLTR7020154T2	MCSS Member	0.66	-0.42	2%
CLTWT020155T2	MCSS Partial Credit Member	0.50	0.31	5%
CLTR7030046T2	MCSS Member	0.58	-0.07	4%
CLTR7030047T2	ZoneMS Member	0.55	0.09	4%
CLTR7030048T2	MCMA - Member	0.47	0.39	3%
CLTW7030053T2	MCSS Member	0.58	-0.04	1%
CLTR7020370T2	MCSS Discrete	0.48	0.37	3%
CLTR7020372T2	MCMA - Discrete	0.60	0.00	2%
CLTW7020350T3	MCSS Partial Credit Member	0.49	0.32	7%
CLTR7020348T3	MCSS Member	0.38	0.81	4%
CLTR7020349T3	MCMS Member	0.11	2.52	3%
CLTR7020158T2	MCSS Partial Credit Member	0.73	0.23	5%
CLTR7020156T2	MCSS Member	0.62	0.62	1%
CLTR7020157T2	MCSS Member	0.55	0.95	1%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR7030054T2	MCSS Member	0.87	-0.84	2%
CLTR7030055T2	MCSS Member	0.68	0.34	4%
CLTW7030056T2	MatchMS Member	0.68	0.45	4%
CLTR7020357T3	MCMA - Member	0.62	0.82	1%
CLTW7020359T3	MCSS Member	0.72	0.13	1%
CLTR7020358T3	MCMS Member	0.22	2.53	1%
CLTR7020364T3	ZoneMS Discrete	0.65	-0.10	1%
CLTR7030098T3	ZoneMS Member	0.63	0.54	2%
CLTR7030099T3	MCSS Member	0.62	0.65	2%
CLTW7030100T3	MCSS Member	0.58	0.80	1%
CLTR7020365T3	MCMA - Discrete	0.73	0.45	0%
CLTW7030134T3	MCSS Member	0.77	-0.15	0%
CLTR7020380T1	MCSS Discrete	0.80	-1.66	3%
CLTR7020381T1	MCSS Discrete	0.49	0.03	3%
CLTW7030251T3	MCSS Member	0.73	-1.20	3%
CLTW7020384T1	MCSS Discrete	0.33	0.75	5%
CLTR7030255T1	ZoneSS Member	0.50	-0.05	9%
CLTR7030257T1	ZoneMS Member	0.74	-1.09	9%
CLTR7030258T1	MCSS Member	0.52	-0.06	6%
CLTW7030259T1	MCSS Member	0.76	-1.35	7%
CLTR7030244T1	ZoneMS Member	0.64	-0.83	9%
CLTR7030243T1	MCMA - Member	0.80	-1.17	7%
CLTR7030245T1	MCSS Member	0.56	-0.33	7%
CLTR7030070T2	ZoneMS Member	0.59	-0.65	9%
CLTR7030071T2	MCSS Member	0.52	-0.19	8%
CLTW7030072T2	MCSS Member	0.58	-0.47	9%

Table 8.D.6 Item Difficulties and Omit Rate—ELA, Grade Eight

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR8020446T1	ZoneMS Discrete	0.77	-1.41	1%
CLTR8020394T1	ZoneMS Member	0.64	-0.96	1%
CLTR8020395T1	MCSS Member	0.75	-1.10	2%
CLTW8020396T1	ZoneMS Member	0.61	-0.67	1%
CLTW8020388T1	ZoneMS Discrete	0.70	-1.25	1%
CLTW8020390T1	MCSS Discrete	0.84	-1.68	3%
CLTR8020321T2	ZoneMS Member	0.77	-1.35	2%
CLTR8020322T2	MCSS Member	0.37	0.72	2%
CLTR8020323T2	MCMA - Member	0.58	-0.11	2%
CLTR8020288T2	ZoneMS Discrete	0.65	-0.86	4%
CLTR8020284T1	MCMA - Member	0.31	0.49	2%
CLTR8020282T1	ZoneMS Member	0.70	-1.24	2%
CLTR8020283T1	MCSS Member	0.41	0.27	3%
CLTR8020447T1	ZoneMS Discrete	0.60	-0.66	2%
CLTR8020210T1	MCSS Member	0.56	-0.37	3%
CLTR8020211T1	MCSS Member	0.61	-0.58	3%
CLTW8020212T1	MCSS Member	0.72	-1.13	3%
CLTW8030212T1	ZoneMS Discrete	0.52	-0.20	4%
CLTR8020289T2	ZoneMS Discrete	0.63	-0.86	5%
CLTR8020292T2	MCMA - Member	0.51	0.10	5%
CLTR8020293T2-M	MatchMS Member	0.60	-0.29	7%
CLTR8020294T2	ZoneMS Member	0.54	-0.21	5%
CLTR8020290T2	MCSS Discrete	0.50	0.15	6%
CLTW8030224T2	ZoneMS Member	0.53	-0.32	6%
CLTW8030219T2	MCSS Partial Credit Member	0.56	-0.30	10%
CLTW8020389T1	ZoneMS Discrete	0.78	-1.41	1%
CLTR8030210T1	MCSS Member	0.87	-1.41	1%
CLTW8020262T2	MCSS Discrete	0.29	1.51	1%
CLTW8020261T2	ZoneMS Discrete	0.83	-1.43	1%
CLTR8030218T2	ZoneMS Member	0.69	-0.33	3%
CLTR8030216T2	ZoneMS Member	0.70	-0.63	4%
CLTR8030217T2	MCSS Member	0.75	-0.58	4%
CLTR8020439T3	ZoneMS Discrete	0.66	-0.28	1%
CLTW8030121T3	ZoneMS Member	0.71	-0.83	2%
CLTR8030120T3	MCMS Member	0.37	1.18	2%
CLTR8020285T2	MCSS Member	0.68	0.32	0%
CLTR8020286T2	MCSS Member	0.67	0.38	1%
CLTW8020287T2-M	MatchMS Member	0.34	1.84	1%
CLTR8020291T2	ZoneMS Discrete	0.89	-1.19	1%
CLTW8020069T3	MCSS Discrete	0.57	0.82	1%
CLTR8020066T3	ZoneMS Member	0.64	0.16	1%
CLTR8020068T3	MCMA - Member	0.73	0.42	2%
CLTR8020067T3	MCSS Member	0.59	0.74	1%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTR8030008T3	MCMS Member	0.71	0.15	2%
CLTR8030007T3	ZoneMS Member	0.72	-0.17	2%
CLTW8030009T3	ZoneMS Member	0.65	0.13	2%
CLTR8030103T1	MCMA - Member	0.68	-0.48	4%
CLTR8030102T1	MCSS Member	0.58	-0.27	4%
CLTR8030101T1	MCMA - Member	0.69	-0.46	4%
CLTR8030207T2	MCSS Member	0.45	0.32	4%
CLTR8030208T2	ZoneMS Member	0.57	-0.33	6%
CLTW8030209T2	MCSS Member	0.45	0.33	7%
CLTR8030059T3	MCMA - Member	0.55	0.00	5%
CLTR8030057T3	ZoneMS Member	0.63	-0.60	8%
CLTR8030058T3	MCMS Member	0.22	1.53	7%
CLTR8030213T2	ZoneMS Member	0.71	-0.99	5%
CLTR8030214T2	MCSS Member	0.54	-0.03	4%
CLTW8030215T2	ZoneMS Member	0.55	-0.21	5%
CLTR8030104T1	MCSS Member	0.84	-1.73	4%
CLTR8030105T1	MCMA - Member	0.59	-0.23	5%
CLTW8030106T1	MCSS Member	0.75	-1.15	6%

Table 8.D.7 Item Difficulties and Omit Rate—ELA, Grade Eleven

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTWH020236T1	ZoneMS Discrete	0.78	-1.35	4%
CLTRH020227T1	MCSS Member	0.81	-1.51	2%
CLTRH020228T1	ZoneMS Member	0.57	-0.31	2%
CLTWH020229T1	MCSS Member	0.71	-0.91	1%
CLTRH020033T1	ZoneMS Discrete	0.64	-0.91	2%
CLTRH020034T1	MCSS Discrete	0.76	-1.20	2%
CLTRH020217T2	MCSS Member	0.71	-0.87	2%
CLTRH020218T2	ZoneMS Member	0.58	-0.53	3%
CLTWH020219T2	MCSS Member	0.57	-0.20	3%
CLTRH020216T2	MCSS Discrete	0.65	-0.55	2%
CLTRH020233T1	MCSS Discrete	0.73	-1.03	2%
CLTRH020230T1	MCSS Member	0.40	-0.13	6%
CLTRH020231T1	MCSS Member	0.56	-0.84	5%
CLTWH020232T1	ZoneMS Member	0.56	-0.95	7%
CLTRH020234T1	MCMA - Discrete	0.57	-0.77	6%
CLTWH030052T1	MCSS Member	0.22	0.79	7%
CLTRH030038T1	MCMA - Member	0.32	0.02	9%
CLTRH030037T1	ZoneMS Member	0.49	-0.55	12%
CLTRH030036T1	MCSS Member	0.39	-0.07	10%
CLTRH020188T2-M	MatchMS Member	0.46	0.29	6%
CLTRH020189T2	MCMA - Member	0.69	-0.54	4%
CLTRH020187T2	MCMS Member	0.29	1.10	4%
CLTRH020223T2	MCSS Discrete	0.45	-0.34	9%
CLTWH030153T2	MCSS Member	0.27	0.52	9%
CLTWH020226T2	ZoneMS Discrete	0.58	-0.42	4%
CLTWH030151T1	MCSS Member	0.50	0.43	1%
CLTRH020032T1-M	MatchMS Member	0.56	0.14	2%
CLTRH020191T2	ZoneMS Member	0.71	-0.94	2%
CLTRH020190T2-M	MatchMS Member	0.73	-1.18	2%
CLTRH020192T2	MCSS Member	0.39	0.91	2%
CLTRH020225T2	MCSS Discrete	0.61	-0.06	1%
CLTRH020224T2	MCMA - Discrete	0.54	0.30	2%
CLTRH020276T3	ZoneMS Discrete	0.62	-0.12	2%
CLTWH030230T3	MCMS Member	0.31	1.27	2%
CLTWH030231T3	MCSS Member	0.59	0.14	2%
CLTRH020220T2	MCSS Member	0.94	-1.59	1%
CLTRH020221T2	MCSS Member	0.77	0.01	2%
CLTWH020222T2	ZoneMS Member	0.90	-0.86	1%
CLTRH030093T2	ZoneMS Member	0.87	-0.81	0%
CLTRH030092T2	MCSS Member	0.71	0.33	1%
CLTRH030094T2	MCMA - Member	0.77	0.43	1%
CLTRH020266T3	MCSS Member	0.53	1.18	1%
CLTWH020268T3	MCSS Member	0.45	1.53	1%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTRH020267T3	ZoneMS Member	0.64	0.43	1%
CLTWH020433T3	MCSS Partial Credit Member	0.49	1.33	6%
CLTRH020431T3-M	MCMA - Discrete	0.72	0.64	1%
CLTRH030227T3	MCMA - Member	0.67	0.81	3%
CLTRH030225T3	MCMS Member	0.45	1.50	2%
CLTRH030226T3	ZoneMS Member	0.64	0.29	2%
CLTRH030117T1	MCSS Member	0.73	-0.99	3%
CLTRH030118T1	MCSS Member	0.46	0.35	4%
CLTWH030119T1	MatchMS Member	0.61	-0.37	9%
CLTRH030266T2	ZoneMS Member	0.78	-1.36	4%
CLTRH030267T2	ZoneMS Member	0.65	-0.69	7%
CLTWH030268T2	MCSS Member	0.40	0.64	6%
CLTRH030221T3	MCSS Member	0.50	0.20	5%
CLTWH030222T3	MCSS Partial Credit Member	0.54	0.03	12%
CLTRH030220T3	MCMS Member	0.16	2.04	5%
CLTRH030034T1	ZoneMS Member	0.69	-0.95	3%
CLTRH030033T1	ZoneMS Member	0.52	0.04	7%
CLTWH030035T1	MCSS Member	0.34	0.90	4%
CLTRH030150T1	MCSS Member	0.61	-0.47	3%
CLTWH030146T2	MCSS Member	0.49	0.15	4%
CLTRH030229T3	MCMS Member	0.21	1.60	4%

Table 8.D.8 Item Difficulties and Omit Rate—Mathematics, Grade Three

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM3020004T1	MCSS Discrete	0.74	-1.09	2%
CLTM3020210T1	MCSS Discrete	0.71	-0.95	2%
CLTM3020186T1	MCSS Discrete	0.71	-0.91	2%
CLTM3020018T1	MCSS Discrete	0.64	-0.58	1%
CLTM3020059T1	MCSS Discrete	0.65	-0.66	5%
CLTM3020171T1	MCMA - Discrete	0.47	0.10	2%
CLTM3020054T2	MCMA - Discrete	0.34	0.50	4%
CLTM3020002T2	InLineChoicelistMS Discrete	0.41	0.46	8%
CLTM3020060T2	MCSS Discrete	0.49	0.05	6%
CLTM3020063T2	MCMA - Discrete	0.63	-0.33	5%
CLTM3020001T1	MCMA - Discrete	0.44	-0.17	6%
CLTM3020010T1	MCMA - Discrete	0.51	-0.36	6%
CLTM3020174T1	MCSS Discrete	0.48	-0.27	9%
CLTM3030563T1	MCSS Member	0.32	0.45	7%
CLTM3030569T1	Composite - Member	0.50	-0.34	9%
CLTM3030581T1	InLineChoicelistMS Member	0.40	0.03	14%
CLTM3030578T1	MCSS Discrete	0.56	-0.61	8%
CLTM3030594T1	MCSS Member	0.71	-1.30	6%
CLTM3030500T1	ZoneSS Discrete	0.47	-0.23	14%
CLTM3020202T2	MCSS Discrete	0.37	0.22	12%
CLTM3020057T2	MCSS Discrete	0.46	0.08	6%
CLTM3020011T2	InLineChoicelistMS Discrete	0.41	-0.07	13%
CLTM3020066T2	MCSS Discrete	0.32	0.43	9%
CLTM3030564T2	ZoneMS Discrete	0.32	0.43	20%
CLTM3030501T2	MCSS Member	0.31	0.50	12%
CLTM3020201T1	MCSS Discrete	0.37	0.63	3%
CLTM3030572T1	Composite - Member	0.37	0.57	5%
CLTM3030506T1	ZoneSS Member	0.57	-0.22	7%
CLTM3020014T2	MCSS Discrete	0.44	0.31	3%
CLTM3020172T2	MCMA - Discrete	0.45	0.22	4%
CLTM3020008T2	MCSS Discrete	0.40	0.49	5%
CLTM3020175T2	MCSS Discrete	0.39	0.55	3%
CLTM3030582T2	MatchMS Discrete	0.52	0.00	10%
CLTM3020168T2	MCSS Discrete	0.35	0.71	4%
CLTM3020204T2	MCSS Discrete	0.32	1.03	3%
CLTM3030567T2	MCSS Member	0.49	0.11	4%
CLTM3030583T3	MCMS Member	0.38	0.88	5%
CLTM3020015T3	MCSS Discrete	0.42	0.41	4%
CLTM3020003T3	MCMA - Discrete	0.47	0.15	6%
CLTM3020208T2	MCSS Discrete	0.49	0.59	0%
CLTM3020005T2	MCSS Discrete	0.36	1.12	1%
CLTM3030579T2	MCSS Discrete	0.64	-0.07	1%
CLTM3030573T2	MatchMS Member	0.61	0.19	4%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM3030504T2	Composite - Member	0.31	1.24	2%
CLTM3020061T3	MCSS Discrete	0.47	0.65	1%
CLTM3020009T3	MCSS Discrete	0.31	1.35	2%
CLTM3020067T3	MCSS Discrete	0.36	1.12	2%
CLTM3020203T3	MCSS Discrete	0.36	1.15	2%
CLTM3020064T3	MCMA - Discrete	0.40	0.80	3%
CLTM3030502T3	MCSS Member	0.61	0.07	1%
CLTM3030580T3	MCSS Member	0.46	0.71	1%
CLTM3030571T3	InLineChoicelistMS Member	0.37	1.04	3%
CLTM3030565T3	MCSS Member	0.48	0.63	3%
CLTM3030503T1	Composite - Member	0.50	0.07	5%
CLTM3030497T3	Numeric Discrete	0.09	2.55	11%
CLTM3030592T2	ZoneMS Member	0.49	0.09	5%
CLTM3030505T3	InLineChoicelistMS Discrete	0.31	0.96	9%
CLTM3030499T2	Composite - Member	0.38	0.65	8%
CLTM3030566T1	MCSS Discrete	0.67	-0.68	4%
CLTM3030710T3	InLineChoicelistMS Member	0.31	0.81	11%
CLTM3030570T2	InLineChoicelistMS Member	0.25	1.06	13%
CLTM3030591T1	ZoneMS Member	0.59	-0.38	8%
CLTM3030590T2	Composite - Member	0.33	0.91	7%
CLTM3030568T3	MCSS Member	0.36	0.59	7%
CLTM3030498T1	Composite - Member	0.46	0.12	8%
CLTM3030496T2	MCSS Member	0.25	1.21	6%
CLTM3030702T1	Composite - Member	0.52	-0.06	7%
CLTM3030574T3	BarPicturegraphMS Member	0.21	0.99	14%

Table 8.D.9 Item Difficulties and Omit Rate—Mathematics, Grade Four

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM4020246T1	MCSS Discrete	0.70	-0.92	1%
CLTM4020252T1	MCSS Discrete	0.57	-0.29	1%
CLTM4020177T1	ZoneMS Discrete	0.67	-0.87	2%
CLTM4020255T1	MCSS Discrete	0.79	-1.37	2%
CLTM4020249T1	ZoneMS Discrete	0.48	0.09	8%
CLTM4020231T1	ZoneMS Discrete	0.58	-0.49	2%
CLTM4020190T2	MCSS Discrete	0.39	0.53	4%
CLTM4020229T2	InLineChoicelistMS Discrete	0.44	0.34	8%
CLTM4020247T2	MCSS Discrete	0.49	0.09	4%
CLTM4020256T2	MCSS Discrete	0.50	0.01	3%
CLTM4020189T1	MCSS Discrete	0.53	-0.41	4%
CLTM4020243T1	MCSS Discrete	0.45	-0.07	4%
CLTM4020219T1	MCSS Discrete	0.47	-0.15	4%
CLTM4020216T1	MCMA - Discrete	0.38	0.30	2%
CLTM4030671T1	ZoneMS Member	0.55	-0.67	5%
CLTM4030484T1	InLineChoicelistMS Member	0.44	-0.07	11%
CLTM4030475T1	ZoneMS Discrete	0.69	-1.18	5%
CLTM4030481T1	MCSS Member	0.62	-0.78	5%
CLTM4030490T1	MCSS Member	0.48	-0.21	4%
CLTM4020178T2	InLineChoicelistMS Discrete	0.49	-0.25	11%
CLTM4030479T2	Composite - Member	0.31	0.54	8%
CLTM4020250T2	ZoneMS Discrete	0.49	0.03	5%
CLTM4030651T2	Composite - Member	0.24	0.95	9%
CLTM4020220T2	MCSS Discrete	0.30	0.62	7%
CLTM4030616T2	MCSS Member	0.47	-0.14	7%
CLTM4030647T1	MCSS Member	0.35	0.83	1%
CLTM4030478T1	MCMA - Member	0.61	-0.09	1%
CLTM4020244T2	MCSS Discrete	0.26	1.31	1%
CLTM4020253T2	MCSS Discrete	0.37	0.76	2%
CLTM4020211T2	MatchMS Discrete	0.22	1.31	2%
CLTM4030491T2	MCSS Member	0.34	0.91	2%
CLTM4030476T2	MatchMS Member	0.76	-0.53	2%
CLTM4030485T2	InLineChoicelistMS Member	0.47	0.33	2%
CLTM4030482T2	MCSS Member	0.65	-0.43	1%
CLTM4030648T2	MCSS Member	0.18	1.78	2%
CLTM4020257T3	MCSS Discrete	0.72	-0.77	2%
CLTM4020251T3	MCMA - Discrete	0.41	0.45	2%
CLTM4020221T3	MCSS Discrete	0.40	0.61	2%
CLTM4020217T2	MatchMS Discrete	0.56	0.58	1%
CLTM4020241T2	MCSS Discrete	0.72	-0.21	1%
CLTM4030669T2	MCSS Member	0.39	1.25	1%
CLTM4020235T2	MCSS Discrete	0.36	1.42	1%
CLTM4030494T2	Composite - Member	0.60	0.36	1%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM4030672T2	ZoneMS Discrete	0.53	0.60	2%
CLTM4020230T3	ZoneMS Discrete	0.55	0.53	1%
CLTM4020242T3	MCSS Discrete	0.40	1.22	1%
CLTM4020194T3	MCSS Discrete	0.37	1.36	2%
CLTM4020227T3	BarPicturegraphMS Discrete	0.79	-0.21	1%
CLTM4020254T3	MCSS Discrete	0.54	0.60	1%
CLTM4020191T3	MCSS Discrete	0.51	0.74	2%
CLTM4020245T3	MCSS Discrete	0.52	0.72	1%
CLTM4030486T3	InLineChoicelistMS Member	0.65	0.31	2%
CLTM4030480T3	BarPicturegraphMS Member	0.65	0.31	2%
CLTM4030493T1	ZoneMS Member	0.49	0.12	4%
CLTM4030673T3	Composite - Discrete	0.16	1.51	4%
CLTM4030649T3	MCSS Member	0.28	1.11	4%
CLTM4030650T1	InLineChoicelistMS Member	0.66	-0.61	9%
CLTM4030670T3	MCSS Member	0.21	1.47	5%
CLTM4030492T3	BarPicturegraphSS Member	0.07	2.77	9%
CLTM4030612T1	ZoneMS Discrete	0.76	-1.36	3%
CLTM4030477T3	BarPicturegraphMS Member	0.31	0.72	8%
CLTM4030483T3	MCSS Member	0.50	0.03	5%
CLTM4030668T1	MCSS Member	0.43	0.33	3%
CLTM4030495T3	InLineChoicelistMS Member	0.42	0.31	5%
CLTM4030617T3	MCSS Member	0.32	0.82	3%
CLTM4030615T1	InLineChoicelistSS Member	0.60	-0.42	7%
CLTM4030613T2	InLineChoicelistMS Member	0.52	-0.09	7%
CLTM4030652T3	InLineChoicelistMS Member	0.26	1.04	7%

Table 8.D.10 Item Difficulties and Omit Rate—Mathematics, Grade Five

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM5020195T1	ZoneMS Discrete	0.79	-1.20	1%
CLTM5020180T1	MCSS Discrete	0.75	-1.17	2%
CLTM5020354T1	MCSS Discrete	0.74	-1.13	2%
CLTM5020345T1	MCSS Discrete	0.70	-0.92	1%
CLTM5020183T1	ZoneMS Discrete	0.61	-0.39	3%
CLTM5020340T1	MCMA - Discrete	0.42	0.25	1%
CLTM5020341T2	MCMA - Discrete	0.45	0.16	2%
CLTM5020214T2	MCSS Discrete	0.40	0.44	3%
CLTM5020265T2	MCSS Discrete	0.40	0.47	4%
CLTM5020262T2	MCSS Discrete	0.47	0.15	3%
CLTM5020213T1	ZoneSS Discrete	0.66	-1.01	5%
CLTM5030575T1	Composite - Member	0.41	0.03	6%
CLTM5030557T1	MCSS Member	0.60	-0.77	4%
CLTM5020165T1	MCSS Discrete	0.48	-0.24	5%
CLTM5020404T1	MCSS Discrete	0.52	-0.41	6%
CLTM5020357T1	ZoneMS Discrete	0.54	-0.48	7%
CLTM5020261T1	MCSS Discrete	0.48	-0.23	7%
CLTM5030458T1	ZoneMS Discrete	0.54	-0.52	5%
CLTM5030707T1	MCMA - Member	0.29	0.25	6%
CLTM5020196T2	ZoneMS Discrete	0.55	-0.51	7%
CLTM5030607T2	Composite - Member	0.46	-0.17	7%
CLTM5020405T2	MCMA - Discrete	0.42	-0.12	7%
CLTM5030561T2	InLineChoicelistSS Member	0.26	0.74	9%
CLTM5030610T2	MCSS Member	0.46	-0.17	7%
CLTM5030456T2	ZoneSS Member	0.30	0.55	16%
CLTM5020360T1	MCSS Discrete	0.46	0.32	2%
CLTM5030700T1	MCSS Member	0.56	-0.08	2%
CLTM5030675T1	MCMA - Member	0.43	0.35	2%
CLTM5030558T2	MCSS Member	0.20	1.59	2%
CLTM5020346T2	MCSS Discrete	0.30	1.03	2%
CLTM5030464T2	InLineChoicelistMS Member	0.53	-0.03	3%
CLTM5020259T2	MCSS Discrete	0.34	0.83	2%
CLTM5020184T2	MCMA - Discrete	0.44	0.34	3%
CLTM5030677T2	InLineChoicelistMS Member	0.28	1.20	3%
CLTM5020358T2	MCMA - Discrete	0.45	0.44	3%
CLTM5020361T2	MCSS Discrete	0.39	0.60	3%
CLTM5030701T2	MCSS Discrete	0.26	1.21	3%
CLTM5020269T3	ZoneMS Discrete	0.46	0.31	4%
CLTM5020359T3	ZoneMS Discrete	0.55	-0.05	4%
CLTM5030674T3	InLineChoicelistMS Member	0.28	1.32	4%
CLTM5030459T2	Composite - Member	0.47	0.80	2%
CLTM5030576T2	Composite - Member	0.62	0.13	2%
CLTM5030462T2	Composite - Member	0.42	0.93	3%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM5020343T2	InLineChoicelistSS Discrete	0.25	1.78	3%
CLTM5020181T2	MCSS Discrete	0.41	1.05	2%
CLTM5020356T3	MCSS Discrete	0.53	0.49	3%
CLTM5020344T3	MCSS Discrete	0.40	1.06	2%
CLTM5020362T3	MCSS Discrete	0.28	1.62	2%
CLTM5020215T3	Graph Discrete	0.36	1.26	6%
CLTM5030465T3	ZoneMS Member	0.67	-0.32	3%
CLTM5030608T3	MatchMS Member	0.49	0.69	5%
CLTM5030577T3	Composite - Member	0.53	0.52	3%
CLTM5030460T3	Composite - Member	0.28	1.51	3%
CLTM5030678T3	MatchMS Member	0.53	0.53	3%
CLTM5030463T1	Composite - Member	0.66	-0.56	3%
CLTM5030611T3	MatchSS Member	0.30	0.98	5%
CLTM5030560T1	MCSS Member	0.45	0.27	3%
CLTM5030676T1	ZoneMS Member	0.55	-0.27	5%
CLTM5030709T3	Composite - Member	0.45	0.23	5%
CLTM5030457T3	Graph Member	0.22	1.41	0%
CLTM5030708T2	Composite - Member	0.42	0.33	6%
CLTM5030703T3	MCSS Member	0.36	0.62	6%
CLTM5030455T1	MCSS Member	0.66	-0.73	5%
CLTM5030609T1	MCSS Member	0.78	-1.39	3%
CLTM5030562T3	InLineChoicelistSS Member	0.23	1.33	5%
CLTM5030559T3	Numeric Member	0.08	2.60	8%
CLTM5030461T1	MCMS Member	0.42	0.37	3%
CLTM5020349T2	MCSS Discrete	0.27	1.04	4%
CLTM5020338T1	ZoneMS Discrete	0.67	-0.88	2%

Table 8.D.11 Item Difficulties and Omit Rate—Mathematics, Grade Six

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM6020198T1	MCSS Discrete	0.65	-0.57	2%
CLTM6020284T1	MCSS Discrete	0.65	-0.61	2%
CLTM6020293T1	ZoneSS Discrete	0.64	-0.55	2%
CLTM6020427T1	MCSS Discrete	0.62	-0.44	2%
CLTM6020363T1	MCMA - Discrete	0.38	0.37	1%
CLTM6020432T1	MCMA - Discrete	0.37	0.40	2%
CLTM6020285T2	MCSS Discrete	0.55	-0.17	2%
CLTM6020315T2	MatchMS Discrete	0.54	-0.07	3%
CLTM6020291T2	MCMA - Discrete	0.44	0.21	2%
CLTM6020041T2	MCSS Discrete	0.40	0.47	2%
CLTM6020320T1	MCSS Discrete	0.48	-0.08	4%
CLTM6020435T1	ZoneMS Discrete	0.41	0.19	4%
CLTM6020366T1	MCMA - Discrete	0.35	0.24	3%
CLTM6020037T1	MCSS Discrete	0.49	-0.13	6%
CLTM6020097T1	ZoneMS Discrete	0.46	0.15	6%
CLTM6030685T1	MCSS Member	0.57	-0.49	6%
CLTM6020314T1	MCMA - Discrete	0.39	0.15	5%
CLTM6030469T1	InLineChoicelistMS Member	0.50	-0.18	8%
CLTM6030679T1	MCSS Member	0.36	0.43	7%
CLTM6020425T2	MCSS Discrete	0.43	0.28	4%
CLTM6020433T2	MCMA - Discrete	0.40	0.09	5%
CLTM6020364T2	MCMA - Discrete	0.38	0.15	6%
CLTM6030683T2	InLineChoicelistSS Discrete	0.44	0.06	8%
CLTM6030599T2	MatchSS Member	0.42	0.16	11%
CLTM6030636T2	MCSS Discrete	0.38	0.34	8%
CLTM6030472T1	MCSS Member	0.52	0.05	2%
CLTM6020094T1	ZoneMS Discrete	0.45	0.41	2%
CLTM6030686T2	MCSS Member	0.24	1.32	2%
CLTM6030622T2	MCSS Member	0.40	0.57	2%
CLTM6020095T2	MCMA - Discrete	0.40	0.40	2%
CLTM6020199T2	MCSS Discrete	0.43	0.45	2%
CLTM6020321T2	MCSS Discrete	0.26	1.36	2%
CLTM6020436T2	ZoneMS Discrete	0.27	0.82	4%
CLTM6030467T2	InLineChoicelistMS Member	0.28	1.13	5%
CLTM6020429T3	MCSS Discrete	0.48	0.24	4%
CLTM6020200T3	ZoneSS Discrete	0.49	0.21	6%
CLTM6030681T3	Numeric Member	0.03	3.56	7%
CLTM6030602T2	InLineChoicelistMS Member	0.35	0.73	5%
CLTM6030596T2	MCSS Member	0.29	1.50	0%
CLTM6030680T2	InLineChoicelistSS Member	0.23	1.83	3%
CLTM6030473T2	MCSS Discrete	0.44	0.82	2%
CLTM6030619T2	InLineChoicelistMS Member	0.43	0.81	2%
CLTM6020294T2	ZoneSS Discrete	0.49	0.59	3%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM6020434T3	ZoneMS Discrete	0.61	0.23	2%
CLTM6030687T3	ZoneSS Member	0.43	0.86	7%
CLTM6030623T3	MCSS Member	0.20	1.96	3%
CLTM6030684T3	ZoneSS Discrete	0.62	0.05	9%
CLTM6020096T3	MCMA - Discrete	0.51	0.52	2%
CLTM6020289T3	MCMA - Discrete	0.46	0.66	2%
CLTM6020042T3	MCSS Discrete	0.51	0.49	2%
CLTM6020368T3	InLineChoicelistMS Discrete	0.39	0.93	4%
CLTM6020039T3	InLineChoicelistMS Discrete	0.43	0.83	4%
CLTM6030618T1	MCMA - Member	0.60	-0.17	2%
CLTM6030474T3	MCSS Member	0.38	0.59	2%
CLTM6030600T3	Numeric Member	0.19	1.60	6%
CLTM6030601T1	Composite - Member	0.50	0.03	5%
CLTM6030595T1	MCSS Member	0.50	0.01	4%
CLTM6030468T3	ZoneMS Member	0.38	0.93	7%
CLTM6030635T1	MCSS Member	0.51	0.02	3%
CLTM6030603T3	InLineChoicelistMS Member	0.40	0.48	6%
CLTM6030620T3	InLineChoicelistMS Member	0.44	0.26	6%
CLTM6030466T1	MCMA - Member	0.45	0.15	2%
CLTM6030470T2	InLineChoicelistMS Member	0.34	0.75	3%
CLTM6030637T3	MCSS Member	0.40	0.44	4%
CLTM6030598T1	MCSS Member	0.52	-0.04	3%
CLTM6030621T1	MCSS Member	0.55	-0.14	3%
CLTM6030682T1	MCSS Member	0.56	-0.21	4%

Table 8.D.12 Item Difficulties and Omit Rate—Mathematics, Grade Seven

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM7020047T1	MCMA - Discrete	0.70	-0.61	1%
CLTM7020085T1	MCSS Discrete	0.66	-0.73	2%
CLTM7020091T1	ZoneMS Discrete	0.69	-0.54	5%
CLTM7020299T1	MCSS Discrete	0.65	-0.69	2%
CLTM7020088T1	MCMA - Discrete	0.46	0.11	1%
CLTM7020323T1	MCSS Discrete	0.48	0.07	3%
CLTM7020032T2	MCSS Discrete	0.48	0.07	3%
CLTM7020089T2	ZoneMS Discrete	0.49	0.08	3%
CLTM7020330T2	ZoneMS Discrete	0.44	0.16	7%
CLTM7020282T2	InLineChoicelistMS Discrete	0.41	0.35	8%
CLTM7020280T1	MCSS Discrete	0.56	-0.75	5%
CLTM7020326T1	MatchMS Discrete	0.51	-0.53	10%
CLTM7020296T1	MCSS Discrete	0.48	-0.39	7%
CLTM7020372T1	MatchMS Discrete	0.42	-0.18	9%
CLTM7030509T1	InLineChoicelistMS Member	0.46	-0.35	10%
CLTM7030512T1	InLineChoicelistMS Member	0.38	-0.11	15%
CLTM7030694T1	MCSS Member	0.56	-0.76	9%
CLTM7030519T2	InLineChoicelistMS Member	0.27	0.56	11%
CLTM7030587T1	MCSS Discrete	0.52	-0.58	9%
CLTM7020092T2	ZoneMS Discrete	0.45	-0.36	14%
CLTM7020370T2	MCSS Discrete	0.37	0.05	12%
CLTM7020048T2	ZoneMS Discrete	0.45	-0.35	10%
CLTM7030518T1	MCMA - Member	0.42	-0.28	11%
CLTM7030522T2	ZoneMS Member	0.37	0.21	11%
CLTM7020448T2	MCSS Discrete	0.22	0.84	13%
CLTM7020418T1	MCMA - Discrete	0.43	0.15	2%
CLTM7020281T1	MCMA - Discrete	0.40	0.22	2%
CLTM7030653T1	MCSS Discrete	0.51	-0.07	2%
CLTM7020297T2	InLineChoicelistSS Discrete	0.42	0.32	4%
CLTM7020373T2	InLineChoicelistMS Discrete	0.43	0.56	3%
CLTM7020327T2	MCMA - Discrete	0.37	0.33	3%
CLTM7020449T2	MCSS Discrete	0.41	0.32	4%
CLTM7030695T2	MCSS Member	0.27	1.01	4%
CLTM7030510T2	InLineChoicelistMS Member	0.45	0.16	5%
CLTM7030689T2	MCSS Member	0.37	0.49	4%
CLTM7030692T2	MCSS Member	0.30	0.85	5%
CLTM7030513T2	ZoneMS Member	0.27	1.14	7%
CLTM7020301T3	MCSS Discrete	0.35	0.59	7%
CLTM7020049T3	InLineChoicelistMS Discrete	0.42	0.25	5%
CLTM7020090T3	MatchMS Discrete	0.37	0.69	5%
CLTM7030585T2	ZoneMS Member	0.49	0.68	2%
CLTM7030516T2	InLineChoicelistMS Member	0.54	0.46	1%
CLTM7020419T2	InLineChoicelistMS Discrete	0.42	0.90	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM7030588T2	MCSS Member	0.52	0.53	2%
CLTM7020374T3	MatchMS Discrete	0.52	0.52	2%
CLTM7020087T3	MatchSS Discrete	0.48	0.70	3%
CLTM7020093T3	InLineChoicelistMS Discrete	0.42	0.92	2%
CLTM7020283T3	InLineChoicelistMS Discrete	0.58	0.31	2%
CLTM7030654T2	MCSS Member	0.72	-0.38	1%
CLTM7030693T3	MCSS Member	0.62	0.07	3%
CLTM7030690T3	Numeric Member	0.17	2.34	2%
CLTM7030696T3	Numeric Member	0.08	3.27	5%
CLTM7030514T3	InLineChoicelistMS Discrete	0.47	0.76	3%
CLTM7020329T1	ZoneMS Discrete	0.66	-0.41	6%
CLTM7030705T2	MCSS Member	0.33	0.79	4%
CLTM7020450T3	MCSS Discrete	0.27	1.09	5%
CLTM7020050T1	MCSS Discrete	0.75	-1.20	4%
CLTM7030704T1	MCSS Member	0.62	-0.53	5%
CLTM7030511T3	ZoneMS Member	0.51	-0.07	4%
CLTM7030584T1	Composite - Member	0.50	0.02	4%
CLTM7030688T1	MCSS Member	0.68	-0.80	3%
CLTM7030586T3	InLineChoicelistMS Member	0.38	0.55	6%
CLTM7030515T1	InLineChoicelistMS Member	0.55	-0.18	6%
CLTM7030521T1	MCMA - Member	0.43	0.20	5%
CLTM7030589T3	InLineChoicelistSS Member	0.33	0.76	7%
CLTM7030691T1	MCSS Member	0.64	-0.68	4%
CLTM7030517T3	InLineChoicelistMS Discrete	0.36	0.51	5%
CLTM7030520T3	InLineChoicelistMS Member	0.47	0.09	5%

