California Department of Education Assessment Development and Administration Division

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Educational Testing Service

Contract No. 5417

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Acronyms and Initialisms Used in the *CMA Technical Report*

ADA	Americans with Disabilities Act
AERA	American Educational Research Association
APA	American Psychological Association
API	Academic Performance Index
ARP	Assessment Review Panel
ASL	American Sign Language
AYP	Adequate Yearly Progress
CAHSEE	California High School Exit Examination
CAPA	California Alternate Performance Assessment
CCR	California *Code of Regulations*
CDE	California Department of Education
CDS	county/district/school
CELDT	California English Language Development Test
CI	confidence interval
CMA	California Modified Assessment
CR	constructed response
CSEMs	conditional standard errors of measurement
CSTs	California Standards Tests
DFA	*Directions for Administration*
DIF	differential item functioning
DOK	depth of knowledge
DPLT	designated primary language test
DQS	Data Quality Services
d-study	decision study
EC	Education Code
EL	English learner
ELA	English–language arts
EM	expectation maximization
EOC	end-of-course
ePEN™	Electronic Performance Evaluation Network
ESEA	Elementary and Secondary Education Act
ETS	Educational Testing Service
FIA	final item analysis
g-study	generalizability study
GENASYS	Generalized Analysis System
ICC	intraclass correlation coefficient item characteristic curve
IEP	individualized education program
I-FEP	initially fluent English proficient
IRT	item response theory
IT	Information Technology
LEA	local education agency
MC	multiple choice
MCE	Manually Coded English
MH DIF	Mantel-Haenszel DIF
MR/ID	Mentally retarded/Intellectually disabled
NCME	National Council on Measurement in Education
NPS	nonpublic, nonsectarian school
NSLP	National School Lunch Program
OIB	ordered item booklet
OTI	Office of Testing Integrity
p-value	item proportion correct
PSAA	Public School Accountability Act
Pt-Bis	point-biserial correlations
QC	quality control
RACF	Random Access Control Facility
R-FEP	reclassified fluent English proficient
SBE	State Board of Education
SD	standard deviation
SEM	standard error of measurement
SFTP	secure file transfer protocol
SGID	School and Grade Identification sheet
SKM	score key management
SPAR	Statewide Pupil Assessment Review
STAR	Standardized Testing and Reporting
STAR TAC	STAR Technical Assistance Center
STS	Standards-based Tests in Spanish
TIF	test information function
WRMSD	Weighted root-mean-square difference

Chapter 1: Introduction

Background

In 1997 and 1998, the California State Board of Education (SBE) adopted content standards in four major content areas: English–language arts (ELA), mathematics, history–social science, and science. These standards are designed to provide state-level input into instruction curricula and serve as a foundation for the state's school accountability programs.

In order to measure and evaluate student achievement of the content standards, the state instituted the Standardized Testing and Reporting (STAR) Program. This Program, administered annually, was authorized in 1997 by state law (Senate Bill 376).

During its 2012 administration, the STAR Program had four components:

- California Standards Tests (CSTs), produced for California public schools to assess the California content standards for ELA, mathematics, history–social science and science in grades two through eleven
- California Modified Assessment (CMA), an assessment of students' achievement of California's content standards for ELA, mathematics, and science, developed for students with an individualized education program (IEP) who meet the CMA eligibility criteria approved by the SBE
- California Alternate Performance Assessment (CAPA), produced for students with an IEP and who have significant cognitive disabilities and are not able to take the CSTs with accommodations and/or modifications or the CMA with accommodations
- Standards-based Tests in Spanish (STS), an assessment of students' achievement of California's content standards for Spanish-speaking English learners that is administered as the STAR Program's designated primary language test (DPLT)

Test Purpose

The purposes of the CMA tests are to allow students with disabilities greater access to an assessment that helps measure their achievement with respect to California's content standards and to provide information about how well schools and school districts are meeting state and federal accountability requirements regarding ELA, mathematics, and science.

CMA results for ELA and mathematics in grades three through eight are used in calculating school and district Academic Performance Index (API) and Adequate Yearly Progress (AYP), which apply toward meeting the requirement of the federal Elementary and Secondary Education Act (ESEA) that all students score at the proficient level or above by 2014.

In November 2011, the SBE adopted performance levels for the CMA for ELA in grades ten and eleven and end-of-course (EOC) Geometry. The CMA results for these grade levels are included in the API beginning with the 2012 Base API, which completes the incorporation of the CMA into the API.

Test Content

The CMA is administered in three content areas: ELA, mathematics, and science. Students in grades three through eleven are tested in ELA; students in grades three through seven

are tested in grade-level mathematics; students who meet the EOC criteria in grades seven through eleven are tested in EOC Algebra I; students who meet the EOC criteria in grades eight through eleven are tested in EOC Geometry; and students in grades five, eight, and ten are tested in grade-level science. Students who take the CMA for ELA in grades four and seven also take a writing test.

In 2012, the CMA included the following tests:

- English–Language Arts (grades three through eleven)
- Mathematics (grades three through seven)
- Algebra I (grades seven through eleven)
- Geometry (grades eight through eleven)
- Science (grades five and eight)
- Life Science (grade ten)

Intended Population

All students enrolled in grades two through eleven in California public schools on the day testing begins are required to take the CSTs, the CMA (available for students in grades three through eleven in ELA, grades three through seven in mathematics, EOC Algebra I, and Geometry, and grades five, eight, and ten in science), or the CAPA. This requirement includes English learners regardless of the length of time they have been in U.S. schools or their fluency in English, as well as students with disabilities who receive special education services. For student with cognitive disabilities, the decision to administer the CSTs, the CMA, or the CAPA is made by their IEP team.

The CMA tests are designed for students with an IEP who meet eligibility criteria adopted by the SBE. The decision to administer the CMA is made by a student's IEP team. The student's IEP team makes the decision annually by evaluating the student's progress on multiple measures. The IEP team must specify annually the CMA content area(s) the student is assigned to take. In addition, to be eligible to take the CMA, the student must have scored at the below basic or far below basic performance level on a previously administered CST.

Parents may submit a written request to have their child exempted from taking any or all parts of the tests within the STAR Program. For the ELA tests in grades four and seven, parents can submit a written request to have their child exempted from taking the essay portion of the ELA test. Only students whose parents submit a written request may be exempted from taking the tests (*Education Code [EC]* Section 60615).

Intended Use and Purpose of Test Scores

The results for tests within the STAR Program are used for three primary purposes, described as follows (excerpted from the *EC* Section 60602 Web page at http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=60001-61000&file=60600-60603) (outside source):

"60602. (a) (1) First and foremost, provide information on the academic status and progress of individual pupils to those pupils, their parents, and their teachers. This information should be designed to assist in the improvement of teaching and learning in California public classrooms. The Legislature recognizes that, in addition to statewide assessments that will occur as specified in this chapter, school districts will conduct additional ongoing pupil

diagnostic assessment and provide information regarding pupil performance based on those assessments on a regular basis to parents or guardians and schools. The legislature further recognizes that local diagnostic assessment is a primary mechanism through which academic strengths and weaknesses are identified."

"60602. (a) (4) Provide information to pupils, parents or guardians, teachers, schools, and school districts on a timely basis so that the information can be used to further the development of the pupil and to improve the educational program."

"60602. (c) It is the intent of the Legislature that parents, classroom teachers, other educators, governing board members of school districts, and the public be involved, in an active and ongoing basis, in the design and implementation of the statewide pupil assessment program and the development of assessment instruments."

"60602. (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 Standardized Testing and Reporting Program become open and transparent to teachers, parents, and pupils, to assist all the 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."

In addition, STAR Program assessments are used to provide data for school, district, and state purposes and to meet federal accountability requirements.

Testing Window

The CMA is administered within a 25-day window which begins 12 instructional days before and ends 12 instructional days after the day on which 85 percent of the instructional year is completed. School districts may use all or any part of the 25 days for testing but are encouraged to schedule testing over no more than a 10- to 15-day period. (California *Code of Regulations [CCR], Title 5,* Education, Division 1, Chapter 2, Subchapter 3.75, Article 2, § 855; in the California Department of Education [CDE] Web document linked at http://www.cde.ca.gov/ta/tg/sr/resources.asp)

Significant Developments in 2012

Cut Scores and Score Scales for Newly Developed Tests

A standard setting was held in the summer of 2011 to establish cut scores for the below basic, basic, proficient, and advanced performance levels for the ELA tests in grades ten and eleven and the EOC Geometry test. A scale for reporting each of these CMA test results was developed and used to report scores after the spring 2012 administration.

Inclusion of the CMA in the STAR Regulations

The eligibility criteria for the CMA have been added to the STAR regulations (*5 CCR* Section 850 [i] [3]). In addition, accommodations for the CMA have been added to the regulations *(5 CCR* Section 853.5 [d]). As a result, the description of the allowable testing variations and accommodations has been replaced in Appendix 2.C on page 24 with Table 2.C.1 Matrix of Test Variations and Accommodations for the CMA.

Release of Results Delayed to Investigate Psychometric Impact of Social Network Security Breaches

This breach involved CST items only. No CAPA, CMA, or STS items were found to be exposed. However, release of results was delayed for all STAR tests.

The spring 2012 security breach of multiple CST test questions through social networking Web sites raised serious concerns that required comprehensive investigations and additional statistical analyses. In recognizing the importance and the need to provide valid and reliable results to the state, districts, and schools, both the CDE and Educational Testing Service (ETS) took every precaution necessary, including extensive statistical analyses, to ensure that all test results maintained the highest levels of validity and reliability.

A preliminary investigation of the scope and magnitude of the security breach was completed by the end of May that resulted in the list of exposed test questions (test items) that were found on social networking sites. This process was needed to determine whether the exposed CST test questions were operational items that contributed to students' test scores, and more importantly, were linking items used in statistical analyses to maintain comparability of scores obtained on different test forms administered from one year to the next.

After the list of exposed CST items was determined, ETS proceeded to conduct additional statistical analyses to determine whether any test questions affected by the security breach needed to be removed from scoring to maintain the highest levels of validity of test results. An exhaustive review of statistical results did not provide evidence of performance changes that differed from that of nonexposed items. From a statistical perspective, results did not indicate the need to remove exposed items from scoring. However, to minimize the potential impact of exposed items, schools with confirmed item exposure were removed from statistical analyses.

Because it is critically important to provide the most valid and reliable results at all levels (state, district, school, and student), additional analyses were conducted. This included an assessment of the impact of removing exposed items from score linking analyses. Results showed that for most of the affected CSTs, scale scores and raw score performance cuts produced with exposed items retained or removed from analyses were very similar. In addition, for all tests, there was no change in the percent of students classified as proficient or above when exposed items were retained or removed from the analyses.

Extension of the STAR Testing Window

The STAR testing window was extended by 4 days, to 25 days: 12 instructional days before and 12 instructional days after the date on which 85 percent of each school's, track's, or program's instructional days had been completed (formerly 21 days, 10 instructional days before and 10 instructional days after 85 percent of instructional days had been completed) (5 CCR Section 855 [a] [1]).

Limitations of the Assessment

Score Interpretation

Teachers and administrators should not use STAR results in isolation to make inferences about instructional needs. In addition, it is important to remember that 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 local assessments, classroom tests, student grades, classroom work, and teacher recommendations in addition to the child's CMA results (CDE, 2012; page 9). It is also important to note that student scores in a content area contain measurement error and could vary if students were retested.

Out-of-Level Testing

Each CMA is designed to measure the content corresponding to a specific grade or course, and is appropriate for students in the specific grade or course. Testing below a student's grade is not allowed for the CMA or any test in the STAR Program; all students are required to take the test for the grade in which they are enrolled. School districts are advised to review all IEPs to ensure that any provision for testing below a student's grade level has been removed.

Score Comparison

When comparing results for the CMA, the reviewer is limited to comparing results only within the same content area and grade. For example, it is appropriate to compare scores obtained by students and/or schools on the 2012 grade three mathematics test; it would not be appropriate to compare scores obtained on the grade three mathematics test with those obtained on the grade four mathematics test. The reviewer may compare results for the same content area and grade, within a school, between schools, or between a school and its district, its county, or the state within the same year, and if based on the same score scale, across years. Comparisons between scores obtained in different grades or content areas should be avoided.

Finally, it is inappropriate to conduct any type of score comparisons (including raw score, percent correct, scale score, or performance level comparisons) between CST and CMA tests. The CMA follows an independent procedure for test development and establishment of performance levels; therefore, comparison between CMA and CST results is discouraged.

Groups and Organizations involved with the STAR Program

State Board of Education

The SBE is the state education agency that sets education 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*.

The SBE is responsible for assuring the compliance with programs that meet the requirement of the federal ESEA and the state's Public School Accountability Act (PSAA) and for reporting results in terms of the AYP and API, which measure the academic performance and growth of schools on a variety of academic measures. In order to provide information on student progress in public schools, as essential for those programs, the SBE supervises the administration and progress of the STAR Program.

California Department of Education

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 9,800 schools. California aims to provide a world-class education for all students, from early childhood to adulthood. The Department of Education serves California by innovating and collaborating with educators, schools, parents, and community partners which together, as a team, prepares students to live, work, and thrive in a highly connected world.

Contractors

Educational Testing Service

The CDE and the SBE contract with ETS to develop and administer the STAR Program. As the prime contractor, ETS has overall responsibility for working with the CDE to implement and maintain an effective assessment system and to coordinate the work of ETS and its subcontractor Pearson. Activities directly conducted by ETS include the following:

- Overall management of the program activities;
- Development of all test items;
- Construction and production of test booklets and related test materials;
- Support and training provided to counties, school districts, and independently testing charter schools;
- Implementation and maintenance of the STAR Management System for orders of materials and pre-identification services; and
- Completion of all psychometric activities.

Pearson

ETS also monitors and manages the work of Pearson, subcontractor to ETS for the STAR Program. Activities conducted by Pearson include the following:

- Production of all scannable test materials;
- Packaging, distribution, and collection of testing materials to school districts and independently testing charter schools;
- Scanning and scoring of all responses, including performance scoring of the writing responses; and
- Production of all score reports and data files of test results.

Overview of the Technical Report

This technical report addresses the characteristics of the CMA administered in spring 2012. The technical report contains nine additional chapters as follows:

- Chapter 2 presents a conceptual overview of processes involved in a testing cycle for a CMA. This includes test construction, test administration, generation of test scores, and dissemination of score reports. Information about the distributions of scores aggregated by subgroups based on demographics and the use of special services is also included in this chapter. Also included are references to various chapters that detail the processes briefly discussed in this chapter.
- Chapter 3 describes the procedures followed during the development of valid CMA items; the chapter explains the process of field-testing new items and the review of items by contractors and content experts.
- Chapter 4 details the content and psychometric criteria that guided the construction of the CMA for 2012.
- Chapter 5 presents the processes involved in the actual administration of the 2012 CMA with an emphasis on efforts made to ensure standardization of the tests. It also includes a detailed section that describes the procedures that were followed by ETS to ensure test security.
- Chapter 6 describes the standard-setting process previously conducted for newly introduced CMA tests.

- Chapter 7 details the types of scores and score reports that are produced at the end of each administration of the CMA.
- Chapter 8 summarizes the results of the test- and item-level analyses performed during the spring 2012 administration of the tests. These include the classical item analyses, the reliability analyses that include assessments of test reliability and the consistency and accuracy of the CMA performance-level classifications, and the procedures designed to ensure the validity of CMA score uses and interpretations. Also discussed in this chapter are the item response theory (IRT) and model-fit analyses, as well as documentation of the equating, along with CMA conversion tables. Finally, the chapter summarizes the results of analyses investigating the differential item functioning (DIF) for each CMA.
- Chapter 9 highlights the importance of controlling and maintaining the quality of the CMA.
- Chapter 10 presents historical comparisons of various item- and test-level results for the past three years and for the base year, which varies according to test.

Each chapter contains summary tables in the body of the text. However, extended appendixes that give more detailed information are provided at the end of the relevant chapters.

References

California *Code of Regulations, Title 5,* Education, Division 1, Chapter 2, Subchapter 3.75, Article 2, § 855.

California Department of Education. (2012). *STAR Program information packet for school district and school staff*. Sacramento, CA. Downloaded from http://www.cde.ca.gov/ta/tg/sr/resources.asp

California Department of Education, EdSource, & the Fiscal Crisis Management Assistance Team. (2012). *Fiscal, demographic, and performance data on California's K–12 schools*. Sacramento, CA: Ed-Data. http://www.ed-data.k12.ca.us/App_Resx/EdDataClassic/fsTwoPanel.aspx?#!bottom=/_layouts/EdDataClassic/profile.asp?Tab=1&level=04&reportNumber=16

California State Board of Education. (2011). SBE agenda for November 2011. Sacramento, CA. http://www.cde.ca.gov/be/ag/ag/yr11/agenda201111.asp

Chapter 2: An Overview of CMA Processes

This chapter provides an overview of the processes involved in a typical test development and administration cycle for the CMA; these processes are similar to those undertaken to develop the CSTs. Also described are the specifications maintained by ETS to implement each of those processes. The chapter is organized to provide a brief description of each process followed by 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 sections that follow.

Item Development

Item Formats

All tests of the CMA contain three-option multiple-choice items. The CMA for ELA in grades four and seven also include a constructed response component, the CMA for Writing, which contains one writing task.

Item Specifications

The CMA items are developed to measure California content standards and designed to conform to principles of item writing defined by ETS (ETS, 2002). ETS maintains and updates an item specifications document, otherwise known as “item writer guidelines,” for each CMA and has developed an item utilization plan to guide the development of the items for each content area. Item writing emphasis is determined in consultation with the CDE.

The item specifications describe the characteristics of the items that should be written to measure each content standard. The item specifications help ensure that the items in the CMA measure the content standards in the same way. To do this, the item specifications provide detailed information to item writers that are developing items for the CMA.

The items selected for the CMA undergo an extensive item review process that is designed to provide the best standards-based tests possible. Details about the item specifications, the item review process, and the item utilization plan are presented in Chapter 3, starting on page 66.

Item Banking

Before newly developed items are placed in the item bank, ETS prepares the items for review by content experts and various external review organizations such as the Assessment Review Panels (ARPs), described in Chapter 3 starting on page 70; and the Statewide Pupil Assessment Review (SPAR) panel, described in Chapter 3 starting on page 73.

Once the ARP review is complete, the items are placed in the item bank along with the associated information obtained at the review sessions. Items that are accepted by the content experts are updated to a “field-test ready” status. ETS then delivers the items to the CDE by means of a delivery of the California electronic item bank. Items are subsequently field-tested to obtain information about item performance and item statistics that can be used to assemble operational forms. The CDE then reviews the item data and makes decisions about which items could be used operationally (see page 75 for more information about the CDE’s data review). Any additional updates to item content and statistics are based on data collected from the operational use of the items. However, only the latest content of the item is retained in the bank at any time, along with the administration data from every administration that has included the item.

Further details on item banking are presented on page 76 in Chapter 3.

Item Refresh Rate

The item utilization plan assumes that each year, 30 percent of items on an operational form are refreshed (replaced); these items remain in the item bank for future use.

Test Assembly

Test Length

The number of operational items in each CMA varies by content area and grade. There are 48 operational items on the CMA for ELA in grades three through five, for mathematics in grades three through five, and for science in grade five. There are 54 operational items on the CMA tests for ELA in grades six through eight, for mathematics in grades six and seven, and for science in grade eight. There are 60 operational items on the CMA for ELA in grades nine through eleven, Algebra I, and Geometry, and Life Science in grade ten. The considerations in deciding upon the test length are described on page 78 in Chapter 4.

Each CMA also includes various number of field-test items in addition to the operational items. The total number of items, including field-test items, in each CMA and the estimated time to complete a test are presented in Appendix 2.A on page 20.

Test Blueprints

ETS selects all CMA items to conform to the SBE-approved California content standards and test blueprints. The test blueprints for the CMA can be found on the CDE STAR CMA Blueprints Web page at http://www.cde.ca.gov/ta/tg/sr/cmablueprints.asp.

Although the test blueprints specify the number of items at the individual standard level, scores for the CMA items are grouped into subcontent areas referred to as “reporting clusters.” For each CMA reporting cluster, the percentage of questions correctly answered is reported on a student’s score report. A description of the CMA reporting clusters and the standards that comprise each cluster are provided in Appendix 2.B, which starts on page 21.

Content Rules and Item Selection

When developing a new test form for a given grade and content area, test developers follow a number of rules. First and foremost, they select items that meet the blueprint for that grade and content area. Using an electronic item bank, assessment specialists begin by identifying a number of linking items These are items that appeared in previous operational test administrations and are then used to equate subsequent (new) test forms. After the linking items are approved, assessment specialists populate the rest of the test form.

Linking items are selected to proportionally represent the full blueprint. Each CMA form is a collection of test items designed to reflect a reliable, fair, and valid measure of student learning within well-defined course content.

Another consideration is the difficulty of each item. Test developers strive to ensure that there are some easy and some hard items and that there are a number of items in the middle range of difficulty. The detailed rules are presented in Chapter 4, which begins on page 78.

Psychometric Criteria

The staff assesses the projected test characteristics during the preliminary review of the assembled forms. The statistical targets used for the 2012 test development and the

projected characteristics of the assembled forms are presented starting from page 79 in Chapter 4.

The items in test forms are organized and sequenced differently according to the requirements of the content area. Further details on the arrangement of items during test assembly are also described on page 80 in Chapter 4.

Test Administration

It is of utmost priority to administer the CMA in an appropriate, consistent, secure, confidential, and standardized manner.

Test Security and Confidentiality

All tests within the STAR Program are secure documents. For the CMA administration, every person having access to test materials maintains the security and confidentiality of the tests. ETS's Code of Ethics requires that all test information, including tangible materials (such as test booklets, test questions, 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 Chapter 5 on page 106.

In its pursuit of enforcing secure practices, ETS and the OTI strive to safeguard the various processes involved in a test development and administration cycle. Those processes are listed below. The practices related to each of the following processes are discussed in detail in Chapter 5, starting on page 106.

- Test development
- Item and data review
- Item banking
- Transfer of forms and items to the CDE
- Security of electronic files using a firewall
- Printing and publishing
- Test administration
- Test delivery
- Processing and scoring
- Data management
- Transfer of scores via secure data exchange
- Statistical analysis
- Reporting and posting results
- Student confidentiality
- Student test results

Procedures to Maintain Standardization

The CMA processes are designed so that the tests are administered and scored in a standardized manner. ETS takes all necessary measures to ensure the standardization of the CMA, as described in this section.

Test Administrators

The CMA are administered in conjunction with the other tests that comprise the STAR Program. ETS employs personnel who facilitate various processes involved in the standardization of an administration cycle.

Staff at school districts who are central to the processes include district STAR coordinators, test site coordinators, test examiners, proctors, and scribes. The responsibilities of each of the staff members are included in the *STAR District and Test Site Coordinator Manual* (CDE, 2012); see page 112 in Chapter 5 for more information.

Test Directions

A series of instructions compiled in detailed manuals are provided to the test administrators. Such documents include, but are not limited to, the following:

***Directions for Administration* (*DFA*s)—**Manuals used by test examiners to administer the CMA to students to be followed exactly so that all students have an equal opportunity to demonstrate their academic achievement (See page 112 in Chapter 5 for more information.)

***District and Test Site Coordinator Manual*—**Test administration procedures for district STAR coordinators and test site coordinators (See page 112 in Chapter 5 for more information.)

STAR Management System manuals—Instructions for the Web-based modules that allow district STAR coordinators to set up test administrations, order materials, and submit and correct student Pre-ID data; every module has its own user manual with detailed instructions on how to use the STAR Management System (See page 113 in Chapter 5 for more information.)

Test Variations and Accommodations

All public school students participate in the STAR Program, including students with disabilities and English learners. Most students with IEPs and most English learners take the CMA under standard conditions. However, some students with IEPs and some English learners may need assistance when taking the CMA. This assistance takes the form of test variations or accommodations. All students in these categories may have test administration directions simplified or clarified.

In addition, all eligible students may have test variations if these variations are regularly used in the classroom. Each student also must be allowed to use the accommodations that are specified in his or her IEP or Section 504 plan. Accommodations change the way the test is given but do not change what is tested. These accommodations must match the one(s) used for classroom work throughout the year.

The purpose of test variations and accommodations is to enable the students to take the CMA, not to give them an advantage over other students or to artificially inflate their scores. Test administration variations and accommodations do not result in changes to the students' scores for API or AYP calculations. Appropriate test variations and accommodations for the 2012 administration of the California Modified Assessment are based on the study of item format and delivery mode from the California Modified Assessment Pilot Test.

Test variations and accommodations for the statewide assessments, including the STAR Program, are defined as follows:

Category 1: Test Variations—Eligible students may have test variations if regularly used in the classroom. For example, students may take a test in a group smaller than the regular testing group or take the test individually. They also may use special lighting, adaptive furniture, or magnifying equipment.

Category 2: Accommodations—Eligible students are permitted to take the CMA with accommodations if specified in their IEP or Section 504 plan for use on the CMA or for use during classroom instruction and assessment. Examples of accommodations are large-print or braille versions of the CMA or providing more than one day for a test designed for a single sitting.

Appendix 2.C on page 24 presents an adaptation of the 2012 Matrix of Test Variations, Accommodations, and Modifications for Administration of California Statewide Assessments; this version shows the complete list of the variations and accommodations that were allowed for the CMA in 2012. Because the CMA was developed with modifications built into the test, additional modifications are not allowed. Students who require additional modifications take the content-area CST with modifications.

Special Services Summaries

The percentage of students using various testing accommodations during the 2012 administration of the CMA is presented in Appendix 2.D, which starts on page 27. The data are organized into two sections within each table. The first section presents the percentages of students using each accommodation in the total testing population. The second section presents the results for students in various categories based on the following levels of English-language fluency:

- **English only (EO)—**A student for whom there is a report of English as the primary language (i.e., language first learned, most frequently used at home, or most frequently spoken by the parents or adults in the home) on the “Home Language Survey”
- **Initially fluent English proficient (I-FEP)—**A student whose primary language is a language other than English who initially met the school district criteria for determining proficiency in English
- **English learner (EL)—**A student who first learned or has a home language other than English who was determined to lack sufficient fluency in English on the basis of state oral language (K–12) and literacy (3–12) assessments to succeed in the school’s regular instructional program (For students tested for initial classification prior to May 2001, this determination is made on the basis of the state-approved instrument the district was using. For students tested after May 2001, use the California English Language Development Test [CELDT] results.)
- **Reclassified fluent English proficient (R-FEP)—**A student whose primary language is a language other than English who was reclassified from English learner to fluent-English proficient

The information within each section is presented for the relevant grades. Most variations and accommodations are common across the CMA, although the CMA for grades four and seven ELA also include variations and accommodations related to the writing tasks. Additional accommodations are included for the CMA for mathematics that involved the use of calculators and for science and mathematics that involved manipulatives.

Scores

The CMA total test raw scores equal the sum of examinees' scores on the operational multiple-choice test items. In grades four and seven, the ELA total test raw score equals the sum of examinees' scores on both the multiple-choice items and the writing task. The writing score is reported on a scale with possible scores of 0, 1, 2, 3 and 4. Details about CMA writing scores and scoring rubrics are described starting on page 124 in Chapter 7.

Total test raw scores on each CMA are converted to three-digit scale scores using the equating process described starting on page 15. CMA results are reported through the use of these scale scores; the scores range from 150 to 600 for each test. Also reported are performance levels obtained by categorizing the scale score into one of the following levels: far below basic, below basic, basic, proficient, or advanced. Scale scores of 300 and 350 correspond to the cut scores for the basic and proficient performance levels, respectively. The state's target is for all students to score at the proficient or advanced level.

In addition to scale scores for the total content-area test, performance on the associated reporting clusters is reported. The subscore or reporting cluster score is obtained by summing an examinee's scores on the items in each reporting cluster. That information is reported in terms of a percent-correct score.

Detailed descriptions of CMA scores are found in Chapter 7, which starts on page 122.

Aggregation Procedures

In order to provide meaningful results to the stakeholders, CMA scores for a given grade and content area are aggregated at the school, independently testing charter school, district, county, and state levels. The aggregated scores are generated for both individual students and demographic subgroups. The following sections present the summary results of individual and demographic subgroup CMA scores aggregated at the state level.

Please note that aggregation is performed on valid scores only, which are cases where examinees met all of the following criteria:

1. Met attemptedness criteria.
2. Did not have a parental exemption.
3. Did not miss any part of the test due to illness or medical emergency.
4. Identified, in the case of the end-of-course Algebra I or Geometry tests, the particular test taken.
5. Did not test out of level (grade inappropriate).

Individual Scores

Table 7.1 and Table 7.2 starting on page 128 in Chapter 7 provide summary statistics for individual scores aggregated at the state level, describing overall student performance on each CMA. Included in the tables are the means and standard deviations of student scores expressed in terms of both raw scores and scale scores; the raw score means and standard deviations expressed as percentages of the total raw score points in each test; and the percentages of students in each performance level.

Statistics summarizing CMA student performance by content area and grade are provided in Table 7.B.1 through Table 7.B.4 starting on page 141 in Appendix 7.B.

Demographic Subgroup Scores

In Table 7.C.1 through Table 7.C.19 starting on page 143, students are grouped by demographic characteristics including gender, ethnicity, English-language fluency, economic status, and primary disability. The tables show the numbers of students with valid scores in each group, scale score means and standard deviations, and percent in a performance level, as well as percent correct for each reporting cluster for each demographic group. Table 7.3 on page 129 provides definitions for the demographic groups included in the tables.

Equating

The CMA is equated to a reference form using a common-item nonequivalent groups data collection design and methods based on item response theory (IRT) (Hambleton & Swaminathan, 1985). The “base” or “reference” calibrations for the CMA were established by calibrating samples of item response data from a specific administration. Doing so established a scale to which subsequent item calibrations could be linked. The 2012 items parameter estimates were placed on the reference scale using a set of linking items selected from the 2011 operational forms and readministered in 2012.

For ELA in grades three through five, mathematics in grades three through five, and science in grade five, the reference scales were established in 2009 and were based on the spring 2009 operational administration. For ELA in grades six through eight, mathematics in grades six to seven, and science in grade eight, the reference scales were established in 2010 and were based on the spring 2010 operational administration. For ELA in grade nine, EOC Algebra I, and Life Science in grade ten, reference scales were established in 2011 and were based on the spring 2011 operational administration. Finally, for the ELA in grades ten and eleven and Geometry, the reference scales were developed in 2012 and were based on the spring 2012 operational administration.

The procedure used for equating the CMA involves three steps: item calibration, item scaling, and production of scoring tables. Each of those procedures, as described below, is applied to all of the tests of the CMA.

Calibration

To obtain item calibrations, a proprietary version of PARSCALE program is used. The estimation process is constrained by setting a common discrimination value for all items equal to 1.0 / 1.7 (or 0.588) and by setting the lower asymptote for all multiple-choice items to zero. The resulting estimation is equivalent to the Rasch model for multiple-choice items and the Rasch partial credit model for polytomously scored items, which was used to obtain calibrations for the writing prompt in the CMA for ELA in grades four and seven. For the purpose of equating, only the operational items are calibrated for each test.

The PARSCALE calibrations are run in two stages, following procedures used with other ETS testing programs. In the first stage, estimation imposed normal constraints on the updated prior ability distribution. The estimates resulting from this first stage are used as starting values for a second PARSCALE run, in which the subject prior distribution is updated after each expectation maximization (EM) cycle with no constraints. For both stages, the metric of the scale is controlled by the constant discrimination parameters.

Scaling

Calibrations of the 2012 items were linked to the previously obtained reference scale estimates using linking items and the Stocking and Lord (1983) procedure. In the case of the one-parameter model calibrations, this procedure is equivalent to setting the mean of the new item parameter estimates for the linking set equal to the mean of the previously scaled estimates. As noted earlier, the linking set is a collection of items in a current test form that also appeared in last year's form and was scaled at that time.

The linking process is carried out iteratively by inspecting differences between the transformed new and old (reference) estimates for the linking items and removing items for which the item difficulty estimates changed significantly. Items with large weighted root-mean-square differences (WRMSDs) between item characteristic curves (ICCs) based on the old and new difficulty estimates were removed from the linking set. The differences are calculated using the following formula:

$$WRMSD = \sqrt{\sum_{j=1}^{n_g} w_j \left[P_n\left(\theta_j\right) - P_r\left(\theta_j\right) \right]^2} \tag{2.1}$$

where,

abilities are grouped into intervals of 0.005 ranging from –3.0 to 3.0,

n_g is the number of intervals/groups,

θ_j is the mean of the ability estimates that fall in interval j,

w_j is a weight equal to the proportion of estimated abilities from the transformed new form in interval j,

$P_n(\theta_j)$ is the probability of correct response for the transformed new form item at ability θ_j, and

$P_r(\theta_j)$ is the probability of correct response for the old (reference) form item at ability θ_j.

Based on established procedures, any linking items for which the WRMSD was greater than 0.125 were eliminated from the linking set. This criterion has produced reasonable results over time in similar equating work done with other testing programs at ETS.

Scoring Table Production

Once the new item calibrations for each test are transformed to the base scale, IRT procedures are used to transform the new form number-correct scores (raw scores) to their corresponding ability (theta). The ability estimates can then be transformed to scale scores through linear transformation.

The procedure is based on the relationship between raw scores and ability (theta). For the CMA consisting entirely of n multiple-choice items, this is the well-known relationship defined in Lord (1980; equations 4–5):

$$\xi(\theta) = \sum_{i=1}^{n} P_i(\theta) \tag{2.2}$$

where,

$P_i(\theta)$ is the probability of a correct response to item i at ability θ, and

$\xi(\theta)$ is the corresponding true score.

For ELA in grades four and seven, ξ(θ) is based on a sum of multiple-choice and constructed response essay items; the relationship can be defined as:

$$\xi(\theta) = \sum_{i=1}^{nmc} P_i(\theta) + \sum_{j=1}^{ncr} \sum_{x=1}^{m} s_{xj} P_{xj}(\theta) \tag{2.3}$$

where,

nmc is the number of multiple-choice items in the test,

ncr is the number of constructed response items in the test,

m is the number of score categories for each constructed response item,

s_{xj} is the value for score category x for the constructed response item *j*, and

$P_{xj}(\theta)$ is the probability that an examinee with ability θ obtains score s_x on the constructed response item *j*.

For each integer score ξ_n on the new form, the procedure is used to first solve for the corresponding ability estimate using equation 2.2, except in the case of the grades four and seven ELA tests, where equation 2.3 is used. The ability estimates are then expressed in the reporting scale metric by applying linear transformation with the appropriate slope and intercept, using equation 2.4:

$$ScaleScore = Intercept + Slope \times \theta \tag{2.4}$$

where,

θ represents student ability.

The slope and intercept for each CMA were developed from the base forms using equations 2.5 and 2.6 because the basic and proficiency cut scores were required to be equal to 300 and 350, respectively.

$$\text{Slope} = \frac{350 - 300}{\theta_{proficient} - \theta_{basic}} \tag{2.5}$$

$$\text{Intercept} = 350 - \theta_{proficient} \times \left(\frac{350 - 300}{\theta_{proficient} - \theta_{basic}} \right) \tag{2.6}$$

where,

$\theta_{proficient}$ represents theta cut score for proficient on the base scale, and

θ_{basic} represents theta cut score for basic on the base scale.

Complete raw-to-scale score conversion tables for the 2012 CMA are presented in Table 8.D.32 through Table 8.D.53 in Appendix 8.D, starting on page 284. The raw scores and corresponding rounded transformed scale scores are listed in those tables.

For all of the 2012 CMA, scale scores were adjusted at both ends of the scale so that the minimum reported scale score was 150 and the maximum reported scale score was 600. Raw scores of zero and perfect raw scores were assigned scale scores of 150 and 600, respectively.

The scale-score ranges defining the various performance levels are presented in Table 2.1.

Table 2.1 Scale-Score Ranges for Performance Levels

Content Area	CMA *	Far Below Basic	Below Basic	Basic	Proficient	Advanced
English–Language Arts	3	150 – 227	228 – 299	300 – 349	350 – 396	397 – 600
	4	150 – 240	241 – 299	300 – 349	350 – 406	407 – 600
	5	150 – 218	219 – 299	300 – 349	350 – 399	400 – 600
	6	150 – 220	221 – 299	300 – 349	350 – 404	405 – 600
	7	150 – 227	228 – 299	300 – 349	350 – 408	409 – 600
	8	150 – 234	235 – 299	300 – 349	350 – 406	407 – 600
	9	150 – 242	243 – 299	300 – 349	350 – 406	407 – 600
	10	150 – 242	243 – 299	300 – 349	350 – 406	407 – 600
	11	150 – 249	250 – 299	300 – 349	350 – 405	406 – 600
Mathematics	3	150 – 228	229 – 299	300 – 349	350 – 422	423 – 600
	4	150 – 218	219 – 299	300 – 349	350 – 429	430 – 600
	5	150 – 225	226 – 299	300 – 349	350 – 421	422 – 600
	6	150 – 229	230 – 299	300 – 349	350 – 427	428 – 600
	7	150 – 236	237 – 299	300 – 349	350 – 442	443 – 600
	Algebra I	150 – 250	251 – 299	300 – 349	350 – 409	410 – 600
	Geometry	150 – 256	257 – 299	300 – 349	350 – 412	413 – 600
Science	5	150 – 242	243 – 299	300 – 349	350 – 400	401 – 600
	8	150 – 263	264 – 299	300 – 349	350 – 405	406 – 600
	10 Life Science	150 – 250	251 – 299	300 – 349	350 – 409	410 – 600

* Numbers indicate grade-level tests.

Equating the Braille Versions of the CMA

In some cases, it is not possible to translate all of the operational items contained in a CMA into braille. This situation requires that a new conversion table be developed for the resulting shortened test. To obtain this table, the shortened test is equated to the full-length operational test for the current year using the IRT equating methods described previously. This process ensures that the scaled cut scores established for the full-length test are used to classify students who take the shorter test.

In 2012, this process was applied to the CMA for Mathematics (Grade 5), because one item of this test could not be translated into braille.

References

California Department of Education. (2012). *2012 STAR district and test site coordinator manual.* Sacramento, CA. Downloaded from http://www.startest.org/pdfs/STAR.coord_man.2012.pdf

Educational Testing Service. (2002). *ETS standards for quality and fairness*. Princeton, NJ: Author.

Hambleton, R. K. & Swaminathan, H. (1985). *Item response theory: principles and applications*. Boston, MA: Kluwer-Nijhoff.

Lord, F. M. (1980). *Applications of item response theory to practical testing problems.* Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Stocking, M. L., and Lord, F. M. (1983). Developing a common metric in item response theory. *Applied Psychological Measurement, 7*, 201–10.

Appendix 2.A—CMA Items and Estimated Time Chart

ITEM AND ESTIMATED TIME CHART

California Modified Assessment	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 9		Grade 10		Grade 11	
	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time	Total No. of Items	Time
English–Language Arts		**180**		**135**		**135**		**165**		**165**		**165**		**150**		**150**		**150**
Part 1		45		45		45		55		55		55		50		50		50
Part 2	57	45	57	45	57	45	63	55	63	55	63	55	70	50	70	50	70	50
Part 3		45		45		45		55		55		55		50		50		50
Part 4–only grade 3		45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Writing Application	–	–	1	70[1]	--	--	--	--	1	70[1]	--	--	--	--	--	--	--	--
Mathematics		**140**		**105**		**105**		**120**		**120**		**150**		**150**		**150**		**150**
Part 1		35		35		35		40		40		50		50		50		50
Part 2	57	35	57	35	57	35	63	40	63[2]	40	70[3]	50	70[3]	50	70[3]	50	70[3]	50
Part 3		35		35		35		40		40		50		50		50		50
Part 4–only grade 3		35	--	--	--	--	--	--	--	--	--	--	--	--	--		--	--
Science		--		--		**120**		--		--		**135**		**--**		**150**		**--**
Part 1	--	--	--	--	57	40	--	--	--	--	63	45	--	--	66	50	N/A	--
Part 2		--		--		40		--		--		45		--		50		--
Part 3		--		--		40		--		--		45		--		50		--

1 The writing tests in grades four and seven are given on a separate date from the multiple-choice tests. Writing test times are not included in the estimated time for ELA multiple-choice tests.

2 Students in grade seven taking a mathematics CMA will take either the CMA for Mathematics (Grade 7) or the CMA for Algebra I. Items and times are for the CMA for Mathematics (Grade 7). Items and estimated times for the CMA for Algebra I are listed under grades eight through eleven mathematics.

3 Students in grades eight through eleven will take the CMA for Algebra I or Geometry or the appropriate mathematics CST.

Appendix 2.B—Reporting Clusters

English–Language Arts

English–Language Arts Modified Standards Assessment (Grade Three)

Vocabulary	14 items
Reading for Understanding	17 items
Language	17 items

English–Language Arts Modified Standards Assessment (Grade Four)

Vocabulary	11 items
Reading for Understanding	16 items
Language	21 items
Writing Applications	1 (4 points)

English–Language Arts Modified Standards Assessment (Grade Five)

Vocabulary	8 items
Reading for Understanding	18 items
Language	22 items

English–Language Arts Modified Standards Assessment (Grade Six)

Vocabulary	9 items
Reading for Understanding	22 items
Language	23 items

English–Language Arts Modified Standards Assessment (Grade Seven)

Vocabulary	8 items
Reading for Understanding	22 items
Language	24 items
Writing Applications	1 (4 points)

English–Language Arts Modified Standards Assessment (Grade Eight)

Vocabulary	6 items
Reading for Understanding	24 items
Language	24 items

English–Language Arts Modified Standards Assessment (Grade Nine)

Vocabulary	7 items
Reading for Understanding	27 items
Language	26 items

English–Language Arts Modified Standards Assessment (Grade Ten)

Vocabulary	7 items
Reading for Understanding	27 items
Language	26 items

English–Language Arts Modified Standards Assessment (Grade Eleven)

Vocabulary	7 items
Reading for Understanding	29 items
Language	24 items

Mathematics

Mathematics Modified Standards Assessment (Grade Three)

Number Sense	24 items
Algebra and Data Analysis	13 items
Measurement and Geometry	11 items

Mathematics Modified Standards Assessment (Grade Four)

Number Sense	23 items
Algebra and Data Analysis	15 items
Measurement and Geometry	10 items

Mathematics Modified Standards Assessment (Grade Five)

Number Sense	21 items
Algebra and Data Analysis	17 items
Measurement and Geometry	10 items

Mathematics Modified Standards Assessment (Grade Six)

Number Sense	21 items
Algebra and Data Analysis	25 items
Measurement and Geometry	8 items

Mathematics Modified Standards Assessment (Grade Seven)

Number Sense	18 items
Algebra and Data Analysis	25 items
Measurement and Geometry	11 items

Mathematics Modified Standards Assessment (Algebra I)

Number Properties, Operations, and Linear Equations	15 items
Graphing and Systems of Linear Equations	14 items
Quadratics and Polynomials	19 items
Functions and Rational Expressions	12 items

Mathematics Modified Standards Assessment (Geometry)

Logic and Geometric Proofs	23 items
Volume and Area Formulas	11 items
Angle Relationships, Constructions, and Lines	14 items
Trigonometry	12 items

Science

Science Modified Standards Assessment (Grade Five)	
Physical Sciences	16 items
Life Sciences	16 items
Earth Sciences	16 items
Science Modified Standards Assessment (Grade Eight)	
Motion	19 items
Matter	23 items
Earth Science	7 items
Investigation and Experimentation	5 items
Science Modified Standards Assessment (Grade Ten)	
Cell Biology and Genetics	22 items
Evolution and Ecology	22 items
Physiology	10 items
Investigation and Experimentation	6 items

Appendix 2.C—2012 CMA Test Variations and Accommodations

Table 2.C.1 Matrix of Test Variations and Accommodations for the CMA

1: Test Variation 2: Accommodation	
Test administration directions that are simplified or clarified (does not apply to test questions)	ALL
Student marks in test booklet (other than responses) including highlighting	ALL For grade 3 marks must be removed to avoid scanning interference or transcribe.
Test students in a small group setting	ALL
Extra time on a test within a testing day	ALL
Test individual student separately, provided that a test examiner directly supervises the student	1
Visual magnifying equipment	1
Audio amplification equipment	1
Noise buffers (e.g., individual carrel or study enclosure)	1
Special lighting or acoustics; special or adaptive furniture	1
Colored overlay, mask, or other means to maintain visual attention	1
Manually Coded English (MCE) or American Sign Language (ASL) to present directions for administration (does not apply to test questions)	1
Student marks responses in test booklet and responses are transferred to a scorable answer document by an employee of the school, district, or nonpublic school	2
Student dictates multiple-choice question responses orally, or in MCE to a scribe, audio recorder, or speech-to-text converter for selected response items	2
Word processing software with spell and grammar check tools turned off for the essay responses (writing portion of the test)	2
Essay responses dictated orally or in MCE to a scribe, audio recorder, or speech-to-text converter and the student provides all spelling and language conventions	2
Assistive device that does not interfere with the independent work of the student on the multiple-choice and/or essay responses (writing portion of the test)	2
Braille transcriptions provided by the test contractor	2
Large-print versions or test items enlarged (not duplicated) to a font size larger than that used on large print versions	2
Test over more than one day for a test or test part to be administered in a single sitting	2
Supervised breaks within a section of the test	2
Administration of the test at the most beneficial time of day to the student	2
Test administered at home or in hospital by a test examiner	2

1: Test Variation 2: Accommodation	
MCE or ASL to present test questions and answer options	2 Math and Science
	2 ELA (excludes passages)
	2 Writing Task
Test questions and answer options read aloud to student or used audio CD presentation	2 Math and Science
	2 ELA (excludes passages)
	2 Writing Task
Calculator on the mathematics tests	2 Grade 5 only
Math manipulatives on the mathematics tests	2
Math manipulatives on the science tests	2
Unlisted Accommodation	Check with STAR Office prior to use

All = All students may be provided these test variations.

(1): Test Variation = Students may have these testing variations if regularly used in the classroom.

(2): Accommodation = Eligible students shall be permitted to take the examination/test with accommodations if specified in the eligible student's IEP or Section 504 plan for use on the examination, standardized testing, or for use during classroom instruction and assessment.

Table 2.C.2 Matrix of Test Variations for English Learners for the CMA

Test Variations	
Hear the test directions printed in the test administration manual translated into the student's primary language. Ask clarifying questions about the test directions in the student's primary language.	Variation Allowed
Additional supervised breaks within a testing day *or* following each section (STAR) within a test part provided that the test section is completed within a testing day. A test section is identified by a "STOP" at the end of it.	Variation Allowed
English learners (ELs) may have the opportunity to be tested separately with other ELs provided that the student is directly supervised by an employee of the school who has signed the test security affidavit and the student has been provided such a flexible setting as part of his/her regular instruction or assessment.	Variation Allowed
Access to translation glossaries/word lists (English-to-primary language). Glossaries/Word lists shall not include definitions or formulas.	Variation Allowed Math and Science
	Not Allowed ELA

Appendix 2.D—Special Service Summary Tables

Notes:

1. To improve clarity of tables presented in this section, the columns with total number of students using each service are labeled with the particular grade or test name for which the services were utilized. For example, the column with a heading of "Grade 3" in Table 2.D.1 presents the number of students using various special services on the CMA for ELA in grade three. The column with the heading of "Pct. Of Total" in the same table represents the percentage of students using a service, out of the total number of test-takers.
2. The total number of test-takers is the total of students listed under "*Any* Accommodation or EL Variation" and those listed under "*No* Accommodation or EL Variation."
3. The sum of the numbers of students across subgroups may not match exactly to the total testing population, due to the fact that only valid codes were chosen to identify these subgroup.