Table 8.D.13 Item Difficulties and Omit Rate—Mathematics, Grade Eight

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM8020079T1	MCSS Discrete	0.70	-0.90	2%
CLTM8020028T1	InLineChoicelistMS Discrete	0.69	-0.80	3%
CLTM8020302T1	MCSS Discrete	0.74	-1.12	1%
CLTM8020378T1	MCMA - Discrete	0.61	-0.29	1%
CLTM8020387T1	ZoneSS Discrete	0.45	0.24	4%
CLTM8020277T1	MCMA - Discrete	0.52	-0.05	2%
CLTM8020276T2	InLineChoicelistMS Discrete	0.44	0.29	4%
CLTM8020080T2	InLineChoicelistMS Discrete	0.39	0.55	6%
CLTM8020029T2	InLineChoicelistMS Discrete	0.59	-0.31	5%
CLTM8020416T2	InLineChoicelistMS Discrete	0.39	0.56	5%
CLTM8020278T1	MCSS Discrete	0.52	-0.59	6%
CLTM8020415T1	MCMA - Discrete	0.41	-0.24	6%
CLTM8020376T2	MatchSS Discrete	0.50	0.04	8%
CLTM8020082T1	ZoneSS Discrete	0.36	0.13	18%
CLTM8020388T1	MCSS Discrete	0.47	-0.35	7%
CLTM8020391T1	MCMA - Discrete	0.42	-0.26	8%
CLTM8030535T1	MCMA - Member	0.52	-0.54	8%
CLTM8030538T1	MCMA - Member	0.49	-0.44	10%
CLTM8030524T1	MatchSS Discrete	0.54	-0.66	20%
CLTM8020452T2	ZoneSS Discrete	0.37	0.42	6%
CLTM8030528T2	InLineChoicelistMS Member	0.45	-0.28	12%
CLTM8030660T2	MCSS Discrete	0.26	0.61	8%
CLTM8030698T2	MCSS Member	0.39	-0.01	11%
CLTM8030625T2	MCSS Member	0.33	0.23	11%
CLTM8020305T1	MCMA - Discrete	0.33	-0.03	12%
CLTM8030659T1	MCSS Member	0.67	-0.68	2%
CLTM8030624T1	ZoneSS Discrete	0.56	-0.19	8%
CLTM8030697T1	MCSS Discrete	0.62	-0.46	2%
CLTM8020069T2	ZoneSS Discrete	0.25	1.21	3%
CLTM8020303T2	ZoneSS Discrete	0.38	0.58	7%
CLTM8020026T2	MCSS Discrete	0.44	0.30	3%
CLTM8030531T2	InLineChoicelistMS Member	0.48	0.13	3%
CLTM8030539T2	InLineChoicelistMS Member	0.47	0.18	3%
CLTM8030525T2	InLineChoicelistSS Member	0.44	0.31	3%
CLTM8020083T2	InLineChoicelistSS Discrete	0.46	0.45	3%
CLTM8030536T2	InLineChoicelistMS Member	0.47	0.15	3%
CLTM8020084T3	InLineChoicelistSS Discrete	0.44	0.31	4%
CLTM8020307T3	InLineChoicelistMS Discrete	0.36	0.54	3%
CLTM8030529T3	InLineChoicelistMS Member	0.57	-0.20	3%
CLTM8030663T2	MCSS Member	0.55	0.49	2%
CLTM8030639T2	MCSS Member	0.63	0.14	1%
CLTM8030711T2	ZoneSS Member	0.60	0.27	5%
CLTM8030657T2	MCSS Discrete	0.33	1.45	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTM8020396T3	InLineChoicelistSS Discrete	0.23	1.95	1%
CLTM8020417T3	InLineChoicelistMS Discrete	0.44	1.00	2%
CLTM8020414T3	MCSS Discrete	0.29	1.66	1%
CLTM8020279T3	MCSS Discrete	0.53	0.57	1%
CLTM8020027T3	MCSS Discrete	0.39	1.15	2%
CLTM8030532T3	InLineChoicelistMS Member	0.48	0.78	3%
CLTM8030540T3	InLineChoicelistMS Member	0.42	0.99	3%
CLTM8030526T3	MCSS Discrete	0.45	0.89	3%
CLTM8030537T3	InLineChoicelistMS Member	0.48	0.78	2%
CLTM8030638T1	MCSS Discrete	0.74	-1.13	4%
CLTM8030533T1	ZoneSS Discrete	0.45	0.26	8%
CLTM8030664T3	Numeric Member	0.12	2.19	6%
CLTM8030656T1	MCSS Member	0.56	-0.24	6%
CLTM8030699T3	Numeric Member	0.07	2.75	8%
CLTM8030534T3	ZoneSS Member	0.36	0.65	11%
CLTM8020453T3	ZoneSS Discrete	0.35	0.72	6%
CLTM8030530T1	MCMA - Member	0.52	0.00	4%
CLTM8030658T3	Numeric Member	0.33	0.82	6%
CLTM8020332T1	MCSS Discrete	0.79	-1.39	3%
CLTM8030527T1	MCMA - Member	0.59	-0.26	2%
CLTM8030640T3	Numeric Member	0.29	1.04	4%
CLTM8020412T1	MCSS Discrete	0.60	-0.47	4%
CLTM8030661T3	ZoneMS Discrete	0.42	0.34	3%
CLTM8030626T3	ZoneSS Member	0.21	1.43	8%

Table 8.D.14 Item Difficulties and Omit Rate—Mathematics, Grade Eleven

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTMH020019T1	MCSS Discrete	0.74	-1.11	1%
CLTMH020272T1	MCSS Discrete	0.73	-1.05	1%
CLTMH020447T1	ZoneSS Discrete	0.64	-0.61	7%
CLTMH020043T1	ZoneSS Discrete	0.63	-0.57	2%
CLTMH020073T1	MatchMS Discrete	0.69	-0.51	4%
CLTMH020409T1	MCMA - Discrete	0.60	-0.27	3%
CLTMH020398T2	ZoneMS Discrete	0.67	-0.95	2%
CLTMH020385T2	MCMA - Discrete	0.44	0.17	3%
CLTMH020071T2	MatchMS Discrete	0.32	0.78	4%
CLTMH020020T2	MCSS Discrete	0.64	-0.63	3%
CLTMH020022T1	MCSS Discrete	0.55	-0.58	3%
CLTMH020308T1	ZoneSS Discrete	0.45	-0.17	15%
CLTMH020311T1	MatchSS Discrete	0.47	-0.27	8%
CLTMH020076T1	ZoneSS Discrete	0.33	0.38	8%
CLTMH020068T1	MCSS Discrete	0.52	-0.47	5%
CLTMH020406T1	MCMA - Discrete	0.39	-0.10	5%
CLTMH030641T1	MCMA - Member	0.43	-0.21	5%
CLTMH030554T1	MCMA - Member	0.37	-0.02	6%
CLTMH030712T1	ZoneSS Member	0.31	0.46	9%
CLTMH020077T2	ZoneSS Discrete	0.27	0.82	11%
CLTMH030628T2	MCSS Member	0.33	0.35	7%
CLTMH030548T2	MCSS Discrete	0.29	0.57	8%
CLTMH030542T2	ZoneMS Discrete	0.39	0.08	6%
CLTMH030645T2	InLineChoicelistMS Member	0.58	-0.60	12%
CLTMH030555T2	InLineChoicelistMS Member	0.40	0.07	12%
CLTMH020335T1	MCSS Discrete	0.44	0.24	1%
CLTMH030553T1	MCSS Discrete	0.71	-0.95	1%
CLTMH030541T1	MCSS Discrete	0.55	-0.23	1%
CLTMH020382T2	MCMA - Discrete	0.28	0.86	1%
CLTMH020402T2	InLineChoicelistMS Discrete	0.42	0.33	6%
CLTMH020407T2	MCMA - Discrete	0.42	0.47	1%
CLTMH030713T2	MCSS Discrete	0.29	0.91	2%
CLTMH030666T2	InLineChoicelistMS Member	0.70	-0.57	4%
CLTMH030633T2	MCSS Member	0.26	1.07	3%
CLTMH030631T2	MCSS Discrete	0.37	0.55	3%
CLTMH030546T2	ZoneMS Member	0.42	0.47	4%
CLTMH020383T3	ZoneMS Discrete	0.44	0.31	3%
CLTMH020045T3	MCSS Discrete	0.54	-0.16	2%
CLTMH030547T3	Composite - Member	0.45	0.23	5%
CLTMH020270T2	MCSS Discrete	0.48	0.48	1%
CLTMH030642T2	InLineChoicelistMS Member	0.56	0.14	2%
CLTMH030551T2	ZoneMS Member	0.79	-1.11	2%
CLTMH020044T2	MCSS Discrete	0.33	1.17	2%

Item ID	Item Type	*p*-value	IRT *b*-value	Omit Rate
CLTMH020078T3	ZoneSS Discrete	0.30	1.26	7%
CLTMH020313T3	MCSS Discrete	0.46	0.58	1%
CLTMH020403T3	InLineChoicelistMS Discrete	0.41	0.76	3%
CLTMH030643T3	InLineChoicelistMS Member	0.42	0.75	3%
CLTMH030543T3	MCSS Discrete	0.41	0.78	1%
CLTMH030714T3	MCSS Discrete	0.31	1.23	2%
CLTMH030667T3	BarPicturegraphMS Member	0.51	0.37	4%
CLTMH030552T3	InLineChoicelistMS Member	0.63	-0.10	2%
CLTMH030634T3	Numeric Discrete	0.15	2.19	3%
CLTMH030550T1	MCMA - Discrete	0.43	0.22	4%
CLTMH020397T1	MCMA - Discrete	0.54	-0.11	3%
CLTMH030544T3	Numeric Discrete	0.10	2.31	10%
CLTMH030549T1	MCSS Member	0.58	-0.35	4%
CLTMH030632T3	MCSS Discrete	0.44	0.23	4%
CLTMH030556T3	InLineChoicelistMS Member	0.49	0.04	6%
CLTMH030630T1	ZoneSS Discrete	0.58	-0.34	8%
CLTMH030629T3	Numeric Discrete	0.14	1.99	8%
CLTMH030646T3	BarPicturegraphMS Member	0.40	0.31	8%
CLTMH030644T1	MatchMS Member	0.61	-0.29	6%
CLTMH020336T2	ZoneMS Discrete	0.57	-0.32	3%
CLTMH020337T3	MCSS Discrete	0.59	-0.38	2%
CLTMH030665T1	MatchMS Member	0.62	-0.35	4%
CLTMH030545T1	MCMA - Member	0.51	-0.07	4%
CLTMH020381T1	MCMA - Discrete	0.59	-0.30	3%

Table 8.D.15 Average Number of Item Omits for Each Test Stage—ELA

Test	Form ID	Stage 1 (Items 1 through 4)	Stage 1B (Items 5 through 13)	Stage 2 (15 items)
Grade 3	Early Exit	0.53	2.65	NA
Grade 3	Easy Pathway	0.12	0.48	1.22
Grade 3	Moderate Pathway	0.05	0.14	0.42
Grade 3	Hard Pathway	0.01	0.08	0.17
Grade 4	Early Exit	0.29	1.99	NA
Grade 4	Easy Pathway	0.08	0.52	1.34
Grade 4	Moderate Pathway	0.04	0.20	0.41
Grade 4	Hard Pathway	0.01	0.10	0.29
Grade 5	Early Exit	0.32	1.96	NA
Grade 5	Easy Pathway	0.09	0.31	0.91
Grade 5	Moderate Pathway	0.02	0.08	0.37
Grade 5	Hard Pathway	0.00	0.03	0.28
Grade 6	Early Exit	0.34	2.15	NA
Grade 6	Easy Pathway	0.15	0.82	1.61
Grade 6	Moderate Pathway	0.04	0.32	0.67
Grade 6	Hard Pathway	0.02	0.12	0.41
Grade 7	Early Exit	0.35	3.00	NA
Grade 7	Easy Pathway	0.09	0.54	1.21
Grade 7	Moderate Pathway	0.02	0.14	0.43
Grade 7	Hard Pathway	0.01	0.07	0.24
Grade 8	Early Exit	0.45	1.98	NA
Grade 8	Easy Pathway	0.05	0.26	0.74
Grade 8	Moderate Pathway	0.01	0.10	0.29
Grade 8	Hard Pathway	0.00	0.05	0.16
Grade 11	Early Exit	0.62	2.97	NA
Grade 11	Easy Pathway	0.18	0.50	1.17
Grade 11	Moderate Pathway	0.03	0.11	0.23
Grade 11	Hard Pathway	0.00	0.06	0.21

Table 8.D.16 Average Number of Item Omits for Each Test Stage—Mathematics

Test	Form ID	Stage 1 (Items 1 through 4)	Stage 1B (Items 5 through 13)	Stage 2 (15 items)
Grade 3	Early Exit	0.28	2.42	NA
Grade 3	Easy Pathway	0.09	0.73	1.53
Grade 3	Moderate Pathway	0.03	0.25	0.69
Grade 3	Hard Pathway	0.02	0.07	0.28
Grade 4	Early Exit	0.51	2.88	NA
Grade 4	Easy Pathway	0.08	0.57	0.96
Grade 4	Moderate Pathway	0.02	0.08	0.24
Grade 4	Hard Pathway	0.01	0.02	0.19
Grade 5	Early Exit	0.31	1.54	NA
Grade 5	Easy Pathway	0.06	0.31	1.05
Grade 5	Moderate Pathway	0.02	0.11	0.41
Grade 5	Hard Pathway	0.01	0.06	0.42
Grade 6	Early Exit	0.43	1.39	NA
Grade 6	Easy Pathway	0.12	0.29	0.95
Grade 6	Moderate Pathway	0.03	0.09	0.48
Grade 6	Hard Pathway	0.01	0.07	0.45
Grade 7	Early Exit	0.37	1.57	NA
Grade 7	Easy Pathway	0.16	0.76	1.54
Grade 7	Moderate Pathway	0.07	0.22	0.65
Grade 7	Hard Pathway	0.02	0.06	0.31
Grade 8	Early Exit	0.61	2.75	NA
Grade 8	Easy Pathway	0.16	0.81	1.61
Grade 8	Moderate Pathway	0.03	0.14	0.53
Grade 8	Hard Pathway	0.01	0.06	0.32
Grade 11	Early Exit	0.43	2.17	NA
Grade 11	Easy Pathway	0.20	0.46	1.22
Grade 11	Moderate Pathway	0.09	0.14	0.45
Grade 11	Hard Pathway	0.02	0.05	0.31

Table 8.D.17 Total Number of Items Answered by Student Achievement Level—ELA, Grades Three and Four

Total Number Answered	Grade Three Level 1—Alternate	Grade Three Level 2—Alternate	Grade Three Level 3—Alternate	Grade Four Level 1—Alternate	Grade Four Level 2—Alternate	Grade Four Level 3—Alternate
28	809	784	1,026	981	1,195	750
27	312	194	174	319	233	108
26	157	56	43	138	103	19
25	67	40	8	70	36	8
24	56	16	3	51	8	2
23	38	7	1	41	6	1
22	26	7	1	29	5	NA
21	19	2	1	13	5	NA
20	14	NA	NA	17	2	NA
19	19	NA	NA	9	NA	NA
18	11	1	NA	11	NA	NA
17	8	NA	NA	9	NA	NA
16	2	NA	NA	16	NA	NA
15	12	NA	NA	10	NA	NA
14	7	NA	NA	11	NA	NA
13	61	NA	NA	97	NA	NA
12	24	NA	NA	26	NA	NA
11	22	NA	NA	21	NA	NA
10	18	NA	NA	42	NA	NA
9	14	NA	NA	17	NA	NA
8	11	NA	NA	10	NA	NA
7	17	NA	NA	10	NA	NA
6	18	NA	NA	18	NA	NA
5	25	NA	NA	27	NA	NA
4	46	NA	NA	55	NA	NA

Table 8.D.18 Total Number of Items Answered by Student Achievement Level—ELA, Grades Five and Six

Total Number Answered	Grade Five Level 1—Alternate	Grade Five Level 2—Alternate	Grade Five Level 3—Alternate	Grade Six Level 1—Alternate	Grade Six Level 2—Alternate	Grade Six Level 3—Alternate
28	1,197	1,419	686	1,006	1,483	381
27	287	246	65	358	298	60
26	159	84	12	163	107	10
25	70	18	3	85	56	2
24	39	15	NA	50	22	2
23	37	1	NA	33	6	NA
22	23	1	NA	29	4	NA
21	12	1	NA	25	3	NA
20	8	NA	NA	25	4	NA
19	11	NA	NA	20	5	NA
18	4	NA	NA	13	NA	NA
17	4	NA	NA	11	NA	NA
16	6	NA	NA	10	NA	NA
15	6	NA	NA	12	NA	NA
14	5	NA	NA	8	NA	NA
13	53	NA	NA	69	NA	NA
12	20	NA	NA	18	NA	NA
11	11	NA	NA	29	NA	NA
10	15	NA	NA	9	NA	NA
9	15	NA	NA	14	NA	NA
8	14	NA	NA	16	NA	NA
7	7	NA	NA	16	NA	NA
6	7	NA	NA	24	NA	NA
5	6	NA	NA	28	NA	NA
4	53	NA	NA	52	NA	NA

Table 8.D.19 Total Number of Items Answered by Student Achievement Level—ELA, Grades Seven and Eight

Total Number Answered	Grade Seven Level 1—Alternate	Grade Seven Level 2—Alternate	Grade Seven Level 3—Alternate	Grade Eight Level 1—Alternate	Grade Eight Level 2—Alternate	Grade Eight Level 3—Alternate
28	1,136	1,115	566	384	1,999	518
27	342	237	97	198	420	44
26	146	75	12	110	156	16
25	80	32	9	47	42	1
24	67	17	2	35	19	1
23	45	9	1	31	6	NA
22	35	5	NA	13	2	NA
21	29	2	NA	16	2	NA
20	20	1	NA	13	1	NA
19	16	NA	NA	4	1	NA
18	9	NA	NA	1	NA	NA
17	8	NA	NA	12	NA	NA
16	11	NA	NA	8	NA	NA
15	6	NA	NA	6	NA	NA
14	7	NA	NA	NA	NA	NA
13	44	NA	NA	70	NA	NA
12	22	NA	NA	33	NA	NA
11	16	NA	NA	24	NA	NA
10	17	NA	NA	13	NA	NA
9	25	NA	NA	14	NA	NA
8	18	NA	NA	13	NA	NA
7	15	NA	NA	12	NA	NA
6	28	NA	NA	15	NA	NA
5	20	NA	NA	13	NA	NA
4	62	NA	NA	53	NA	NA

Table 8.D.20 Total Number of Items Answered by Student Achievement Level—ELA, Grade Eleven

Total Number Answered	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate
28	597	1,417	715
27	208	221	95
26	83	64	12
25	47	23	2
24	39	13	NA
23	21	2	NA
22	12	1	NA
21	13	NA	NA
20	9	2	NA
19	14	NA	NA
18	6	NA	NA
17	6	NA	NA
16	17	NA	NA
15	9	NA	NA
14	6	NA	NA
13	33	NA	NA
12	11	NA	NA
11	8	NA	NA
10	7	NA	NA
9	9	NA	NA
8	12	NA	NA
7	7	NA	NA
6	13	NA	NA
5	14	NA	NA
4	25	NA	NA

Table 8.D.21 Total Number of Items Answered by Student Achievement Level—Mathematics, Grades Three and Four

Total Number Answered	Grade Three Level 1—Alternate	Grade Three Level 2—Alternate	Grade Three Level 3—Alternate	Grade Four Level 1—Alternate	Grade Four Level 2—Alternate	Grade Four Level 3—Alternate
28	1,195	1,153	267	1,645	1,191	353
27	374	150	22	332	139	18
26	101	44	3	115	23	3
25	69	11	NA	68	4	NA
24	52	7	NA	27	2	NA
23	24	6	NA	30	1	NA
22	34	1	NA	28	1	NA
21	20	1	NA	19	NA	NA
20	18	NA	NA	10	NA	NA
19	21	NA	NA	14	NA	NA
18	20	NA	NA	14	NA	NA
17	5	NA	NA	17	NA	NA
16	11	NA	NA	10	NA	NA
15	10	NA	NA	7	NA	NA
14	11	NA	NA	8	NA	NA
13	143	NA	NA	51	NA	NA
12	43	NA	NA	27	NA	NA
11	35	NA	NA	21	NA	NA
10	26	NA	NA	22	NA	NA
9	21	NA	NA	13	NA	NA
8	18	NA	NA	18	NA	NA
7	29	NA	NA	23	NA	NA
6	22	NA	NA	25	NA	NA
5	39	NA	NA	31	NA	NA
4	64	NA	NA	54	NA	NA

Table 8.D.22 Total Number of Items Answered by Student Achievement Level—Mathematics, Grades Five and Six

Total Number Answered	Grade Five Level 1—Alternate	Grade Five Level 2—Alternate	Grade Five Level 3—Alternate	Grade Six Level 1—Alternate	Grade Six Level 2—Alternate	Grade Six Level 3—Alternate
28	1,564	1,466	283	1,568	1,296	172
27	321	143	32	322	174	18
26	71	32	2	121	59	3
25	49	12	1	75	18	2
24	32	6	NA	35	10	NA
23	20	3	NA	32	4	1
22	14	1	NA	19	4	NA
21	16	2	NA	22	1	NA
20	8	NA	NA	16	NA	NA
19	3	1	NA	9	1	NA
18	8	NA	NA	11	1	NA
17	11	NA	NA	10	NA	NA
16	11	NA	NA	15	NA	NA
15	4	NA	NA	9	NA	NA
14	8	NA	NA	7	2	NA
13	185	NA	NA	121	NA	NA
12	41	NA	NA	29	NA	NA
11	28	NA	NA	15	NA	NA
10	19	NA	NA	13	NA	NA
9	11	NA	NA	10	NA	NA
8	10	NA	NA	8	NA	NA
7	13	NA	NA	13	NA	NA
6	18	NA	NA	13	NA	NA
5	23	NA	NA	13	NA	NA
4	50	NA	NA	41	NA	NA

Table 8.D.23 Total Number of Items Answered by Student Achievement Level—Mathematics, Grades Seven and Eight

Total Number Answered	Grade Seven Level 1—Alternate	Grade Seven Level 2—Alternate	Grade Seven Level 3—Alternate	Grade Eight Level 1—Alternate	Grade Eight Level 2—Alternate	Grade Eight Level 3—Alternate
28	1,491	1,074	357	1,371	1,165	336
27	287	112	37	389	163	39
26	114	31	4	155	40	5
25	86	16	1	69	17	1
24	56	4	1	51	5	NA
23	36	NA	1	40	5	2
22	28	1	NA	25	8	NA
21	21	NA	NA	17	4	NA
20	20	1	NA	20	NA	NA
19	14	NA	NA	15	NA	NA
18	16	1	NA	13	2	NA
17	14	NA	NA	17	NA	NA
16	11	NA	NA	13	NA	NA
15	5	NA	NA	6	NA	NA
14	20	1	NA	5	NA	NA
13	133	NA	NA	40	NA	NA
12	45	NA	NA	22	NA	NA
11	31	NA	NA	11	NA	NA
10	20	NA	NA	16	NA	NA
9	27	NA	NA	13	NA	NA
8	16	NA	NA	24	NA	NA
7	22	NA	NA	34	NA	NA
6	19	NA	NA	18	NA	NA
5	18	NA	NA	23	NA	NA
4	49	NA	NA	49	NA	NA

Table 8.D.24 Total Number of Items Answered by Student Achievement Level—Mathematics, Grade Eleven

Total Number Answered	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate
28	1,262	1,095	241
27	284	133	15
26	113	29	2
25	69	9	NA
24	38	6	1
23	37	2	NA
22	27	2	1
21	20	NA	NA
20	19	2	NA
19	11	NA	NA
18	13	NA	NA
17	12	NA	NA
16	3	NA	NA
15	8	NA	NA
14	7	NA	NA
13	97	NA	NA
12	26	NA	NA
11	25	NA	NA
10	19	NA	NA
9	15	NA	NA
8	11	NA	NA
7	13	NA	NA
6	15	NA	NA
5	21	NA	NA
4	39	NA	NA

Appendix 8.E: Differential Item Functioning (DIF) Analysis

Note: The sample size requirements for the differential item functioning (DIF) analyses were 100 in the smaller of either the focal group or the reference group; and 400 in the combined focal and reference groups. The following focal groups did not meet the required sample size for inclusion in the DIF analyses:

- American Indian or Alaska Native
- Native Hawaiian or Other Pacific Islander
- Deaf-Blindness
- Emotional Disturbance
- Traumatic Brain Injury
- Hearing Impairment
- Visual Impairment

Table 8.E.1 DIF for ELA, Grade Three

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
A+	20	47%	15	35%	14	33%	NA	NA	19	44%	5	12%
A-	21	49%	13	30%	14	33%	NA	NA	23	53%	6	14%
B-	2	5%	NA	NA	NA	NA	NA	NA	NA	NA	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	35%	15	35%	43	100%	NA	NA	31	72%
Operational Items Total	**43**	**101%**	**43**	**100%**	**43**	**101%**	**43**	**100%**	**43**	**99%**	**43**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
A+	5	33%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
A-	9	60%	NA	NA	NA	NA	NA	NA	5	33%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.2 DIF for ELA, Grade Three (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	4	9%	NA	NA	1	2%	NA	NA	2	5%	NA	NA
A+	21	49%	7	16%	7	16%	9	21%	13	30%	12	28%
A-	16	37%	4	9%	4	9%	11	26%	14	33%	7	16%
B-	1	2%	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	1	2%
NA	NA	NA	31	72%	31	72%	23	53%	13	30%	23	53%
Operational ItemsTotal	**43**	**99%**	**43**	**99%**	**43**	**99%**	**43**	**100%**	**43**	**100%**	**43**	**99%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	5	33%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A-	7	47%	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
B-	2	13%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.3 DIF for ELA, Grade Four

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
A+	23	48%	10	21%	13	27%	NA	NA	21	44%	4	8%
A-	24	50%	16	33%	12	25%	NA	NA	27	56%	7	15%
B-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	21	44%	23	48%	48	100%	NA	NA	37	77%
Operational Items Total	**48**	**100%**	**48**	**100%**	**48**	**100%**	**48**	**100%**	**48**	**100%**	**48**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	8	53%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
A-	7	47%	NA	NA	NA	NA	NA	NA	6	40%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.4 DIF for ELA, Grade Four (Continued)

DIF Category	Intellectual Disability– Autism N	Intellectual Disability– Autism Pct	Intellectual Disability– Multiple Disabilities N	Intellectual Disability- Multiple Disabilities Pct	Intellectual Disability- Orthopedic Impairment N	Intellectual Disability- Orthopedic Impairment Pct	Intellectual Disability- Other N	Intellectual Disability- Other Pct	Intellectual Disability- Specific Learning N	Intellectual Disability- Specific Learning Pct	Intellectual Disability- Speech or Language N	Intellectual Disability- Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	4	8%	NA	NA	NA	NA	NA	NA	7	15%	2	4%
A+	20	42%	5	10%	4	8%	18	38%	14	29%	11	23%
A-	20	42%	8	17%	7	15%	10	21%	13	27%	2	4%
B-	1	2%	1	2%	NA	NA	NA	NA	4	8%	1	2%
C-	2	4%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	34	71%	37	77%	20	42%	9	19%	32	67%
Operational ItemsTotal	**48**	**100%**	**48**	**100%**	**48**	**100%**	**48**	**101%**	**48**	**100%**	**48**	**100%**
C+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	6	40%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.5 DIF for ELA, Grade Five

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	1	2%	1	2%	NA	NA
A+	26	53%	14	29%	14	29%	3	6%	26	53%	6	12%
A-	23	47%	23	47%	22	45%	6	12%	21	43%	4	8%
B-	NA	NA	NA	NA	1	2%	NA	NA	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	12	24%	12	24%	39	80%	NA	NA	39	80%
Operational ItemsTotal	**49**	**100%**	**49**	**100%**	**49**	**100%**	**49**	**100%**	**49**	**100%**	**49**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	60%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.6 DIF for ELA, Grade Five (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	5	10%	1	2%
B+	1	2%	NA	NA	NA	NA	1	2%	3	6%	1	2%
A+	20	41%	10	20%	9	18%	13	27%	13	27%	7	14%
A-	26	53%	3	6%	4	8%	10	20%	13	27%	7	14%
B-	2	4%	NA	NA	NA	NA	NA	NA	3	6%	NA	NA
C-	NA	NA	NA	NA	NA	NA	1	2%	NA	NA	NA	NA
NA	NA	NA	36	73%	36	73%	24	49%	12	24%	33	67%
Operational ItemsTotal	**49**	**100%**	**49**	**99%**	**49**	**99%**	**49**	**100%**	**49**	**100%**	**49**	**99%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	53%	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
A-	5	33%	NA	NA	NA	NA	NA	NA	3	20%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	9	60%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.7 DIF for ELA, Grade Six

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	1	2%	NA	NA	1	2%	NA	NA
A+	30	60%	16	32%	14	28%	7	14%	24	48%	5	10%
A-	20	40%	18	36%	10	20%	2	4%	25	50%	5	10%
B-	NA	NA	1	2%	1	2%	1	2%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	14	28%	24	48%	40	80%	NA	NA	40	80%
Operational ItemsTotal	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	4	27%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
A-	10	67%	NA	NA	NA	NA	NA	NA	8	53%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.8 DIF for ELA, Grade Six (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
B+	NA	NA	NA	NA	1	2%	1	2%	3	6%	1	2%
A+	26	52%	1	2%	3	6%	11	22%	18	36%	9	18%
A-	20	40%	8	16%	7	14%	13	26%	9	18%	3	6%
B-	4	8%	1	2%	2	4%	NA	NA	2	4%	1	2%
C-	NA	NA	NA	NA	1	2%	NA	NA	2	4%	NA	NA
NA	NA	NA	40	80%	36	72%	25	50%	14	28%	36	72%
Operational ItemsTotal	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**	**50**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	2	13%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	12	80%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	1	7%	NA	NA	NA	NA	NA	NA	3	20%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.9 DIF for ELA, Grade Seven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	1	2%	NA	NA	NA	NA	1	2%	NA	NA
A+	27	49%	18	33%	23	42%	6	11%	19	35%	NA	NA
A-	28	51%	21	38%	17	31%	4	7%	35	64%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	27%	15	27%	45	82%	NA	NA	55	100%
Operational ItemsTotal	**55**	**100%**	**55**	**100%**	**55**	**100%**	**55**	**100%**	**55**	**101%**	**55**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	9	64%	NA	NA	NA	NA	NA	NA	6	43%	NA	NA
A-	4	29%	NA	NA	NA	NA	NA	NA	6	43%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	14	100%	14	100%	14	100%	NA	NA	14	100%
Embedded Field-test Items Total	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**

Table 8.E.10 DIF for ELA, Grade Seven (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	NA	NA	NA	NA	1	2%	3	5%	1	2%
A+	18	33%	5	9%	7	13%	9	16%	8	15%	2	4%
A-	20	36%	5	9%	3	5%	15	27%	13	24%	6	11%
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	1	2%
C-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	15	27%	45	82%	45	82%	30	55%	30	55%	45	82%
Operational ItemsTotal	**55**	**100%**	**55**	**100%**	**55**	**100%**	**55**	**100%**	**55**	**101%**	**55**	**101%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	7	50%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	14	100%	14	100%	14	100%	14	100%	14	100%
Embedded Field-test Items Total	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**	**14**	**100%**

Table 8.E.11 DIF for ELA, Grade Eight

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	2	4%	NA	NA	NA	NA	NA	NA	NA	NA
A+	19	41%	14	30%	13	28%	8	17%	21	46%	7	15%
A-	16	35%	18	39%	14	30%	7	15%	14	30%	7	15%
B-	NA	NA	1	2%	1	2%	NA	NA	NA	NA	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	11	24%	11	24%	18	39%	31	67%	11	24%	31	67%
Operational ItemsTotal	**46**	**100%**	**46**	**99%**	**46**	**99%**	**46**	**99%**	**46**	**100%**	**46**	**99%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	53%	NA	NA	NA	NA	NA	NA	9	60%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	6	40%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.12 DIF for ELA, Grade Eight (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
B+	NA	NA	NA	NA	NA	NA	2	4%	1	2%	NA	NA
A+	18	39%	9	20%	9	20%	13	28%	18	39%	NA	NA
A-	16	35%	6	13%	7	15%	12	26%	7	15%	NA	NA
B-	1	2%	NA	NA	NA	NA	NA	NA	6	13%	NA	NA
C-	NA	NA	NA	NA	NA	NA	1	2%	2	4%	NA	NA
NA	11	24%	31	67%	30	65%	18	39%	11	24%	46	100%
Operational ItemsTotal	**46**	**100%**	**46**	**100%**	**46**	**100%**	**46**	**99%**	**46**	**99%**	**46**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A-	7	47%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.13 DIF for ELA, Grade Eleven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	1	2%	NA	NA	1	2%	NA	NA	NA	NA
A+	16	33%	10	20%	13	27%	6	12%	19	39%	NA	NA
A-	19	39%	14	29%	8	16%	7	14%	16	33%	NA	NA
B-	NA	NA	NA	NA	3	6%	1	2%	NA	NA	NA	NA
C-	NA	NA	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
NA	14	29%	24	49%	24	49%	34	69%	14	29%	49	100%
Operational ItemsTotal	**49**	**101%**	**49**	**100%**	**49**	**100%**	**49**	**99%**	**49**	**101%**	**49**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	4	27%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	9	60%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.14 DIF for ELA, Grade Eleven (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	1	2%	1	2%	NA	NA
B+	NA	NA	NA	NA	1	2%	2	4%	3	6%	NA	NA
A+	17	35%	6	12%	6	12%	11	22%	9	18%	NA	NA
A-	17	35%	9	18%	9	18%	10	20%	11	22%	NA	NA
B-	1	2%	NA	NA	NA	NA	1	2%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
NA	14	29%	34	69%	33	67%	24	49%	24	49%	49	100%
Operational ItemsTotal	**49**	**101%**	**49**	**99%**	**49**	**99%**	**49**	**99%**	**49**	**99%**	**49**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	2	13%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	8	53%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	4	27%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	15	100%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.15 DIF for Mathematics, Grade Three

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	26	49%	15	28%	13	25%	NA	NA	27	51%	5	9%
A-	27	51%	9	17%	11	21%	NA	NA	25	47%	5	9%
B-	NA	NA	1	2%	1	2%	NA	NA	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	28	53%	28	53%	53	100%	NA	NA	43	81%
Operational ItemsTotal	**53**	**100%**	**53**	**100%**	**53**	**101%**	**53**	**100%**	**53**	**100%**	**53**	**99%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	8	53%	NA	NA	NA	NA	NA	NA	6	40%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	8	53%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.16 DIF for Mathematics, Grade Three (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	4	8%	NA	NA
B+	3	6%	NA	NA	NA	NA	3	6%	3	6%	1	2%
A+	25	47%	6	11%	7	13%	12	23%	12	23%	4	8%
A-	22	42%	4	8%	3	6%	7	13%	16	30%	6	11%
B-	2	4%	NA	NA	NA	NA	2	4%	1	2%	1	2%
C-	1	2%	NA	NA	NA	NA	1	2%	3	6%	NA	NA
NA	NA	NA	43	81%	43	81%	28	53%	14	26%	41	77%
Operational ItemsTotal	**53**	**101%**	**53**	**100%**	**53**	**100%**	**53**	**101%**	**53**	**101%**	**53**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	60%	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
A-	5	33%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.17 DIF for Mathematics, Grade Four

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	3	6%	NA	NA	1	2%	NA	NA	1	2%	NA	NA
A+	25	47%	20	38%	20	38%	NA	NA	21	40%	8	15%
A-	23	43%	17	32%	16	30%	NA	NA	31	58%	1	2%
B-	2	4%	1	2%	1	2%	NA	NA	NA	NA	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	28%	15	28%	53	100%	NA	NA	43	81%
Operational ItemsTotal	**53**	**100%**	**53**	**100%**	**53**	**100%**	**53**	**100%**	**53**	**100%**	**53**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
A-	8	53%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.18 DIF for Mathematics, Grade Four (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	2	4%	NA	NA	NA	NA	1	2%	5	9%	NA	NA
B+	1	2%	1	2%	NA	NA	3	6%	2	4%	2	4%
A+	21	40%	5	9%	5	9%	9	17%	5	9%	1	2%
A-	12	23%	6	11%	6	11%	11	21%	9	17%	9	17%
B-	2	4%	NA	NA	1	2%	NA	NA	3	6%	NA	NA
C-	NA	NA	NA	NA	NA	NA	1	2%	1	2%	NA	NA
NA	15	28%	41	77%	41	77%	28	53%	28	53%	41	77%
Operational ItemsTotal	**53**	**101%**	**53**	**99%**	**53**	**99%**	**53**	**101%**	**53**	**100%**	**53**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	5	33%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	3	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	2	13%	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.19 DIF for Mathematics, Grade Five

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	2	4%	2	4%	NA	NA	NA	NA	NA	NA
A+	27	50%	16	30%	17	31%	5	9%	29	54%	6	11%
A-	26	48%	22	41%	21	39%	5	9%	25	46%	4	7%
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	14	26%	14	26%	44	81%	NA	NA	44	81%
Operational ItemsTotal	**54**	**100%**	**54**	**101%**	**54**	**100%**	**54**	**99%**	**54**	**100%**	**54**	**99%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	9	60%	NA	NA	NA	NA	NA	NA	8	53%	NA	NA
A-	6	40%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.20 DIF for Mathematics, Grade Five (Continued)

DIF Category	Intellectual Disability-Autism N	Intellectual Disability-Autism Pct	Intellectual Disability-Multiple Disabilities N	Intellectual Disability-Multiple Disabilities Pct	Intellectual Disability-Orthopedic Impairment N	Intellectual Disability-Orthopedic Impairment Pct	Intellectual Disability-Other N	Intellectual Disability-Other Pct	Intellectual Disability-Specific Learning N	Intellectual Disability-Specific Learning Pct	Intellectual Disability-Speech or Language N	Intellectual Disability-Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	5	9%	NA	NA
B+	1	2%	NA	NA	NA	NA	3	6%	5	9%	4	7%
A+	27	50%	6	11%	7	13%	4	7%	16	30%	2	4%
A-	23	43%	4	7%	3	6%	4	7%	17	31%	3	6%
B-	2	4%	NA	NA	NA	NA	NA	NA	7	13%	1	2%
C-	1	2%	NA	NA	NA	NA	NA	NA	4	7%	1	2%
NA	NA	NA	44	81%	44	81%	43	80%	NA	NA	43	80%
Operational ItemsTotal	**54**	**101%**	**54**	**99%**	**54**	**100%**	**54**	**100%**	**54**	**99%**	**54**	**101%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	10	67%	NA	NA	NA	NA	NA	NA	4	27%	NA	NA
A-	4	27%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	9	60%	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.21 DIF for Mathematics, Grade Six

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	1	2%	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	1	2%	1	2%	NA	NA	NA	NA
A+	24	46%	18	35%	18	35%	4	8%	26	50%	6	12%
A-	27	52%	19	37%	18	35%	4	8%	26	50%	4	8%
B-	1	2%	NA	NA	1	2%	1	2%	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	14	27%	14	27%	42	81%	NA	NA	42	81%
Operational ItemsTotal	**52**	**100%**	**52**	**101%**	**52**	**101%**	**52**	**101%**	**52**	**100%**	**52**	**101%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	6	40%	NA	NA	NA	NA	NA	NA	9	60%	NA	NA
A-	9	60%	NA	NA	NA	NA	NA	NA	5	33%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.22 DIF for Mathematics, Grade Six (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	4	8%	1	2%
B+	2	4%	1	2%	NA	NA	1	2%	4	8%	1	2%
A+	23	44%	6	12%	9	17%	12	23%	8	15%	6	12%
A-	25	48%	3	6%	3	6%	12	23%	13	25%	1	2%
B-	2	4%	NA	NA	NA	NA	NA	NA	4	8%	1	2%
C-	NA	NA	NA	NA	NA	NA	NA	NA	5	10%	2	4%
NA	NA	NA	42	81%	40	77%	27	52%	14	27%	40	77%
Operational ItemsTotal	**52**	**100%**	**52**	**101%**	**52**	**100%**	**52**	**100%**	**52**	**101%**	**52**	**101%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
B+	2	13%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
A-	5	33%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.23 DIF for Mathematics, Grade Seven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	1	2%	1	2%	NA	NA
B+	1	2%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	22	42%	11	21%	10	19%	4	8%	23	43%	NA	NA
A-	29	55%	14	26%	14	26%	5	9%	29	55%	NA	NA
B-	1	2%	NA	NA	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	28	53%	28	53%	43	81%	NA	NA	53	100%
Operational ItemsTotal	**53**	**101%**	**53**	**100%**	**53**	**100%**	**53**	**100%**	**53**	**100%**	**53**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	10	67%	NA	NA
A-	7	47%	NA	NA	NA	NA	NA	NA	4	27%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**101%**	**15**	**100%**

Table 8.E.24 DIF for Mathematics, Grade Seven (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
B+	2	4%	NA	NA	NA	NA	1	2%	2	4%	2	4%
A+	28	53%	6	11%	7	13%	13	25%	19	36%	1	2%
A-	21	40%	3	6%	3	6%	10	19%	9	17%	7	13%
B-	2	4%	1	2%	NA	NA	1	2%	5	9%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
NA	NA	NA	43	81%	43	81%	28	53%	15	28%	43	81%
Operational ItemsTotal	**53**	**101%**	**53**	**100%**	**53**	**100%**	**53**	**101%**	**53**	**100%**	**53**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	3	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	11	73%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	15	100%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.25 DIF for Mathematics, Grade Eight

DIF Category	Male-Female N	Male–Female Pct	White–African Amer N	White–African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	1	2%	NA	NA	1	2%	NA	NA
A+	27	52%	13	25%	13	25%	4	8%	20	38%	4	8%
A-	25	48%	11	21%	12	23%	6	12%	30	58%	5	10%
B-	NA	NA	2	4%	NA	NA	1	2%	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	2%
NA	NA	NA	26	50%	26	50%	41	79%	NA	NA	42	81%
Operational ItemsTotal	**52**	**100%**	**52**	**100%**	**52**	**100%**	**52**	**101%**	**52**	**100%**	**52**	**101%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	4	27%	NA	NA	NA	NA	NA	NA	8	53%	NA	NA
A-	10	67%	NA	NA	NA	NA	NA	NA	7	47%	NA	NA
B-	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**101%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.26 DIF for Mathematics, Grade Eight (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	1	2%	NA	NA	NA	NA	NA	NA	3	6%	NA	NA
B+	1	2%	NA	NA	1	2%	NA	NA	2	4%	NA	NA
A+	27	52%	4	8%	4	8%	17	33%	13	25%	NA	NA
A-	21	40%	6	12%	6	12%	9	17%	15	29%	NA	NA
B-	2	4%	1	2%	NA	NA	NA	NA	5	10%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
NA	NA	NA	41	79%	41	79%	26	50%	13	25%	52	100%
Operational ItemsTotal	**52**	**100%**	**52**	**101%**	**52**	**101%**	**52**	**100%**	**52**	**101%**	**52**	**100%**
C+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	6	40%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	8	53%	NA	NA	NA	NA	NA	NA	3	20%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	12	80%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.27 DIF for Mathematics, Grade Eleven

DIF Category	Male–Female N	Male–Female Pct	White–African Amer N	White-African Amer Pct	White–Asian N	White–Asian Pct	White–Filipino N	White–Filipino Pct	White–Hispanic N	White–Hispanic Pct	White–Two or More N	White–Two or More Pct
C+	NA	NA	NA	NA	NA	NA	1	2%	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	1	2%	NA	NA
A+	28	54%	12	23%	4	8%	4	8%	24	46%	NA	NA
A-	24	46%	13	25%	8	15%	5	10%	27	52%	NA	NA
B-	NA	NA	1	2%	1	2%	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	26	50%	39	75%	42	81%	NA	NA	52	100%
Operational ItemsTotal	**52**	**100%**	**52**	**100%**	**52**	**100%**	**52**	**101%**	**52**	**100%**	**52**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	7	47%	NA	NA	NA	NA	NA	NA	9	60%	NA	NA
A-	8	53%	NA	NA	NA	NA	NA	NA	5	33%	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	1	7%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	NA	NA	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Table 8.E.28 DIF for Mathematics, Grade Eleven (Continued)

DIF Category	Intellectual Disability–Autism N	Intellectual Disability–Autism Pct	Intellectual Disability–Multiple Disabilities N	Intellectual Disability–Multiple Disabilities Pct	Intellectual Disability–Orthopedic Impairment N	Intellectual Disability–Orthopedic Impairment Pct	Intellectual Disability–Other N	Intellectual Disability–Other Pct	Intellectual Disability–Specific Learning N	Intellectual Disability–Specific Learning Pct	Intellectual Disability–Speech or Language N	Intellectual Disability–Speech or Language Pct
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	2%	1	2%	1	2%	1	2%	4	8%	NA	NA
A+	25	48%	2	4%	6	12%	5	10%	12	23%	NA	NA
A-	21	40%	7	13%	3	6%	6	12%	7	13%	NA	NA
B-	5	10%	NA	NA	1	2%	NA	NA	1	2%	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	2	4%	NA	NA
NA	NA	NA	42	81%	41	79%	40	77%	26	50%	52	100%
Operational ItemsTotal	**52**	**100%**	**52**	**100%**	**52**	**101%**	**52**	**101%**	**52**	**100%**	**52**	**100%**
C+	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B+	1	7%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A+	11	73%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
A-	3	20%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
C-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	15	100%	15	100%	15	100%	15	100%	15	100%
Embedded Field-test Items Total	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**	**15**	**100%**

Appendix 8.F: Reliability Estimates

Notes:

- The reliabilities are reported only for samples that comprise 11 or more examinees.
- In some cases in Appendix 8.F, score reliabilities were not estimable and are presented in the tables as “NA.”
- Results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes.

Table 8.F.1 Reliabilities and Standard Errors of Measurement (SEMs) by Gender

Content Area/Grade	Male N	Male Reliability	Male Theta Score SEM	Female N	Female Reliability	Female Theta Score SEM
ELA 3	2,845	0.89	0.51	1,332	0.87	0.54
ELA 4	3,090	0.87	0.48	1,439	0.87	0.47
ELA 5	3,164	0.88	0.42	1,456	0.89	0.41
ELA 6	3,116	0.86	0.41	1,450	0.85	0.40
ELA 7	2,974	0.89	0.42	1,430	0.89	0.43
ELA 8	2,942	0.87	0.38	1,424	0.87	0.39
ELA 11	2,446	0.85	0.41	1,347	0.85	0.41
Mathematics 3	2,785	0.81	0.44	1,285	0.81	0.45
Mathematics 4	2,979	0.84	0.41	1,385	0.84	0.41
Mathematics 5	3,096	0.84	0.42	1,426	0.83	0.42
Mathematics 6	2,931	0.74	0.43	1,382	0.71	0.45
Mathematics 7	2,876	0.85	0.42	1,365	0.84	0.41
Mathematics 8	2,856	0.81	0.40	1,393	0.81	0.39
Mathematics 11	2,422	0.80	0.42	1,320	0.78	0.46

Table 8.F.2 Reliabilities and SEMs by Ethnicity

Content Area/Grade	American Indian or Alaska Native N	American Indian or Alaska Native Reliability	American Indian or Alaska Native Theta Score SEM	Asian N	Asian Reliability	Asian Theta Score SEM	Native Hawaiian or Other Pacific Islander N	Native Hawaiian or Other Pacific Islander Reliability	Native Hawaiian or Other Pacific Islander Theta Score SEM
ELA 3	24	0.86	0.47	319	0.90	0.43	21	0.92	0.44
ELA 4	35	0.67	0.72	336	0.88	0.43	18	0.89	0.42
ELA 5	28	0.78	0.73	338	0.88	0.41	25	0.89	0.43
ELA 6	26	0.86	0.40	315	0.87	0.42	20	0.87	0.42
ELA 7	29	0.90	0.53	339	0.88	0.41	12	0.92	0.42
ELA 8	37	0.86	0.38	321	0.89	0.40	18	0.78	0.37
ELA 11	33	0.87	0.40	265	0.85	0.40	27	0.86	0.40
Mathematics 3	23	0.72	0.35	304	0.79	0.54	18	0.64	0.34
Mathematics 4	35	0.68	0.36	317	0.85	0.42	17	0.90	0.43
Mathematics 5	28	0.68	0.33	328	0.81	0.47	23	0.79	0.35
Mathematics 6	26	0.65	0.33	296	0.72	0.57	17	0.66	0.34
Mathematics 7	28	0.89	0.36	326	0.87	0.37	12	0.88	0.35
Mathematics 8	35	0.87	0.36	317	0.86	0.36	18	0.75	0.34
Mathematics 11	31	0.81	0.36	266	0.84	0.38	24	0.44	0.33

Table 8.F.3 Reliabilities and SEMS by Ethnicity (Continued)

Content Area/Grade	Filipino N	Filipino Reliability	Filipino Theta Score SEM	Hispanic or Latino N	Hispanic or Latino Reliability	Hispanic or Latino Theta Score SEM	Black or African American N	Black or African American Reliability	Black or African American Theta Score SEM
ELA 3	91	0.90	0.41	2,446	0.87	0.54	304	0.89	0.52
ELA 4	91	0.87	0.40	2,711	0.87	0.50	345	0.89	0.42
ELA 5	120	0.87	0.40	2,762	0.88	0.42	359	0.89	0.41
ELA 6	124	0.82	0.43	2,653	0.85	0.40	404	0.86	0.40
ELA 7	128	0.89	0.53	2,544	0.89	0.42	345	0.89	0.42
ELA 8	149	0.88	0.38	2,398	0.86	0.38	369	0.87	0.38
ELA 11	122	0.86	0.41	2,063	0.85	0.41	339	0.86	0.41
Mathematics 3	87	0.83	0.38	2,395	0.82	0.43	296	0.79	0.48
Mathematics 4	84	0.79	0.37	2,623	0.84	0.41	330	0.86	0.42
Mathematics 5	117	0.82	0.36	2,721	0.84	0.43	349	0.83	0.46
Mathematics 6	114	0.74	0.37	2,510	0.74	0.44	377	0.69	0.47
Mathematics 7	122	0.87	0.35	2,457	0.84	0.41	330	0.83	0.47
Mathematics 8	138	0.81	0.36	2,341	0.81	0.40	356	0.84	0.36
Mathematics 11	115	0.80	0.35	2,043	0.78	0.46	330	0.84	0.38

Table 8.F.4 Reliabilities and SEMS by Ethnicity (Continued)

Content Area/Grade	White N	White Reliability	White Theta Score SEM	Two or More Races N	Two or More Races Reliability	Two or More Races Theta Score SEM
ELA 3	795	0.90	0.50	177	0.91	0.53
ELA 4	835	0.88	0.46	158	0.88	0.44
ELA 5	834	0.88	0.41	154	0.90	0.42
ELA 6	871	0.86	0.43	153	0.86	0.39
ELA 7	887	0.89	0.42	120	0.89	0.44
ELA 8	923	0.88	0.40	151	0.87	0.38
ELA 11	849	0.86	0.41	95	0.83	0.39
Mathematics 3	771	0.82	0.42	176	0.78	0.53
Mathematics 4	808	0.85	0.38	150	0.85	0.39
Mathematics 5	810	0.85	0.37	146	0.87	0.37
Mathematics 6	828	0.75	0.42	145	0.76	0.35
Mathematics 7	852	0.84	0.43	114	0.82	0.50
Mathematics 8	904	0.80	0.43	140	0.85	0.38
Mathematics 11	836	0.81	0.41	97	0.79	0.52

Table 8.F.5 Reliabilities and SEMs by English Proficiency

Content Area/Grade	English Only N	English Only Reliability	English Only Theta Score SEM	Initially Fluent English Proficient N	Initially Fluent English Proficient Reliability	Initially Fluent English Proficient Theta Score SEM
ELA 3	2,489	0.88	0.54	39	0.89	0.41
ELA 4	2,594	0.87	0.48	29	0.89	0.40
ELA 5	2,612	0.88	0.42	40	0.88	0.40
ELA 6	2,605	0.86	0.42	66	0.86	0.39
ELA 7	2,537	0.89	0.43	61	0.88	0.44
ELA 8	2,569	0.87	0.39	65	0.87	0.38
ELA 11	2,225	0.86	0.41	58	0.89	0.42
Mathematics 3	2,427	0.81	0.44	40	0.85	0.44
Mathematics 4	2,491	0.85	0.40	28	0.83	0.61
Mathematics 5	2,544	0.84	0.42	42	0.86	0.42
Mathematics 6	2,445	0.74	0.42	61	0.80	0.39
Mathematics 7	2,435	0.83	0.44	61	0.86	0.37
Mathematics 8	2,485	0.80	0.42	62	0.84	0.36
Mathematics 11	2,181	0.80	0.41	59	0.71	0.86

Table 8.F.6 Reliabilities and SEMs by English Proficiency (Continued)

Content Area/Grade	English Learner N	English Learner Reliability	English Learner Theta Score SEM	Redesignated Fluent English Proficient N	Redesignated Fluent English Proficient Reliability	Redesignated Fluent English Proficient Theta Score SEM
ELA 3	1,524	0.89	0.50	118	0.91	0.45
ELA 4	1,709	0.87	0.48	191	0.88	0.51
ELA 5	1,726	0.88	0.41	237	0.87	0.40
ELA 6	1,642	0.86	0.39	249	0.84	0.44
ELA 7	1,492	0.89	0.42	307	0.89	0.40
ELA 8	1,394	0.86	0.38	333	0.88	0.40
ELA 11	1,125	0.84	0.41	381	0.84	0.42
Mathematics 3	1,477	0.81	0.45	119	0.83	0.39
Mathematics 4	1,653	0.84	0.41	186	0.86	0.39
Mathematics 5	1,696	0.83	0.43	233	0.85	0.38
Mathematics 6	1,562	0.72	0.47	242	0.74	0.45
Mathematics 7	1,444	0.86	0.39	295	0.88	0.37
Mathematics 8	1,375	0.83	0.36	321	0.84	0.39
Mathematics 11	1,118	0.78	0.46	379	0.82	0.37

Table 8.F.7 Reliabilities and SEMs by English Proficiency (Continued)

Content Area/Grade	To Be Determined N	To Be Determined Reliability	To Be Determined Theta Score SEM	English Proficiency Unknown N	English Proficiency Unknown Reliability	English Proficiency Unknown Theta Score SEM
ELA 3	3	NA	NA	4	NA	NA
ELA 4	2	NA	NA	4	NA	NA
ELA 5	2	NA	NA	3	NA	NA
ELA 6	1	NA	NA	3	NA	NA
ELA 7	4	NA	NA	3	NA	NA
ELA 8	0	NA	NA	5	NA	NA
ELA 11	0	NA	NA	4	NA	NA
Mathematics 3	2	NA	NA	5	NA	NA
Mathematics 4	2	NA	NA	4	NA	NA
Mathematics 5	3	NA	NA	4	NA	NA
Mathematics 6	0	NA	NA	3	NA	NA
Mathematics 7	3	NA	NA	3	NA	NA
Mathematics 8	1	NA	NA	5	NA	NA
Mathematics 11	0	NA	NA	5	NA	NA

Table 8.F.8 Reliabilities and SEMs by Economic Status

Content Area/Grade	Not Economically Disadvantaged N	Not Economically Disadvantaged Reliability	Not Economically Disadvantaged Theta Score SEM	Economically Disadvantaged N	Economically Disadvantaged Reliability	Economically Disadvantaged Theta Score SEM
ELA 3	1,357	0.90	0.50	2,820	0.87	0.54
ELA 4	1,449	0.88	0.45	3,080	0.86	0.50
ELA 5	1,443	0.89	0.42	3,177	0.88	0.42
ELA 6	1,535	0.87	0.41	3,031	0.85	0.41
ELA 7	1,471	0.89	0.43	2,933	0.89	0.42
ELA 8	1,532	0.88	0.39	2,834	0.86	0.38
ELA 11	1,321	0.87	0.41	2,472	0.84	0.41
Mathematics 3	1,303	0.81	0.48	2,767	0.81	0.42
Mathematics 4	1,380	0.86	0.40	2,984	0.83	0.41
Mathematics 5	1,389	0.84	0.42	3,133	0.84	0.42
Mathematics 6	1,422	0.74	0.47	2,891	0.73	0.42
Mathematics 7	1,417	0.85	0.42	2,824	0.84	0.41
Mathematics 8	1,486	0.82	0.41	2,763	0.81	0.39
Mathematics 11	1,292	0.80	0.42	2,450	0.79	0.44

Table 8.F.9 Reliabilities and SEMs by Migrant Status

Content Area/Grade	Migrant N	Migrant Reliability	Migrant Theta Score SEM	Nonmigrant N	Nonmigrant Reliability	Nonmigrant Theta Score SEM
ELA 3	43	0.83	0.73	4,134	0.89	0.52
ELA 4	34	0.78	0.79	4,495	0.87	0.48
ELA 5	49	0.91	0.47	4,571	0.88	0.42
ELA 6	30	0.88	0.40	4,536	0.86	0.41
ELA 7	29	0.75	0.37	4,375	0.89	0.42
ELA 8	32	0.77	0.38	4,334	0.87	0.39
ELA 11	19	0.87	0.41	3,774	0.85	0.41
Mathematics 3	42	0.79	0.36	4,028	0.81	0.44
Mathematics 4	33	0.88	0.42	4,331	0.84	0.41
Mathematics 5	48	0.88	0.38	4,474	0.84	0.42
Mathematics 6	31	0.79	0.37	4,282	0.73	0.44
Mathematics 7	27	0.86	0.38	4,214	0.84	0.42
Mathematics 8	30	0.69	0.34	4,219	0.81	0.40
Mathematics 11	19	0.61	0.33	3,723	0.80	0.43

Table 8.F.10 Reliabilities and SEMs by Primary Disabilities

Content Area/Grade	Intellectual Disability N	Intellectual Disability Reliability	Intellectual Disability Theta Score SEM	Hearing Impairment N	Hearing Impairment Reliability	Hearing Impairment Theta Score SEM	Speech or Language Impairment N	Speech or Language Impairment Reliability	Speech or Language Impairment Theta Score SEM
ELA 3	1,397	0.89	0.45	40	0.89	0.44	210	0.76	0.69
ELA 4	1,545	0.87	0.44	43	0.85	0.40	195	0.83	0.42
ELA 5	1,681	0.88	0.40	45	0.80	0.38	154	0.82	0.41
ELA 6	1,765	0.85	0.38	47	0.81	0.36	135	0.73	0.38
ELA 7	1,799	0.88	0.41	47	0.84	0.39	111	0.88	0.43
ELA 8	1,786	0.86	0.38	48	0.79	0.36	95	0.80	0.39
ELA 11	1,679	0.84	0.40	56	0.85	0.41	43	0.76	0.41
Mathematics 3	1,337	0.81	0.44	40	0.74	0.35	212	0.78	0.47
Mathematics 4	1,481	0.82	0.39	43	0.78	0.36	191	0.77	0.36
Mathematics 5	1,638	0.83	0.46	46	0.76	0.36	154	0.81	0.35
Mathematics 6	1,655	0.69	0.46	46	0.79	0.36	135	0.77	0.35
Mathematics 7	1,714	0.82	0.43	49	0.73	0.33	112	0.87	0.36
Mathematics 8	1,739	0.79	0.41	49	0.85	0.36	95	0.76	0.35
Mathematics 11	1,646	0.77	0.45	57	0.86	0.40	41	0.71	0.35

Table 8.F.11 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area/Grade	Visual Impairment N	Visual Impairment Reliability	Visual Impairment Theta Score SEM	Emotional Disturbance N	Emotional Disturbance Reliability	Emotional Disturbance Theta Score SEM	Orthopedic Impairment N	Orthopedic Impairment Reliability	Orthopedic Impairment Theta Score SEM
ELA 3	13	0.93	0.44	28	0.80	0.82	136	0.88	0.56
ELA 4	16	0.92	0.44	32	0.79	0.47	156	0.91	0.47
ELA 5	19	0.92	0.41	31	0.86	0.45	151	0.92	0.47
ELA 6	14	0.84	0.36	39	0.83	0.39	166	0.85	0.42
ELA 7	13	0.89	0.40	25	0.80	0.38	151	0.91	0.45
ELA 8	23	0.92	0.44	30	0.78	0.39	141	0.89	0.39
ELA 11	22	0.86	0.42	30	0.82	0.43	183	0.89	0.42
Mathematics 3	11	0.88	0.45	27	0.72	0.76	135	0.85	0.40
Mathematics 4	15	0.87	0.40	32	0.82	0.37	141	0.89	0.43
Mathematics 5	18	0.88	0.36	33	0.89	0.40	144	0.81	0.52
Mathematics 6	11	0.23	0.33	39	0.78	0.35	152	0.83	0.42
Mathematics 7	12	0.86	0.36	26	0.81	0.33	139	0.82	0.60
Mathematics 8	24	0.90	0.45	30	0.79	0.34	126	0.84	0.38
Mathematics 11	21	0.84	0.37	31	0.66	0.33	186	0.74	0.63

Table 8.F.12 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area/Grade	Other Health Impairment N	Other Health Impairment Reliability	Other Health Impairment Theta Score SEM	Specific Learning Disability N	Specific Learning Disability Reliability	Specific Learning Disability Theta Score SEM	Deaf-Blindness N	Deaf-Blindness Reliability	Deaf-Blindness Theta Score SEM
ELA 3	262	0.86	0.56	353	0.64	0.74	0	NA	NA
ELA 4	278	0.85	0.56	452	0.63	0.64	0	NA	NA
ELA 5	243	0.85	0.42	522	0.74	0.49	2	NA	NA
ELA 6	257	0.80	0.45	438	0.63	0.44	1	NA	NA
ELA 7	256	0.88	0.47	382	0.85	0.42	1	NA	NA
ELA 8	214	0.83	0.38	356	0.76	0.40	2	NA	NA
ELA 11	185	0.75	0.42	298	0.75	0.43	0	NA	NA
Mathematics 3	255	0.81	0.37	357	0.72	0.36	0	NA	NA
Mathematics 4	273	0.81	0.41	448	0.73	0.45	0	NA	NA
Mathematics 5	243	0.81	0.39	521	0.79	0.41	2	NA	NA
Mathematics 6	246	0.78	0.36	440	0.76	0.37	1	NA	NA
Mathematics 7	251	0.86	0.35	376	0.84	0.37	1	NA	NA
Mathematics 8	214	0.81	0.35	355	0.76	0.38	2	NA	NA
Mathematics 11	185	0.78	0.35	292	0.70	0.35	0	NA	NA

Table 8.F.13 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area/Grade	Multiple Disabilities N	Multiple Disabilities Reliability	Multiple Disabilities Theta Score SEM	Autism N	Autism Reliability	Autism Theta Score SEM
ELA 3	125	0.91	0.42	1,598	0.90	0.49
ELA 4	156	0.86	0.53	1,633	0.87	0.46
ELA 5	147	0.88	0.39	1,596	0.88	0.41
ELA 6	138	0.88	0.46	1,549	0.86	0.42
ELA 7	128	0.89	0.47	1,464	0.89	0.42
ELA 8	164	0.92	0.43	1,486	0.87	0.39
ELA 11	122	0.84	0.39	1,144	0.86	0.41
Mathematics 3	123	0.78	0.62	1,556	0.81	0.45
Mathematics 4	142	0.87	0.45	1,576	0.85	0.41
Mathematics 5	140	0.82	0.47	1,554	0.84	0.39
Mathematics 6	116	0.65	0.67	1,456	0.74	0.44
Mathematics 7	116	0.86	0.38	1,420	0.85	0.41
Mathematics 8	150	0.82	0.49	1,443	0.81	0.39
Mathematics 11	114	0.79	0.51	1,138	0.82	0.40

Table 8.F.14 Reliabilities and SEMs by Primary Disabilities (Continued)

Content Area/Grade	Traumatic Brain Injury N	Traumatic Brain Injury Reliability	Traumatic Brain Injury Theta Score SEM	Not Classified N	Not Classified Reliability	Not Classified Theta Score SEM
ELA 3	14	0.88	0.46	1	NA	NA
ELA 4	20	0.86	0.39	3	NA	NA
ELA 5	25	0.90	0.42	4	NA	NA
ELA 6	14	0.77	0.36	3	NA	NA
ELA 7	19	0.91	0.43	8	NA	NA
ELA 8	20	0.77	0.38	1	NA	NA
ELA 11	26	0.81	0.42	5	NA	NA
Mathematics 3	15	0.85	0.38	2	NA	NA
Mathematics 4	20	0.39	0.35	2	NA	NA
Mathematics 5	24	0.88	0.41	5	NA	NA
Mathematics 6	14	0.75	0.37	2	NA	NA
Mathematics 7	18	0.91	0.43	7	NA	NA
Mathematics 8	21	0.86	0.37	1	NA	NA
Mathematics 11	26	0.84	0.39	5	NA	NA

Note: In Table 8.F.15 through Table 8.F.28, the pathway indicates the set of modules a given student received.