Table 2.D.1 Special Service Summary for ELA, Grade Three

Special Service Summary for ELA, Grade Three		
All Tested	**Grade 3**	**Pct. of Total**
B: Marked in test booklet	257	1.29%
C: Dictated responses to a scribe	37	0.19%
F: Used noninterfering assistive device	50	0.25%
G: Used braille test	4	0.02%
H: Used large-print test	66	0.33%
J: Tested over more than one day	1,066	5.37%
K: Had supervised breaks	4,173	21.01%
L: Most beneficial time of day	2,046	10.30%
M: Administered at home or in a hospital	10	0.05%
O: Examiner presented with MCE or ASL	40	0.20%
X: Used an unlisted accommodation	776	3.91%
Y: Leave blank	201	1.01%
Z: Examiner read test questions aloud	5,155	25.96%
Accommodation is in Section 504 plan	9	0.05%
Accommodation is in IEP	8,059	40.58%
English Learner Test Variation A	22	0.11%
English Learner Test Variation B	38	0.19%
English Learner Test Variation C	39	0.20%
Any Accommodation or EL Variation	8,983	45.24%
No Accommodation or EL Variation	10,875	54.76%
English-Only Students	**Grade 3**	**Pct. of Total**
B: Marked in test booklet	141	1.32%
C: Dictated responses to a scribe	28	0.26%
F: Used noninterfering assistive device	30	0.28%
G: Used braille test	2	0.02%
H: Used large-print test	45	0.42%
J: Tested over more than one day	577	5.41%
K: Had supervised breaks	2,087	19.56%
L: Most beneficial time of day	1,087	10.19%
M: Administered at home or in a hospital	6	0.06%
O: Examiner presented with MCE or ASL	25	0.23%
X: Used an unlisted accommodation	421	3.94%
Y: Leave blank	119	1.12%
Z: Examiner read test questions aloud	2,701	25.31%
Accommodation is in Section 504 plan	6	0.06%
Accommodation is in IEP	4,209	39.44%

Special Service Summary for ELA, Grade Three		
English Learner Test Variation A	2	0.02%
English Learner Test Variation B	3	0.03%
English Learner Test Variation C	2	0.02%
Any Accommodation or EL Variation	4,702	44.06%
No Accommodation or EL Variation	5,970	55.94%
Initially Fluent English Proficient (I-FEP) Students	**Grade 3**	**Pct. of Total**
B: Marked in test booklet	2	1.05%
C: Dictated responses to a scribe	1	0.53%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	0	0.00%
H: Used large-print test	1	0.53%
J: Tested over more than one day	7	3.68%
K: Had supervised breaks	39	20.53%
L: Most beneficial time of day	24	12.63%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	3	1.58%
X: Used an unlisted accommodation	5	2.63%
Y: Leave blank	2	1.05%
Z: Examiner read test questions aloud	35	18.42%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	74	38.95%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
Any Accommodation or EL Variation	80	42.11%
No Accommodation or EL Variation	110	57.89%
English Learner (EL) Students	**Grade 3**	**Pct. of Total**
B: Marked in test booklet	104	1.22%
C: Dictated responses to a scribe	7	0.08%
F: Used noninterfering assistive device	20	0.24%
G: Used braille test	1	0.01%
H: Used large-print test	18	0.21%
J: Tested over more than one day	454	5.34%
K: Had supervised breaks	1,953	22.96%
L: Most beneficial time of day	894	10.51%
M: Administered at home or in a hospital	4	0.05%
O: Examiner presented with MCE or ASL	5	0.06%
X: Used an unlisted accommodation	325	3.82%
Y: Leave blank	72	0.85%
Z: Examiner read test questions aloud	2,341	27.52%
Accommodation is in Section 504 plan	3	0.04%
Accommodation is in IEP	3,598	42.30%
English Learner Test Variation A	19	0.22%
English Learner Test Variation B	33	0.39%
English Learner Test Variation C	33	0.39%
Any Accommodation or EL Variation	4,003	47.06%
No Accommodation or EL Variation	4,503	52.94%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 3**	**Pct. of Total**
B: Marked in test booklet	4	6.67%
C: Dictated responses to a scribe	1	1.67%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	1	1.67%

Special Service Summary for ELA, Grade Three		
H: Used large-print test	0	0.00%
J: Tested over more than one day	5	8.33%
K: Had supervised breaks	16	26.67%
L: Most beneficial time of day	5	8.33%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	1	1.67%
X: Used an unlisted accommodation	2	3.33%
Y: Leave blank	1	1.67%
Z: Examiner read test questions aloud	13	21.67%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	25	41.67%
English Learner Test Variation A	1	1.67%
English Learner Test Variation B	1	1.67%
English Learner Test Variation C	2	3.33%
Any Accommodation or EL Variation	30	50.00%
No Accommodation or EL Variation	30	50.00%

Table 2.D.2 Special Service Summary for ELA, Grade Four

Special Service Summary for ELA, Grade Four		
All Tested	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	1,138	4.25%
C: Dictated responses to a scribe	42	0.16%
D: Used word processing with tools off	97	0.36%
E: Dictated essay with conventions	61	0.23%
F: Used noninterfering assistive device	75	0.28%
G: Used braille test	10	0.04%
H: Used large-print test	126	0.47%
J: Tested over more than one day	1,348	5.03%
K: Had supervised breaks	6,615	24.69%
L: Most beneficial time of day	3,102	11.58%
M: Administered at home or in a hospital	32	0.12%
O: Examiner presented with MCE or ASL	90	0.34%
X: Used an unlisted accommodation	1,436	5.36%
Y: Leave blank	393	1.47%
Z: Examiner read test questions aloud	9,595	35.81%
Accommodation is in Section 504 plan	21	0.08%
Accommodation is in IEP	13,063	48.76%
English Learner Test Variation A	47	0.18%
English Learner Test Variation B	94	0.35%
English Learner Test Variation C	104	0.39%
Any Accommodation or EL Variation	14,395	53.73%
No Accommodation or EL Variation	12,396	46.27%
English-Only Students	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	728	5.03%
C: Dictated responses to a scribe	32	0.22%
D: Used word processing with tools off	76	0.52%
E: Dictated essay with conventions	47	0.32%
F: Used noninterfering assistive device	45	0.31%
G: Used braille test	6	0.04%
H: Used large-print test	83	0.57%
J: Tested over more than one day	779	5.38%
K: Had supervised breaks	3,470	23.96%
L: Most beneficial time of day	1,732	11.96%
M: Administered at home or in a hospital	19	0.13%
O: Examiner presented with MCE or ASL	65	0.45%
X: Used an unlisted accommodation	796	5.50%
Y: Leave blank	236	1.63%
Z: Examiner read test questions aloud	5,078	35.06%
Accommodation is in Section 504 plan	13	0.09%
Accommodation is in IEP	7,043	48.63%
English Learner Test Variation A	1	0.01%
English Learner Test Variation B	10	0.07%
English Learner Test Variation C	8	0.06%
Any Accommodation or EL Variation	7,734	53.40%
No Accommodation or EL Variation	6,750	46.60%
Initially Fluent English Proficient (I-FEP) Students	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	10	3.60%
C: Dictated responses to a scribe	1	0.36%
D: Used word processing with tools off	0	0.00%
E: Dictated essay with conventions	0	0.00%

Special Service Summary for ELA, Grade Four		
F: Used noninterfering assistive device	1	0.36%
G: Used braille test	1	0.36%
H: Used large-print test	3	1.08%
J: Tested over more than one day	16	5.76%
K: Had supervised breaks	70	25.18%
L: Most beneficial time of day	25	8.99%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	2	0.72%
X: Used an unlisted accommodation	15	5.40%
Y: Leave blank	2	0.72%
Z: Examiner read test questions aloud	93	33.45%
Accommodation is in Section 504 plan	1	0.36%
Accommodation is in IEP	131	47.12%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	1	0.36%
English Learner Test Variation C	1	0.36%
Any Accommodation or EL Variation	141	50.72%
No Accommodation or EL Variation	137	49.28%
English Learner (EL) Students	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	391	3.32%
C: Dictated responses to a scribe	7	0.06%
D: Used word processing with tools off	18	0.15%
E: Dictated essay with conventions	13	0.11%
F: Used noninterfering assistive device	29	0.25%
G: Used braille test	2	0.02%
H: Used large-print test	39	0.33%
J: Tested over more than one day	536	4.55%
K: Had supervised breaks	3,031	25.73%
L: Most beneficial time of day	1,323	11.23%
M: Administered at home or in a hospital	13	0.11%
O: Examiner presented with MCE or ASL	22	0.19%
X: Used an unlisted accommodation	606	5.14%
Y: Leave blank	150	1.27%
Z: Examiner read test questions aloud	4,355	36.96%
Accommodation is in Section 504 plan	7	0.06%
Accommodation is in IEP	5,789	49.13%
English Learner Test Variation A	46	0.39%
English Learner Test Variation B	82	0.70%
English Learner Test Variation C	95	0.81%
Any Accommodation or EL Variation	6,408	54.39%
No Accommodation or EL Variation	5,374	45.61%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	5	2.96%
C: Dictated responses to a scribe	0	0.00%
D: Used word processing with tools off	2	1.18%
E: Dictated essay with conventions	1	0.59%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	1	0.59%
H: Used large-print test	1	0.59%
J: Tested over more than one day	11	6.51%
K: Had supervised breaks	35	20.71%
L: Most beneficial time of day	16	9.47%

Special Service Summary for ELA, Grade Four		
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	1	0.59%
X: Used an unlisted accommodation	15	8.88%
Y: Leave blank	1	0.59%
Z: Examiner read test questions aloud	41	24.26%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	66	39.05%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	1	0.59%
English Learner Test Variation C	0	0.00%
Any Accommodation or EL Variation	73	43.20%
No Accommodation or EL Variation	96	56.80%

Table 2.D.3 Special Service Summary for ELA, Grades Five and Six

Special Service Summary for ELA, Grades Five and Six				
All Tested	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	1,003	3.43%	604	2.09%
C: Dictated responses to a scribe	31	0.11%	36	0.12%
F: Used noninterfering assistive device	51	0.17%	32	0.11%
G: Used braille test	8	0.03%	13	0.04%
H: Used large-print test	114	0.39%	81	0.28%
J: Tested over more than one day	1,505	5.15%	1,236	4.28%
K: Had supervised breaks	6,050	20.72%	4,781	16.54%
L: Most beneficial time of day	2,933	10.04%	2,125	7.35%
M: Administered at home or in a hospital	26	0.09%	20	0.07%
O: Examiner presented with MCE or ASL	51	0.17%	50	0.17%
X: Used an unlisted accommodation	1,144	3.92%	1,026	3.55%
Y: Leave blank	308	1.05%	294	1.02%
Z: Examiner read test questions aloud	6,839	23.42%	5,405	18.70%
Accommodation is in Section 504 plan	10	0.03%	1	0.00%
Accommodation is in IEP	12,094	41.42%	9,799	33.90%
English Learner Test Variation A	21	0.07%	5	0.02%
English Learner Test Variation B	79	0.27%	28	0.10%
English Learner Test Variation C	59	0.20%	18	0.06%
Any Accommodation or EL Variation	12,868	44.07%	10,493	36.30%
No Accommodation or EL Variation	16,333	55.93%	18,411	63.70%
English-Only Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	589	3.80%	375	2.44%
C: Dictated responses to a scribe	21	0.14%	20	0.13%
F: Used noninterfering assistive device	26	0.17%	14	0.09%
G: Used braille test	4	0.03%	6	0.04%
H: Used large-print test	62	0.40%	46	0.30%
J: Tested over more than one day	817	5.27%	709	4.62%
K: Had supervised breaks	3,071	19.82%	2,501	16.30%
L: Most beneficial time of day	1,628	10.51%	1,160	7.56%
M: Administered at home or in a hospital	22	0.14%	14	0.09%
O: Examiner presented with MCE or ASL	38	0.25%	27	0.18%
X: Used an unlisted accommodation	602	3.88%	542	3.53%
Y: Leave blank	198	1.28%	164	1.07%
Z: Examiner read test questions aloud	3,462	22.34%	2,578	16.80%
Accommodation is in Section 504 plan	5	0.03%	1	0.01%
Accommodation is in IEP	6,336	40.89%	4,996	32.57%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	12	0.08%	0	0.00%
English Learner Test Variation C	5	0.03%	1	0.01%
Any Accommodation or EL Variation	6,753	43.58%	5,351	34.88%
No Accommodation or EL Variation	8,744	56.42%	9,990	65.12%
Initially Fluent English Proficient (I-FEP) Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	13	3.96%	5	0.93%
C: Dictated responses to a scribe	0	0.00%	0	0.00%
F: Used noninterfering assistive device	1	0.30%	1	0.19%
G: Used braille test	0	0.00%	0	0.00%
H: Used large-print test	2	0.61%	1	0.19%
J: Tested over more than one day	19	5.79%	19	3.53%
K: Had supervised breaks	70	21.34%	85	15.80%
L: Most beneficial time of day	24	7.32%	42	7.81%
M: Administered at home or in a hospital	0	0.00%	1	0.19%
O: Examiner presented with MCE or ASL	1	0.30%	6	1.12%

Special Service Summary for ELA, Grades Five and Six				
X: Used an unlisted accommodation	13	3.96%	24	4.46%
Y: Leave blank	1	0.30%	3	0.56%
Z: Examiner read test questions aloud	61	18.60%	78	14.50%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	128	39.02%	172	31.97%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
Any Accommodation or EL Variation	133	40.55%	177	32.90%
No Accommodation or EL Variation	195	59.45%	361	67.10%
English Learner (EL) Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	386	2.98%	204	1.66%
C: Dictated responses to a scribe	10	0.08%	16	0.13%
F: Used noninterfering assistive device	23	0.18%	14	0.11%
G: Used braille test	3	0.02%	5	0.04%
H: Used large-print test	45	0.35%	31	0.25%
J: Tested over more than one day	648	5.01%	478	3.89%
K: Had supervised breaks	2,819	21.78%	2,071	16.87%
L: Most beneficial time of day	1,239	9.57%	875	7.13%
M: Administered at home or in a hospital	4	0.03%	5	0.04%
O: Examiner presented with MCE or ASL	12	0.09%	17	0.14%
X: Used an unlisted accommodation	517	3.99%	420	3.42%
Y: Leave blank	102	0.79%	122	0.99%
Z: Examiner read test questions aloud	3,237	25.00%	2,608	21.24%
Accommodation is in Section 504 plan	4	0.03%	0	0.00%
Accommodation is in IEP	5,474	42.28%	4,374	35.63%
English Learner Test Variation A	21	0.16%	5	0.04%
English Learner Test Variation B	66	0.51%	27	0.22%
English Learner Test Variation C	54	0.42%	16	0.13%
Any Accommodation or EL Variation	5,816	44.93%	4,686	38.17%
No Accommodation or EL Variation	7,130	55.07%	7,590	61.83%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	10	2.72%	20	2.91%
C: Dictated responses to a scribe	0	0.00%	0	0.00%
F: Used noninterfering assistive device	1	0.27%	3	0.44%
G: Used braille test	0	0.00%	2	0.29%
H: Used large-print test	2	0.54%	3	0.44%
J: Tested over more than one day	17	4.62%	29	4.22%
K: Had supervised breaks	74	20.11%	109	15.87%
L: Most beneficial time of day	38	10.33%	46	6.70%
M: Administered at home or in a hospital	0	0.00%	0	0.00%
O: Examiner presented with MCE or ASL	0	0.00%	0	0.00%
X: Used an unlisted accommodation	11	2.99%	30	4.37%
Y: Leave blank	6	1.63%	5	0.73%
Z: Examiner read test questions aloud	62	16.85%	132	19.21%
Accommodation is in Section 504 plan	1	0.27%	0	0.00%
Accommodation is in IEP	127	34.51%	228	33.19%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	1	0.15%
English Learner Test Variation C	0	0.00%	1	0.15%
Any Accommodation or EL Variation	136	36.96%	248	36.10%
No Accommodation or EL Variation	232	63.04%	439	63.90%

Table 2.D.4 Special Service Summary for ELA, Grade Seven

Special Service Summary for ELA, Grade Seven		
All Tested	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	353	1.30%
C: Dictated responses to a scribe	27	0.10%
D: Used word processing with tools off	154	0.57%
E: Dictated essay with conventions	44	0.16%
F: Used noninterfering assistive device	45	0.17%
G: Used braille test	12	0.04%
H: Used large-print test	81	0.30%
J: Tested over more than one day	668	2.46%
K: Had supervised breaks	3,989	14.66%
L: Most beneficial time of day	1,495	5.49%
M: Administered at home or in a hospital	38	0.14%
O: Examiner presented with MCE or ASL	96	0.35%
X: Used an unlisted accommodation	1,075	3.95%
Y: Leave blank	492	1.81%
Z: Examiner read test questions aloud	6,286	23.10%
Accommodation is in Section 504 plan	11	0.04%
Accommodation is in IEP	8,482	31.17%
English Learner Test Variation A	22	0.08%
English Learner Test Variation B	42	0.15%
English Learner Test Variation C	22	0.08%
Any Accommodation or EL Variation	10,148	37.30%
No Accommodation or EL Variation	17,060	62.70%
English-Only Students	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	217	1.49%
C: Dictated responses to a scribe	19	0.13%
D: Used word processing with tools off	130	0.90%
E: Dictated essay with conventions	32	0.22%
F: Used noninterfering assistive device	29	0.20%
G: Used braille test	9	0.06%
H: Used large-print test	49	0.34%
J: Tested over more than one day	342	2.36%
K: Had supervised breaks	2,068	14.24%
L: Most beneficial time of day	853	5.88%
M: Administered at home or in a hospital	29	0.20%
O: Examiner presented with MCE or ASL	68	0.47%
X: Used an unlisted accommodation	584	4.02%
Y: Leave blank	243	1.67%
Z: Examiner read test questions aloud	2,870	19.77%
Accommodation is in Section 504 plan	7	0.05%
Accommodation is in IEP	4,312	29.70%
English Learner Test Variation A	1	0.01%
English Learner Test Variation B	5	0.03%
English Learner Test Variation C	4	0.03%
Any Accommodation or EL Variation	5,138	35.39%
No Accommodation or EL Variation	9,381	64.61%
Initially Fluent English Proficient (I-FEP) Students	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	5	0.88%
C: Dictated responses to a scribe	1	0.18%
D: Used word processing with tools off	0	0.00%
E: Dictated essay with conventions	2	0.35%

Special Service Summary for ELA, Grade Seven		
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	0	0.00%
H: Used large-print test	1	0.18%
J: Tested over more than one day	13	2.30%
K: Had supervised breaks	80	14.16%
L: Most beneficial time of day	14	2.48%
M: Administered at home or in a hospital	1	0.18%
O: Examiner presented with MCE or ASL	5	0.88%
X: Used an unlisted accommodation	21	3.72%
Y: Leave blank	5	0.88%
Z: Examiner read test questions aloud	123	21.77%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	163	28.85%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	3	0.53%
English Learner Test Variation C	1	0.18%
Any Accommodation or EL Variation	188	33.27%
No Accommodation or EL Variation	377	66.73%
English Learner (EL) Students	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	122	1.10%
C: Dictated responses to a scribe	5	0.04%
D: Used word processing with tools off	21	0.19%
E: Dictated essay with conventions	8	0.07%
F: Used noninterfering assistive device	14	0.13%
G: Used braille test	1	0.01%
H: Used large-print test	28	0.25%
J: Tested over more than one day	291	2.62%
K: Had supervised breaks	1,689	15.18%
L: Most beneficial time of day	560	5.03%
M: Administered at home or in a hospital	5	0.04%
O: Examiner presented with MCE or ASL	22	0.20%
X: Used an unlisted accommodation	406	3.65%
Y: Leave blank	237	2.13%
Z: Examiner read test questions aloud	3,047	27.39%
Accommodation is in Section 504 plan	3	0.03%
Accommodation is in IEP	3,684	33.12%
English Learner Test Variation A	19	0.17%
English Learner Test Variation B	33	0.30%
English Learner Test Variation C	17	0.15%
Any Accommodation or EL Variation	4,434	39.86%
No Accommodation or EL Variation	6,689	60.14%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	8	0.87%
C: Dictated responses to a scribe	2	0.22%
D: Used word processing with tools off	3	0.32%
E: Dictated essay with conventions	2	0.22%
F: Used noninterfering assistive device	2	0.22%
G: Used braille test	1	0.11%
H: Used large-print test	3	0.32%
J: Tested over more than one day	21	2.27%
K: Had supervised breaks	142	15.37%
L: Most beneficial time of day	66	7.14%

Special Service Summary for ELA, Grade Seven		
M: Administered at home or in a hospital	3	0.32%
O: Examiner presented with MCE or ASL	1	0.11%
X: Used an unlisted accommodation	58	6.28%
Y: Leave blank	6	0.65%
Z: Examiner read test questions aloud	236	25.54%
Accommodation is in Section 504 plan	1	0.11%
Accommodation is in IEP	302	32.68%
English Learner Test Variation A	2	0.22%
English Learner Test Variation B	1	0.11%
English Learner Test Variation C	0	0.00%
Any Accommodation or EL Variation	365	39.50%
No Accommodation or EL Variation	559	60.50%

Table 2.D.5 Special Service Summary for ELA, Grades Eight and Nine

Special Service Summary for ELA, Grades Eight and Nine				
All Tested	**Grade 8**	**Pct. of Total**	**Grade 9**	**Pct. of Total**
B: Marked in test booklet	302	1.18%	105	0.51%
C: Dictated responses to a scribe	15	0.06%	17	0.08%
F: Used noninterfering assistive device	22	0.09%	12	0.06%
G: Used braille test	8	0.03%	9	0.04%
H: Used large-print test	57	0.22%	36	0.18%
J: Tested over more than one day	631	2.47%	321	1.57%
K: Had supervised breaks	3,090	12.12%	2,603	12.75%
L: Most beneficial time of day	1,015	3.98%	369	1.81%
M: Administered at home or in a hospital	31	0.12%	16	0.08%
O: Examiner presented with MCE or ASL	33	0.13%	30	0.15%
X: Used an unlisted accommodation	651	2.55%	465	2.28%
Y: Leave blank	395	1.55%	226	1.11%
Z: Examiner read test questions aloud	2,455	9.63%	667	3.27%
Accommodation is in Section 504 plan	2	0.01%	1	0.00%
Accommodation is in IEP	5,599	21.95%	3,274	16.04%
English Learner Test Variation A	2	0.01%	11	0.05%
English Learner Test Variation B	20	0.08%	25	0.12%
English Learner Test Variation C	5	0.02%	30	0.15%
Any Accommodation or EL Variation	6,426	25.20%	3,951	19.36%
No Accommodation or EL Variation	19,079	74.80%	16,460	80.64%
English-Only Students	**Grade 8**	**Pct. of Total**	**Grade 9**	**Pct. of Total**
B: Marked in test booklet	219	1.58%	72	0.67%
C: Dictated responses to a scribe	10	0.07%	8	0.07%
F: Used noninterfering assistive device	12	0.09%	8	0.07%
G: Used braille test	4	0.03%	5	0.05%
H: Used large-print test	32	0.23%	19	0.18%
J: Tested over more than one day	364	2.63%	175	1.63%
K: Had supervised breaks	1,693	12.25%	1,363	12.68%
L: Most beneficial time of day	552	3.99%	215	2.00%
M: Administered at home or in a hospital	28	0.20%	11	0.10%
O: Examiner presented with MCE or ASL	24	0.17%	16	0.15%
X: Used an unlisted accommodation	365	2.64%	274	2.55%
Y: Leave blank	189	1.37%	100	0.93%
Z: Examiner read test questions aloud	1,092	7.90%	340	3.16%
Accommodation is in Section 504 plan	2	0.01%	0	0.00%
Accommodation is in IEP	2,933	21.23%	1,750	16.28%
English Learner Test Variation A	0	0.00%	2	0.02%
English Learner Test Variation B	0	0.00%	5	0.05%
English Learner Test Variation C	0	0.00%	3	0.03%
Any Accommodation or EL Variation	3,336	24.14%	2,051	19.08%
No Accommodation or EL Variation	10,482	75.86%	8,696	80.92%
Initially Fluent English Proficient (I-FEP) Students	**Grade 8**	**Pct. of Total**	**Grade 9**	**Pct. of Total**
B: Marked in test booklet	6	1.02%	0	0.00%
C: Dictated responses to a scribe	1	0.17%	0	0.00%
F: Used noninterfering assistive device	1	0.17%	1	0.25%
G: Used braille test	1	0.17%	0	0.00%
H: Used large-print test	1	0.17%	0	0.00%
J: Tested over more than one day	13	2.20%	1	0.25%
K: Had supervised breaks	75	12.69%	58	14.22%
L: Most beneficial time of day	30	5.08%	10	2.45%
M: Administered at home or in a hospital	0	0.00%	0	0.00%

Special Service Summary for ELA, Grades Eight and Nine				
O: Examiner presented with MCE or ASL	1	0.17%	0	0.00%
X: Used an unlisted accommodation	16	2.71%	8	1.96%
Y: Leave blank	3	0.51%	5	1.23%
Z: Examiner read test questions aloud	59	9.98%	19	4.66%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	140	23.69%	71	17.40%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
Any Accommodation or EL Variation	151	25.55%	81	19.85%
No Accommodation or EL Variation	440	74.45%	327	80.15%
English Learner (EL) Students	**Grade 8**	**Pct. of Total**	**Grade 9**	**Pct. of Total**
B: Marked in test booklet	64	0.65%	27	0.33%
C: Dictated responses to a scribe	2	0.02%	7	0.09%
F: Used noninterfering assistive device	7	0.07%	2	0.02%
G: Used braille test	2	0.02%	4	0.05%
H: Used large-print test	21	0.21%	13	0.16%
J: Tested over more than one day	233	2.38%	140	1.73%
K: Had supervised breaks	1,182	12.08%	1,056	13.08%
L: Most beneficial time of day	381	3.89%	134	1.66%
M: Administered at home or in a hospital	3	0.03%	4	0.05%
O: Examiner presented with MCE or ASL	8	0.08%	14	0.17%
X: Used an unlisted accommodation	221	2.26%	159	1.97%
Y: Leave blank	191	1.95%	101	1.25%
Z: Examiner read test questions aloud	1,188	12.14%	286	3.54%
Accommodation is in Section 504 plan	0	0.00%	1	0.01%
Accommodation is in IEP	2,250	22.99%	1,298	16.08%
English Learner Test Variation A	2	0.02%	9	0.11%
English Learner Test Variation B	20	0.20%	20	0.25%
English Learner Test Variation C	5	0.05%	27	0.33%
Any Accommodation or EL Variation	2,620	26.77%	1,631	20.20%
No Accommodation or EL Variation	7,167	73.23%	6,442	79.80%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 8**	**Pct. of Total**	**Grade 9**	**Pct. of Total**
B: Marked in test booklet	11	0.89%	6	0.56%
C: Dictated responses to a scribe	2	0.16%	2	0.19%
F: Used noninterfering assistive device	2	0.16%	1	0.09%
G: Used braille test	1	0.08%	0	0.00%
H: Used large-print test	3	0.24%	3	0.28%
J: Tested over more than one day	19	1.54%	5	0.47%
K: Had supervised breaks	124	10.08%	118	10.98%
L: Most beneficial time of day	47	3.82%	10	0.93%
M: Administered at home or in a hospital	0	0.00%	1	0.09%
O: Examiner presented with MCE or ASL	0	0.00%	0	0.00%
X: Used an unlisted accommodation	48	3.90%	21	1.95%
Y: Leave blank	12	0.98%	20	1.86%
Z: Examiner read test questions aloud	102	8.29%	20	1.86%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	248	20.16%	142	13.21%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
Any Accommodation or EL Variation	289	23.50%	175	16.28%
No Accommodation or EL Variation	941	76.50%	900	83.72%

Table 2.D.6 Special Service Summary for ELA, Grades Ten and Eleven

Special Service Summary for ELA, Grades Ten and Eleven				
All Tested	**Grade 10**	**Pct. of Total**	**Grade 11**	**Pct. of Total**
B: Marked in test booklet	102	0.58%	112	0.79%
C: Dictated responses to a scribe	8	0.05%	7	0.05%
F: Used noninterfering assistive device	18	0.10%	5	0.04%
G: Used braille test	8	0.05%	4	0.03%
H: Used large-print test	25	0.14%	22	0.16%
J: Tested over more than one day	254	1.45%	180	1.27%
K: Had supervised breaks	2,162	12.36%	1,589	11.20%
L: Most beneficial time of day	357	2.04%	266	1.87%
M: Administered at home or in a hospital	19	0.11%	18	0.13%
O: Examiner presented with MCE or ASL	24	0.14%	20	0.14%
X: Used an unlisted accommodation	350	2.00%	246	1.73%
Y: Leave blank	178	1.02%	167	1.18%
Z: Examiner read test questions aloud	463	2.65%	413	2.91%
Accommodation is in Section 504 plan	2	0.01%	2	0.01%
Accommodation is in IEP	2,536	14.50%	1,970	13.88%
English Learner Test Variation A	7	0.04%	2	0.01%
English Learner Test Variation B	10	0.06%	7	0.05%
English Learner Test Variation C	18	0.10%	9	0.06%
Any Accommodation or EL Variation	3,154	18.04%	2,431	17.13%
No Accommodation or EL Variation	14,333	81.96%	11,762	82.87%
English-Only Students	**Grade 10**	**Pct. of Total**	**Grade 11**	**Pct. of Total**
B: Marked in test booklet	70	0.73%	68	0.86%
C: Dictated responses to a scribe	3	0.03%	5	0.06%
F: Used noninterfering assistive device	14	0.15%	0	0.00%
G: Used braille test	7	0.07%	3	0.04%
H: Used large-print test	16	0.17%	15	0.19%
J: Tested over more than one day	142	1.48%	99	1.26%
K: Had supervised breaks	1,208	12.56%	811	10.28%
L: Most beneficial time of day	222	2.31%	155	1.97%
M: Administered at home or in a hospital	14	0.15%	13	0.16%
O: Examiner presented with MCE or ASL	12	0.12%	8	0.10%
X: Used an unlisted accommodation	238	2.47%	152	1.93%
Y: Leave blank	80	0.83%	74	0.94%
Z: Examiner read test questions aloud	244	2.54%	221	2.80%
Accommodation is in Section 504 plan	1	0.01%	1	0.01%
Accommodation is in IEP	1,455	15.12%	1,036	13.14%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	4	0.04%	1	0.01%
English Learner Test Variation C	1	0.01%	1	0.01%
Any Accommodation or EL Variation	1,771	18.41%	1,253	15.89%
No Accommodation or EL Variation	7,850	81.59%	6,633	84.11%
Initially Fluent English Proficient (I-FEP) Students	**Grade 10**	**Pct. of Total**	**Grade 11**	**Pct. of Total**
B: Marked in test booklet	2	0.48%	3	0.72%
C: Dictated responses to a scribe	0	0.00%	0	0.00%
F: Used noninterfering assistive device	0	0.00%	0	0.00%
G: Used braille test	0	0.00%	0	0.00%
H: Used large-print test	0	0.00%	2	0.48%
J: Tested over more than one day	9	2.15%	3	0.72%
K: Had supervised breaks	68	16.23%	51	12.29%
L: Most beneficial time of day	7	1.67%	9	2.17%
M: Administered at home or in a hospital	2	0.48%	1	0.24%

Special Service Summary for ELA, Grades Ten and Eleven				
O: Examiner presented with MCE or ASL	1	0.24%	4	0.96%
X: Used an unlisted accommodation	5	1.19%	7	1.69%
Y: Leave blank	5	1.19%	7	1.69%
Z: Examiner read test questions aloud	16	3.82%	14	3.37%
Accommodation is in Section 504 plan	0	0.00%	1	0.24%
Accommodation is in IEP	66	15.75%	61	14.70%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
Any Accommodation or EL Variation	84	20.05%	82	19.76%
No Accommodation or EL Variation	335	79.95%	333	80.24%
English Learner (EL) Students	**Grade 10**	**Pct. of Total**	**Grade 11**	**Pct. of Total**
B: Marked in test booklet	23	0.35%	39	0.75%
C: Dictated responses to a scribe	4	0.06%	1	0.02%
F: Used noninterfering assistive device	4	0.06%	5	0.10%
G: Used braille test	1	0.02%	0	0.00%
H: Used large-print test	8	0.12%	5	0.10%
J: Tested over more than one day	96	1.47%	72	1.38%
K: Had supervised breaks	791	12.12%	661	12.70%
L: Most beneficial time of day	121	1.85%	89	1.71%
M: Administered at home or in a hospital	3	0.05%	3	0.06%
O: Examiner presented with MCE or ASL	10	0.15%	8	0.15%
X: Used an unlisted accommodation	97	1.49%	80	1.54%
Y: Leave blank	83	1.27%	84	1.61%
Z: Examiner read test questions aloud	183	2.80%	161	3.09%
Accommodation is in Section 504 plan	1	0.02%	0	0.00%
Accommodation is in IEP	894	13.70%	794	15.26%
English Learner Test Variation A	7	0.11%	2	0.04%
English Learner Test Variation B	6	0.09%	6	0.12%
English Learner Test Variation C	17	0.26%	8	0.15%
Any Accommodation or EL Variation	1,161	17.79%	1,003	19.28%
No Accommodation or EL Variation	5,366	82.21%	4,200	80.72%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 10**	**Pct. of Total**	**Grade 11**	**Pct. of Total**
B: Marked in test booklet	7	0.83%	1	0.16%
C: Dictated responses to a scribe	0	0.00%	1	0.16%
F: Used noninterfering assistive device	0	0.00%	0	0.00%
G: Used braille test	0	0.00%	1	0.16%
H: Used large-print test	1	0.12%	0	0.00%
J: Tested over more than one day	6	0.71%	5	0.78%
K: Had supervised breaks	88	10.40%	61	9.55%
L: Most beneficial time of day	6	0.71%	12	1.88%
M: Administered at home or in a hospital	0	0.00%	1	0.16%
O: Examiner presented with MCE or ASL	0	0.00%	0	0.00%
X: Used an unlisted accommodation	10	1.18%	6	0.94%
Y: Leave blank	10	1.18%	2	0.31%
Z: Examiner read test questions aloud	20	2.36%	17	2.66%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	112	13.24%	74	11.58%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
Any Accommodation or EL Variation	129	15.25%	87	13.62%
No Accommodation or EL Variation	717	84.75%	552	86.38%

Table 2.D.7 Special Service Summary for Mathematics, Grades Three and Four

Special Service Summary for Mathematics, Grades Three and Four				
All Tested	**Grade 3**	**Pct. of Total**	**Grade 4**	**Pct. of Total**
B: Marked in test booklet	228	1.33%	997	4.44%
C: Dictated responses to a scribe	40	0.23%	40	0.18%
F: Used noninterfering assistive device	41	0.24%	45	0.20%
G: Used braille test	6	0.03%	10	0.04%
H: Used large-print test	62	0.36%	93	0.41%
J: Tested over more than one day	907	5.29%	1,128	5.03%
K: Had supervised breaks	3,434	20.03%	4,517	20.12%
L: Most beneficial time of day	1,772	10.33%	2,063	9.19%
M: Administered at home or in a hospital	9	0.05%	13	0.06%
O: Examiner presented with MCE or ASL	56	0.33%	64	0.29%
S: Used math manipulatives	295	1.72%	375	1.67%
X: Used an unlisted accommodation	642	3.74%	900	4.01%
Y: Leave blank	113	0.66%	165	0.74%
Z: Examiner read test questions aloud	6,696	39.05%	8,106	36.11%
Accommodation is in Section 504 plan	9	0.05%	9	0.04%
Accommodation is in IEP	8,311	48.47%	10,807	48.14%
English Learner Test Variation A	20	0.12%	22	0.10%
English Learner Test Variation B	33	0.19%	51	0.23%
English Learner Test Variation C	36	0.21%	60	0.27%
English Learner Test Variation D	2	0.01%	0	0.00%
Any Accommodation or EL Variation	9,042	52.73%	11,402	50.80%
No Accommodation or EL Variation	8,106	47.27%	11,045	49.20%
English-Only Students				
B: Marked in test booklet	118	1.29%	650	5.36%
C: Dictated responses to a scribe	30	0.33%	28	0.23%
F: Used noninterfering assistive device	24	0.26%	26	0.21%
G: Used braille test	4	0.04%	5	0.04%
H: Used large-print test	38	0.41%	61	0.50%
J: Tested over more than one day	505	5.51%	661	5.45%
K: Had supervised breaks	1,725	18.82%	2,335	19.24%
L: Most beneficial time of day	946	10.32%	1,163	9.58%
M: Administered at home or in a hospital	6	0.07%	8	0.07%
O: Examiner presented with MCE or ASL	34	0.37%	50	0.41%
S: Used math manipulatives	166	1.81%	197	1.62%
X: Used an unlisted accommodation	345	3.76%	511	4.21%
Y: Leave blank	62	0.68%	104	0.86%
Z: Examiner read test questions aloud	3,477	37.94%	4,273	35.21%
Accommodation is in Section 504 plan	6	0.07%	8	0.07%
Accommodation is in IEP	4,360	47.58%	5,812	47.89%
English Learner Test Variation A	3	0.03%	1	0.01%
English Learner Test Variation B	4	0.04%	5	0.04%
English Learner Test Variation C	3	0.03%	6	0.05%
English Learner Test Variation D	0	0.00%	0	0.00%
Any Accommodation or EL Variation	4,759	51.93%	6,125	50.47%
No Accommodation or EL Variation	4,405	48.07%	6,011	49.53%
Initially Fluent English Proficient (I-FEP) Students				
B: Marked in test booklet	1	0.69%	6	2.74%
C: Dictated responses to a scribe	1	0.69%	1	0.46%
F: Used noninterfering assistive device	0	0.00%	1	0.46%

Special Service Summary for Mathematics, Grades Three and Four				
G: Used braille test	0	0.00%	1	0.46%
H: Used large-print test	0	0.00%	2	0.91%
J: Tested over more than one day	4	2.78%	13	5.94%
K: Had supervised breaks	27	18.75%	45	20.55%
L: Most beneficial time of day	14	9.72%	13	5.94%
M: Administered at home or in a hospital	0	0.00%	0	0.00%
O: Examiner presented with MCE or ASL	3	2.08%	2	0.91%
S: Used math manipulatives	0	0.00%	2	0.91%
X: Used an unlisted accommodation	5	3.47%	7	3.20%
Y: Leave blank	1	0.69%	1	0.46%
Z: Examiner read test questions aloud	39	27.08%	73	33.33%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	61	42.36%	93	42.47%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	1	0.46%
English Learner Test Variation C	0	0.00%	1	0.46%
English Learner Test Variation D	0	0.00%	0	0.00%
Any Accommodation or EL Variation	63	43.75%	98	44.75%
No Accommodation or EL Variation	81	56.25%	121	55.25%
English Learner (EL) Students				
B: Marked in test booklet	98	1.33%	337	3.41%
C: Dictated responses to a scribe	7	0.09%	9	0.09%
F: Used noninterfering assistive device	17	0.23%	18	0.18%
G: Used braille test	1	0.01%	3	0.03%
H: Used large-print test	21	0.28%	30	0.30%
J: Tested over more than one day	377	5.10%	442	4.47%
K: Had supervised breaks	1,604	21.72%	2,108	21.33%
L: Most beneficial time of day	775	10.49%	871	8.81%
M: Administered at home or in a hospital	3	0.04%	5	0.05%
O: Examiner presented with MCE or ASL	11	0.15%	12	0.12%
S: Used math manipulatives	123	1.67%	172	1.74%
X: Used an unlisted accommodation	270	3.66%	374	3.78%
Y: Leave blank	45	0.61%	56	0.57%
Z: Examiner read test questions aloud	3,049	41.29%	3,702	37.45%
Accommodation is in Section 504 plan	3	0.04%	1	0.01%
Accommodation is in IEP	3,690	49.97%	4,824	48.80%
English Learner Test Variation A	16	0.22%	21	0.21%
English Learner Test Variation B	27	0.37%	45	0.46%
English Learner Test Variation C	29	0.39%	53	0.54%
English Learner Test Variation D	2	0.03%	0	0.00%
Any Accommodation or EL Variation	4,007	54.26%	5,096	51.55%
No Accommodation or EL Variation	3,378	45.74%	4,789	48.45%
Reclassified Fluent English Proficient (R-FEP) Students	**g**			
B: Marked in test booklet	4	6.06%	2	1.43%
C: Dictated responses to a scribe	2	3.03%	0	0.00%
F: Used noninterfering assistive device	0	0.00%	0	0.00%
G: Used braille test	1	1.52%	1	0.71%
H: Used large-print test	1	1.52%	0	0.00%
J: Tested over more than one day	2	3.03%	6	4.29%
K: Had supervised breaks	14	21.21%	22	15.71%
L: Most beneficial time of day	7	10.61%	11	7.86%
M: Administered at home or in a hospital	0	0.00%	0	0.00%

Special Service Summary for Mathematics, Grades Three and Four				
O: Examiner presented with MCE or ASL	1	1.52%	0	0.00%
S: Used math manipulatives	0	0.00%	4	2.86%
X: Used an unlisted accommodation	3	4.55%	6	4.29%
Y: Leave blank	1	1.52%	0	0.00%
Z: Examiner read test questions aloud	23	34.85%	34	24.29%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	31	46.97%	51	36.43%
English Learner Test Variation A	1	1.52%	0	0.00%
English Learner Test Variation B	1	1.52%	0	0.00%
English Learner Test Variation C	2	3.03%	0	0.00%
English Learner Test Variation D	0	0.00%	0	0.00%
Any Accommodation or EL Variation	35	53.03%	51	36.43%
No Accommodation or EL Variation	31	46.97%	89	63.57%

Table 2.D.8 Special Service Summary for Mathematics, Grades Five and Six

Special Service Summary for Mathematics, Grades Five and Six				
All Tested	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	899	3.50%	570	2.16%
C: Dictated responses to a scribe	29	0.11%	36	0.14%
F: Used noninterfering assistive device	73	0.28%	52	0.20%
G: Used braille test	11	0.04%	14	0.05%
H: Used large-print test	100	0.39%	81	0.31%
J: Tested over more than one day	1,317	5.13%	1,074	4.07%
K: Had supervised breaks	5,155	20.08%	4,292	16.26%
L: Most beneficial time of day	2,608	10.16%	1,938	7.34%
M: Administered at home or in a hospital	25	0.10%	21	0.08%
O: Examiner presented with MCE or ASL	84	0.33%	63	0.24%
Q: Used a calculator	2,393	9.32%	0	0.00%
S: Used math manipulatives	357	1.39%	319	1.21%
X: Used an unlisted accommodation	1,006	3.92%	981	3.72%
Y: Leave blank	200	0.78%	225	0.85%
Z: Examiner read test questions aloud	8,695	33.86%	6,276	23.78%
Accommodation is in Section 504 plan	12	0.05%	1	0.00%
Accommodation is in IEP	12,433	48.42%	9,651	36.57%
English Learner Test Variation A	11	0.04%	5	0.02%
English Learner Test Variation B	72	0.28%	28	0.11%
English Learner Test Variation C	49	0.19%	16	0.06%
English Learner Test Variation D	2	0.01%	5	0.02%
Any Accommodation or EL Variation	13,116	51.08%	10,259	38.87%
No Accommodation or EL Variation	12,561	48.92%	16,132	61.13%
English-Only Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	547	3.92%	370	2.56%
C: Dictated responses to a scribe	18	0.13%	19	0.13%
F: Used noninterfering assistive device	39	0.28%	30	0.21%
G: Used braille test	6	0.04%	6	0.04%
H: Used large-print test	61	0.44%	50	0.35%
J: Tested over more than one day	734	5.26%	644	4.46%
K: Had supervised breaks	2,696	19.33%	2,313	16.03%
L: Most beneficial time of day	1,472	10.56%	1,091	7.56%
M: Administered at home or in a hospital	19	0.14%	16	0.11%
O: Examiner presented with MCE or ASL	53	0.38%	36	0.25%
Q: Used a calculator	1,260	9.04%	0	0.00%
S: Used math manipulatives	183	1.31%	154	1.07%
X: Used an unlisted accommodation	528	3.79%	543	3.76%
Y: Leave blank	137	0.98%	133	0.92%
Z: Examiner read test questions aloud	4,489	32.19%	3,091	21.42%
Accommodation is in Section 504 plan	4	0.03%	1	0.01%
Accommodation is in IEP	6,636	47.59%	5,057	35.04%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	12	0.09%	0	0.00%
English Learner Test Variation C	6	0.04%	2	0.01%
English Learner Test Variation D	1	0.01%	1	0.01%
Any Accommodation or EL Variation	7,006	50.24%	5,383	37.30%
No Accommodation or EL Variation	6,939	49.76%	9,049	62.70%

Special Service Summary for Mathematics, Grades Five and Six				
Initially Fluent English Proficient (I-FEP) Students	**Grade 5**	**Pct. of Total**		
B: Marked in test booklet	11	4.06%	6	1.24%
C: Dictated responses to a scribe	0	0.00%	1	0.21%
F: Used noninterfering assistive device	1	0.37%	1	0.21%
G: Used braille test	1	0.37%	1	0.21%
H: Used large-print test	1	0.37%	1	0.21%
J: Tested over more than one day	16	5.90%	19	3.93%
K: Had supervised breaks	54	19.93%	78	16.15%
L: Most beneficial time of day	20	7.38%	35	7.25%
M: Administered at home or in a hospital	0	0.00%	1	0.21%
O: Examiner presented with MCE or ASL	2	0.74%	5	1.04%
Q: Used a calculator	13	4.80%	0	0.00%
S: Used math manipulatives	3	1.11%	7	1.45%
X: Used an unlisted accommodation	9	3.32%	18	3.73%
Y: Leave blank	1	0.37%	1	0.21%
Z: Examiner read test questions aloud	81	29.89%	96	19.88%
Accommodation is in Section 504 plan	0	0.00%	0	0.00%
Accommodation is in IEP	118	43.54%	168	34.78%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	0	0.00%
English Learner Test Variation C	0	0.00%	0	0.00%
English Learner Test Variation D	0	0.00%	0	0.00%
Any Accommodation or EL Variation	125	46.13%	170	35.20%
No Accommodation or EL Variation	146	53.87%	313	64.80%
English Learner (EL) Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	329	2.96%	174	1.61%
C: Dictated responses to a scribe	11	0.10%	16	0.15%
F: Used noninterfering assistive device	33	0.30%	18	0.17%
G: Used braille test	3	0.03%	5	0.05%
H: Used large-print test	35	0.32%	27	0.25%
J: Tested over more than one day	549	4.95%	380	3.52%
K: Had supervised breaks	2,333	21.02%	1,784	16.51%
L: Most beneficial time of day	1,079	9.72%	769	7.12%
M: Administered at home or in a hospital	6	0.05%	4	0.04%
O: Examiner presented with MCE or ASL	29	0.26%	21	0.19%
Q: Used a calculator	1,093	9.85%	0	0.00%
S: Used math manipulatives	162	1.46%	139	1.29%
X: Used an unlisted accommodation	458	4.13%	383	3.55%
Y: Leave blank	58	0.52%	89	0.82%
Z: Examiner read test questions aloud	4,030	36.30%	2,923	27.06%
Accommodation is in Section 504 plan	7	0.06%	0	0.00%
Accommodation is in IEP	5,527	49.79%	4,169	38.59%
English Learner Test Variation A	11	0.10%	5	0.05%
English Learner Test Variation B	59	0.53%	27	0.25%
English Learner Test Variation C	43	0.39%	14	0.13%
English Learner Test Variation D	1	0.01%	4	0.04%
Any Accommodation or EL Variation	5,825	52.47%	4,437	41.07%
No Accommodation or EL Variation	5,276	47.53%	6,366	58.93%

Special Service Summary for Mathematics, Grades Five and Six				
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 5**	**Pct. of Total**	**Grade 6**	**Pct. of Total**
B: Marked in test booklet	7	2.28%	19	3.11%
C: Dictated responses to a scribe	0	0.00%	0	0.00%
F: Used noninterfering assistive device	0	0.00%	3	0.49%
G: Used braille test	0	0.00%	2	0.33%
H: Used large-print test	0	0.00%	3	0.49%
J: Tested over more than one day	14	4.56%	30	4.92%
K: Had supervised breaks	55	17.92%	102	16.72%
L: Most beneficial time of day	33	10.75%	41	6.72%
M: Administered at home or in a hospital	0	0.00%	0	0.00%
O: Examiner presented with MCE or ASL	0	0.00%	0	0.00%
Q: Used a calculator	24	7.82%	0	0.00%
S: Used math manipulatives	8	2.61%	17	2.79%
X: Used an unlisted accommodation	10	3.26%	27	4.43%
Y: Leave blank	3	0.98%	2	0.33%
Z: Examiner read test questions aloud	78	25.41%	153	25.08%
Accommodation is in Section 504 plan	1	0.33%	0	0.00%
Accommodation is in IEP	122	39.74%	225	36.89%
English Learner Test Variation A	0	0.00%	0	0.00%
English Learner Test Variation B	0	0.00%	1	0.16%
English Learner Test Variation C	0	0.00%	0	0.00%
English Learner Test Variation D	0	0.00%	0	0.00%
Any Accommodation or EL Variation	129	42.02%	237	38.85%
No Accommodation or EL Variation	178	57.98%	373	61.15%

Table 2.D.9 Special Service Summary for Mathematics, Grade Seven

Special Service Summary for Mathematics, Grade Seven		
All Tested	**Grade 7**	**Pct. of Total**
B: Marked in test booklet	351	1.33%
C: Dictated responses to a scribe	27	0.10%
F: Used noninterfering assistive device	28	0.11%
G: Used braille test	11	0.04%
H: Used large-print test	67	0.25%
J: Tested over more than one day	595	2.25%
K: Had supervised breaks	3,017	11.43%
L: Most beneficial time of day	1,073	4.06%
M: Administered at home or in a hospital	36	0.14%
O: Examiner presented with MCE or ASL	48	0.18%
S: Used math manipulatives	147	0.56%
X: Used an unlisted accommodation	764	2.89%
Y: Leave blank	307	1.16%
Z: Examiner read test questions aloud	3,706	14.03%
Accommodation is in Section 504 plan	3	0.01%
Accommodation is in IEP	6,712	25.42%
English Learner Test Variation A	6	0.02%
English Learner Test Variation B	19	0.07%
English Learner Test Variation C	7	0.03%
English Learner Test Variation D	6	0.02%
Any Accommodation or EL Variation	7,196	27.25%
No Accommodation or EL Variation	19,210	72.75%
English-Only Students		
B: Marked in test booklet	230	1.59%
C: Dictated responses to a scribe	18	0.12%
F: Used noninterfering assistive device	20	0.14%
G: Used braille test	10	0.07%
H: Used large-print test	38	0.26%
J: Tested over more than one day	324	2.24%
K: Had supervised breaks	1,592	10.99%
L: Most beneficial time of day	620	4.28%
M: Administered at home or in a hospital	28	0.19%
O: Examiner presented with MCE or ASL	24	0.17%
S: Used math manipulatives	73	0.50%
X: Used an unlisted accommodation	433	2.99%
Y: Leave blank	161	1.11%
Z: Examiner read test questions aloud	1,725	11.91%
Accommodation is in Section 504 plan	2	0.01%
Accommodation is in IEP	3,462	23.89%
English Learner Test Variation A	2	0.01%
English Learner Test Variation B	2	0.01%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	3,706	25.58%
No Accommodation or EL Variation	10,783	74.42%
Initially Fluent English Proficient (I-FEP) Students		
B: Marked in test booklet	4	0.74%
C: Dictated responses to a scribe	1	0.19%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	0	0.00%

Special Service Summary for Mathematics, Grade Seven		
H: Used large-print test	1	0.19%
J: Tested over more than one day	13	2.41%
K: Had supervised breaks	57	10.56%
L: Most beneficial time of day	10	1.85%
M: Administered at home or in a hospital	1	0.19%
O: Examiner presented with MCE or ASL	4	0.74%
S: Used math manipulatives	2	0.37%
X: Used an unlisted accommodation	15	2.78%
Y: Leave blank	4	0.74%
Z: Examiner read test questions aloud	73	13.52%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	132	24.44%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	1	0.19%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	137	25.37%
No Accommodation or EL Variation	403	74.63%
English Learner (EL) Students		
B: Marked in test booklet	108	1.04%
C: Dictated responses to a scribe	6	0.06%
F: Used noninterfering assistive device	8	0.08%
G: Used braille test	0	0.00%
H: Used large-print test	25	0.24%
J: Tested over more than one day	240	2.31%
K: Had supervised breaks	1,250	12.03%
L: Most beneficial time of day	382	3.68%
M: Administered at home or in a hospital	4	0.04%
O: Examiner presented with MCE or ASL	20	0.19%
S: Used math manipulatives	60	0.58%
X: Used an unlisted accommodation	269	2.59%
Y: Leave blank	138	1.33%
Z: Examiner read test questions aloud	1,763	16.97%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	2,843	27.37%
English Learner Test Variation A	4	0.04%
English Learner Test Variation B	16	0.15%
English Learner Test Variation C	7	0.07%
English Learner Test Variation D	6	0.06%
Any Accommodation or EL Variation	3,062	29.47%
No Accommodation or EL Variation	7,327	70.53%
Reclassified Fluent English Proficient (R-FEP) Students		
B: Marked in test booklet	7	0.76%
C: Dictated responses to a scribe	2	0.22%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	1	0.11%
H: Used large-print test	3	0.33%
J: Tested over more than one day	18	1.96%
K: Had supervised breaks	111	12.10%
L: Most beneficial time of day	60	6.54%
M: Administered at home or in a hospital	3	0.33%
O: Examiner presented with MCE or ASL	0	0.00%

Special Service Summary for Mathematics, Grade Seven		
S: Used math manipulatives	10	1.09%
X: Used an unlisted accommodation	45	4.91%
Y: Leave blank	3	0.33%
Z: Examiner read test questions aloud	134	14.61%
Accommodation is in Section 504 plan	1	0.11%
Accommodation is in IEP	255	27.81%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	270	29.44%
No Accommodation or EL Variation	647	70.56%

Table 2.D.10 Special Service Summary for Mathematics, Algebra I

Special Service Summary for Mathematics, Algebra I							
All Tested	**Grade 7**	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	44	30	35	23	132	0.45%
C: Dictated responses to a scribe	0	4	1	0	2	7	0.02%
F: Used noninterfering assistive device	0	16	5	3	0	24	0.08%
G: Used braille test	0	1	1	0	2	4	0.01%
H: Used large-print test	0	15	10	13	8	46	0.16%
J: Tested over more than one day	2	149	113	103	70	437	1.49%
K: Had supervised breaks	10	743	1,241	939	533	3,466	11.83%
L: Most beneficial time of day	2	243	141	175	79	640	2.18%
M: Administered at home or in a hospital	0	6	14	11	3	34	0.12%
O: Examiner presented with MCE or ASL	0	2	28	10	7	47	0.16%
S: Used math manipulatives	0	62	25	15	18	120	0.41%
X: Used an unlisted accommodation	3	245	201	162	113	724	2.47%
Y: Leave blank	2	51	71	88	47	259	0.88%
Z: Examiner read test questions aloud	4	641	344	212	126	1,327	4.53%
Accommodation is in Section 504 plan	0	0	0	0	0	0	0.00%
Accommodation is in IEP	11	1,371	1,543	1,134	689	4,748	16.20%
English Learner Test Variation A	0	0	5	5	0	10	0.03%
English Learner Test Variation B	0	0	8	9	1	18	0.06%
English Learner Test Variation C	0	1	14	12	1	28	0.10%
English Learner Test Variation D	0	0	11	10	1	22	0.08%
Any Accommodation or EL Variation	15	1,564	1,840	1,394	815	5,628	19.20%
No Accommodation or EL Variation	32	4,604	8,290	6,960	3,796	23,682	80.80%
English-Only Students	**Grade 7**	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	26	20	23	18	87	0.55%
C: Dictated responses to a scribe	0	2	0	0	2	4	0.03%
F: Used noninterfering assistive device	0	7	1	2	0	10	0.06%
G: Used braille test	0	1	0	0	2	3	0.02%
H: Used large-print test	0	8	6	9	6	29	0.18%
J: Tested over more than one day	2	79	57	55	41	234	1.47%
K: Had supervised breaks	8	379	626	536	272	1,821	11.41%
L: Most beneficial time of day	2	119	79	108	46	354	2.22%
M: Administered at home or in a hospital	0	5	12	8	2	27	0.17%
O: Examiner presented with MCE or ASL	0	2	7	5	3	17	0.11%
S: Used math manipulatives	0	25	15	10	12	62	0.39%
X: Used an unlisted accommodation	2	129	113	109	76	429	2.69%
Y: Leave blank	1	29	40	44	20	134	0.84%
Z: Examiner read test questions aloud	3	246	189	123	81	642	4.02%
Accommodation is in Section 504 plan	0	0	0	0	0	0	0.00%
Accommodation is in IEP	10	648	814	678	401	2,551	15.98%
English Learner Test Variation A	0	0	1	0	0	1	0.01%
English Learner Test Variation B	0	0	0	4	0	4	0.03%
English Learner Test Variation C	0	0	0	1	0	1	0.01%
English Learner Test Variation D	0	0	1	0	0	1	0.01%
Any Accommodation or EL Variation	12	742	949	807	449	2,959	18.54%
No Accommodation or EL Variation	22	2,498	4,286	3,942	2,252	13,000	81.46%

Special Service Summary for Mathematics, Algebra I

Initially Fluent English Proficient (I-FEP) Students	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Total	Pct. of Total
B: Marked in test booklet	0	3	0	0	0	3	0.41%
C: Dictated responses to a scribe	0	1	0	0	0	1	0.14%
F: Used noninterfering assistive device	0	1	1	0	0	2	0.27%
G: Used braille test	0	0	0	0	0	0	0.00%
H: Used large-print test	0	0	0	0	0	0	0.00%
J: Tested over more than one day	0	1	0	5	1	7	0.95%
K: Had supervised breaks	0	15	20	29	21	85	11.56%
L: Most beneficial time of day	0	6	4	3	2	15	2.04%
M: Administered at home or in a hospital	0	0	0	1	0	1	0.14%
O: Examiner presented with MCE or ASL	0	0	0	0	0	0	0.00%
S: Used math manipulatives	0	1	0	1	0	2	0.27%
X: Used an unlisted accommodation	0	5	5	3	3	16	2.18%
Y: Leave blank	0	0	1	2	1	4	0.54%
Z: Examiner read test questions aloud	0	18	3	7	2	30	4.08%
Accommodation is in Section 504 plan	0	0	0	0	0	0	0.00%
Accommodation is in IEP	0	35	24	26	21	106	14.42%
English Learner Test Variation A	0	0	0	0	0	0	0.00%
English Learner Test Variation B	0	0	0	0	0	0	0.00%
English Learner Test Variation C	0	0	0	0	0	0	0.00%
English Learner Test Variation D	0	0	0	0	0	0	0.00%
Any Accommodation or EL Variation	0	38	30	35	27	130	17.69%
No Accommodation or EL Variation	0	127	186	170	122	605	82.31%

English Learner (EL) Students	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Total	Pct. of Total
B: Marked in test booklet	0	10	6	9	5	30	0.28%
C: Dictated responses to a scribe	0	1	1	0	0	2	0.02%
F: Used noninterfering assistive device	0	6	2	1	0	9	0.08%
G: Used braille test	0	0	1	0	0	1	0.01%
H: Used large-print test	0	4	4	2	2	12	0.11%
J: Tested over more than one day	0	55	50	38	26	169	1.55%
K: Had supervised breaks	2	302	530	324	221	1,379	12.67%
L: Most beneficial time of day	0	96	53	61	28	238	2.19%
M: Administered at home or in a hospital	0	1	1	2	1	5	0.05%
O: Examiner presented with MCE or ASL	0	0	21	4	4	29	0.27%
S: Used math manipulatives	0	33	9	4	6	52	0.48%
X: Used an unlisted accommodation	1	99	74	44	31	249	2.29%
Y: Leave blank	1	18	21	40	25	105	0.96%
Z: Examiner read test questions aloud	1	325	133	76	40	575	5.28%
Accommodation is in Section 504 plan	0	0	0	0	0	0	0.00%
Accommodation is in IEP	1	591	621	367	246	1,826	16.77%
English Learner Test Variation A	0	0	4	5	0	9	0.08%
English Learner Test Variation B	0	0	8	5	1	14	0.13%
English Learner Test Variation C	0	1	14	11	1	27	0.25%
English Learner Test Variation D	0	0	10	10	1	21	0.19%
Any Accommodation or EL Variation	3	670	758	484	315	2,230	20.49%
No Accommodation or EL Variation	9	1,704	3,248	2,486	1,209	8,656	79.51%

Special Service Summary for Mathematics, Algebra I							
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 7**	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	5	4	3	0	12	0.75%
C: Dictated responses to a scribe	0	0	0	0	0	0	0.00%
F: Used noninterfering assistive device	0	2	1	0	0	3	0.19%
G: Used braille test	0	0	0	0	0	0	0.00%
H: Used large-print test	0	3	0	2	0	5	0.31%
J: Tested over more than one day	0	12	5	5	2	24	1.51%
K: Had supervised breaks	0	44	59	46	17	166	10.43%
L: Most beneficial time of day	0	20	4	3	2	29	1.82%
M: Administered at home or in a hospital	0	0	1	0	0	1	0.06%
O: Examiner presented with MCE or ASL	0	0	0	0	0	0	0.00%
S: Used math manipulatives	0	3	0	0	0	3	0.19%
X: Used an unlisted accommodation	0	12	9	6	2	29	1.82%
Y: Leave blank	0	4	9	2	1	16	1.01%
Z: Examiner read test questions aloud	0	52	17	6	3	78	4.90%
Accommodation is in Section 504 plan	0	0	0	0	0	0	0.00%
Accommodation is in IEP	0	95	76	58	19	248	15.58%
English Learner Test Variation A	0	0	0	0	0	0	0.00%
English Learner Test Variation B	0	0	0	0	0	0	0.00%
English Learner Test Variation C	0	0	0	0	0	0	0.00%
English Learner Test Variation D	0	0	0	0	0	0	0.00%
Any Accommodation or EL Variation	0	111	95	63	21	290	18.22%
No Accommodation or EL Variation	1	254	521	333	193	1,302	81.78%

Table 2.D.11 Special Service Summary for Mathematics, Geometry

Special Service Summary for Mathematics, Geometry						
All Tested	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	2	18	11	31	0.44%
C: Dictated responses to a scribe	0	0	1	1	2	0.03%
F: Used noninterfering assistive device	0	3	7	2	12	0.17%
G: Used braille test	0	0	0	0	0	0.00%
H: Used large-print test	0	0	6	6	12	0.17%
J: Tested over more than one day	0	10	51	39	100	1.41%
K: Had supervised breaks	0	43	359	254	656	9.27%
L: Most beneficial time of day	0	5	36	37	78	1.10%
M: Administered at home or in a hospital	0	0	3	6	9	0.13%
O: Examiner presented with MCE or ASL	0	3	26	5	34	0.48%
S: Used math manipulatives	0	1	15	4	20	0.28%
X: Used an unlisted accommodation	0	6	40	62	108	1.53%
Y: Leave blank	0	4	32	45	81	1.15%
Z: Examiner read test questions aloud	0	12	81	74	167	2.36%
Accommodation is in Section 504 plan	0	0	0	0	0	0.00%
Accommodation is in IEP	0	57	463	373	893	12.63%
English Learner Test Variation A	0	0	1	0	1	0.01%
English Learner Test Variation B	0	1	0	1	2	0.03%
English Learner Test Variation C	0	0	4	3	7	0.10%
English Learner Test Variation D	0	1	4	1	6	0.08%
Any Accommodation or EL Variation	0	66	571	456	1,093	15.45%
No Accommodation or EL Variation	3	473	2,891	2,613	5,980	84.55%
English-Only Students	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	1	13	4	18	0.51%
C: Dictated responses to a scribe	0	0	0	1	1	0.03%
F: Used noninterfering assistive device	0	3	3	0	6	0.17%
G: Used braille test	0	0	0	0	0	0.00%
H: Used large-print test	0	0	5	1	6	0.17%
J: Tested over more than one day	0	5	26	20	51	1.43%
K: Had supervised breaks	0	21	167	131	319	8.97%
L: Most beneficial time of day	0	4	21	27	52	1.46%
M: Administered at home or in a hospital	0	0	3	5	8	0.22%
O: Examiner presented with MCE or ASL	0	2	9	2	13	0.37%
S: Used math manipulatives	0	0	7	4	11	0.31%
X: Used an unlisted accommodation	0	2	25	28	55	1.55%
Y: Leave blank	0	1	10	21	32	0.90%
Z: Examiner read test questions aloud	0	5	34	30	69	1.94%
Accommodation is in Section 504 plan	0	0	0	0	0	0.00%
Accommodation is in IEP	0	25	221	178	424	11.92%
English Learner Test Variation A	0	0	0	0	0	0.00%
English Learner Test Variation B	0	0	0	1	1	0.03%
English Learner Test Variation C	0	0	0	0	0	0.00%
English Learner Test Variation D	0	0	0	0	0	0.00%
Any Accommodation or EL Variation	0	28	259	215	502	14.12%
No Accommodation or EL Variation	0	189	1,482	1,383	3,054	85.88%

Special Service Summary for Mathematics, Geometry						
Initially Fluent English Proficient (I-FEP) Students	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	0	0	0	0	0.00%
C: Dictated responses to a scribe	0	0	0	0	0	0.00%
F: Used noninterfering assistive device	0	0	0	0	0	0.00%
G: Used braille test	0	0	0	0	0	0.00%
H: Used large-print test	0	0	0	0	0	0.00%
J: Tested over more than one day	0	0	2	1	3	1.49%
K: Had supervised breaks	0	0	8	8	16	7.96%
L: Most beneficial time of day	0	0	1	0	1	0.50%
M: Administered at home or in a hospital	0	0	0	1	1	0.50%
O: Examiner presented with MCE or ASL	0	0	0	0	0	0.00%
S: Used math manipulatives	0	0	0	0	0	0.00%
X: Used an unlisted accommodation	0	0	0	2	2	1.00%
Y: Leave blank	0	0	1	3	4	1.99%
Z: Examiner read test questions aloud	0	0	3	1	4	1.99%
Accommodation is in Section 504 plan	0	0	0	0	0	0.00%
Accommodation is in IEP	0	0	9	10	19	9.45%
English Learner Test Variation A	0	0	0	0	0	0.00%
English Learner Test Variation B	0	0	0	0	0	0.00%
English Learner Test Variation C	0	0	0	0	0	0.00%
English Learner Test Variation D	0	0	0	0	0	0.00%
Any Accommodation or EL Variation	0	0	12	15	27	13.43%
No Accommodation or EL Variation	1	15	74	84	174	86.57%
English Learner (EL) Students	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	0	1	6	7	0.25%
C: Dictated responses to a scribe	0	0	1	0	1	0.04%
F: Used noninterfering assistive device	0	0	4	1	5	0.18%
G: Used braille test	0	0	0	0	0	0.00%
H: Used large-print test	0	0	1	4	5	0.18%
J: Tested over more than one day	0	5	23	17	45	1.60%
K: Had supervised breaks	0	18	149	103	270	9.63%
L: Most beneficial time of day	0	1	14	10	25	0.89%
M: Administered at home or in a hospital	0	0	0	0	0	0.00%
O: Examiner presented with MCE or ASL	0	1	17	3	21	0.75%
S: Used math manipulatives	0	1	8	0	9	0.32%
X: Used an unlisted accommodation	0	3	13	29	45	1.60%
Y: Leave blank	0	3	18	20	41	1.46%
Z: Examiner read test questions aloud	0	6	36	40	82	2.92%
Accommodation is in Section 504 plan	0	0	0	0	0	0.00%
Accommodation is in IEP	0	25	194	166	385	13.73%
English Learner Test Variation A	0	0	1	0	1	0.04%
English Learner Test Variation B	0	1	0	0	1	0.04%
English Learner Test Variation C	0	0	4	3	7	0.25%
English Learner Test Variation D	0	1	4	1	6	0.21%
Any Accommodation or EL Variation	0	31	251	205	487	17.37%
No Accommodation or EL Variation	1	213	1,112	991	2,317	82.63%

Special Service Summary for Mathematics, Geometry						
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 8**	**Grade 9**	**Grade 10**	**Grade 11**	**Total**	**Pct. of Total**
B: Marked in test booklet	0	1	4	1	6	1.23%
C: Dictated responses to a scribe	0	0	0	0	0	0.00%
F: Used noninterfering assistive device	0	0	0	1	1	0.21%
G: Used braille test	0	0	0	0	0	0.00%
H: Used large-print test	0	0	0	1	1	0.21%
J: Tested over more than one day	0	0	0	1	1	0.21%
K: Had supervised breaks	0	4	34	12	50	10.29%
L: Most beneficial time of day	0	0	0	0	0	0.00%
M: Administered at home or in a hospital	0	0	0	0	0	0.00%
O: Examiner presented with MCE or ASL	0	0	0	0	0	0.00%
S: Used math manipulatives	0	0	0	0	0	0.00%
X: Used an unlisted accommodation	0	1	2	3	6	1.23%
Y: Leave blank	0	0	3	1	4	0.82%
Z: Examiner read test questions aloud	0	1	8	3	12	2.47%
Accommodation is in Section 504 plan	0	0	0	0	0	0.00%
Accommodation is in IEP	0	7	38	19	64	13.17%
English Learner Test Variation A	0	0	0	0	0	0.00%
English Learner Test Variation B	0	0	0	0	0	0.00%
English Learner Test Variation C	0	0	0	0	0	0.00%
English Learner Test Variation D	0	0	0	0	0	0.00%
Any Accommodation or EL Variation	0	7	48	21	76	15.64%
No Accommodation or EL Variation	1	49	210	150	410	84.36%

Table 2.D.12 Special Service Summary for Science, Grade Five

Special Service Summary for Science, Grade Five		
All Tested	**Grade 5**	**Pct. of Total**
B: Marked in test booklet	891	3.30%
C: Dictated responses to a scribe	30	0.11%
F: Used noninterfering assistive device	50	0.19%
G: Used braille test	11	0.04%
H: Used large-print test	104	0.39%
J: Tested over more than one day	1,283	4.75%
K: Had supervised breaks	5,144	19.05%
L: Most beneficial time of day	2,643	9.79%
M: Administered at home or in a hospital	21	0.08%
O: Examiner presented with MCE or ASL	77	0.29%
S: Used math manipulatives	196	0.73%
X: Used an unlisted accommodation	969	3.59%
Y: Leave blank	237	0.88%
Z: Examiner read test questions aloud	9,248	34.25%
Accommodation is in Section 504 plan	11	0.04%
Accommodation is in IEP	12,658	46.88%
English Learner Test Variation A	16	0.06%
English Learner Test Variation B	77	0.29%
English Learner Test Variation C	53	0.20%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	13,383	49.57%
No Accommodation or EL Variation	13,615	50.43%
English-Only Students	**Grade 5**	**Pct. of Total**
B: Marked in test booklet	535	3.70%
C: Dictated responses to a scribe	20	0.14%
F: Used noninterfering assistive device	26	0.18%
G: Used braille test	7	0.05%
H: Used large-print test	64	0.44%
J: Tested over more than one day	684	4.73%
K: Had supervised breaks	2,639	18.24%
L: Most beneficial time of day	1,475	10.19%
M: Administered at home or in a hospital	17	0.12%
O: Examiner presented with MCE or ASL	54	0.37%
S: Used math manipulatives	90	0.62%
X: Used an unlisted accommodation	523	3.61%
Y: Leave blank	151	1.04%
Z: Examiner read test questions aloud	4,774	32.99%
Accommodation is in Section 504 plan	6	0.04%
Accommodation is in IEP	6,686	46.20%
English Learner Test Variation A	1	0.01%
English Learner Test Variation B	12	0.08%
English Learner Test Variation C	5	0.03%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	7,081	48.93%
No Accommodation or EL Variation	7,390	51.07%
Initially Fluent English Proficient (I-FEP) Students	**Grade 5**	**Pct. of Total**
B: Marked in test booklet	10	3.37%
C: Dictated responses to a scribe	0	0.00%
F: Used noninterfering assistive device	1	0.34%
G: Used braille test	0	0.00%

Special Service Summary for Science, Grade Five		
H: Used large-print test	2	0.67%
J: Tested over more than one day	16	5.39%
K: Had supervised breaks	54	18.18%
L: Most beneficial time of day	21	7.07%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	2	0.67%
S: Used math manipulatives	2	0.67%
X: Used an unlisted accommodation	9	3.03%
Y: Leave blank	1	0.34%
Z: Examiner read test questions aloud	92	30.98%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	126	42.42%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	132	44.44%
No Accommodation or EL Variation	165	55.56%
English Learner (EL) Students	**Grade 5**	**Pct. of Total**
B: Marked in test booklet	331	2.80%
C: Dictated responses to a scribe	10	0.08%
F: Used noninterfering assistive device	22	0.19%
G: Used braille test	3	0.03%
H: Used large-print test	33	0.28%
J: Tested over more than one day	565	4.77%
K: Had supervised breaks	2,378	20.09%
L: Most beneficial time of day	1,112	9.40%
M: Administered at home or in a hospital	4	0.03%
O: Examiner presented with MCE or ASL	21	0.18%
S: Used math manipulatives	100	0.84%
X: Used an unlisted accommodation	431	3.64%
Y: Leave blank	79	0.67%
Z: Examiner read test questions aloud	4,280	36.16%
Accommodation is in Section 504 plan	4	0.03%
Accommodation is in IEP	5,698	48.14%
English Learner Test Variation A	15	0.13%
English Learner Test Variation B	64	0.54%
English Learner Test Variation C	48	0.41%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	6,012	50.79%
No Accommodation or EL Variation	5,824	49.21%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 5**	**Pct. of Total**
B: Marked in test booklet	10	2.97%
C: Dictated responses to a scribe	0	0.00%
F: Used noninterfering assistive device	1	0.30%
G: Used braille test	0	0.00%
H: Used large-print test	2	0.59%
J: Tested over more than one day	15	4.45%
K: Had supervised breaks	59	17.51%
L: Most beneficial time of day	32	9.50%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	0	0.00%

Special Service Summary for Science, Grade Five		
S: Used math manipulatives	3	0.89%
X: Used an unlisted accommodation	5	1.48%
Y: Leave blank	5	1.48%
Z: Examiner read test questions aloud	82	24.33%
Accommodation is in Section 504 plan	1	0.30%
Accommodation is in IEP	117	34.72%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	126	37.39%
No Accommodation or EL Variation	211	62.61%

Table 2.D.13 Special Service Summary for Science, Grade Eight

Special Service Summary for Science, Grade Eight		
All Tested	**Grade 8**	**Pct. of Total**
B: Marked in test booklet	293	1.25%
C: Dictated responses to a scribe	15	0.06%
F: Used noninterfering assistive device	20	0.09%
G: Used braille test	6	0.03%
H: Used large-print test	53	0.23%
J: Tested over more than one day	522	2.23%
K: Had supervised breaks	2,639	11.28%
L: Most beneficial time of day	877	3.75%
M: Administered at home or in a hospital	25	0.11%
O: Examiner presented with MCE or ASL	34	0.15%
S: Used math manipulatives	14	0.06%
X: Used an unlisted accommodation	549	2.35%
Y: Leave blank	306	1.31%
Z: Examiner read test questions aloud	3,210	13.72%
Accommodation is in Section 504 plan	1	0.00%
Accommodation is in IEP	5,594	23.91%
English Learner Test Variation A	1	0.00%
English Learner Test Variation B	15	0.06%
English Learner Test Variation C	5	0.02%
English Learner Test Variation D	3	0.01%
Any Accommodation or EL Variation	6,309	26.97%
No Accommodation or EL Variation	17,085	73.03%
English-Only Students	**Grade 8**	**Pct. of Total**
B: Marked in test booklet	209	1.64%
C: Dictated responses to a scribe	9	0.07%
F: Used noninterfering assistive device	9	0.07%
G: Used braille test	4	0.03%
H: Used large-print test	32	0.25%
J: Tested over more than one day	270	2.12%
K: Had supervised breaks	1,433	11.27%
L: Most beneficial time of day	455	3.58%
M: Administered at home or in a hospital	22	0.17%
O: Examiner presented with MCE or ASL	21	0.17%
S: Used math manipulatives	11	0.09%
X: Used an unlisted accommodation	301	2.37%
Y: Leave blank	147	1.16%
Z: Examiner read test questions aloud	1,511	11.88%
Accommodation is in Section 504 plan	1	0.01%
Accommodation is in IEP	2,864	22.52%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	3,221	25.33%
No Accommodation or EL Variation	9,496	74.67%
Initially Fluent English Proficient (I-FEP) Students	**Grade 8**	**Pct. of Total**
B: Marked in test booklet	7	1.35%
C: Dictated responses to a scribe	1	0.19%
F: Used noninterfering assistive device	1	0.19%
G: Used braille test	1	0.19%

Special Service Summary for Science, Grade Eight		
H: Used large-print test	1	0.19%
J: Tested over more than one day	12	2.31%
K: Had supervised breaks	58	11.15%
L: Most beneficial time of day	24	4.62%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	2	0.38%
S: Used math manipulatives	0	0.00%
X: Used an unlisted accommodation	14	2.69%
Y: Leave blank	3	0.58%
Z: Examiner read test questions aloud	71	13.65%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	131	25.19%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	141	27.12%
No Accommodation or EL Variation	379	72.88%
English Learner (EL) Students	**Grade 8**	**Pct. of Total**
B: Marked in test booklet	64	0.72%
C: Dictated responses to a scribe	3	0.03%
F: Used noninterfering assistive device	9	0.10%
G: Used braille test	1	0.01%
H: Used large-print test	17	0.19%
J: Tested over more than one day	218	2.44%
K: Had supervised breaks	1,021	11.45%
L: Most beneficial time of day	352	3.95%
M: Administered at home or in a hospital	3	0.03%
O: Examiner presented with MCE or ASL	11	0.12%
S: Used math manipulatives	2	0.02%
X: Used an unlisted accommodation	190	2.13%
Y: Leave blank	144	1.61%
Z: Examiner read test questions aloud	1,453	16.29%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	2,298	25.76%
English Learner Test Variation A	1	0.01%
English Learner Test Variation B	15	0.17%
English Learner Test Variation C	5	0.06%
English Learner Test Variation D	3	0.03%
Any Accommodation or EL Variation	2,599	29.14%
No Accommodation or EL Variation	6,321	70.86%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 8**	**Pct. of Total**
B: Marked in test booklet	11	0.95%
C: Dictated responses to a scribe	2	0.17%
F: Used noninterfering assistive device	1	0.09%
G: Used braille test	0	0.00%
H: Used large-print test	3	0.26%
J: Tested over more than one day	20	1.73%
K: Had supervised breaks	112	9.67%
L: Most beneficial time of day	42	3.63%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	0	0.00%

Special Service Summary for Science, Grade Eight		
S: Used math manipulatives	1	0.09%
X: Used an unlisted accommodation	43	3.71%
Y: Leave blank	12	1.04%
Z: Examiner read test questions aloud	159	13.73%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	276	23.83%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	319	27.55%
No Accommodation or EL Variation	839	72.45%

Table 2.D.14 Special Service Summary for Life Science, Grade Ten

Special Service Summary for Life Science, Grade Ten		
All Tested	**Grade 10**	**Pct. of Total**
B: Marked in test booklet	84	0.57%
C: Dictated responses to a scribe	6	0.04%
F: Used noninterfering assistive device	14	0.10%
G: Used braille test	8	0.05%
H: Used large-print test	23	0.16%
J: Tested over more than one day	213	1.45%
K: Had supervised breaks	1,550	10.56%
L: Most beneficial time of day	251	1.71%
M: Administered at home or in a hospital	16	0.11%
O: Examiner presented with MCE or ASL	41	0.28%
S: Used math manipulatives	6	0.04%
X: Used an unlisted accommodation	284	1.93%
Y: Leave blank	138	0.94%
Z: Examiner read test questions aloud	399	2.72%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	1,927	13.12%
English Learner Test Variation A	6	0.04%
English Learner Test Variation B	10	0.07%
English Learner Test Variation C	16	0.11%
English Learner Test Variation D	19	0.13%
Any Accommodation or EL Variation	2,408	16.40%
No Accommodation or EL Variation	12,274	83.60%
English-Only Students	**Grade 10**	**Pct. of Total**
B: Marked in test booklet	59	0.73%
C: Dictated responses to a scribe	3	0.04%
F: Used noninterfering assistive device	10	0.12%
G: Used braille test	7	0.09%
H: Used large-print test	13	0.16%
J: Tested over more than one day	118	1.46%
K: Had supervised breaks	827	10.25%
L: Most beneficial time of day	151	1.87%
M: Administered at home or in a hospital	10	0.12%
O: Examiner presented with MCE or ASL	18	0.22%
S: Used math manipulatives	3	0.04%
X: Used an unlisted accommodation	196	2.43%
Y: Leave blank	60	0.74%
Z: Examiner read test questions aloud	211	2.61%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	1,088	13.48%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	4	0.05%
English Learner Test Variation C	1	0.01%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	1,312	16.26%
No Accommodation or EL Variation	6,759	83.74%
Initially Fluent English Proficient (I-FEP) Students	**Grade 10**	**Pct. of Total**
B: Marked in test booklet	2	0.58%
C: Dictated responses to a scribe	0	0.00%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	0	0.00%
H: Used large-print test	0	0.00%
J: Tested over more than one day	8	2.31%
K: Had supervised breaks	41	11.82%
L: Most beneficial time of day	5	1.44%

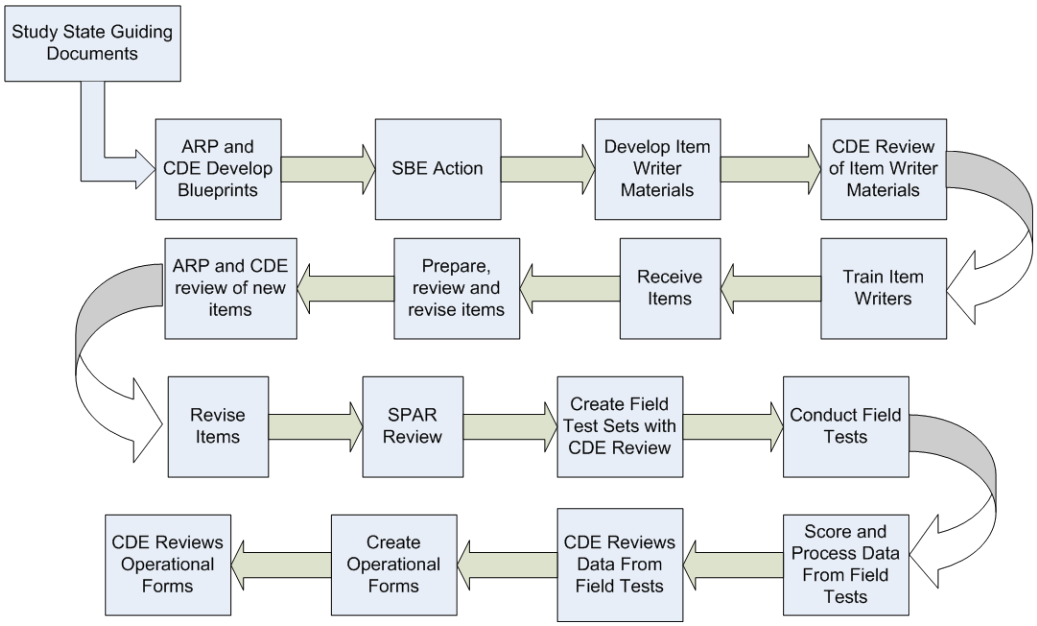
Special Service Summary for Life Science, Grade Ten		
M: Administered at home or in a hospital	2	0.58%
O: Examiner presented with MCE or ASL	2	0.58%
S: Used math manipulatives	1	0.29%
X: Used an unlisted accommodation	1	0.29%
Y: Leave blank	4	1.15%
Z: Examiner read test questions aloud	11	3.17%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	42	12.10%
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	55	15.85%
No Accommodation or EL Variation	292	84.15%
English Learner (EL) Students	**Grade 10**	**Pct. of Total**
B: Marked in test booklet	16	0.29%
C: Dictated responses to a scribe	3	0.05%
F: Used noninterfering assistive device	4	0.07%
G: Used braille test	1	0.02%
H: Used large-print test	9	0.16%
J: Tested over more than one day	80	1.45%
K: Had supervised breaks	610	11.09%
L: Most beneficial time of day	91	1.65%
M: Administered at home or in a hospital	4	0.07%
O: Examiner presented with MCE or ASL	21	0.38%
S: Used math manipulatives	2	0.04%
X: Used an unlisted accommodation	78	1.42%
Y: Leave blank	69	1.25%
Z: Examiner read test questions aloud	161	2.93%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	703	12.78%
English Learner Test Variation A	6	0.11%
English Learner Test Variation B	6	0.11%
English Learner Test Variation C	15	0.27%
English Learner Test Variation D	19	0.35%
Any Accommodation or EL Variation	934	16.98%
No Accommodation or EL Variation	4,568	83.02%
Reclassified Fluent English Proficient (R-FEP) Students	**Grade 10**	**Pct. of Total**
B: Marked in test booklet	7	0.99%
C: Dictated responses to a scribe	0	0.00%
F: Used noninterfering assistive device	0	0.00%
G: Used braille test	0	0.00%
H: Used large-print test	1	0.14%
J: Tested over more than one day	6	0.85%
K: Had supervised breaks	68	9.59%
L: Most beneficial time of day	3	0.42%
M: Administered at home or in a hospital	0	0.00%
O: Examiner presented with MCE or ASL	0	0.00%
S: Used math manipulatives	0	0.00%
X: Used an unlisted accommodation	9	1.27%
Y: Leave blank	5	0.71%
Z: Examiner read test questions aloud	14	1.97%
Accommodation is in Section 504 plan	0	0.00%
Accommodation is in IEP	88	12.41%

Special Service Summary for Life Science, Grade Ten		
English Learner Test Variation A	0	0.00%
English Learner Test Variation B	0	0.00%
English Learner Test Variation C	0	0.00%
English Learner Test Variation D	0	0.00%
Any Accommodation or EL Variation	101	14.25%
No Accommodation or EL Variation	608	85.75%

Chapter 3: Item Development

The CMA items are developed to measure California's content standards and designed to conform to principles of item writing defined by ETS (ETS, 2002). Each CMA item goes through a comprehensive development cycle as is described in Figure 3.1, below.

Figure 3.1 The ETS Item Development Process for the STAR Program



Rules for Item Development

ETS maintains and updates item development specifications for each CMA and has developed an item utilization plan to guide the development of the items for each content area. Item writing emphasis is determined in consultation with the CDE.

Item Specifications

The item specifications describe the characteristics of the items that should be written to measure each content standard. The item specifications help ensure that the items on the CMA measure the content standards. To achieve this, the item specifications provide detailed information to item writers that are developing items for the CMA. The specifications include the following:

- A full statement of each academic content standard, as defined by the SBE (CDE, 2009)
- A description of each content strand
- The expected depth of knowledge (DOK) measured by items written for each standard (coded as 1, 2, 3, or 4; items assigned a DOK of 1 are the least cognitively complex, items assigned a DOK of 3 are the most cognitively complex, and the code of 4 only applies to some writing tasks)
- The homogeneity of the construct measured by each standard
- A description of the kinds of item stems appropriate for multiple-choice items used to assess each standard
- A description of the kinds of distractors that are appropriate for multiple-choice items assessing each standard

- A description of appropriate data representations (such as charts, tables, graphs, or other illustrations) for mathematics and science items
- The content limits for the standard (such as one or two variables, maximum place values of numbers) for mathematics and science items
- A description of appropriate reading passages, if applicable, for ELA items
- A description of specific kinds of items to be avoided, if any (for example, items with any negative expressions in the stem, e.g. “Which of the following is NOT…”)

In addition, the ELA item specifications contain guidelines for passages used to assess reading comprehension and writing. These guidelines include the following:

- The acceptable ranges for passage length
- The expected distribution of passages by genre
- Guidelines for readability and cognitive load, using standards agreed to by the CDE and ETS
- Expected use of illustrations
- The target number of items that should follow each reading passage and each writing passage
- Appropriate readability levels for writing passages
- A list of topics to be avoided

Expected Item Ratio

ETS developed the item utilization plan to continue the development of CMA items. The plan includes strategies for developing items that will permit coverage of all appropriate standards for all tests in each content area and at each grade level. ETS test development staff uses this plan to determine the number of items to develop for each content area.

The item utilization plan assumes that after the first two operational administrations, 30 percent of items on an operational form would be refreshed (replaced) each year; these items would remain in the item bank for future use. The plan also declares that an additional five percent of the operational items are likely to become unusable because of normal attrition and notes that there is a need to focus development on “critical” standards, which are standards that are difficult to measure well or for which there are few usable items.

For all content areas except science, it is assumed that at least 75 percent of all field-tested items are expected to have acceptable field-test statistics and become candidates for use in operational tests. For science, it is expected that 60 percent of the items will achieve this status.

ETS has developed field-test percentages and item counts that are shown in Table 3.1, on the next page. The number of items to be field-tested for a given CMA reflects the demand for new items and is determined as a percent of the number of operational items. For example, there are 48 operational items on the CMA for ELA in grade three; the number of items to be field-tested is 113 percent of 48, which is 54 items.

Table 3.1 Field-test Percentages for the CMA

Content Area	Grade or Course	Number of Operational Items per Grade or Course	Percentage of Operational Form to Be Field Tested	Number of Items to Be Field-tested per Grade or Course
English–Language Arts	3 & 5	48	113%	54
	4	48	94%	45
	6–8	54	67%	36
	9–11	60	67%	40
Mathematics	3 & 5	48	113%	54
	4	48	94%	45
	6–7	54	67%	36
	Algebra I	60	67%	40
	Geometry	60	67%	40
Science	5	48	113%	54
	8	54	100%	54
	10 Life Science	60	100%	60

Selection of Item Writers

Criteria for Selecting Item Writers

The items for each CMA are developed by individual item writers who have a thorough understanding of the California content standards. Applicants 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 writers. Because most of the participants are current or former California educators, they are particularly knowledgeable about the standards assessed by the CMA. 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 of interest; an advanced degree in the relevant content area is desirable
- Previous experience in writing items for standards-based assessments, including knowledge of the many considerations that are important when developing items to match state-specific standards
- Previous experience in writing items in the content areas covered by CMA grades and/or courses
- Familiarity, understanding, and support of the California content standards
- Current or previous teaching experience in California, when possible

Item Review Process

The items selected for each CMA undergo an extensive item review process that is designed to provide the best standards-based tests possible. This section summarizes the various reviews performed that ensure the quality of the CMA items and test forms.

Contractor Review

Once the items have been written, ETS employs a series of internal reviews. The reviews establish the criteria used to judge the quality of the item content and are designed to ensure that each item is measuring what it is intended to measure. The internal reviews also

examine the overall quality of the test items before they are prepared for presentation to the CDE and the Assessment Review Panels (ARPs). Because of the complexities involved in producing defensible items for high-stakes programs such as the STAR Program, it is essential that many experienced individuals review each item before it is brought to the CDE, the ARPs, and Statewide Pupil Assessment Review (SPAR) panels.

The ETS review process for the CMA includes the following:

1. Internal content review
2. Internal editorial review
3. Internal sensitivity review

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

1. Internal Content Review

Test items and materials undergo two reviews by the content-area assessment specialists. These assessment specialists make sure that the test items and related materials 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 review 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 DOK
- 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 a code for the standard it is intended to measure. The assessment specialists check all items against their 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 is intended to measure. The reviewers may 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.

2. Internal Editorial Review

After the content-area assessment specialists review each item, a group of specially trained editors review each item in preparation for review by the CDE and the ARPs. 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. Internal 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 ARP reviews.

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

- Cultural diversity
- Diversity of background, cultural tradition, and viewpoints to be found in the test-taking populations
- 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

Content Expert Reviews

Assessment Review Panels

ETS is responsible for working with ARPs as items are developed for the CMA. The ARPs are advisory panels to the CDE and ETS and provide guidance on areas related to item development for the CMA. The ARPs are responsible for reviewing all newly developed items for alignment to the California content standards. The ARPs also review the items for accuracy of content, clarity of phrasing, and quality. In their examination of test items, the ARPs may raise concerns related to age/grade appropriateness, and gender, racial, ethnic, and/or socioeconomic bias.

Composition of ARPs

The ARPs are comprised of current and former teachers, resource specialists, administrators, curricular experts, and other education professionals. Current school staff members must meet minimum qualifications to serve on the CMA ARPs, including:

- Three or more years of general teaching experience in grades kindergarten through twelve and in the relevant content areas (ELA, mathematics, or science);
- Bachelor’s or higher degree in a grade or content area related to ELA, mathematics, or science;
- Knowledge and experience with the California content standards in ELA, mathematics, or science;
- 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, district/county content/program specialists, or university educators serving on the CMA ARPs must meet the following qualifications:

- Three or more years of experience as a school administrator, district/county content/ program specialist, or university instructor in a grade-specific area or area related to ELA, mathematics, or science

- Bachelor's or higher degree in a grade-specific or content area related to ELA, mathematics, or science; and
- Knowledge of and experience with the California content standards in ELA, mathematics, or science

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

Current ARP members are recruited through an application process. Recommendations are solicited from school districts and county offices of education as well as from CDE and SBE staff. Applications are received and reviewed throughout the year. They are reviewed by the ETS assessment directors, who confirm that the applicant's qualifications meet the specified criteria. Applications that meet the criteria are forwarded to CDE and SBE staff for further review and agreement on ARP membership. Upon approval, the applicant is notified that he or she has been selected to serve on the ARP committee.

Table 3.2 shows the educational qualifications, present occupation, and credentials of the current CMA ARP members.

Table 3.2 CMA ARP Member Qualifications, by Content Area and Total

CMA	ELA	Math	Science	Total
Total	**11**	**12**	**8**	**31**
Occupation (Members may teach multiple levels.)				
Teacher or Program Specialist, Elementary/Middle School	4	7	4	15
Teacher or Program Specialist, High School	6	8	2	16
Teacher or Program Specialist, K–12	4	2	3	9
University Personnel	0	0	1	1
Other District Personnel (e.g., Director of Special Services, etc.)	2	1	1	4
Highest Degree Earned				
Bachelor's Degree	4	4	2	10
Master's Degree	6	8	4	18
Doctorate	0	0	0	0
K–12 Teaching Credentials and Experience (Members may hold multiple credentials.)				
Elementary Teaching (multiple subjects)	5	5	2	12
Secondary Teaching (single subject)	3	5	6	14
Special Education	6	5	3	14
Reading Specialist	4	1	0	5
English Learner (CLAD,BCLAD)	2	3	1	6
Administrative	3	1	0	4
Other	2	0	4	6
None (teaching at the university level)	0	0	0	0

ARP Meetings for Review of CMA Items

ETS content-area assessment specialists facilitate the CMA ARP 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 CMA
- Overview of the CMA test design specifications and blueprints

- Analysis of the CMA item specifications
- Overview of criteria for evaluating multiple-choice test items and for reviewing constructed-response writing tasks
- Review and evaluation of items for bias and sensitivity issues

The criteria for evaluating multiple-choice items and constructed-response writing tasks include the following:

- Overall technical quality
- Match to the California content standards
- 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 include more global factors, including—for ELA—the appropriateness, difficulty, and readability of reading passages. The ARPs 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 below.

Does the item:

- Have one and only one clearly correct answer?
- Measure the content standard?
- Match the test item specifications?
- Align with the construct being measured?
- Test worthwhile concepts or information?
- Reflect good and current teaching practices?
- Have a stem that gives the student a full sense of what the item is asking?
- Avoid unnecessary wordiness?
- Use response options that relate to the stem in the same way?
- Use response options that are plausible and have reasonable misconceptions and errors?
- Avoid having one response option that is markedly different from the others?
- Avoid clues to students, such as absolutes or words repeated in both the stem and options?
- Reflect content that is free of bias against any person or group?

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?

As the first step of the item review process, ARP members review a set of items independently and record their individual comments. The next step in the review process is for the group to discuss each item. The content-area assessment specialists facilitate the discussion and record all recommendations in a master item review booklet. Item review binders and other item evaluation materials also identify potential bias and sensitivity factors the ARP will consider as a part of its item reviews.

Depending on CDE approval and the numbers of items still to be reviewed, some ARPs are divided further into smaller groups. The science ARP, for example, divides into content area and grade-level groups. These smaller groups are also facilitated by the content-area assessment specialists.

ETS staff maintains the minutes summarizing the review process and then forwards copies of the minutes to the CDE, emphasizing in particular the recommendations of the panel members.

Statewide Pupil Assessment Review Panel

The SPAR panel is responsible for reviewing and approving all achievement test items to be used statewide for the testing of students in California public schools, grades two through eleven. At the SPAR panel meetings, all new items are presented in binders for review. The SPAR panel representatives ensure that the test items conform to the requirements of *EC* Section 60602. The constructed-response writing tasks are also presented for review. If the SPAR panel rejects specific items and/or constructed-response writing tasks, the items and/or tasks are marked for rejection in the item bank and excluded from use on field tests. For the SPAR panel meeting, the item development coordinator is available by telephone to respond to any questions during the course of the meeting.

Field Testing

The primary purposes of field testing are to obtain information about item performance and to obtain statistics that can be used to assemble operational forms.

Stand-alone Field Testing

For each new CMA launched, a pool of items is initially constructed by administering the newly developed items in a stand-alone field test. In stand-alone field testing, examinees are recruited to take tests outside of the usual testing circumstances and the test results are typically not used for instructional or accountability purposes (Schmeiser & Welch, 2006).

CMA stand-alone field testing for each new test occurred in the fall before the test became operational in the following spring. In the case of writing prompts administered as part of the grades four and seven CMA for ELA, due to time constraints, field-testing occurs every few years and is conducted only as stand-alone event.

The writing prompts for the 2012 administration of grades four and seven CMA for ELA were selected from the writing prompts field-tested by ETS in the fall of 2011. Before the field test, a task force was convened to provide an opportunity for representatives from the field and other specialists to recommend possible changes to the writing test that could be incorporated into the field tests. Six prompts were field-tested for grade four and eight prompts were field-tested for grade seven to determine which of the modifications in format and directions recommended by the Writing Test Task Force were most helpful to students.

These new writing prompts with modified formats and directions were field-tested with thousands of California students.

Following reviews of field test results by the CDE, ETS, and the ELA ARP, two grade-four and two grade-seven prompts were selected for the subsequent administrations.

The stand-alone field-testing timeline for the CMA is presented in Table 3.3.

Table 3.3 Stand-alone Field-testing Timeline for the CMA

Content Area	CMA *	Field-test Year
English–Language Arts	3	2007
	4	2007
	5	2007
	6	2008
	7	2008
	8	2008
	9	2009
	10	2010
	11	2010
	Writing †	2008 and 2011
Mathematics	3	2007
	4	2007
	5	2007
	6	2008
	7	2008
	Algebra I	2009
	Geometry	2010
Science	5	2007
	8	2008
	10 Life Science	2009

* Number indicates grade-level test.

† Grades four and seven

Embedded Field-test Items

Although a stand-alone field test is useful for developing a new test because it can produce a large pool of quality items, embedded field testing is generally preferred because the items being field-tested are seeded throughout the operational test. Factors such as test-taker motivation and test security are the same in embedded field testing as they will be when the field-tested items are later administered operationally. Such field testing involves distributing the items being field-tested within an operational test form. Different forms contain the same core set of operational items and different sets of field-test items. The numbers of embedded field-test items for the CMA are shown in Table 3.4, on the next page.

Allocation of Students to Forms

The test forms for a given CMA are spiraled among students in the state so that a large representative sample of test-takers responds to the field-test items embedded in these forms. The spiraling design ensures that a diverse sample of students take each field-test item. The students do not know which items are field-test items and which items are operational items; therefore, their motivation is not expected to vary over the two types of items (Patrick & Way, 2008).

Number of Forms and Sample Sizes

A set of field-test items is administered on all CMA forms. The sets of field-test items differ across forms, and the number of forms and number of field-test items per form vary across content area and grade level. As mentioned earlier, the number of items to be field-tested for a given CMA reflects the demand for new items.

Table 3.4 also shows the number of forms, operational items, field-test items, and the approximate number of students included in the P1 data. This P1 data file contained the entire test-taking population and all the student records used in the August 30, 2012, reporting of STAR results.

The field-test samples are listed in the last column of Table 3.4.

Table 3.4 Summary of Items and Forms Presented in the 2012 CMA

		Operational			Field Test	
Content Area	**CMA ***	**No. Items**	**No. Examinees P1 Data †**	**No. Forms**	**No. Items**	**No. Examinees P1 Data †**
English–Language Arts	3	48	19,718	6	54	3,129–3,880
	4	48 ‡	26,193	5	45	4,240–6,299
	5	48	28,670	6	54	4,532–5,481
	6	54	28,397	4	36	6,872–7,641
	7	54 ‡	26,619	4	36	6,413–7,094
	8	54	24,945	4	36	3,848–4,700
	9	60	19,698	4	40	4,864–4,994
	10	60	17,009	4	40	2,692–2,971
	11	60	13,807	4	40	3,393–3,541
Mathematics	3	48	16,973	6	54	2,685–3,380
	4	48	21,924	5	45	3,581–5,276
	5 §	48	25,223	6	54	4,022–4,805
	6	54	25,977	4	36	6,272–6,960
	7	54	25,110	4	36	6,093–6,626
	Algebra I	60	28,756	4	40	7,049–7,463
	Geometry	60	6,972	4	40	1,727–1,785
Science	5	48	26,448	6	54	4,182–5,033
	8	54	22,809	6	54	3,533–4,316
	10 Life Science	60	14,145	6	36	2,203–2,489

* Numbers indicate grade-level tests.

† Valid forms

‡ Multiple-choice (MC) items

§ Standard form

CDE Data Review

Once items have been field-tested, ETS prepares the items and the associated statistics for review by the CDE. ETS provides items with their statistical data, along with annotated comment sheets, for the CDE to use in its review. ETS conducts an introductory training to highlight any new issues and serve as a statistical refresher. CDE consultants then make decisions about which items should be included in the item bank. ETS psychometric and content staff are available to CDE consultants throughout this process.

Item Banking

Once the ARP new item review is complete, the items are placed in the item bank along with their corresponding review information. Items that are accepted by the ARP, SPAR, and CDE are updated to a “field-test ready” status; items that are rejected are updated to a “rejected before use” status. ETS then delivers the items to the CDE by means of a delivery of the California electronic item bank. Subsequent updates to items are based on field-test and operational use of the items. However, only the latest content of the item is in the bank at any given time, along with the administration data from every administration that has included the item.

After field-test or operational use, items that do not meet statistical specifications may be rejected; such items are updated with a status of “rejected for statistical reasons” and remain unavailable in the bank. These statistics are obtained by the psychometrics group at ETS which carefully evaluates each item for its level of difficulty and discrimination as well as conformance to the IRT Rasch model. Psychometricians also determine if the item functions similarly for various subgroups of interest.

All unavailable items are clearly marked with an availability indicator of “Unavailable,” a reason for rejection as described above, and cause alerts so they are not inadvertently included on subsequent test forms. Statuses and availability are updated programmatically as items are presented for review, accepted or rejected, placed on a form for field-testing, presented for statistical review, and used operationally. All rejection indications are monitored and controlled through ETS’s assessment development processes.

ETS currently provides and maintains the electronic item banks for several of the California assessments including the California High School Exit Examination (CAHSEE), the California English Language Development Test (CELDT), and STAR (CST, CMA, CAPA, and STS). CAHSEE and STAR are currently consolidated in the California item banking system. ETS works with the CDE to obtain the data for assessments such as the CELDT, under contract with other vendors for inclusion into the item bank. ETS provides the item banking application using the LAN architecture and the relational database management system, SQL 2005/SQL 2008, already deployed. ETS provides updated versions of the item bank to the CDE on an ongoing basis and works with the CDE to determine the optimum process if a change in databases is desired.

References

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Chapter 4: Test Assembly

The CMA tests are constructed to measure students' performance relative to California's content standards approved by the SBE. They are also constructed to meet professional standards for validity and reliability. For each CMA, the content standards and desired psychometric attributes are used as the basis for assembling the test forms.

Test Length

The number of items in each CMA blueprint was determined by considering the construct that the test is intended to measure and the level of psychometric quality desired. Test length is closely related to the complexity of content to be measured by each test; this content is defined by the California content standards for each grade level and content area. Also considered is the goal that the test be short enough that most of the students complete it in a reasonable amount of time.

The number of operational items on each CMA varies across grades and content areas. There are 48 operational items on the CMA tests for ELA in grades three through five, for mathematics in grades three through five, and for science in grade five. There are 54 operational items on the CMA tests for ELA in grades six through eight, for mathematics in grades six and seven, and for science in grade eight. There are 60 operational items on the CMA for ELA in grades nine through eleven, Algebra I, and Geometry, and Life Science in grade ten.

The number of items total also varies. There are 57 items total on the CMA tests for ELA in grades three through five, for mathematics in grades three through five, and for science in grade five. There are 63 items total on the CMA tests for ELA in grades six through eight, for mathematics in grades six and seven, and for science in grade eight. There are 66 items total on the CMA for Life Science in grade ten, and 70 items total on the CMA for ELA in grades nine through eleven, Algebra I, and Geometry.

In addition to operational items, a certain number of the items on each test are field-test items. Specifically, there are nine field-test items for grade-level tests in grades three through eight; ten on the tests for ELA in grades nine through eleven and EOC Algebra I and Geometry; and six field-test items for Life Science in grade ten. For more details on the distribution of items, see Appendix 2.A—CMA Items and Estimated Time Chart starting on page 20.

Rules for Item Selection

Test Blueprint

ETS selects all CMA test items to conform to the SBE-approved California content standards and test blueprints. The content blueprints for the CMA can be found on the CDE STAR CMA Blueprints Web page at http://www.cde.ca.gov/ta/tg/sr/cmablueprints.asp.

Although the test blueprints call for the number of items at the individual standard level, scores for the CMA items are grouped into subcontent areas (reporting clusters). For each CMA reporting cluster, the percentage of questions correctly answered is reported on a student's score report. A list of the CMA reporting clusters by test and the number of items in the cluster that appear in each test are provided in Appendix 2.B—Reporting Clusters, which starts on page 21.

Content Rules and Item Selection

When developing a new test form for a given grade and content area, test developers follow a number of rules. First and foremost, they select items that meet the blueprint for that grade level and content area. Using an electronic item bank, assessment specialists begin by identifying a number of linking items. These are items that appeared in the previous year's operational administration and are used to equate the test forms administered each year. Linking items are selected to proportionally represent the full blueprint. For example, if 25 percent of all of the items in a test are in the first reporting cluster, then 25 percent of the linking items should come from that cluster. The selected linking items are also reviewed by psychometricians to ensure that specific psychometric criteria are met.

After the linking items are approved, assessment specialists populate the rest of the test form. Their first consideration is the strength of the content and the match of each item to a specified content standard. In selecting items, team members also try to ensure that they include a variety of formats and content and that at least some of the items include graphics for visual interest.

Another consideration is the difficulty of each item. Test developers strive to ensure that there are some easy and some hard items and that there are a number of items in the middle range of difficulty. If items do not meet all content and psychometric criteria, staff reviews the other available items to determine if there are other selections that could improve the match of the test to all of the requirements. If such a match is not attainable, the content team works in conjunction with psychometricians and the CDE to determine which combination of items will best serve the needs of the students taking the test. Chapter 3, starting on page 66, contains further information about this process.

Psychometric Criteria

The three goals of CMA test development are as follows:

1. The test must have desired precision of measurement at all ability levels.
2. The test score must be valid and reliable for the intended population and for the various subgroups of test-takers.
3. The test forms must be comparable across years of administration to ensure the generalizability of scores over time.

In order to achieve these goals, a set of rules that outlines the desired psychometric properties of each CMA has been developed. Such rules are referred to as statistical targets.

Three types of assembly targets are developed for each CMA: the total test target, the linking block target, and (reporting) cluster targets. These targets are provided to test developers before a test construction cycle begins. The test developers and psychometricians work together to design the tests to these targets.

Primary Statistical Targets

The total test targets, or primary statistical targets, used for assembling the CMA forms for the 2012 administration were the test information function (TIF) and an average point-biserial correlation.

The TIF is the sum of the item information function based on the item response theory (IRT) item parameters. When using an IRT model, the target TIF makes it possible to choose items to produce a test that has the desired precision of measurement at all ability levels.

Due to the unique characteristics of the Rasch IRT model, the information curve conditional on each ability level is determined by item difficulty (*b*-values) alone. In this case, the TIF would, therefore, suffice as the target for conditional test difficulty. Although additional item difficulty targets are not imperative when the target TIF is used for form construction, the target mean and standard deviation of item difficulty consistent with the TIF were still provided to test development staff to help with the test construction process. The target *b*-value range approximates a minimum proportion-correct value (*p*-value) of 0.33 and a maximum *p*-value of 0.95 for each test.

The point-biserial correlation describes the relationship between student performance on a dichotomously scored item and student performance on the test as a whole. It is used as a measure of how well an item discriminates among test-takers that differ in their ability and it is related to the overall reliability of the test.

The minimum target value for an item point biserial was set at 0.14 for each test. This value approximates a biserial correlation of 0.20.

Assembly Targets

Table 4.1 shows the source of assembly targets for each CMA test.

Table 4.1 Matrix of Assembly Targets

CMA Content Area			Source of Assembly Targets
ELA • Grade 3 • Grade 4 • Grade 5	Mathematics • Grade 3 • Grade 4 • Grade 5	Science • Grade 5	Analyses of spring 2009 operational forms
ELA • Grade 6 • Grade 7 • Grade 8	Mathematics • Grade 6 • Grade 7	Science • Grade 8	Analyses of spring 2010 operational forms
ELA • Grade 9	Mathematics • Algebra I	Science • 10 Life Science	Analyses of spring 2011 operational forms
ELA • Grade 10 • Grade 11	Mathematics • Geometry		The spring 2011 forms were reused for spring 2012. These targets were developed using data from the fall 2010 field-test administration. The targets for these tests will be subsequently updated using data from the 2012 operational administration after the base scale is established.

The target values for the CMA are presented in Table 4.2, on the next page. These specifications were developed from the analyses of test forms administered starting from 2009 to the present as shown in the previous matrix.

Table 4.2 Statistical Targets for CMA Test Assembly

		Point Biserial		*b-Values*		*p-value*	
Content Area	**CMA ***	**Mean**	**Minimum**	**Mean**	**St. Dev.**	**Minimum**	**Maximum**
English–Language Arts	3	0.37	0.14	–0.51	0.55	0.33	0.95
	4 †	0.37	0.14	–0.41	0.53	0.33	0.95
	5	0.37	0.14	–0.40	0.77	0.33	0.95
	6	0.35	0.14	–0.46	0.64	0.33	0.95
	7 †	0.35	0.14	–0.51	0.48	0.33	0.95
	8	0.35	0.14	–0.49	0.65	0.33	0.95
	9	0.30	0.14	–0.23	0.65	0.33	0.95
	10	0.30	0.14	–0.21	0.65	0.33	0.95
	11	0.30	0.14	–0.21	0.65	0.33	0.95
Mathematics	3	0.37	0.14	–0.43	0.75	0.33	0.95
	4	0.37	0.14	–0.40	0.76	0.33	0.95
	5	0.37	0.14	–0.38	0.78	0.33	0.95
	6	0.30	0.14	–0.44	0.52	0.33	0.95
	7	0.30	0.14	–0.49	0.50	0.33	0.95
	Algebra I	0.30	0.14	–0.23	0.50	0.33	0.95
	Geometry	0.30	0.14	–0.21	0.65	0.33	0.95
Science	5	0.37	0.14	–0.43	0.74	0.33	0.95
	8	0.33	0.14	–0.46	0.50	0.33	0.95
	10 Life Science	0.30	0.14	–0.22	0.50	0.33	0.95

* Numbers indicate grade-level tests.

† MC items

The linking block target for each test consists of a proportionally adjusted (for numbers of items) total test target. To aid comparisons, the information curves based on the linking blocks were proportionally adjusted to match the full test length and were presented with the information curves for the total test. The graphs for the total test and linking blocks are presented in Figure 4.A.1 through Figure 4.A.3, starting on page 85, for the ELA, mathematics, and science tests, respectively. These curves present the target test information curves and the projected information curves for the total test and the linking sets.

Target information functions are also used to evaluate the items selected to measure each subscore in the interest of maintaining some consistency in the accuracy of cluster scores across years. Because the clusters include fewer items than the total test, there is always more variability between the target and the information curves constructed for the new form clusters than there is for the total test.

Figure 4.B.1 through Figure 4.B.16 starting on page 90 present the target and projected information curves for the clusters in the ELA, mathematics, and science tests, respectively.

Projected Psychometric Properties of the Assembled Tests

Prior to the 2012 administration, ETS psychometricians performed a preliminary review of the technical characteristics of the assembled tests. The expected or projected performance of examinees and the overall score reliability were estimated using the item-level statistics available in the California item bank for the selected items. The test reliability was based on Gulliksen's formula (Gulliksen, 1987) for estimating test reliability (r_{xx}) from item *p*-values and item point-biserial correlations:

$$r_{xx} = \left(\frac{K}{K-1}\right)\left(1 - \frac{\sum_{g=1}^{K} s_g^{\,2}}{\left(\sum_{g=1}^{K} r_{xg} s_g\right)^2}\right) \tag{4.1}$$

where,

K is the number of items in the test,

$s_g^{\,2}$ is the estimated item variances, i.e. $p_g(1-p_g)$, where p_g is the item *p*-value for item g,

r_{xg} is the item point-biserial correlation for item g, and

$r_{xg}s_g$ is the item reliability index.

In addition, estimated test raw score means were calculated by summing the item *p*-values, and estimated test raw score standard deviations were calculated by summing the item reliability indices. Table 4.A.1 on page 85 presents these summary values by content area and grade.

It should be noted that the projected reliabilities in Table 4.A.1 were based on item *p*-values and point-biserial correlations that, for some of the items, were based on external field-testing using samples of students that were not fully representative of the state. Chapter 8 presents item *p*-values, point-biserial correlations, and test reliability estimates based on the data from the 2012 CMA administration.