Pathway	Combination of Modules
Easy	Stage 1 (as router) and Stage 2 Easy Module
Moderate	Stage 1 (as router) and Stage 2 Moderate Module
Hard	Stage 1 (as router) and Stage 2 Hard Module

Table 8.F.15 Scale Score Conversion Tables with CSEMs for ELA, Grade Three

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.7755	303	27	-6.0000	1.9293	303	29	-6.0000	2.0214	303	30
1	-4.8239	1.0368	303	16	-4.6460	1.0413	303	16	-4.5424	1.0473	303	16
2	-4.0550	0.7583	303	11	-3.8685	0.7637	303	11	-3.7521	0.7721	303	12
3	-3.5745	0.6384	303	10	-3.3801	0.6443	303	10	-3.2505	0.6547	303	10
4	-3.2130	0.5682	303	9	-3.0111	0.5747	303	9	-2.8677	0.5868	305	9
5	-2.9176	0.5208	304	8	-2.7081	0.5280	307	8	-2.5506	0.5414	310	8
6	-2.6647	0.4860	308	7	-2.4476	0.4938	311	7	-2.2757	0.5082	314	8
7	-2.4417	0.4589	311	7	-2.2169	0.4673	315	7	-2.0307	0.4822	318	7
8	-2.2412	0.4372	314	7	-2.0085	0.4459	318	7	-1.8085	0.4608	321	7
9	-2.0578	0.4195	317	6	-1.8177	0.4279	321	6	-1.6046	0.4424	324	7
10	-1.8879	0.4050	320	6	-1.6411	0.4125	323	6	-1.4160	0.4262	327	6
11	-1.7287	0.3931	322	6	-1.4764	0.3991	326	6	-1.2404	0.4117	329	6
12	-1.5779	0.3834	324	6	-1.3217	0.3874	328	6	-1.0762	0.3988	332	6
13	-1.4340	0.3754	326	6	-1.1756	0.3771	330	6	-0.9216	0.3875	334	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
14	-1.2954	0.3689	329	6	-1.0367	0.3681	332	6	-0.7752	0.3776	336	6
15	-1.1613	0.3636	331	5	-0.9040	0.3605	334	5	-0.6357	0.3693	338	6
16	-1.0306	0.3593	333	5	-0.7763	0.3541	336	5	-0.5019	0.3624	340	5
17	-0.9027	0.3559	334	5	-0.6527	0.3490	338	5	-0.3724	0.3571	342	5
18	-0.7768	0.3535	336	5	-0.5321	0.3453	340	5	-0.2463	0.3531	344	5
19	-0.6524	0.3520	338	5	-0.4137	0.3429	342	5	-0.1226	0.3505	346	5
20	-0.5286	0.3516	340	5	-0.2965	0.3419	344	5	-0.0001	0.3493	348	5
21	-0.4047	0.3523	342	5	-0.1794	0.3424	345	5	0.1220	0.3495	350	5
22	-0.2798	0.3545	344	5	-0.0615	0.3444	347	5	0.2447	0.3510	352	5
23	-0.1529	0.3582	346	5	0.0583	0.3480	349	5	0.3689	0.3539	354	5
24	-0.0227	0.3636	348	5	0.1814	0.3536	351	5	0.4957	0.3582	355	5
25	0.1123	0.3711	350	6	0.3091	0.3612	353	5	0.6262	0.3641	357	5
26	0.2536	0.3810	352	6	0.4432	0.3713	355	6	0.7615	0.3717	359	6
27	0.4036	0.3937	354	6	0.5859	0.3845	357	6	0.9033	0.3812	362	6
28	0.5650	0.4100	356	6	0.7402	0.4013	359	6	1.0531	0.3930	364	6
29	0.7416	0.4309	359	6	0.9099	0.4231	362	6	1.2133	0.4078	366	6
30	0.9387	0.4578	362	7	1.1007	0.4514	365	7	1.3871	0.4265	369	6
31	1.1643	0.4933	365	7	1.3211	0.4889	368	7	1.5792	0.4508	372	7
32	1.4314	0.5424	369	8	1.5850	0.5407	372	8	1.7970	0.4837	375	7
33	1.7641	0.6154	374	9	1.9177	0.6169	377	9	2.0529	0.5303	379	8
34	2.2158	0.7392	381	11	2.3739	0.7442	384	11	2.3709	0.6018	384	9

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
35	2.9564	1.0233	392	15	3.1255	1.0305	395	15	2.8044	0.7258	390	11
36	6.0000	4.4814	399	67	6.0000	4.0864	399	61	3.5242	1.0127	399	15
37	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	3.4097	399	51

Table 8.F.16 Scale Score Conversion Tables with CSEMs for ELA, Grade Four

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.0787	403	31	-6.0000	2.2039	403	33	-6.0000	2.6520	403	40
1	-4.4988	1.0337	403	16	-4.3710	1.0398	403	16	-3.9894	1.0395	403	16
2	-3.7359	0.7546	403	11	-3.5957	0.7627	403	11	-3.2174	0.7588	403	11
3	-3.2607	0.6346	403	10	-3.1083	0.6437	403	10	-2.7384	0.6355	404	10
4	-2.9036	0.5646	403	8	-2.7400	0.5740	404	9	-2.3823	0.5619	409	8
5	-2.6118	0.5177	406	8	-2.4382	0.5265	408	8	-2.0954	0.5113	414	8
6	-2.3618	0.4833	410	7	-2.1799	0.4909	412	7	-1.8533	0.4738	417	7
7	-2.1413	0.4566	413	7	-1.9529	0.4626	416	7	-1.6428	0.4446	420	7
8	-1.9427	0.4350	416	7	-1.7496	0.4393	419	7	-1.4556	0.4211	423	6
9	-1.7612	0.4171	419	6	-1.5653	0.4195	422	6	-1.2863	0.4020	426	6
10	-1.5936	0.4019	421	6	-1.3963	0.4027	424	6	-1.1310	0.3863	428	6
11	-1.4373	0.3889	423	6	-1.2398	0.3884	426	6	-0.9868	0.3733	430	6
12	-1.2904	0.3777	426	6	-1.0936	0.3764	429	6	-0.8515	0.3626	432	5
13	-1.1513	0.3681	428	6	-0.9557	0.3664	431	5	-0.7232	0.3539	434	5
14	-1.0187	0.3600	430	5	-0.8244	0.3583	433	5	-0.6004	0.3469	436	5
15	-0.8915	0.3533	432	5	-0.6983	0.3519	435	5	-0.4819	0.3415	438	5
16	-0.7685	0.3480	433	5	-0.5761	0.3473	436	5	-0.3667	0.3374	439	5
17	-0.6488	0.3439	435	5	-0.4564	0.3444	438	5	-0.2537	0.3347	441	5
18	-0.5314	0.3412	437	5	-0.3383	0.3430	440	5	-0.1422	0.3331	443	5
19	-0.4155	0.3397	439	5	-0.2207	0.3431	442	5	-0.0314	0.3327	445	5
20	-0.3001	0.3396	440	5	-0.1024	0.3447	443	5	0.0796	0.3334	446	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1844	0.3409	442	5	0.0175	0.3479	445	5	0.1914	0.3353	448	5
22	-0.0673	0.3436	444	5	0.1403	0.3527	447	5	0.3049	0.3385	450	5
23	0.0523	0.3479	446	5	0.2670	0.3592	449	5	0.4211	0.3430	451	5
24	0.1754	0.3540	448	5	0.3991	0.3677	451	6	0.5408	0.3490	453	5
25	0.3035	0.3620	450	5	0.5381	0.3783	453	6	0.6653	0.3568	455	5
26	0.4383	0.3723	452	6	0.6862	0.3915	455	6	0.7962	0.3668	457	6
27	0.5818	0.3854	454	6	0.8458	0.4079	458	6	0.9354	0.3795	459	6
28	0.7367	0.4019	456	6	1.0206	0.4286	460	6	1.0855	0.3956	461	6
29	0.9066	0.4229	459	6	1.2155	0.4550	463	7	1.2501	0.4163	464	6
30	1.0966	0.4497	461	7	1.4382	0.4900	467	7	1.4344	0.4432	467	7
31	1.3146	0.4853	465	7	1.7016	0.5385	471	8	1.6466	0.4793	470	7
32	1.5735	0.5344	469	8	2.0296	0.6111	475	9	1.8999	0.5295	473	8
33	1.8971	0.6075	473	9	2.4755	0.7349	482	11	2.2188	0.6043	478	9
34	2.3388	0.7321	480	11	3.2093	1.0198	493	15	2.6577	0.7311	485	11
35	3.0684	1.0177	491	15	6.0000	3.9646	499	59	3.3876	1.0187	496	15
36	6.0000	4.2608	499	64	NA	NA	NA	NA	6.0000	3.6286	499	54

Table 8.F.17 Scale Score Conversion Tables with CSEMs for ELA, Grade Five

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.6352	503	25	-6.0000	2.0001	503	30	-6.0000	2.0991	503	31
1	-4.9985	1.0346	503	16	-4.5676	1.0444	503	16	-4.4618	1.0486	503	16
2	-4.2333	0.7565	503	11	-3.7830	0.7685	503	12	-3.6689	0.7735	503	12
3	-3.7546	0.6377	503	10	-3.2872	0.6499	503	10	-3.1662	0.6547	503	10
4	-3.3930	0.5691	503	9	-2.9114	0.5802	503	9	-2.7849	0.5841	503	9
5	-3.0957	0.5234	503	8	-2.6028	0.5325	506	8	-2.4728	0.5351	508	8
6	-2.8394	0.4902	503	7	-2.3384	0.4969	510	7	-2.2064	0.4980	512	7
7	-2.6118	0.4645	506	7	-2.1055	0.4688	513	7	-1.9732	0.4683	515	7
8	-2.4057	0.4437	509	7	-1.8964	0.4460	517	7	-1.7654	0.4438	519	7
9	-2.2164	0.4264	512	6	-1.7059	0.4271	519	6	-1.5774	0.4234	521	6
10	-2.0409	0.4116	514	6	-1.5302	0.4114	522	6	-1.4054	0.4063	524	6
11	-1.8767	0.3988	517	6	-1.3664	0.3983	525	6	-1.2460	0.3921	526	6
12	-1.7221	0.3876	519	6	-1.2120	0.3875	527	6	-1.0969	0.3804	529	6
13	-1.5755	0.3780	521	6	-1.0652	0.3786	529	6	-0.9558	0.3708	531	6
14	-1.4356	0.3698	523	6	-0.9245	0.3714	531	6	-0.8211	0.3632	533	5
15	-1.3014	0.3630	525	5	-0.7887	0.3657	533	5	-0.6912	0.3574	535	5
16	-1.1716	0.3574	527	5	-0.6566	0.3612	535	5	-0.5650	0.3533	537	5
17	-1.0454	0.3531	529	5	-0.5273	0.3577	537	5	-0.4411	0.3506	538	5
18	-0.9218	0.3500	531	5	-0.4002	0.3554	539	5	-0.3187	0.3492	540	5
19	-0.7999	0.3482	533	5	-0.2743	0.3540	541	5	-0.1967	0.3492	542	5
20	-0.6788	0.3477	535	5	-0.1491	0.3536	543	5	-0.0743	0.3504	544	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.5577	0.3484	537	5	-0.0238	0.3543	545	5	0.0494	0.3528	546	5
22	-0.4356	0.3504	538	5	0.1024	0.3563	547	5	0.1752	0.3564	548	5
23	-0.3117	0.3537	540	5	0.2306	0.3597	548	5	0.3039	0.3611	550	5
24	-0.1849	0.3584	542	5	0.3619	0.3649	550	5	0.4365	0.3670	552	6
25	-0.0542	0.3645	544	5	0.4976	0.3721	552	6	0.5738	0.3741	554	6
26	0.0814	0.3721	546	6	0.6396	0.3817	555	6	0.7170	0.3827	556	6
27	0.2234	0.3815	548	6	0.7901	0.3944	557	6	0.8675	0.3930	558	6
28	0.3733	0.3928	551	6	0.9521	0.4108	559	6	1.0268	0.4054	560	6
29	0.5330	0.4065	553	6	1.1294	0.4319	562	6	1.1973	0.4205	563	6
30	0.7050	0.4231	556	6	1.3277	0.4593	565	7	1.3821	0.4395	566	7
31	0.8926	0.4436	558	7	1.5550	0.4955	568	7	1.5858	0.4639	569	7
32	1.1008	0.4695	562	7	1.8247	0.5452	572	8	1.8159	0.4966	572	7
33	1.3370	0.5036	565	8	2.1610	0.6187	577	9	2.0848	0.5427	576	8
34	1.6139	0.5508	569	8	2.6173	0.7427	584	11	2.4163	0.6130	581	9
35	1.9550	0.6215	574	9	3.3636	1.0263	595	15	2.8635	0.7351	588	11
36	2.4135	0.7432	581	11	6.0000	3.6498	599	55	3.5966	1.0189	599	15
37	3.1591	1.0253	592	15	NA	NA	NA	NA	6.0000	3.2733	599	49
38	6.0000	4.0458	599	61	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.18 Scale Score Conversion Tables with CSEMs for ELA, Grade Six

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.4467	603	31	-6.0000	2.8230	603	35	-6.0000	2.9584	603	37
1	-4.1763	1.0238	603	13	-3.8909	1.0193	603	13	-3.7958	1.0191	603	13
2	-3.4365	0.7376	603	9	-3.1623	0.7288	605	9	-3.0687	0.7273	607	9
3	-2.9886	0.6111	608	8	-2.7282	0.5995	611	7	-2.6369	0.5976	612	7
4	-2.6623	0.5356	612	7	-2.4155	0.5232	615	7	-2.3263	0.5215	616	7
5	-2.4032	0.4845	615	6	-2.1688	0.4725	618	6	-2.0809	0.4716	619	6
6	-2.1866	0.4476	618	6	-1.9627	0.4369	620	5	-1.8752	0.4369	622	5
7	-1.9988	0.4199	620	5	-1.7834	0.4108	623	5	-1.6954	0.4119	624	5
8	-1.8314	0.3988	622	5	-1.6228	0.3912	625	5	-1.5335	0.3934	626	5
9	-1.6790	0.3824	624	5	-1.4756	0.3764	627	5	-1.3842	0.3796	628	5
10	-1.5376	0.3697	626	5	-1.3383	0.3650	628	5	-1.2441	0.3692	629	5
11	-1.4046	0.3599	627	4	-1.2082	0.3562	630	4	-1.1107	0.3614	631	5
12	-1.2778	0.3523	629	4	-1.0837	0.3494	631	4	-0.9822	0.3555	633	4
13	-1.1557	0.3466	631	4	-0.9635	0.3442	633	4	-0.8573	0.3511	634	4
14	-1.0369	0.3425	632	4	-0.8463	0.3402	634	4	-0.7351	0.3479	636	4
15	-0.9206	0.3396	633	4	-0.7315	0.3372	636	4	-0.6148	0.3457	637	4
16	-0.8058	0.3379	635	4	-0.6185	0.3351	637	4	-0.4957	0.3442	639	4
17	-0.6919	0.3371	636	4	-0.5066	0.3338	639	4	-0.3775	0.3434	640	4
18	-0.5781	0.3372	638	4	-0.3953	0.3331	640	4	-0.2596	0.3431	642	4
19	-0.4641	0.3382	639	4	-0.2843	0.3332	641	4	-0.1417	0.3434	643	4
20	-0.3491	0.3399	641	4	-0.1730	0.3340	643	4	-0.0234	0.3444	645	4

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.2327	0.3423	642	4	-0.0609	0.3356	644	4	0.0958	0.3460	646	4
22	-0.1143	0.3456	644	4	0.0527	0.3383	646	4	0.2165	0.3485	648	4
23	0.0066	0.3497	645	4	0.1684	0.3420	647	4	0.3392	0.3520	649	4
24	0.1307	0.3548	647	4	0.2872	0.3471	649	4	0.4647	0.3566	651	4
25	0.2589	0.3612	648	5	0.4100	0.3538	650	4	0.5941	0.3627	652	5
26	0.3923	0.3691	650	5	0.5381	0.3623	652	5	0.7284	0.3704	654	5
27	0.5321	0.3789	652	5	0.6734	0.3732	653	5	0.8693	0.3803	656	5
28	0.6804	0.3913	654	5	0.8177	0.3869	655	5	1.0187	0.3928	658	5
29	0.8395	0.4069	655	5	0.9740	0.4041	657	5	1.1791	0.4085	660	5
30	1.0131	0.4269	658	5	1.1460	0.4258	659	5	1.3541	0.4286	662	5
31	1.2064	0.4530	660	6	1.3391	0.4537	662	6	1.5487	0.4545	664	6
32	1.4271	0.4879	663	6	1.5614	0.4904	665	6	1.7708	0.4891	667	6
33	1.6885	0.5367	666	7	1.8260	0.5406	668	7	2.0332	0.5374	670	7
34	2.0148	0.6099	670	8	2.1573	0.6147	672	8	2.3596	0.6096	674	8
35	2.4597	0.7346	676	9	2.6089	0.7396	678	9	2.8036	0.7335	680	9
36	3.1937	1.0202	685	13	3.3508	1.0244	687	13	3.5350	1.0184	689	13
37	6.0000	3.9927	699	50	6.0000	3.6785	699	46	6.0000	3.3760	699	42

Table 8.F.19 Scale Score Conversion Tables with CSEMs for ELA, Grade Seven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.8174	703	27	-6.0000	2.0845	703	31	-6.0000	2.2383	703	34
1	-4.7720	1.0408	703	16	-4.4698	1.0551	703	16	-4.3214	1.0545	703	16
2	-3.9931	0.7660	703	11	-3.6609	0.7852	703	12	-3.5137	0.7845	703	12
3	-3.4991	0.6502	703	10	-3.1380	0.6712	703	10	-2.9915	0.6709	703	10
4	-3.1207	0.5843	703	9	-2.7335	0.6046	704	9	-2.5869	0.6050	706	9
5	-2.8052	0.5409	703	8	-2.3964	0.5582	709	8	-2.2487	0.5597	711	8
6	-2.5298	0.5095	707	8	-2.1048	0.5222	713	8	-1.9550	0.5248	716	8
7	-2.2829	0.4848	711	7	-1.8477	0.4923	717	7	-1.6946	0.4960	720	7
8	-2.0577	0.4642	714	7	-1.6179	0.4664	721	7	-1.4608	0.4711	723	7
9	-1.8505	0.4461	717	7	-1.4108	0.4439	724	7	-1.2490	0.4493	726	7
10	-1.6586	0.4299	720	6	-1.2225	0.4241	727	6	-1.0557	0.4300	729	6
11	-1.4801	0.4150	723	6	-1.0499	0.4068	729	6	-0.8780	0.4131	732	6
12	-1.3133	0.4016	725	6	-0.8905	0.3918	732	6	-0.7134	0.3983	734	6
13	-1.1569	0.3895	728	6	-0.7420	0.3790	734	6	-0.5598	0.3856	737	6
14	-1.0092	0.3790	730	6	-0.6024	0.3683	736	6	-0.4152	0.3748	739	6
15	-0.8689	0.3700	732	6	-0.4700	0.3594	738	5	-0.2781	0.3659	741	5
16	-0.7347	0.3626	734	5	-0.3433	0.3524	740	5	-0.1468	0.3587	743	5
17	-0.6054	0.3567	736	5	-0.2210	0.3471	742	5	-0.0201	0.3532	745	5
18	-0.4796	0.3525	738	5	-0.1018	0.3435	743	5	0.1032	0.3492	747	5
19	-0.3563	0.3497	740	5	0.0155	0.3415	745	5	0.2243	0.3469	748	5
20	-0.2344	0.3486	741	5	0.1320	0.3411	747	5	0.3444	0.3460	750	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1128	0.3490	743	5	0.2487	0.3423	749	5	0.4643	0.3467	752	5
22	0.0098	0.3511	745	5	0.3669	0.3452	751	5	0.5854	0.3491	754	5
23	0.1344	0.3550	747	5	0.4877	0.3499	752	5	0.7086	0.3532	756	5
24	0.2625	0.3608	749	5	0.6124	0.3565	754	5	0.8355	0.3592	758	5
25	0.3955	0.3687	751	6	0.7427	0.3653	756	5	0.9674	0.3674	760	6
26	0.5352	0.3791	753	6	0.8802	0.3766	758	6	1.1063	0.3781	762	6
27	0.6839	0.3924	755	6	1.0274	0.3909	760	6	1.2545	0.3920	764	6
28	0.8445	0.4093	758	6	1.1872	0.4088	763	6	1.4150	0.4096	766	6
29	1.0207	0.4307	760	6	1.3634	0.4314	765	6	1.5919	0.4320	769	6
30	1.2180	0.4583	763	7	1.5619	0.4603	768	7	1.7909	0.4609	772	7
31	1.4444	0.4944	767	7	1.7911	0.4984	772	7	2.0206	0.4989	775	7
32	1.7129	0.5441	771	8	2.0650	0.5504	776	8	2.2949	0.5506	779	8
33	2.0478	0.6175	776	9	2.4091	0.6269	781	9	2.6388	0.6263	785	9
34	2.5027	0.7417	783	11	2.8791	0.7545	788	11	3.1070	0.7524	792	11
35	3.2476	1.0258	794	15	3.6485	1.0404	799	16	3.8709	1.0365	799	16
36	6.0000	3.8674	799	58	6.0000	3.1260	799	47	6.0000	2.8149	799	42

Table 8.F.20 Scale Score Conversion Tables with CSEMs for ELA, Grade Eight

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	1.6946	803	21	-6.0000	1.5617	803	20	-6.0000	1.7116	803	21
1	-4.9255	1.0310	803	13	-5.0970	1.0303	803	13	-4.9036	1.0326	803	13
2	-4.1675	0.7520	803	9	-4.3403	0.7511	803	9	-4.1420	0.7546	803	9
3	-3.6951	0.6331	803	8	-3.8693	0.6321	803	8	-3.6655	0.6366	803	8
4	-3.3387	0.5652	806	7	-3.5142	0.5640	804	7	-3.3043	0.5696	806	7
5	-3.0451	0.5206	809	7	-3.2218	0.5196	807	6	-3.0052	0.5261	810	7
6	-2.7907	0.4891	813	6	-2.9684	0.4883	810	6	-2.7447	0.4958	813	6
7	-2.5633	0.4654	815	6	-2.7415	0.4651	813	6	-2.5102	0.4734	816	6
8	-2.3554	0.4468	818	6	-2.5335	0.4473	816	6	-2.2942	0.4563	819	6
9	-2.1625	0.4316	820	5	-2.3398	0.4331	818	5	-2.0922	0.4427	821	6
10	-1.9817	0.4188	823	5	-2.1571	0.4216	821	5	-1.9012	0.4316	824	5
11	-1.8109	0.4076	825	5	-1.9834	0.4119	823	5	-1.7189	0.4221	826	5
12	-1.6488	0.3976	827	5	-1.8171	0.4035	825	5	-1.5443	0.4137	828	5
13	-1.4942	0.3884	829	5	-1.6572	0.3961	827	5	-1.3762	0.4061	830	5
14	-1.3466	0.3799	831	5	-1.5028	0.3894	829	5	-1.2141	0.3989	832	5
15	-1.2052	0.3720	832	5	-1.3535	0.3831	831	5	-1.0575	0.3922	834	5
16	-1.0694	0.3647	834	5	-1.2089	0.3773	832	5	-0.9060	0.3859	836	5
17	-0.9388	0.3580	836	4	-1.0685	0.3718	834	5	-0.7593	0.3800	838	5
18	-0.8127	0.3519	837	4	-0.9320	0.3667	836	5	-0.6168	0.3747	840	5
19	-0.6907	0.3466	839	4	-0.7991	0.3621	838	5	-0.4781	0.3700	842	5
20	-0.5721	0.3421	840	4	-0.6694	0.3580	839	4	-0.3426	0.3662	843	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.4563	0.3384	842	4	-0.5425	0.3546	841	4	-0.2095	0.3634	845	5
22	-0.3426	0.3357	843	4	-0.4176	0.3519	842	4	-0.0780	0.3616	847	5
23	-0.2305	0.3339	845	4	-0.2943	0.3502	844	4	0.0526	0.3610	848	5
24	-0.1192	0.3332	846	4	-0.1719	0.3495	845	4	0.1832	0.3617	850	5
25	-0.0080	0.3336	847	4	-0.0496	0.3499	847	4	0.3148	0.3637	851	5
26	0.1038	0.3351	849	4	0.0735	0.3516	848	4	0.4483	0.3672	853	5
27	0.2171	0.3379	850	4	0.1981	0.3545	850	4	0.5850	0.3722	855	5
28	0.3326	0.3420	852	4	0.3253	0.3589	852	4	0.7261	0.3789	857	5
29	0.4515	0.3476	853	4	0.4563	0.3647	853	5	0.8730	0.3876	858	5
30	0.5748	0.3548	855	4	0.5920	0.3722	855	5	1.0273	0.3983	860	5
31	0.7039	0.3639	856	5	0.7341	0.3816	857	5	1.1913	0.4116	862	5
32	0.8405	0.3753	858	5	0.8841	0.3930	859	5	1.3675	0.4281	865	5
33	0.9866	0.3893	860	5	1.0439	0.4068	861	5	1.5595	0.4486	867	6
34	1.1448	0.4066	862	5	1.2162	0.4236	863	5	1.7722	0.4745	870	6
35	1.3190	0.4283	864	5	1.4044	0.4444	865	6	2.0134	0.5087	873	6
36	1.5141	0.4559	866	6	1.6134	0.4706	868	6	2.2956	0.5558	876	7
37	1.7382	0.4920	869	6	1.8508	0.5049	871	6	2.6425	0.6263	881	8
38	2.0041	0.5414	873	7	2.1290	0.5522	874	7	3.1072	0.7475	886	9
39	2.3357	0.6145	877	8	2.4718	0.6230	878	8	3.8594	1.0286	896	13
40	2.7864	0.7385	882	9	2.9323	0.7446	884	9	6.0000	2.8516	899	36
41	3.5260	1.0228	892	13	3.6799	1.0263	893	13	NA	NA	NA	NA
42	6.0000	3.3780	899	42	6.0000	3.1217	899	39	NA	NA	NA	NA

Table 8.F.21 Scale Score Conversion Tables with CSEMs for ELA, Grade Eleven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.1222	903	27	-6.0000	2.0047	903	25	-6.0000	2.2497	903	28
1	-4.4540	1.0355	903	13	-4.5674	1.0400	903	13	-4.3300	1.0384	903	13
2	-3.6876	0.7567	903	9	-3.7913	0.7635	903	10	-3.5579	0.7605	903	10
3	-3.2093	0.6368	907	8	-3.3022	0.6456	906	8	-3.0739	0.6414	909	8
4	-2.8496	0.5669	912	7	-2.9307	0.5775	911	7	-2.7079	0.5727	914	7
5	-2.5554	0.5198	916	6	-2.6240	0.5321	915	7	-2.4065	0.5273	917	7
6	-2.3034	0.4853	919	6	-2.3587	0.4991	918	6	-2.1459	0.4949	921	6
7	-2.0809	0.4585	921	6	-2.1224	0.4736	921	6	-1.9131	0.4707	924	6
8	-1.8807	0.4368	924	5	-1.9078	0.4531	924	6	-1.7004	0.4520	926	6
9	-1.6977	0.4189	926	5	-1.7102	0.4361	926	5	-1.5028	0.4371	929	5
10	-1.5284	0.4040	928	5	-1.5263	0.4216	928	5	-1.3169	0.4251	931	5
11	-1.3702	0.3915	930	5	-1.3537	0.4092	931	5	-1.1405	0.4151	933	5
12	-1.2210	0.3811	932	5	-1.1906	0.3986	933	5	-0.9717	0.4065	935	5
13	-1.0790	0.3727	934	5	-1.0353	0.3896	935	5	-0.8094	0.3990	937	5
14	-0.9426	0.3661	936	5	-0.8863	0.3822	936	5	-0.6529	0.3922	939	5
15	-0.8103	0.3612	937	5	-0.7425	0.3762	938	5	-0.5014	0.3859	941	5
16	-0.6810	0.3579	939	4	-0.6026	0.3717	940	5	-0.3546	0.3802	943	5
17	-0.5535	0.3562	941	4	-0.4656	0.3685	942	5	-0.2120	0.3748	945	5
18	-0.4267	0.3561	942	4	-0.3306	0.3665	943	5	-0.0732	0.3701	947	5
19	-0.2994	0.3574	944	4	-0.1965	0.3658	945	5	0.0624	0.3661	948	5
20	-0.1706	0.3603	945	5	-0.0625	0.3663	947	5	0.1953	0.3630	950	5

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.0392	0.3646	947	5	0.0723	0.3680	948	5	0.3264	0.3611	952	5
22	0.0959	0.3706	949	5	0.2089	0.3710	950	5	0.4566	0.3605	953	5
23	0.2361	0.3782	950	5	0.3481	0.3754	952	5	0.5870	0.3616	955	5
24	0.3828	0.3878	952	5	0.4914	0.3815	954	5	0.7187	0.3644	956	5
25	0.5377	0.3995	954	5	0.6400	0.3895	956	5	0.8533	0.3694	958	5
26	0.7029	0.4136	956	5	0.7956	0.3996	957	5	0.9924	0.3767	960	5
27	0.8812	0.4309	959	5	0.9603	0.4123	960	5	1.1380	0.3867	962	5
28	1.0759	0.4521	961	6	1.1369	0.4283	962	5	1.2927	0.4000	964	5
29	1.2922	0.4786	964	6	1.3288	0.4483	964	6	1.4594	0.4170	966	5
30	1.5375	0.5131	967	6	1.5412	0.4739	967	6	1.6423	0.4388	968	5
31	1.8245	0.5603	970	7	1.7816	0.5078	970	6	1.8470	0.4666	971	6
32	2.1766	0.6306	975	8	2.0626	0.5546	973	7	2.0814	0.5029	974	6
33	2.6468	0.7513	981	9	2.4080	0.6250	978	8	2.3587	0.5522	977	7
34	3.4047	1.0313	990	13	2.8709	0.7461	983	9	2.7027	0.6248	981	8
35	6.0000	3.5622	999	45	3.6207	1.0273	993	13	3.1663	0.7474	987	9
36	NA	NA	NA	NA	6.0000	3.2121	999	40	3.9192	1.0292	996	13
37	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.7672	999	35

Table 8.F.22 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Three

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.5084	303	66	-6.0000	3.8493	303	72	-6.0000	4.2287	303	79
1	-3.4587	1.0173	303	19	-3.2680	1.0197	303	19	-3.0707	1.0240	303	19
2	-2.7309	0.7302	303	14	-2.5352	0.7336	303	14	-2.3301	0.7384	303	14
3	-2.2929	0.6038	303	11	-2.0922	0.6078	303	11	-1.8809	0.6124	306	11
4	-1.9745	0.5287	304	10	-1.7691	0.5331	308	10	-1.5528	0.5373	312	10
5	-1.7224	0.4777	309	9	-1.5124	0.4824	313	9	-1.2919	0.4864	317	9
6	-1.5123	0.4403	313	8	-1.2977	0.4453	317	8	-1.0735	0.4495	321	8
7	-1.3311	0.4117	316	8	-1.1122	0.4170	320	8	-0.8841	0.4216	325	8
8	-1.1708	0.3893	319	7	-0.9476	0.3948	324	7	-0.7155	0.4003	328	8
9	-1.0262	0.3715	322	7	-0.7988	0.3772	326	7	-0.5620	0.3836	331	7
10	-0.8935	0.3572	325	7	-0.6618	0.3631	329	7	-0.4198	0.3706	333	7
11	-0.7700	0.3458	327	6	-0.5340	0.3519	331	7	-0.2862	0.3605	336	7
12	-0.6536	0.3367	329	6	-0.4133	0.3431	334	6	-0.1590	0.3528	338	7
13	-0.5426	0.3297	331	6	-0.2979	0.3363	336	6	-0.0366	0.3470	341	7
14	-0.4356	0.3245	333	6	-0.1865	0.3313	338	6	0.0824	0.3429	343	6
15	-0.3315	0.3208	335	6	-0.0779	0.3278	340	6	0.1990	0.3402	345	6
16	-0.2293	0.3186	337	6	0.0290	0.3259	342	6	0.3144	0.3390	347	6
17	-0.1281	0.3178	339	6	0.1350	0.3253	344	6	0.4294	0.3392	349	6
18	-0.0269	0.3183	341	6	0.2411	0.3262	346	6	0.5450	0.3407	352	6
19	0.0750	0.3201	343	6	0.3483	0.3285	348	6	0.6620	0.3435	354	6
20	0.1785	0.3233	345	6	0.4575	0.3324	350	6	0.7815	0.3479	356	7

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.2846	0.3281	347	6	0.5698	0.3378	352	6	0.9047	0.3540	358	7
22	0.3943	0.3344	349	6	0.6864	0.3452	354	6	1.0328	0.3619	361	7
23	0.5088	0.3426	351	6	0.8088	0.3546	356	7	1.1674	0.3720	363	7
24	0.6298	0.3531	353	7	0.9387	0.3665	359	7	1.3105	0.3848	366	7
25	0.7591	0.3663	356	7	1.0784	0.3813	362	7	1.4646	0.4008	369	8
26	0.8994	0.3830	358	7	1.2309	0.3999	364	7	1.6334	0.4213	372	8
27	1.0541	0.4042	361	8	1.4002	0.4233	368	8	1.8219	0.4476	375	8
28	1.2285	0.4317	364	8	1.5919	0.4532	371	8	2.0377	0.4827	380	9
29	1.4305	0.4684	368	9	1.8147	0.4921	375	9	2.2937	0.5313	384	10
30	1.6732	0.5192	373	10	2.0827	0.5452	380	10	2.6137	0.6042	390	11
31	1.9811	0.5948	378	11	2.4212	0.6226	387	12	3.0510	0.7289	399	14
32	2.4082	0.7227	386	14	2.8860	0.7510	395	14	3.7755	1.0150	399	19
33	3.1254	1.0123	399	19	3.6499	1.0376	399	19	6.0000	3.0039	399	56
34	6.0000	4.1586	399	78	6.0000	3.1315	399	59	NA	NA	NA	NA

Table 8.F.23 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Four

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	2.5130	403	47	-6.0000	3.1071	403	58	-6.0000	3.1896	403	60
1	-4.1090	1.0336	403	19	-3.6720	1.0363	403	19	-3.6192	1.0361	403	19
2	-3.3469	0.7538	403	14	-2.9056	0.7557	403	14	-2.8532	0.7555	403	14
3	-2.8733	0.6330	403	12	-2.4307	0.6327	403	12	-2.3783	0.6331	403	12
4	-2.5186	0.5623	403	11	-2.0779	0.5592	403	10	-2.0246	0.5604	403	11
5	-2.2297	0.5146	403	10	-1.7940	0.5084	408	10	-1.7387	0.5108	409	10
6	-1.9830	0.4798	404	9	-1.5549	0.4707	412	9	-1.4967	0.4741	413	9
7	-1.7658	0.4529	408	8	-1.3473	0.4413	416	8	-1.2855	0.4457	417	8
8	-1.5705	0.4313	412	8	-1.1629	0.4178	419	8	-1.0970	0.4229	421	8
9	-1.3921	0.4136	415	8	-0.9963	0.3990	423	7	-0.9260	0.4044	424	8
10	-1.2271	0.3988	418	7	-0.8432	0.3836	425	7	-0.7686	0.3893	427	7
11	-1.0730	0.3864	421	7	-0.7008	0.3713	428	7	-0.6219	0.3768	430	7
12	-0.9277	0.3759	424	7	-0.5667	0.3613	431	7	-0.4838	0.3666	432	7
13	-0.7897	0.3671	426	7	-0.4390	0.3533	433	7	-0.3524	0.3583	435	7
14	-0.6576	0.3598	429	7	-0.3163	0.3472	435	7	-0.2263	0.3518	437	7
15	-0.5303	0.3538	431	7	-0.1974	0.3426	438	6	-0.1043	0.3468	439	7
16	-0.4068	0.3490	434	7	-0.0811	0.3394	440	6	0.0147	0.3432	442	6
17	-0.2861	0.3455	436	6	0.0335	0.3375	442	6	0.1317	0.3409	444	6
18	-0.1676	0.3431	438	6	0.1472	0.3369	444	6	0.2476	0.3400	446	6
19	-0.0502	0.3419	440	6	0.2610	0.3376	446	6	0.3634	0.3404	448	6
20	0.0667	0.3419	443	6	0.3756	0.3394	448	6	0.4798	0.3420	450	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.1840	0.3431	445	6	0.4919	0.3426	451	6	0.5978	0.3450	453	6
22	0.3026	0.3455	447	6	0.6108	0.3471	453	7	0.7183	0.3493	455	7
23	0.4233	0.3494	449	7	0.7334	0.3530	455	7	0.8424	0.3552	457	7
24	0.5473	0.3548	452	7	0.8607	0.3606	457	7	0.9712	0.3627	460	7
25	0.6756	0.3618	454	7	0.9941	0.3699	460	7	1.1062	0.3720	462	7
26	0.8098	0.3707	456	7	1.1351	0.3812	463	7	1.2488	0.3835	465	7
27	0.9513	0.3819	459	7	1.2857	0.3950	465	7	1.4013	0.3976	468	7
28	1.1024	0.3957	462	7	1.4484	0.4119	468	8	1.5663	0.4149	471	8
29	1.2657	0.4127	465	8	1.6267	0.4329	472	8	1.7472	0.4362	474	8
30	1.4448	0.4340	468	8	1.8255	0.4595	476	9	1.9492	0.4633	478	9
31	1.6447	0.4610	472	9	2.0523	0.4943	480	9	2.1799	0.4986	482	9
32	1.8733	0.4963	476	9	2.3200	0.5425	485	10	2.4522	0.5471	487	10
33	2.1433	0.5450	481	10	2.6522	0.6145	491	12	2.7898	0.6191	494	12
34	2.4786	0.6172	488	12	3.1023	0.7377	499	14	3.2460	0.7420	499	14
35	2.9324	0.7405	496	14	3.8400	1.0216	499	19	3.9904	1.0250	499	19
36	3.6745	1.0239	499	19	6.0000	2.8943	499	54	6.0000	2.6802	499	50
37	6.0000	3.1357	499	59	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.24 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Five

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.0860	503	58	-6.0000	3.6189	503	68	-6.0000	3.6956	503	69
1	-3.7232	1.0140	503	19	-3.3958	1.0181	503	19	-3.3518	1.0192	503	19
2	-3.0005	0.7279	503	14	-2.6649	0.7333	503	14	-2.6185	0.7350	503	14
3	-2.5643	0.6036	503	11	-2.2209	0.6098	503	11	-2.1719	0.6120	503	11
4	-2.2448	0.5311	503	10	-1.8941	0.5378	506	10	-1.8423	0.5403	507	10
5	-1.9889	0.4827	504	9	-1.6313	0.4894	511	9	-1.5768	0.4923	512	9
6	-1.7729	0.4479	508	8	-1.4092	0.4542	515	9	-1.3519	0.4572	516	9
7	-1.5843	0.4214	512	8	-1.2153	0.4272	519	8	-1.1553	0.4301	520	8
8	-1.4155	0.4006	515	8	-1.0421	0.4055	522	8	-0.9797	0.4083	523	8
9	-1.2617	0.3838	518	7	-0.8848	0.3878	525	7	-0.8203	0.3904	526	7
10	-1.1197	0.3699	520	7	-0.7401	0.3730	527	7	-0.6737	0.3755	529	7
11	-0.9872	0.3583	523	7	-0.6056	0.3607	530	7	-0.5374	0.3629	531	7
12	-0.8622	0.3486	525	7	-0.4792	0.3503	532	7	-0.4095	0.3523	534	7
13	-0.7435	0.3405	527	6	-0.3595	0.3418	535	6	-0.2885	0.3435	536	6
14	-0.6298	0.3337	529	6	-0.2450	0.3348	537	6	-0.1729	0.3363	538	6
15	-0.5203	0.3281	532	6	-0.1347	0.3293	539	6	-0.0617	0.3306	540	6
16	-0.4141	0.3238	534	6	-0.0276	0.3252	541	6	0.0461	0.3262	542	6
17	-0.3103	0.3205	535	6	0.0772	0.3224	543	6	0.1515	0.3231	544	6
18	-0.2082	0.3183	537	6	0.1807	0.3209	545	6	0.2553	0.3212	546	6
19	-0.1072	0.3173	539	6	0.2836	0.3206	547	6	0.3583	0.3205	548	6
20	-0.0064	0.3175	541	6	0.3867	0.3217	549	6	0.4611	0.3209	550	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.0948	0.3189	543	6	0.4910	0.3240	551	6	0.5646	0.3224	552	6
22	0.1974	0.3216	545	6	0.5972	0.3278	552	6	0.6694	0.3251	554	6
23	0.3022	0.3258	547	6	0.7064	0.3330	555	6	0.7764	0.3290	556	6
24	0.4103	0.3317	549	6	0.8196	0.3399	557	6	0.8864	0.3342	558	6
25	0.5229	0.3396	551	6	0.9380	0.3485	559	7	1.0003	0.3407	560	6
26	0.6417	0.3498	553	7	1.0632	0.3591	561	7	1.1192	0.3488	562	7
27	0.7685	0.3627	556	7	1.1968	0.3721	564	7	1.2442	0.3585	565	7
28	0.9061	0.3793	558	7	1.3411	0.3878	566	7	1.3770	0.3703	567	7
29	1.0579	0.4005	561	8	1.4989	0.4070	569	8	1.5193	0.3844	570	7
30	1.2291	0.4279	564	8	1.6740	0.4304	573	8	1.6738	0.4017	573	8
31	1.4277	0.4645	568	9	1.8718	0.4597	576	9	1.8436	0.4230	576	8
32	1.6667	0.5153	573	10	2.1003	0.4973	581	9	2.0339	0.4500	579	8
33	1.9702	0.5908	578	11	2.3725	0.5481	586	10	2.2521	0.4854	584	9
34	2.3920	0.7186	586	13	2.7125	0.6221	592	12	2.5110	0.5342	588	10
35	3.1025	1.0085	599	19	3.1737	0.7464	599	14	2.8341	0.6069	594	11
36	6.0000	4.2224	599	79	3.9261	1.0296	599	19	3.2747	0.7311	599	14
37	NA	NA	NA	NA	6.0000	2.7559	599	52	4.0026	1.0167	599	19
38	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	2.6805	599	50