Table 4.A.2 on page 85 shows the mean observed statistics of the items on each CMA based on the item-level statistics available in the item bank for the most recent administration of those items. These values can be compared to the target values in Table 4.2.

Rules for Item Sequence and Layout

The items on test forms are organized and sequenced differently according to the requirements of the content area.

- ELA—Because the ELA test forms are primarily passage-dependent, items are sequenced with their associated reading passages. Passages are sequenced according to genre and interest level; test developers work to place high-interest pieces (typically narrative selections) near lower-interest pieces (typically functional or technical writing). Stand-alone items are placed throughout the form, where appropriate.
- Mathematics—The CMA mathematics test forms are sequenced mostly according to reporting cluster; that is, all items from a single reporting cluster are presented together and then all of the items from the next reporting cluster are presented. There are three reporting clusters for the grade-level mathematics tests: Reporting cluster 1, which tests Number Sense; reporting cluster 2, which tests both Algebra and Functions and Statistics, Data Analysis, and Probability; and reporting cluster 3, which tests Measurement and Geometry. There are four reporting clusters for each of the EOC tests.
- Science—The science test forms are sequenced according to reporting cluster; that is, all items from a single reporting cluster are presented together and then all of the items

from the next reporting cluster are presented. Items from the Investigation and Experimentation reporting cluster are an exception to this rule: these items assess aspects of practical knowledge in various clusters; they are presented with their associated clusters and then aggregated for reporting purposes as an Investigation and Experimentation cluster.

Reference

Gulliksen, H. (1987). *Theory of mental tests*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Appendix 4.A—Technical Characteristics

Table 4.A.1 Summary of 2012 CMA Projected Raw Score Statistics

Content Area	CMA*	Number of Items	Mean Raw Score	Std. Dev. of Raw Scores	Reliability
English–Language Arts	3	48	28.20	7.76	0.83
	4 †	48	26.99	7.69	0.83
	5	48	26.65	7.04	0.79
	6	54	30.21	8.31	0.83
	7 †	54	31.37	9.13	0.87
	8	54	31.83	8.49	0.85
	9	60	29.69	8.80	0.83
	10	60	30.01	8.42	0.81
	11	60	26.76	7.36	0.75
Mathematics	3	48	29.61	8.43	0.86
	4	48	28.03	7.31	0.82
	5	48	28.39	8.08	0.85
	6	54	28.74	7.28	0.78
	7	54	25.42	6.13	0.67
	Algebra I	60	28.69	7.86	0.78
	Geometry	60	28.54	8.05	0.79
Science	5	48	28.25	6.71	0.78
	8	54	29.63	7.53	0.79
	10 Life Science	60	30.97	8.81	0.83

* Numbers indicate grade-level tests.

† MC items

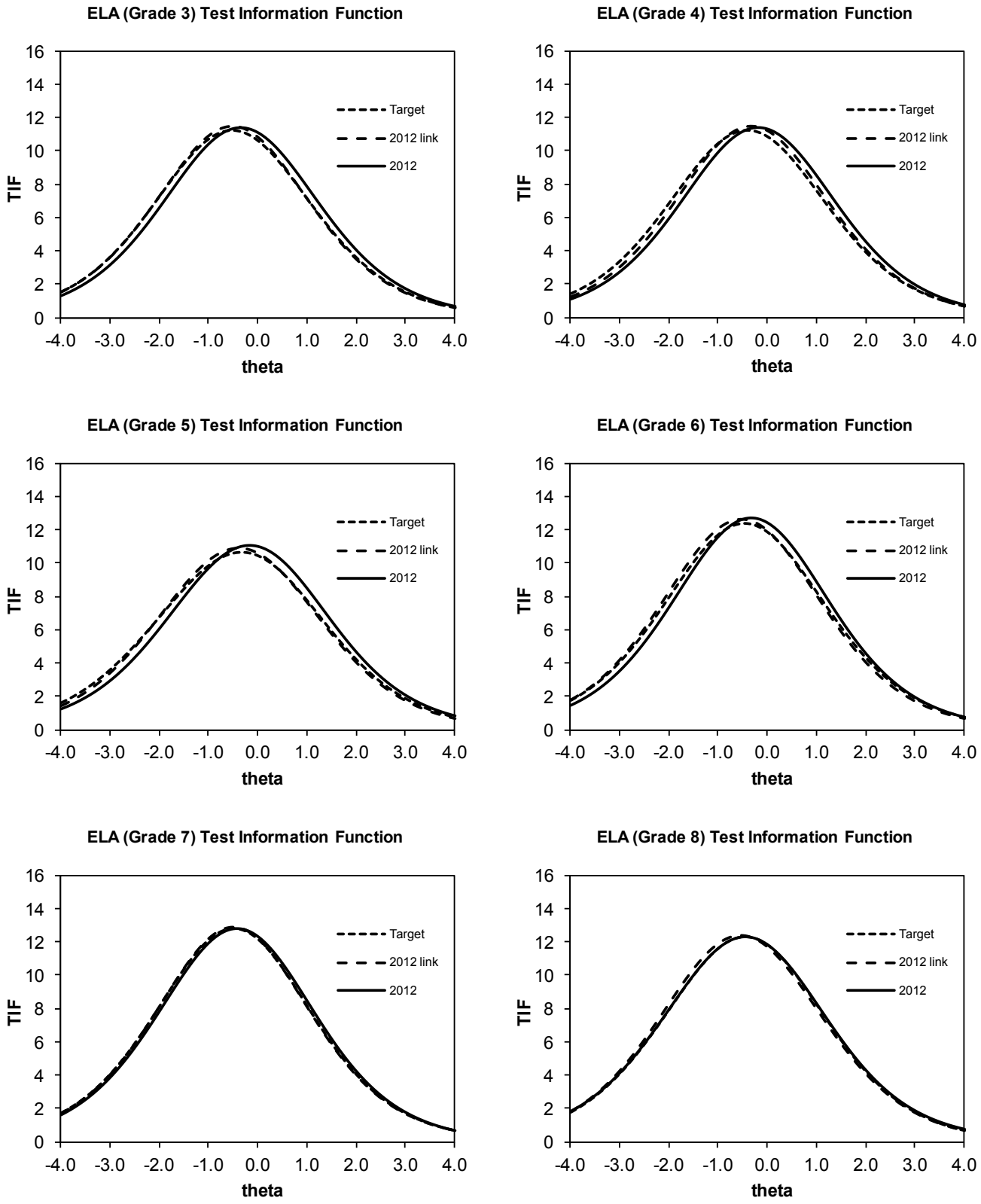
Table 4.A.2 Summary of 2012 CMA Projected Item Statistics

Content Area	CMA*	Mean b	SD b	Mean *p*–value	Min *p*–value	Max *p*–value	Mean Point Biserial	Min Point Biserial
English–Language Arts	3	–0.35	0.49	0.59	0.32	0.82	0.34	0.09
	4 †	–0.19	0.46	0.56	0.38	0.72	0.33	0.10
	5	–0.21	0.60	0.56	0.35	0.83	0.31	0.12
	6	–0.34	0.49	0.56	0.33	0.78	0.32	0.15
	7 †	–0.45	0.49	0.58	0.37	0.83	0.35	0.14
	8	–0.48	0.64	0.59	0.33	0.89	0.33	0.15
	9	–0.04	0.42	0.49	0.20	0.75	0.30	0.10
	10	–0.01	0.52	0.50	0.27	0.82	0.29	0.06
	11	0.22	0.41	0.45	0.29	0.69	0.25	0.07
Mathematics	3	–0.43	0.47	0.62	0.43	0.85	0.37	0.13
	4	–0.35	0.68	0.58	0.31	0.84	0.32	0.06
	5	–0.25	0.57	0.59	0.39	0.83	0.36	0.11
	6	–0.19	0.52	0.53	0.25	0.78	0.28	0.09
	7	0.07	0.43	0.47	0.24	0.71	0.23	0.02
	Algebra I	0.04	0.38	0.48	0.28	0.65	0.27	0.12
	Geometry	0.10	0.41	0.48	0.27	0.70	0.27	0.12
Science	5	–0.37	0.66	0.59	0.32	0.84	0.30	0.06
	8	–0.24	0.50	0.55	0.35	0.88	0.29	0.15
	10 Life Science	–0.07	0.43	0.52	0.32	0.72	0.30	–0.09

* Numbers indicate grade-level tests.

† MC items

Figure 4.A.1 Plots for Target Information Function and Projected Information for Total Test and Linking Set for English–Language Arts



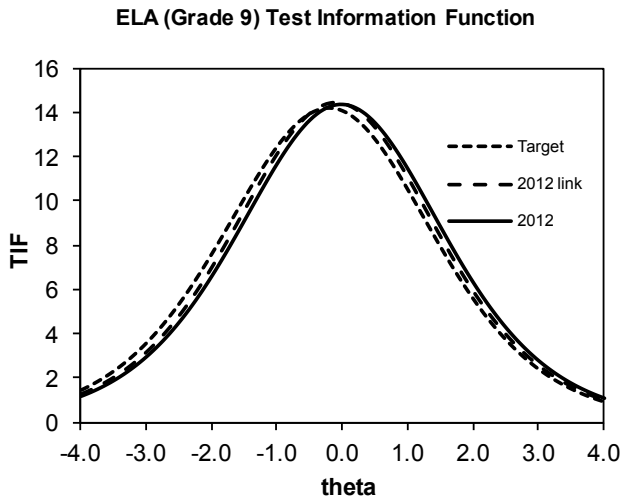

ELA (Grade 9) Test Information Function
16
14
12
10
8
6
4
2
0
TIF
-4.0
-3.0
-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
theta
Target
2012 link
2012

Figure 4.A.2 Plots for Target Information Function and Projected Information for Total Test and Linking Set for Mathematics

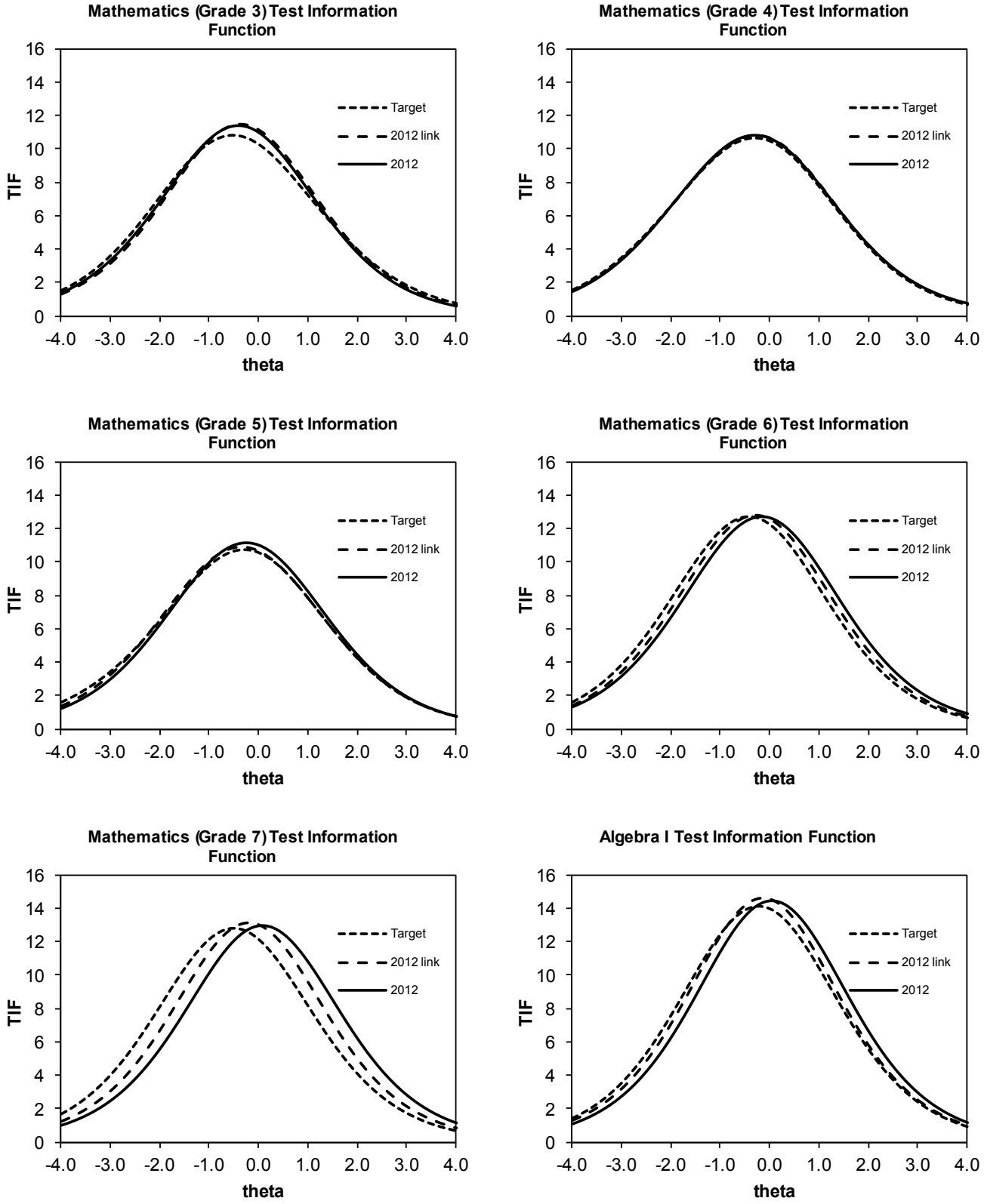
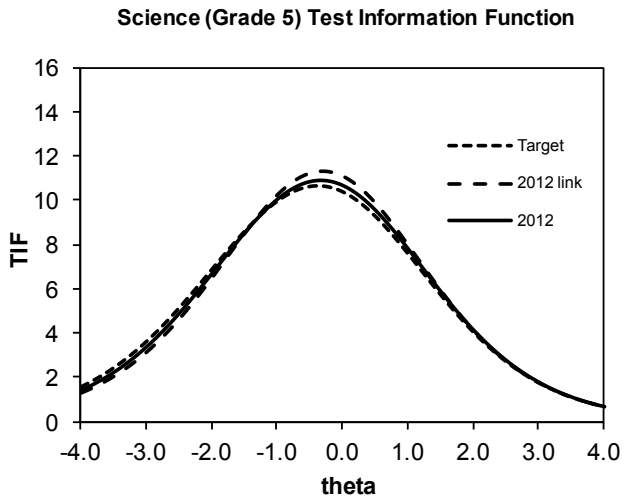
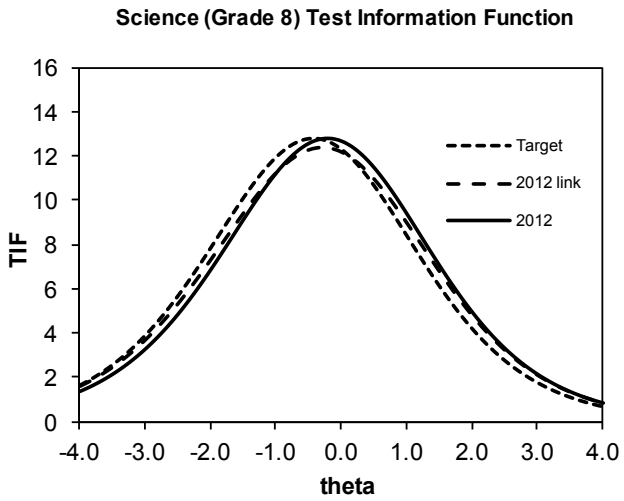
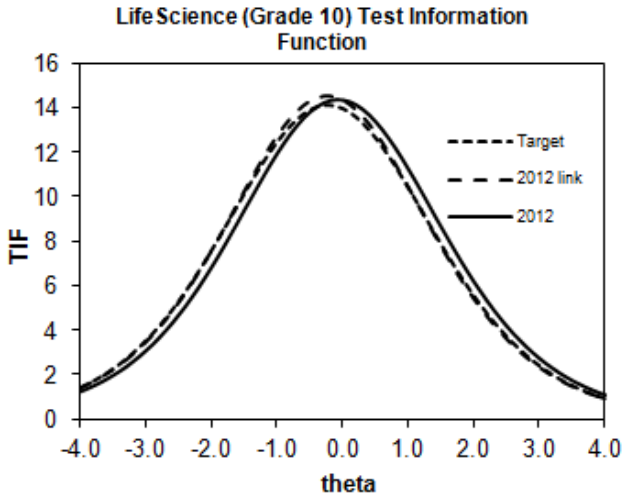


Figure 4.A.3 Plots for Target Information Function and Projected Information for Total Test and Linking Set for Science

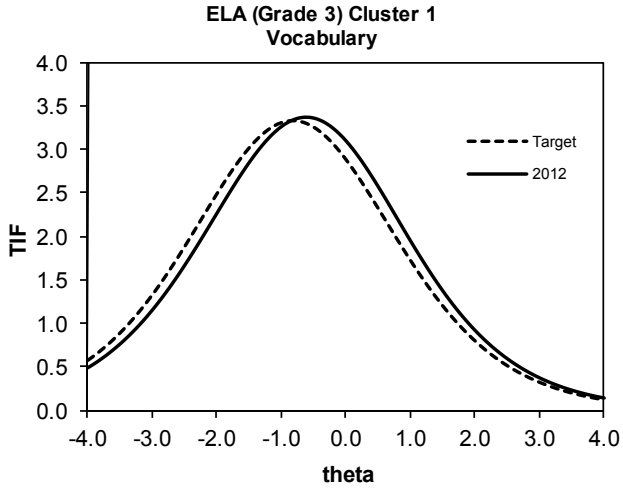


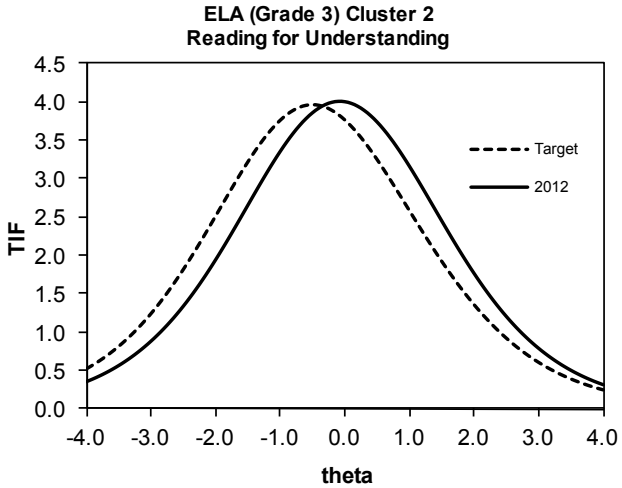




Appendix 4.B—Cluster Targets

Figure 4.B.1 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Three





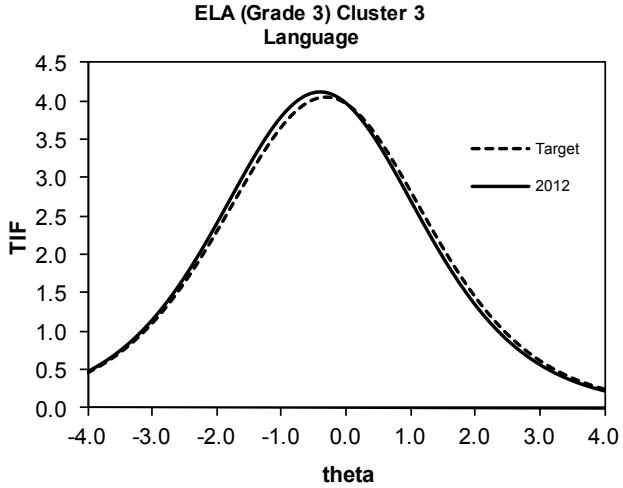
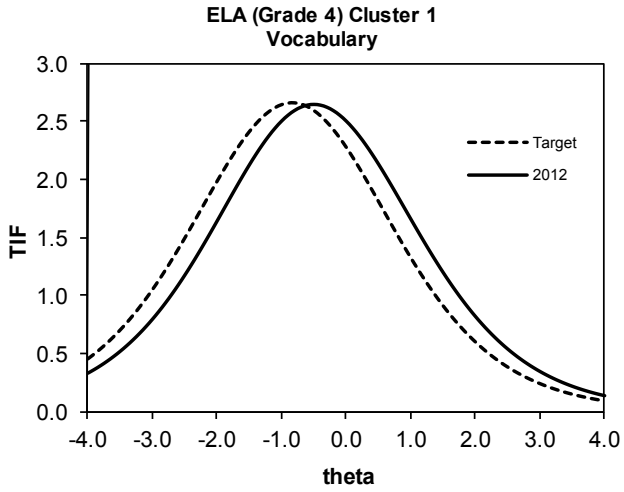
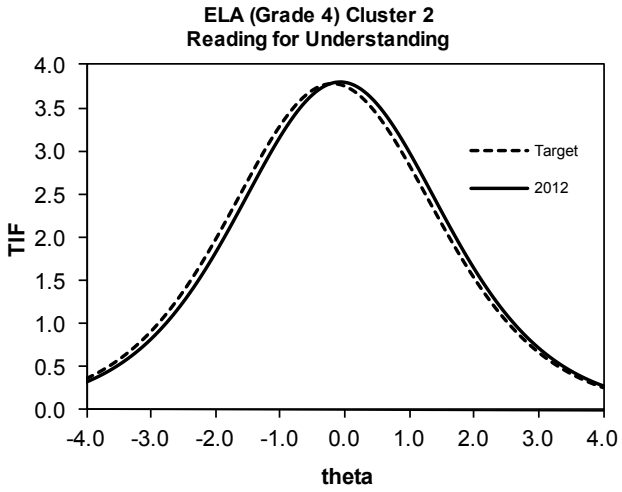


Figure 4.B.2 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Four





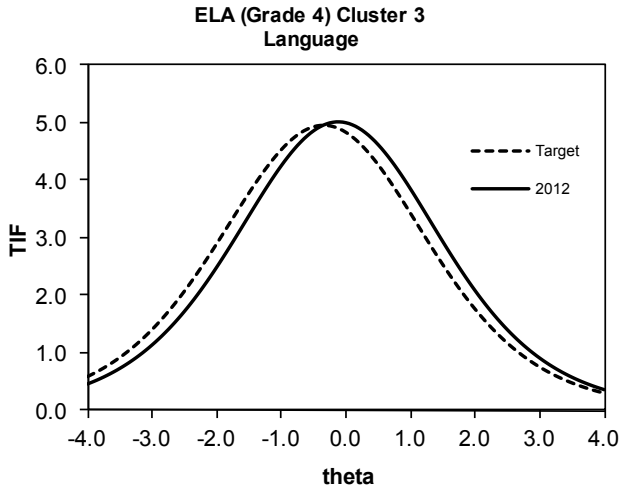


Figure 4.B.3 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Five

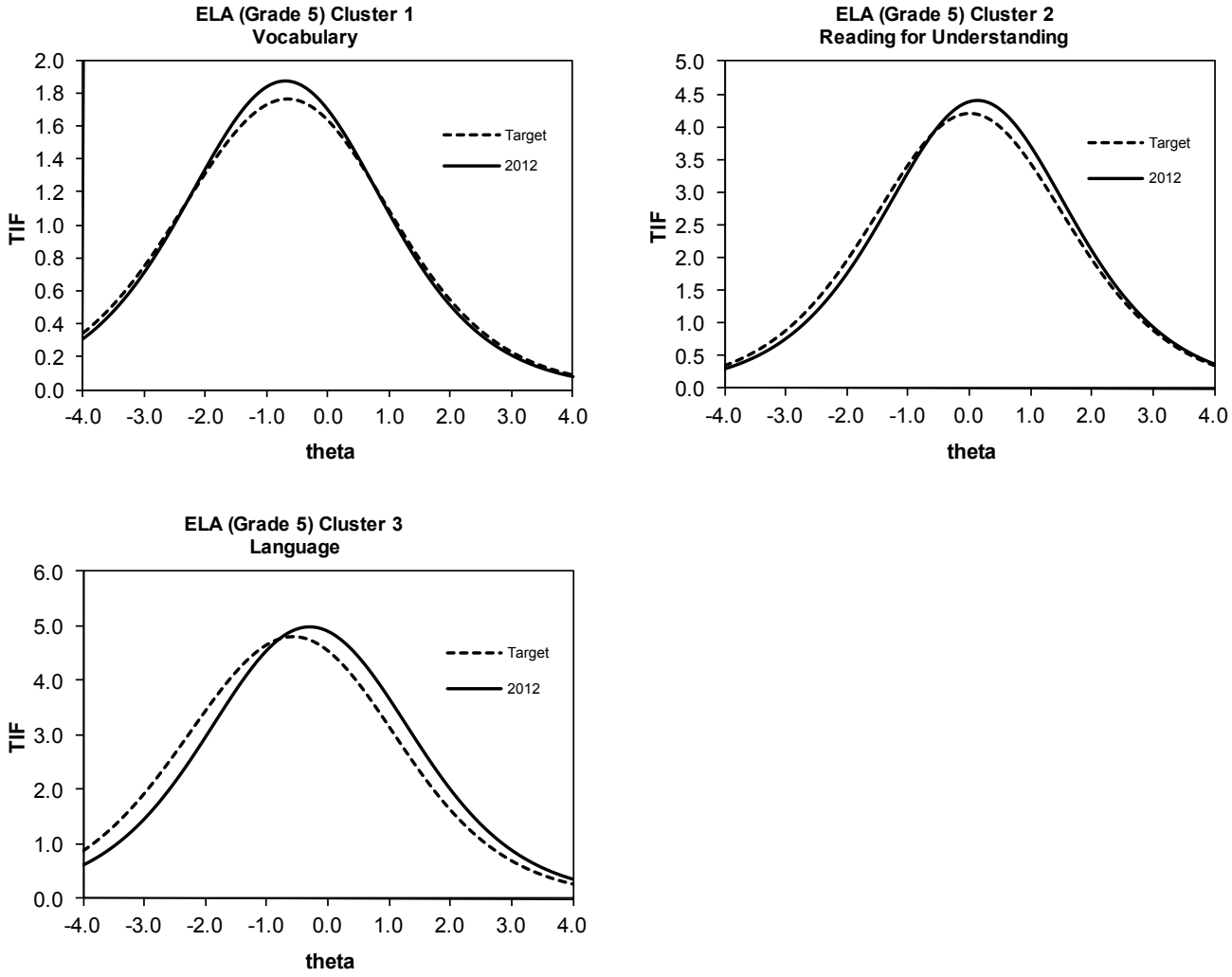
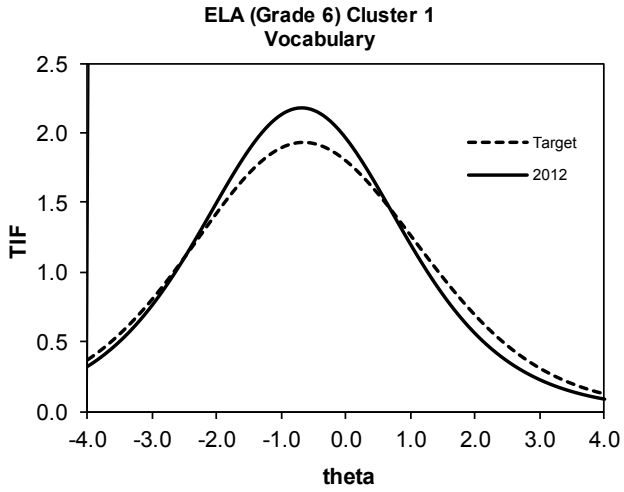
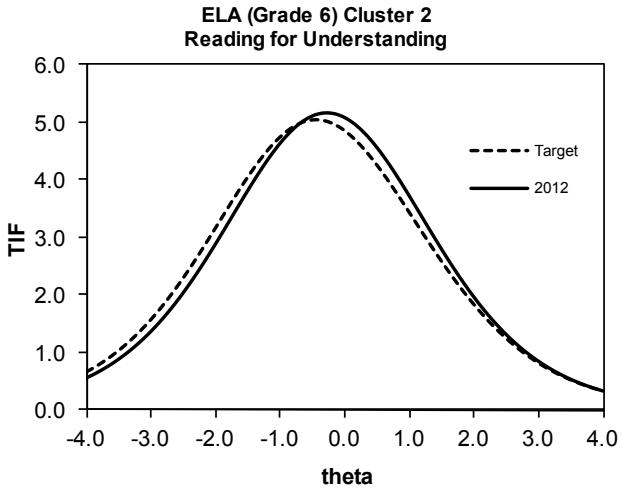


Figure 4.B.4 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Six





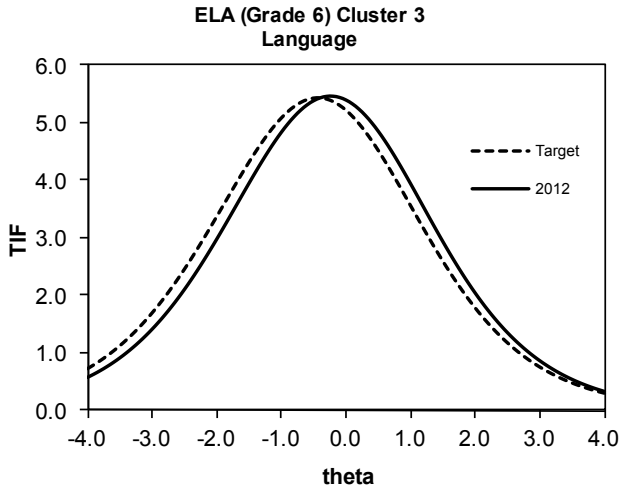
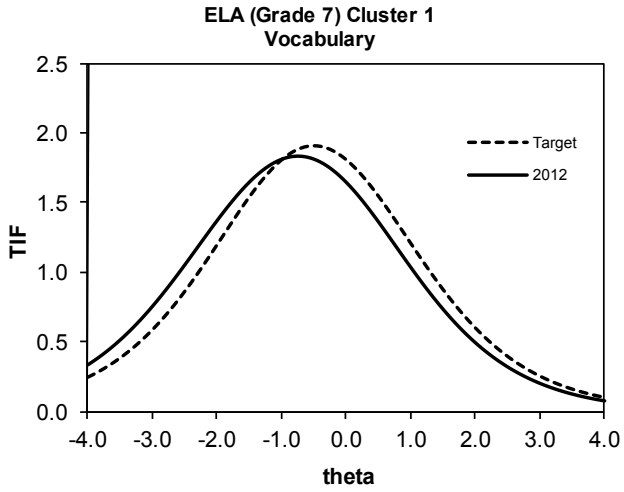
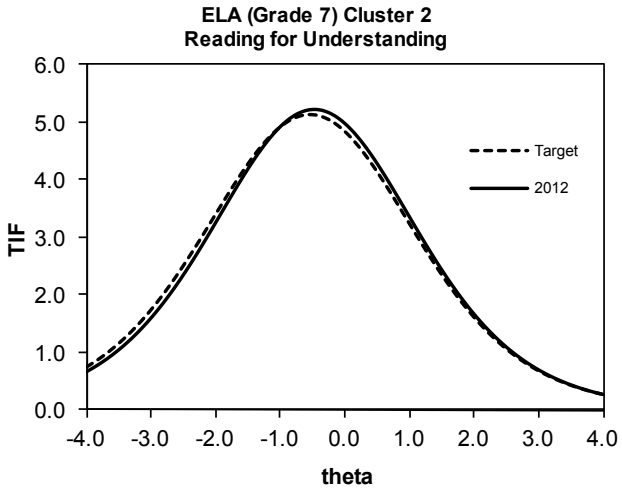


Figure 4.B.5 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Seven





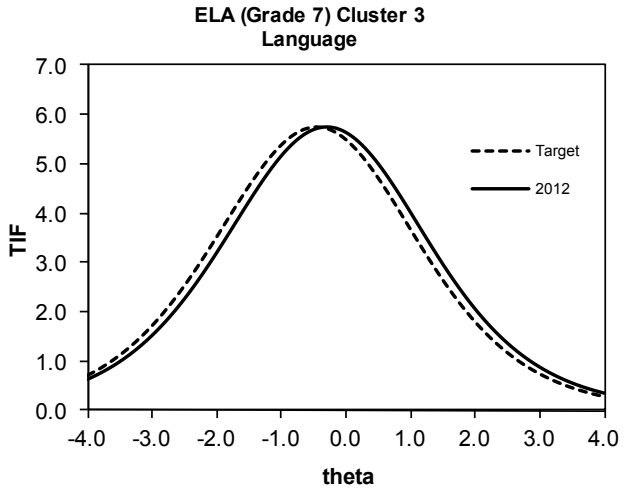
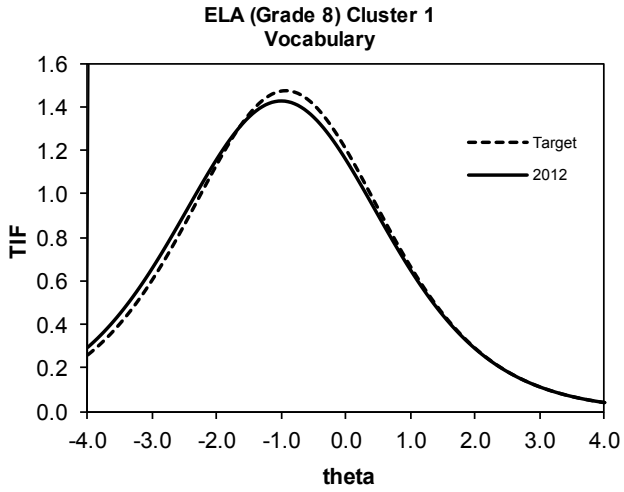
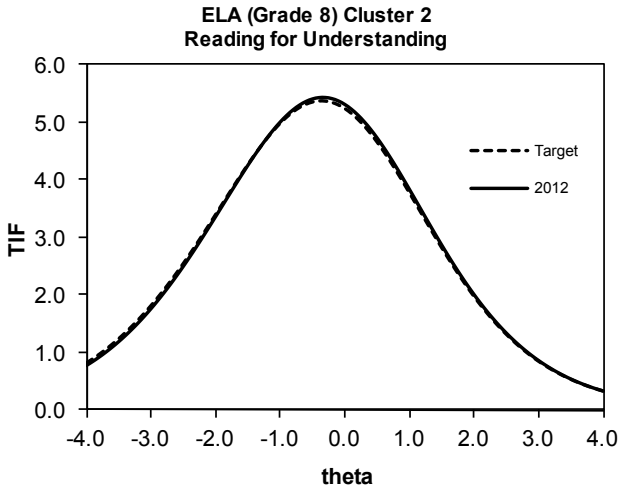


Figure 4.B.6 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Eight





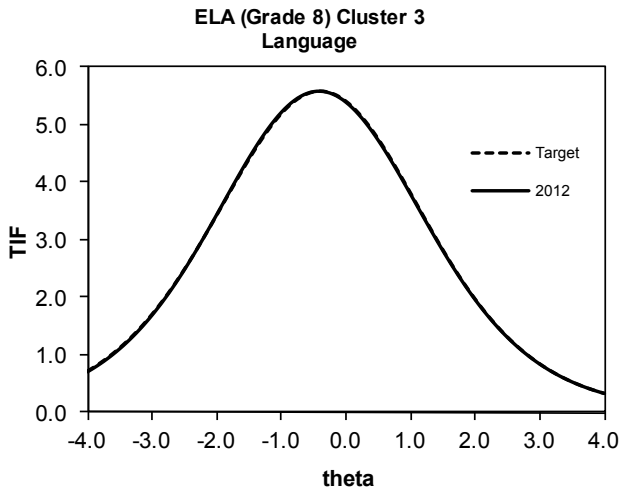
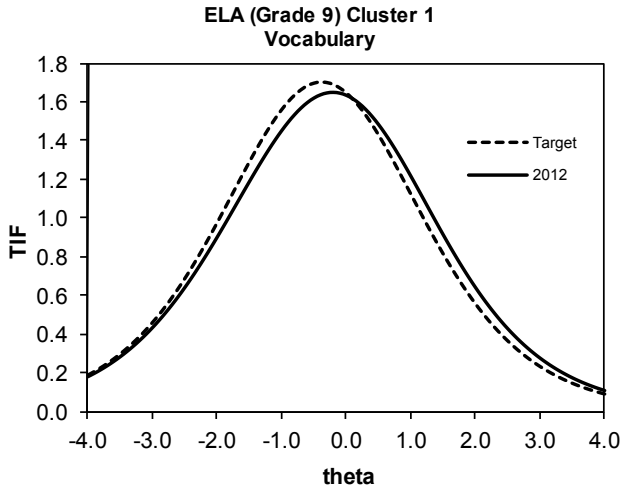
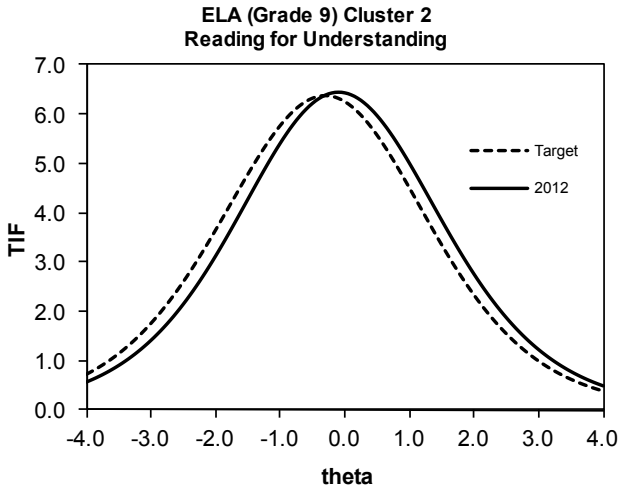


Figure 4.B.7 Plots of Target Information Functions and Projected Information for Clusters for ELA, Grade Nine





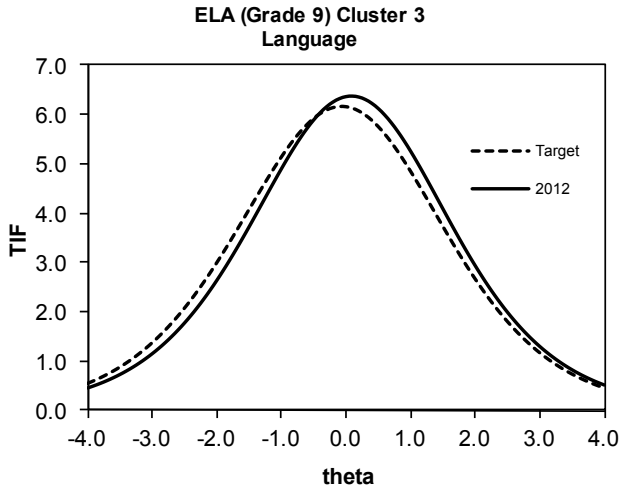
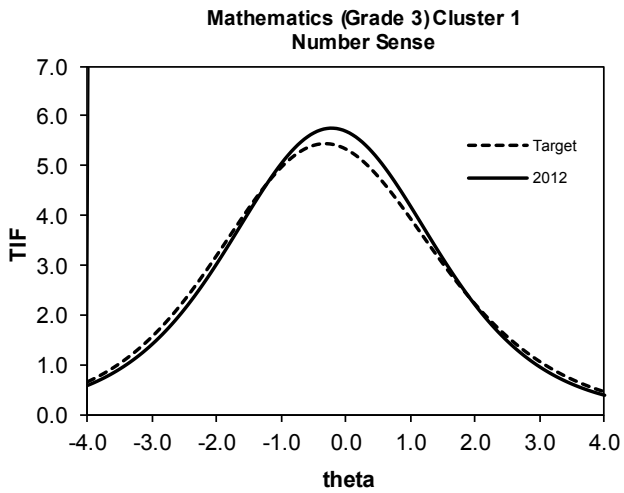
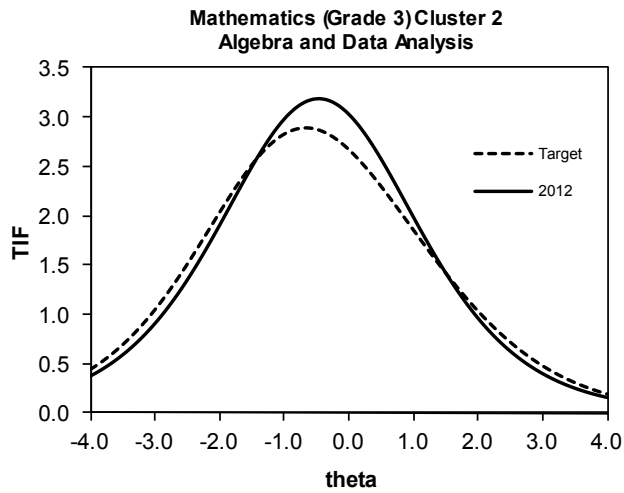


Figure 4.B.8 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Grade Three





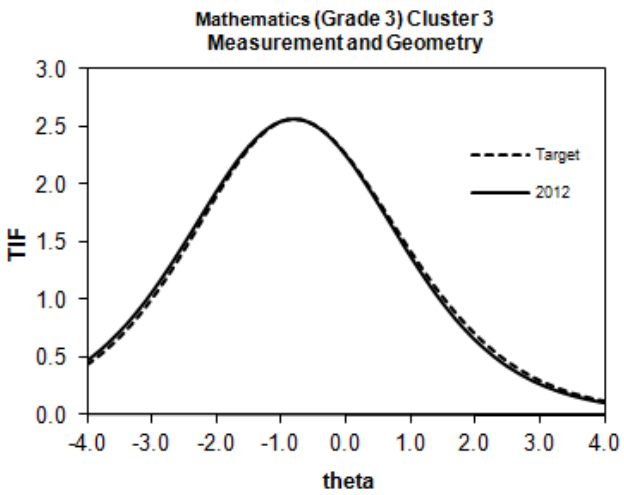
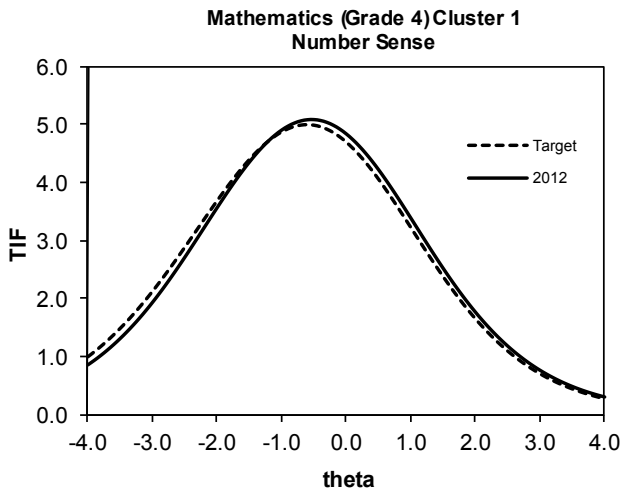
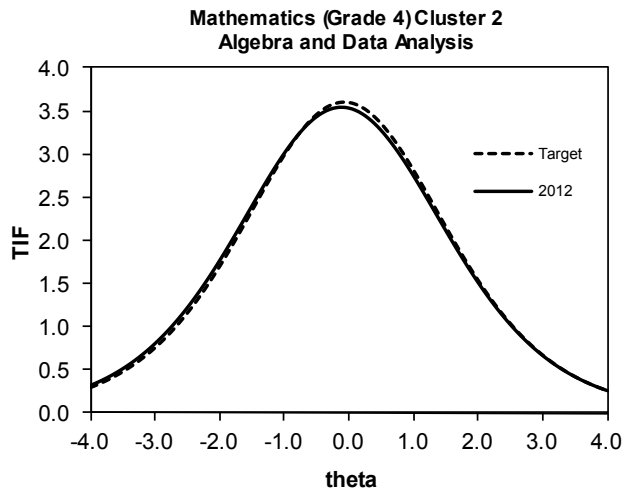


Figure 4.B.9 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Grade Four





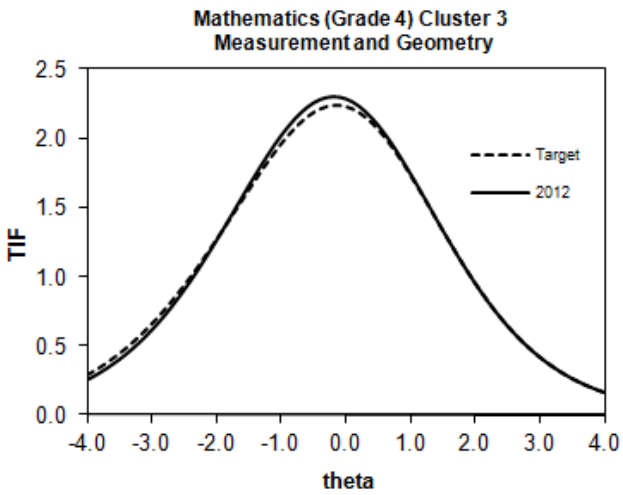
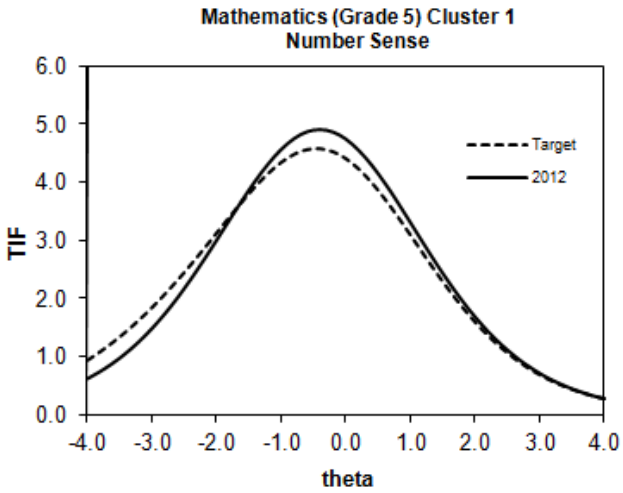
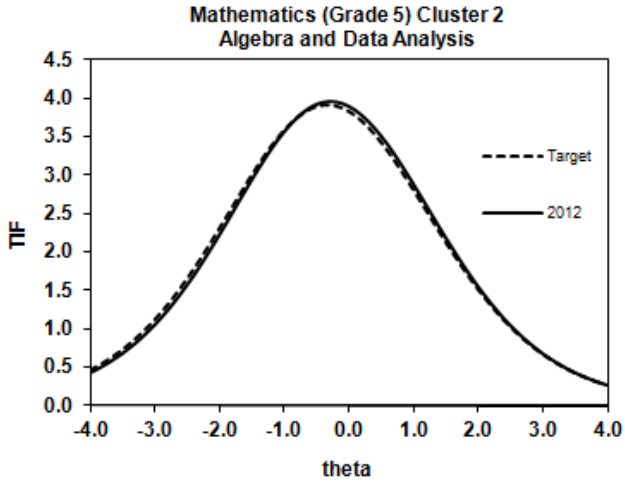


Figure 4.B.10 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Grade Five





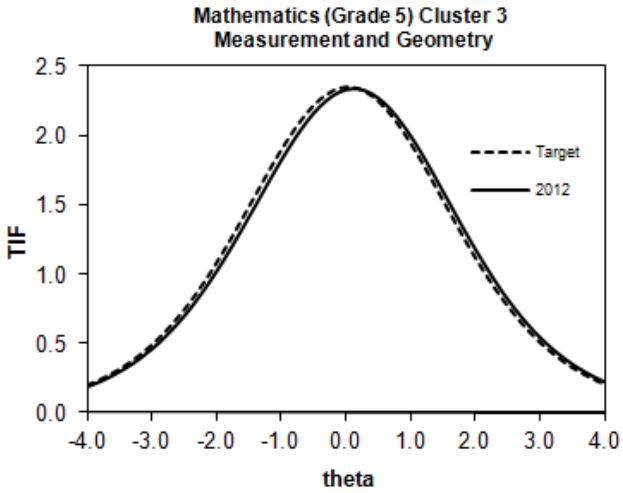
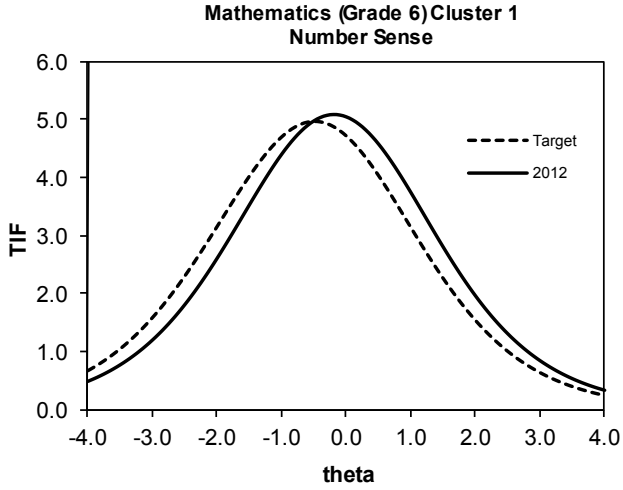
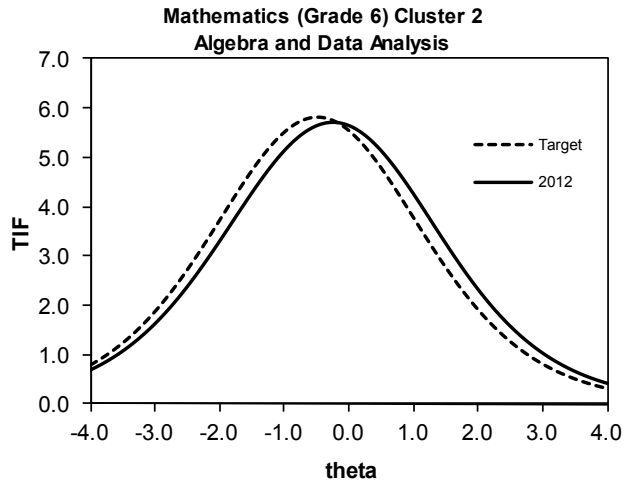


Figure 4.B.11 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Grade Six





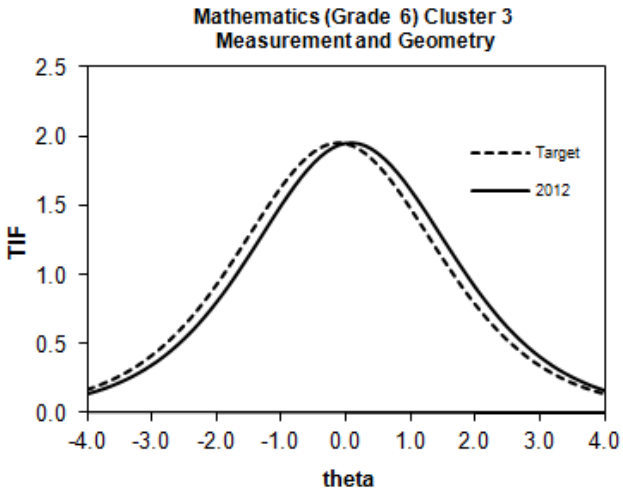
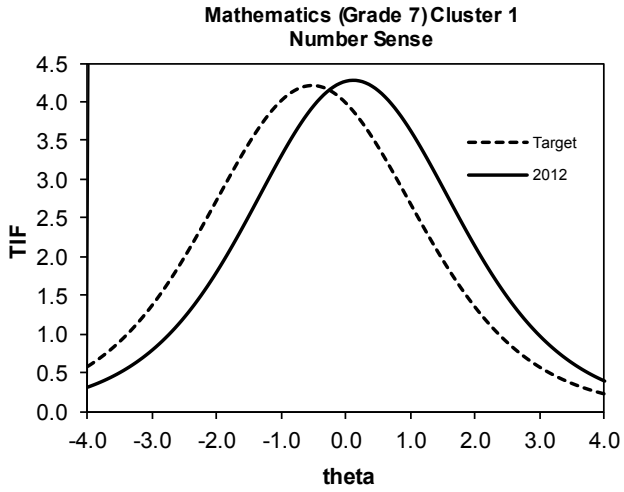
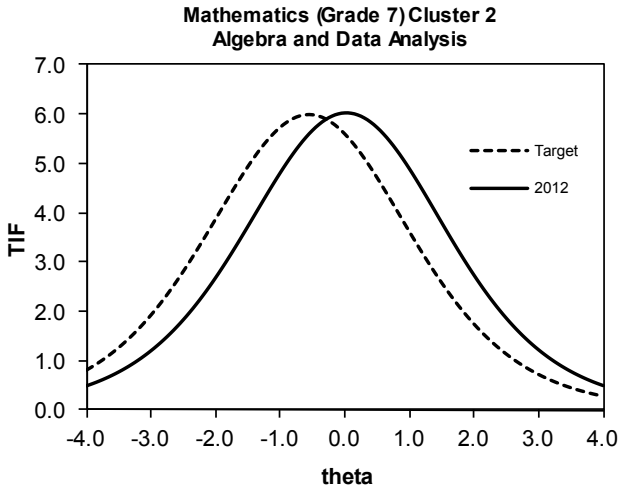


Figure 4.B.12 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Grade Seven





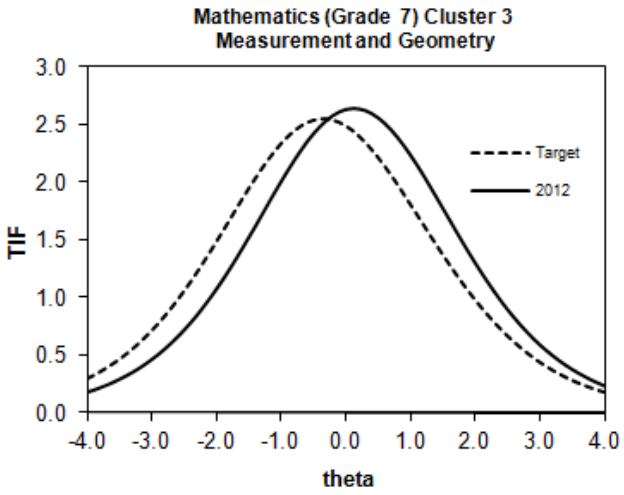


Figure 4.B.13 Plots of Target Information Functions and Projected Information for Clusters for Mathematics, Algebra I

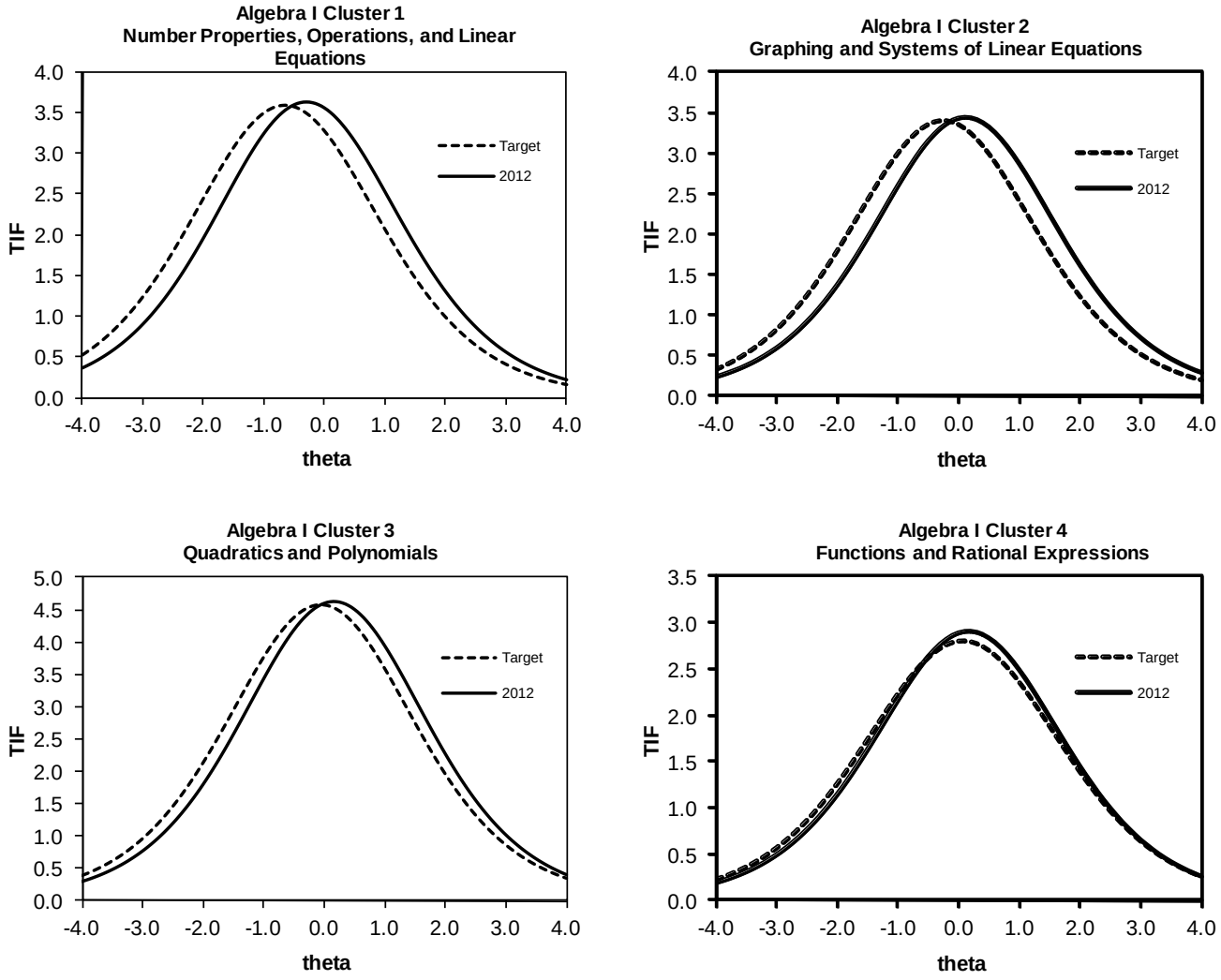


Figure 4.B.14 Plots of Target Information Functions and Projected Information for Clusters for Science, Grade Five

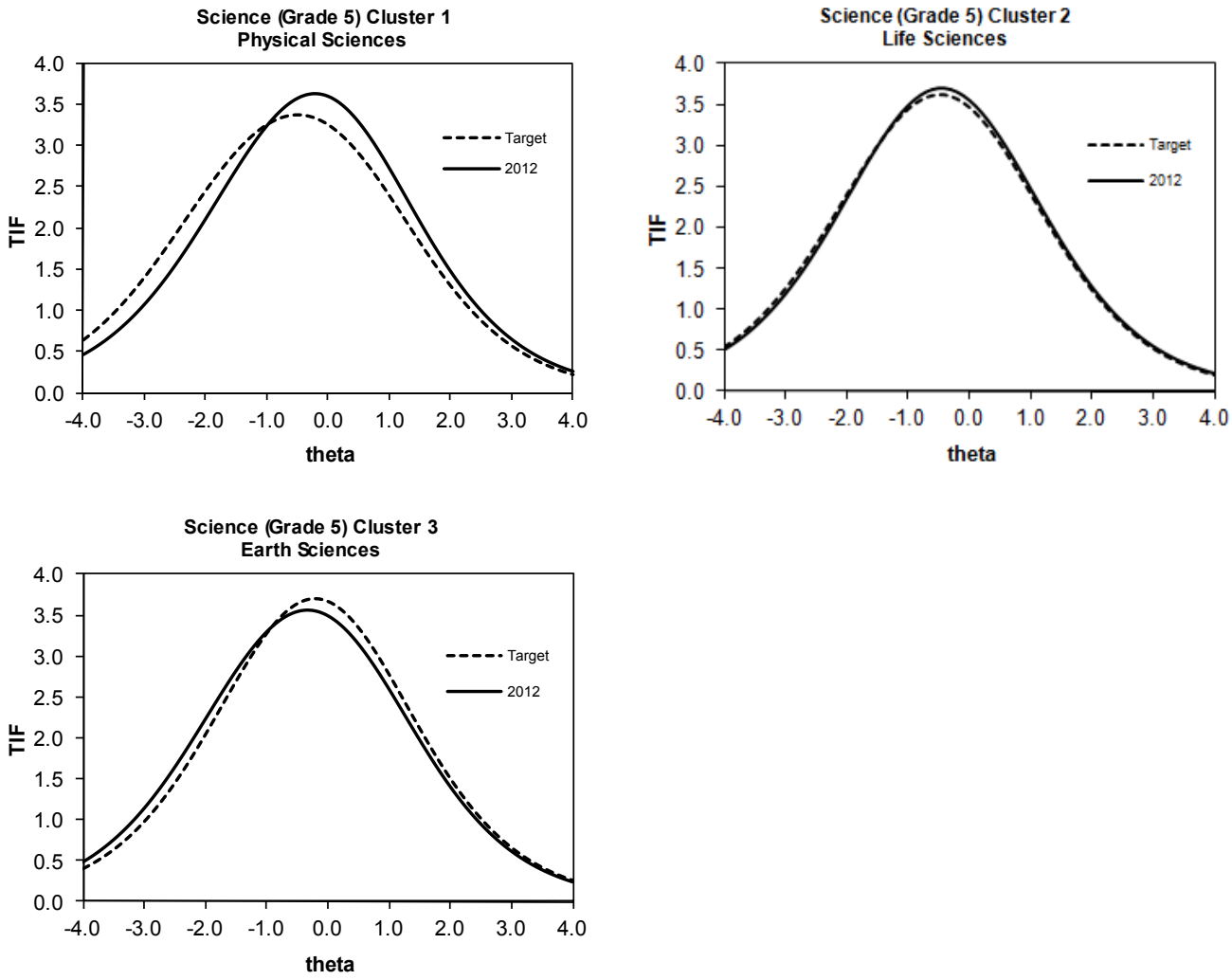


Figure 4.B.15 Plots of Target Information Functions and Projected Information for Clusters for Science, Grade Eight

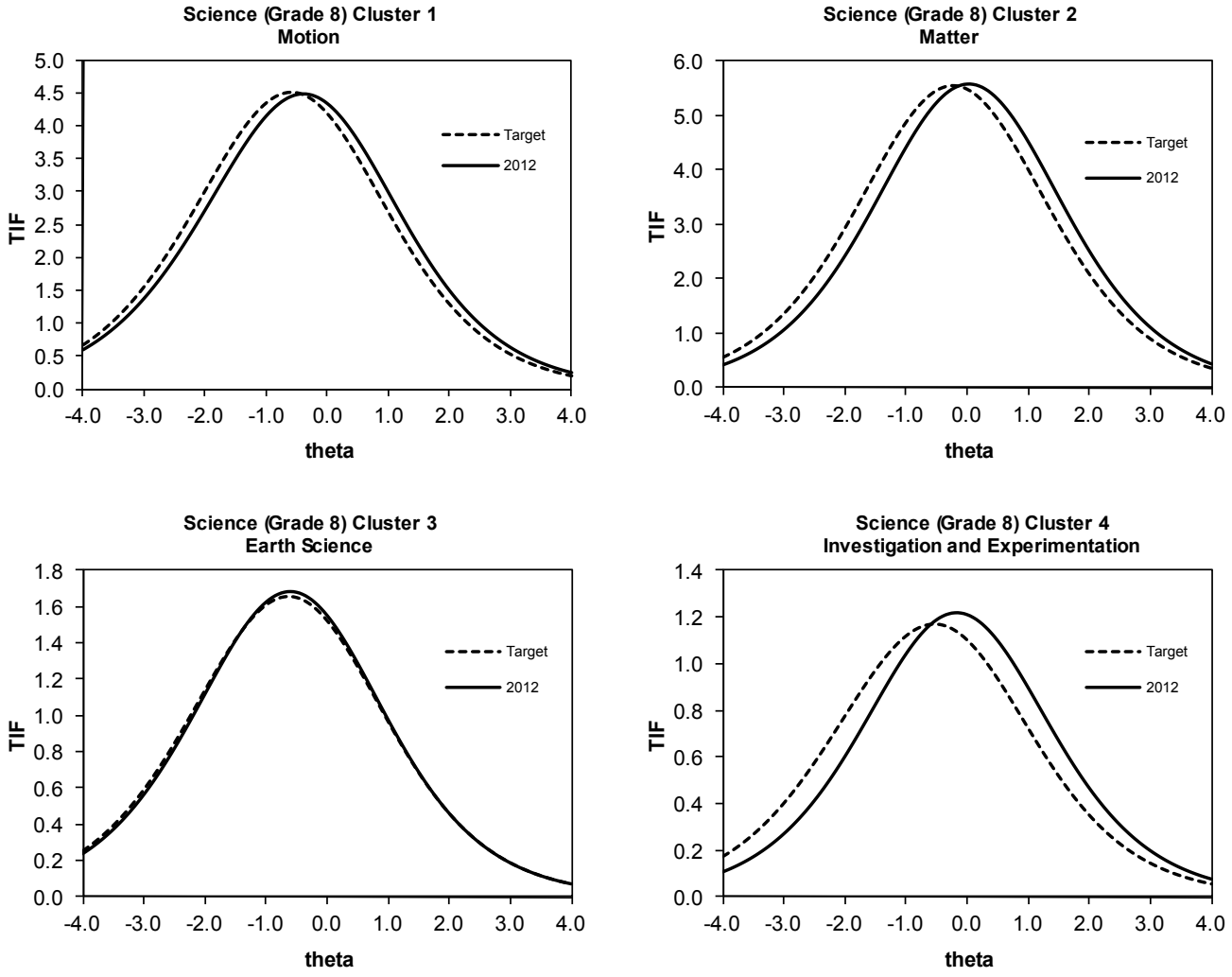
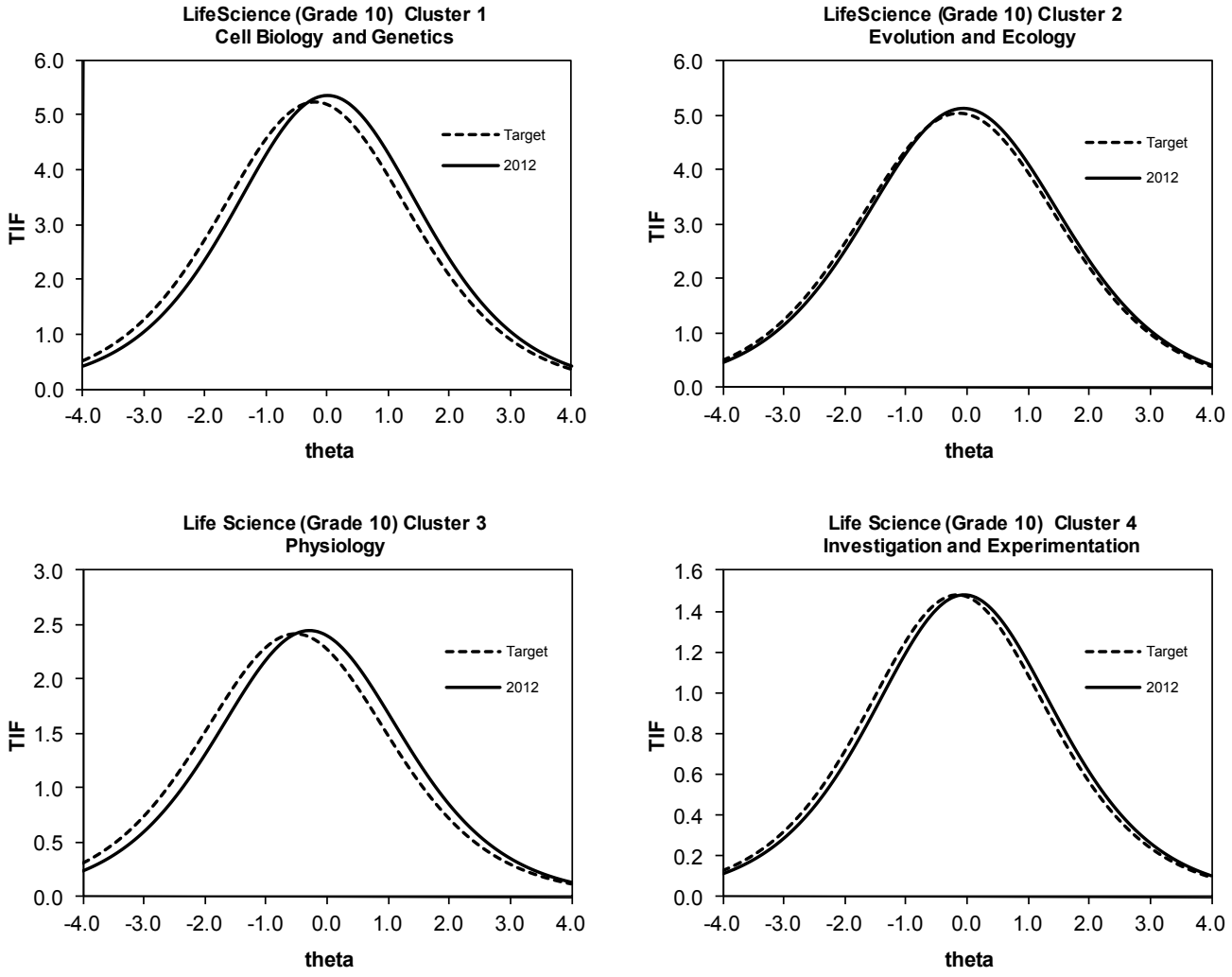


Figure 4.B.16 Plots of Target Information Functions and Projected Information for Clusters for Life Science, Grade Ten



Chapter 5: Test Administration

Test Security and Confidentiality

All tests within the STAR Program are secure documents. For the CMA administration, every person having access to testing materials maintains the security and confidentiality of the tests. ETS's Code of Ethics requires that all test information, including tangible materials (such as test booklets), confidential files, processes, and activities are kept secure. ETS has systems in place that maintain tight security for test questions and test results, as well as for student data. 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 section.

ETS's Office of Testing Integrity

The OTI is a division of ETS that provides quality assurance services for all testing programs administered by ETS and resides in the ETS legal department. The Office of Professional Standards Compliance of ETS publishes and maintains *ETS Standards for Quality and Fairness,* which supports the OTI's goals and activities. The purposes of the *ETS Standards for Quality and Fairness* are to help ETS design, develop, and deliver technically sound, fair, and useful products and services, and to 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
- Report on security activities

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

Test Development

During the test development process, ETS staff members consistently adhere to the following established security procedures:

- Only authorized individuals have access to test content at any step during the test development, item review, and data analysis processes.
- Test developers keep all hard-copy test content, computer disk copies, art, film, proofs, and plates in locked storage when not in use.
- ETS shreds working copies of secure content as soon as they are no longer needed during the test development process.
- Test developers take further security measures when test materials are to be shared outside of ETS; this is achieved by using registered and/or secure mail, using express delivery methods, and actively tracking records of dispatch and receipt of the materials.

Item and Data Review

ETS enforces security measures at ARP meetings to protect the integrity of meeting materials using the following guidelines:

- Individuals who participate in the ARPs must sign a confidentiality agreement.
- Meeting materials are strictly managed before, during, and after the review meetings.
- Meeting participants are supervised at all times during the meetings.
- Use of electronic devices is prohibited in the meeting rooms.

Item Banking

Once the ARP review is complete, the items are placed in the item bank. ETS then delivers the items to the CDE through the California electronic item bank. Subsequent updates to content and statistics associated with items are based on data collected from field testing and the operational use of the items. The latest version of the item is retained in the bank along with the data from every administration that has included the item.

Security of the electronic item banking system is of critical importance. The measures that ETS takes for assuring the security of electronic files include the following:

- Electronic forms of test content, documentation, and item banks are backed up electronically, with the backups kept off site, to prevent loss from a system breakdown or a natural disaster.
- The offsite backup files are kept in secure storage with access limited to authorized personnel only.
- To prevent unauthorized electronic access to the item bank, state-of-the-art network security measures are used.

ETS routinely maintains many secure electronic systems for both internal and external access. The current electronic item banking application includes a login/password system to provide authorized access to the database or designated portions of the database. In addition, only users authorized to access the specific SQL database are able to use the electronic item banking system. Designated administrators at the CDE and at ETS authorize users to access these electronic systems.

Transfer of Forms and Items to the CDE

ETS shares a secure file transfer protocol (SFTP) site with the CDE. SFTP is a method for reliable and exclusive routing of files. Files reside on a password-protected server that only authorized users may access. On that site, ETS posts Microsoft Word and Excel, Adobe Acrobat PDF, or other document files for the CDE to review. ETS sends a notification e-mail to the CDE to announce that files are posted. Item data are always transmitted in an encrypted format to the SFTP site; test data are never sent via e-mail. The SFTP server is used as a conduit for the transfer of files; secure test data are not stored permanently on the shared SFTP server.

Security of Electronic Items Using a Firewall

A firewall is software that prevents unauthorized entry to files, e-mail, and other organization-specific programs. ETS data exchange 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 included in the STAR Management System (CDE, 2012a) remain protected by the ETS firewall software at all times. Due to the sensitive nature of the student information processed by the STAR Management System, the firewall plays a significant role in maintaining an assurance of confidentiality in the users of this information. (It should

be noted that the STAR Management System neither stores nor processes tests or student test results.)

Printing and Publishing

After items and test forms are approved, the files are sent for printing on a CD using a secure courier system. According to the established procedures, the OTI preapproves all printing vendors before they can work on secured confidential and proprietary testing materials. The printing vendor must submit a completed ETS Printing Plan and a Typesetting Facility Security Plan; both plans document security procedures, access to testing materials, a log of work in progress, personnel procedures, and access to the facilities by the employees and visitors. After reviewing the completed plans, representatives of the OTI visit the printing vendor to conduct an onsite inspection. The printing vendor ships printed test booklets to Pearson and other authorized locations. Pearson distributes the booklets to school districts in securely packaged boxes.

Test Administration

Pearson receives testing materials from printers, packages them, and sends them to school districts. After testing, the school districts return materials to Pearson for scoring. During these events, Pearson takes extraordinary measures to protect the testing materials. Pearson's customized Oracle business applications verify that inventory controls are in place, from materials receipt to packaging. The reputable carriers used by Pearson provide a specialized handling and delivery service that maintains test security and meets the STAR program schedule. The carriers provide inside delivery directly to the district STAR coordinators or authorized recipients of the assessment materials.

Test Delivery

Test security requires accounting for all secure materials before, during, and after each test administration. The district STAR coordinators are, therefore, required to keep all testing materials in central locked storage except during actual test administration times. Test site coordinators are responsible for accounting for and returning all secure materials to the district STAR coordinator, who is responsible for returning them to the STAR Scoring and Processing Center. The following measures are in place to ensure security of STAR testing materials:

- District STAR coordinators are required to sign and submit a "STAR Test (Including Field Tests) Security Agreement for District and Test Site Coordinators" form to the STAR Technical Assistance Center before ETS can ship any testing materials to the school district.
- Test site coordinators have to sign and submit a "STAR Test (Including Field Tests) Security Agreement for District and Test Site Coordinators" form to the district STAR coordinator before any testing materials can be delivered to the school/test site.
- Anyone having access to the testing materials must sign and submit a "STAR Test (Including Field Tests) Security Affidavit for Test Examiners, Proctors, Scribes, and Any Other Person Having Access to STAR Tests" form to the test site coordinator before receiving access to any testing materials.
- It is the responsibility of each person participating in the STAR Program to report immediately any violation or suspected violation of test security or confidentiality. The test site coordinator is responsible for immediately reporting any security violation to the district STAR coordinator. The district STAR coordinator must contact the CDE

immediately; the coordinator will be asked to follow up with a written explanation of the violation or suspected violation.

Processing and Scoring

An environment that promotes the security of the test prompts, student responses, data, and employees throughout a project is of utmost concern to Pearson. Pearson requires the following standard safeguards for security at its sites:

- There is controlled access to the facility.
- No test materials may leave the facility during the project without the permission of a person or persons designated by the CDE.
- All scoring personnel must sign a nondisclosure and confidentiality form in which they agree not to use or divulge any information concerning tests, scoring guides, or individual student responses.
- All staff must wear Pearson identification badges at all times in Pearson facilities.

No recording or photographic equipment is allowed in the scoring area without the consent of the CDE.

The completed and scored answer documents are stored in secure warehouses. After they are stored, they will not be handled again unless questions arise about a student's score. For example, a school district or a parent may request that a student's test responses be rescored. In such a case, the answer document is removed from storage, copied, and sent securely to the ETS facility in Sacramento, California, for hand scoring, after which the copy is destroyed. School and district personnel are not allowed to look at a completed answer document unless required for transcription, or to investigate irregular cases.

All answer documents, test booklets, and other secure testing materials are destroyed after October 31 each year.

Data Management

Pearson provides overall security for assessment materials through its limited-access facilities and through its secure data processing capabilities. Pearson enforces stringent procedures to prevent unauthorized attempts to access its facilities. Entrances are monitored by security personnel and a computerized badge-reading system is utilized. Upon entering a facility, all Pearson employees are required to display identification badges that must be worn at all times while in the facility. Visitors must sign in and out. While they are at the facility, they are assigned a visitor badge and escorted by Pearson personnel. Access to the Data Center is further controlled by the computerized badge-reading system that allows entrance only to those employees who possess the proper authorization.

Data, electronic files, test files, programs (source and object), and all associated tables and parameters are maintained in secure network libraries for all systems developed and maintained in a client-server environment. Only authorized software development employees are given access as needed for development, testing, and implementation in a strictly controlled Configuration Management environment.

For mainframe processes, Pearson utilizes Random Access Control Facility (RACF) to limit and control access to all data files (test and production), source code, object code, databases, and tables. RACF controls who is authorized to alter, update, or even read the files. All attempts to access files on the mainframe by unauthorized users are logged and monitored. In addition, Pearson uses ChangeMan, a mainframe configuration management

tool, to control versions of the software and data files. ChangeMan provides another level of security, combined with RACF, to place the correct tested version of code into production. Unapproved changes are not implemented without prior review and approval.

Transfer of Scores via Secure Data Exchange

After scoring is completed, Pearson sends scored data files to ETS and follows secure data exchange procedures. ETS and Pearson have implemented procedures and systems to provide efficient coordination of secure data exchange. This includes the established SFTP site that is used for secure data transfers between ETS and Pearson. These well-established procedures provide timely, efficient, and secure transfer of data. Access to the STAR data files is limited to appropriate personnel with direct project responsibilities.

Statistical Analysis

The Information Technology (IT) area at ETS retrieves the Pearson data files from the SFTP site and loads them into a database. The Data Quality Services (DQS) area at ETS extracts the data from the database and performs quality control procedures before passing files to the ETS Statistical Analysis group. The Statistical Analysis group keeps the files on secure servers and adheres to the ETS Code of Ethics and the ETS Information Protection Policies to prevent any unauthorized access.

Reporting and Posting Results

After statistical analysis has been completed on student data, the following deliverables are produced:

- Paper reports, some with individual student results and others with summary results
- Encrypted files of summary results (sent to the CDE by means of SFTP) (Any summary results that have fewer than 11 students are not reported.)
- Item-level statistics based on the results which are entered into the item bank

Student Confidentiality

To meet ESEA and state requirements, school districts must collect demographic data about students. This includes information about students' ethnicity, parent education, disabilities, whether the student qualifies for the National School Lunch Program (NSLP), and so forth (CDE, 2012b). In addition, students may reveal other information about themselves through the essays they write. ETS takes precautions to prevent any of this information from becoming public or being used for anything other than testing purposes. These procedures are applied to all documents in which these student demographic data may appear, including the following:

- Pre-ID files
- Reports
- Essays

Student Test Results

ETS also has security measures for files and reports that show students' scores and performance levels. ETS is committed to safeguarding the information in its possession from unauthorized access, disclosure, modification, or destruction. ETS has strict information security policies in place to protect the confidentiality of ETS 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 to unauthorized access or denial of service. Routers, switches, firewalls, and gateways may possess little in the way of logical access.

ETS has many facilities and procedures that protect computer files. Facilities, policies, 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 its data to either disk through deduplication or to tape, both 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 can only be unlocked by the badges of personnel who have functional responsibilities within its secure perimeter. Authorized personnel accompany visitors to the Data Center at all times. Extensive smoke detection and alarm systems, as well as a pre-action fire-control system, are installed in the Center.

ETS protects individual student's 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's property and resources. Specific rules are also given to ETS employees and their immediate families who may take a test developed by ETS, such as a STAR examination. The ETS Office of Testing Integrity verifies that these standards are followed throughout ETS. It does this, in part, by conducting periodic onsite security audits of departments, with followup reports containing recommendations for improvement.

Procedures to Maintain Standardization

The CMA processes are designed so that the tests are administered and scored in a standardized manner. ETS takes all necessary measures to ensure the standardization of CMA tests, as described in this section.

Test Administrators

The CMA is administered in conjunction with the other tests that comprise the STAR Program. ETS employs personnel who facilitate various processes involved in the standardization of an administration cycle.

The responsibilities for district and test site staff members are included in the *STAR District and Test Site Coordinator Manua*l (CDE, 2012c). This manual is described in the next section.

The staff members centrally involved in the test administration are as follows:

District STAR Coordinator

Each local education agency (LEA) designates a district STAR coordinator who is responsible for ensuring the proper and consistent administration of the STAR tests. LEAs include public school districts, statewide benefit charter schools, state board-authorized charter schools, county office of education programs, and charter schools testing independently from their home district.

District STAR coordinators are also responsible for securing testing materials upon receipt, distributing testing materials to schools, tracking the materials, training and answering questions from district staff and test site coordinators, reporting any testing irregularities or security breaches to the CDE, receiving scorable and nonscorable materials from schools after an administration, and returning the materials to the STAR contractor for processing.

Test Site Coordinator

At each test site, the superintendent of the school district or the district STAR coordinator designates a STAR test site coordinator from among the employees of the school district. (*5 CCR* Section 858 [a])

Test site coordinators are responsible for making sure that the school has the proper testing materials, distributing testing materials within a school, securing materials before, during, and after the administration period, answering questions from test examiners, preparing and packaging materials to be returned to the school district after testing, and returning the materials to the school district. (CDE, 2012c)

Test Examiner

The CMA is administered by test examiners who may be assisted by test proctors and scribes. A test examiner is an employee of a school district or an employee of a nonpublic, nonsectarian school (NPS) who has been trained to administer the tests and has signed a STAR Test Security Affidavit. Test examiners must follow the directions in the *California Modified Assessment Directions for Administration* (*DFA*) (CDE, 2012d) exactly.

Test Proctor

A test proctor is an employee of the school district or a person, assigned by an NPS to implement the IEP of a student, who has received training designed to prepare the proctor to assist the test examiner in the administration of tests within the STAR Program (*5 CCR* Section 850 [r]). Test proctors must sign STAR Test Security Affidavits (*5 CCR* Section 859 [c]).

Scribe

A scribe is an employee of the school district or a person, assigned by an NPS to implement the IEP of a student, who is required to transcribe a student's responses to the format required by the test. A student's parent or guardian is not eligible to serve as a scribe (*5 CCR* Section 850 [m]). Scribes must sign STAR Test Security Affidavits (*5 CCR* Section 859 [c]).

Directions for Administration

CMA *DFAs* are manuals used by test examiners to administer the CMA to students (CDE, 2012d). Test examiners must follow all directions and guidelines and read, word-for-word, the instructions to students in "SAY" boxes to ensure test standardization.

District and Test Site Coordinator Manual

Test administration procedures are to be followed exactly so that all students have an equal opportunity to demonstrate their academic achievement. The *STAR District and Test Site Coordinator Manual* contributes to this goal by providing information about the

responsibilities of district and test site coordinators, as well as those of the other staff involved in the administration cycle (CDE, 2012c). However, the manual is not intended as a substitute for the *CCR*, *Title 5,* Education (*5 CCR*) or to detail all of the coordinator's responsibilities.

STAR Management System Manuals

The STAR Management System is a series of secure, Web-based modules that allow district STAR coordinators to set up test administrations, order materials, and submit and correct student Pre-ID data. Every module has its own user manual with detailed instructions on how to use the STAR Management System. The modules of the STAR Management System are as follows:

- **Test Administration Setup—**This module allows school districts to determine and calculate dates for scheduling test administrations for school districts, to verify contact information for those school districts, and to update the school district's shipping information. (CDE, 2012e)
- **Order Management—**This module allows school districts to enter quantities of testing materials for schools. Its manual includes guidelines for determining which materials to order. (CDE, 2012f)
- **Pre-ID—**This module allows school districts to enter or upload student information including demographics and to identify the test(s) the student will take. This information is printed on student test booklets or answer documents or on labels that can be affixed to test booklets or answer documents. Its manual includes the CDE's Pre-ID layout. (CDE, 2012b)
- **Extended Pre-ID Data Corrections—**This module allows school districts to correct the data that were submitted during Pre-ID prior to the last day of the school district's selected testing window. (CDE, 2012b)

Test Booklets

For each grade-level and end-of-course test, multiple versions of test booklets are administered. The versions differ only in terms of the field-test items they contain. In grades three through eleven, these versions are spiraled—comingled—and packaged consecutively and are distributed at the student level; that is, each classroom or group of test-takers receives at least one of each version of the test.

The test booklets, along with answer documents and other supporting materials, are packaged by school or group, depending on how the district STAR coordinator ordered the materials. All materials are sent to the district STAR coordinator for proper distribution within the LEA. Special formats of test booklets are also available for test-takers who require accommodations to participate in testing. These special formats include large-print and braille testing materials.

Test Variations and Accommodations

All public school students participate in the STAR Program, including students with disabilities and English learners. ETS policy states that reasonable testing accommodations be provided to candidates with documented disabilities that are identified in the Americans with Disabilities Act (ADA). The ADA mandates that test accommodations be individualized, meaning that no single type of test accommodation may be adequate or appropriate for all individuals with any given type of disability. ADA authorizes that test-takers with disabilities may be tested under standard conditions if ETS determines that only minor adjustments to

the testing environment are required (e.g., wheelchair access, large-print test book, a sign language interpreter for spoken directions).

Identification

Most students with disabilities and most English learners take the CMA under standard conditions. However, some students with disabilities and some English learners may need assistance when taking the CMA. This assistance takes the form of test variations or accommodations (see Appendix 2.D on page 27 in Chapter 2 for details). During the test, these students may use the special services specified in their IEP or Section 504 plan. If students use accommodations for the CMA, test examiners are responsible for marking the accommodation(s) used on the students' test booklets, answer documents, or Writing Response Booklets. Because the CMA was developed with modifications built into the test, modifications are not allowed. Students who require additional modifications take the content-area CST with modifications.

In the event that a student injures a hand or arm prior to the writing test, is willing and able to sit for the examination, but unable to write, the school completes a Section 504 plan for the student. The Section 504 plan identifies which accommodations the student will use in completion of his or her writing test (CDE, 2012c).

Scoring

The purpose of test variations and accommodations is to enable students to take the CMA, not to give them an advantage over other students or to inflate their scores artificially. Test administration variations and accommodations do not result in changes to students' scores for API or AYP calculations. The addition of CMA results into the API does not change the API test weights; the same test weights and calculation rules used for the CSTs also apply to the CMA.

Demographic Data Corrections

After reviewing student data, some school districts may discover demographic data that are incorrect. The Demographic Data Corrections module of the STAR Management System gives school districts the means to correct these data within a specified availability window. Districts may correct data to: (1) Have the school district's API/AYP recalculated; (2) Rescore uncoded or miscoded CMA end-of-course mathematics tests; (3) Obtain a corrected data CD-ROM for school district records; or (4) Match unmatched records for grades four and seven writing and multiple-choice tests. (CDE, 2012g)

Testing Irregularities

Testing irregularities are circumstances that may compromise the reliability and validity of test results and, if more than five percent of the students tested are involved, could affect a school's API and AYP.

The district STAR coordinator is responsible for immediately notifying the CDE of any irregularities that occur before, during, or after testing. The test examiner is responsible for immediately notifying the district STAR coordinator of any security breaches or testing irregularities that occur in the administration of the test. Once the district STAR coordinator and the CDE have determined that an irregularity has occurred, the CDE instructs the district STAR coordinator on how and where to identify the irregularity on the student test booklet or answer document. The information and procedures to assist in identifying irregularities and notifying the CDE are provided in the *STAR District and Test Site Coordinator Manual* (CDE, 2012c).

Test Administration Incidents

A test administration incident is any event that occurs before, during, or after test administrations that does not conform to the instructions stated in the *DFAs* (CDE, 2012d) and the *STAR District and Test Site Coordinator Manual* (CDE, 2012c). These events include test administration errors, disruptions, and student cheating. Test administration incidents generally do not affect test results. These administration incidents are not reported to the CDE or the STAR Program testing contractor. The STAR test site coordinator should immediately notify the district STAR coordinator of any test administration incidents that occur. It is recommended by the CDE that districts and schools maintain records of these incidents.

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Chapter 6: Performance Standards

Background

The CMA was introduced in stages, starting with the lower grades in 2008. Performance standards for each new test were developed after the introductory year for operational use in subsequent administrations. The CMA for ELA and mathematics in grades three through five and science in grade five became part of the STAR Program in spring 2008. For each test, the performance standards were developed in September and October 2008 and adopted by the SBE for the 2009 operational administration of those tests.

In spring 2009, the CMA for ELA in grades six through eight, mathematics in grades six and seven, and science in grade eight were introduced. The performance standards for those tests were developed in August 2009 and adopted by the SBE for the 2010 operational administration of those CMA.

The CMA for high school phase 1 (ELA in grade nine, Life Science in grade ten, and EOC Algebra I) were introduced in spring 2010. The performance standards for those tests were developed in August 2010 and adopted by the SBE for use starting in the 2011 operational administration.

Finally, the CMA for high school phase 2 (ELA in grades ten and eleven and EOC Geometry) were introduced in spring 2011. The performance standards for these tests were established in fall 2011 and adopted by the SBE for use starting in the 2012 operational administration.

The performance standards for the CMA were defined by the SBE as far below basic, below basic, basic, proficient, and advanced. Performance standards are developed from a general description of the performance level (policy-level descriptors) and competencies lists, which operationally define each level. Cut scores numerically define the performance levels.

The state target is to have all students achieve the proficient or advanced level by 2014. Schools and districts are expected to provide additional assistance to students scoring at or below the basic level.

California employed carefully designed standard-setting procedures to facilitate the development of performance standards for each CMA. The standard-setting method used for the CMA is the Bookmark method. These processes are described in the sections that follow.

Standard Setting Procedure

The process of standard setting is designed to identify a “cut score” or minimum test score that is required to qualify a student for each performance level. The process generally requires that a panel of subject-matter experts and others with relevant perspectives (for example, teachers, school administrators) be assembled. The panelists for the CMA standard setting were selected based on the following characteristics:

- Familiarity with the subject matter assessed
- Familiarity with students in the respective grade levels
- Experience with English learners

- Experience in special education and general education classrooms as well as integrated classrooms
- Familiarity with the California content standards
- An understanding of the CMA
- An appreciation of the consequences of setting these cut scores

Panelists were recruited from diverse geographic regions and from different gender and major racial/ethnic subgroups to be representative of the educators of the state's CMA-eligible students (ETS, 2009a, 2009b, 2010, 2011).

For each test, three cut scores were developed in order to differentiate four of the five performance levels: below basic, basic, proficient, and advanced. Far below basic was defined as chance-level performance.

The standard-setting processes implemented for the CMA required panelists to follow these steps, which include training and practice prior to making judgments:

1. Prior to attending the workshop, all panelists received a pre-workshop assignment. The task was to review, on their own, the content standards upon which the test items are based and take notes on their own expectations in the content area. This allowed the panelists to understand how their perceptions may relate to the complexity of the content standards.
2. At the start of the workshop, panelists received training, which included the purpose of standard setting and their role in the work, the meaning of a "cut score" and "impact data," and specific training and practice in the Bookmark method. Impact data included the percentage of examinees assessed in a previous administration of the test that would fall into each level, given the panelists' judgments of cut scores.
3. Panelists became familiar with the difficulty level of the items by taking the actual test and then assessing and discussing the demands of the test items.
4. Panelists reviewed the draft list of competencies as a group, noting the increasing demands of each subsequent level. In this step, they began to visualize the knowledge and skills of students in each performance level.
5. Panelists identified characteristics of a "borderline" test-taker or "target student." This student is defined as one who possesses just enough knowledge of the content to move over the border separating a performance level from the performance level below it.
6. After training in the method was complete and confirmed through an evaluation questionnaire, panelists made individual judgments. Working in small groups, they discussed feedback related to other panelists' judgments and feedback based on student performance data (impact data). Panelists could revise their judgments during the process if they wished.
7. The final recommended cut scores were based on the median of panelists' judgment scores at the end of three rounds (in the Bookmark method, the panel recommendation is calculated by taking the median of the small group [table] medians). For the CMA, the cut scores recommended by the panelists and the recommendation of the State Superintendent of Public Instruction were presented for public comment at regional public hearings. Comments and recommendations were then presented to the SBE for adoption.

Development of Competencies Lists

Prior to the CMA standard-setting workshop, ETS facilitated a meeting in which a subset of the standard-setting panelists was assembled to develop lists of competencies based on the California content standards and policy-level descriptors. For each content area, one panel of educators was assembled for each grade to identify and discuss the competencies required of students taking the CMA for each performance level (below basic, basic, proficient, and advanced). The lists were used to facilitate the discussion and construction of the target student definitions during the standard-setting workshop.

Standard Setting Methodology

Bookmark Method

The Bookmark method for setting cut scores was introduced in 1999 and has been used widely across the United States (Lewis, et al., 1999; Mitzel, et al., 2001). In California, the Bookmark method has been used in standard settings for most of the STAR tests.

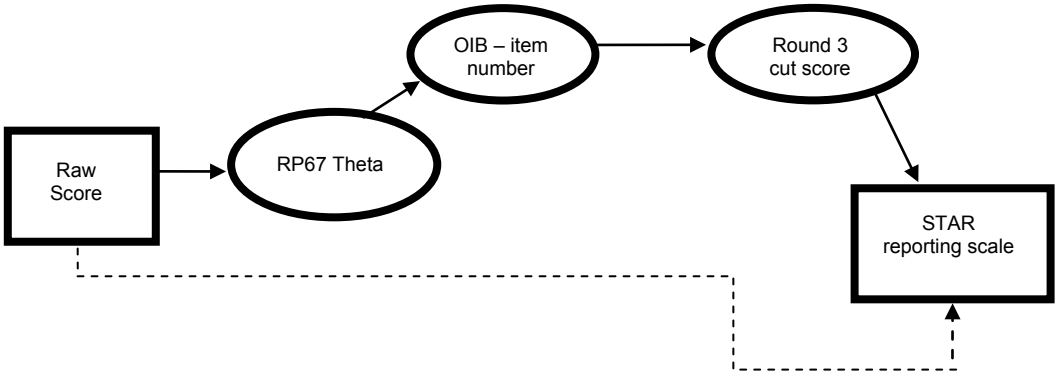
The Bookmark method is an item-mapping procedure in which panelists consider content covered by items in a specially constructed book where items are ordered from easiest to hardest, based on operational student performance data from a previous test administration. The “item map,” which accompanies the ordered item booklet (OIB), includes information on the content measured by each operational test question, information about each question’s difficulty, the correct answer for each question, and where each question was located in the test booklet before the questions were reordered by difficulty.

Panelists are asked to place a bookmark in the OIB to demarcate each performance level. The bookmarks are placed with the assumption that the borderline students will perform successfully at a given performance level with a probability of at least 0.67. Conversely, these students are expected to perform successfully on the items after the bookmark with a probability of less than 0.67 (Huynh, 1998).

In this method, the panelists’ cut-score recommendations are presented in the metric of the OIB and are derived by obtaining the median of the corresponding bookmarks placed for each performance level across panelists.

Each item location corresponds to a value of theta, based on a response probability of 0.67 (RP67 Theta), which maps back to a raw score on this test form. Figure 6.1 below may best illustrate the relationship among the various metrics used when the Bookmark method is applied. The solid lines represent steps in the standard-setting process described above; the dotted line represents the scaling described in the next section.

Figure 6.1 Bookmark Standard-setting Process for the CMA



Results

The cut scores obtained as a result of the standard-setting process are on the IRT scale; each recommended cut score is associated with a theta value in the OIB. This RP67 Theta has a corresponding number-correct or raw score for the test form upon which standards were set; the scores are then translated to a score scale that ranges between 150 and 600. The cut score for the basic performance level is 300 for every grade and content area; this means that a student must earn a score of 300 or higher to achieve a basic classification. The cut score for the proficient performance level is 350 for every grade and content area; this means that a student must earn a score of 350 or higher to achieve a proficient classification.

The cut scores for the other performance levels are derived using procedures based on IRT and usually vary by grade and content area. Each raw cut score for a given test is mapped to an IRT *theta* (θ) using the test characteristic function or curve and then transformed to the scale-score metric using the following equation:

$$\text{Scale Cut Score} = (350 - \theta_{proficient} \times \left(\frac{350 - 300}{\theta_{proficient} - \theta_{basic}}\right)) + \left(\frac{350 - 300}{\theta_{proficient} - \theta_{basic}}\right) \times \theta \qquad (6.1)$$

where,

θ represents the student ability,

$\theta_{proficient}$ represents the theta corresponding to the cut score for proficient, and

θ_{basic} represents the theta corresponding to the cut score for basic.

Please note that an IRT test characteristic function or curve is the sum of item characteristic curves (ICC), where an ICC represents the probability of correctly responding to an item conditioned on examinee ability.

The scale-score ranges for each performance level are presented in Table 2.1 on page 18. The cut score for each performance 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 levels are adopted.

Table 7.2 on page 128 in Chapter 7 presents the percentages of examinees meeting each performance level in 2012.

References

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Mitzel, H. C., Lewis, D. M., Patz, R. J., & Green, D. R. (2001). The bookmark procedure: Psychological perspectives. In G. J. Cizek (Ed.), *Setting performance standards: Concepts, methods, and perspectives* (pp. 249–81). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Chapter 7: Scoring and Reporting

ETS conforms to high standards of quality and fairness (ETS, 2002) when scoring tests and reporting scores. These standards dictate that ETS provides accurate and understandable assessment results to the intended recipients. It is also ETS's mission to provide appropriate guidelines for score interpretation and cautions about the limitations in the meaning and use of the test scores. Finally ETS conducts analyses needed to ensure that the assessments are equitable for various groups of test-takers.

Procedures for Maintaining and Retrieving Individual Scores

Items for all the CMA, except for the writing task in grades four and seven, are multiple choice. Students are presented with a question and asked to select the correct answer from among three possible choices. In grade three, students mark their answer choices in the test booklet. In the other grades, students mark their answer choices in an answer document. All multiple-choice questions are machine scored. Responses to the writing task are scored by trained raters.

In order to score and report CMA results, ETS follows an established set of written procedures. The specifications for these procedures are presented in the next sections.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications so that test materials are processed and scored accurately. These documents include the following:

- General Reporting Specifications—Provides the calculation rules for the information presented on STAR summary reports and defines the appropriate codes to use when a student does not take or complete a test or when a score will not be reported
- Score Key and Score Conversion—Defines file formats and information that is provided for scoring and the process of converting raw scores to scale scores
- Form Planner Specifications—Describes, in detail, the contents of files that contain keys required for scoring
- Aggregation Rules—Describes how and when a school's results are aggregated at the school, district, county, and state levels
- "What If" List—Provides a variety of anomalous scenarios that may occur when test materials are returned by school districts to Pearson and defines the action(s) to be taken in response
- Edit Specifications—Describes edits, defaults, and solutions to errors encountered while data are being captured as answer documents are processed
- Reporting Cluster Names and Item Numbers—Identifies the reporting clusters for each test and the number of items in each cluster
- CST and CMA Matching Criteria—Describes the criteria necessary to ensure that, for students who take both CST and CMA tests, all results are combined into a single student data record by matching specific demographic fields on test booklets and answer documents
- Matching Criteria for Multiple-choice and Writing Answer Documents—Describes the method used to match students' writing and multiple-choice responses

The scoring specifications are reviewed and revised by the CDE, ETS, and Pearson each year. After a version agreeable to all parties is finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Scanning and Scoring

Answer documents are scanned and scored by Pearson in accordance with the scoring specifications that have been approved by the CDE. Answer documents are designed to produce a single complete record for each student. This record includes demographic data and scanned responses for each student; once computed, the scored responses and the total test scores for a student are also merged into the same record. All scores must comply with the ETS scoring specifications. Pearson has quality control checks in place to ensure the quality and accuracy of scanning and the transfer of scores into the database of student records.

Each school district must return scorable and nonscorable materials within five working days after the selected last day of testing for each test administration period. For the CMA for Writing test materials, school districts return the writing booklets within two working days after the test administration's makeup day.

Types of Scores and Subscores

Raw Score

For all of the tests except for ELA in grades four and seven, the total test raw score equals the number of multiple-choice test items answered correctly. In grades four and seven, the ELA total test raw score equals the sum of examinees' scores on the multiple-choice items and the writing task.

Subscore

The items in each CMA are aggregated into groups of related content standards to form reporting clusters. A subscore is a measure of an examinee's performance on the items in each reporting cluster. These results are reported both as raw scores and percent of items answered correctly. A description of the CMA reporting clusters is provided in Appendix 2.B of Chapter 2, starting on page 21.

Scale Score

Raw scores obtained on each CMA are transformed to three-digit scale scores using the equating process described in Chapter 2 on page 15. Scale scores range from 150 to 600 on each CMA. The scale scores of examinees that have been tested in different years at a given grade level and content area can be compared. However, the raw scores of these examinees cannot be meaningfully compared, because these scores are affected by the relative difficulty of the test taken as well as the ability of the examinee.

Performance Levels

The performance of each student on each CMA is categorized into one of the following performance levels:

- far below basic
- below basic
- basic
- proficient
- advanced

For all CMA, the cut score for the basic performance level is 300 for every grade and content area; this means that a student must earn a score of 300 or higher to achieve a basic classification. The cut score for the proficient performance level is 350 for every grade and content area; this means that a student must earn a score of 350 or higher to achieve a proficient classification. The cut scores for the other performance levels usually vary by grade and content area.

Writing Score

Examinees' essay responses to the writing task associated with the grades four and seven CMA for ELA are rated on a 0–4 scale by a single reader. A score of zero indicates that the student attempted the writing task but either did not provide a response, refused to provide a response, or responded to a writing task from an earlier administration. The rubrics used to assign the nonzero scores to the writing tasks for grades four and seven are presented in Appendix 7.A, which starts on page 135.

It is important to note that the writing score, considered in isolation, does not correspond directly to one of the five performance levels used to show overall student performance on the CMA for ELA tests. For example, a writing score of 4 is not related to the advanced performance level, nor does a writing score of 3 relate to the proficient performance level. Students' ELA performance levels are decided in light of their performance on all of the items in the ELA grades four and seven tests; this total may include the writing component.

It should be noted that parents/guardians may choose not to let their child attempt the writing task in grades four or seven. In these cases, the student's ELA score is based on the multiple-choice portion of the test only. Summary results provided in this technical report for the grades four and seven CMA for ELA are based on all students with valid scores, including those who completed the MC portion only as well as those who completed both the MC portion and the essay.

Score Verification Procedures

Various necessary measures are taken to ascertain that the scoring keys are applied to the student responses as intended and that the student scores are computed accurately.

Scoring Key Verification Process

Scoring keys, provided in the form planners, are produced by ETS and verified by performing multiple quality-control checks. The form planners contain the information about an assembled test form including scoring keys, test name, administration year, subscore identification, and the standards and statistics associated with each item. The quality control checks that are performed before keys are finalized are listed below:

1. Keys in the form planners are checked against their matching test booklets to ensure that the correct keys are listed.
2. The form planners are checked for accuracy against the Form Planner Specification document and the Score Key and Score Conversion document before the keys are loaded into the score key management system (SKM) at ETS.
3. The printed lists of the scoring keys are checked again once the keys have been loaded into the SKM system.
4. The sequences of linking items in the form planners are matched with their sequence in the actual test booklets. Linking items are used to equate the scores on the current year's test form to scores obtained on the previous years' test forms so as to adjust for

any differences in the difficulty level of the forms across years. This is accomplished during the equating process, as discussed in Chapter 2 on page 15.

5. The demarcations of various sections in the actual test booklets are checked against the list of demarcations provided by ETS test development staff.
6. Scoring is verified internally at Pearson. ETS independently generates scores and verifies Pearson's scoring of the data by comparing the two results. Any discrepancies are then resolved.
7. The entire scoring system is tested using a test deck that includes typical and extremely atypical response vectors.
8. Classical item analyses are computed on an early sample of data to provide an additional check of the keys. Although rare, if an item is found to be problematic, a followup process is carried out for it to be excluded from further analyses.

Monitoring and Quality Control of Writing Scoring

Students who take the CMA for ELA in grades four and seven respond to one of two writing tasks each year. One task is administered to the majority of test-takers; the other is administered to students in schools, tracks, or programs not in session during the first administration.

Students' responses to the writing task are each read by a single reader; the writing score is based on that reader's rating. In addition, 10 percent of students' responses are also read by a second reader to provide data that can be used to assess the accuracy and reliability of the writing scores. The score from the second reader does not count toward the student's writing test score.

The next sections detail the process employed by Pearson to score the writing tasks.

Scoring System

All student responses are scanned into the Electronic Performance Evaluation Network (ePEN™) system. Scorers view assigned responses on a computer at one of Pearson's regional scoring centers. The screen does *not* display the student's name or background information; the scorer sees only the student response.

Scorer Training

Individuals who are selected to serve as scorers must be college graduates who possess at least a Bachelor of Arts degree. Each prospective scorer is required to participate in extensive computer-based training and is provided with the following kinds of information:

- General information about the ePEN™ system
- Background information about the STAR Program
- Information about the STAR writing tasks
- Explanations of STAR scoring rubrics and scoring principles
- Sets of prescored annotated training papers
  - The training papers include anchor and practice papers.
  - Anchor papers provide samples of student writing that represent each of the four points in the scoring rubric. The samples of student responses are identified at the rangefinding sessions. During these sessions, the content experts at Pearson select sample responses that represent each of the four score points and illustrate the different ways of responding to the topic.

- Practice papers include samples of student writing that demonstrate the “high” and “low” end of each score point.

Scorer Qualification

Once the training is complete, the potential scorers complete the Qualification Sets (three sets of scored papers consisting of ten papers per set) before being eligible to score. On at least two of the three sets, scorers must demonstrate exact agreement or adjacent agreement with the scores assigned to seventy percent of the papers on each of these sets.

Scorers continue to qualify throughout the scoring process. Before each operational scoring session, each scorer scores a Calibration Set of three to four papers. The scores on these sets have been previously agreed upon by scoring directors, in conjunction with other personnel. The sets are given to scorers to ensure that the accuracy of their scoring does not drift. These sets are used to calibrate the scorers. The scorers that cannot be calibrated during this process do not qualify for operational scoring.

Scoring Supervisors and Directors

Scoring supervisors monitor and mentor scorers during operational scoring. If a writing response is difficult to score, the scorers elevate the response to the scoring supervisor to be scored. In these cases, the scoring supervisor’s score is the final writing score.

Scorers with a history of achieving the highest accuracy on the Qualification Sets and the highest level of scoring consistency and validity statistics during operational scoring are selected as scoring supervisors. Approximately ten scorers are assigned to one scoring supervisor; this ratio allows scoring supervisors to work closely with each scorer. The ePEN™ system also allows scoring supervisors to continuously monitor each response scored and the score point assigned to ensure accuracy. All scoring supervisors participate in a two-day training session that provides the same training that is used to qualify scorers. If a scoring supervisor does not achieve the accuracy required on the Qualification Sets, that individual is not allowed to be a supervisor. In addition, all supervisors receive extensive training on how the ePEN™ system works, how to best manage scorers, and how to maintain accuracy as scoring continues.

Scoring directors are responsible for overseeing the scoring and for providing leadership for the scoring supervisors. They also help to manage the scorers and they are ultimately responsible for maintaining the highest accuracy possible during STAR scoring. Scoring directors represent the best of the scoring supervisors. They typically have two to three years of experience as scoring supervisors and strong leadership qualities, as well as a thorough understanding of STAR scoring.