Table 8.F.25 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Six

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	4.1861	603	78	-6.0000	4.5079	603	85	-6.0000	4.8949	603	92
1	-3.1180	1.0095	603	19	-2.9538	1.0181	603	19	-2.7963	1.0136	603	19
2	-2.4056	0.7199	603	13	-2.2243	0.7314	603	14	-2.0767	0.7242	603	14
3	-1.9821	0.5921	604	11	-1.7845	0.6053	608	11	-1.6477	0.5961	610	11
4	-1.6772	0.5164	610	10	-1.4644	0.5304	614	10	-1.3387	0.5198	616	10
5	-1.4374	0.4651	614	9	-1.2105	0.4795	619	9	-1.0958	0.4682	621	9
6	-1.2387	0.4277	618	8	-0.9986	0.4423	623	8	-0.8944	0.4306	625	8
7	-1.0680	0.3993	621	7	-0.8157	0.4138	626	8	-0.7213	0.4021	628	8
8	-0.9176	0.3769	624	7	-0.6538	0.3914	629	7	-0.5686	0.3799	631	7
9	-0.7823	0.3591	627	7	-0.5076	0.3736	632	7	-0.4310	0.3623	633	7
10	-0.6585	0.3446	629	6	-0.3734	0.3593	634	7	-0.3048	0.3483	636	7
11	-0.5438	0.3329	631	6	-0.2484	0.3479	637	7	-0.1874	0.3372	638	6
12	-0.4361	0.3234	633	6	-0.1305	0.3389	639	6	-0.0767	0.3284	640	6
13	-0.3340	0.3158	635	6	-0.0180	0.3319	641	6	0.0289	0.3216	642	6
14	-0.2361	0.3098	637	6	0.0905	0.3268	643	6	0.1307	0.3165	644	6
15	-0.1416	0.3052	639	6	0.1962	0.3234	645	6	0.2298	0.3130	646	6
16	-0.0494	0.3019	640	6	0.3002	0.3216	647	6	0.3271	0.3109	647	6
17	0.0411	0.2999	642	6	0.4035	0.3213	649	6	0.4235	0.3102	649	6
18	0.1309	0.2991	644	6	0.5071	0.3225	651	6	0.5200	0.3108	651	6
19	0.2205	0.2995	645	6	0.6120	0.3253	653	6	0.6172	0.3128	653	6
20	0.3107	0.3012	647	6	0.7193	0.3297	655	6	0.7161	0.3161	655	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.4023	0.3041	649	6	0.8300	0.3359	657	6	0.8176	0.3209	657	6
22	0.4961	0.3085	651	6	0.9456	0.3441	659	6	0.9226	0.3273	659	6
23	0.5931	0.3145	652	6	1.0675	0.3545	661	7	1.0324	0.3354	661	6
24	0.6945	0.3224	654	6	1.1978	0.3676	664	7	1.1483	0.3455	663	6
25	0.8016	0.3324	656	6	1.3389	0.3840	666	7	1.2720	0.3580	665	7
26	0.9164	0.3453	658	6	1.4942	0.4044	669	8	1.4057	0.3733	668	7
27	1.0412	0.3616	661	7	1.6681	0.4302	673	8	1.5520	0.3920	670	7
28	1.1794	0.3824	663	7	1.8672	0.4631	676	9	1.7147	0.4153	673	8
29	1.3359	0.4096	666	8	2.1014	0.5062	681	9	1.8993	0.4446	677	8
30	1.5183	0.4459	670	8	2.3870	0.5650	686	11	2.1136	0.4825	681	9
31	1.7394	0.4967	674	9	2.7537	0.6505	693	12	2.3710	0.5341	686	10
32	2.0229	0.5727	679	11	3.2646	0.7893	699	15	2.6956	0.6095	692	11
33	2.4225	0.7021	687	13	4.1054	1.0834	699	20	3.1410	0.7357	699	14
34	3.1082	0.9956	699	19	6.0000	2.4212	699	45	3.8776	1.0219	699	19
35	6.0000	4.2614	699	80	NA	NA	NA	NA	6.0000	2.8391	699	53

Table 8.F.26 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Seven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.4932	703	65	-6.0000	4.1389	703	78	-6.0000	3.9857	703	75
1	-3.4860	1.0061	703	19	-3.1427	1.0072	703	19	-3.2102	1.0121	703	19
2	-2.7810	0.7144	703	13	-2.4368	0.7144	703	13	-2.4940	0.7215	703	14
3	-2.3656	0.5851	703	11	-2.0220	0.5842	703	11	-2.0692	0.5926	703	11
4	-2.0691	0.5081	703	10	-1.7266	0.5072	709	10	-1.7642	0.5162	708	10
5	-1.8378	0.4559	707	9	-1.4959	0.4556	713	9	-1.5246	0.4650	713	9
6	-1.6474	0.4180	710	8	-1.3054	0.4186	717	8	-1.3257	0.4282	716	8
7	-1.4848	0.3892	713	7	-1.1419	0.3910	720	7	-1.1542	0.4009	720	8
8	-1.3422	0.3667	716	7	-0.9974	0.3698	723	7	-1.0020	0.3799	723	7
9	-1.2143	0.3487	719	7	-0.8669	0.3531	725	7	-0.8639	0.3637	725	7
10	-1.0978	0.3342	721	6	-0.7469	0.3399	727	6	-0.7363	0.3509	727	7
11	-0.9900	0.3225	723	6	-0.6349	0.3294	729	6	-0.6167	0.3409	730	6
12	-0.8891	0.3129	725	6	-0.5292	0.3209	731	6	-0.5032	0.3330	732	6
13	-0.7936	0.3052	726	6	-0.4284	0.3142	733	6	-0.3943	0.3268	734	6
14	-0.7023	0.2991	728	6	-0.3313	0.3088	735	6	-0.2890	0.3221	736	6
15	-0.6143	0.2942	730	6	-0.2372	0.3048	737	6	-0.1863	0.3186	738	6
16	-0.5288	0.2906	731	5	-0.1452	0.3018	739	6	-0.0856	0.3162	740	6
17	-0.4451	0.2880	733	5	-0.0547	0.2998	740	6	0.0140	0.3147	742	6
18	-0.3626	0.2864	735	5	0.0348	0.2987	742	6	0.1129	0.3142	743	6
19	-0.2807	0.2857	736	5	0.1240	0.2986	744	6	0.2117	0.3145	745	6
20	-0.1990	0.2860	738	5	0.2134	0.2993	745	6	0.3110	0.3156	747	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.1169	0.2871	739	5	0.3035	0.3010	747	6	0.4112	0.3176	749	6
22	-0.0339	0.2891	741	5	0.3950	0.3037	749	6	0.5130	0.3204	751	6
23	0.0506	0.2921	742	5	0.4883	0.3074	750	6	0.6169	0.3242	753	6
24	0.1371	0.2960	744	6	0.5843	0.3122	752	6	0.7236	0.3289	755	6
25	0.2262	0.3010	746	6	0.6837	0.3182	754	6	0.8337	0.3346	757	6
26	0.3187	0.3073	747	6	0.7873	0.3256	756	6	0.9480	0.3416	759	6
27	0.4155	0.3149	749	6	0.8962	0.3345	758	6	1.0675	0.3498	761	7
28	0.5175	0.3240	751	6	1.0117	0.3453	760	6	1.1933	0.3595	764	7
29	0.6261	0.3350	753	6	1.1354	0.3583	763	7	1.3267	0.3710	766	7
30	0.7428	0.3483	755	7	1.2694	0.3739	765	7	1.4695	0.3846	769	7
31	0.8697	0.3643	758	7	1.4162	0.3928	768	7	1.6237	0.4009	772	8
32	1.0095	0.3838	760	7	1.5796	0.4161	771	8	1.7923	0.4205	775	8
33	1.1660	0.4079	763	8	1.7649	0.4453	774	8	1.9792	0.4446	778	8
34	1.3446	0.4381	767	8	1.9798	0.4831	778	9	2.1901	0.4746	782	9
35	1.5535	0.4772	770	9	2.2377	0.5344	783	10	2.4335	0.5133	787	10
36	1.8060	0.5300	775	10	2.5625	0.6096	789	11	2.7235	0.5656	792	11
37	2.1267	0.6068	781	11	3.0080	0.7356	798	14	3.0852	0.6414	799	12
38	2.5697	0.7346	789	14	3.7443	1.0217	799	19	3.5743	0.7673	799	14
39	3.3056	1.0221	799	19	6.0000	3.0329	799	57	4.3630	1.0495	799	20
40	6.0000	3.7678	799	71	NA	NA	NA	NA	6.0000	2.1977	799	41

Table 8.F.27 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Eight

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.5802	803	67	-6.0000	3.5424	803	66	-6.0000	3.9325	803	74
1	-3.4360	1.0067	803	19	-3.4459	1.0138	803	19	-3.2312	1.0165	803	19
2	-2.7294	0.7157	803	13	-2.7243	0.7265	803	14	-2.5045	0.7298	803	14
3	-2.3119	0.5870	803	11	-2.2909	0.6007	803	11	-2.0665	0.6044	803	11
4	-2.0131	0.5105	804	10	-1.9755	0.5266	804	10	-1.7469	0.5305	809	10
5	-1.7793	0.4587	808	9	-1.7249	0.4767	809	9	-1.4921	0.4810	813	9
6	-1.5863	0.4211	812	8	-1.5151	0.4405	813	8	-1.2781	0.4454	817	8
7	-1.4211	0.3925	815	7	-1.3333	0.4129	816	8	-1.0918	0.4187	821	8
8	-1.2759	0.3702	817	7	-1.1718	0.3914	819	7	-0.9252	0.3981	824	7
9	-1.1454	0.3525	820	7	-1.0253	0.3742	822	7	-0.7731	0.3822	827	7
10	-1.0262	0.3382	822	6	-0.8905	0.3604	825	7	-0.6318	0.3698	829	7
11	-0.9157	0.3267	824	6	-0.7647	0.3492	827	7	-0.4986	0.3602	832	7
12	-0.8120	0.3174	826	6	-0.6459	0.3402	829	6	-0.3714	0.3530	834	7
13	-0.7136	0.3100	828	6	-0.5326	0.3330	831	6	-0.2487	0.3477	837	7
14	-0.6192	0.3042	830	6	-0.4235	0.3275	833	6	-0.1290	0.3442	839	6
15	-0.5280	0.2998	831	6	-0.3177	0.3233	835	6	-0.0113	0.3421	841	6
16	-0.4390	0.2967	833	6	-0.2140	0.3204	837	6	0.1055	0.3413	843	6
17	-0.3516	0.2947	835	6	-0.1119	0.3187	839	6	0.2221	0.3417	845	6
18	-0.2650	0.2938	836	6	-0.0105	0.3181	841	6	0.3394	0.3432	848	6
19	-0.1786	0.2939	838	6	0.0909	0.3186	843	6	0.4581	0.3457	850	6
20	-0.0919	0.2951	840	6	0.1929	0.3201	845	6	0.5789	0.3492	852	7

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	-0.0041	0.2974	841	6	0.2962	0.3227	847	6	0.7024	0.3537	854	7
22	0.0854	0.3007	843	6	0.4015	0.3264	849	6	0.8295	0.3592	857	7
23	0.1772	0.3053	845	6	0.5097	0.3313	851	6	0.9609	0.3658	859	7
24	0.2721	0.3110	846	6	0.6215	0.3375	853	6	1.0976	0.3736	862	7
25	0.3711	0.3182	848	6	0.7380	0.3451	855	6	1.2407	0.3829	865	7
26	0.4752	0.3271	850	6	0.8603	0.3544	857	7	1.3916	0.3939	867	7
27	0.5857	0.3377	852	6	0.9900	0.3658	860	7	1.5520	0.4072	870	8
28	0.7041	0.3506	855	7	1.1289	0.3797	862	7	1.7243	0.4233	874	8
29	0.8325	0.3661	857	7	1.2795	0.3967	865	7	1.9120	0.4434	877	8
30	0.9734	0.3850	860	7	1.4453	0.4180	868	8	2.1198	0.4690	881	9
31	1.1306	0.4083	862	8	1.6312	0.4451	872	8	2.3554	0.5028	885	9
32	1.3091	0.4375	866	8	1.8450	0.4807	876	9	2.6313	0.5499	891	10
33	1.5169	0.4753	870	9	2.0993	0.5300	881	10	2.9714	0.6206	897	12
34	1.7668	0.5266	874	10	2.4180	0.6034	887	11	3.4287	0.7424	899	14
35	2.0828	0.6019	880	11	2.8545	0.7284	895	14	4.1732	1.0247	899	19
36	2.5184	0.7284	889	14	3.5785	1.0149	899	19	6.0000	2.4502	899	46
37	3.2435	1.0158	899	19	6.0000	3.3133	899	62	NA	NA	NA	NA
38	6.0000	3.9100	899	73	NA	NA	NA	NA	NA	NA	NA	NA

Table 8.F.28 Scale Score Conversion Tables with CSEMs for Mathematics, Grade Eleven

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
0	-6.0000	3.4476	903	65	-6.0000	3.2853	903	62	-6.0000	3.3393	903	63
1	-3.4785	1.0246	903	19	-3.5723	1.0277	903	19	-3.5236	1.0367	903	19
2	-2.7393	0.7357	903	14	-2.8251	0.7421	903	14	-2.7587	0.7533	903	14
3	-2.2960	0.6061	903	11	-2.3712	0.6156	903	12	-2.2894	0.6268	903	12
4	-1.9769	0.5278	904	10	-2.0399	0.5396	903	10	-1.9455	0.5499	905	10
5	-1.7270	0.4741	909	9	-1.7772	0.4875	908	9	-1.6728	0.4964	910	9
6	-1.5211	0.4348	913	8	-1.5584	0.4492	912	8	-1.4464	0.4565	914	9
7	-1.3452	0.4048	916	8	-1.3699	0.4198	916	8	-1.2521	0.4257	918	8
8	-1.1909	0.3814	919	7	-1.2033	0.3969	919	7	-1.0812	0.4015	921	8
9	-1.0525	0.3630	922	7	-1.0530	0.3788	922	7	-0.9278	0.3823	924	7
10	-0.9261	0.3483	924	7	-0.9150	0.3645	924	7	-0.7876	0.3669	927	7
11	-0.8088	0.3367	926	6	-0.7863	0.3532	927	7	-0.6575	0.3546	929	7
12	-0.6985	0.3276	928	6	-0.6647	0.3444	929	6	-0.5352	0.3448	931	6
13	-0.5935	0.3206	930	6	-0.5484	0.3376	931	6	-0.4190	0.3370	933	6
14	-0.4923	0.3154	932	6	-0.4361	0.3326	933	6	-0.3074	0.3310	936	6
15	-0.3939	0.3119	934	6	-0.3266	0.3292	935	6	-0.1994	0.3264	938	6
16	-0.2973	0.3099	936	6	-0.2190	0.3270	937	6	-0.0939	0.3231	940	6
17	-0.2014	0.3093	938	6	-0.1123	0.3261	939	6	0.0098	0.3209	941	6
18	-0.1055	0.3101	939	6	-0.0059	0.3262	941	6	0.1125	0.3198	943	6
19	-0.0086	0.3124	941	6	0.1009	0.3274	943	6	0.2147	0.3198	945	6
20	0.0902	0.3161	943	6	0.2088	0.3296	945	6	0.3173	0.3207	947	6

Raw Score	Easy Pathway Theta	Easy Pathway Theta CSEM	Easy Pathway Scale Score	Easy Pathway SS CSEM	Moderate Pathway Theta	Moderate Pathway Theta CSEM	Moderate Pathway Scale Score	Moderate Pathway SS CSEM	Hard Pathway Theta	Hard Pathway Theta CSEM	Hard Pathway Scale Score	Hard Pathway SS CSEM
21	0.1918	0.3215	945	6	0.3185	0.3329	947	6	0.4209	0.3228	949	6
22	0.2975	0.3287	947	6	0.4308	0.3373	949	6	0.5261	0.3260	951	6
23	0.4085	0.3379	949	6	0.5465	0.3429	952	6	0.6338	0.3304	953	6
24	0.5266	0.3496	951	7	0.6666	0.3501	954	7	0.7449	0.3362	955	6
25	0.6539	0.3641	954	7	0.7923	0.3590	956	7	0.8605	0.3437	957	6
26	0.7931	0.3824	956	7	0.9251	0.3700	959	7	0.9818	0.3530	960	7
27	0.9480	0.4053	959	8	1.0670	0.3837	961	7	1.1106	0.3647	962	7
28	1.1241	0.4346	962	8	1.2208	0.4009	964	8	1.2488	0.3791	965	7
29	1.3295	0.4729	966	9	1.3902	0.4227	967	8	1.3992	0.3970	968	7
30	1.5775	0.5251	971	10	1.5806	0.4507	971	8	1.5658	0.4196	971	8
31	1.8925	0.6015	977	11	1.8002	0.4877	975	9	1.7538	0.4484	974	8
32	2.3283	0.7292	985	14	2.0624	0.5387	980	10	1.9715	0.4860	978	9
33	3.0553	1.0172	999	19	2.3921	0.6138	986	12	2.2324	0.5376	983	10
34	6.0000	4.2877	999	80	2.8432	0.7399	995	14	2.5610	0.6131	989	11
35	NA	NA	NA	NA	3.5865	1.0255	999	19	3.0116	0.7397	998	14
36	NA	NA	NA	NA	6.0000	3.2687	999	61	3.7550	1.0258	999	19
37	NA	NA	NA	NA	NA	NA	NA	NA	6.0000	3.0061	999	56

Table 8.F.29 Decision Accuracy All-forms Average—ELA, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.36	0.06	0.01	0.43
345–359	0.04	0.17	0.05	0.27
360–399	0.00	0.03	0.27	0.30

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.30 Decision Consistency Alternate Form—ELA, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.35	0.07	0.01	0.43
345–359	0.07	0.13	0.07	0.27
360–399	0.00	0.04	0.26	0.30

Estimated Proportion Consistently Classified: Total = 0.74

Table 8.F.31 Decision Accuracy All-forms Average—ELA, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.39	0.06	0.00	0.45
445–459	0.06	0.22	0.07	0.35
460–499	0.00	0.02	0.18	0.20

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.32 Decision Consistency Alternate Form—ELA, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.37	0.07	0.01	0.45
445–459	0.08	0.18	0.09	0.35
460–499	0.00	0.04	0.16	0.20

Estimated Proportion Consistently Classified: Total = 0.71

Table 8.F.33 Decision Accuracy All-forms Average—ELA, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.39	0.06	0.00	0.45
545–559	0.06	0.26	0.07	0.39
560–599	0.00	0.02	0.15	0.17

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.34 Decision Consistency Alternate Form—ELA, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.38	0.07	0.00	0.45
545–559	0.08	0.22	0.09	0.39
560–599	0.00	0.03	0.13	0.17

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.35 Decision Accuracy All-forms Average—ELA, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.43	0.04	0.00	0.46
645–659	0.09	0.31	0.04	0.44
660–699	0.00	0.03	0.07	0.10

Estimated Proportion Correctly Classified: Total = 0.81

Table 8.F.36 Decision Consistency Alternate Form—ELA, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.40	0.06	0.00	0.46
645–659	0.11	0.26	0.06	0.44
660–699	0.00	0.03	0.07	0.10

Estimated Proportion Consistently Classified: Total = 0.74

Table 8.F.37 Decision Accuracy All-forms Average—ELA, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.44	0.06	0.00	0.51
745–759	0.04	0.24	0.05	0.34
760–799	0.00	0.03	0.13	0.16

Estimated Proportion Correctly Classified: Total = 0.81

Table 8.F.38 Decision Consistency Alternate Form—ELA, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.42	0.07	0.01	0.51
745–759	0.07	0.20	0.07	0.34
760–799	0.00	0.04	0.11	0.16

Estimated Proportion Consistently Classified: Total = 0.74

Table 8.F.39 Decision Accuracy All-forms Average—ELA, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.26	0.00	0.00	0.26
845–859	0.14	0.40	0.07	0.61
860–899	0.00	0.03	0.11	0.13

Estimated Proportion Correctly Classified: Total = 0.77

Table 8.F.40 Decision Consistency Alternate Form—ELA, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.25	0.01	0.00	0.26
845–859	0.15	0.36	0.10	0.61
860–899	0.00	0.03	0.10	0.13

Estimated Proportion Consistently Classified: Total = 0.71

Table 8.F.41 Decision Accuracy All-forms Average—ELA, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.27	0.05	0.00	0.32
945–959	0.05	0.34	0.07	0.46
960–999	0.00	0.06	0.16	0.22

Estimated Proportion Correctly Classified: Total = 0.77

Table 8.F.42 Decision Consistency Alternate Form—ELA, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.26	0.06	0.00	0.32
945–959	0.07	0.28	0.10	0.46
960–999	0.00	0.08	0.13	0.22

Estimated Proportion Consistently Classified: Total = 0.68

Table 8.F.43 Decision Accuracy All-forms Average—Mathematics, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.54	0.05	0.00	0.59
345–359	0.09	0.20	0.05	0.34
360–399	0.00	0.02	0.05	0.07

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.44 Decision Consistency Alternate Form—Mathematics, Grade Three

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
303–344	0.51	0.08	0.00	0.59
345–359	0.11	0.16	0.07	0.34
360–399	0.00	0.02	0.06	0.07

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.45 Decision Accuracy All-forms Average—Mathematics, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.51	0.08	0.01	0.60
445–459	0.04	0.23	0.04	0.31
460–499	0.00	0.04	0.05	0.09

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.46 Decision Consistency Alternate Form—Mathematics, Grade Four

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
403–444	0.49	0.10	0.02	0.60
445–459	0.07	0.18	0.06	0.31
460–499	0.00	0.04	0.05	0.09

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.47 Decision Accuracy All-forms Average—Mathematics, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.52	0.04	0.00	0.56
545–559	0.10	0.22	0.05	0.37
560–599	0.00	0.01	0.06	0.07

Estimated Proportion Correctly Classified: Total = 0.80

Table 8.F.48 Decision Consistency Alternate Form—Mathematics, Grade Five

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
503–544	0.50	0.06	0.00	0.56
545–559	0.11	0.18	0.07	0.37
560–599	0.00	0.01	0.06	0.07

Estimated Proportion Consistently Classified: Total = 0.74

Table 8.F.49 Decision Accuracy All-forms Average—Mathematics, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.52	0.07	0.00	0.59
645–659	0.10	0.23	0.04	0.36
660–699	0.00	0.02	0.03	0.05

Estimated Proportion Correctly Classified: Total = 0.77

Table 8.F.50 Decision Consistency Alternate Form—Mathematics, Grade Six

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
603–644	0.48	0.11	0.00	0.59
645–659	0.12	0.18	0.06	0.36
660–699	0.00	0.02	0.03	0.05

Estimated Proportion Consistently Classified: Total = 0.69

Table 8.F.51 Decision Accuracy All-forms Average—Mathematics, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.53	0.08	0.01	0.61
745–759	0.05	0.20	0.04	0.29
760–799	0.00	0.03	0.07	0.09

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.52 Decision Consistency Alternate Form—Mathematics, Grade Seven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
703–744	0.50	0.09	0.02	0.61
745–759	0.07	0.15	0.06	0.29
760–799	0.00	0.03	0.06	0.09

Estimated Proportion Consistently Classified: Total = 0.72

Table 8.F.53 Decision Accuracy All-forms Average—Mathematics, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.50	0.07	0.00	0.58
845–859	0.07	0.23	0.04	0.33
860–899	0.00	0.03	0.06	0.09

Estimated Proportion Correctly Classified: Total = 0.78

Table 8.F.54 Decision Consistency Alternate Form—Mathematics, Grade Eight

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
803–844	0.48	0.09	0.01	0.58
845–859	0.09	0.18	0.06	0.33
860–899	0.00	0.04	0.06	0.09

Estimated Proportion Consistently Classified: Total = 0.71

Table 8.F.55 Decision Accuracy All-forms Average—Mathematics, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.54	0.05	0.00	0.59
945–959	0.10	0.21	0.04	0.34
960–999	0.00	0.02	0.05	0.07

Estimated Proportion Correctly Classified: Total = 0.79

Table 8.F.56 Decision Consistency Alternate Form—Mathematics, Grade Eleven

Scale Score	Level 1—Alternate	Level 2—Alternate	Level 3—Alternate	Category Total
903–944	0.51	0.08	0.00	0.59
945–959	0.11	0.17	0.06	0.34
960–999	0.00	0.02	0.05	0.07

Estimated Proportion Consistently Classified: Total = 0.72

Appendix 8.G: Validity Analyses

Notes:

- Pathway Easy includes the router and Stage 2 easy module.
- Pathway Moderate includes the router and Stage 2 moderate module.
- Pathway Hard includes the router and Stage 2 hard module.

Table 8.G.1 Total Testing Time (In Minutes) at Each Pathway, English Language Arts/Literacy (ELA)

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Easy	2,156	25.71	16.18	0.57	179.91	1.80	8.40	15.45	23.05	32.88	44.57	79.42
Grade 3 Moderate	946	32.93	18.25	3.76	200.87	5.91	15.67	21.90	29.44	39.01	53.52	95.83
Grade 3 Hard	1,075	47.00	21.50	2.58	186.41	12.73	26.07	33.27	42.51	55.74	71.94	125.80
Grade 4 Easy	1,770	24.00	16.83	0.22	183.94	1.52	6.21	12.79	21.21	30.99	44.02	79.76
Grade 4 Moderate	1,437	25.02	14.74	1.46	220.31	4.22	11.48	16.10	22.09	30.61	42.15	69.81
Grade 4 Hard	1,322	43.38	21.56	3.18	281.17	10.97	22.82	29.91	39.12	51.63	67.29	119.62
Grade 5 Easy	1,875	25.05	15.72	0.34	148.10	1.60	7.80	15.05	23.15	31.48	42.88	75.48
Grade 5 Moderate	1,901	29.68	15.42	1.97	210.19	6.38	16.14	20.63	26.75	35.60	45.31	87.39
Grade 5 Hard	844	43.49	18.63	4.08	147.42	10.62	23.58	31.82	40.63	51.93	67.12	108.25
Grade 6 Easy	1,208	24.13	16.89	0.53	173.20	1.06	5.51	11.63	21.68	32.10	45.11	78.46
Grade 6 Moderate	1,428	36.56	21.67	1.71	268.49	5.20	14.99	23.82	33.04	44.51	58.80	117.93
Grade 6 Hard	1,930	64.59	32.50	4.11	302.41	10.69	31.26	44.50	59.79	78.14	100.08	180.63
Grade 7 Easy	1,885	24.66	18.18	0.28	187.47	1.35	5.60	11.27	20.69	34.08	48.09	84.01
Grade 7 Moderate	1,906	31.73	21.53	2.30	449.62	7.05	12.47	17.59	27.70	41.16	54.39	93.04
Grade 7 Hard	613	38.31	23.91	7.65	333.65	10.25	15.04	22.42	34.83	48.91	62.31	110.07

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 8 Easy	2,751	25.50	15.15	0.00	142.30	1.66	7.38	15.63	24.15	32.88	42.72	74.95
Grade 8 Moderate	1,441	41.16	20.05	2.55	293.84	8.36	21.98	29.56	37.96	48.35	63.36	104.68
Grade 8 Hard	174	43.49	15.77	8.45	102.29	16.91	27.68	33.37	41.49	50.16	60.01	99.56
Grade 11 Easy	1,276	26.26	19.93	0.26	217.94	1.66	6.56	12.68	22.64	34.43	48.26	95.91
Grade 11 Moderate	2,230	28.36	16.46	1.86	248.74	5.76	13.48	17.85	24.84	34.27	47.76	89.71
Grade 11 Hard	287	71.22	31.61	15.52	247.38	18.44	38.10	52.58	64.75	84.84	106.30	184.45

Table 8.G.2 Total Testing Time (In Minutes) at Each Pathway, Mathematics

Pathways	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Easy	1,404	13.98	10.33	0.66	118.60	1.36	4.02	7.48	12.31	17.72	24.07	51.21
Grade 3 Moderate	1,591	19.22	9.64	1.66	90.17	4.59	9.79	12.77	17.29	23.12	31.52	52.38
Grade 3 Hard	1,075	22.91	11.66	1.94	141.66	5.64	12.32	15.66	20.84	27.08	35.84	63.11
Grade 4 Easy	2,016	16.39	12.87	0.09	332.63	1.55	5.53	9.75	14.62	20.35	27.26	52.45
Grade 4 Moderate	1,778	20.99	12.18	2.95	254.74	6.45	11.49	14.53	18.14	24.40	32.43	58.76
Grade 4 Hard	570	27.94	12.42	2.83	102.14	6.43	15.75	20.07	25.49	32.86	42.44	72.95
Grade 5 Easy	1,908	16.23	10.81	0.33	107.01	1.36	5.19	9.17	14.50	20.75	28.67	54.75
Grade 5 Moderate	1,712	20.93	11.24	2.34	117.24	4.88	10.39	13.89	18.75	24.83	33.78	62.96
Grade 5 Hard	902	25.59	12.85	1.95	112.95	6.11	12.81	17.38	22.78	31.15	40.92	67.59
Grade 6 Easy	1,906	17.96	11.24	0.37	119.70	1.52	5.92	11.22	16.25	22.23	30.11	59.50
Grade 6 Moderate	1,736	22.07	11.99	1.82	110.62	4.13	10.36	14.55	19.50	26.86	35.91	64.46
Grade 6 Hard	671	27.33	14.77	1.85	118.85	4.66	13.06	18.58	24.55	32.52	42.61	81.62
Grade 7 Easy	1,163	17.94	12.05	0.00	101.98	0.93	4.84	9.20	16.29	24.06	33.74	53.04
Grade 7 Moderate	1,831	25.32	14.57	1.00	267.23	3.66	11.14	16.29	22.74	31.34	41.44	69.52
Grade 7 Hard	1,247	32.57	16.27	3.16	144.26	9.31	16.78	22.06	29.52	38.40	50.70	93.64
Grade 8 Easy	1,350	18.57	11.47	0.62	107.53	1.62	5.21	10.38	16.98	24.49	33.96	57.17
Grade 8 Moderate	1,863	25.21	14.10	1.92	239.39	4.89	12.29	16.91	22.91	30.43	39.80	71.68
Grade 8 Hard	1,036	30.77	15.97	2.93	201.75	8.62	16.55	21.55	27.36	36.45	47.27	82.52
Grade 11 Easy	1,302	16.78	11.94	0.29	121.89	1.56	5.06	9.11	14.55	21.32	30.16	58.77
Grade 11 Moderate	953	22.11	12.96	1.71	155.38	3.26	9.79	14.38	19.57	27.14	35.93	66.55
Grade 11 Hard	1,487	25.36	13.31	2.19	105.56	4.60	12.63	16.79	22.78	30.76	41.27	75.81

Table 8.G.3 Total Testing Time (In Minutes) at Each Quartile Group, ELA

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Q 1	303–334	944	20.92	14.92	0.57	123.36	1.35	5.17	9.90	18.57	27.45	38.53	70.11
Grade 3 Q 2	336–347	1,079	29.55	17.51	2.46	179.91	6.51	13.36	18.56	26.16	35.55	47.40	90.95
Grade 3 Q 3	348–364	1,107	34.69	18.18	3.76	200.87	8.10	16.67	23.03	31.31	42.30	56.18	95.25
Grade 3 Q 4	365–399	1,047	44.97	21.66	2.58	186.41	14.53	23.75	31.16	40.49	53.10	70.38	124.29
Grade 4 Q 1	403–436	1,123	20.55	16.25	0.22	183.94	1.26	4.49	9.76	17.84	27.08	39.94	69.19
Grade 4 Q 2	437–446	1,135	27.52	16.87	0.38	220.31	4.07	11.39	16.98	24.48	33.99	46.15	82.53
Grade 4 Q 3	447–456	1,082	29.39	16.02	0.87	130.64	5.32	13.62	18.26	25.66	36.67	49.99	82.49
Grade 4 Q 4	457–499	1,189	41.75	22.36	3.18	281.17	9.62	20.69	27.24	37.43	50.36	66.43	121.53
Grade 5 Q 1	503–535	1,106	22.56	15.86	0.34	142.61	1.32	5.39	11.45	20.33	29.80	40.63	75.58
Grade 5 Q 2	537–546	1,187	27.59	15.42	1.97	148.10	4.39	13.26	18.29	24.51	32.96	45.98	83.70
Grade 5 Q 3	547–555	1,142	31.60	15.67	4.24	139.01	9.66	17.07	21.54	28.30	37.85	48.76	95.09
Grade 5 Q 4	556–599	1,185	39.08	18.35	4.08	210.19	12.75	21.28	26.78	36.12	46.51	62.37	102.74
Grade 6 Q 1	603–636	1,089	22.37	16.64	0.53	173.20	1.00	4.71	10.28	19.45	30.53	42.48	77.78
Grade 6 Q 2	637–645	1,129	37.13	22.12	2.24	163.21	5.26	14.62	22.21	32.37	47.02	65.50	117.37
Grade 6 Q 3	646–651	994	51.96	30.77	4.11	252.90	8.91	23.01	31.73	45.38	63.73	86.47	168.95
Grade 6 Q 4	652–699	1,354	65.06	32.24	7.80	302.41	19.06	32.15	44.05	59.79	78.26	99.79	182.19
Grade 7 Q 1	703–732	921	19.51	16.63	0.28	122.34	0.98	3.24	7.32	14.44	28.78	41.69	70.70
Grade 7 Q 2	734–742	1,102	29.15	19.03	1.42	203.08	3.96	10.45	15.41	24.96	37.34	53.17	97.69
Grade 7 Q 3	743–753	1,192	31.56	18.66	2.30	187.47	7.06	12.86	17.77	27.83	41.05	54.52	93.04
Grade 7 Q 4	754–799	1,189	35.95	25.00	4.36	449.62	9.61	14.49	20.18	32.07	45.81	59.71	105.76