Accuracy Monitoring

The accuracy of all scoring is regularly monitored using several procedures: First, scoring supervisors and scoring directors constantly monitor the degree to which readers are consistent in scores that they assign. This is done using data provided by the second readers employed to score 10 percent of all student responses a second time. The consistency is measured in terms of the percentage of instances in which the first and second readers’ scores are identical, adjacent, and nonadjacent; this is a commonly used measure of interrater reliability. If a scorer’s rate of agreement begins to decline, the scorer is retrained by a scoring supervisor or scoring director and closely monitored thereafter. If the scorer’s performance does not improve, the scorer is released.

Second, the consistency between readers’ scores and those of scoring directors or supervisors is evaluated using student responses that are known as validity papers,

because they have been previously scored by scoring directors or supervisors. Validity papers are ones with known psychometric properties that are intended to exemplify certain aspects of student responses and the scores that should be assigned. One in every 40 papers read by each scorer is a validity paper. The consistency of the scorer's ratings with the scores on the validity papers is checked throughout the day to ensure that each scorer has applied the scoring rubrics accurately. The validity papers are introduced throughout the scoring process. If a scorer's performance on the validity papers falls below required levels, the scorer is retrained by a scoring supervisor or scoring director. If a scorer's ratings continue to show poor validity, the scorer is excused.

Third, scoring supervisors "back-read" a certain percentage of the student responses that have been scored by each scorer. The scorer's and supervisor's scores are then compared to check the scorer's reliability and to ensure that the scorer is maintaining scoring standards. In addition, ePEN™ allows scoring directors to view the back-reading completed by scoring supervisors to ensure that scoring supervisors are maintaining accuracy. Scoring directors also back-read to assess scorers' work.

Fourth, to minimize score drift, scorers are required to score a Calibration Set before each scoring session. If a scorer is deficient on any of the accuracy indices, that scorer is immediately retrained or released from the scoring process.

Score Verification Process

ETS psychometricians employ special procedures that adjust for differences in item difficulty of one test form to another. (See Chapter 2, Equating, on page 15 for details.) As a result of this process, scoring tables are produced. Such tables map the current year's raw score to an appropriate scale score. A series of quality control (QC) checks are carried out by ETS psychometricians to ensure the accuracy of each scoring table, as discussed in Chapter 9 on page 334.

Pearson utilizes the scoring tables to generate scale scores for each student. ETS verifies Pearson's scale scores by conducting QC and reasonableness checks, which are described in Chapter 9 on page 334.

Overview of Score Aggregation Procedures

In order to provide meaningful results to the stakeholders, CMA scores for a given grade and content area are aggregated at the school, independently testing charter school, district, county, and state levels. The aggregated scores are generated both for individual scores and group scores. The next section contains a description of types of aggregation performed on CMA scores.

Individual Scores

The tables in this section provide state-level summary statistics describing student performance on each CMA.

Score Distributions and Summary Statistics

Summary statistics that describe student performance on each CMA are presented in Table 7.1 on the next page. Included in the table are the number of items in each test, the number of examinees taking each test, and the means and standard deviations of student scores expressed in terms of both raw scores and scale scores. The last two columns in the table list the raw score means and standard deviations as percentages of the total raw score points in each test.

The last content-area section in the table presents information on the grade-specific end-of-course testing groups. The statistics for grade-specific end-of-course testing groups are based on the population of test-takers in a particular grade for which the course is recommended. While the assessments are presented to students at a variety of grade levels, the majority of test-takers belong to that specific grade.

Table 7.1 Mean and Standard Deviation of Raw and Scale Scores for the CMA

				Scale Score		Raw Score		Raw Score Percent Correct	
Content Area	CMA *	No. of Items	No. of Examinees	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
English–Language Arts	3	48	19,718	307	63	28.51	8.49	59.41	17.68
	4	48	26,694	330 †	78 †	28.16	8.22	58.66	17.12
	5	48	29,080	326	67	27.65	7.72	57.60	16.08
	6	54	28,737	320	93	31.70	8.64	58.70	16.00
	7	54	26,908	311 †	85 †	31.98	9.15	59.23	16.94
	8	54	25,174	319	82	33.48	8.39	62.01	15.54
	9	60	19,950	293	72	31.33	9.21	52.21	15.35
	10	60	17,163	289	64	30.04	8.49	50.06	14.15
	11	60	13,936	279	57	27.09	7.54	45.15	12.57
Mathematics	3	48	16,973	320	63	29.56	8.53	61.58	17.77
	4	48	22,340	330	86	28.85	7.53	60.10	15.69
	5	48	25,586	349	78	29.43	8.29	61.32	17.28
	6	54	26,222	320	83	29.46	7.60	54.56	14.08
	7	54	26,130	295	87	25.37	6.64	46.97	12.30
	Algebra I	60	28,896	289	55	29.16	8.28	48.60	13.80
	Geometry	60	6,991	288	46	28.59	7.84	47.66	13.06
Science	5	48	26,838	339	56	28.88	7.02	60.16	14.63
	8	54	23,112	331	67	30.88	8.22	57.18	15.23
	10 Life Science	60	14,356	300	61	31.68	9.14	52.80	15.24
Grade-Specific	Algebra I – 8	60	6,115	292	58	29.43	8.59	49.06	14.32
	Geometry – 9	60	530	286	50	28.32	8.34	47.21	13.90

* Numbers indicate grade-level tests.

† Including writing prompt

The percentages of students in each performance level are presented in Table 7.2. The last column of the table presents the overall percentage of examinees that were classified at the proficient level or higher.

The numbers in the summary tables may not match exactly the results reported on the CDE's Web site because of slight differences in the samples used to compute the statistics. The P1 data file was used for the analyses in this chapter. This file contained the entire test-taking population and all the student with score records used in the August 30, 2012, reporting of STAR results.

Table 7.2 Percentages of Examinees in Each Performance Level

Content Area	CMA *	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Proficient/ Advanced
English–Language Arts	3	9%	40%	26%	17%	8%	25%
	4	14%	25%	21%	21%	18%	39%
	5	3%	33%	30%	19%	14%	33%
	6	17%	27%	19%	18%	18%	36%
	7	17%	31%	21%	16%	15%	31%
	8	17%	27%	21%	20%	15%	35%
	9	27%	31%	21%	15%	7%	21%
	10	25%	34%	23%	13%	5%	18%
	11	31%	35%	22%	9%	3%	12%

Content Area	CMA *	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Proficient/ Advanced
Mathematics	3	5%	36%	26%	27%	5%	33%
	4	9%	30%	23%	23%	14%	38%
	5	5%	25%	22%	29%	19%	48%
	6	12%	29%	24%	24%	10%	35%
	7	25%	30%	20%	19%	6%	25%
	Algebra I	23%	38%	25%	11%	3%	14%
	Geometry	23%	41%	25%	9%	2%	10%
Science	5	3%	20%	34%	28%	15%	43%
	8	14%	19%	30%	23%	14%	37%
	10 Life Science	22%	30%	26%	17%	5%	22%
Grade-Specific	Algebra I – 8	23%	37%	24%	11%	4%	16%
	Geometry –9	26%	40%	24%	8%	2%	10%

* Numbers indicate grade-level tests.

Table 7.B.1 through Table 7.B.3 in Appendix 7.B starting on page 141 show the distributions of scale scores for each CMA. Table 7.B.4 presents analogous information for the grade-specific EOC mathematics testing groups.

The results are reported in terms of 15 score intervals, each of which contains 30 scale score points. A cell value of “N/A” indicates that there are no obtainable scale scores within that scale-score range for the particular CMA.

Group Scores

Statistics summarizing student performance by content area and grade for selected groups of students are provided starting on page 143 in Table 7.C.1 through Table 7.C.19 for the CMA. When a test is administered at more than one grade level, the results are reported for all students tested and also by grade.

In the tables, students are grouped by demographic characteristics including gender, ethnicity, English-language fluency, need for special education services, and economic status. The tables show, for each demographic group, the numbers of valid cases, scale score means and standard deviations, the percentages of students in each performance level, as well as the mean percent correct in each reporting cluster.

Table 7.3 provides definitions of the demographic groups included in the tables. Students’ economic status was determined by considering the education level of their parents and whether or not they participated in the National School Lunch Program (NSLP).

To protect privacy when the number of students in a subgroup is 10 or fewer, the summary statistics at the test- and reporting-cluster–level are not reported and are presented as hyphens. Percentages in these tables may not sum up to 100 due to rounding.

Table 7.3 Subgroup Definitions

Subgroup	Definition
Gender	• Male • Female
Ethnicity	• American Indian or Alaska Native • Asian – Asian Indian – Cambodian – Chinese – Hmong

Subgroup	Definition
	– Japanese – Korean – Laotian – Vietnamese – Other Asian • Pacific Islander – Guamanian – Native Hawaiian – Samoan – Tahitian – Other Pacific Islander • Filipino • Hispanic or Latino • African American • White (not Hispanic)
English-language Fluency	• English only • Initially fluent English proficient • English learner • Reclassified fluent English proficient
Economic Status	• Not economically disadvantaged • Economically disadvantaged
Primary Disability	• Mental retardation/Intellectual disability (MR/ID) • Hard of hearing • Deafness • Speech/language impairment • Visual impairment • Emotional disturbance • Orthopedic impairment • Other health impairment • Specific learning impairment • Deaf blindness • Multiple group • Autism • Traumatic brain injury

In addition to the subgroups presented in Table 7.3, the demographic tables also include grade-level data for the end-of-course mathematics CMA. The grades included for the end-of-course tests are as follows:

Grades	Test
7, 8, 9, 10, 11	Algebra I
8, 9, 10, 11	Geometry

Reports Produced and Scores for Each Report

The tests that make up the STAR Program provide results or score summaries that are reported for different purposes. The four major purposes include:

1. Communicating with parents and guardians;
2. Informing decisions needed to support student achievement;
3. Evaluating school programs; and
4. Providing data for state and federal accountability programs for schools and districts.

A detailed description of the uses and applications of STAR reports is presented in the next section.

Types of Score Reports

There are three categories of CMA reports. These categories and the specific reports in each category are given in Table 7.4.

Table 7.4 Types of CMA Reports

1. Summary Reports	▪ STAR Student Master List Summary ▪ STAR Student Master List Summary, End-of-Course ▪ STAR Subgroup Summary (including the Ethnicity for Economic Status)
2. Individual Reports	▪ STAR Student Record Label ▪ STAR Student Master List ▪ STAR Student Report for CMA
3. Internet Reports	▪ CMA Scores (state, county, district, school) ▪ CMA Summary Scores (state, county, district, school)

These reports are sent to the independently testing charter schools, counties, or school districts; the school district forwards the appropriate reports to test sites or, in the case of the STAR Student Report, sends the report(s) to the child's parent or guardian and forwards a copy to the student's school or test site. Reports such as the STAR Student Report, Student Record Label, and Student Master List that include individual student results are not distributed beyond the student's school. Internet reports are described on the CDE Web site and are accessible to the public online at http://star.cde.ca.gov/.

Score Report Contents

The STAR Student Report provides scale scores, performance levels, and reporting cluster (subscore) results for each CMA taken by the student. Scale scores are reported on a scale ranging from 150 to 600. The performance levels reported are: far below basic, below basic, basic, proficient, and advanced.

In addition, percent-correct scores are provided at the cluster level. Also given for each cluster is the average percent correct for proficient students, which is presented as a range from the percent-correct score associated with the lowest proficient score on the total test to the percent-correct score associated with the lowest advanced score on the total test, less one percent. The average percent correct estimates associated with the lowest proficient and advanced scores were obtained empirically for the tests that have sample sizes of 25 or more examinees at both the minimum proficient and the minimum advanced score levels. In cases where the available sample sizes were less than 25, "data smoothing" was conducted before obtaining the averages (Lu & Smith, 2009).

Students in grades four and seven also receive a numerical score (from 0–4) for the CMA writing task. The score for the writing tests is incorporated into the overall score for the grade four or seven ELA test (for which a performance level and scale score are available).

Reports for students with disabilities and English learners who use accommodations include a notation that indicates that the student used accommodations. Scores for students who use accommodations are reported in the same way as they are for nonaccommodated students.

Further information about the STAR Student Report and the other reports is provided in Appendix 7.D on page 181.

Score Report Applications

CMA results provide parents and guardians with information about their child's progress. The results are a tool for increasing communication and collaboration between parents or guardians and teachers. Along with report cards from teachers and information from school and classroom tests, the STAR Student Report can be used by parents and guardians while talking with teachers about ways to improve their child's achievement of the California content standards.

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

CMA results help school districts and schools identify strengths and weaknesses in their instructional programs. Each year, school districts and school staffs examine CMA results at each grade and content area tested. Their findings are used to help determine:

- The extent to which students are learning the academic 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 ensure that students achieve the standards.

The results from the CMA are used for state and federal accountability programs to monitor each school's and district's progress toward achieving established goals. As mentioned previously, CMA results are used to calculate each school's and district's API. The API is a major component of California's Public School Accountability Act (PSAA) and is used to rank the academic performance of schools, compare schools with similar characteristics (for example, size and ethnic makeup), identify low-performing and high-priority schools, and set yearly targets for academic growth.

CMA results also are used to comply with federal ESEA legislation that requires all schools to meet specific academic goals. The progress of each school toward achieving these goals is provided annually in an AYP report. Each year, California schools and districts must meet AYP goals by showing that a specified percentage of CMA test-takers at the district and school level are performing at or above the proficient level on the CMA in ELA and mathematics.

Criteria for Interpreting Test Scores

A school district may use CMA results to help make decisions about student placement, promotion, retention, or other considerations related to student achievement. However, it is important to remember that 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 child's CMA results (CDE, 2012a). It is also important to note that a student's score in a content area contains measurement error and could vary somewhat if the student were retested.

Criteria for Interpreting Score Reports

The information presented in various reports must be interpreted with caution when making performance comparisons. When comparing scale score and performance-level results for the CMA, the user is limited to comparisons within the same content area and grade. This is because the score scales are different for each content area and grade. 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. The user can also make comparisons within the same grade and content area across years. Comparing scores obtained in different grades or content areas should be avoided because the results are not on the same scale. Comparisons between raw scores or cluster scores should be limited to comparisons within not only content area and grade but also test year. For more details on the criteria for interpreting information provided on the score reports, see the *2012 STAR Post-Test Guide* (CDE, 2012b).

Reference

California Department of Education. (2012a). *2012 STAR CST/CMA, CAPA, and STS printed reports*. Sacramento, CA. Downloaded from http://www.startest.org/pdfs/STAR.reports.2012.pdf

California Department of Education. (2012b). *2012 STAR post-test guide.* Sacramento, CA. Downloaded from http://www.startest.org/pdfs/STAR.post-test_guide.2012.pdf

Educational Testing Service. (2002). *ETS standards for quality and fairness*. Princeton, NJ: Author.

Lu, Y. & Smith, R. L. (2009, April). *An alternative method to estimate cluster performance of proficient students on a large scale state assessment.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Diego, CA.

Appendix 7.A—ELA for Writing (Grades Four and Seven) Rubrics

Grade Four Scoring Rubric

The scoring rubric that follows was used to assign scores to students' written responses on the writing test for grade four. This rubric includes two sets of criteria. The criteria under "The Writing" are adapted from the writing strategies and written conventions strands of California's English–language arts content standards. These criteria are used to evaluate on-demand, first-draft written responses in all genres. Student responses are evaluated on their clarity of purpose, central idea, and organization; their coherence; and their use of supporting evidence, sentence variety, and written conventions. The criteria under "Narrative writing," "Summary writing," and "Response to literature writing" have been adapted from the writing applications strand of the state's content standards for these genres. These criteria are used to evaluated student writing in the specific genres to which they apply.

Score: 4

The Writing:

- *Clearly* addresses the writing task.
- Demonstrates a *clear* understanding of purpose.
- Maintains a *consistent* point of view, focus, and organizational structure, including paragraphing when appropriate.
- Includes a *clearly presented* central idea with *relevant* facts, details, and/or explanations.
- Includes sentence *variety.*
- Contains *some errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors do **not** interfere with the reader's understanding of the writing.

Narrative writing:

- Provides a *thoroughly developed* sequence of *significant* events to relate ideas, observations, and/or memories.
- Includes *vivid* descriptive language and sensory details that enable the reader to imagine the events or experiences.

Summary writing:

- Summarizes text with *clear* identification of the main idea(s) and the most significant details, in the student's own words.

Response to literature writing:

- Demonstrates a *clear* understanding of the literary work.
- Provides *effective* support for judgments through *specific* references to text and/or prior knowledge.

Score: 3

The Writing:

- Addresses *most* of the writing task.
- Demonstrates a *general* understanding of purpose.
- Maintains a *mostly consistent* point of view, focus, and organizational structure, including paragraphing when appropriate.
- Presents a central idea with *mostly* relevant facts, details, and/or explanations.

- Includes some sentence *variety.*
- Contains *errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors do **not** interfere with the reader's understanding of the writing.

Narrative writing

- Provides an *adequately developed* sequence of significant events to relate ideas, observations, and/or memories.
- Includes *some* descriptive language and sensory details that enable the reader to imagine the events or experiences.

Summary writing

- Summarizes text with the main idea(s) and important details, generally in the student's own words.

Response to literature writing

- Demonstrates an understanding of the literary work.
- Provides *some* support for judgments through references to text and/or prior knowledge.

Score: 2

The Writing:

- Addresses *some* of the writing task.
- Demonstrates *little* understanding of purpose.
- Maintains an *inconsistent* point of view, focus, and/or organizational structure; may lack appropriate paragraphing.
- S*uggests* a central idea with *limited* facts, details, and/or explanations.
- Includes *little* sentence variety.
- Contains *many errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors **may** interfere with the reader's understanding of the writing.

Narrative writing:

- Provides a *minimally developed* sequence of events to relate ideas, observations, and/or memories.
- Includes *limited* descriptive language and sensory details that enable the reader to imagine the events or experiences.

Summary writing:

- Summarizes text with some of the main idea(s) and details, minimal use of student's own words.

Response to literature writing:

- Demonstrates a *limited* understanding of the literary work.
- Provides *weak* support for judgments.

Score: 1

The Writing:

- Addresses *only one part*, if any, of the writing task.
- Demonstrates *no* understanding of purpose.
- *Lacks* a clear point of view, focus, and/or organizational structure; may contain inappropriate paragraphing.

- *Lacks* a central idea but may contain *marginally related* facts, details, and/or explanations.
- Includes *no* sentence variety.
- Contains *serious errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors interfere with the reader's understanding of the writing.

Narrative writing:

- *Lacks* a sequence of events to relate ideas, observations, and/or memories.
- *Lacks* descriptive language and sensory details that enable the reader to imagine the events or experiences.

Summary writing:

- Summarizes text with few, if any, the main idea(s) and/or details, little or no use of the student's own words.

Response to literature writing:

- Demonstrates *little or no* understanding of the literary work.
- *Fails* to provide support for judgments.

Grade Seven Scoring Rubric

The scoring rubric that follows was used to assign scores to students' written responses on the writing test for grade seven. This rubric includes two sets of criteria. The criteria under "The Writing" are adapted from the writing strategies and written conventions strands of California's English–language arts content standards. These criteria are used to evaluate on-demand, first-draft written responses in all genres. Student responses are evaluated on their clarity of purpose, central idea, and organization; their coherence; and their use of supporting evidence, sentence variety, and written conventions. The criteria under "Fictional or autobiographical narrative writing," "Response to literature writing," "Persuasive writing," and "Summary writing" have been adapted from the writing applications strand of the state's content standards for these genres. These criteria are used to evaluate student writing in the specific genres to which they apply.

Score: 4

The Writing:

- *Clearly* addresses the writing task.
- Demonstrates a *clear* understanding of purpose and audience.
- Maintains a *consistent* point of view, focus, and organizational structure, including the *effective* use of transitions.
- Includes a *clearly presented* central idea with *relevant* facts, details, and/or explanations. (The relevancy of facts, details, and/or explanations is determined by the genre.)
- Includes sentence *variety.*
- Contains *some errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors do **not** interfere with the reader's understanding of the writing.

Fictional or autobiographical narrative writing:

- Provides a *thoroughly developed* plot line, including major and minor characters and a *definite* setting.
- Includes *appropriate* strategies (e.g., dialogue; suspense; narrative action).

Response to literature writing:

- Develops interpretations that demonstrate a *thoughtful,* comprehensive grasp of the text.
- Organizes *accurate and coherent* interpretations around *clear* ideas, premises, or images from the literary work.
- Provides *specific* textual examples and details to support the interpretations.

Persuasive writing:

- *Authoritatively* defends a clear position with precise and relevant evidence and *convincingly* addresses the reader's concerns, biases, and expectations.

Summary writing:

- Summarizes text with clear identification of the main idea(s) and most significant details, in student's own words, and clearly reflects underlying meaning.

Score: 3

The Writing:

- Addresses most of the writing task.
- Demonstrates a *general* understanding of purpose and audience.
- Maintains a *mostly consistent* point of view, focus, and organizational structure, including use of isolated and/or single word transitions.
- Presents a central idea with *mostly relevant* facts, details, and/or explanations. (The relevancy of facts, details, and/or explanations is determined by the genre.)
- Includes some sentence *variety.*
- Contains *errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling). These errors do **not** interfere with the reader's understanding of the writing.

Fictional or autobiographical narrative writing:

- Provides an *adequately developed* plot line, including major and minor characters and a *definite* setting.
- Includes *appropriate* strategies (e.g., dialogue; suspense; narrative action).

Response to literature writing:

- Develops interpretations that demonstrate a comprehensive grasp of the text.
- Organizes accurate and *reasonably* coherent interpretations around *clear* ideas, premises, or images from the literary work.
- Provides textual examples and details to support the interpretations.

Persuasive writing

- *Generally* defends a position with relevant evidence and addresses the reader's concerns, biases, and expectations.

Summary writing

- Summarizes text with the main idea(s) and *important* details, *mostly* in student's own words, and generally reflects underlying meaning.

Score: 2

The Writing:

- Addresses *some* of the writing task.
- Demonstrates *little* understanding of purpose and audience.
- Maintains an *inconsistent* point of view, focus, and/or organizational structure, which may include *ineffective or awkward* transitions that do not unify important ideas.
- *Suggests* a central idea with *limited* facts, details, and/or explanations. (The relevancy of facts, details, and/or explanations is determined by the genre.)
- Includes *little* sentence variety.
- Contains *many errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling).These errors **may** interfere with the reader's understanding of the writing.

Fictional or autobiographical narrative writing:

- Provides a *minimally developed* plot line, including characters and a setting.
- *Attempts* to use strategies but with *minimal* effectiveness (e.g., dialogue; suspense; narrative action).

Response to literature writing:

- Develops interpretations that demonstrate a *limited* grasp of the text.
- Includes interpretations that *lack* accuracy or coherence as related to ideas, premises, or images from the literary work.
- Provides *few, if any,* textual examples and details to support the interpretations.

Persuasive writing:

- Defends a position with *little, if any,* evidence and *may* address the reader's concerns, biases, and expectations.

Summary writing:

- Summarizes text with *some* of the main idea(s) and details, which may be superficial, minimal use of the student's own words and minimal reflection of underlying meaning.

Score: 1

The Writing:

- Addresses *only one part*, if any, of the writing task.
- Demonstrates *no* understanding of purpose and audience.
- *Lacks* a point of view, focus, organizational structure, and transitions that unify important ideas.
- *Lacks* a central idea but may contain *marginally related* facts, details, and/or explanations. (The relevancy of facts, details, and/or explanations is determined by the genre.)
- Includes *no* sentence variety.
- Contains *serious errors* in the conventions of the English language (grammar, punctuation, capitalization, and spelling).These errors interfere with the reader's understanding of the writing.

Fictional or autobiographical narrative writing:

- *Lacks* a developed plot line.
- *Fails* to use strategies (e.g., dialogue; suspense; narrative action).

Response to literature writing:

- Demonstrates *little* grasp of the text.
- *Lacks* an interpretation or may be a simple retelling of the passage.
- *Lacks* textual examples and details.

Persuasive writing:

- *Fails* to defend a position with *any* evidence and *fails* to address the reader's concerns, biases, and expectations.

Summary writing:

- Summarizes text with few, if any, of the main ideas and/or details, little or no use of the student's own words, little or no reflection of underlying meaning.

Appendix 7.B—Scale Score Distribution Tables

In Appendix 7.B, a cell value of "N/A" indicates that there are no obtainable scale scores within that scale-score range for the particular CMA.

Table 7.B.1 Distribution of CMA Scale Scores for ELA

Scale Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
570 – 600	3	71	55	197	75	45	33	2	1
540 – 569	29	85	N/A	170	120	75	35	2	4
510 – 539	N/A	368	84	595	191	147	73	17	18
480 – 509	57	356	419	427	279	550	91	64	25
450 – 479	332	992	830	1,161	801	942	408	123	48
420 – 449	285	2,117	1,198	1,611	1,735	1,305	405	390	151
390 – 419	1,376	1,716	2,566	2,892	1,542	1,718	903	625	267
360 – 389	2,018	3,777	3,225	2,142	2,639	2,959	1,738	1,418	640
330 – 359	3,043	3,096	5,014	3,449	3,827	3,294	2,156	2,007	1,201
300 – 329	2,896	3,640	5,103	3,326	2,787	3,126	2,537	2,352	2,370
270 – 299	3,448	4,082	4,667	3,103	3,663	3,758	2,890	2,761	2,616
240 – 269	3,346	3,561	3,685	3,902	3,231	2,994	3,372	3,097	3,108
210 – 239	2,036	1,835	1,586	2,479	2,833	1,907	3,093	2,643	2,455
180 – 209	757	764	537	1,333	1,778	1,352	1,704	1,326	798
150 – 179	92	234	111	1,950	1,407	1,002	512	336	234

Table 7.B.2 Distribution of CMA Scale Scores for Mathematics

Scale Score	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Algebra I	Geometry
570 – 600	8	216	205	116	125	2	0
540 – 569	50	202	227	214	144	15	0
510 – 539	N/A	266	326	157	272	49	0
480 – 509	100	328	406	437	183	53	11
450 – 479	421	926	1,198	739	515	217	21
420 – 449	347	1,254	2,500	1,746	800	419	55
390 – 419	1,419	2,329	3,103	1,623	1,863	711	125
360 – 389	1,848	1,881	3,187	2,931	1,692	1,543	295
330 – 359	3,346	3,079	4,011	3,537	2,200	3,345	607
300 – 329	2,466	3,080	2,722	3,750	4,072	4,945	1,360
270 – 299	2,880	2,967	3,339	3,550	3,126	5,224	1,788
240 – 269	2,496	2,445	2,652	3,277	3,216	7,137	1,774
210 – 239	1,221	1,853	1,163	2,314	4,098	3,813	832
180 – 209	347	1,060	457	947	1,859	1,246	111
150 – 179	24	454	90	884	1,965	177	12

Table 7.B.3 Distribution of CMA Scale Scores for Science

Scale Score	Grade 5	Grade 8	Grade 10
570 – 600	23	40	4
540 – 569	44	51	8
510 – 539	81	211	20
480 – 509	118	163	76
450 – 479	471	843	120
420 – 449	1,542	850	351
390 – 419	2,657	2,368	588
360 – 389	3,747	2,333	1,200
330 – 359	5,620	3,676	2,021
300 – 329	6,290	5,084	2,521
270 – 299	3,465	3,571	2,670
240 – 269	1,968	2,591	2,222
210 – 239	720	937	2,073
180 – 209	82	348	427
150 – 179	10	46	55

Table 7.B.4 Distribution of CMA Scale Scores for a Grade-specific Population

Scale Score	Algebra I – Grade 8	Geometry – Grade 9
570 – 600	0	0
540 – 569	6	0
510 – 539	17	0
480 – 509	16	2
450 – 479	72	5
420 – 449	113	3
390 – 419	160	10
360 – 389	343	21
330 – 359	676	47
300 – 329	1,040	91
270 – 299	1,090	122
240 – 269	1,482	141
210 – 239	800	72
180 – 209	263	16
150 – 179	37	0

Appendix 7.C—Demographic Summaries

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

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	19,718	307	63	9%	40%	26%	17%	8%	64%	55%	60%
Male	13,309	304	63	9%	41%	26%	16%	7%	64%	54%	59%
Female	6,225	312	62	8%	38%	27%	19%	9%	65%	57%	62%
Gender unknown	184	304	66	9%	39%	27%	16%	9%	63%	54%	59%
American Indian	183	309	63	6%	42%	28%	15%	9%	65%	56%	59%
Asian American	599	317	62	6%	35%	30%	19%	10%	68%	56%	64%
Pacific Islander	77	308	57	8%	40%	27%	17%	8%	66%	56%	60%
Filipino	196	324	61	4%	30%	29%	31%	6%	71%	58%	66%
Hispanic	12,323	301	61	10%	43%	26%	15%	6%	62%	53%	59%
African American	1,811	301	61	11%	40%	27%	15%	6%	63%	54%	58%
White	3,778	324	66	6%	32%	27%	23%	13%	70%	60%	64%
Ethnicity unknown	751	311	67	8%	40%	25%	17%	10%	66%	56%	60%
English only	10,583	313	64	8%	37%	27%	19%	9%	67%	56%	61%
Initially fluent English prof.	190	322	70	7%	34%	23%	20%	16%	69%	58%	64%
English learner	8,459	298	60	10%	45%	25%	14%	5%	61%	53%	58%
Reclassified fluent English prof.	60	322	62	7%	33%	18%	32%	10%	68%	58%	67%
English prof. unknown	426	310	65	8%	40%	26%	15%	10%	65%	56%	61%
Autism	1,510	306	62	9%	39%	26%	18%	7%	65%	54%	60%
Deaf-blindness	5	–	–	–	–	–	–	–	–	–	–
Deafness	88	284	53	18%	42%	31%	9%	0%	56%	49%	55%
Emotional disturbance	298	310	70	11%	36%	24%	18%	10%	66%	56%	59%
Hard of hearing	169	309	56	9%	33%	33%	22%	4%	66%	54%	63%
MR/ID	323	257	53	29%	54%	11%	4%	2%	47%	43%	44%
Multiple disability	49	266	58	29%	41%	20%	10%	0%	55%	47%	43%
Orthopedic impairment	158	313	68	11%	30%	29%	20%	9%	66%	56%	61%
Other health impairment	1,878	315	65	8%	36%	26%	20%	11%	67%	58%	62%
Specific learning disability	11,078	306	63	9%	41%	26%	17%	7%	64%	55%	60%
Speech or language Impairment	3,312	311	61	7%	39%	29%	17%	8%	66%	55%	62%
Traumatic brain injury	53	307	57	9%	32%	40%	11%	8%	67%	52%	62%
Visual impairment	45	303	65	13%	36%	27%	20%	4%	64%	57%	55%
Disability unknown	752	300	61	10%	45%	24%	13%	7%	62%	53%	58%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
Not economically disadvantaged	3,910	326	65	6%	31%	28%	23%	13%	71%	60%	65%
Economically disadvantaged	15,072	302	61	10%	43%	26%	16%	6%	63%	54%	59%
Economic status unknown	736	307	61	8%	41%	28%	15%	8%	65%	55%	60%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	32	321	69	3%	41%	25%	13%	19%	68%	60%	60%
Asian American	258	328	62	5%	28%	34%	22%	12%	72%	59%	67%
Pacific Islander	17	322	55	6%	35%	29%	12%	18%	70%	62%	62%
Filipino	91	331	59	4%	24%	29%	33%	10%	73%	60%	68%
Hispanic	1,267	319	63	7%	34%	27%	21%	11%	68%	58%	63%
African American	266	306	60	11%	35%	28%	20%	6%	66%	54%	59%
White	1,785	334	66	4%	28%	27%	25%	16%	72%	62%	67%
Ethnicity unknown	194	329	71	5%	31%	27%	23%	14%	72%	60%	65%
Primary Ethnicity—Economically Disadvantaged											
American Indian	146	306	63	7%	42%	27%	16%	8%	64%	56%	59%
Asian American	329	308	61	8%	41%	26%	17%	7%	66%	54%	61%
Pacific Islander	57	305	58	7%	44%	25%	19%	5%	66%	54%	59%
Filipino	97	321	63	3%	35%	28%	31%	3%	69%	57%	66%
Hispanic	10,754	299	61	10%	44%	25%	15%	6%	62%	53%	58%
African American	1,481	300	62	11%	41%	27%	15%	6%	63%	53%	58%
White	1,866	314	64	8%	36%	27%	20%	10%	67%	57%	62%
Ethnicity unknown	342	299	62	11%	44%	23%	15%	7%	63%	53%	56%
Primary Ethnicity—Unknown Economic Status											
American Indian	5	–	–	–	–	–	–	–	–	–	–
Asian American	12	322	46	0%	33%	50%	8%	8%	70%	57%	67%
Pacific Islander	3	–	–	–	–	–	–	–	–	–	–
Filipino	8	–	–	–	–	–	–	–	–	–	–
Hispanic	302	295	54	9%	48%	25%	13%	4%	62%	51%	57%
African American	64	304	57	8%	44%	31%	8%	9%	63%	55%	59%
White	127	327	65	6%	27%	29%	25%	13%	71%	62%	64%
Ethnicity unknown	215	313	67	7%	40%	25%	16%	12%	67%	56%	61%

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	26,694	330	78	14%	25%	21%	21%	18%	66%	55%	58%
Male	17,829	326	78	15%	26%	21%	20%	17%	65%	55%	57%
Female	8,841	337	77	11%	24%	22%	23%	20%	66%	57%	60%
Gender unknown	24	321	55	8%	29%	29%	29%	4%	62%	53%	59%
American Indian	232	334	83	18%	19%	19%	24%	20%	67%	57%	58%
Asian American	832	332	76	12%	26%	22%	20%	19%	66%	55%	59%
Pacific Islander	127	346	84	10%	26%	17%	24%	24%	68%	58%	61%
Filipino	310	344	78	10%	21%	24%	24%	22%	67%	59%	61%
Hispanic	16,671	324	76	15%	27%	22%	20%	16%	65%	54%	56%
African American	2,654	318	75	17%	27%	22%	19%	14%	63%	53%	55%
White	5,237	350	82	10%	20%	20%	23%	26%	69%	60%	61%
Ethnicity unknown	631	345	79	10%	20%	21%	27%	22%	68%	59%	61%
English only	14,420	337	81	13%	23%	21%	22%	21%	67%	57%	59%
Initially fluent English prof.	278	348	86	13%	21%	17%	22%	28%	70%	60%	60%
English learner	11,749	320	73	15%	29%	23%	20%	14%	64%	53%	56%
Reclassified fluent English prof.	169	364	84	9%	17%	17%	21%	36%	74%	61%	64%
English prof. unknown	78	315	75	17%	32%	23%	17%	12%	63%	53%	53%
Autism	1,793	328	80	16%	23%	22%	21%	18%	65%	56%	58%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	123	279	61	30%	41%	12%	12%	4%	48%	48%	47%
Emotional disturbance	469	334	84	15%	26%	16%	23%	21%	68%	58%	57%
Hard of hearing	221	330	76	15%	26%	16%	24%	19%	65%	56%	58%
MR/ID	389	262	54	40%	40%	15%	4%	2%	48%	42%	43%
Multiple disability	25	260	69	44%	32%	16%	4%	4%	51%	35%	44%
Orthopedic impairment	158	334	87	15%	29%	12%	19%	25%	66%	56%	59%
Other health impairment	2,537	342	81	13%	21%	20%	23%	24%	69%	58%	60%
Specific learning disability	15,423	329	77	14%	26%	22%	21%	17%	65%	55%	57%
Speech or language Impairment	3,699	334	75	11%	24%	23%	24%	18%	67%	56%	59%
Traumatic brain injury	48	313	73	17%	29%	27%	15%	13%	61%	53%	54%
Visual impairment	65	355	100	12%	29%	6%	18%	34%	67%	60%	63%
Disability unknown	1,741	334	74	11%	25%	23%	23%	18%	68%	56%	59%
Not economically disadvantaged	5,838	354	82	9%	18%	20%	24%	28%	70%	61%	63%
Economically disadvantaged	20,735	323	75	15%	28%	22%	20%	15%	64%	54%	56%
Economic status unknown	121	314	75	17%	34%	23%	13%	13%	60%	52%	54%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	55	356	89	13%	11%	25%	22%	29%	72%	61%	63%
Asian American	349	343	83	14%	19%	17%	24%	25%	68%	56%	62%
Pacific Islander	29	373	91	10%	14%	7%	24%	45%	75%	63%	67%
Filipino	150	351	81	9%	19%	26%	20%	27%	68%	60%	63%
Hispanic	1,882	348	80	11%	20%	20%	24%	25%	70%	59%	61%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	430	337	81	13%	21%	23%	24%	19%	66%	58%	59%
White	2,696	363	83	7%	16%	20%	24%	32%	72%	63%	64%
Ethnicity unknown	247	354	82	10%	15%	23%	26%	26%	70%	61%	63%
Primary Ethnicity—Economically Disadvantaged											
American Indian	177	327	81	20%	21%	17%	25%	17%	65%	55%	56%
Asian American	480	323	70	11%	31%	26%	17%	16%	64%	54%	57%
Pacific Islander	98	338	80	10%	30%	19%	23%	17%	66%	57%	59%
Filipino	156	337	73	11%	24%	21%	28%	16%	66%	59%	59%
Hispanic	14,732	322	75	15%	28%	22%	20%	15%	64%	53%	56%
African American	2,216	315	74	18%	29%	22%	18%	13%	62%	52%	54%
White	2,518	335	78	13%	24%	21%	22%	20%	66%	58%	58%
Ethnicity unknown	358	340	76	10%	22%	21%	27%	20%	68%	57%	61%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	3	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	4	–	–	–	–	–	–	–	–	–	–
Hispanic	57	305	71	21%	33%	25%	12%	9%	60%	49%	52%
African American	8	–	–	–	–	–	–	–	–	–	–
White	23	333	85	13%	26%	26%	9%	26%	69%	57%	56%
Ethnicity unknown	26	310	67	12%	46%	15%	19%	8%	54%	52%	55%

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	29,080	326	67	3%	33%	30%	19%	14%	67%	53%	58%
Male	19,405	323	67	4%	35%	30%	18%	13%	66%	52%	57%
Female	9,657	334	66	3%	28%	32%	21%	16%	68%	54%	61%
Gender unknown	18	314	77	11%	44%	17%	17%	11%	60%	53%	53%
American Indian	303	323	70	4%	35%	30%	17%	14%	67%	53%	56%
Asian American	909	330	67	3%	31%	30%	21%	15%	66%	52%	61%
Pacific Islander	128	327	65	3%	32%	30%	27%	9%	69%	52%	59%
Filipino	308	325	64	3%	34%	34%	16%	14%	65%	51%	60%
Hispanic	18,476	322	64	4%	35%	32%	18%	12%	65%	51%	58%
African American	3,070	317	66	5%	37%	30%	17%	12%	65%	51%	55%
White	5,286	347	73	3%	24%	28%	22%	24%	71%	58%	63%
Ethnicity unknown	600	338	74	3%	29%	26%	20%	22%	70%	56%	60%
English only	15,412	333	70	3%	30%	29%	20%	18%	69%	54%	59%
Initially fluent English prof.	327	348	69	2%	25%	28%	22%	23%	71%	58%	63%
English learner	12,911	317	61	4%	37%	32%	17%	10%	64%	50%	57%
Reclassified fluent English prof.	368	368	75	2%	15%	24%	26%	33%	76%	62%	68%
English prof. unknown	62	323	70	3%	40%	23%	23%	11%	64%	52%	57%
Autism	1,711	324	70	5%	34%	29%	17%	15%	64%	51%	59%
Deaf-blindness	4	–	–	–	–	–	–	–	–	–	–
Deafness	121	282	57	8%	60%	20%	7%	4%	50%	42%	49%
Emotional disturbance	596	331	76	5%	32%	25%	19%	19%	68%	55%	58%
Hard of hearing	252	325	65	4%	30%	35%	18%	13%	66%	50%	61%
MR/ID	446	269	50	14%	61%	19%	4%	2%	51%	39%	44%
Multiple disability	30	308	64	3%	47%	27%	13%	10%	65%	44%	56%
Orthopedic impairment	191	322	73	6%	35%	27%	14%	18%	65%	51%	58%
Other health impairment	2,648	338	71	3%	28%	29%	21%	19%	70%	56%	60%
Specific learning disability	18,334	326	67	3%	33%	31%	19%	14%	67%	53%	58%
Speech or language Impairment	3,171	327	62	3%	31%	33%	20%	13%	66%	52%	60%
Traumatic brain injury	64	314	77	8%	41%	19%	19%	14%	60%	51%	55%
Visual impairment	62	323	64	2%	35%	29%	24%	10%	64%	51%	59%
Disability unknown	1,450	328	64	3%	31%	33%	20%	13%	68%	53%	58%
Not economically disadvantaged	6,109	348	72	2%	24%	28%	22%	24%	71%	58%	63%
Economically disadvantaged	22,880	321	64	4%	35%	31%	18%	12%	65%	51%	57%
Economic status unknown	91	317	79	8%	38%	23%	15%	15%	64%	53%	53%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	76	333	68	4%	33%	26%	18%	18%	67%	53%	62%
Asian American	361	340	70	1%	28%	29%	21%	21%	69%	54%	63%
Pacific Islander	37	341	74	3%	32%	19%	27%	19%	68%	55%	63%
Filipino	159	331	64	3%	28%	36%	16%	17%	66%	52%	62%
Hispanic	2,017	343	71	2%	26%	30%	21%	21%	70%	57%	62%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	533	331	71	3%	32%	29%	17%	18%	69%	54%	58%
White	2,703	357	73	2%	19%	26%	23%	29%	73%	60%	65%
Ethnicity unknown	223	350	74	2%	23%	25%	21%	28%	73%	59%	62%
Primary Ethnicity—Economically Disadvantaged											
American Indian	227	320	70	4%	36%	31%	16%	12%	67%	52%	55%
Asian American	547	324	64	4%	33%	31%	20%	12%	65%	51%	60%
Pacific Islander	90	322	60	3%	31%	34%	27%	4%	70%	50%	57%
Filipino	147	318	63	3%	40%	31%	15%	10%	63%	50%	58%
Hispanic	16,417	319	63	4%	36%	32%	18%	11%	65%	51%	57%
African American	2,529	315	64	5%	38%	30%	16%	10%	65%	50%	55%
White	2,564	335	71	3%	29%	29%	20%	19%	69%	55%	60%
Ethnicity unknown	359	332	71	3%	33%	28%	20%	17%	68%	54%	59%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	2	–	–	–	–	–	–	–	–	–	–
Hispanic	42	326	71	0%	36%	31%	19%	14%	67%	55%	56%
African American	8	–	–	–	–	–	–	–	–	–	–
White	19	303	68	11%	42%	26%	11%	11%	68%	53%	45%
Ethnicity unknown	18	319	101	22%	39%	6%	11%	22%	63%	52%	53%

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	28,737	320	93	17%	27%	19%	18%	18%	66%	57%	58%
Male	19,099	312	92	19%	29%	19%	18%	16%	65%	56%	56%
Female	9,621	335	93	13%	25%	20%	20%	22%	67%	59%	61%
Gender unknown	17	273	70	35%	29%	18%	18%	0%	61%	48%	50%
American Indian	240	323	98	18%	25%	19%	18%	20%	68%	58%	57%
Asian American	887	325	94	15%	26%	21%	19%	19%	66%	57%	59%
Pacific Islander	150	315	87	19%	27%	24%	16%	15%	67%	56%	56%
Filipino	304	334	83	9%	28%	21%	25%	17%	68%	58%	62%
Hispanic	18,171	314	90	18%	29%	20%	18%	15%	64%	56%	57%
African American	3,043	306	91	21%	30%	20%	16%	14%	64%	55%	55%
White	5,348	345	99	13%	22%	18%	21%	27%	72%	62%	60%
Ethnicity unknown	594	333	98	15%	24%	20%	17%	24%	70%	59%	59%
English only	15,236	329	96	15%	25%	19%	19%	21%	68%	59%	58%
Initially fluent English prof.	536	345	94	13%	20%	18%	26%	23%	71%	63%	60%
English learner	12,218	305	86	19%	31%	20%	17%	12%	61%	54%	56%
Reclassified fluent English prof.	685	367	98	9%	18%	16%	20%	36%	74%	64%	66%
English prof. unknown	62	286	82	24%	34%	23%	13%	6%	60%	50%	53%
Autism	1,477	317	98	19%	28%	16%	18%	18%	63%	55%	58%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	133	236	67	55%	30%	8%	5%	2%	42%	42%	46%
Emotional disturbance	752	316	104	22%	26%	19%	13%	21%	67%	57%	55%
Hard of hearing	243	310	90	19%	31%	17%	19%	14%	60%	55%	58%
MR/ID	457	243	71	45%	35%	12%	6%	2%	46%	44%	46%
Multiple disability	45	268	86	38%	33%	11%	11%	7%	49%	48%	50%
Orthopedic impairment	186	327	102	18%	24%	17%	22%	20%	67%	57%	59%
Other health impairment	2,716	338	96	14%	23%	19%	19%	24%	71%	60%	60%
Specific learning disability	18,855	320	92	16%	28%	20%	19%	17%	66%	57%	58%
Speech or language Impairment	2,551	321	88	15%	28%	21%	20%	16%	65%	57%	59%
Traumatic brain injury	60	318	112	25%	22%	15%	20%	18%	63%	55%	58%
Visual impairment	77	343	103	16%	17%	22%	22%	23%	69%	60%	62%
Disability unknown	1,182	318	87	16%	29%	20%	20%	15%	67%	57%	57%
Not economically disadvantaged	6,271	348	99	12%	21%	18%	21%	28%	72%	62%	61%
Economically disadvantaged	22,380	312	90	18%	29%	20%	18%	15%	64%	56%	57%
Economic status unknown	86	299	90	22%	33%	19%	13%	14%	62%	53%	55%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	62	339	103	13%	24%	23%	13%	27%	72%	61%	58%
Asian American	343	344	94	12%	21%	20%	21%	25%	69%	61%	62%
Pacific Islander	45	355	96	13%	9%	29%	20%	29%	74%	63%	63%
Filipino	162	342	89	10%	25%	19%	27%	20%	68%	59%	64%
Hispanic	2,084	343	97	12%	21%	19%	22%	25%	71%	61%	61%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	575	321	99	19%	25%	20%	17%	20%	67%	57%	57%
White	2,788	358	99	10%	20%	17%	22%	31%	75%	63%	63%
Ethnicity unknown	212	349	102	12%	21%	18%	17%	32%	74%	62%	61%
Primary Ethnicity—Economically Disadvantaged											
American Indian	178	317	96	20%	25%	18%	20%	17%	67%	56%	57%
Asian American	543	313	92	17%	29%	21%	18%	15%	64%	55%	57%
Pacific Islander	104	297	77	21%	34%	22%	14%	9%	64%	53%	54%
Filipino	141	325	75	7%	32%	25%	23%	13%	68%	57%	60%
Hispanic	16,063	310	88	19%	30%	20%	18%	14%	63%	55%	57%
African American	2,455	303	89	21%	31%	20%	16%	12%	63%	55%	54%
White	2,538	332	97	15%	24%	19%	20%	22%	70%	60%	58%
Ethnicity unknown	358	324	95	17%	25%	21%	17%	20%	68%	58%	57%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–
Hispanic	24	308	94	21%	33%	21%	8%	17%	64%	54%	57%
African American	13	293	88	23%	46%	0%	15%	15%	62%	51%	54%
White	22	270	102	45%	18%	14%	5%	18%	55%	49%	48%
Ethnicity unknown	24	321	78	4%	33%	29%	25%	8%	69%	55%	60%

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	26,908	311	85	17%	31%	21%	16%	15%	67%	58%	58%
Male	18,041	307	86	19%	32%	20%	15%	14%	67%	58%	56%
Female	8,853	321	82	14%	29%	23%	19%	16%	67%	59%	61%
Gender unknown	14	282	94	43%	14%	7%	21%	14%	50%	53%	55%
American Indian	246	318	88	14%	34%	18%	17%	17%	68%	61%	57%
Asian American	743	322	91	15%	29%	20%	17%	20%	68%	58%	62%
Pacific Islander	113	323	88	12%	29%	24%	14%	20%	71%	60%	60%
Filipino	278	336	83	9%	28%	19%	21%	23%	71%	62%	65%
Hispanic	16,943	305	82	18%	33%	21%	15%	12%	65%	57%	57%
African American	3,099	300	83	20%	33%	21%	14%	12%	66%	56%	55%
White	5,038	335	89	12%	25%	21%	20%	23%	72%	64%	61%
Ethnicity unknown	448	325	90	15%	27%	20%	20%	19%	72%	61%	60%
English only	14,320	320	87	15%	29%	21%	17%	18%	69%	60%	59%
Initially fluent English prof.	562	330	87	13%	26%	20%	18%	23%	72%	63%	60%
English learner	11,033	295	77	21%	35%	21%	14%	9%	63%	54%	55%
Reclassified fluent English prof.	919	363	89	6%	20%	19%	21%	34%	76%	68%	68%
English prof. unknown	74	292	92	28%	31%	15%	11%	15%	61%	55%	54%
Autism	1,328	316	97	19%	30%	17%	15%	18%	67%	57%	61%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	127	262	79	40%	30%	17%	8%	6%	56%	46%	52%
Emotional disturbance	790	313	94	21%	26%	21%	14%	18%	69%	60%	56%
Hard of hearing	241	306	81	20%	31%	24%	12%	13%	65%	54%	60%
MR/ID	460	231	60	52%	35%	8%	4%	1%	47%	42%	42%
Multiple disability	39	278	76	31%	38%	18%	8%	5%	62%	50%	51%
Orthopedic impairment	197	319	93	17%	28%	19%	17%	19%	70%	59%	59%
Other health impairment	2,448	328	86	12%	29%	21%	18%	20%	73%	62%	59%
Specific learning disability	18,319	311	83	16%	31%	22%	16%	14%	67%	58%	57%
Speech or language Impairment	1,873	310	79	16%	31%	23%	17%	13%	66%	57%	59%
Traumatic brain injury	60	307	81	15%	38%	27%	10%	10%	67%	57%	57%
Visual impairment	67	328	86	10%	28%	30%	18%	13%	74%	61%	59%
Disability unknown	956	310	86	19%	30%	19%	18%	15%	68%	58%	57%
Not economically disadvantaged	5,901	336	88	12%	25%	21%	20%	23%	72%	63%	62%
Economically disadvantaged	20,919	304	82	18%	33%	21%	15%	12%	66%	57%	56%
Economic status unknown	88	299	101	32%	24%	15%	13%	17%	64%	55%	55%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	73	340	96	12%	25%	15%	26%	22%	70%	64%	63%
Asian American	270	339	91	11%	25%	20%	19%	25%	72%	61%	65%
Pacific Islander	35	356	73	0%	20%	31%	23%	26%	72%	68%	68%
Filipino	157	337	87	11%	25%	19%	19%	25%	70%	62%	65%
Hispanic	2,095	329	86	13%	26%	21%	19%	21%	71%	62%	61%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	589	316	88	17%	30%	21%	14%	18%	69%	59%	58%
White	2,537	344	89	10%	23%	20%	21%	26%	74%	65%	63%
Ethnicity unknown	145	345	92	12%	19%	21%	24%	24%	77%	64%	64%
Primary Ethnicity—Economically Disadvantaged											
American Indian	172	307	83	15%	38%	19%	14%	14%	68%	59%	55%
Asian American	471	312	89	17%	32%	20%	15%	17%	66%	57%	60%
Pacific Islander	78	308	91	18%	33%	21%	10%	18%	70%	57%	56%
Filipino	121	334	77	7%	31%	20%	22%	21%	74%	61%	64%
Hispanic	14,812	301	81	19%	34%	21%	15%	11%	65%	56%	56%
African American	2,499	297	82	21%	33%	21%	14%	11%	65%	56%	54%
White	2,478	326	87	13%	28%	21%	19%	19%	71%	62%	59%
Ethnicity unknown	288	316	87	15%	32%	20%	18%	16%	70%	59%	58%
Primary Ethnicity—Unknown Economic Status											
American Indian	1	–	–	–	–	–	–	–	–	–	–
Asian American	2	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	0	–	–	–	–	–	–	–	–	–	–
Hispanic	36	286	70	25%	33%	19%	19%	3%	64%	51%	55%
African American	11	276	106	45%	18%	9%	9%	18%	65%	55%	45%
White	23	317	134	35%	17%	17%	0%	30%	64%	59%	55%
Ethnicity unknown	15	310	100	33%	13%	7%	20%	27%	69%	56%	58%

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

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	25,174	319	82	17%	27%	21%	20%	15%	75%	59%	62%
Male	16,876	313	82	19%	28%	20%	19%	14%	74%	58%	60%
Female	8,239	332	79	12%	24%	23%	23%	18%	77%	61%	65%
Gender unknown	59	298	76	25%	27%	20%	14%	14%	73%	55%	58%
American Indian	258	317	75	14%	29%	21%	22%	13%	77%	59%	61%
Asian American	673	320	80	17%	25%	24%	20%	15%	73%	58%	64%
Pacific Islander	136	316	77	18%	22%	24%	22%	13%	73%	59%	62%
Filipino	262	317	77	15%	28%	22%	22%	13%	73%	57%	64%
Hispanic	15,719	316	80	18%	27%	22%	20%	14%	74%	59%	61%
African American	2,889	309	80	20%	29%	20%	18%	13%	75%	58%	59%
White	4,763	336	86	13%	24%	20%	21%	22%	79%	63%	64%
Ethnicity unknown	474	326	82	17%	23%	21%	22%	17%	77%	61%	62%
English only	13,610	324	83	16%	26%	21%	20%	18%	77%	60%	62%
Initially fluent English prof.	583	339	82	11%	22%	21%	25%	21%	79%	63%	65%
English learner	9,685	305	75	20%	30%	22%	18%	10%	71%	56%	60%
Reclassified fluent English prof.	1,222	370	83	7%	14%	17%	28%	35%	83%	69%	71%
English prof. unknown	74	299	76	27%	26%	19%	18%	11%	69%	56%	58%
Autism	1,209	312	84	20%	29%	19%	18%	14%	70%	55%	64%
Deaf-blindness	1	–	–	–	–	–	–	–	–	–	–
Deafness	156	254	72	49%	30%	8%	7%	6%	56%	43%	52%
Emotional disturbance	829	316	90	21%	26%	16%	18%	18%	75%	59%	59%
Hard of hearing	214	317	84	20%	26%	21%	17%	16%	73%	58%	62%
MR/ID	496	243	64	55%	27%	11%	4%	2%	54%	44%	48%
Multiple disability	37	297	85	19%	38%	19%	16%	8%	71%	53%	59%
Orthopedic impairment	161	324	92	18%	26%	15%	19%	22%	74%	59%	63%
Other health impairment	2,462	332	83	14%	24%	21%	22%	20%	79%	62%	63%
Specific learning disability	17,749	321	80	16%	27%	22%	20%	15%	76%	60%	62%
Speech or language Impairment	1,536	317	75	15%	29%	24%	20%	13%	75%	58%	63%
Traumatic brain injury	69	313	81	19%	29%	20%	19%	13%	68%	58%	62%
Visual impairment	51	319	92	16%	29%	20%	18%	18%	73%	60%	60%
Disability unknown	204	313	77	15%	32%	22%	15%	15%	73%	58%	61%
Not economically disadvantaged	5,949	336	85	13%	24%	20%	22%	22%	79%	62%	65%
Economically disadvantaged	19,118	314	80	18%	28%	22%	19%	13%	74%	58%	61%
Economic status unknown	107	297	75	25%	28%	17%	21%	9%	70%	55%	58%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	69	320	69	12%	29%	19%	32%	9%	79%	60%	62%
Asian American	268	333	82	14%	24%	21%	21%	21%	76%	60%	67%
Pacific Islander	48	317	82	23%	15%	17%	31%	15%	76%	58%	62%
Filipino	151	322	77	13%	28%	21%	25%	14%	74%	58%	65%
Hispanic	2,150	333	84	14%	23%	20%	22%	21%	78%	62%	64%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	623	316	84	19%	25%	20%	20%	15%	76%	58%	61%
White	2,491	345	87	11%	23%	19%	22%	26%	81%	64%	66%
Ethnicity unknown	149	332	74	11%	24%	25%	25%	15%	79%	62%	64%
Primary Ethnicity—Economically Disadvantaged											
American Indian	187	317	77	14%	30%	22%	19%	15%	76%	59%	61%
Asian American	401	312	77	18%	26%	26%	19%	11%	72%	57%	62%
Pacific Islander	87	315	76	16%	26%	28%	17%	13%	71%	59%	62%
Filipino	110	310	76	18%	27%	24%	18%	13%	72%	56%	62%
Hispanic	13,540	313	79	18%	28%	22%	19%	13%	73%	58%	61%
African American	2,256	307	79	20%	30%	20%	18%	12%	75%	57%	58%
White	2,251	326	83	15%	25%	21%	20%	18%	78%	61%	62%
Ethnicity unknown	286	326	87	19%	21%	19%	21%	19%	77%	62%	61%
Primary Ethnicity—Unknown Economic Status											
American Indian	2	–	–	–	–	–	–	–	–	–	–
Asian American	4	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–
Hispanic	29	309	66	17%	28%	17%	34%	3%	67%	56%	63%
African American	10	–	–	–	–	–	–	–	–	–	–
White	21	299	80	24%	38%	5%	14%	19%	71%	56%	57%
Ethnicity unknown	39	303	71	23%	26%	23%	18%	10%	76%	57%	57%

Table 7.C.7 Demographic Summary for ELA, Grade Nine

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	19,950	293	72	27%	31%	21%	15%	7%	57%	53%	50%
Male	13,372	291	74	28%	31%	20%	14%	7%	57%	53%	49%
Female	6,533	297	70	23%	32%	23%	15%	6%	57%	53%	52%
Gender unknown	45	280	69	29%	42%	16%	7%	7%	54%	51%	46%
American Indian	185	290	75	33%	27%	17%	15%	8%	59%	52%	49%
Asian American	511	306	72	19%	30%	24%	21%	6%	58%	55%	54%
Pacific Islander	82	286	66	28%	37%	16%	15%	5%	53%	52%	49%
Filipino	169	318	77	14%	31%	25%	18%	12%	59%	57%	58%
Hispanic	12,507	287	68	29%	33%	20%	14%	5%	55%	52%	49%
African American	2,254	284	71	31%	32%	20%	11%	5%	56%	51%	48%
White	3,798	314	79	19%	28%	23%	19%	12%	64%	57%	54%
Ethnicity unknown	444	306	81	21%	30%	26%	13%	10%	60%	55%	53%
English only	10,493	300	76	24%	30%	22%	16%	9%	60%	54%	51%
Initially fluent English prof.	401	306	72	20%	31%	22%	18%	9%	61%	56%	52%
English learner	7,890	277	62	32%	35%	20%	11%	3%	53%	49%	48%
Reclassified fluent English prof.	1,060	337	75	11%	21%	25%	28%	15%	66%	62%	60%
English prof. unknown	106	295	70	25%	30%	24%	15%	6%	57%	53%	51%
Autism	847	312	83	20%	30%	21%	18%	11%	59%	55%	56%
Deaf-blindness	2	–	–	–	–	–	–	–	–	–	–
Deafness	122	248	52	52%	33%	11%	5%	0%	45%	41%	43%
Emotional disturbance	678	306	85	24%	29%	19%	15%	13%	64%	55%	51%
Hard of hearing	226	299	68	23%	28%	29%	12%	7%	56%	53%	54%
MR/ID	413	239	47	59%	32%	7%	2%	1%	42%	40%	40%
Multiple disability	37	263	69	38%	30%	27%	3%	3%	49%	47%	43%
Orthopedic impairment	150	302	77	21%	32%	21%	17%	9%	60%	54%	53%
Other health impairment	1,926	309	80	23%	27%	21%	19%	10%	62%	56%	53%
Specific learning disability	14,319	292	70	27%	32%	21%	14%	6%	57%	53%	50%
Speech or language Impairment	945	290	65	26%	33%	23%	15%	3%	55%	51%	52%
Traumatic brain injury	59	286	70	31%	34%	8%	24%	3%	55%	50%	50%
Visual impairment	53	304	86	25%	32%	9%	21%	13%	59%	54%	53%
Disability unknown	173	286	72	31%	29%	21%	13%	5%	57%	52%	48%
Not economically disadvantaged	5,250	310	78	21%	28%	22%	19%	11%	62%	56%	54%
Economically disadvantaged	14,571	287	69	29%	33%	20%	13%	5%	56%	52%	49%
Economic status unknown	129	285	71	30%	29%	23%	13%	4%	55%	52%	48%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	64	312	78	27%	19%	17%	27%	11%	65%	57%	54%
Asian American	204	313	75	17%	28%	27%	21%	7%	59%	56%	56%
Pacific Islander	28	296	72	25%	39%	18%	7%	11%	55%	51%	54%
Filipino	95	323	77	14%	27%	25%	19%	15%	60%	58%	58%
Hispanic	2,030	302	74	24%	30%	21%	17%	8%	59%	55%	52%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	609	295	75	27%	30%	22%	14%	7%	58%	53%	50%
White	2,050	321	80	17%	26%	23%	21%	13%	65%	58%	56%
Ethnicity unknown	170	331	84	14%	24%	30%	16%	17%	67%	60%	58%
Primary Ethnicity—Economically Disadvantaged											
American Indian	120	277	70	37%	32%	18%	8%	6%	56%	49%	46%
Asian American	307	302	70	21%	31%	22%	21%	6%	57%	55%	53%
Pacific Islander	54	281	63	30%	35%	15%	19%	2%	51%	53%	46%
Filipino	74	311	76	15%	36%	24%	16%	8%	58%	55%	57%
Hispanic	10,444	284	67	30%	33%	20%	13%	4%	55%	51%	49%
African American	1,627	280	69	33%	33%	19%	11%	5%	56%	50%	47%
White	1,728	306	77	21%	30%	22%	16%	10%	61%	56%	52%
Ethnicity unknown	217	292	77	27%	32%	24%	11%	6%	57%	52%	50%
Primary Ethnicity—Unknown Economic Status											
American Indian	1	–	–	–	–	–	–	–	–	–	–
Asian American	0	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	0	–	–	–	–	–	–	–	–	–	–
Hispanic	33	277	66	30%	33%	24%	9%	3%	55%	49%	47%
African American	18	244	46	56%	22%	22%	0%	0%	48%	43%	38%
White	20	320	92	30%	5%	25%	30%	10%	64%	57%	57%
Ethnicity unknown	57	288	65	23%	39%	23%	12%	4%	54%	53%	48%

Table 7.C.8 Demographic Summary for ELA, Grade Ten

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	17,163	289	64	25%	34%	23%	13%	5%	57%	50%	48%
Male	11,333	285	64	27%	35%	21%	12%	4%	56%	49%	47%
Female	5,791	297	63	20%	33%	26%	15%	5%	59%	51%	50%
Gender unknown	39	280	62	26%	44%	15%	13%	3%	57%	48%	46%
American Indian	183	297	68	20%	38%	22%	13%	7%	60%	52%	49%
Asian American	436	292	60	21%	34%	26%	15%	3%	57%	51%	49%
Pacific Islander	61	292	67	26%	30%	28%	11%	5%	56%	51%	49%
Filipino	159	309	63	14%	31%	31%	18%	7%	59%	53%	54%
Hispanic	10,550	287	63	26%	34%	23%	13%	4%	56%	50%	48%
African American	1,923	280	61	28%	38%	21%	10%	3%	56%	48%	46%
White	3,499	301	68	21%	32%	23%	16%	8%	61%	52%	51%
Ethnicity unknown	352	290	62	22%	36%	24%	14%	4%	58%	50%	48%
English only	9,417	293	66	24%	34%	23%	14%	6%	59%	51%	49%
Initially fluent English prof.	416	303	63	18%	33%	26%	17%	6%	61%	53%	51%
English learner	6,429	278	58	29%	36%	22%	10%	2%	54%	48%	46%
Reclassified fluent English prof.	830	328	70	13%	21%	27%	24%	14%	68%	58%	57%
English prof. unknown	71	286	60	21%	46%	17%	13%	3%	59%	49%	47%
Autism	619	299	70	19%	37%	23%	13%	9%	57%	51%	52%
Deaf-blindness	2	–	–	–	–	–	–	–	–	–	–
Deafness	149	259	55	44%	36%	12%	7%	1%	47%	44%	41%
Emotional disturbance	735	293	74	28%	30%	20%	14%	8%	59%	51%	48%
Hard of hearing	176	294	64	22%	35%	21%	17%	5%	56%	50%	51%
MR/ID	404	245	47	50%	37%	10%	2%	0%	42%	40%	39%
Multiple disability	33	255	57	48%	33%	12%	3%	3%	47%	41%	43%
Orthopedic impairment	149	301	71	22%	32%	22%	13%	10%	58%	52%	52%
Other health impairment	1,493	298	68	22%	32%	23%	16%	7%	60%	52%	50%
Specific learning disability	12,404	289	63	25%	34%	24%	13%	4%	58%	50%	48%
Speech or language Impairment	759	289	59	24%	35%	25%	14%	2%	56%	50%	49%
Traumatic brain injury	52	273	56	31%	37%	21%	10%	2%	53%	46%	46%
Visual impairment	44	313	74	14%	39%	20%	14%	14%	64%	55%	53%
Disability unknown	144	275	56	30%	42%	17%	8%	3%	53%	47%	44%
Not economically disadvantaged	4,772	299	67	21%	32%	24%	16%	7%	60%	52%	51%
Economically disadvantaged	12,293	286	63	27%	35%	22%	12%	4%	56%	49%	47%
Economic status unknown	98	279	61	27%	42%	18%	10%	3%	58%	48%	45%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	61	302	67	20%	30%	31%	11%	8%	64%	52%	51%
Asian American	147	292	62	21%	35%	24%	15%	4%	58%	50%	49%
Pacific Islander	28	305	64	21%	25%	36%	14%	4%	59%	52%	55%
Filipino	95	313	63	12%	32%	29%	20%	7%	60%	54%	55%
Hispanic	1,822	295	65	23%	32%	24%	16%	5%	59%	51%	50%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	559	287	65	25%	37%	22%	11%	5%	58%	49%	48%
White	1,931	306	69	19%	30%	25%	18%	8%	63%	53%	52%
Ethnicity unknown	129	302	68	18%	33%	24%	18%	8%	61%	52%	51%
Primary Ethnicity—Economically Disadvantaged											
American Indian	122	294	68	20%	42%	17%	14%	7%	59%	52%	47%
Asian American	288	292	59	22%	34%	27%	15%	2%	56%	51%	49%
Pacific Islander	31	282	71	32%	29%	23%	10%	6%	55%	51%	44%
Filipino	64	304	64	17%	30%	33%	14%	6%	58%	53%	53%
Hispanic	8,699	285	62	27%	35%	23%	12%	4%	56%	49%	47%
African American	1,361	277	58	29%	38%	21%	9%	2%	54%	48%	45%
White	1,549	294	67	24%	34%	21%	15%	6%	60%	51%	49%
Ethnicity unknown	179	283	57	23%	38%	24%	13%	2%	57%	49%	46%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	2	–	–	–	–	–	–	–	–	–	–
Filipino	0	–	–	–	–	–	–	–	–	–	–
Hispanic	29	279	62	28%	45%	14%	10%	3%	59%	49%	43%
African American	3	–	–	–	–	–	–	–	–	–	–
White	19	282	62	32%	32%	21%	11%	5%	62%	48%	45%
Ethnicity unknown	44	279	61	25%	41%	23%	9%	2%	56%	47%	47%

Table 7.C.9 Demographic Summary for ELA, Grade Eleven

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
All valid scores	13,936	279	57	31%	35%	22%	9%	3%	42%	47%	44%
Male	9,147	277	57	32%	35%	21%	9%	3%	43%	47%	43%
Female	4,760	282	55	28%	37%	23%	10%	3%	42%	47%	45%
Gender unknown	29	282	68	31%	28%	24%	14%	3%	43%	48%	44%
American Indian	151	283	61	28%	35%	23%	10%	4%	45%	48%	44%
Asian American	349	279	53	27%	42%	20%	9%	2%	42%	46%	45%
Pacific Islander	61	279	50	31%	33%	25%	11%	0%	40%	48%	44%
Filipino	128	284	52	25%	38%	24%	10%	2%	43%	47%	47%
Hispanic	8,451	276	54	32%	36%	21%	9%	2%	42%	46%	43%
African American	1,546	274	56	34%	35%	21%	7%	3%	41%	46%	43%
White	3,002	290	63	27%	32%	24%	12%	5%	45%	49%	46%
Ethnicity unknown	248	280	57	30%	35%	22%	10%	3%	43%	47%	44%
English only	7,749	282	59	30%	34%	22%	10%	4%	43%	48%	44%
Initially fluent English prof.	404	287	58	25%	35%	25%	11%	4%	44%	49%	45%
English learner	5,108	271	51	34%	38%	20%	7%	1%	40%	45%	43%
Reclassified fluent English prof.	628	303	61	18%	30%	29%	16%	7%	47%	52%	50%
English prof. unknown	47	270	57	34%	34%	23%	6%	2%	41%	45%	41%
Autism	487	290	64	26%	35%	21%	12%	6%	47%	48%	47%
Deaf-blindness	2	–	–	–	–	–	–	–	–	–	–
Deafness	150	247	38	53%	37%	9%	1%	0%	34%	39%	38%
Emotional disturbance	547	285	64	31%	31%	22%	12%	5%	45%	48%	45%
Hard of hearing	137	277	56	30%	38%	20%	9%	2%	40%	45%	45%
MR/ID	361	244	39	54%	37%	7%	1%	0%	34%	38%	38%
Multiple disability	14	274	58	36%	29%	21%	14%	0%	44%	44%	44%
Orthopedic impairment	119	280	54	29%	37%	24%	8%	3%	45%	47%	44%
Other health impairment	1,206	290	63	26%	33%	23%	13%	5%	45%	50%	46%
Specific learning disability	10,145	278	55	31%	35%	22%	9%	3%	42%	47%	44%
Speech or language Impairment	610	277	52	29%	38%	23%	8%	1%	40%	46%	45%
Traumatic brain injury	49	263	56	47%	33%	12%	6%	2%	35%	44%	40%
Visual impairment	34	297	68	21%	44%	18%	6%	12%	50%	51%	46%
Disability unknown	75	280	61	28%	41%	20%	8%	3%	44%	48%	42%
Not economically disadvantaged	3,971	289	61	26%	33%	23%	12%	5%	45%	49%	46%
Economically disadvantaged	9,902	275	54	33%	36%	21%	8%	2%	41%	46%	43%
Economic status unknown	63	272	61	33%	38%	21%	5%	3%	43%	46%	41%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	70	303	57	14%	43%	21%	16%	6%	50%	52%	48%
Asian American	122	286	58	24%	39%	23%	10%	4%	42%	48%	47%
Pacific Islander	26	281	48	35%	27%	27%	12%	0%	45%	48%	43%
Filipino	68	286	55	28%	34%	24%	10%	4%	43%	47%	47%
Hispanic	1,488	284	58	29%	35%	21%	12%	3%	44%	48%	45%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Vocabulary	Reading for Understanding	Language
African American	425	281	58	27%	37%	24%	7%	4%	45%	48%	43%
White	1,681	295	64	24%	31%	25%	13%	7%	46%	50%	48%
Ethnicity unknown	91	291	63	27%	33%	21%	14%	4%	47%	50%	45%
Primary Ethnicity—Economically Disadvantaged											
American Indian	81	266	59	40%	28%	25%	5%	2%	40%	44%	41%
Asian American	227	276	49	29%	44%	19%	8%	1%	41%	46%	44%
Pacific Islander	35	278	51	29%	37%	23%	11%	0%	36%	47%	45%
Filipino	59	283	49	20%	44%	25%	10%	0%	42%	46%	47%
Hispanic	6,945	274	53	33%	37%	21%	8%	2%	41%	46%	43%
African American	1,115	271	55	37%	34%	20%	7%	2%	40%	45%	42%
White	1,311	282	60	31%	33%	22%	11%	4%	44%	48%	44%
Ethnicity unknown	129	277	51	29%	39%	22%	9%	2%	41%	47%	43%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	0	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–
Hispanic	18	269	38	28%	56%	11%	6%	0%	42%	47%	39%
African American	6	–	–	–	–	–	–	–	–	–	–
White	10	–	–	–	–	–	–	–	–	–	–
Ethnicity unknown	28	258	60	43%	29%	21%	4%	4%	42%	41%	40%

Table 7.C.10 Demographic Summary for Mathematics, Grade Three

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
All valid scores	16,973	320	63	5%	36%	26%	27%	5%	59%	62%	68%
Male	11,160	322	65	5%	36%	26%	27%	6%	59%	62%	68%
Female	5,659	317	59	5%	37%	28%	27%	4%	58%	62%	67%
Gender unknown	154	316	59	3%	43%	25%	25%	4%	58%	60%	66%
American Indian	158	319	61	6%	36%	28%	25%	5%	56%	63%	69%
Asian American	517	334	70	5%	29%	23%	33%	9%	63%	65%	70%
Pacific Islander	80	321	55	3%	34%	33%	29%	3%	60%	62%	67%
Filipino	178	330	65	3%	32%	27%	31%	7%	62%	63%	69%
Hispanic	10,655	319	62	5%	37%	27%	26%	5%	58%	61%	67%
African American	1,746	310	61	6%	43%	26%	22%	4%	55%	59%	65%
White	2,984	330	65	4%	30%	26%	32%	7%	61%	66%	70%
Ethnicity unknown	655	320	65	5%	38%	26%	25%	6%	57%	63%	68%
English only	9,059	321	64	5%	35%	26%	28%	6%	59%	63%	68%
Initially fluent English prof.	144	327	67	6%	32%	26%	28%	8%	61%	64%	68%
English learner	7,316	318	62	5%	37%	27%	26%	5%	58%	61%	67%
Reclassified fluent English prof.	66	338	61	3%	24%	27%	38%	8%	64%	68%	71%
English prof. unknown	388	323	62	4%	38%	27%	24%	7%	59%	63%	69%
Autism	1,501	317	68	7%	38%	22%	26%	6%	57%	61%	66%
Deaf-blindness	5	–	–	–	–	–	–	–	–	–	–
Deafness	77	334	55	0%	29%	30%	38%	4%	66%	63%	71%
Emotional disturbance	279	315	70	9%	34%	25%	25%	6%	56%	61%	66%
Hard of hearing	156	335	64	3%	33%	19%	38%	7%	64%	64%	71%
MR/ID	320	263	48	21%	62%	10%	6%	1%	41%	44%	50%
Multiple disability	49	289	64	8%	57%	16%	12%	6%	49%	52%	58%
Orthopedic impairment	156	308	63	8%	45%	22%	19%	6%	53%	60%	64%
Other health impairment	1,639	321	62	5%	35%	28%	27%	5%	58%	63%	68%
Specific learning disability	9,183	322	61	4%	35%	28%	28%	5%	59%	63%	68%
Speech or language Impairment	2,838	325	64	5%	33%	27%	29%	6%	60%	63%	68%
Traumatic brain injury	51	313	69	4%	43%	25%	18%	10%	55%	59%	66%
Visual impairment	42	310	64	12%	36%	26%	24%	2%	55%	60%	65%
Disability unknown	677	313	58	4%	44%	26%	24%	3%	57%	60%	66%
Not economically disadvantaged	3,235	331	66	4%	30%	25%	32%	8%	61%	66%	71%
Economically disadvantaged	13,051	317	62	5%	38%	27%	26%	5%	58%	61%	67%
Economic status unknown	687	325	63	4%	35%	28%	26%	7%	60%	63%	69%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	28	338	53	0%	36%	25%	32%	7%	61%	70%	77%
Asian American	227	344	70	4%	25%	23%	37%	11%	66%	68%	72%
Pacific Islander	18	316	52	0%	39%	33%	28%	0%	58%	62%	66%
Filipino	86	341	69	3%	24%	27%	33%	13%	65%	67%	71%
Hispanic	1,079	326	63	4%	33%	25%	31%	6%	60%	64%	69%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
African American	256	317	66	6%	39%	27%	23%	5%	57%	62%	67%
White	1,374	335	65	4%	27%	25%	35%	8%	62%	68%	72%
Ethnicity unknown	167	332	77	6%	32%	25%	27%	11%	60%	66%	71%
Primary Ethnicity—Economically Disadvantaged											
American Indian	125	313	61	7%	37%	30%	22%	4%	55%	61%	67%
Asian American	278	326	70	6%	33%	23%	30%	8%	61%	63%	67%
Pacific Islander	59	321	57	3%	34%	32%	27%	3%	61%	61%	67%
Filipino	84	323	58	2%	37%	29%	31%	1%	60%	61%	70%
Hispanic	9,288	318	62	5%	37%	27%	26%	5%	58%	61%	67%
African American	1,427	308	60	6%	44%	26%	21%	3%	55%	58%	65%
White	1,487	323	64	5%	34%	26%	30%	6%	59%	64%	69%
Ethnicity unknown	303	310	58	6%	40%	29%	22%	2%	54%	61%	66%
Primary Ethnicity—Unknown Economic Status											
American Indian	5	–	–	–	–	–	–	–	–	–	–
Asian American	12	341	65	0%	25%	33%	25%	17%	67%	63%	73%
Pacific Islander	3	–	–	–	–	–	–	–	–	–	–
Filipino	8	–	–	–	–	–	–	–	–	–	–
Hispanic	288	318	60	5%	35%	31%	25%	4%	58%	61%	68%
African American	63	320	55	5%	38%	24%	29%	5%	59%	63%	67%
White	123	342	71	3%	24%	32%	26%	15%	63%	69%	74%
Ethnicity unknown	185	325	63	2%	41%	23%	28%	6%	59%	63%	70%

Table 7.C.11 Demographic Summary for Mathematics, Grade Four

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
All valid scores	22,340	330	86	9%	30%	23%	23%	14%	65%	55%	57%
Male	14,505	329	88	10%	30%	23%	22%	15%	65%	54%	57%
Female	7,812	332	83	8%	29%	24%	25%	13%	65%	55%	58%
Gender unknown	23	293	80	30%	22%	17%	30%	0%	55%	50%	53%
American Indian	211	331	87	9%	27%	27%	23%	14%	65%	55%	56%
Asian American	666	353	96	7%	25%	17%	28%	23%	70%	58%	59%
Pacific Islander	109	332	96	9%	32%	21%	24%	14%	65%	55%	57%
Filipino	247	344	96	7%	29%	21%	23%	20%	68%	55%	59%
Hispanic	14,061	330	85	9%	30%	24%	23%	14%	65%	55%	57%
African American	2,417	311	81	13%	34%	23%	20%	9%	61%	52%	54%
White	4,117	339	89	8%	28%	22%	24%	17%	67%	56%	58%
Ethnicity unknown	512	334	86	10%	26%	24%	26%	15%	65%	56%	58%
English only	12,051	330	87	10%	30%	22%	23%	14%	65%	55%	57%
Initially fluent English prof.	219	346	86	5%	29%	22%	25%	19%	67%	57%	62%
English learner	9,863	331	84	8%	30%	24%	23%	14%	65%	55%	57%
Reclassified fluent English prof.	140	352	104	8%	26%	24%	18%	25%	69%	58%	59%
English prof. unknown	67	288	83	25%	34%	24%	12%	4%	56%	47%	51%
Autism	1,655	327	96	13%	30%	20%	21%	16%	64%	54%	56%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	98	305	81	16%	35%	24%	14%	10%	60%	49%	54%
Emotional disturbance	430	311	84	14%	36%	21%	19%	10%	62%	51%	53%
Hard of hearing	192	346	90	8%	28%	18%	24%	22%	69%	57%	59%
MR/ID	387	248	65	38%	44%	11%	6%	2%	46%	40%	44%
Multiple disability	28	266	87	29%	46%	11%	7%	7%	50%	43%	48%
Orthopedic impairment	156	326	91	10%	33%	21%	21%	15%	63%	55%	56%
Other health impairment	2,169	329	85	9%	30%	24%	23%	14%	64%	54%	57%
Specific learning disability	12,702	332	83	8%	30%	24%	24%	14%	65%	55%	58%
Speech or language Impairment	2,989	339	90	8%	28%	22%	25%	17%	67%	56%	58%
Traumatic brain injury	45	291	82	16%	38%	22%	18%	7%	57%	49%	50%
Visual impairment	60	321	96	22%	18%	15%	33%	12%	62%	54%	56%
Disability unknown	1,426	334	82	7%	30%	23%	25%	14%	65%	55%	59%
Not economically disadvantaged	4,634	344	90	8%	26%	22%	26%	19%	68%	57%	59%
Economically disadvantaged	17,599	327	85	10%	31%	23%	23%	13%	64%	54%	57%
Economic status unknown	107	301	78	15%	36%	22%	22%	4%	57%	51%	54%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	51	356	97	10%	18%	20%	29%	24%	70%	60%	59%
Asian American	273	356	97	7%	25%	17%	29%	22%	70%	58%	60%
Pacific Islander	24	343	85	4%	25%	33%	21%	17%	68%	55%	62%
Filipino	113	341	98	9%	27%	24%	19%	21%	68%	56%	56%
Hispanic	1,549	339	86	8%	27%	24%	24%	18%	67%	56%	60%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
African American	377	319	82	12%	32%	23%	21%	11%	63%	52%	55%
White	2,055	350	91	7%	24%	21%	27%	20%	69%	58%	60%
Ethnicity unknown	192	342	87	8%	21%	24%	28%	18%	67%	58%	59%
Primary Ethnicity—Economically Disadvantaged											
American Indian	160	323	82	9%	29%	29%	21%	11%	64%	53%	55%
Asian American	389	352	96	8%	25%	16%	28%	23%	70%	58%	59%
Pacific Islander	85	329	100	11%	34%	18%	25%	13%	64%	55%	56%
Filipino	131	346	95	5%	31%	19%	26%	19%	68%	55%	62%
Hispanic	12,464	328	84	9%	31%	24%	23%	13%	64%	55%	57%
African American	2,033	310	80	14%	34%	23%	20%	9%	61%	52%	53%
White	2,040	328	86	9%	31%	23%	22%	15%	64%	54%	57%
Ethnicity unknown	297	333	85	9%	28%	23%	26%	14%	64%	56%	59%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	4	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	3	–	–	–	–	–	–	–	–	–	–
Hispanic	48	303	82	10%	44%	21%	19%	6%	56%	51%	58%
African American	7	–	–	–	–	–	–	–	–	–	–
White	22	311	77	14%	32%	23%	27%	5%	58%	57%	53%
Ethnicity unknown	23	272	69	30%	30%	26%	13%	0%	53%	45%	47%

Table 7.C.12 Demographic Summary for Mathematics, Grade Five

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
All valid scores	25,586	349	78	5%	25%	22%	29%	19%	66%	61%	53%
Male	16,647	345	79	5%	27%	22%	27%	18%	65%	60%	52%
Female	8,922	355	75	4%	22%	23%	31%	21%	68%	63%	54%
Gender unknown	17	299	69	6%	53%	24%	12%	6%	49%	55%	41%
American Indian	269	333	71	6%	25%	31%	27%	11%	62%	58%	49%
Asian American	721	364	91	6%	22%	20%	25%	28%	69%	62%	57%
Pacific Islander	111	353	79	4%	27%	18%	33%	18%	67%	60%	54%
Filipino	269	356	76	4%	23%	20%	31%	22%	68%	62%	55%
Hispanic	16,064	349	76	4%	25%	23%	29%	19%	66%	61%	53%
African American	3,001	334	78	8%	31%	22%	25%	14%	62%	57%	51%
White	4,612	355	79	5%	23%	22%	29%	22%	66%	63%	55%
Ethnicity unknown	539	351	81	6%	24%	22%	26%	22%	66%	61%	53%
English only	13,874	346	78	6%	26%	22%	28%	19%	65%	61%	53%
Initially fluent English prof.	270	373	81	2%	17%	20%	31%	30%	70%	66%	59%
English learner	11,083	351	77	4%	24%	23%	29%	19%	66%	61%	53%
Reclassified fluent English prof.	306	386	82	2%	13%	18%	33%	34%	74%	69%	60%
English prof. unknown	53	323	79	8%	43%	21%	15%	13%	58%	56%	46%
Autism	1,607	341	84	7%	29%	22%	23%	19%	62%	59%	53%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	104	354	96	7%	30%	16%	20%	27%	65%	61%	54%
Emotional disturbance	582	316	72	10%	37%	22%	21%	9%	57%	54%	47%
Hard of hearing	207	366	82	4%	23%	14%	32%	28%	70%	65%	55%
MR/ID	441	276	62	22%	51%	14%	9%	3%	47%	42%	42%
Multiple disability	29	312	76	14%	34%	24%	21%	7%	57%	52%	46%
Orthopedic impairment	187	338	87	11%	30%	17%	25%	18%	61%	59%	53%
Other health impairment	2,453	350	78	5%	25%	22%	29%	19%	65%	61%	54%
Specific learning disability	15,822	352	77	4%	24%	22%	30%	20%	67%	62%	53%
Speech or language Impairment	2,707	353	78	4%	24%	23%	29%	20%	67%	61%	54%
Traumatic brain injury	58	322	85	10%	41%	16%	14%	19%	59%	52%	50%
Visual impairment	62	333	85	10%	34%	18%	24%	15%	61%	56%	50%
Disability unknown	1,324	352	72	3%	22%	25%	32%	17%	67%	62%	53%
Not economically disadvantaged	5,319	359	80	4%	22%	21%	30%	23%	68%	63%	56%
Economically disadvantaged	20,187	346	77	5%	26%	23%	28%	18%	65%	61%	52%
Economic status unknown	80	316	80	8%	49%	16%	16%	11%	55%	54%	46%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	63	334	69	5%	29%	22%	37%	8%	64%	57%	49%
Asian American	290	371	92	5%	21%	19%	23%	32%	70%	64%	59%
Pacific Islander	34	360	72	0%	24%	21%	32%	24%	71%	62%	53%
Filipino	147	360	81	5%	23%	17%	31%	24%	69%	61%	57%
Hispanic	1,735	356	79	4%	22%	21%	30%	22%	67%	63%	54%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
African American	527	342	81	6%	29%	21%	26%	18%	64%	58%	53%
White	2,332	362	78	3%	20%	21%	31%	24%	68%	64%	57%
Ethnicity unknown	191	366	88	6%	19%	24%	21%	30%	68%	63%	58%
Primary Ethnicity—Economically Disadvantaged											
American Indian	206	333	71	7%	24%	33%	24%	12%	61%	59%	49%
Asian American	430	359	89	7%	23%	21%	26%	24%	68%	61%	55%
Pacific Islander	76	351	82	5%	28%	17%	34%	16%	66%	60%	55%
Filipino	120	350	69	3%	23%	25%	32%	18%	67%	62%	52%
Hispanic	14,295	349	76	4%	25%	23%	29%	18%	66%	61%	52%
African American	2,468	332	77	8%	32%	22%	25%	14%	61%	57%	51%
White	2,260	347	80	6%	26%	22%	27%	19%	64%	61%	53%
Ethnicity unknown	332	345	76	6%	25%	21%	29%	19%	66%	60%	51%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	2	–	–	–	–	–	–	–	–	–	–
Hispanic	34	321	74	0%	53%	18%	21%	9%	58%	56%	46%
African American	6	–	–	–	–	–	–	–	–	–	–
White	20	318	97	15%	40%	15%	15%	15%	56%	51%	51%
Ethnicity unknown	16	302	76	13%	56%	13%	6%	13%	50%	57%	38%

Table 7.C.13 Demographic Summary for Mathematics, Grade Six

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
All valid scores	26,222	320	83	12%	29%	24%	24%	10%	56%	56%	47%
Male	17,132	318	85	13%	30%	23%	23%	11%	56%	55%	47%
Female	9,072	323	79	11%	28%	25%	26%	10%	56%	57%	48%
Gender unknown	18	274	72	33%	33%	17%	11%	6%	50%	48%	35%
American Indian	238	324	87	14%	25%	25%	26%	10%	57%	56%	48%
Asian American	758	339	91	9%	24%	22%	29%	16%	59%	60%	49%
Pacific Islander	136	310	80	13%	32%	26%	19%	10%	54%	54%	48%
Filipino	266	325	79	10%	27%	27%	27%	10%	57%	57%	47%
Hispanic	16,311	318	81	12%	30%	24%	24%	10%	56%	55%	47%
African American	2,963	300	77	17%	33%	24%	19%	6%	53%	52%	44%
White	4,986	333	88	11%	26%	22%	27%	15%	57%	59%	50%
Ethnicity unknown	564	324	80	10%	30%	24%	27%	10%	57%	57%	46%
English only	14,317	320	84	13%	29%	23%	24%	11%	56%	56%	48%
Initially fluent English prof.	481	343	83	9%	20%	28%	27%	16%	59%	60%	52%
English learner	10,754	316	80	13%	30%	24%	24%	9%	55%	55%	47%
Reclassified fluent English prof.	607	357	87	5%	21%	22%	30%	22%	62%	63%	51%
English prof. unknown	63	302	76	17%	33%	24%	19%	6%	53%	54%	40%
Autism	1,410	321	96	16%	28%	20%	21%	15%	56%	56%	46%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	126	300	76	15%	41%	20%	18%	6%	52%	51%	48%
Emotional disturbance	779	303	86	21%	29%	22%	18%	9%	53%	53%	44%
Hard of hearing	218	329	81	11%	24%	25%	28%	12%	56%	59%	49%
MR/ID	454	249	67	41%	40%	10%	7%	2%	44%	43%	36%
Multiple disability	42	264	81	48%	19%	12%	14%	7%	47%	45%	39%
Orthopedic impairment	192	300	88	20%	34%	16%	21%	9%	52%	53%	43%
Other health impairment	2,659	322	84	12%	29%	23%	25%	11%	56%	56%	48%
Specific learning disability	16,843	322	81	11%	29%	24%	25%	10%	56%	56%	48%
Speech or language Impairment	2,210	322	81	11%	30%	24%	25%	10%	56%	57%	47%
Traumatic brain injury	55	320	97	13%	35%	20%	18%	15%	55%	56%	47%
Visual impairment	76	320	85	14%	25%	25%	24%	12%	54%	58%	45%
Disability unknown	1,155	316	83	15%	29%	24%	22%	10%	55%	55%	48%
Not economically disadvantaged	5,835	334	87	11%	25%	22%	27%	15%	58%	59%	49%
Economically disadvantaged	20,303	316	81	13%	31%	24%	23%	9%	55%	55%	47%
Economic status unknown	84	307	84	19%	24%	31%	17%	10%	54%	54%	44%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	59	328	87	10%	32%	20%	25%	12%	60%	56%	46%
Asian American	297	348	90	8%	21%	21%	33%	18%	60%	62%	50%
Pacific Islander	35	339	91	3%	31%	23%	20%	23%	59%	58%	53%
Filipino	144	331	83	10%	28%	24%	25%	14%	59%	58%	47%
Hispanic	1,909	331	87	11%	26%	23%	26%	14%	57%	58%	49%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
African American	556	303	81	18%	30%	23%	22%	7%	53%	53%	44%
White	2,628	341	88	9%	23%	21%	29%	17%	58%	60%	51%
Ethnicity unknown	207	332	80	9%	28%	19%	31%	12%	58%	59%	48%
Primary Ethnicity—Economically Disadvantaged											
American Indian	179	323	87	15%	22%	26%	27%	9%	56%	57%	48%
Asian American	460	333	90	10%	27%	23%	26%	15%	58%	58%	49%
Pacific Islander	100	300	73	17%	32%	27%	19%	5%	52%	52%	47%
Filipino	121	317	73	10%	26%	31%	28%	5%	55%	56%	48%
Hispanic	14,383	316	80	12%	31%	24%	24%	9%	55%	55%	47%
African American	2,393	299	76	17%	34%	24%	19%	6%	53%	52%	44%
White	2,336	324	86	12%	29%	22%	25%	12%	56%	57%	49%
Ethnicity unknown	331	321	82	10%	32%	25%	24%	9%	57%	56%	46%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–
Hispanic	19	306	84	21%	21%	26%	21%	11%	54%	53%	45%
African American	14	294	60	14%	36%	43%	0%	7%	49%	52%	46%
White	22	313	121	27%	27%	14%	14%	18%	54%	55%	44%
Ethnicity unknown	26	309	63	15%	19%	38%	23%	4%	54%	56%	41%

Table 7.C.14 Demographic Summary for Mathematics, Grade Seven

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
All valid scores	26,130	295	87	25%	30%	20%	19%	6%	45%	49%	45%
Male	17,183	294	88	26%	30%	20%	19%	6%	45%	49%	45%
Female	8,934	299	84	22%	31%	21%	21%	6%	45%	51%	44%
Gender unknown	13	255	75	38%	38%	8%	15%	0%	39%	45%	38%
American Indian	253	300	86	21%	32%	19%	22%	6%	46%	49%	47%
Asian American	646	321	102	20%	25%	18%	23%	13%	50%	53%	47%
Pacific Islander	113	283	86	35%	27%	14%	19%	5%	44%	48%	41%
Filipino	261	309	93	21%	29%	18%	21%	11%	48%	51%	47%
Hispanic	16,191	293	85	25%	31%	20%	19%	5%	45%	49%	44%
African American	3,102	280	81	30%	33%	19%	15%	4%	43%	47%	42%
White	5,112	309	90	21%	26%	21%	23%	8%	47%	51%	48%
Ethnicity unknown	452	296	87	23%	33%	19%	18%	7%	45%	49%	46%
English only	14,299	297	88	25%	29%	20%	20%	6%	45%	49%	45%
Initially fluent English prof.	537	304	93	23%	29%	20%	19%	9%	47%	50%	45%
English learner	10,313	290	83	25%	32%	20%	18%	5%	45%	49%	43%
Reclassified fluent English prof.	912	336	95	13%	24%	19%	30%	13%	51%	55%	49%
English prof. unknown	69	271	69	30%	32%	20%	17%	0%	42%	45%	43%
Autism	1,309	290	94	30%	28%	18%	16%	7%	44%	49%	43%
Deaf-blindness	4	–	–	–	–	–	–	–	–	–	–
Deafness	112	291	86	29%	26%	21%	19%	6%	44%	49%	45%
Emotional disturbance	808	280	84	30%	32%	19%	12%	6%	43%	47%	44%
Hard of hearing	239	308	93	21%	30%	20%	22%	8%	47%	52%	45%
MR/ID	457	225	58	58%	30%	10%	2%	0%	36%	38%	35%
Multiple disability	38	263	74	34%	39%	18%	5%	3%	41%	43%	42%
Orthopedic impairment	208	279	87	33%	27%	21%	14%	5%	43%	48%	41%
Other health impairment	2,567	298	90	25%	29%	18%	21%	7%	46%	49%	45%
Specific learning disability	17,532	298	85	23%	30%	20%	20%	6%	46%	50%	45%
Speech or language Impairment	1,780	302	85	21%	31%	22%	20%	6%	46%	51%	45%
Traumatic brain injury	58	276	83	31%	31%	21%	16%	2%	43%	45%	46%
Visual impairment	61	303	97	20%	30%	26%	16%	8%	46%	50%	46%
Disability unknown	957	294	85	25%	29%	22%	19%	5%	45%	49%	44%
Not economically disadvantaged	5,961	312	91	20%	26%	21%	24%	9%	47%	51%	47%
Economically disadvantaged	20,090	291	85	26%	31%	20%	18%	5%	45%	49%	44%
Economic status unknown	79	267	81	41%	32%	9%	16%	3%	40%	46%	42%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	76	298	88	28%	22%	22%	22%	5%	46%	49%	48%
Asian American	225	334	107	18%	22%	19%	24%	17%	52%	54%	49%
Pacific Islander	32	298	100	28%	28%	19%	13%	13%	48%	50%	39%
Filipino	146	314	97	21%	23%	19%	25%	12%	48%	52%	47%
Hispanic	2,111	306	88	21%	28%	21%	23%	7%	47%	51%	46%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Number Sense	Algebra and Data Analysis	Measurement and Geometry
African American	584	294	86	25%	30%	22%	18%	6%	45%	49%	45%
White	2,628	318	92	19%	24%	21%	26%	9%	48%	52%	49%
Ethnicity unknown	159	319	90	15%	31%	19%	25%	10%	50%	51%	49%
Primary Ethnicity—Economically Disadvantaged											
American Indian	177	300	86	18%	36%	18%	22%	7%	47%	49%	46%
Asian American	419	315	99	21%	27%	17%	22%	11%	48%	52%	46%
Pacific Islander	81	277	80	37%	27%	12%	21%	2%	42%	47%	42%
Filipino	114	301	86	21%	36%	16%	18%	10%	46%	49%	47%
Hispanic	14,050	291	84	26%	31%	20%	18%	5%	45%	49%	44%
African American	2,509	276	79	31%	33%	18%	15%	3%	43%	47%	41%
White	2,461	299	87	23%	29%	21%	20%	6%	46%	49%	46%
Ethnicity unknown	279	285	83	27%	33%	20%	15%	5%	43%	48%	44%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	2	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–
Hispanic	30	257	75	40%	40%	3%	17%	0%	35%	47%	39%
African American	9	–	–	–	–	–	–	–	–	–	–
White	23	279	89	43%	22%	9%	22%	4%	41%	47%	47%
Ethnicity unknown	14	249	66	36%	43%	14%	7%	0%	41%	39%	44%

Table 7.C.15 Demographic Summary for Algebra I

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Properties, Operations, and Linear	Graphing and Systems of Linear Equations	Quadratics and Polynomials	Functions and Rational Expressions
All valid scores	28,896	289	55	23%	38%	25%	11%	3%	56%	45%	46%	48%
Male	18,783	287	56	25%	38%	23%	10%	3%	56%	44%	45%	47%
Female	10,044	294	54	19%	38%	28%	12%	3%	57%	45%	48%	49%
Gender unknown	69	281	50	20%	52%	14%	12%	1%	50%	45%	44%	48%
American Indian	250	293	56	22%	35%	26%	14%	3%	58%	45%	46%	49%
Asian American	681	313	63	14%	31%	29%	18%	8%	62%	50%	52%	53%
Pacific Islander	124	303	58	15%	37%	23%	19%	5%	63%	47%	49%	50%
Filipino	244	305	60	14%	34%	32%	13%	6%	60%	50%	50%	51%
Hispanic	17,937	289	55	23%	38%	24%	11%	3%	55%	45%	46%	47%
African American	3,632	278	50	28%	42%	22%	8%	1%	52%	42%	44%	45%
White	5,393	295	57	20%	36%	27%	13%	4%	59%	46%	47%	49%
Ethnicity unknown	635	290	57	23%	38%	23%	12%	3%	57%	45%	46%	47%
English only	15,731	289	55	23%	38%	25%	11%	3%	56%	44%	46%	47%
Initially fluent English prof.	722	294	54	19%	39%	26%	12%	4%	59%	46%	46%	49%
English learner	10,735	286	54	24%	39%	24%	10%	3%	54%	44%	46%	47%
Reclassified fluent English prof.	1,574	316	62	13%	28%	31%	20%	8%	65%	50%	52%	55%
English prof. unknown	134	280	51	28%	44%	15%	12%	1%	52%	44%	44%	45%
Autism	1,086	304	63	18%	33%	28%	16%	6%	58%	50%	50%	51%
Deaf-blindness	5	–	–	–	–	–	–	–	–	–	–	–
Deafness	118	297	52	19%	31%	34%	14%	2%	55%	49%	50%	48%
Emotional disturbance	1,105	276	52	31%	40%	20%	8%	2%	53%	42%	42%	44%
Hard of hearing	280	303	57	18%	31%	30%	17%	4%	59%	48%	50%	51%
MR/ID	576	253	40	48%	40%	9%	3%	0%	41%	38%	40%	38%
Multiple disability	37	288	65	27%	41%	16%	8%	8%	53%	46%	45%	49%
Orthopedic impairment	201	294	55	18%	42%	24%	12%	4%	56%	48%	46%	50%
Other health impairment	2,890	291	55	22%	38%	25%	11%	3%	58%	44%	46%	48%
Specific learning disability	20,949	290	55	22%	39%	25%	11%	3%	56%	45%	46%	48%
Speech or language Impairment	1,238	299	57	17%	35%	31%	13%	5%	58%	46%	50%	50%
Traumatic brain injury	86	294	56	21%	38%	26%	13%	2%	59%	46%	47%	48%
Visual impairment	68	298	68	26%	22%	28%	16%	7%	59%	48%	46%	50%
Disability unknown	257	278	51	29%	38%	23%	10%	1%	51%	42%	45%	45%
Not economically disadvantaged	7,774	296	57	20%	36%	28%	13%	4%	59%	46%	47%	49%
Economically disadvantaged	20,940	287	55	24%	39%	24%	10%	3%	55%	44%	46%	47%
Economic status unknown	182	274	51	32%	43%	15%	8%	2%	50%	42%	43%	44%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	99	298	59	18%	36%	25%	15%	5%	60%	44%	49%	51%
Asian American	252	319	65	12%	30%	30%	17%	11%	63%	51%	54%	54%
Pacific Islander	44	313	53	9%	34%	27%	25%	5%	64%	48%	52%	54%
Filipino	133	308	62	11%	35%	35%	13%	6%	62%	49%	51%	51%
Hispanic	3,082	292	54	21%	37%	26%	12%	3%	57%	45%	47%	48%

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Properties, Operations, and Linear	Graphing and Systems of Linear Equations	Quadratics and Polynomials	Functions and Rational Expressions
African American	1,028	282	53	26%	38%	24%	10%	2%	53%	43%	45%	46%
White	2,915	301	58	17%	34%	29%	15%	4%	61%	47%	48%	51%
Ethnicity unknown	221	303	61	18%	31%	31%	15%	5%	62%	46%	49%	51%
Primary Ethnicity—Economically Disadvantaged												
American Indian	150	290	54	24%	34%	26%	14%	2%	58%	46%	45%	48%
Asian American	429	309	62	15%	32%	29%	18%	7%	61%	50%	51%	52%
Pacific Islander	78	297	61	19%	37%	22%	17%	5%	62%	46%	47%	48%
Filipino	110	302	58	17%	33%	30%	14%	6%	57%	50%	49%	51%
Hispanic	14,802	288	55	24%	39%	24%	11%	3%	55%	44%	46%	47%
African American	2,585	277	48	28%	43%	21%	7%	1%	52%	42%	44%	44%
White	2,449	289	55	23%	39%	24%	11%	3%	57%	45%	46%	47%
Ethnicity unknown	337	282	54	28%	41%	20%	9%	3%	54%	44%	44%	45%
Primary Ethnicity—Unknown Economic Status												
American Indian	1	–	–	–	–	–	–	–	–	–	–	–
Asian American	0	–	–	–	–	–	–	–	–	–	–	–
Pacific Islander	2	–	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–	–
Hispanic	53	271	55	38%	36%	19%	4%	4%	50%	41%	43%	42%
African American	19	247	32	53%	42%	5%	0%	0%	40%	40%	35%	36%
White	29	273	50	34%	38%	21%	7%	0%	52%	41%	42%	43%
Ethnicity unknown	77	284	50	22%	49%	14%	13%	1%	53%	44%	46%	47%

Table 7.C.16 Demographic Summary for Geometry

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Properties, Operations, and Linear	Graphing and Systems of Linear Equations	Quadratics and Polynomials	Functions and Rational Expressions
All valid scores	6,991	288	46	23%	41%	25%	9%	2%	50%	49%	46%	44%
Male	4,445	289	48	23%	41%	24%	10%	2%	50%	50%	46%	44%
Female	2,527	286	41	23%	42%	27%	7%	1%	50%	48%	46%	43%
Gender unknown	19	289	37	11%	58%	21%	11%	0%	50%	51%	42%	48%
American Indian	51	301	52	12%	45%	25%	12%	6%	52%	55%	50%	48%
Asian American	190	307	50	12%	38%	30%	14%	5%	55%	57%	52%	48%
Pacific Islander	26	287	48	27%	35%	31%	4%	4%	50%	49%	46%	41%
Filipino	65	296	45	22%	34%	31%	14%	0%	51%	51%	50%	47%
Hispanic	4,509	284	44	25%	42%	25%	7%	1%	49%	48%	45%	43%
African American	886	278	39	28%	46%	21%	5%	1%	48%	46%	43%	41%
White	1,155	303	53	16%	36%	28%	16%	4%	54%	55%	49%	48%
Ethnicity unknown	109	294	48	22%	34%	28%	15%	1%	54%	51%	46%	44%
English only	3,503	290	48	22%	40%	26%	10%	2%	51%	50%	46%	44%
Initially fluent English prof.	200	293	47	19%	39%	30%	11%	2%	51%	52%	46%	47%
English learner	2,780	281	42	27%	45%	21%	6%	1%	48%	46%	45%	43%
Reclassified fluent English prof.	482	306	46	13%	32%	38%	15%	2%	55%	57%	50%	49%
English prof. unknown	26	289	42	23%	38%	27%	12%	0%	51%	52%	44%	46%
Autism	251	309	59	17%	33%	28%	15%	8%	56%	55%	52%	49%
Deaf-blindness	0	–	–	–	–	–	–	–	–	–	–	–
Deafness	76	294	44	22%	37%	29%	11%	1%	52%	52%	48%	45%
Emotional disturbance	194	281	50	31%	40%	17%	10%	2%	46%	49%	43%	43%
Hard of hearing	72	300	47	15%	38%	35%	8%	4%	55%	53%	48%	46%
MR/ID	71	252	32	58%	34%	7%	1%	0%	37%	39%	39%	35%
Multiple disability	7	–	–	–	–	–	–	–	–	–	–	–
Orthopedic impairment	60	280	48	25%	42%	25%	7%	2%	46%	51%	45%	40%
Other health impairment	659	295	50	21%	36%	27%	15%	2%	53%	53%	46%	46%
Specific learning disability	5,306	286	44	23%	43%	25%	7%	1%	49%	48%	46%	44%
Speech or language Impairment	214	296	48	15%	46%	24%	12%	3%	52%	53%	48%	45%
Traumatic brain injury	18	288	49	22%	39%	22%	17%	0%	50%	51%	47%	42%
Visual impairment	22	305	43	9%	41%	27%	23%	0%	56%	55%	52%	47%
Disability unknown	41	290	45	20%	49%	24%	5%	2%	52%	48%	44%	46%
Not economically disadvantaged	1,788	299	50	17%	38%	28%	14%	3%	54%	54%	48%	47%
Economically disadvantaged	5,176	284	43	25%	43%	24%	7%	1%	49%	48%	45%	43%
Economic status unknown	27	285	44	30%	33%	26%	11%	0%	49%	51%	43%	44%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	22	317	64	5%	50%	14%	18%	14%	55%	61%	54%	52%
Asian American	59	311	48	7%	41%	37%	7%	8%	56%	61%	52%	48%
Pacific Islander	9	–	–	–	–	–	–	–	–	–	–	–
Filipino	42	297	47	24%	31%	29%	17%	0%	52%	50%	51%	48%
Hispanic	702	293	46	19%	40%	29%	11%	1%	52%	51%	47%	46%

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Properties, Operations, and Linear	Graphing and Systems of Linear Equations	Quadratics and Polynomials	Functions and Rational Expressions
African American	237	284	44	23%	44%	26%	6%	1%	50%	48%	44%	42%
White	682	309	55	15%	33%	28%	19%	5%	56%	57%	51%	49%
Ethnicity unknown	35	302	49	17%	34%	26%	23%	0%	57%	52%	49%	46%
Primary Ethnicity—Economically Disadvantaged												
American Indian	29	289	39	17%	41%	34%	7%	0%	49%	51%	47%	44%
Asian American	131	305	51	15%	37%	27%	18%	4%	54%	55%	52%	47%
Pacific Islander	17	293	55	29%	29%	29%	6%	6%	51%	50%	48%	45%
Filipino	23	295	41	17%	39%	35%	9%	0%	50%	55%	48%	47%
Hispanic	3,800	283	43	26%	43%	24%	7%	1%	48%	47%	45%	43%
African American	649	276	37	30%	47%	19%	4%	0%	47%	45%	43%	40%
White	472	294	48	18%	40%	29%	10%	3%	52%	51%	47%	45%
Ethnicity unknown	55	290	48	25%	31%	33%	9%	2%	53%	50%	46%	42%
Primary Ethnicity—Unknown Economic Status												
American Indian	0	–	–	–	–	–	–	–	–	–	–	–
Asian American	0	–	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–	–
Filipino	0	–	–	–	–	–	–	–	–	–	–	–
Hispanic	7	–	–	–	–	–	–	–	–	–	–	–
African American	0	–	–	–	–	–	–	–	–	–	–	–
White	1	–	–	–	–	–	–	–	–	–	–	–
Ethnicity unknown	19	291	46	21%	42%	21%	16%	0%	51%	54%	43%	46%