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 8 Q 1	803–842	945	18.05	13.44	0.00	84.35	1.07	3.50	7.38	15.84	25.62	34.28	65.95
Grade 8 Q 2	843–848	1,069	28.23	14.76	1.71	142.30	4.14	12.67	19.07	25.84	34.64	45.17	76.05
Grade 8 Q 3	849–853	1,125	34.34	17.65	2.47	158.93	6.76	17.19	23.29	31.14	40.76	53.10	104.55
Grade 8 Q 4	855–899	1,227	41.71	18.91	3.41	293.84	11.64	23.79	30.60	38.65	48.67	61.35	99.65
Grade 11 Q 1	903–941	866	23.45	20.11	0.26	217.94	1.27	5.18	10.26	19.31	30.90	46.14	96.46
Grade 11 Q 2	942–948	1,001	27.59	15.65	1.86	121.49	3.85	11.98	16.95	24.16	34.41	48.70	77.20
Grade 11 Q 3	949–956	899	30.41	19.58	2.74	248.74	7.42	13.89	18.93	25.44	36.65	50.04	112.37
Grade 11 Q 4	957–996	1,027	40.83	28.02	4.84	247.38	8.09	15.94	21.92	31.51	52.62	78.76	134.49

Table 8.G.4 Total Testing Time (In Minutes) at Each Quartile Group, Mathematics

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 3 Q 1	303–333	999	12.34	9.48	0.66	84.26	1.23	3.22	5.79	10.18	16.02	22.85	46.87
Grade 3 Q 2	334–341	864	17.69	10.59	1.66	118.46	4.50	8.94	11.76	15.10	20.57	28.56	56.92
Grade 3 Q 3	342–348	1,109	19.39	9.68	1.78	118.60	5.33	10.27	13.13	17.36	23.42	31.10	50.50
Grade 3 Q 4	349–399	1,098	23.43	11.20	1.94	141.66	6.07	13.04	16.45	21.44	27.28	36.27	64.21
Grade 4 Q 1	403–433	923	13.13	10.29	0.09	128.09	1.06	3.49	6.73	11.26	17.20	23.93	41.96
Grade 4 Q 2	434–440	1,136	18.64	13.30	1.87	332.63	4.34	9.61	12.65	16.39	21.99	28.49	57.22
Grade 4 Q 3	442–448	1,214	20.53	10.90	3.52	141.97	5.96	11.24	14.25	18.07	23.80	31.14	65.46
Grade 4 Q 4	449–499	1,091	25.73	14.37	2.83	254.74	7.69	13.80	17.05	22.99	30.87	39.32	70.90
Grade 5 Q 1	503–532	1,045	13.06	10.09	0.33	84.46	1.00	3.24	6.36	10.68	16.89	25.09	50.60
Grade 5 Q 2	534–542	1,163	19.27	9.80	1.30	117.15	4.47	9.67	13.13	17.41	23.33	30.22	55.12
Grade 5 Q 3	543–548	987	21.11	12.04	2.34	117.24	5.72	10.68	13.63	18.37	24.83	33.38	69.50
Grade 5 Q 4	549–599	1,327	24.87	12.27	1.95	112.95	6.33	12.83	17.03	22.16	29.89	39.04	65.53
Grade 6 Q 1	603–634	888	14.87	11.38	0.37	119.70	1.04	3.90	7.49	12.97	19.26	26.41	56.06
Grade 6 Q 2	635–641	1,160	19.66	10.72	1.78	91.66	3.35	9.42	12.93	17.70	24.04	32.59	60.77
Grade 6 Q 3	642–647	1,124	21.74	11.20	2.51	110.62	4.87	11.32	14.83	19.66	25.74	34.05	64.46
Grade 6 Q 4	649–699	1,141	26.69	13.92	1.85	118.85	5.85	13.35	17.97	23.60	31.77	42.44	77.78
Grade 7 Q 1	703–732	1,048	16.37	11.93	0.00	101.98	0.87	4.05	7.65	13.74	21.83	31.52	53.04
Grade 7 Q 2	733–739	889	22.44	11.93	1.70	121.07	3.02	10.27	14.50	20.37	27.66	37.24	63.75
Grade 7 Q 3	740–747	1,115	27.82	15.48	2.79	267.23	6.67	14.27	18.91	24.65	33.35	43.45	80.99
Grade 7 Q 4	749–799	1,189	33.40	15.83	4.28	144.26	10.06	18.42	23.63	30.25	39.07	50.75	93.76

Student Performance Percentile	Scale Score Range	Number	Mean	Standard Deviation	Minimum	Maximum	Percentile Points 1	Percentile Points 10	Percentile Points 25	Percentile Points 50	Percentile Points 75	Percentile Points 90	Percentile Points 99
Grade 8 Q 1	803–831	947	17.04	12.66	0.62	188.95	1.43	4.40	8.35	15.06	22.25	31.47	56.02
Grade 8 Q 2	833–840	989	22.40	10.78	1.78	71.68	4.30	10.65	14.97	20.61	28.14	36.48	56.20
Grade 8 Q 3	841–849	1,200	25.71	14.02	1.92	239.39	5.48	13.22	17.57	23.42	30.69	39.60	72.01
Grade 8 Q 4	850–899	1,113	31.24	16.12	2.69	201.75	10.21	17.46	21.88	27.58	36.98	47.51	88.57
Grade 11 Q 1	903–933	901	15.10	12.73	0.29	155.38	1.51	3.90	7.17	12.50	19.23	28.02	58.30
Grade 11 Q 2	934–940	776	20.07	10.79	1.55	93.68	2.88	8.91	13.02	18.05	25.07	33.36	57.80
Grade 11 Q 3	941–947	1,054	22.29	11.73	2.19	137.76	4.36	10.84	14.99	19.81	27.06	35.93	63.91
Grade 11 Q 4	949–999	1,011	27.65	14.12	3.27	105.56	7.15	14.16	18.19	24.33	33.15	45.96	82.06

Notes for Table 8.G.5 through Table 8.G.11:

- Numbers in **bold** font in the *Mathematics* row of the *[Student Group] R and Sample Size* column are the sample sizes used to calculate the correlations.
- R denotes the correlation coefficient.

Table 8.G.5 Content Correlation for Gender Student Groups

Content Area/Grade	Male Students	Male R and Sample Size	Female Students	Female R and Sample Size
ELA 3	2,845	0.62	1,332	0.56
Mathematics 3	2,785	**2,720**	1,285	**1,261**
ELA 4	3,090	0.58	1,439	0.58
Mathematics 4	2,979	**2,925**	1,385	**1,364**
ELA 5	3,164	0.55	1,456	0.56
Mathematics 5	3,096	**3,046**	1,426	**1,399**
ELA 6	3,116	0.53	1,450	0.37
Mathematics 6	2,931	**2,888**	1,382	**1,351**
ELA 7	2,974	0.62	1,430	0.59
Mathematics 7	2,876	**2,800**	1,365	**1,334**
ELA 8	2,942	0.58	1,424	0.59
Mathematics 8	2,856	**2,792**	1,393	**1,359**
ELA 11	2,446	0.60	1,347	0.62
Mathematics 11	2,422	**2,367**	1,320	**1,278**

Table 8.G.6 Content Correlation for Ethnicity Student Groups

Content Area/Grade	American Indian or Alaska Native Students	American Indian or Alaska Native R and Sample Size	Asian Students	Asian R and Sample Size	Native Hawaiian or Other Pacific Islander Students	Native Hawaiian or Other Pacific Islander R and Sample Size	Filipino Students	Filipino R and Sample Size
ELA 3	24	0.51	319	0.59	21	0.68	91	0.40
Mathematics 3	23	**23**	304	**300**	18	**18**	87	**85**
ELA 4	35	0.45	336	0.53	18	0.76	91	0.43
Mathematics 4	35	**35**	317	**312**	17	**16**	84	**83**
ELA 5	28	0.60	338	0.60	25	0.41	120	0.53
Mathematics 5	28	**28**	328	**323**	23	**23**	117	**114**
ELA 6	26	0.45	315	0.48	20	0.41	124	0.43
Mathematics 6	26	**25**	296	**285**	17	**17**	114	**110**
ELA 7	29	0.78	339	0.53	12	0.60	128	0.67
Mathematics 7	28	**27**	326	**316**	12	**12**	122	**121**
ELA 8	37	0.70	321	0.58	18	0.68	149	0.49
Mathematics 8	35	**35**	317	**305**	18	**18**	138	**137**
ELA 11	33	0.51	265	0.67	27	0.33	122	0.53
Mathematics 11	31	**31**	266	**258**	24	**23**	115	**111**

Table 8.G.7 Content Correlation for Ethnicity Student Groups (Continued)

Content Area/Grade	Hispanic or Latino Students	Hispanic or Latino R and Sample Size	Black or African American Students	Black or African American R and Sample Size	White Students	White R and Sample Size	Two or More Races Students	Two or More Races R and Sample Size
ELA 3	2,446	0.61	304	0.56	795	0.60	177	0.67
Mathematics 3	2,395	**2,345**	296	**287**	771	**754**	176	**169**
ELA 4	2,711	0.59	345	0.53	835	0.61	158	0.53
Mathematics 4	2,623	**2,585**	330	**322**	808	**787**	150	**149**
ELA 5	2,762	0.55	359	0.58	834	0.53	154	0.60
Mathematics 5	2,721	**2,677**	349	**341**	810	**794**	146	**145**
ELA 6	2,653	0.46	404	0.45	871	0.53	153	0.55
Mathematics 6	2,510	**2,473**	377	**372**	828	**815**	145	**142**
ELA 7	2,544	0.60	345	0.61	887	0.65	120	0.62
Mathematics 7	2,457	**2,402**	330	**323**	852	**822**	114	**111**
ELA 8	2,398	0.57	369	0.58	923	0.60	151	0.63
Mathematics 8	2,341	**2,296**	356	**345**	904	**878**	140	**137**
ELA 11	2,063	0.61	339	0.52	849	0.63	95	0.62
Mathematics 11	2,043	**1,987**	330	**325**	836	**818**	97	**92**

Table 8.G.8 Content Correlation for English Proficiency Student Groups

Content Area/Grade	English Only Students	English Only R and Sample Size	Initially Fluent English Proficient Students	Initially Fluent English Proficient R and Sample Size	English Learner Students	English Learner R and Sample Size	Reclassified Fluent English Proficient Students	Reclassified Fluent English Proficient R and Sample Size
ELA 3	2,489	0.59	39	0.50	1,524	0.62	118	0.51
Mathematics 3	2,427	**2,369**	40	**38**	1,477	**1,453**	119	**115**
ELA 4	2,594	0.58	29	0.57	1,709	0.61	191	0.46
Mathematics 4	2,491	**2,441**	28	**26**	1,653	**1,634**	186	**183**
ELA 5	2,612	0.54	40	0.49	1,726	0.56	237	0.58
Mathematics 5	2,544	**2,502**	42	**39**	1,696	**1,668**	233	**231**
ELA 6	2,605	0.48	66	0.67	1,642	0.47	249	0.45
Mathematics 6	2,445	**2,404**	61	**59**	1,562	**1,533**	242	**240**
ELA 7	2,537	0.62	61	0.51	1,492	0.59	307	0.63
Mathematics 7	2,435	**2,378**	61	**59**	1,444	**1,402**	295	**289**
ELA 8	2,569	0.58	65	0.53	1,394	0.57	333	0.60
Mathematics 8	2,485	**2,431**	62	**59**	1,375	**1,341**	321	**315**
ELA 11	2,225	0.59	58	0.57	1,125	0.63	381	0.64
Mathematics 11	2,181	**2,132**	59	**56**	1,118	**1,081**	379	**372**

Table 8.G.9 Content Correlation for English Proficiency Student Groups (Continued)

Content Area/Grade	To Be Determined Students	To Be Determined R and Sample Size	English Proficiency Unknown Students	English Proficiency Unknown R and Sample Size
ELA 3	3	NA	4	NA
Mathematics 3	2	**2**	5	**4**
ELA 4	2	NA	4	NA
Mathematics 4	2	**2**	4	**3**
ELA 5	2	NA	3	NA
Mathematics 5	3	**2**	4	**3**
ELA 6	1	NA	3	NA
Mathematics 6	NA	NA	3	**3**
ELA 7	4	NA	3	NA
Mathematics 7	3	**3**	3	**3**
ELA 8	NA	NA	5	NA
Mathematics 8	1	NA	5	**5**
ELA 11	NA	NA	4	NA
Mathematics 11	NA	NA	5	**4**

Table 8.G.10 Content Correlation for Economic Status Student Groups

Content Area/Area	Not Economically Disadvantaged Students	Not Economically Disadvantaged R and Sample Size	Economically Disadvantaged Students	Economically Disadvantaged R and Sample Size
ELA 3	1,357	0.59	2,820	0.60
Mathematics 3	1,303	**1,267**	2,767	**2,714**
ELA 4	1,449	0.57	3,080	0.58
Mathematics 4	1,380	**1,344**	2,984	**2,945**
ELA 5	1,443	0.53	3,177	0.56
Mathematics 5	1,389	**1,359**	3,133	**3,086**
ELA 6	1,535	0.51	3,031	0.46
Mathematics 6	1,422	**1,392**	2,891	**2,847**
ELA 7	1,471	0.60	2,933	0.62
Mathematics 7	1,417	**1,369**	2,824	**2,765**
ELA 8	1,532	0.56	2,834	0.59
Mathematics 8	1,486	**1,436**	2,763	**2,715**
ELA 11	1,321	0.61	2,472	0.60
Mathematics 11	1,292	**1,256**	2,450	**2,389**

Table 8.G.11 Content Correlation for Migrant Status Student Groups

Content Area/Area	Migrant Students	Migrant R and Sample Size	Nonmigrant Students	Nonmigrant R and Sample Size
ELA 3	43	0.72	4,134	0.60
Mathematics 3	42	**42**	4,028	**3,939**
ELA 4	34	0.71	4,495	0.58
Mathematics 4	33	**33**	4,331	**4,256**
ELA 5	49	0.65	4,571	0.55
Mathematics 5	48	**47**	4,474	**4,398**
ELA 6	30	0.60	4,536	0.48
Mathematics 6	31	**30**	4,282	**4,209**
ELA 7	29	0.70	4,375	0.61
Mathematics 7	27	**27**	4,214	**4,107**
ELA 8	32	0.42	4,334	0.58
Mathematics 8	30	**30**	4,219	**4,121**
ELA 11	19	0.56	3,774	0.61
Mathematics 11	19	**19**	3,723	**3,626**

Table 8.G.12 Frequency of Responses for Survey Questions—ELA

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	○ Yes	11%	10%	9%	10%	12%	10%	12%
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	○ No	72%	72%	74%	74%	71%	72%	72%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.	52%	55%	58%	61%	60%	62%	62%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student provided a verbal response.	45%	49%	42%	43%	37%	36%	27%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used gestures or pointed to indicate a response.	49%	44%	41%	38%	36%	32%	29%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.	1%	1%	0%	1%	1%	1%	1%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used an assistive/augmentative communication device.	1%	2%	1%	2%	2%	2%	1%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used eye gaze.	3%	3%	2%	3%	3%	3%	2%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Other	2%	2%	1%	2%	2%	2%	3%
3. How engaged was your student with this test you just administered?	○ 0 – not engaged at all	3%	4%	3%	3%	4%	3%	3%
3. How engaged was your student with this test you just administered?	○ 1 – minimally engaged	17%	17%	16%	17%	18%	14%	11%
3. How engaged was your student with this test you just administered?	○ 2 – moderately engaged	30%	30%	30%	30%	28%	27%	22%
3. How engaged was your student with this test you just administered?	○ 3 – fully engaged	33%	32%	35%	35%	34%	39%	48%
Total Number Tested:		**5,003**	**5,410**	**5,533**	**5,336**	**5,288**	**5,247**	**4,505**

Table 8.G.13 Frequency of Responses for Survey Questions—Mathematics

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	○ Yes	12%	9%	9%	9%	12%	11%	13%
1. Did you end this test early because the student's productivity and engagement had significantly declined, even after allowing the student breaks over multiple days?	○ No	70%	72%	72%	72%	69%	70%	71%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used a mouse, touchscreen, and/or a computer keyboard to enter responses directly in the system.	53%	57%	59%	61%	60%	62%	62%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student provided a verbal response.	44%	45%	41%	39%	36%	37%	27%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used gestures or pointed to indicate a response.	48%	43%	39%	36%	35%	32%	29%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used the accommodation of print on demand and responded (check, circle, fill-in, etc.) on paper.	1%	1%	1%	1%	1%	1%	1%

Questionnaire	Answer Selections	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used an assistive/augmentative communication device.	1%	2%	1%	2%	1%	2%	1%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Student used eye gaze.	3%	3%	2%	2%	3%	3%	3%
2. Please indicate your student's mode(s) of communication that were used on this test. (Select all that apply)	□ Other	2%	2%	1%	2%	2%	2%	3%
3. How engaged was your student with this test you just administered?	○ 0 – not engaged at all	5%	4%	4%	3%	4%	4%	4%
3. How engaged was your student with this test you just administered?	○ 1 – minimally engaged	20%	17%	17%	16%	17%	16%	12%
3. How engaged was your student with this test you just administered?	○ 2 – moderately engaged	29%	29%	29%	28%	26%	26%	23%
3. How engaged was your student with this test you just administered?	○ 3 – fully engaged	28%	31%	33%	34%	34%	35%	46%
Total Number Tested:		**4,989**	**5,396**	**5,543**	**5,321**	**5,275**	**5,232**	**4,496**

Chapter 9: Quality Control Procedures

The California Department of Education (CDE) and Educational Testing Service (ETS) implemented rigorous quality control procedures throughout the test development, administration, scoring, analyses, and reporting processes. As part of this effort, ETS staff worked with its Office of Professional Standards Compliance, which publishes and maintains the *ETS Standards for Quality and Fairness* (ETS, 2014).These *Standards* support the goals of delivering technically sound, fair, and useful products and services; and assisting the public and auditors evaluate those products and services. Quality control procedures are outlined in this chapter.

9.1. Quality Control of Item Development

ETS's goal is to provide the best standards-based items for the California Alternate Assessments (CAAs) for English language arts/literacy (ELA) and mathematics. Items developed for the CAAs for ELA and mathematics undergo an extensive item review process. The item writers hired to develop CAA items were trained in California Assessment of Student Performance and Progress (CAASPP) and ETS policies on quality control of item content, sensitivity, and bias guidelines; and guidelines for accessibility to ensure that the items allow the widest possible range of students to demonstrate their content knowledge.

Once a written item is accepted for authoring—that is, once it has been entered into ETS's item bank and formatted for use in an assessment—ETS employs a series of internal and external reviews. These reviews use established criteria and specifications to judge the quality of item content and to ensure that each item measures what it is intended to measure. These reviews also examine the overall quality of the test items before presentation to the CDE and item reviewers. Finally, a group of California educators review the items for accessibility, bias/sensitivity, and content prior to their administration to students. The details on quality control of item development are described in subsection *3.2 Item Review Process*.

9.2. Quality Control of Test Assembly and Delivery

The assembly of all test forms must conform to blueprints that represent a set of constraints and specifications. There are separate specifications for the English language arts/literacy (ELA) and mathematics assessments (CDE, 2015a [ELA] and 2015b [mathematics]). These blueprints are critical to the formation of valid assessments.

Quality assurance checks on each constructed test form are critical to overall test integrity.

9.2.1. Quality Control of Test Form Development

ETS conducts multiple levels of quality assurance checks on each constructed test form to ensure it meets defined statistical criteria. Both ETS assessment development and psychometric staff reviewed and signed off on the accuracy of forms before the test forms were put into production for the operational administration. Detailed information related to test assembly can be found in section *4.3 Test Production Process*.

In particular, the assembly of all test forms went through a certification process that included various checks to verify that

- all answers are correct,
- answers score correctly in the item bank and incorrect answers score as incorrect,

- all items match the standard,
- all content in the item is correct,
- distractors are plausible,
- multiple-choice item options are parallel in structure,
- language is grade-level appropriate,
- no more than three multiple choice items in a row have the same key,
- all art is correct,
- there are no errors in spelling or grammar,
- items adhere to the approved style guide, and
- all item meets the statistical criteria.

Reviews were also conducted for functionality and sequencing during the user acceptance testing process to ensure all items were functioning as expected.

9.2.2. Quality Control of Test Assignment

Test assignment for the CAASPP assessments, including the CAAs for ELA and mathematics, is controlled by the Test Operations Management System (TOMS) using student demographic information received from the California Longitudinal Pupil Achievement Data System (CALPADS) (CDE, 2017). The two systems are kept in sync during the testing window. Students in eligible grades are assigned to the Smarter Balanced assessments by default. For students eligible for the CAAs for ELA and mathematics, local educational agencies (LEAs) log on to TOMS and assign students to take the alternate assessment, which automatically unassigns those students from taking Smarter Balanced Summative Assessments.

The quality of test assignment for the CAAs is monitored and controlled through several strategies. TOMS enforces preconditions for eligibility for the CAAs by permitting assignment only for students with an Individuals with Disabilities Education Act (IDEA)[10] indicator of “Yes” in TOMS. This indicator is set to “Yes” when the CALPADS *Education Program* field (Field 3.13) is equal to 144 (Special Education) and the primary disability code (CALPADS Field 3.21) is not set to blank.

Additionally, TOMS prevents the prohibited “mixing and matching” of assessments. For example, a student assigned to take an alternate assessment for any content area will automatically be prevented from assignment to a general assessment for another content area.

9.2.3. Quality Control of Test Administration

The quality of test administration is managed through comprehensive rules and guidelines for maintaining the security and standardization of CAASPP assessments, including the CAA. LEAs receive training on these topics and are provided tools for reporting security incidents and resolving testing discrepancies for specific testing sessions.

Several strategies are utilized to monitor and control the quality of test administration for the CAAs as well as all assessments administered as part of the CAASPP System. A fully staffed support center, the California Technical Assistance Center (CalTAC), supports all LEAs in the administration of CAASPP assessments. CalTAC is guided by a core group of

[10] The Individuals with Disabilities Education Act is the primary federal program that authorizes state and local aid for special education and related services for children with disabilities.

LEA outreach and advocacy staff that manage communications to LEAs, regional and Web-based trainings, and a Web site, http://www.caaspp.org/, that houses a full range of manuals, videos, and other instructional and support materials. In addition to providing guidance and answering questions, CalTAC regularly conducts outreach campaigns on particular administration topics to ensure all LEAs understand correct test administration procedures.

The ETS Office of Testing Integrity (OTI) reinforces the quality control procedures for test administration, providing quality assurance services for all testing programs managed by ETS. The detailed procedures OTI developed and applied in quality control are described in subsection *5.2.1. ETS's Office of Testing Integrity (OTI)*.

9.2.4. Quality Control of Machine Scoring Procedures

To ensure valid item-level scoring for the CAAs for ELA and mathematics, quality control procedures are employed by American Institutes for Research (AIR), the CAASPP subcontractor responsible for providing the test delivery system (TDS) and scoring machine-scorable items. AIR psychometric staff members independently review all CAAs for ELA and mathematics test forms by taking sample tests. Responses to the test forms are compared with the answer keys for each form to confirm the accuracy of scoring keys. Score outcomes are contemplated above and below each of the routing thresholds to ensure that the appropriate test stage was assigned in each instance, according to the score thresholds approved by the CDE. The scores for all applicable items are recorded prior to the routing action. A final comparison of the test map to each online form as configured in the user acceptance test environment ensures that no changes to the form were introduced prior to operational deployment.

A real-time, quality-monitoring component was built into the TDS. After a test is administered to a student, the TDS passes the resulting data to the Quality Assurance (QA) system. QA conducts a series of data integrity checks, ensuring, for example, that the record for each test contains information for each item, keys for multiple-choice items, score points in each item, and the total number of operational items, and that the test record contains no data from items that have been invalidated.

Data pass directly from the Quality Monitoring System to the Database of Record, which serves as the repository for all test information, and from which all test information for reporting is pulled and transmitted to ETS in a predetermined results format.

9.3. Quality Control of Test Materials

9.3.1. Developing Online Assessments

The steps taken to develop and ensure the quality of the online assessments are described in *Chapter 4: Test Assembly*.

9.3.2. Test Administration Manuals

ETS staff consult with internal subject matter experts and conduct validation checks to verify that test directions and administration manuals accurately match the test materials and testing processes. Copy editors and content editors review each document for spelling, grammar, accuracy, and adherence to CDE style. Each document must be approved by the CDE before it can be published to the CAASPP Portal at http://www.caaspp.org/. Only nonsecure documents are posted to this Web site. Secure materials, such as the *CAA Directions for Administration*, are made available to designated LEA staff through TOMS, which requires a secure log on.

The manuals used in the administration of the CAA are listed in subsection *5.4.4 Instructions for Test Examiners and Staff Involved in CAA Administration*.

9.3.3. Processing Test Materials

Online tests are submitted by test examiners and transmitted from AIR to ETS each day. The AIR and ETS systems check for the completeness of the student record and stop records that are identified as having an error. For example, the system will identify a test module that is missing a content registration ID, a unique identifier that matches the student's opportunity in the final scoring.

9.4. Quality Control of Psychometric Processes

9.4.1. Development of Scoring Specifications

ETS scoring specifications for the CAA are completed, approved, and checked well in advance of the receipt of student response data. These specifications contain detailed scoring procedures and routing rules, as well as the procedures for determining whether a student has attempted a test and whether that student's response data should be included in the statistical analyses and calculations for computing summary data.

9.4.2. Development of Scoring Procedures

ETS's enterprise score key management system (eSKM) utilizes scoring procedures specified by psychometricians and provides scoring services. Following scoring, a series of quality control checks are carried out by ETS psychometricians to ensure the accuracy of each score.

9.4.2.1. Enterprise Score Key Management System (eSKM) Processing

Prior to the test administration, ETS Assessment Development staff review and verify the keys and scoring rubrics for each item. Then, these keys and rubrics are provided to AIR for implementation. After AIR finishes machine-scoring, those scores and responses are delivered to ETS. AIR quality control of machine-scoring is described in subsection *9.2.3 Quality Control of Test Administration*.

ETS's Centralized Repository Distribution System and Enterprise Service Bus departments collect and parse .xml files that contain student response data from AIR. ETS's eSKM system collects and calculates individual students' overall scores (total raw scores) and generates student scores in the approved statistical extract format. These data extracts are sent to ETS's Data Quality Services (DQS) for data validation. Following successful validation, the student response statistical extracts are made available to the psychometric team.

ETS developed two parallel scoring systems to produce and verify overall students' scores: the eSKM scoring system receives the individual students' item scores and item responses from AIR and calculates individual student scores for ETS's reporting systems. The Psychometrics, Statistics, and Data Science team also computes individual student scores based on item scores delivered by AIR. The scores from the two sources are then compared for internal quality control. Any differences in the scores are discussed and resolved. All scores must comply with the ETS scoring specifications and the parallel scoring process to ensure the quality and accuracy of scoring, and to support the transfer of scores into the database of the student records scoring system, TOMS.

9.4.2.2. Psychometric Processing

Psychometricians verify the eSKM scoring by comparing the parallel scoring programs and conduct extensive analyses including item analyses, differential item functioning, item response theory (IRT) calibration, and linking and scaling.

The psychometric analyses conducted at ETS undergo comprehensive quality checks by a team of psychometricians and data analysts. Detailed checklists are developed by members of the team for each of the statistical procedures performed on each CAA. Classical item analyses are performed which include a check of scoring keys for multiple choice items and scoring logic. Items that are flagged for questionable statistical attributes are sent to Assessment Development (AD) staff for their review; AD comments are then reviewed by the psychometricians before items are approved for inclusion in calibration.

During the calibration process, checks are made to ascertain that the version of the software and control files are established accurately. Checks are also made on the number of items, number of examinees with valid scores, IRT item difficulty estimates, standard errors for the item difficulty estimates, and the match of selected statistics to the results on the same statistics obtained during preliminary item analyses. Two psychometricians conduct parallel calibration processing and compare the results to check its accuracy. Psychometricians also perform detailed reviews of statistics to investigate whether the IRT model used fits the data. In addition, the results of the calibration procedures are reviewed by a psychometric manager.

Once raw-to-scale score conversion tables for each form are generated, the psychometricians carry out quality control checks on each scoring table to verify

- all possible raw scores for each form are included in the tables;
- the lowest obtainable scale score (LOSS), LOSS+1, and highest obtainable scale score (HOSS) match the specifications for each grade respectively; and
- the threshold score for the performance levels are correctly identified.

After all quality control steps are completed and any differences are resolved, one final inspection of scoring tables is made prior to uploading the tables to eSKM for score reporting.

9.5. Quality Control of Reporting

To ensure the quality of CAAs for ELA and mathematics test results for both individual student and summary reports, four general areas are evaluated:

1. Comparison of report formats with input sources from the CDE-approved samples
2. Validation of the report data through quality control checks performed by ETS's DQS and Resolutions teams, as well as running of all the student score reports through ETS's patented Quality Control Integrator software
3. Evaluation of the production of all printed reports by verifying the print quality, comparing number of report copies, sequence of report order, and offset characteristics to the CDE requirements
4. Proofreading of the pilot and production reports by the CDE and ETS prior to any LEA mailings

All reports are required to include a single, accurate LEA code, a charter school number (if applicable), a school district name, and a school name. All elements conform to the CDE's official county/district/school (CDS) code and naming records. From the start of processing through scoring and reporting, the CDS Master File is used to verify and confirm accurate codes and names. The CDE provides a revised LEA Master File to ETS throughout the year as updates become available.

After the reports are validated against the CDE's requirements, a set of reports representing all possible grades, content areas, and reporting outcomes is provided to the CDE and ETS for review and approval. The sample paper reports, representing the way they are expected to look in production are sent to the CDE and ETS for review and approval after a thorough examination.

Upon the CDE's approval of the sample set of reports generated, ETS proceeds with report production. All reports for all LEAs administering CAAs during the 2016–17 CAASPP administration are produced and distributed as one batch.

9.5.1. Exclusion of Student Scores from Summary Reports

ETS provides reporting specifications to the CDE that document when to exclude student scores from summary reports. These specifications include the logic for handling submitted tests and answer documents that, for example, indicate the student tested but responded to no items, was absent, was not tested due to parent/guardian request, or did not complete the test due to illness. The methods for handling other anomalies are also covered in the specifications. These anomalies are described in more detail in the subsection *7.3.2 Special Cases*.

9.5.2. End-to-End Testing for Operational Administration

ETS conducts end-to-end testing prior to the start of the test administration. The purpose of this testing is to verify that all systems, processes, and resources are ready for the operational administration. ETS employs a number of strategies to verify ongoing systems performance, including monitoring of system availability and online system usage. Time is allotted for user acceptance testing to confirm that the systems meet requirements and to make identified corrections before final deployment. To accomplish system acceptance and sign off, ETS deploys systems to a staging area, which mirrors the final production environment, for operational and user acceptance testing. Final approval by the CDE triggers the final deployment of the system.

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Chapter 10: Historical Comparisons

Historical comparisons of the California Alternate Assessments (CAA) for English language arts/literacy (ELA) and mathematics results are performed to identify the trends in student performance and test characteristics over time. Such comparisons were performed for ELA and mathematics in grades three through eight and eleven for the two most recent administrations: 2015–16 and 2016–17, with 2015–16 as the base school year. The comparisons are cross-sectional comparisons, which are made between the current year and the previous year for the same grades in a content area. Without a vertical scale in each test, longitudinal comparisons are not possible.

The indicators of student performance include the mean and standard deviation of scale scores and the percentage of students classified into achievement levels. Test characteristics are compared by examining the reliability and standard error of measurement (SEM) for each test.

10.1. Student Performances

In cross-sectional comparisons, cohorts of students from the same grades are compared across the 2015–16 and 2016–17 CAAs for ELA and mathematics administrations. For example, students enrolled in grade three for the 2015–16 CAA administration are compared with students enrolled in grade three for the 2016–17 CAA administration. As noted in Table 7.2 on page 95 of *Chapter 7: Scoring and Reporting*, the different grades have different reporting scales, 300s for Grade 3, 400s for Grade 4, …., 900s for Grade 11, for both ELA and mathematics.

10.1.1. Summary Statistics

Table 10.A.1 on page 507 shows, for each test, the number of students enrolled, the number of students with valid scores, and the means and standard deviations of students' scale scores in 2015–16 and 2016–17

10.1.2. Achievement Levels of Overall Students

Scale cut scores are used to classify each student into one of three achievement levels: Level 1—Alternate, Level 2—Alternate, and Level 3—Alternate, with higher levels indicating higher performance. Refer to Table 7.2 in Chapter 7 for the achievement level scale score ranges for each test. The percentages of students in each achievement level in 2015–16 and 2016–17 are presented in Table 10.A.1. The percentages for the three achievement levels may not sum to exactly 100 because of rounding. Also note that this information may differ slightly from information found on the California Department of Education (CDE) CAASPP Public Reporting Web site at http://caaspp.cde.ca.gov/ due to different dates on which data were accessed.

10.1.3. Scale Score Distributions

Table 10.A.3 through Table 10.A.16 starting on page 509 show the distributions of scale scores observed in 2015–16 and 2016–17 for each grade and content area. Frequency counts are provided for each scale score interval of 3. A blank indicates that there are no obtainable scale scores beyond the scale score range. The scale score ranges for each grade are those defined in Table 7.2 on page 95 of Chapter 7 for the scale score ranges.

10.1.4. Achievement Levels of Selected Student Groups

Table 10.A.17 through Table 10.A.30, which start on page 523, provide statistics summarizing student achievement by content area and grade for selected student groups. In these tables, students are grouped by demographic characteristics, including gender, ethnicity, English-language fluency, economic status (disadvantaged or not), primary disability groups, migrant status, the use of designated supports (using designated supports or not), and the use of accommodations (using accommodations or not). The tables show, for each demographic student group, the numbers of students with a valid scale score, scale score means and standard deviations, and the percentage of students in each achievement level, for 2016–17 and 2015–16 respectively.

10.2. Test Characteristics

The marginal reliability (Green, Bock, Humphreys, Linn, & Reckase, 1984),which is used to estimate the reliability of MST scores, and standard errors of measurement (SEM) expressed in theta score units for each test are presented in Table 10.B.1 on page 551. Reliabilities are affected by both item characteristics and student characteristics. Refer to sections *8.6.1. Internal Consistency Reliability* and *8.6.2 Standard Error of Measurement (SEM)* for the methods used to calculate marginal reliability and SEM, respectively.

Reference

Green, B. F., Bock, R. D., Humphreys, L. G., Linn, R. L., & Reckase, M. D. (1984). Technical guidelines for assessing computerized adaptive tests. *Journal of Educational Measurement*, *21*(4), 347–360.

Appendix 10.A: Cross-Sectional Comparisons of the Overall Group and Selected Groups on the Overall Tests

Notes:

1. For consistency, the 2015–16 and 2016–17 results are based on the final data.
2. Individual achievement level percentages may not sum to 100 or the combined achievement level percentage due to rounding.
3. To protect privacy when the number of students in a student group is 10 or fewer, the summary statistics of performance are not reported and are presented as "-".
4. N means the number of valid scores unless it is specifically pointed out otherwise; for example, "N enrolled" means the number of students enrolled.

Table 10.A.1 Summary Statistics of the Total Test across 2015–16 and 2016–17, Cross-Sectional Comparison

Content Area/Grade	2015–16 N Enrolled	2015–16 N	2015–16 Scale Score Mean	2015–16 Scale Score SD	2016–17 N Enrolled	2016–17 N	2016–17 Scale Score Mean	2016–17 Scale Score SD
ELA 3	5,462	4,962	339	25	5,385	5,003	342	26
ELA 4	5,751	5,267	437	22	5,817	5,410	439	24
ELA 5	5,674	5,098	537	21	5,965	5,533	538	23
ELA 6	5,656	5,116	637	20	5,805	5,336	638	20
ELA 7	5,672	5,123	736	21	5,807	5,288	736	22
ELA 8	5,347	4,755	838	21	5,784	5,247	840	21
ELA 11	5,210	4,273	940	20	5,322	4,505	941	22
Mathematics 3	5,462	4,978	331	21	5,385	4,989	333	21
Mathematics 4	5,751	5,283	432	20	5,817	5,396	433	21
Mathematics 5	5,674	5,098	532	20	5,965	5,543	533	21
Mathematics 6	5,656	5,123	631	20	5,805	5,321	634	20
Mathematics 7	5,672	5,117	732	21	5,807	5,275	733	22
Mathematics 8	5,347	4,757	831	20	5,784	5,232	834	21
Mathematics 11	5,210	4,268	933	20	5,322	4,496	934	20

Table 10.A.2 Percentage of Each Achievement Level across 2015–16 and 2016–17, Cross-Sectional Comparison

Content Area/Grade	Level 1 in 2015–16	Level 1 in 2016–17	Level 2 in 2015–16	Level 2 in 2016–17	Level 3 in 2015–16	Level 3 in 2016–17
ELA 3	54%	53%	25%	22%	21%	25%
ELA 4	59%	54%	29%	29%	11%	16%
ELA 5	57%	54%	35%	32%	9%	14%
ELA 6	54%	54%	38%	37%	8%	9%
ELA 7	57%	59%	35%	28%	8%	13%
ELA 8	47%	38%	44%	50%	9%	11%
ELA 11	43%	43%	49%	39%	8%	18%
Mathematics 3	72%	67%	23%	28%	5%	6%
Mathematics 4	70%	68%	26%	25%	4%	7%
Mathematics 5	70%	64%	25%	30%	5%	6%
Mathematics 6	73%	67%	23%	30%	4%	4%
Mathematics 7	70%	69%	24%	24%	5%	8%
Mathematics 8	71%	66%	25%	27%	4%	7%
Mathematics 11	66%	66%	29%	28%	6%	6%

Table 10.A.3 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Three

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[300, 302]	949	19%	826	17%
[303, 305]	104	2%	188	4%
[306, 308]	14	0%	20	0%
[309, 311]	43	1%	12	0%
[312, 314]	42	1%	16	0%
[315, 317]	37	1%	25	0%
[318, 320]	46	1%	28	1%
[321, 323]	68	1%	37	1%
[324, 326]	38	1%	109	2%
[327, 329]	132	3%	97	2%
[330, 332]	168	3%	114	2%
[333, 335]	180	4%	298	6%
[336, 338]	309	6%	334	7%
[339, 341]	209	4%	184	4%
[342, 344]	347	7%	351	7%
[345, 347]	268	5%	210	4%
[348, 350]	301	6%	218	4%
[351, 353]	256	5%	230	5%
[354, 356]	254	5%	185	4%
[357, 359]	152	3%	264	5%
[360, 362]	261	5%	152	3%
[363, 365]	146	3%	125	2%
[366, 368]	118	2%	146	3%
[369, 371]	133	3%	120	2%
[372, 374]	89	2%	155	3%
[375, 377]	108	2%	148	3%
[378, 380]	34	1%	119	2%
[381, 383]	36	1%	0	0%
[384, 386]	29	1%	113	2%
[387, 389]	27	1%	0	0%
[390, 392]	20	0%	95	2%
[393, 395]	0	0%	0	0%
[396, 398]	0	0%	0	0%
[399, 399]	44	1%	84	2%

Table 10.A.4 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Four

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[400, 402]	956	18%	881	16%
[403, 405]	63	1%	223	4%
[406, 408]	30	1%	19	0%
[409, 411]	41	1%	19	0%
[412, 414]	48	1%	20	0%
[415, 417]	58	1%	24	0%
[418, 420]	46	1%	31	1%
[421, 423]	58	1%	72	1%
[424, 426]	60	1%	58	1%
[427, 429]	96	2%	76	1%
[430, 432]	170	3%	221	4%
[433, 435]	220	4%	335	6%
[436, 438]	427	8%	216	4%
[439, 441]	447	8%	349	6%
[442, 444]	412	8%	385	7%
[445, 447]	347	7%	381	7%
[448, 450]	375	7%	284	5%
[451, 453]	353	7%	407	8%
[454, 456]	239	5%	220	4%
[457, 459]	219	4%	301	6%
[460, 462]	195	4%	187	3%
[463, 465]	145	3%	155	3%
[466, 468]	76	1%	113	2%
[469, 471]	66	1%	131	2%
[472, 474]	18	0%	101	2%
[475, 477]	39	1%	1	0%
[478, 480]	18	0%	88	2%
[481, 483]	11	0%	0	0%
[484, 486]	5	0%	55	1%
[487, 489]	10	0%	0	0%
[490, 492]	0	0%	0	0%
[493, 495]	0	0%	0	0%
[496, 498]	10	0%	41	1%
[499, 499]	9	0%	16	0%

Table 10.A.5 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Five

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[500, 502]	879	17%	913	17%
[503, 505]	37	1%	162	3%
[506, 508]	26	1%	18	0%
[509, 511]	23	0%	14	0%
[512, 514]	28	1%	22	0%
[515, 517]	57	1%	21	0%
[518, 520]	56	1%	30	1%
[521, 523]	73	1%	90	2%
[524, 526]	81	2%	61	1%
[527, 529]	87	2%	212	4%
[530, 532]	134	3%	130	2%
[533, 535]	236	5%	346	6%
[536, 538]	224	4%	352	6%
[539, 541]	483	9%	275	5%
[542, 544]	472	9%	336	6%
[545, 547]	516	10%	371	7%
[548, 550]	431	8%	518	9%
[551, 553]	287	6%	270	5%
[554, 556]	217	4%	263	5%
[557, 559]	316	6%	363	7%
[560, 562]	138	3%	164	3%
[563, 565]	88	2%	150	3%
[566, 568]	117	2%	111	2%
[569, 571]	0	0%	96	2%
[572, 574]	41	1%	87	2%
[575, 577]	24	0%	53	1%
[578, 580]	15	0%	0	0%
[581, 583]	0	0%	45	1%
[584, 586]	0	0%	0	0%
[587, 589]	6	0%	39	1%
[590, 592]	0	0%	0	0%
[593, 595]	0	0%	0	0%
[596, 598]	6	0%	0	0%
[599, 599]	0	0%	21	0%

Table 10.A.6 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Six

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[600, 602]	873	17%	770	14%
[603, 605]	28	1%	74	1%
[606, 608]	23	0%	68	1%
[609, 611]	0	0%	0	0%
[612, 614]	28	1%	23	0%
[615, 617]	27	1%	24	0%
[618, 620]	41	1%	38	1%
[621, 623]	61	1%	15	0%
[624, 626]	85	2%	59	1%
[627, 629]	109	2%	118	2%
[630, 632]	167	3%	195	4%
[633, 635]	196	4%	295	6%
[636, 638]	292	6%	361	7%
[639, 641]	434	8%	487	9%
[642, 644]	415	8%	366	7%
[645, 647]	522	10%	451	8%
[648, 650]	377	7%	464	9%
[651, 653]	441	9%	488	9%
[654, 656]	410	8%	390	7%
[657, 659]	193	4%	195	4%
[660, 662]	183	4%	230	4%
[663, 665]	112	2%	83	2%
[666, 668]	39	1%	64	1%
[669, 671]	21	0%	36	1%
[672, 674]	15	0%	19	0%
[675, 677]	10	0%	0	0%
[678, 680]	7	0%	13	0%
[681, 683]	0	0%	0	0%
[684, 686]	4	0%	0	0%
[687, 689]	0	0%	6	0%
[690, 692]	0	0%	0	0%
[693, 695]	3	0%	0	0%
[696, 698]	0	0%	0	0%
[699, 699]	0	0%	4	0%

Table 10.A.7 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Seven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[700, 702]	958	19%	884	17%
[703, 705]	87	2%	216	4%
[706, 708]	20	0%	15	0%
[709, 711]	21	0%	26	0%
[712, 714]	42	1%	24	0%
[715, 717]	27	1%	23	0%
[718, 720]	86	2%	40	1%
[721, 723]	92	2%	60	1%
[724, 726]	137	3%	84	2%
[727, 729]	85	2%	122	2%
[730, 732]	137	3%	311	6%
[733, 735]	208	4%	231	4%
[736, 738]	198	4%	451	9%
[739, 741]	427	8%	344	7%
[742, 744]	376	7%	277	5%
[745, 747]	383	7%	429	8%
[748, 750]	489	10%	220	4%
[751, 753]	402	8%	342	6%
[754, 756]	194	4%	354	7%
[757, 759]	323	6%	148	3%
[760, 762]	108	2%	206	4%
[763, 765]	164	3%	170	3%
[766, 768]	45	1%	74	1%
[769, 771]	40	1%	52	1%
[772, 774]	35	1%	47	1%
[775, 777]	20	0%	42	1%
[778, 780]	0	0%	37	1%
[781, 783]	8	0%	1	0%
[784, 786]	2	0%	28	1%
[787, 789]	2	0%	0	0%
[790, 792]	0	0%	19	0%
[793, 795]	6	0%	0	0%
[796, 798]	0	0%	0	0%
[799, 799]	1	0%	11	0%

Table 10.A.8 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Eight

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[800, 802]	888	19%	881	17%
[803, 805]	34	1%	66	1%
[806, 808]	7	0%	44	1%
[809, 811]	4	0%	89	2%
[812, 814]	22	0%	9	0%
[815, 817]	36	1%	10	0%
[818, 820]	31	1%	18	0%
[821, 823]	44	1%	15	0%
[824, 826]	44	1%	11	0%
[827, 829]	47	1%	37	1%
[830, 832]	67	1%	61	1%
[833, 835]	88	2%	55	1%
[836, 838]	188	4%	135	3%
[839, 841]	242	5%	221	4%
[842, 844]	497	10%	367	7%
[845, 847]	543	11%	815	16%
[848, 850]	531	11%	621	12%
[851, 853]	357	8%	565	11%
[854, 856]	472	10%	293	6%
[857, 859]	187	4%	354	7%
[860, 862]	189	4%	185	4%
[863, 865]	92	2%	218	4%
[866, 868]	69	1%	73	1%
[869, 871]	36	1%	43	1%
[872, 874]	19	0%	25	0%
[875, 877]	8	0%	15	0%
[878, 880]	7	0%	3	0%
[881, 883]	5	0%	9	0%
[884, 886]	1	0%	8	0%
[887, 889]	0	0%	0	0%
[890, 892]	0	0%	0	0%
[893, 895]	0	0%	0	0%
[896, 898]	0	0%	0	0%
[899, 899]	0	0%	1	0%

Table 10.A.9 Scale Score Distributions across 2015–16 and 2016–17 for ELA, Grade Eleven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[900, 902]	625	15%	712	16%
[903, 905]	31	1%	37	1%
[906, 908]	9	0%	35	1%
[909, 911]	14	0%	0	0%
[912, 914]	6	0%	13	0%
[915, 917]	30	1%	13	0%
[918, 920]	37	1%	12	0%
[921, 923]	43	1%	20	0%
[924, 926]	67	2%	54	1%
[927, 929]	49	1%	37	1%
[930, 932]	99	2%	109	2%
[933, 935]	65	2%	83	2%
[936, 938]	111	3%	218	5%
[939, 941]	255	6%	235	5%
[942, 944]	385	9%	360	8%
[945, 947]	587	14%	445	10%
[948, 950]	577	14%	454	10%
[951, 953]	392	9%	222	5%
[954, 956]	308	7%	419	9%
[957, 959]	246	6%	203	5%
[960, 962]	121	3%	345	8%
[963, 965]	136	3%	140	3%
[966, 968]	31	1%	147	3%
[969, 971]	18	0%	68	2%
[972, 974]	17	0%	55	1%
[975, 977]	6	0%	22	0%
[978, 980]	7	0%	14	0%
[981, 983]	0	0%	23	1%
[984, 986]	1	0%	0	0%
[987, 989]	0	0%	9	0%
[990, 992]	0	0%	0	0%
[993, 995]	0	0%	0	0%
[996, 998]	0	0%	1	0%
[999, 999]	0	0%	0	0%

Table 10.A.10 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Three

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[300, 302]	1,099	22%	919	18%
[303, 305]	95	2%	351	7%
[306, 308]	0	0%	0	0%
[309, 311]	45	1%	23	0%
[312, 314]	51	1%	19	0%
[315, 317]	36	1%	20	0%
[318, 320]	87	2%	36	1%
[321, 323]	171	3%	41	1%
[324, 326]	112	2%	86	2%
[327, 329]	212	4%	174	3%
[330, 332]	180	4%	136	3%
[333, 335]	239	5%	282	6%
[336, 338]	369	7%	326	7%
[339, 341]	375	8%	369	7%
[342, 344]	524	11%	542	11%
[345, 347]	245	5%	392	8%
[348, 350]	411	8%	397	8%
[351, 353]	180	4%	179	4%
[354, 356]	211	4%	305	6%
[357, 359]	105	2%	100	2%
[360, 362]	82	2%	85	2%
[363, 365]	43	1%	67	1%
[366, 368]	30	1%	53	1%
[369, 371]	22	0%	19	0%
[372, 374]	0	0%	31	1%
[375, 377]	13	0%	15	0%
[378, 380]	13	0%	6	0%
[381, 383]	9	0%	0	0%
[384, 386]	2	0%	6	0%
[387, 389]	3	0%	0	0%
[390, 392]	0	0%	3	0%
[393, 395]	0	0%	0	0%
[396, 398]	6	0%	0	0%
[399, 399]	8	0%	7	0%

Table 10.A.11 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Four

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[400, 402]	994	19%	1,032	19%
[403, 405]	136	3%	261	5%
[406, 408]	55	1%	17	0%
[409, 411]	65	1%	0	0%
[412, 414]	0	0%	13	0%
[415, 417]	92	2%	25	0%
[418, 420]	107	2%	38	1%
[421, 423]	131	2%	55	1%
[424, 426]	93	2%	169	3%
[427, 429]	201	4%	133	2%
[430, 432]	177	3%	179	3%
[433, 435]	182	3%	326	6%
[436, 438]	507	10%	520	10%
[439, 441]	443	8%	323	6%
[442, 444]	510	10%	570	11%
[445, 447]	427	8%	418	8%
[448, 450]	416	8%	311	6%
[451, 453]	217	4%	375	7%
[454, 456]	174	3%	152	3%
[457, 459]	131	2%	105	2%
[460, 462]	71	1%	123	2%
[463, 465]	33	1%	71	1%
[466, 468]	52	1%	45	1%
[469, 471]	12	0%	29	1%
[472, 474]	16	0%	30	1%
[475, 477]	10	0%	0	0%
[478, 480]	9	0%	13	0%
[481, 483]	1	0%	16	0%
[484, 486]	4	0%	0	0%
[487, 489]	4	0%	13	0%
[490, 492]	0	0%	0	0%
[493, 495]	8	0%	15	0%
[496, 498]	0	0%	0	0%
[499, 499]	5	0%	19	0%

Table 10.A.12 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Five

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[500, 502]	1,031	20%	1,021	18%
[503, 505]	91	2%	321	6%
[506, 508]	34	1%	17	0%
[509, 511]	32	1%	0	0%
[512, 514]	26	1%	28	1%
[515, 517]	78	2%	18	0%
[518, 520]	69	1%	62	1%
[521, 523]	62	1%	72	1%
[524, 526]	86	2%	79	1%
[527, 529]	129	3%	261	5%
[530, 532]	253	5%	187	3%
[533, 535]	402	8%	369	7%
[536, 538]	256	5%	233	4%
[539, 541]	575	11%	542	10%
[542, 544]	469	9%	349	6%
[545, 547]	403	8%	598	11%
[548, 550]	389	8%	358	6%
[551, 553]	269	5%	354	6%
[554, 556]	125	2%	233	4%
[557, 559]	86	2%	123	2%
[560, 562]	86	2%	101	2%
[563, 565]	35	1%	58	1%
[566, 568]	28	1%	32	1%
[569, 571]	22	0%	32	1%
[572, 574]	15	0%	25	0%
[575, 577]	7	0%	16	0%
[578, 580]	8	0%	10	0%
[581, 583]	8	0%	0	0%
[584, 586]	0	0%	12	0%
[587, 589]	10	0%	13	0%
[590, 592]	0	0%	0	0%
[593, 595]	3	0%	7	0%
[596, 598]	0	0%	0	0%
[599, 599]	11	0%	12	0%

Table 10.A.13 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Six

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[600, 602]	1,003	20%	1,008	19%
[603, 605]	87	2%	196	4%
[606, 608]	25	0%	0	0%
[609, 611]	38	1%	18	0%
[612, 614]	91	2%	28	1%
[615, 617]	135	3%	0	0%
[618, 620]	99	2%	26	0%
[621, 623]	183	4%	38	1%
[624, 626]	196	4%	46	1%
[627, 629]	282	6%	185	3%
[630, 632]	176	3%	149	3%
[633, 635]	183	4%	400	8%
[636, 638]	312	6%	276	5%
[639, 641]	344	7%	686	13%
[642, 644]	564	11%	499	9%
[645, 647]	424	8%	625	12%
[648, 650]	323	6%	257	5%
[651, 653]	205	4%	384	7%
[654, 656]	102	2%	137	3%
[657, 659]	139	3%	167	3%
[660, 662]	46	1%	48	1%
[663, 665]	40	1%	57	1%
[666, 668]	35	1%	19	0%
[669, 671]	27	1%	20	0%
[672, 674]	14	0%	9	0%
[675, 677]	12	0%	10	0%
[678, 680]	10	0%	0	0%
[681, 683]	8	0%	9	0%
[684, 686]	0	0%	9	0%
[687, 689]	6	0%	0	0%
[690, 692]	0	0%	3	0%
[693, 695]	4	0%	0	0%
[696, 698]	0	0%	0	0%
[699, 699]	10	0%	12	0%

Table 10.A.14 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Seven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[700, 702]	1,041	20%	1,034	20%
[703, 705]	128	3%	289	5%
[706, 708]	35	1%	20	0%
[709, 711]	26	1%	23	0%
[712, 714]	85	2%	10	0%
[715, 717]	152	3%	15	0%
[718, 720]	74	1%	31	1%
[721, 723]	58	1%	82	2%
[724, 726]	78	2%	118	2%
[727, 729]	79	2%	164	3%
[730, 732]	258	5%	296	6%
[733, 735]	289	6%	426	8%
[736, 738]	452	9%	271	5%
[739, 741]	385	8%	400	8%
[742, 744]	460	9%	454	9%
[745, 747]	415	8%	453	9%
[748, 750]	253	5%	253	5%
[751, 753]	242	5%	277	5%
[754, 756]	182	4%	118	2%
[757, 759]	150	3%	140	3%
[760, 762]	49	1%	82	2%
[763, 765]	58	1%	62	1%
[766, 768]	34	1%	49	1%
[769, 771]	33	1%	47	1%
[772, 774]	20	0%	31	1%
[775, 777]	17	0%	28	1%
[778, 780]	17	0%	24	0%
[781, 783]	22	0%	25	0%
[784, 786]	0	0%	0	0%
[787, 789]	9	0%	20	0%
[790, 792]	0	0%	11	0%
[793, 795]	11	0%	0	0%
[796, 798]	0	0%	0	0%
[799, 799]	5	0%	22	0%

Table 10.A.15 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Eight

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[800, 802]	966	20%	983	19%
[803, 805]	103	2%	156	3%
[806, 808]	47	1%	16	0%
[809, 811]	46	1%	0	0%
[812, 814]	104	2%	19	0%
[815, 817]	140	3%	65	1%
[818, 820]	130	3%	50	1%
[821, 823]	101	2%	61	1%
[824, 826]	59	1%	147	3%
[827, 829]	84	2%	153	3%
[830, 832]	96	2%	280	5%
[833, 835]	275	6%	434	8%
[836, 838]	345	7%	322	6%
[839, 841]	411	9%	475	9%
[842, 844]	470	10%	278	5%
[845, 847]	438	9%	482	9%
[848, 850]	216	5%	292	6%
[851, 853]	200	4%	278	5%
[854, 856]	192	4%	142	3%
[857, 859]	124	3%	216	4%
[860, 862]	72	2%	96	2%
[863, 865]	55	1%	64	1%
[866, 868]	31	1%	62	1%
[869, 871]	19	0%	48	1%
[872, 874]	11	0%	35	1%
[875, 877]	3	0%	25	0%
[878, 880]	10	0%	0	0%
[881, 883]	4	0%	19	0%
[884, 886]	0	0%	13	0%
[887, 889]	1	0%	0	0%
[890, 892]	1	0%	9	0%
[893, 895]	0	0%	0	0%
[896, 898]	2	0%	6	0%
[899, 899]	1	0%	6	0%

Table 10.A.16 Scale Score Distributions across 2015–16 and 2016–17 for Mathematics, Grade Eleven

Scale Score	2015–16 N	2015–16 Percent	2016–17 N	2016–17 Percent
[900, 902]	695	16%	754	17%
[903, 905]	144	3%	225	5%
[906, 908]	19	0%	0	0%
[909, 911]	35	1%	15	0%
[912, 914]	85	2%	16	0%
[915, 917]	79	2%	17	0%
[918, 920]	87	2%	37	1%
[921, 923]	76	2%	45	1%
[924, 926]	77	2%	136	3%
[927, 929]	106	2%	116	3%
[930, 932]	106	2%	257	6%
[933, 935]	329	8%	237	5%
[936, 938]	204	5%	320	7%
[939, 941]	502	12%	521	12%
[942, 944]	268	6%	262	6%
[945, 947]	456	11%	527	12%
[948, 950]	365	9%	212	5%
[951, 953]	137	3%	323	7%
[954, 956]	182	4%	129	3%
[957, 959]	77	2%	87	2%
[960, 962]	62	1%	123	3%
[963, 965]	37	1%	40	1%
[966, 968]	31	1%	22	0%
[969, 971]	28	1%	16	0%
[972, 974]	16	0%	17	0%
[975, 977]	17	0%	0	0%
[978, 980]	15	0%	10	0%
[981, 983]	0	0%	12	0%
[984, 986]	12	0%	0	0%
[987, 989]	0	0%	10	0%
[990, 992]	8	0%	0	0%
[993, 995]	0	0%	0	0%
[996, 998]	0	0%	5	0%
[999, 999]	13	0%	5	0%

Table 10.A.17 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Three

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,962	339	25	54%	25%	21%	5,003	342	26	53%	22%	25%
Male	3,383	339	25	53%	25%	22%	3,396	342	27	52%	22%	26%
Female	1,579	337	25	56%	24%	20%	1,607	341	26	54%	22%	24%
American Indian or Alaska Native	34	345	20	44%	35%	21%	26	353	24	31%	35%	35%
Asian	414	336	24	60%	27%	14%	392	336	24	63%	23%	15%
Native Hawaiian or Other Pacific Islander	17	329	25	71%	12%	18%	24	342	26	54%	21%	25%
Filipino	119	332	23	66%	22%	13%	117	334	24	62%	25%	14%
Hispanic or Latino	2,865	339	25	53%	26%	21%	2,906	343	27	51%	22%	27%
Black or African American	357	338	25	56%	21%	23%	364	340	26	54%	23%	23%
White	971	339	26	53%	24%	23%	956	342	27	52%	22%	26%
Two or more races	185	341	24	51%	23%	26%	218	339	27	56%	21%	24%
English only	2,953	338	26	55%	24%	21%	3,004	342	27	52%	22%	26%
Initially fluent English proficient	33	335	24	64%	24%	12%	47	337	23	66%	21%	13%
English learner	1,861	339	24	53%	26%	21%	1,804	342	26	52%	23%	25%
Reclassified fluent English proficient	105	342	25	51%	23%	26%	139	340	25	58%	22%	20%
To be determined	6	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,315	341	25	50%	26%	24%	3,278	344	26	49%	22%	29%
Not economically disadvantaged	1,647	334	25	62%	23%	15%	1,725	336	26	60%	22%	19%
Migrant	26	355	24	35%	23%	42%	44	359	24	32%	23%	45%
Nonmigrant	4,936	339	25	54%	25%	21%	4,959	341	26	53%	22%	25%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,605	335	22	65%	23%	12%	1,655	338	23	61%	23%	15%
Hearing impairment	51	345	20	37%	39%	24%	44	348	24	39%	34%	27%
Speech or language impairment	227	356	19	21%	32%	47%	217	358	20	24%	29%	47%
Visual impairment	31	320	27	74%	19%	6%	21	326	27	67%	24%	10%
Emotional disturbance	20	359	20	20%	20%	60%	29	362	25	28%	7%	66%
Orthopedic impairment	243	328	29	68%	17%	15%	224	331	30	64%	17%	19%
Other health impairment	283	345	25	45%	24%	31%	283	352	25	36%	26%	38%
Specific learning disability	310	365	17	7%	27%	66%	357	371	18	9%	14%	77%
Deaf–blindness	0	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
Multiple disabilities	256	318	22	84%	11%	4%	245	320	24	84%	9%	7%
Autism	1,863	339	24	53%	27%	20%	1,907	340	25	55%	24%	22%
Traumatic brain injury	17	345	23	35%	41%	24%	18	343	29	50%	11%	39%
Not classified	56	335	23	61%	25%	14%	1	NA	NA	NA	NA	NA
Using designated supports	1,318	343	25	48%	26%	27%	1,621	345	26	48%	22%	30%
No designated supports	3,644	337	25	57%	24%	19%	3,382	340	27	55%	22%	23%
Using accommodations	1,092	340	26	52%	23%	25%	1,400	342	27	52%	22%	26%
No accommodations	3,870	338	25	55%	25%	20%	3,603	341	26	53%	22%	25%

Table 10.A.18 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Four

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students		437	22	59%	29%	11%		439	24	54%	29%	16%
Male	3,560	437	21	59%	30%	12%	3,699	439	24	54%	30%	17%
Female	1,707	435	22	61%	28%	10%	1,711	439	23	55%	29%	16%
American Indian or Alaska Native	37	439	26	54%	32%	14%	37	449	19	30%	43%	27%
Asian	389	431	22	70%	23%	7%	414	434	22	65%	26%	9%
Native Hawaiian or Other Pacific Islander	26	440	20	58%	27%	15%	25	426	21	76%	24%	0%
Filipino	148	433	20	71%	23%	6%	115	433	21	70%	20%	10%
Hispanic or Latino	3,095	438	21	57%	31%	12%	3,214	440	24	52%	30%	18%
Black or African American	412	436	23	60%	29%	11%	402	438	22	52%	35%	13%
White	970	437	22	60%	27%	12%	1,010	438	24	55%	29%	17%
Two or more races	190	436	24	59%	28%	13%	193	437	23	59%	28%	13%
English only	3,023	436	22	60%	29%	12%	3,166	438	24	55%	29%	16%
Initially fluent English proficient	59	430	22	73%	17%	10%	37	433	23	65%	24%	11%
English learner	2,024	437	21	59%	30%	11%	1,983	440	23	52%	30%	17%
Reclassified fluent English proficient	154	437	21	57%	32%	11%	215	440	23	52%	34%	14%
To be determined	4	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,572	439	21	55%	32%	13%	3,566	441	23	49%	32%	19%
Not economically disadvantaged	1,695	432	22	68%	24%	8%	1,844	434	23	64%	25%	11%
Migrant	54	450	19	37%	37%	26%	36	453	25	39%	17%	44%
Nonmigrant	5,213	436	22	60%	29%	11%	5,374	439	23	54%	30%	16%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,802	435	19	66%	27%	7%	1,831	436	21	61%	30%	9%
Hearing impairment	47	444	18	45%	34%	21%	48	445	21	35%	46%	19%
Speech or language impairment	195	451	15	30%	44%	26%	200	452	17	21%	51%	29%
Visual impairment	30	424	28	77%	7%	17%	31	420	24	74%	16%	10%
Emotional disturbance	23	456	15	22%	39%	39%	32	458	16	19%	34%	47%
Orthopedic impairment	268	426	25	72%	20%	8%	240	427	26	70%	20%	10%
Other health impairment	280	444	21	44%	36%	20%	309	446	24	39%	34%	27%
Specific learning disability	408	458	13	11%	47%	41%	454	463	15	8%	32%	60%
Deaf–blindness	6	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Multiple disabilities	285	417	20	88%	11%	1%	279	418	21	86%	13%	1%
Autism	1,835	435	21	63%	28%	8%	1,958	437	22	58%	29%	13%
Traumatic brain injury	33	436	27	52%	27%	21%	25	438	23	44%	36%	20%
Not classified	55	438	20	58%	35%	7%	3	NA	NA	NA	NA	NA
Using designated supports	1,313	440	21	54%	31%	15%	1,939	442	23	49%	31%	20%
No designated supports	3,954	435	22	61%	28%	10%	3,471	437	24	57%	28%	15%
Using accommodations	1,077	437	23	58%	29%	13%	1,591	440	23	53%	29%	18%
No accommodations	4,190	436	22	60%	29%	11%	3,819	438	24	55%	30%	16%

Table 10.A.19 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Five

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,098	537	21	57%	35%	9%	5,533	538	23	54%	32%	14%
Male	3,440	537	21	56%	35%	9%	3,729	539	22	52%	33%	15%
Female	1,658	536	20	59%	34%	7%	1,804	536	23	57%	30%	12%
American Indian or Alaska Native	45	545	18	36%	47%	18%	33	541	25	48%	30%	21%
Asian	356	531	21	66%	30%	4%	431	533	22	62%	29%	9%
Native Hawaiian or Other Pacific Islander	31	532	23	65%	29%	6%	31	536	24	61%	32%	6%
Filipino	138	534	19	70%	28%	3%	147	535	21	61%	32%	7%
Hispanic or Latino	2,953	538	21	55%	36%	8%	3,257	539	22	52%	33%	15%
Black or African American	408	538	20	58%	32%	10%	439	536	23	55%	34%	11%
White	1,002	537	21	56%	34%	10%	1,009	538	23	56%	30%	15%
Two or more races	165	535	20	61%	31%	8%	186	537	23	55%	32%	13%
English only	2,968	537	21	57%	34%	9%	3,157	538	23	55%	32%	14%
Initially fluent English proficient	76	531	20	68%	29%	3%	53	529	21	75%	21%	4%
English learner	1,865	538	20	56%	36%	8%	2,040	539	22	53%	33%	14%
Reclassified fluent English proficient	177	537	21	56%	36%	7%	277	540	22	50%	34%	16%
To be determined	4	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,411	539	20	53%	37%	10%	3,690	540	22	50%	34%	16%
Not economically disadvantaged	1,687	532	21	65%	29%	6%	1,843	534	23	62%	29%	9%
Migrant	26	545	21	35%	54%	12%	50	549	21	42%	28%	30%
Nonmigrant	5,072	537	21	57%	35%	9%	5,483	538	23	54%	32%	14%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,889	536	19	63%	32%	5%	1,932	536	20	61%	31%	8%
Hearing impairment	50	541	18	48%	46%	6%	48	544	17	42%	46%	13%
Speech or language impairment	178	551	12	22%	58%	20%	156	552	15	26%	49%	24%
Visual impairment	31	525	22	74%	26%	0%	28	525	23	71%	21%	7%
Emotional disturbance	25	553	16	20%	48%	32%	36	549	26	42%	22%	36%
Orthopedic impairment	271	526	24	72%	20%	8%	261	525	26	69%	21%	9%
Other health impairment	254	545	19	39%	43%	18%	274	545	21	34%	43%	23%
Specific learning disability	371	556	12	12%	57%	32%	524	560	15	10%	42%	48%
Deaf–blindness	1	NA	NA	NA	NA	NA	7	NA	NA	NA	NA	NA
Multiple disabilities	215	518	21	85%	14%	1%	311	517	21	86%	12%	3%
Autism	1,734	535	20	60%	34%	6%	1,916	537	22	57%	33%	11%
Traumatic brain injury	31	535	24	61%	29%	10%	34	535	26	50%	38%	12%
Not classified	48	538	21	56%	40%	4%	6	NA	NA	NA	NA	NA
Using designated supports	1,431	540	20	50%	39%	11%	2,072	541	21	49%	35%	16%
No designated supports	3,667	536	21	59%	33%	8%	3,461	536	23	57%	30%	13%
Using accommodations	1,183	538	21	57%	32%	10%	1,674	539	22	54%	33%	13%
No accommodations	3,915	537	21	57%	35%	8%	3,859	538	23	54%	32%	14%

Table 10.A.20 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Six

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,116	637	20	54%	38%	8%	5,336	638	20	54%	37%	9%
Male	3,436	638	20	53%	39%	8%	3,618	638	20	54%	38%	9%
Female	1,680	637	20	56%	37%	7%	1,718	638	20	55%	37%	8%
American Indian or Alaska Native	38	642	19	39%	47%	13%	29	645	20	31%	55%	14%
Asian	392	635	20	60%	34%	5%	387	633	20	65%	32%	4%
Native Hawaiian or Other Pacific Islander	21	628	22	67%	33%	0%	26	635	22	50%	46%	4%
Filipino	149	637	20	55%	38%	7%	145	635	18	68%	30%	3%
Hispanic or Latino	2,952	638	20	53%	39%	8%	3,096	638	20	53%	39%	9%
Black or African American	400	637	19	57%	39%	5%	457	639	18	55%	36%	8%
White	1,031	637	21	54%	37%	9%	1,015	639	20	53%	36%	11%
Two or more races	133	635	21	62%	34%	5%	181	637	20	58%	33%	9%
English only	2,982	637	20	55%	37%	8%	3,054	638	20	54%	37%	9%
Initially fluent English proficient	83	634	22	63%	30%	7%	80	633	19	73%	24%	4%
English learner	1,779	637	20	54%	39%	7%	1,915	638	19	54%	38%	8%
Reclassified fluent English proficient	262	641	18	48%	43%	10%	283	640	19	51%	41%	8%
To be determined	2	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,413	639	19	50%	41%	9%	3,441	640	19	50%	40%	10%
Not economically disadvantaged	1,703	633	21	62%	32%	6%	1,895	634	20	62%	32%	6%
Migrant	36	650	14	33%	44%	22%	34	642	20	41%	47%	12%
Nonmigrant	5,080	637	20	54%	38%	8%	5,302	638	20	54%	37%	9%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,960	637	18	58%	37%	5%	2,030	637	18	60%	35%	5%
Hearing impairment	57	641	17	40%	58%	2%	52	638	16	60%	40%	0%
Speech or language impairment	139	651	9	14%	68%	17%	136	651	10	20%	61%	19%
Visual impairment	34	618	24	74%	21%	6%	20	629	22	75%	20%	5%
Emotional disturbance	32	650	16	16%	59%	25%	41	649	16	27%	46%	27%
Orthopedic impairment	258	625	23	73%	22%	5%	264	627	23	69%	27%	4%
Other health impairment	261	645	17	37%	51%	12%	274	647	17	29%	55%	15%
Specific learning disability	342	655	10	11%	61%	28%	440	656	9	8%	60%	32%
Deaf–blindness	5	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
Multiple disabilities	256	619	22	84%	13%	3%	258	620	22	81%	17%	2%
Autism	1,700	636	20	59%	35%	6%	1,794	637	19	59%	35%	6%
Traumatic brain injury	22	645	20	36%	41%	23%	23	628	24	61%	30%	9%
Not classified	50	637	19	52%	48%	0%	3	NA	NA	NA	NA	NA
Using designated supports	1,306	640	20	50%	39%	11%	1,985	641	19	48%	41%	11%
No designated supports	3,810	637	20	56%	38%	7%	3,351	637	20	58%	35%	7%
Using accommodations	1,048	638	21	54%	36%	10%	1,564	638	20	53%	37%	9%
No accommodations	4,068	637	20	55%	38%	7%	3,772	638	20	55%	37%	8%

Table 10.A.21 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Seven

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,123	736	21	57%	35%	8%	5,288	736	22	59%	28%	13%
Male	3,401	736	21	57%	34%	9%	3,557	737	22	58%	29%	13%
Female	1,722	735	22	57%	36%	7%	1,731	736	22	61%	26%	13%
American Indian or Alaska Native	32	743	24	41%	41%	19%	32	743	23	47%	31%	22%
Asian	400	733	21	64%	30%	6%	425	733	21	68%	24%	8%
Native Hawaiian or Other Pacific Islander	25	734	23	52%	40%	8%	18	726	25	78%	11%	11%
Filipino	178	734	20	61%	36%	3%	151	737	23	57%	30%	13%
Hispanic or Latino	2,794	736	21	56%	36%	8%	3,029	737	22	57%	29%	13%
Black or African American	429	734	22	59%	34%	7%	414	736	22	60%	28%	12%
White	1,101	737	22	56%	34%	10%	1,070	737	23	58%	27%	15%
Two or more races	164	736	23	53%	35%	12%	149	734	22	64%	24%	12%
English only	3,018	736	22	57%	35%	9%	3,043	737	22	58%	28%	14%
Initially fluent English proficient	73	729	22	71%	26%	3%	83	732	23	64%	27%	10%
English learner	1,701	735	21	57%	36%	7%	1,808	736	22	60%	28%	12%
Reclassified fluent English proficient	323	739	21	52%	36%	12%	347	739	21	59%	27%	15%
To be determined	3	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA
Economically disadvantaged	3,342	738	21	53%	37%	10%	3,416	738	22	55%	31%	14%
Not economically disadvantaged	1,781	732	22	63%	31%	6%	1,872	734	23	65%	24%	11%
Migrant	34	747	15	29%	56%	15%	30	747	14	33%	53%	13%
Nonmigrant	5,089	736	21	57%	35%	8%	5,258	736	22	59%	28%	13%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	2,008	736	20	58%	36%	6%	2,103	736	20	61%	29%	10%
Hearing impairment	38	739	19	47%	50%	3%	51	739	16	57%	37%	6%
Speech or language impairment	122	750	11	25%	61%	13%	111	750	16	32%	39%	29%
Visual impairment	45	722	24	76%	20%	4%	29	721	26	79%	7%	14%
Emotional disturbance	32	750	21	25%	53%	22%	25	749	13	32%	52%	16%
Orthopedic impairment	255	721	24	75%	20%	5%	241	726	25	72%	20%	8%
Other health impairment	233	743	20	36%	49%	14%	278	745	21	42%	34%	24%
Specific learning disability	318	753	13	20%	55%	25%	385	756	16	20%	39%	41%
Deaf–blindness	6	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA
Multiple disabilities	301	720	23	80%	17%	3%	269	717	21	86%	12%	2%
Autism	1,709	735	21	60%	32%	8%	1,764	735	21	63%	27%	11%
Traumatic brain injury	24	739	25	46%	38%	17%	20	740	19	50%	40%	10%
Not classified	32	728	24	69%	22%	9%	9	NA	NA	NA	NA	NA
Using designated supports	1,327	739	21	52%	38%	10%	1,799	740	22	52%	31%	17%
No designated supports	3,796	735	22	58%	34%	8%	3,489	735	22	62%	27%	11%
Using accommodations	1,035	736	21	56%	35%	9%	1,468	737	22	59%	29%	12%
No accommodations	4,088	736	21	57%	35%	8%	3,820	736	22	59%	28%	13%

Table 10.A.22 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Eight

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,755	838	21	47%	44%	9%	5,247	840	21	38%	50%	11%
Male	3,157	838	21	48%	44%	9%	3,494	840	21	38%	50%	12%
Female	1,598	838	21	46%	44%	9%	1,753	839	22	40%	50%	10%
American Indian or Alaska Native	43	845	22	28%	47%	26%	39	847	17	21%	64%	15%
Asian	372	835	21	56%	40%	4%	410	836	23	44%	48%	8%
Native Hawaiian or Other Pacific Islander	21	830	22	67%	33%	0%	21	843	20	38%	52%	10%
Filipino	149	834	22	56%	38%	6%	179	838	21	41%	50%	9%
Hispanic or Latino	2,580	839	21	46%	46%	9%	2,849	840	21	37%	52%	11%
Black or African American	416	839	21	47%	44%	9%	456	839	22	40%	49%	11%
White	1,060	839	22	46%	43%	11%	1,114	840	22	41%	46%	13%
Two or more races	114	838	22	51%	38%	11%	179	841	21	35%	52%	13%
English only	2,774	838	21	47%	44%	9%	3,083	840	22	39%	49%	12%
Initially fluent English proficient	87	836	21	45%	53%	2%	83	834	21	55%	40%	5%
English learner	1,564	838	21	47%	44%	9%	1,690	840	21	37%	53%	10%
Reclassified fluent English proficient	325	840	19	48%	43%	8%	384	841	21	35%	53%	12%
To be determined	2	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
English proficiency unknown	3	NA	NA	NA	NA	NA	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,118	840	20	44%	46%	10%	3,301	842	20	34%	53%	12%
Not economically disadvantaged	1,637	835	22	53%	40%	7%	1,946	836	23	46%	45%	9%
Migrant	20	848	7	30%	70%	0%	34	849	16	24%	59%	18%
Nonmigrant	4,735	838	21	47%	44%	9%	5,213	840	21	39%	50%	11%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,992	839	19	46%	46%	8%	2,075	840	20	38%	54%	8%
Hearing impairment	53	841	18	42%	51%	8%	50	846	14	30%	58%	12%
Speech or language impairment	73	850	16	29%	55%	16%	95	853	11	18%	57%	25%
Visual impairment	38	821	24	74%	24%	3%	38	828	26	55%	34%	11%
Emotional disturbance	29	849	17	28%	45%	28%	33	850	19	18%	55%	27%
Orthopedic impairment	283	828	26	63%	28%	9%	237	826	24	65%	29%	5%
Other health impairment	210	846	19	32%	48%	20%	240	845	19	28%	53%	19%
Specific learning disability	262	854	11	11%	59%	30%	358	856	11	8%	60%	32%
Deaf–blindness	0	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
Multiple disabilities	232	822	23	74%	23%	3%	316	821	24	69%	27%	3%
Autism	1,516	837	20	50%	43%	6%	1,775	840	21	39%	51%	10%
Traumatic brain injury	25	843	18	36%	60%	4%	24	844	22	29%	50%	21%
Not classified	42	831	22	62%	38%	0%	1	NA	NA	NA	NA	NA
Using designated supports	1,190	841	20	40%	48%	12%	1,814	843	21	32%	54%	14%
No designated supports	3,565	837	21	49%	42%	8%	3,433	838	22	42%	49%	10%
Using accommodations	954	839	21	43%	47%	10%	1,490	841	21	35%	53%	12%
No accommodations	3,801	838	21	48%	43%	9%	3,757	839	22	40%	49%	11%

Table 10.A.23 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for ELA, Grade Eleven

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,273	940	20	43%	49%	8%	4,505	941	22	43%	39%	18%
Male	2,799	941	19	41%	50%	9%	2,879	942	21	42%	38%	19%
Female	1,474	939	20	45%	49%	6%	1,626	940	22	44%	40%	16%
American Indian or Alaska Native	30	946	16	27%	57%	17%	39	939	21	46%	44%	10%
Asian	332	936	20	49%	46%	4%	338	936	22	53%	37%	10%
Native Hawaiian or Other Pacific Islander	19	941	21	42%	47%	11%	31	941	20	42%	35%	23%
Filipino	139	937	20	53%	42%	4%	148	939	22	43%	45%	11%
Hispanic or Latino	2,259	940	20	43%	50%	7%	2,423	942	21	42%	40%	18%
Black or African American	404	942	19	38%	53%	9%	402	941	21	45%	38%	17%
White	984	941	19	42%	48%	10%	1,003	943	22	41%	36%	24%
Two or more races	106	941	20	40%	46%	14%	121	938	23	49%	34%	17%
English only	2,601	941	19	41%	50%	9%	2,646	941	22	43%	37%	20%
Initially fluent English proficient	70	936	24	49%	39%	13%	83	930	24	61%	28%	11%
English learner	1,281	938	19	46%	49%	5%	1,350	940	21	43%	42%	15%
Reclassified fluent English proficient	316	942	19	40%	50%	11%	421	945	19	36%	42%	22%
To be determined	1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
Economically disadvantaged	2,750	941	19	41%	52%	8%	2,859	943	21	41%	40%	19%
Not economically disadvantaged	1,523	938	20	47%	46%	8%	1,646	939	23	47%	36%	17%
Migrant	17	938	19	35%	65%	0%	19	948	14	26%	58%	16%
Nonmigrant	4,256	940	20	43%	49%	8%	4,486	941	22	43%	39%	18%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,923	940	18	44%	51%	4%	1,939	941	20	45%	41%	14%
Hearing impairment	48	939	18	46%	48%	6%	64	943	20	30%	55%	16%
Speech or language impairment	48	952	10	13%	73%	15%	43	956	11	9%	42%	49%
Visual impairment	30	935	23	57%	33%	10%	39	929	27	59%	26%	15%
Emotional disturbance	48	952	13	23%	52%	25%	30	957	13	13%	30%	57%
Orthopedic impairment	266	931	24	56%	38%	6%	293	930	26	62%	23%	15%
Other health impairment	150	947	16	26%	59%	15%	203	952	19	19%	43%	37%
Specific learning disability	295	953	11	13%	62%	25%	302	958	13	10%	38%	52%
Deaf–blindness	3	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Multiple disabilities	219	925	24	66%	29%	5%	229	924	24	68%	27%	5%
Autism	1,186	940	19	43%	48%	8%	1,328	941	21	45%	40%	15%
Traumatic brain injury	29	941	22	38%	52%	10%	30	947	22	30%	37%	33%
Not classified	28	917	22	79%	21%	0%	5	NA	NA	NA	NA	NA
Using designated supports	810	940	19	42%	51%	7%	934	943	21	40%	39%	21%
No designated supports	3,463	940	20	43%	49%	8%	3,571	941	22	44%	39%	18%
Using accommodations	634	938	20	46%	48%	6%	790	941	21	46%	39%	16%
No accommodations	3,639	940	19	42%	50%	8%	3,715	941	22	42%	39%	19%

Table 10.A.24 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Three

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,978	331	21	72%	23%	5%	4,989	333	21	67%	28%	6%
Male	3,397	332	21	70%	24%	6%	3,392	333	21	66%	28%	6%
Female	1,581	330	20	77%	21%	3%	1,597	332	21	68%	27%	5%
American Indian or Alaska Native	34	333	18	71%	26%	3%	26	339	18	54%	46%	0%
Asian	415	330	22	73%	20%	7%	391	329	21	79%	16%	5%
Native Hawaiian or Other Pacific Islander	17	327	20	76%	24%	0%	24	333	21	71%	25%	4%
Filipino	117	328	22	75%	23%	2%	119	328	22	70%	29%	2%
Hispanic or Latino	2,877	332	21	72%	24%	5%	2,891	334	21	64%	30%	6%
Black or African American	360	330	20	75%	21%	4%	360	333	21	67%	28%	5%
White	974	331	21	73%	23%	4%	956	332	21	68%	26%	6%
Two or more races	184	333	19	71%	25%	4%	222	331	22	71%	21%	8%
English only	2,956	331	21	73%	22%	4%	3,000	333	21	67%	28%	6%
Initially fluent English proficient	34	329	21	71%	29%	0%	47	329	20	77%	21%	2%
English learner	1,873	332	20	71%	24%	5%	1,794	333	21	66%	28%	6%
Reclassified fluent English proficient	105	332	20	68%	24%	9%	138	332	19	70%	25%	4%
To be determined	6	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,328	333	20	70%	25%	5%	3,263	335	20	64%	30%	6%
Not economically disadvantaged	1,650	328	21	78%	19%	3%	1,726	329	22	72%	23%	5%
Migrant	27	344	19	48%	41%	11%	45	343	18	42%	44%	13%
Nonmigrant	4,951	331	21	72%	23%	5%	4,944	333	21	67%	27%	6%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,615	329	19	82%	16%	2%	1,641	330	20	74%	23%	3%
Hearing impairment	51	339	20	65%	18%	18%	44	342	18	50%	36%	14%
Speech or language impairment	228	342	15	52%	42%	6%	219	344	16	46%	41%	13%
Visual impairment	30	313	19	93%	7%	0%	21	322	24	76%	14%	10%
Emotional disturbance	20	349	10	25%	70%	5%	29	343	20	41%	48%	10%
Orthopedic impairment	239	321	21	87%	10%	3%	224	324	23	76%	18%	6%
Other health impairment	282	334	20	69%	27%	4%	282	340	19	55%	37%	9%
Specific learning disability	309	350	14	29%	53%	18%	358	351	12	28%	54%	18%
Deaf–blindness	0	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
Multiple disabilities	265	314	18	93%	6%	1%	249	316	20	86%	13%	1%
Autism	1,867	332	21	69%	25%	6%	1,900	332	21	69%	26%	5%
Traumatic brain injury	17	337	18	65%	35%	0%	18	331	21	56%	39%	6%
Not classified	55	327	19	78%	22%	0%	2	NA	NA	NA	NA	NA
Using designated supports	1,315	335	21	66%	27%	7%	1,612	335	21	62%	31%	7%
No designated supports	3,663	330	21	75%	22%	4%	3,377	332	21	69%	26%	5%
Using accommodations	759	332	22	71%	23%	6%	1,047	332	22	67%	26%	7%
No accommodations	4,219	331	20	72%	23%	4%	3,942	333	21	66%	28%	6%

Table 10.A.25 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Four

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,283	432	20	70%	26%	4%	5,396	433	21	68%	25%	7%
Male	3,569	433	20	68%	27%	5%	3,685	433	21	67%	25%	7%
Female	1,714	430	20	74%	23%	4%	1,711	433	21	69%	25%	6%
American Indian or Alaska Native	38	432	23	68%	21%	11%	37	443	16	57%	30%	14%
Asian	390	428	21	76%	22%	3%	413	430	22	73%	19%	7%
Native Hawaiian or Other Pacific Islander	26	438	17	62%	31%	8%	25	424	22	72%	28%	0%
Filipino	148	430	19	74%	23%	3%	117	428	21	74%	23%	3%
Hispanic or Latino	3,103	433	20	68%	28%	4%	3,202	434	21	67%	26%	7%
Black or African American	415	430	21	73%	22%	5%	401	433	21	70%	24%	6%
White	972	432	20	71%	24%	5%	1,006	433	21	68%	25%	7%
Two or more races	191	432	22	71%	23%	6%	195	432	22	70%	24%	6%
English only	3,026	432	20	71%	25%	4%	3,153	432	22	69%	24%	7%
Initially fluent English proficient	59	426	20	76%	24%	0%	37	425	21	89%	5%	5%
English learner	2,034	433	20	69%	27%	4%	1,980	435	21	65%	27%	7%
Reclassified fluent English proficient	154	434	20	62%	31%	6%	214	436	21	67%	24%	9%
To be determined	6	NA	NA	NA	NA	NA	6	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,588	434	19	68%	28%	5%	3,562	435	21	64%	28%	8%
Not economically disadvantaged	1,695	428	21	75%	22%	3%	1,834	429	21	76%	20%	5%
Migrant	55	443	19	53%	35%	13%	36	447	24	53%	22%	25%
Nonmigrant	5,228	432	20	70%	26%	4%	5,360	433	21	68%	25%	7%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,808	431	18	76%	22%	2%	1,825	431	19	75%	22%	3%
Hearing impairment	47	442	17	47%	43%	11%	48	439	18	54%	38%	8%
Speech or language impairment	194	444	15	48%	42%	10%	201	443	17	54%	35%	11%
Visual impairment	30	423	27	70%	20%	10%	31	418	22	87%	13%	0%
Emotional disturbance	24	446	18	46%	38%	17%	32	445	13	47%	41%	13%
Orthopedic impairment	270	420	22	81%	16%	2%	238	423	23	80%	16%	5%
Other health impairment	280	438	19	59%	35%	7%	311	440	20	57%	32%	12%
Specific learning disability	408	449	13	34%	50%	16%	451	452	14	26%	48%	26%
Deaf–blindness	6	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Multiple disabilities	288	415	19	92%	7%	1%	278	416	19	91%	8%	1%
Autism	1,840	432	20	71%	25%	4%	1,954	432	21	70%	24%	6%
Traumatic brain injury	33	429	25	73%	24%	3%	24	437	18	58%	38%	4%
Not classified	55	432	18	73%	27%	0%	3	NA	NA	NA	NA	NA
Using designated supports	1,307	435	20	66%	28%	6%	1,932	436	21	63%	27%	10%
No designated supports	3,976	431	20	71%	25%	4%	3,464	432	21	70%	24%	5%
Using accommodations	747	431	22	72%	22%	6%	1,191	435	22	66%	25%	9%
No accommodations	4,536	432	20	70%	27%	4%	4,205	433	21	68%	25%	6%

Table 10.A.26 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Five

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,098	532	20	70%	25%	5%	5,543	533	21	64%	30%	6%
Male	3,437	533	21	70%	25%	5%	3,739	534	21	62%	31%	7%
Female	1,661	531	19	72%	25%	3%	1,804	531	21	68%	28%	4%
American Indian or Alaska Native	44	539	19	57%	30%	14%	33	537	19	52%	42%	6%
Asian	361	528	21	78%	17%	5%	435	530	21	69%	27%	4%
Native Hawaiian or Other Pacific Islander	30	527	21	77%	20%	3%	31	530	21	68%	32%	0%
Filipino	139	530	20	75%	24%	1%	149	533	21	68%	26%	5%
Hispanic or Latino	2,948	533	20	70%	26%	4%	3,263	534	21	63%	32%	6%
Black or African American	405	533	19	71%	25%	4%	437	532	21	68%	27%	6%
White	1,006	532	21	70%	24%	5%	1,009	533	22	64%	29%	7%
Two or more races	165	532	21	70%	24%	6%	186	532	22	71%	23%	6%
English only	2,967	532	20	71%	24%	5%	3,151	533	21	65%	28%	6%
Initially fluent English proficient	76	523	20	83%	14%	3%	54	526	19	78%	20%	2%
English learner	1,865	533	20	69%	27%	4%	2,054	533	21	63%	32%	5%
Reclassified fluent English proficient	177	533	21	71%	23%	6%	276	534	20	60%	36%	4%
To be determined	5	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA
English proficiency unknown	8	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
Economically disadvantaged	3,405	534	19	67%	28%	5%	3,700	535	21	62%	32%	6%
Not economically disadvantaged	1,693	528	21	77%	20%	4%	1,843	530	22	69%	26%	5%
Migrant	26	542	24	50%	35%	15%	50	542	20	50%	36%	14%
Nonmigrant	5,072	532	20	71%	25%	5%	5,493	533	21	64%	30%	6%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,892	531	18	75%	23%	2%	1,935	532	19	68%	29%	3%
Hearing impairment	49	536	21	63%	27%	10%	49	544	15	45%	49%	6%
Speech or language impairment	178	544	12	46%	46%	8%	157	543	15	43%	50%	7%
Visual impairment	31	522	22	77%	19%	3%	29	526	25	66%	24%	10%
Emotional disturbance	26	551	21	38%	31%	31%	35	551	25	37%	37%	26%
Orthopedic impairment	272	521	22	82%	14%	4%	265	521	23	78%	19%	3%
Other health impairment	256	539	18	60%	32%	8%	280	539	20	53%	40%	7%
Specific learning disability	370	548	13	35%	51%	14%	521	550	14	32%	49%	18%
Deaf–blindness	1	NA	NA	NA	NA	NA	7	NA	NA	NA	NA	NA
Multiple disabilities	219	515	20	90%	9%	1%	308	516	21	85%	14%	1%
Autism	1,727	531	21	73%	22%	5%	1,917	532	21	68%	26%	5%
Traumatic brain injury	31	529	23	77%	16%	6%	34	531	24	62%	29%	9%
Not classified	46	533	18	72%	26%	2%	6	NA	NA	NA	NA	NA
Using designated supports	1,430	536	19	65%	29%	6%	2,077	536	20	61%	32%	7%
No designated supports	3,668	531	20	73%	23%	4%	3,466	532	22	66%	29%	5%
Using accommodations	806	531	21	73%	22%	5%	1,216	532	21	67%	28%	6%
No accommodations	4,292	532	20	70%	26%	4%	4,327	533	21	64%	31%	6%

Table 10.A.27 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Six

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,123	631	20	73%	23%	4%	5,321	634	20	67%	30%	4%
Male	3,445	632	20	72%	23%	5%	3,602	634	20	66%	30%	4%
Female	1,678	630	20	74%	23%	3%	1,719	632	20	69%	28%	2%
American Indian or Alaska Native	37	635	23	59%	27%	14%	30	639	18	63%	30%	7%
Asian	395	629	20	72%	25%	3%	388	631	22	71%	26%	4%
Native Hawaiian or Other Pacific Islander	21	620	22	81%	19%	0%	24	629	21	71%	29%	0%
Filipino	148	632	20	72%	24%	5%	144	630	19	75%	24%	1%
Hispanic or Latino	2,956	632	20	72%	24%	4%	3,084	634	20	67%	29%	4%
Black or African American	403	630	19	76%	21%	4%	458	634	20	66%	30%	4%
White	1,033	630	20	74%	22%	4%	1,011	635	20	64%	31%	4%
Two or more races	130	631	21	75%	19%	5%	182	633	20	63%	34%	3%
English only	2,990	631	20	74%	23%	4%	3,042	633	20	67%	29%	4%
Initially fluent English proficient	81	629	21	75%	20%	5%	80	629	21	73%	26%	1%
English learner	1,782	632	20	71%	24%	5%	1,910	633	20	67%	29%	4%
Reclassified fluent English proficient	260	634	19	68%	29%	3%	284	637	20	62%	34%	4%
To be determined	3	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,411	633	20	71%	25%	5%	3,434	635	19	64%	32%	4%
Not economically disadvantaged	1,712	628	21	76%	21%	3%	1,887	630	21	72%	24%	4%
Migrant	36	643	19	56%	25%	19%	34	640	18	53%	44%	3%
Nonmigrant	5,087	631	20	73%	23%	4%	5,287	633	20	67%	29%	4%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,962	631	18	76%	22%	2%	2,021	633	19	70%	29%	2%
Hearing impairment	56	639	18	54%	43%	4%	53	638	19	45%	45%	9%
Speech or language impairment	139	642	14	55%	36%	9%	139	642	14	58%	37%	4%
Visual impairment	32	617	23	91%	9%	0%	19	625	22	74%	26%	0%
Emotional disturbance	31	640	19	58%	29%	13%	41	645	16	39%	49%	12%
Orthopedic impairment	260	621	22	80%	18%	2%	263	622	22	79%	18%	3%
Other health impairment	261	637	18	66%	28%	7%	270	640	18	61%	33%	6%
Specific learning disability	342	647	17	42%	43%	15%	443	648	14	39%	48%	13%
Deaf–blindness	5	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
Multiple disabilities	257	616	20	88%	11%	1%	252	617	21	87%	12%	0%
Autism	1,704	630	20	74%	21%	4%	1,793	633	20	68%	28%	3%
Traumatic brain injury	21	635	20	57%	43%	0%	23	620	20	78%	22%	0%
Not classified	53	631	18	72%	26%	2%	3	NA	NA	NA	NA	NA
Using designated supports	1,307	634	21	66%	27%	7%	1,991	636	20	62%	33%	4%
No designated supports	3,816	630	20	75%	22%	3%	3,330	632	20	69%	27%	3%
Using accommodations	697	631	23	72%	21%	7%	1,047	633	21	67%	30%	4%
No accommodations	4,426	631	20	73%	24%	4%	4,274	634	20	67%	29%	4%

Table 10.A.28 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Seven

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	5,117	732	21	70%	24%	5%	5,275	733	22	69%	24%	8%
Male	3,392	733	21	69%	25%	6%	3,546	733	22	68%	24%	8%
Female	1,725	730	21	73%	23%	4%	1,729	731	21	71%	23%	6%
American Indian or Alaska Native	32	735	21	66%	25%	9%	32	736	22	66%	22%	13%
Asian	397	732	22	70%	22%	8%	427	730	22	72%	22%	6%
Native Hawaiian or Other Pacific Islander	25	734	25	64%	20%	16%	18	726	24	78%	11%	11%
Filipino	179	730	20	75%	22%	3%	149	734	22	66%	22%	12%
Hispanic or Latino	2,793	733	21	69%	26%	5%	3,024	733	22	68%	24%	8%
Black or African American	424	730	21	75%	21%	4%	412	732	22	71%	21%	8%
White	1,102	731	21	72%	23%	5%	1,065	732	22	70%	23%	7%
Two or more races	165	731	21	70%	27%	4%	148	730	22	71%	21%	8%
English only	3,011	732	21	72%	23%	5%	3,028	733	22	69%	24%	7%
Initially fluent English proficient	73	726	20	79%	21%	0%	84	728	22	76%	20%	4%
English learner	1,705	733	22	68%	26%	6%	1,810	732	22	68%	24%	8%
Reclassified fluent English proficient	318	734	21	64%	30%	6%	345	735	22	67%	23%	10%
To be determined	3	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
English proficiency unknown	7	NA	NA	NA	NA	NA	4	NA	NA	NA	NA	NA
Economically disadvantaged	3,339	734	21	67%	27%	6%	3,413	734	21	67%	25%	8%
Not economically disadvantaged	1,778	729	21	76%	19%	4%	1,862	730	22	73%	21%	6%
Migrant	34	745	17	29%	65%	6%	29	741	18	48%	45%	7%
Nonmigrant	5,083	732	21	71%	24%	5%	5,246	732	22	69%	23%	8%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	2,001	731	19	75%	22%	3%	2,087	731	20	75%	21%	4%
Hearing impairment	40	740	20	45%	43%	13%	52	747	16	35%	42%	23%
Speech or language impairment	119	747	15	36%	51%	13%	113	745	18	42%	42%	16%
Visual impairment	45	718	21	89%	11%	0%	29	715	21	86%	14%	0%
Emotional disturbance	35	742	19	51%	43%	6%	26	739	14	73%	19%	8%
Orthopedic impairment	255	718	22	87%	9%	3%	243	721	23	82%	14%	4%
Other health impairment	232	737	20	65%	28%	7%	277	739	20	58%	31%	10%
Specific learning disability	317	749	14	36%	49%	15%	382	752	18	32%	39%	29%
Deaf–blindness	6	NA	NA	NA	NA	NA	3	NA	NA	NA	NA	NA
Multiple disabilities	303	715	19	90%	8%	1%	269	714	20	91%	8%	1%
Autism	1,708	733	21	69%	24%	7%	1,766	732	22	69%	24%	8%
Traumatic brain injury	24	732	23	75%	17%	8%	20	732	24	65%	25%	10%
Not classified	32	727	23	75%	22%	3%	8	NA	NA	NA	NA	NA
Using designated supports	1,324	735	20	66%	27%	6%	1,797	735	22	63%	27%	10%
No designated supports	3,793	731	21	72%	23%	5%	3,478	731	22	72%	22%	6%
Using accommodations	670	729	21	75%	22%	4%	1,014	731	22	71%	22%	6%
No accommodations	4,447	732	21	70%	25%	6%	4,261	733	22	68%	24%	8%

Table 10.A.29 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Eight

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,757	831	20	71%	25%	4%	5,232	834	21	66%	27%	7%
Male	3,162	831	21	70%	25%	5%	3,471	834	21	65%	27%	8%
Female	1,595	831	20	73%	24%	3%	1,761	833	21	66%	27%	6%
American Indian or Alaska Native	42	834	20	62%	33%	5%	39	837	21	56%	33%	10%
Asian	375	829	21	75%	21%	4%	408	832	22	70%	22%	8%
Native Hawaiian or Other Pacific Islander	21	823	21	81%	19%	0%	21	836	19	57%	43%	0%
Filipino	150	827	21	76%	22%	2%	179	831	21	72%	23%	4%
Hispanic or Latino	2,570	832	20	71%	25%	4%	2,840	834	21	64%	29%	7%
Black or African American	420	831	20	72%	23%	5%	452	833	22	66%	26%	8%
White	1,065	831	21	69%	25%	5%	1,116	833	21	68%	24%	8%
Two or more races	114	832	21	65%	29%	6%	177	834	22	63%	28%	10%
English only	2,778	831	21	71%	24%	5%	3,073	833	21	66%	26%	7%
Initially fluent English proficient	86	830	21	67%	30%	2%	82	828	21	77%	18%	5%
English learner	1,565	831	20	71%	25%	4%	1,692	834	21	65%	28%	7%
Reclassified fluent English proficient	321	832	20	71%	25%	4%	377	836	21	60%	31%	9%
To be determined	2	NA	NA	NA	NA	NA	2	NA	NA	NA	NA	NA
English proficiency unknown	5	NA	NA	NA	NA	NA	6	NA	NA	NA	NA	NA
Economically disadvantaged	3,111	833	20	69%	26%	5%	3,284	836	20	63%	30%	8%
Not economically disadvantaged	1,646	828	21	74%	22%	4%	1,948	830	22	71%	22%	6%
Migrant	21	840	16	76%	10%	14%	33	845	18	39%	42%	18%
Nonmigrant	4,736	831	20	71%	25%	4%	5,199	834	21	66%	27%	7%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,976	832	19	73%	24%	3%	2,070	833	19	70%	26%	4%
Hearing impairment	54	840	19	56%	35%	9%	51	844	19	43%	41%	16%
Speech or language impairment	73	841	17	53%	37%	10%	95	849	13	34%	51%	16%
Visual impairment	39	816	21	87%	13%	0%	39	821	24	79%	13%	8%
Emotional disturbance	30	843	19	50%	37%	13%	33	842	19	58%	33%	9%
Orthopedic impairment	285	822	22	80%	17%	3%	237	820	21	83%	16%	1%
Other health impairment	206	838	19	55%	38%	7%	241	840	19	53%	38%	9%
Specific learning disability	261	846	14	41%	48%	11%	357	852	14	28%	47%	24%
Deaf–blindness	0	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
Multiple disabilities	238	816	20	88%	11%	1%	315	817	22	85%	13%	2%
Autism	1,528	831	20	73%	23%	5%	1,764	834	21	67%	25%	8%
Traumatic brain injury	25	833	17	72%	28%	0%	24	843	24	46%	38%	17%
Not classified	42	822	17	93%	7%	0%	1	NA	NA	NA	NA	NA
Using designated supports	1,189	834	20	65%	29%	6%	1,803	837	21	60%	31%	9%
No designated supports	3,568	830	20	73%	23%	4%	3,429	832	21	69%	25%	6%
Using accommodations	600	830	21	69%	27%	4%	972	832	21	68%	26%	6%
No accommodations	4,157	831	20	71%	24%	4%	4,260	834	21	65%	27%	8%

Table 10.A.30 Student Groups Comparisons of Scale Score Mean, Standard Deviation and Achievement Levels: 2015–16 and 2016–17 for Mathematics, Grade Eleven

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
All Students	4,268	933	20	66%	29%	6%	4,496	934	20	66%	28%	6%
Male	2,800	934	21	64%	29%	7%	2,878	934	20	64%	30%	6%
Female	1,468	931	20	69%	27%	3%	1,618	932	20	69%	26%	5%
American Indian or Alaska Native	30	941	17	60%	30%	10%	38	932	20	68%	29%	3%
Asian	332	931	22	70%	23%	7%	340	930	21	71%	22%	6%
Native Hawaiian or Other Pacific Islander	17	936	19	71%	24%	6%	29	936	18	55%	45%	0%
Filipino	142	931	20	68%	26%	6%	150	933	22	65%	28%	7%
Hispanic or Latino	2,257	933	20	67%	28%	5%	2,417	934	20	66%	29%	5%
Black or African American	402	936	21	60%	34%	6%	402	934	21	67%	26%	7%
White	982	934	20	64%	30%	6%	1,000	934	20	63%	30%	7%
Two or more races	106	934	19	61%	34%	5%	120	932	21	68%	27%	5%
English only	2,598	934	20	65%	29%	6%	2,638	933	20	66%	28%	6%
Initially fluent English proficient	69	932	23	61%	32%	7%	82	927	23	76%	22%	2%
English learner	1,278	932	20	70%	26%	4%	1,346	933	20	67%	28%	5%
Reclassified fluent English proficient	318	936	21	62%	29%	9%	424	938	19	58%	34%	8%
To be determined	1	NA	NA	NA	NA	NA	1	NA	NA	NA	NA	NA
English proficiency unknown	4	NA	NA	NA	NA	NA	5	NA	NA	NA	NA	NA
Economically disadvantaged	2,749	935	20	64%	30%	6%	2,861	935	20	65%	29%	6%
Not economically disadvantaged	1,519	931	21	70%	25%	5%	1,635	932	21	68%	27%	5%
Migrant	17	938	18	59%	41%	0%	19	943	10	53%	47%	0%
Nonmigrant	4,251	933	20	66%	28%	6%	4,477	934	20	66%	28%	6%

Student Group	2015–16 N	2015–16 SS Mean	2015–16 SS SD	2015–16 Level 1	2015–16 Level 2	2015–16 Level 3	2016–17 N	2016–17 SS Mean	2016–17 SS SD	2016–17 Level 1	2016–17 Level 2	2016–17 Level 3
Intellectual disability	1,923	932	19	70%	27%	3%	1,937	933	19	70%	26%	4%
Hearing impairment	47	934	19	68%	28%	4%	63	938	20	62%	27%	11%
Speech or language impairment	46	946	12	46%	43%	11%	41	949	12	32%	59%	10%
Visual impairment	29	927	25	66%	28%	7%	39	921	23	79%	18%	3%
Emotional disturbance	48	950	17	29%	48%	23%	31	946	11	52%	39%	10%
Orthopedic impairment	263	924	21	83%	15%	2%	291	923	22	80%	16%	3%
Other health impairment	149	942	19	50%	38%	11%	202	943	18	42%	46%	12%
Specific learning disability	298	948	14	34%	48%	18%	298	949	13	33%	51%	16%
Deaf–blindness	3	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA
Multiple disabilities	218	919	21	82%	16%	2%	231	918	21	84%	15%	1%
Autism	1,187	934	21	64%	29%	7%	1,328	935	20	65%	29%	6%
Traumatic brain injury	29	933	21	66%	31%	3%	30	939	22	73%	17%	10%
Not classified	28	906	14	96%	4%	0%	5	NA	NA	NA	NA	NA
Using designated supports	805	934	20	64%	30%	5%	934	936	20	62%	30%	9%
No designated supports	3,463	933	20	66%	28%	6%	3,562	933	20	67%	28%	5%
Using accommodations	337	928	21	75%	21%	4%	529	932	20	69%	26%	4%
No accommodations	3,931	934	20	65%	29%	6%	3,967	934	20	65%	29%	6%

Appendix 10.B: Comparisons of Test Characteristics

Table 10.B.1 Marginal Reliability and Standard Error of the Measurement (SEM) across 2015–16 and 2016–17

Content Area/Grade	2015–16 Reliability	2016–17 Reliability	2015–16 Theta Score Mean	2015–16 Theta Score SD	2015–16 Theta Score SEM	2016–17 Theta Score Mean	2016–17 Theta Score SD	2016–17 Theta Score SEM
ELA 3	0.89	0.89	-0.03	1.29	0.43	0.09	1.54	0.52
ELA 4	0.85	0.87	-0.03	1.03	0.39	0.04	1.33	0.48
ELA 5	0.83	0.88	-0.04	0.92	0.38	0.01	1.23	0.42
ELA 6	0.85	0.86	0.00	0.99	0.39	-0.05	1.08	0.41
ELA 7	0.84	0.89	-0.08	0.99	0.39	-0.15	1.28	0.42
ELA 8	0.86	0.87	-0.05	0.94	0.36	0.02	1.07	0.39
ELA 11	0.84	0.85	-0.07	0.94	0.38	0.11	1.07	0.41
Mathematics 3	0.74	0.81	-0.08	0.83	0.43	-0.12	1.02	0.44
Mathematics 4	0.78	0.84	-0.12	0.88	0.41	-0.07	1.03	0.41
Mathematics 5	0.78	0.84	-0.06	0.80	0.37	-0.11	1.05	0.42
Mathematics 6	0.76	0.73	-0.15	0.86	0.42	-0.04	0.85	0.44
Mathematics 7	0.81	0.84	-0.08	0.90	0.40	-0.10	1.05	0.42
Mathematics 8	0.76	0.81	-0.15	0.89	0.43	-0.02	0.92	0.40
Mathematics 11	0.77	0.80	-0.11	0.96	0.46	-0.10	0.96	0.43