Table 7.C.17 Demographic Summary for Science, Grade Five

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Physical Sciences	Life Sciences	Earth Sciences
All valid scores	26,838	339	56	3%	20%	34%	28%	15%	60%	62%	59%
Male	17,820	341	58	3%	20%	32%	28%	16%	60%	62%	59%
Female	9,000	336	52	3%	20%	37%	28%	12%	58%	62%	58%
Gender unknown	18	317	55	0%	56%	11%	22%	11%	55%	55%	53%
American Indian	285	341	59	4%	20%	34%	27%	15%	60%	62%	59%
Asian American	838	338	56	2%	22%	34%	28%	14%	60%	61%	59%
Pacific Islander	121	335	57	5%	19%	36%	24%	16%	61%	60%	57%
Filipino	278	336	52	3%	21%	34%	31%	13%	60%	61%	58%
Hispanic	16,982	335	53	3%	21%	36%	28%	12%	59%	61%	58%
African American	2,905	326	55	5%	26%	35%	24%	10%	56%	59%	55%
White	4,887	358	61	2%	14%	26%	31%	26%	64%	68%	63%
Ethnicity unknown	542	350	59	3%	17%	29%	32%	20%	63%	66%	61%
English only	14,358	344	59	3%	19%	31%	29%	18%	61%	64%	60%
Initially fluent English prof.	291	358	64	3%	13%	28%	29%	26%	64%	68%	62%
English learner	11,795	332	51	3%	23%	38%	27%	10%	58%	60%	57%
Reclassified fluent English prof.	337	366	54	1%	8%	29%	35%	28%	65%	71%	66%
English prof. unknown	57	338	58	2%	30%	23%	28%	18%	58%	62%	59%
Autism	1,623	337	62	4%	24%	30%	25%	17%	59%	60%	59%
Deaf-blindness	3	–	–	–	–	–	–	–	–	–	–
Deafness	114	305	51	11%	34%	33%	18%	4%	52%	51%	50%
Emotional disturbance	543	332	66	7%	27%	25%	25%	16%	57%	60%	57%
Hard of hearing	231	333	56	2%	23%	41%	21%	13%	60%	59%	56%
MR/ID	434	288	47	14%	47%	29%	8%	3%	47%	47%	45%
Multiple disability	29	323	69	10%	31%	24%	14%	21%	56%	56%	55%
Orthopedic impairment	183	327	60	7%	27%	26%	30%	11%	55%	60%	56%
Other health impairment	2,459	346	59	3%	18%	31%	30%	19%	61%	65%	60%
Specific learning disability	16,812	341	55	3%	19%	35%	28%	15%	60%	63%	59%
Speech or language Impairment	2,949	336	51	2%	21%	36%	30%	11%	59%	61%	58%
Traumatic brain injury	61	315	59	10%	34%	25%	25%	7%	53%	54%	54%
Visual impairment	56	323	50	4%	27%	38%	27%	5%	56%	59%	53%
Disability unknown	1,341	339	51	2%	18%	36%	31%	12%	60%	63%	59%
Not economically disadvantaged	5,636	354	61	3%	14%	28%	31%	23%	63%	67%	62%
Economically disadvantaged	21,118	335	54	3%	22%	35%	27%	12%	59%	61%	58%
Economic status unknown	84	328	60	8%	26%	29%	23%	14%	54%	59%	58%
Primary Ethnicity—Not Economically Disadvantaged											
American Indian	67	351	59	1%	18%	36%	21%	24%	64%	63%	63%
Asian American	331	346	60	2%	19%	31%	28%	20%	62%	63%	61%
Pacific Islander	37	342	58	3%	19%	32%	27%	19%	62%	64%	56%
Filipino	153	339	54	3%	20%	34%	27%	16%	61%	61%	59%
Hispanic	1,858	348	57	3%	15%	31%	32%	19%	61%	65%	61%

				Percent in Performance Level					Mean Percent Correct in Content Area		
	No. Tested	Mean Scale Scores	Std. Dev. Of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Physical Sciences	Life Sciences	Earth Sciences
African American	507	332	59	6%	22%	31%	28%	13%	58%	61%	56%
White	2,480	366	62	2%	12%	25%	32%	30%	66%	70%	65%
Ethnicity unknown	203	360	56	2%	11%	30%	33%	25%	65%	68%	64%
Primary Ethnicity—Economically Disadvantaged											
American Indian	218	337	59	4%	21%	33%	29%	12%	59%	62%	58%
Asian American	506	333	53	2%	24%	35%	28%	10%	59%	60%	57%
Pacific Islander	83	332	56	6%	19%	37%	23%	14%	60%	58%	57%
Filipino	123	333	50	2%	20%	34%	35%	8%	59%	61%	57%
Hispanic	15,087	334	52	3%	22%	37%	27%	11%	59%	61%	57%
African American	2,391	324	53	5%	27%	36%	23%	9%	56%	58%	55%
White	2,388	351	60	2%	17%	28%	31%	22%	62%	66%	62%
Ethnicity unknown	322	346	60	3%	19%	29%	31%	18%	62%	65%	59%
Primary Ethnicity—Unknown Economic Status											
American Indian	0	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–
Filipino	2	–	–	–	–	–	–	–	–	–	–
Hispanic	37	328	64	11%	22%	32%	19%	16%	53%	61%	57%
African American	7	–	–	–	–	–	–	–	–	–	–
White	19	338	61	5%	26%	26%	21%	21%	57%	62%	60%
Ethnicity unknown	17	324	61	6%	35%	18%	35%	6%	53%	58%	57%

Table 7.C.18 Demographic Summary for Science, Grade Eight

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Motion	Matter	Earth Sciences	Investg & Experi
All valid scores	23,112	331	67	14%	19%	30%	23%	14%	62%	51%	68%	54%
Male	15,390	333	69	14%	18%	29%	23%	16%	62%	51%	68%	54%
Female	7,665	328	60	12%	20%	33%	24%	11%	60%	51%	67%	54%
Gender unknown	57	322	58	11%	25%	35%	21%	9%	61%	49%	64%	49%
American Indian	234	329	63	15%	15%	33%	25%	12%	62%	50%	69%	52%
Asian American	589	346	72	10%	15%	28%	25%	22%	64%	55%	69%	61%
Pacific Islander	122	342	71	12%	17%	30%	20%	20%	63%	54%	68%	57%
Filipino	238	336	68	13%	15%	32%	24%	16%	62%	52%	70%	56%
Hispanic	14,403	327	64	14%	20%	31%	23%	12%	61%	50%	67%	53%
African American	2,671	319	62	18%	21%	31%	20%	9%	59%	48%	64%	50%
White	4,417	350	73	10%	14%	27%	27%	22%	65%	55%	72%	58%
Ethnicity unknown	438	336	68	11%	19%	32%	19%	18%	63%	52%	69%	54%
English Only	12,549	336	69	13%	18%	29%	24%	16%	63%	52%	69%	54%
Initially fluent English prof.	516	350	73	10%	15%	24%	27%	23%	65%	56%	73%	58%
English learner	8,819	320	60	16%	22%	32%	22%	9%	60%	48%	65%	52%
Reclassified fluent English prof.	1,151	364	70	7%	9%	27%	31%	26%	68%	58%	75%	65%
English prof. unknown	77	323	64	8%	29%	34%	17%	13%	60%	49%	64%	53%
Autism	1,153	343	76	12%	17%	26%	25%	20%	62%	55%	70%	58%
Deaf-blindness	1	–	–	–	–	–	–	–	–	–	–	–
Deafness	140	304	61	26%	26%	29%	12%	7%	54%	45%	58%	53%
Emotional disturbance	780	320	71	21%	23%	25%	18%	13%	59%	48%	64%	51%
Hard of hearing	195	333	66	12%	17%	32%	25%	13%	62%	51%	70%	57%
MR/ID	474	276	46	39%	31%	22%	7%	0%	46%	41%	52%	37%
Multiple disability	38	317	53	13%	24%	34%	26%	3%	59%	49%	64%	48%
Orthopedic impairment	155	331	63	12%	14%	37%	26%	10%	60%	53%	68%	54%
Other health impairment	2,282	337	69	13%	17%	29%	24%	16%	63%	52%	68%	55%
Specific learning disability	16,177	332	66	13%	19%	31%	24%	14%	62%	51%	68%	54%
Speech or language impairment	1,405	332	60	11%	17%	35%	25%	12%	62%	52%	69%	55%
Traumatic brain injury	64	324	64	17%	16%	30%	27%	11%	61%	49%	68%	50%
Visual impairment	49	341	66	10%	20%	22%	29%	18%	62%	53%	74%	58%
Disability unknown	199	317	63	17%	23%	34%	17%	10%	60%	47%	65%	48%
Not economically disadvantaged	5,482	347	71	11%	14%	28%	26%	21%	65%	55%	71%	58%
Economically disadvantaged	17,526	326	64	15%	20%	31%	23%	12%	61%	50%	67%	53%
Economic status unknown	104	327	63	11%	25%	30%	22%	13%	60%	49%	67%	57%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	58	338	61	12%	9%	33%	29%	17%	64%	51%	72%	57%
Asian American	233	358	76	7%	15%	25%	28%	26%	66%	58%	72%	63%
Pacific Islander	47	349	70	11%	19%	23%	28%	19%	64%	56%	71%	60%
Filipino	132	336	67	14%	14%	31%	26%	14%	62%	52%	71%	54%
Hispanic	1,982	339	67	12%	16%	30%	26%	17%	63%	53%	70%	57%

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Motion	Matter	Earth Sciences	Investg & Experi
African American	571	325	66	17%	17%	33%	21%	12%	61%	50%	65%	51%
White	2,324	359	74	9%	12%	25%	28%	26%	67%	57%	74%	60%
Ethnicity unknown	135	347	74	13%	11%	30%	20%	27%	64%	56%	70%	57%
Primary Ethnicity—Economically Disadvantaged												
American Indian	174	327	64	15%	18%	33%	24%	10%	61%	50%	67%	51%
Asian American	353	339	69	12%	16%	29%	24%	19%	63%	53%	67%	59%
Pacific Islander	75	337	72	13%	16%	35%	15%	21%	62%	54%	66%	56%
Filipino	105	338	69	12%	15%	32%	23%	17%	62%	53%	68%	58%
Hispanic	12,394	325	63	15%	21%	31%	23%	11%	61%	49%	67%	53%
African American	2,089	317	60	18%	23%	31%	20%	9%	59%	48%	64%	49%
White	2,074	341	70	12%	16%	28%	26%	19%	64%	53%	70%	55%
Ethnicity unknown	262	330	66	12%	23%	33%	18%	15%	62%	50%	68%	53%
Primary Ethnicity—Unknown Economic Status												
American Indian	2	–	–	–	–	–	–	–	–	–	–	–
Asian American	3	–	–	–	–	–	–	–	–	–	–	–
Pacific Islander	0	–	–	–	–	–	–	–	–	–	–	–
Filipino	1	–	–	–	–	–	–	–	–	–	–	–
Hispanic	27	331	58	4%	33%	19%	33%	11%	62%	49%	69%	61%
African American	11	300	77	36%	18%	27%	9%	9%	56%	40%	60%	51%
White	19	325	65	11%	32%	26%	21%	11%	58%	50%	62%	64%
Ethnicity unknown	41	340	63	5%	20%	37%	22%	17%	63%	53%	71%	56%

Table 7.C.19 Demographic Summary for Life Science (Grade 10)

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Motion	Matter	Earth Sciences	Investg & Experi
All valid scores	14,356	300	61	22%	30%	26%	17%	5%	52%	52%	57%	51%
Male	9,380	300	64	24%	29%	25%	16%	6%	52%	52%	57%	51%
Female	4,951	301	55	18%	32%	30%	17%	4%	53%	53%	57%	52%
Gender unknown	25	306	66	20%	20%	32%	16%	12%	53%	52%	62%	53%
American Indian	156	302	70	21%	36%	22%	12%	10%	52%	52%	58%	52%
Asian American	370	314	64	14%	28%	31%	19%	8%	55%	55%	61%	55%
Pacific Islander	49	310	58	10%	35%	24%	22%	8%	54%	54%	60%	58%
Filipino	133	317	64	12%	34%	23%	21%	11%	54%	57%	61%	61%
Hispanic	8,877	297	58	23%	31%	27%	15%	4%	51%	51%	56%	51%
African American	1,585	287	59	29%	32%	23%	12%	3%	50%	48%	53%	47%
White	2,902	315	66	17%	26%	27%	22%	9%	55%	56%	61%	55%
Ethnicity unknown	284	314	66	18%	26%	26%	20%	10%	55%	55%	61%	55%
English Only	7,844	304	64	21%	29%	26%	18%	7%	53%	53%	58%	52%
Initially fluent English prof.	343	309	64	18%	31%	26%	19%	6%	55%	54%	59%	53%
English learner	5,428	290	54	24%	34%	27%	13%	2%	50%	50%	54%	49%
Reclassified fluent English prof.	692	331	64	11%	20%	27%	30%	12%	58%	60%	66%	62%
English prof. unknown	49	296	55	22%	29%	35%	8%	6%	52%	50%	58%	49%
Autism	533	320	71	16%	26%	25%	22%	11%	55%	57%	62%	56%
Deaf-blindness	2	–	–	–	–	–	–	–	–	–	–	–
Deafness	129	283	48	24%	42%	23%	9%	2%	49%	49%	50%	45%
Emotional disturbance	619	300	70	27%	25%	23%	17%	7%	52%	51%	58%	50%
Hard of hearing	150	311	61	16%	27%	30%	23%	5%	54%	55%	61%	56%
MR/ID	355	263	41	39%	44%	12%	5%	0%	44%	42%	46%	42%
Multiple disability	28	269	63	50%	18%	21%	11%	0%	42%	47%	48%	43%
Orthopedic impairment	127	311	64	13%	35%	28%	14%	9%	55%	55%	59%	52%
Other health impairment	1,234	309	67	20%	27%	25%	20%	8%	54%	53%	60%	54%
Specific learning disability	10,345	300	60	22%	30%	27%	16%	5%	52%	52%	57%	51%
Speech or language impairment	638	301	57	17%	33%	30%	15%	5%	52%	53%	57%	52%
Traumatic brain injury	39	289	49	28%	36%	23%	13%	0%	49%	49%	55%	49%
Visual impairment	42	316	68	19%	17%	38%	14%	12%	54%	56%	62%	58%
Disability unknown	115	290	58	28%	31%	23%	13%	4%	51%	48%	52%	50%
Not economically disadvantaged	4,030	311	65	18%	27%	27%	20%	8%	54%	55%	60%	54%
Economically disadvantaged	10,252	296	59	23%	31%	26%	15%	4%	51%	51%	55%	51%
Economic status unknown	74	289	61	31%	24%	28%	12%	4%	49%	49%	55%	50%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	50	305	69	18%	36%	30%	4%	12%	52%	53%	60%	52%
Asian American	132	321	70	15%	27%	27%	19%	11%	57%	56%	63%	56%
Pacific Islander	19	332	56	11%	11%	26%	47%	5%	57%	60%	71%	68%
Filipino	83	312	61	12%	39%	18%	23%	8%	53%	57%	58%	58%
Hispanic	1,543	304	60	20%	29%	29%	17%	5%	53%	53%	58%	52%

				Percent in Performance Level					Mean Percent Correct in Content Area			
	No. Tested	Mean Scale Scores	Std. Dev. of Scale Scores	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Motion	Matter	Earth Sciences	Investg & Experi
African American	476	290	58	28%	32%	22%	15%	3%	50%	49%	54%	49%
White	1,617	321	68	15%	24%	28%	23%	11%	56%	57%	63%	56%
Ethnicity unknown	110	332	71	13%	25%	20%	25%	16%	60%	59%	65%	60%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	106	300	71	22%	36%	18%	16%	8%	52%	51%	56%	52%
Asian American	237	311	60	14%	28%	32%	19%	6%	54%	55%	60%	55%
Pacific Islander	29	297	58	10%	48%	24%	7%	10%	53%	50%	53%	53%
Filipino	50	324	69	12%	26%	30%	18%	14%	55%	57%	65%	65%
Hispanic	7,308	295	58	23%	32%	26%	15%	4%	51%	51%	55%	50%
African American	1,107	286	59	30%	32%	24%	10%	3%	50%	47%	53%	47%
White	1,268	307	63	19%	29%	26%	20%	6%	54%	54%	59%	53%
Ethnicity unknown	147	302	61	22%	27%	27%	18%	5%	52%	52%	58%	53%
Primary Ethnicity—Not Economically Disadvantaged												
American Indian	0	–	–	–	–	–	–	–	–	–	–	–
Asian American	1	–	–	–	–	–	–	–	–	–	–	–
Pacific Islander	1	–	–	–	–	–	–	–	–	–	–	–
Filipino	0	–	–	–	–	–	–	–	–	–	–	–
Hispanic	26	280	62	38%	23%	23%	15%	0%	45%	47%	53%	50%
African American	2	–	–	–	–	–	–	–	–	–	–	–
White	17	280	71	41%	24%	18%	12%	6%	49%	47%	45%	48%
Ethnicity unknown	27	302	54	19%	22%	44%	7%	7%	52%	51%	63%	50%

Appendix 7.D—Types of Score Reports

Table 7.D.1 Score Reports Reflecting CMA Results

2012 STAR CMA PRINTED REPORTS	
DESCRIPTION	**DISTRIBUTION**
The CMA Student Report	
This report provides parents/guardians and teachers with the student's results, presented in tables and graphs. Data presented include the following: • Scale scores • Performance levels (advanced, proficient, basic, below basic, and far below basic) • Number and percent correct in each reporting cluster • Comparison of the student's scores on specific reporting clusters to the range of scores of students statewide who scored proficient on the total test	This report includes individual student results and is not distributed beyond parents/guardians and the student's school. Two copies of this report are provided for each student. One is for the student's current teacher and one is distributed by the school district to parents/ guardians.
Student Record Label	
These reports are printed on adhesive labels to be affixed to the student's permanent school records. Each student shall have an individual record of accomplishment that includes STAR testing results (see California *EC* Section 60607[a]). Data presented include the following for each content area tested: • Scale scores • Performance levels	This report includes individual student results and is not distributed beyond the student's school.
Student Master List	
This report is an alphabetical roster that presents individual student results. Data include the following: • Percent correct for each reporting cluster within each content area tested • A scale score and a performance level for each content area tested • Writing score (CMA in grades four and seven only)	This report provides administrators and teachers with all students' results within each grade or within each grade and year-round schedule at a school. Because this report includes individual student results, it is not distributed beyond the student's school. It is recommended that summary reports be retained until the grade level exits the school.
Student Master List Summary	
This report summarizes student results at the school, district, county, and state levels for each grade. It does not include any individual student information. ***Note:*** Summaries for specific CMA tests for mathematics across grades are provided in the Student Master List Summary—End-of-Course report. For each content area tested, the following data are	This report is a resource for evaluators, researchers, teachers, parents/guardians, community members, and administrators. One copy is packaged for the school and one for the school district. This report is also produced for school districts, counties, and the state. ***Note:*** The data in this report may be shared with parents/guardians, community members, and the

2012 STAR CMA PRINTED REPORTS	
DESCRIPTION	**DISTRIBUTION**
summarized: • Number of students enrolled • Number and percent of students tested • Number and percent of valid scores • Number tested with scores • Mean percent correct • Mean scale score • Scale score standard deviation • Number and percent of students scoring at each performance level • The number of items and mean percent correct for each reporting cluster • For grades four and seven, the percent of students achieving each Writing Application score	media only if the data are for 11 or more students. It is recommended that summary reports be retained until the grade level exits the school.
Student Master List Summary—End of Course	
This report summarizes Student Master List information for the EOC CMA for Algebra I, administered to students in grades seven through eleven, and Geometry, administered to students in grades eight through eleven. It does not include any individual student information. For each of these CMA, the following data are summarized by grade and content area: • Number of students enrolled • Number and percent of students tested • Number and percent of valid scores • Number tested with scores • Mean percent correct • Mean scale score • Scale score standard deviation • Number and percent of students scoring at each performance level For each reporting cluster: • Number of items • Mean percent correct	This report is a resource for evaluators, researchers, teachers, parents/guardians, community members, and administrators. One copy is packaged for the school and one for the school district. This report is also produced for school districts, counties, and the state. ***Note:*** The data on this report may be shared with parents/guardians, community members, and the media only if the data are for 11 or more students. It is recommended that summary reports be retained until the grade level exits the school.
Subgroup Summary	
This set of reports disaggregates and reports results by the following subgroups: • All students • Disability status • Economic status • Gender • English proficiency • Primary ethnicity	This report is a resource for evaluators, researchers, teachers, parents/guardians, community members, and administrators. One copy is packaged for the school and one for the school district. This report is also produced for school districts, counties, and the state. ***Note:*** The data on this report may be shared with

2012 STAR CMA PRINTED REPORTS	
DESCRIPTION	**DISTRIBUTION**
These reports contain no individual student-identifying information and are aggregated at the school, district, county, and state levels. For each subgroup within a report and for the total number of students, the following data are included: • Total number tested in the subgroup • Percent tested in the subgroup as a percent of all students tested • Number and percent of valid scores • Number tested who received scores • Mean scale score • Standard deviation of scale score • Number and percent of students scoring at each performance level	parents/guardians, community members, and the media only if the data are for 11 or more students. It is recommended that summary reports be retained until the grade level exits the school.
Subgroup Summary—Ethnicity for Economic Status	
This report, a part of the Subgroup Summary, disaggregates and reports results by cross-referencing each ethnicity with economic status. The economic status for each student is "economically disadvantaged," "not economically disadvantaged," or "economic status unknown." A student is defined as "economically disadvantaged" if the most educated parent of the student, as indicated in the answer document or Pre-ID, has not received a high school diploma or the student is eligible to participate in the free or reduced-price lunch program also known as the National School Lunch Program (NSLP). As with the standard Subgroup Summary, this disaggregation contains no individual student-identifying information and is aggregated at the school, district, county, and state levels. For each subgroup within a report, and for the total number of students, the following data are included: • Total number tested in the subgroup • Percent tested in the subgroup as a percent of all students tested • Number and percent of valid scores • Number tested who received scores • Mean scale scores • Standard deviation of scale scores • Number and percent of students scoring at each performance level	This report is a resource for evaluators, researchers, teachers, parents/guardians, community members, and administrators. One copy is packaged for the school and one for the school district. This report is also produced for school districts, counties, and the state. ***Note:*** The data on this report may be shared with parents/guardians, community members, and the media only if the data are for 11 or more students. It is recommended that summary reports be retained until the grade level exits the school.

Chapter 8: Analyses

This chapter summarizes the item- and test-level statistics obtained for the CMA administered during the spring of 2012.

The statistics presented in this chapter are divided into five sections in the following order:

1. Classical Item Analyses
2. Reliability Analyses
3. Analyses in Support of Validity Evidence
4. Item Response Theory (IRT) Analyses
5. Differential Item Functioning (DIF) Analyses

Each of those sets of analyses is presented in the body of the text and in the appendixes as listed below.

1. Appendix 8.A on page 211 presents the classical item analyses including proportion-correct value (*p*-value) and point-biserial correlation (Pt-Bis) for each item in each operational test. The appendix also presents information about the distribution of scores on the writing tasks administered in grades four and seven for the overall population and for the various subgroups. In addition, the average and median *p*-value and Pt-Bis for each operational test are presented in Table 8.2 on page 186.
2. Appendix 8.B on page 221 presents results of the reliability analyses of total test scores and subscores for the population as a whole and for selected subgroups. Also presented are results of the analyses of the accuracy and consistency of the performance classifications. Finally, interrater reliability results for the writing tasks administered in grades four and seven are shown.
3. Appendix 8.C on page 267 presents tables showing the correlation between scores obtained on the CMA measured in the different content areas, which are provided as an example of the evidence of the validity of the interpretation and uses of CMA scores. The results for the overall test population are presented in Table 8.5; the tables in Appendix 8.C summarize the results for various subgroups.
4. Appendix 8.D on page 276 presents the results of IRT analyses including the distribution of items based on their fit to the Rasch model and the summaries of Rasch item difficulty statistics (*b*-values) for the operational and field-test items. In addition, the appendix presents the scoring tables obtained as a result of the IRT equating process. Information related to the evaluation of linking items is presented in Table 8.4 on page 190; these linking items were used in the equating process discussed later in this chapter.
5. Appendix 8.E on page 306 presents the results of the DIF analyses applied to all operational and field-test items for which sufficient student samples were available. In this appendix, items flagged for significant DIF are listed. Also given are the distributions of items across DIF categories.

Samples Used for the Analyses

CMA analyses were conducted at different times after test administration and involved varying proportions of the full CMA data. The classical-item analyses presented in Appendix 8.A, the reliability statistics included in Appendix 8.B, the content area correlations presented in Appendix 8.C, the IRT results presented in Appendix 8.D, and the item-level

DIF results presented in Appendix 8.E were calculated using the P1 data file, which contained the entire test-taking population and all the student records used in the August 30, 2012, reporting of STAR results. The IRT results for the operational items presented in Appendix 8.D were calculated using equating samples that include all valid cases available in early June 2012.

Following the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999, Standard 6.4), the results of the classical item analyses and reliability analyses for the EOC Algebra I and Geometry CMA are also presented for the grade-specific population in addition to the overall test-taking population. "Grade-specific population" refers to test-takers in the particular grade for which the course has been recommended by the SBE, that is, in grade eight for Algebra I and grade nine for Geometry.

Summary statistics describing the samples are presented in Table 8.1; the samples used to generate scoring tables are labeled as "Equating Samples."

Table 8.1 Summary Statistics for P1 and Equating Samples

		P1			Equating Sample			
Content Area	**CMA ***	**N**	**Mean**	**SD**	**N**	**% of P1**	**Mean**	**SD**
English–Language Arts	3	19,718	28.51	8.49	10,132	51%	28.75	8.42
	4	26,694	28.16	8.22	13,708	51%	28.41	8.22
	5	29,080	27.65	7.72	14,958	51%	27.91	7.69
	6	28,737	31.70	8.64	19,150	67%	32.06	8.64
	7	26,908	31.98	9.15	18,483	69%	32.38	9.1
	8	25,174	33.48	8.39	17,161	68%	33.83	8.36
	9	19,950	31.33	9.21	14,829	74%	31.55	9.23
	10	17,163	30.04	8.49	12,943	75%	30.16	8.50
	11	13,936	27.09	7.54	10,455	75%	27.15	7.59
Mathematics	3	16,973	29.56	8.53	10,876	64%	29.6	8.51
	4	22,340	28.85	7.53	14,533	65%	28.86	7.51
	5	25,586	29.43	8.29	16,716	65%	29.49	8.32
	6	26,222	29.46	7.60	17,447	67%	29.71	7.61
	7	26,130	25.37	6.64	17,980	69%	25.58	6.7
	Algebra I	28,896	29.16	8.28	21,215	73%	29.46	8.33
	Geometry	6,991	28.59	7.84	4,359	62%	29.26	7.94
Science	5	26,838	28.88	7.02	13,987	52%	29.08	6.98
	8	23,112	30.88	8.22	12,628	55%	31.14	8.18
	10 Life Science	14,356	31.68	9.14	8,907	62%	31.54	9.04
Grade-Specific	Algebra I – 8	6,115	29.43	8.59	3,581	59%	30.22	8.82
	Geometry – 9	530	28.32	8.34	185	35%	31.56	9.51

* CMA tests named by number only are grade-level tests.

Classical Item Analyses

Multiple-choice Items

The classical item statistics that included overall and item-by-item proportion-correct indices and the point-biserial correlation indices were computed for the operational items. The

p-value of an item represents the proportion of examinees in the sample that answered an item correctly. The formula for *p*-value is:

$$p-value_i = \frac{N_{ic}}{N_i} \tag{8.1}$$

where,

N_{ic} is the number of examinees that answered item *i* correctly, and

N_i is the total number of examinees that attempted the item.

The point-biserial correlation is a special case of the Pearson product-moment correlation used to measure the strength of the relationship between two variables, one dichotomously and one continuously measured—in this case, the item score (right/wrong) and the total test score. The formula for the Pearson product-moment correlation is:

$$r_{X_iT} = \frac{\mathrm{cov}(X_i, T)}{s_{X_i} s_T} \tag{8.2}$$

where,

$cov(X_i, T)$ is the covariance between the score of item *i* and total score T,

s_{X_i} is the standard deviation for the score of item i, and

s_T is the standard deviation for total score T.

The classical statistics for the overall test are presented in Table 8.2. The item-by-item values for the indices are presented in Table 8.A.1 through Table 8.A.4, which start on page 211.

Table 8.2 Mean and Median Proportion Correct and Point-Biserial Correlation

				Mean		Median	
Subject	**CMA ***	**No. of Items**	**No. of Examinees**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
English–Language Arts	3	48	19,718	0.59	0.37	0.60	0.38
	4	48 †	26,694	0.59	0.36	0.60	0.35
	5	48	29,080	0.58	0.34	0.55	0.35
	6	54	28,737	0.59	0.34	0.58	0.35
	7	54 †	26,908	0.59	0.36	0.59	0.36
	8	54	25,174	0.62	0.34	0.63	0.35
	9	60	19,950	0.52	0.31	0.51	0.31
	10	60	17,163	0.50	0.29	0.51	0.30
	11	60	13,936	0.45	0.26	0.44	0.26
Mathematics	3	48	16,973	0.62	0.37	0.61	0.39
	4	48	22,340	0.60	0.34	0.58	0.34
	5	48	25,586	0.61	0.37	0.63	0.38
	6	54	26,222	0.55	0.29	0.52	0.29
	7	54	26,130	0.47	0.25	0.47	0.27
	Algebra I	60	28,896	0.49	0.28	0.49	0.29
	Geometry	60	6,991	0.48	0.27	0.49	0.27

				Mean		Median	
Subject	**CMA ***	**No. of Items**	**No. of Examinees**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
Science	5	48	26,838	0.60	0.32	0.59	0.30
	8	54	23,112	0.57	0.32	0.56	0.33
	Life Science	60	14,356	0.53	0.31	0.53	0.30
Grade-Specific	Algebra I – 8	60	6,115	0.49	0.29	0.50	0.30
	Geometry – 9	60	530	0.47	0.28	0.48	0.28

* CMA tests named by number only are grade-level tests.

† MC items

Writing Tasks

As described earlier, students in grades four and seven were administered two different writing prompts at different times in the STAR testing cycle. Students were given one of the two writing prompts depending upon when they were tested.

The distributions of writing scores for the overall population and for the various subgroups are presented in Table 8.A.5 and Table 8.A.6, which appear starting on page 217. The subgroups include gender, ethnicity, economic status, primary disability, and English-language fluency.

The mean scores obtained on the writing test for the overall population and for various subgroups are presented in Table 8.A.7 and Table 8.A.8. To quantify the differences between mean scores of subgroups, effect sizes were calculated; Cohen's *d* (1992) was used as the measure of effect size. Cohen's *d* is defined as the difference between two means divided by the pooled standard deviation adjusted for sample size. Cohen (1992) suggested that 0.2 is indicative of a small effect, 0.5 a medium, and 0.8 a large effect size. The effect sizes for various subgroup differences are presented in Table 8.A.9 and Table 8.A.10.

Reliability Analyses

Reliability focuses on the extent to which differences in test scores reflect true differences in the knowledge, ability, or skill being tested, rather than fluctuations due to chance or random factors. The variance in the distribution of test scores—essentially, the differences among individuals—is partly due to real differences in the knowledge, skill, or ability being tested (true-score variance) and partly due to random unsystematic errors in the measurement process (error variance).

The number used to describe reliability is an estimate of the proportion of the total variance that is true-score variance. Several different ways of estimating this proportion exist. The estimates of reliability reported here are internal-consistency measures, which are derived from analysis of the consistency of the performance of individuals on items within a test (internal-consistency reliability). Therefore, they apply only to the test form being analyzed. They do not take into account form-to-form variation due to equating limitations or lack of parallelism, nor are they responsive to day-to-day variation due, for example, to students' state of health or testing environment.

Reliability coefficients may range from 0 to 1. The higher the reliability coefficient for a set of scores, the more likely individuals would be to obtain very similar scores if they were retested. The formula for the internal consistency reliability as measured by Cronbach's Alpha (Cronbach, 1951) is defined by equation 8.3:

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum_{i=1}^{n} s_i^2}{s_t^2}\right] \tag{8.3}$$

where,

n is the number of items,

s_i^2 is the variance of scores on the item *i*, and

s_t^2 is the variance of the total score.

The standard error of measurement (SEM) provides a measure of score instability in the score metric. The SEM was computed as shown in equation 8.4:

$$s_e = s_t\sqrt{1-\alpha} \tag{8.4}$$

where,

α is the reliability estimated in equation 8.3, and

s_t is the standard deviation of the total score (either the total raw score or scale score).

The SEM is particularly useful in determining the confidence interval (CI) that captures an examinee's true score. Assuming that measurement error is normally distributed, it can be said that upon infinite replications of the testing occasion, approximately 95 percent of the CIs of ±1.96 SEM around the observed score would contain an examinee's true score (Crocker & Algina, 1986). For example, if an examinee's observed score on a given test equals 15 points, and the SEM equals 1.92, one can be 95 percent confident that the examinee's true score lies between 11 and 19 points (15 ± 3.76 rounded to the nearest integer).

Table 8.3 gives the reliability and SEM for each of the 19 operational CMA, along with the number of items and examinees upon which those analyses were performed. The results for the grade-specific population for the EOC Algebra I and Geometry CMA are also presented in this table.

Table 8.3 Reliabilities and SEMs for the CMA

					Scale Score			Raw Score		
Content Area	**CMA ***	**No. of Items**	**No. of Examinees**	**Reliability**	**Mean**	**Std. Dev.**	**SEM**	**Mean**	**Std. Dev.**	**SEM**
English–Language Arts	3	48	19,718	0.86	307	63	23.32	28.51	8.49	3.15
	4	48	26,694	0.85	330 †	78 †	29.87 †	28.16	8.22	3.15
	5	48	29,080	0.83	326	67	27.60	27.65	7.72	3.17
	6	54	28,737	0.85	320	93	36.18	31.70	8.64	3.36
	7	54	26,908	0.87	311 †	85 †	30.86 †	31.98	9.15	3.33
	8	54	25,174	0.85	319	82	31.49	33.48	8.39	3.24
	9	60	19,950	0.84	293	72	28.47	31.33	9.21	3.63
	10	60	17,163	0.82	289	64	27.47	30.04	8.49	3.64
	11	60	13,936	0.76	279	57	27.71	27.09	7.54	3.68
Mathematics	3	48	16,973	0.87	320	63	22.97	29.56	8.53	3.11
	4	48	22,340	0.83	330	86	35.39	28.85	7.53	3.10
	5	48	25,586	0.86	349	78	28.97	29.43	8.29	3.08
	6	54	26,222	0.80	320	83	37.41	29.46	7.60	3.43
	7	54	26,130	0.72	295	87	45.54	25.37	6.64	3.49

					Scale Score			Raw Score		
Content Area	CMA *	No. of Items	No. of Examinees	Reliability	Mean	Std. Dev.	SEM	Mean	Std. Dev.	SEM
Mathematics (cont.)	Algebra I	60	28,896	0.80	289	55	24.56	29.16	8.28	3.68
	Geometry	60	6,991	0.78	288	46	21.57	28.59	7.84	3.69
Science	5	48	26,838	0.80	339	56	24.91	28.88	7.02	3.12
	8	54	23,112	0.83	331	67	27.52	30.88	8.22	3.40
	10 Life Science	60	14,356	0.84	300	61	24.25	31.68	9.14	3.62
Grade-Specific	Algebra I – 8	60	6,115	0.82	292	58	24.84	29.43	8.59	3.68
	Geometry – 9	60	530	0.80	286	50	21.91	28.32	8.34	3.68

* CMA tests named by number only are grade-level tests.

† Including writing prompt

Intercorrelations, Reliabilities, and SEMs for Reporting Clusters

For each CMA, number-correct scores are computed for the reporting clusters—three in all tests except for the CMA for ELA in grade seven, science in grades eight and ten, and Algebra I, which have four. The number of items with each reporting cluster is limited, and cluster scores alone should not be used in making inferences about individual students.

Intercorrelations and reliability estimates for the reporting clusters are presented in Table 8.B.1 through Table 8.B.3, starting on page 221. Results are also reported in Table 8.B.4 for grade-specific samples of the mathematics tests of Algebra I and Geometry. Consistent with results from previous years, the reliabilities across reporting clusters varied significantly according to the number of items in each cluster.

Subgroup Reliabilities and SEMs

The reliabilities of the CMA were examined for various subgroups of the examinee population. The subgroups included in these analyses were defined by their gender, ethnicity, economic status, primary disability, and English-language fluency. The reliability analyses are also presented by ethnicity within economic status.

Reliabilities and SEM information for the total test scores and the reporting cluster scores are reported for each subgroup analysis. Table 8.B.5 through Table 8.B.8 present the reliabilities for the subgroups based on gender, economic status, English-language fluency, and primary ethnicity. The next set of tables, Table 8.B.9 through Table 8.B.11, show the same analyses for the subgroups based on primary ethnicity within economic status and gender within economic status. Table 8.B.12 and Table 8.B.13 present the reliabilities for subgroups based on primary disability.

Test-level reliabilities for the various subgroups are compiled in Table 8.B.14 through Table 8.B.20. The corresponding cluster-level reliabilities are provided in Table 8.B.21 through Table 8.B.48.

Note that the reliabilities are reported only for samples that are comprised of 11 or more examinees. Also, in some cases, score reliabilities were not estimable and are presented in the tables as hyphens. Finally, results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes.

Conditional Standard Errors of Measurement

As part of the IRT-based equating procedures, scale-score conversion tables and conditional standard errors of measurement (CSEMs) are produced. CSEMs for CMA scale

scores are based on IRT and are calculated by the IRTEQUATE module in a computer system called the Generalized Analysis System (GENASYS).

The CSEM is estimated as a function of measured ability. It is typically smaller in scale-score units toward the center of the scale in the test metric where more items are located and larger at the extremes where there are fewer items. An examinee's CSEM under the IRT framework is equal to the inverse of the square root of the test information function:

$$\mathrm{CSEM}(\hat{\theta}) = \frac{1}{\sqrt{\mathrm{I}\left(\hat{\theta}\right)}} a \tag{8.5}$$

where,

CSEM($\hat{\theta}$) is the standard error of measurement, and

I($\hat{\theta}$) is the test information function at ability level $\hat{\theta}$.

The statistic is multiplied by a, where a is the original scaling factor needed to transform theta to the scale-score metric. The value of a varies by grade and content area.

SEMs vary across the scale. When a test has cut scores, it is important to provide CSEMs at the cut scores.

Table 8.4 presents the scale score CSEMs at the lowest score required for a student to be classified in the below basic, basic, proficient, and advanced performance levels for each CMA.

The CSEMs tended to be higher at the advanced cut points for all tests. The pattern of lower values of CSEMs at the basic and proficient levels are expected since (1) more items tend to be of middle difficulty; and (2) items at the extremes still provide information toward the middle of the scale. This results in more precise scores in the middle of the scale and less precise scores at the extremes of the scale.

Table 8.4 Scale Score CSEM at Performance-level Cut Points

		Below Basic		Basic		Proficient		Advanced	
Content Area	**CMA ***	**Min SS**	**CSEM**	**Min SS**	**CSEM**	**Min SS**	**CSEM**	**Min SS**	**CSEM**
English–Language Arts	3	228	22	300	21	350	24	397	29
	4 †	241	27	300	27	350	28	407	31
	5	219	28	300	25	350	26	400	30
	6	221	34	300	34	350	35	405	39
	7 †	228	28	300	28	350	30	409	34
	8	235	29	300	29	350	31	407	35
	9	243	27	300	27	350	28	407	31
	10	243	27	300	26	350	27	407	30
	11	250	27	300	27	350	27	406	30
Mathematics	3	229	22	300	20	350	23	423	31
	4	219	33	300	32	350	34	430	39
	5	226	28	300	26	350	27	422	32
	6	230	36	300	35	350	36	428	40
	7	237	46	300	45	350	45	443	48
	Algebra I	251	24	300	23	350	24	410	28
	Geometry	257	21	300	20	350	21	413	26

		Below Basic		Basic		Proficient		Advanced	
Content Area	CMA *	Min SS	CSEM	Min SS	CSEM	Min SS	CSEM	Min SS	CSEM
Science	5	243	24	300	23	350	24	401	27
	8	264	26	300	25	350	26	406	29
	10 Life Science	251	23	300	23	350	24	410	28

* CMA named by number only are grade-level tests.
† Including writing prompt

Decision Classification Analyses

The methodology used for estimating the reliability of classification decisions is described in Livingston and Lewis (1995) and is implemented using the ETS-proprietary computer program RELCLASS-COMP (Version 4.14).

Decision accuracy describes the extent to which examinees 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 following question: How does the actual classification of test-takers, based on their single-form scores, agree with the classification that would be made on the basis of their true scores, if their true scores were somehow known? RELCLASS-COMP also estimates decision accuracy using an estimated multivariate distribution of reported classifications on the current form of the exam and the classifications based on an all-forms average (true score).

Decision consistency describes the extent to which examinees 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 following question: What is the agreement between the classifications based on two nonoverlapping, equally difficult, forms of the test? RELCLASS-COMP estimates decision consistency using an estimated multivariate distribution of reported classifications on the current form of the exam and classifications on a hypothetical alternate form using the reliability of the test and strong true-score theory.

In each case, the proportion of classifications with exact agreement is the sum of the entries in the diagonal of the contingency table representing the multivariate distribution. Reliability of classification at a cut score is estimated by collapsing the multivariate distribution at the passing score boundary into an *n* by *n* table (where *n* is the number of performance levels) and summing the entries in the diagonal. Figure 8.1 and Figure 8.2 present the two scenarios graphically.

Figure 8.1 Decision Accuracy for Achieving a Performance Level

		Decision made on a form actually taken	
		Does not achieve a performance level	Achieves a performance level
True status on all-forms average	Does not achieve a performance level	Correct classification	Misclassification
	Achieves a performance level	Misclassification	Correct classification

Figure 8.2 Decision Consistency for Achieving a Performance Level

		Decision made on the alternate form taken	
		Does not achieve a performance level	Achieves a performance level
Decision made on the form taken	Does not achieve a performance level	Correct classification	Misclassification
	Achieves a performance level	Misclassification	Correct classification

The results of these analyses are presented in Table 8.B.49 through Table 8.B.71 in Appendix 8.B. For the CMA for ELA in grades four and seven, two sets of tables are presented for the decision classification analyses: a table for all examinees who attempted multiple-choice (MC) items and a second table for examinees who attempted MC as well as the Writing Application section of the test.

Each table includes the contingency tables for both accuracy and consistency of the various performance-level classifications. The proportion of students being accurately classified is determined by summing across the diagonals of the upper tables. The proportion of consistently classified students is determined by summing the diagonals of the lower tables.

The classifications are collapsed to below-proficient versus proficient and above, which are the critical categories for Adequate Yearly Progress (AYP) calculations and are also presented in the tables.

Writing Score Reliability

The reliability of the total scores for the students who responded to the writing prompt for ELA in grades four and seven was estimated by substituting sample estimates into the following definitional formula for composite reliability (Feldt & Brennan, 1989):

$$\alpha_c = 1 - \frac{\sum_{j=1}^{k} \left(w_j \sigma_{e_j} \right)^2}{\sigma_c^2} \tag{8.6}$$

where,

k is the number of part scores in the composite,

w_j is the weight associated with the j-th part score,

σ_{e_j} is the SEM of the j-th part score, and

σ_c^2 is the variance of the composite score.

The reliability of the writing task can be estimated indirectly by examining the correlation between the MC and writing components in relation to the MC reliability. The lower bound reliability for a constructed response (CR) item in a test with MC items and only one CR item can be estimated using the squared correlation between the MC and writing (CR) portions of the test and dividing by the reliability of the MC portion of the test ($[Corr_{Writing\text{-}MC}]^2/Rel_{MC}$) (Sax, 1989), and substituting sample estimates into it.

The SEM for writing (that is, the CR portion of the test) can then be estimated by substituting sample estimates into the following equation:

$$\sigma_{e_{CR}} = \sigma_{CR} * \sqrt{1 - reliability_{CR}} \quad (8.7)$$

where,

σ_{CR} is the standard deviation of the writing scores.

The reliability estimates for the multiple-choice scores were 0.85 for grade four and 0.87 for grade seven. The approximate lower bound reliability for the essay scores was estimated to be 0.19 and 0.18 for the two grades, respectively. The composite reliability estimates for the combined MC and essay scores were 0.88 and 0.89.

Prompt and Rater Agreement Summary

As described earlier, in order to monitor the accuracy of ratings, two raters scored approximately ten percent of the examinees' writing responses. The two sets of ratings were used to carry out interrater agreement and generalizability analyses to assess the reliability of the writing scores.

Interrater Reliability Analyses

In the context of essay scoring, interrater reliability or consistency is defined as the degree of agreement between ratings or scores assigned by two or more readers to a given response. It is an indicator of homogeneity and is most frequently measured using intraclass correlation coefficient (ICC) which incorporates the exact agreement between raters over and above that expected by chance. The index is defined as the following:

$$ICC = r_I = (ms_{between} - ms_{within})/(ms_{between} + [k - 1]ms_{within}) \quad (8.8)$$

where,

$ms_{between}$ is the mean-square estimate of between-subjects variance, and

ms_{within} is the mean-square estimate of within-subjects variance.

For categorical ratings, Cohen's Kappa statistic has the properties of an intraclass correlation coefficient and can be used for interrater reliability. Cohen's Kappa was therefore used as a primary indicator of the interrater reliability of the writing scoring. In addition, the percentages of ratings on which the raters were in exact agreement or differed by just one point were computed.

The reliability analyses were performed on approximately 10 percent of the overall testing population that were scored by two raters. From those double-scored writing responses, samples were selected that had valid ratings (1, 2, 3, or 4) for both raters (see Appendix 7.A on page 135 for the writing scoring rubrics). Zero is a valid score for the writing responses but was not provided by a rater. Instead, a score of zero was assigned when the student attempted the writing task but either did not provide a response, refused to provide a response, or responded to a writing task from an earlier administration.

The results of interrater analyses are presented in Table 8.B.72 and Table 8.B.73 in Appendix 8.B. Table 8.B.74 and Table 8.B.75 provide descriptive statistics of the ratings by the two raters.

Generalizability Analyses

Generalizability analyses were performed on the writing scores to quantify the proportion of variance explained by various possible sources of variation including raters, writing prompt, and persons (desired variance). A generalizability study (g-study) was performed to estimate variance components for selected sources of variation also known as "facets." A

d-study was performed to estimate the generalizability coefficient (Brennan, 2001a; Crocker & Algina, 1986).

The computer programs GENOVA and its extension, urGENOVA, were used to carry out these analyses (Brennan, 2001b; Crick & Brennan, 1983). Since two raters scored each student's response but each student did not receive the same prompt, a nested unbalanced design was used (Lee & Kantor, 2005; Wang et al., 2007) as described below:

Design = (Person : Task) x Rater

The model assumes that the raters are selected from an infinite pool of raters and all the raters are randomly equivalent. The model also assumes that the writing prompts are randomly selected from a universe of prompts and that students' writing responses are randomly assigned to the raters. The results of the study are presented in Table 8.B.76 and Table 8.B.77 on page 266.

Validity Evidence

Validity refers to the degree to which each interpretation or use of a test score is supported by evidence that is gathered (AERA, APA, & NCME, 1999; ETS, 2002). It is a central concern underlying the development, administration, and scoring of a test and the uses and interpretations of test scores.

Validation is the process of accumulating evidence to support each proposed score interpretation or use. It involves more than a single study or gathering one particular kind of evidence. Validation involves multiple investigations and various kinds of evidence (AERA, APA, & NCME, 1999; Cronbach, 1971; ETS, 2002; Kane, 2006). The process begins with test design and continues through the entire assessment process including item development and field testing, analyses of item and test data, test scaling, scoring, and score reporting.

This section presents the evidence gathered to support the intended uses and interpretations of scores for the CMA testing program. The description is organized in the manner prescribed by *The Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999). These standards require a clear definition of the purpose of the test, which includes a description of the qualities—called constructs—that are to be assessed by a test, the population to be assessed, as well as how the scores are to be interpreted and used.

In addition, the *Standards* identify five kinds of evidence that can provide support for score interpretations and uses, which are as follows:

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; and
5. Evidence based on the consequences of testing.

These kinds of evidence are also defined as important elements of validity information in documents developed by the U.S. Department of Education for the peer review of testing programs administered by states in response to the Elementary and Secondary Education Act (USDOE, 2001).

The next section defines the purpose of the CMA, followed by a description and discussion of the kinds of validity evidence that have been gathered.

Purpose of the CMA

As mentioned in Chapter 1, the CMA test results contribute to calculating school and district API. Additionally, the CMA for ELA and mathematics are used in determining AYP that applies toward meeting the requirement of the federal Elementary and Secondary Education Act (ESEA), which is to have all students score at proficient or above by 2014.

The Constructs to Be Measured

The tests of the CMA, given in English, are designed to show how well students perform relative to the California content standards. These content standards were approved by the SBE; they describe what students should know and be able to do at each grade level.

Test blueprints and specifications written to define the procedures used to measure the content standards provide an operational definition of the construct to which each set of standards refers—that is, they define, for each content area to be assessed, the tasks to be presented, the administration instructions to be given, and the rules used to score examinee responses. They control as many aspects of the measurement procedure as possible so that the testing conditions will remain the same over test administrations (Cronbach, 1971; Cronbach, Gleser, Nanda, & Rajaratnam, 1972) to minimize construct-irrelevant score variance (Messick, 1989). The content blueprints for the CMA can be found on the CDE STAR CMA Blueprints Web page at http://www.cde.ca.gov/ta/tg/sr/cmablueprints.asp. ETS has developed all CMA test items to conform to the SBE-approved content standards and test blueprints.

Interpretations and Uses of the Scores Generated

Total test scores expressed as scale scores, student performance levels, and subscores for each reporting cluster are generated for each grade-level and content-area test. The total test scale score is used to draw inferences about a student's achievement in the content area and to classify the achievement into one of five performance levels: advanced, proficient, basic, below basic, and far below basic.

Reporting cluster scores, also called subscores, are used to draw inferences about a student's achievement in each of several specific knowledge or skill areas covered by each test. Reporting cluster results compare an individual student's percent-correct score to the average-percent correct for the state as a whole. The range of scores for students who scored proficient on the total test is also provided for each cluster using a percent-correct metric. The reference points for this range are: (1) the average-percent correct for students who received the lowest score qualifying for the proficient performance level; and (2) the average-percent correct for students who received the lowest score qualifying for the advanced performance level, minus one percent. A detailed description of the uses and applications of CMA scores is presented in Chapter 7, which starts on page 122.

The tests that make up the STAR Program, along with other assessments, provide results or score summaries that are used for different purposes. The four major purposes are:

1. Communicating with parents and guardians;
2. Informing decisions needed to support student achievement;
3. Evaluating school programs; and
4. Providing data for state and federal accountability programs for schools.

These are the only uses and interpretations of scores for which validity evidence has been gathered. If the user wishes to interpret or use the scores in other ways, the user is cautioned that the validity of doing so has not been established (AERA, APA, & NCME, 1999, Standard 1.3). The user is advised to gather evidence to support these additional interpretations or uses (AERA, APA, & NCME, 1999, Standard 1.4).

Intended Test Population(s)

California public school students who meet certain eligibility criteria are the intended test population for the CMA. Students in grades three through eleven are tested in ELA; students in grades three through seven are tested in mathematics; and students in grades five, eight and ten are tested in science. In addition, students in grades seven through eleven can take the EOC CMA for Algebra I and students in grades eight through eleven can take the EOC CMA for Geometry. In grade seven, students take either grade-level mathematics or EOC Algebra I. Only those students whose parents/guardians have submitted written requests to exempt them from STAR Program testing do not take the tests.

Validity Evidence Collected

Evidence Based on Content

According to *The Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), analyses that demonstrate a strong relationship between a test's content and the construct that the test was designed to measure can provide important evidence of validity. In current K–12 testing, the construct of interest usually is operationally defined by state content standards and the test blueprints that specify the content, format, and scoring of items that are admissible measures of the knowledge and skills described in the content standards. Evidence that the items meet these specifications and represent the domain of knowledge and skills referenced by the standards supports the inference that students' scores on these items can appropriately be regarded as measures of the intended construct.

As noted in the AERA, APA, and NCME *Test Standards* (1999), evidence based on test content may involve logical analyses of test content in which experts judge the adequacy with which the test content conforms to the test specifications and represents the intended domain of content. Such reviews can also be used to determine whether the test content contains material that is not relevant to the construct of interest. Analyses of test content may also involve the use of empirical evidence of item quality.

Also to be considered in evaluating test content are the procedures used for test administration and test scoring. As Kane (2006, p. 29) has noted, although evidence that appropriate administration and scoring procedures have been used does not provide compelling evidence to support a particular score interpretation or use, such evidence may prove useful in refuting rival explanations of test results. Evidence based on content includes the following:

Description of the state standards—As was noted in Chapter 1, the SBE adopted rigorous content standards in 1997 and 1998 in four major content areas: ELA, history–social science, mathematics, and science. These standards were designed to guide instruction and learning for all students in the state and to bring California students to world-class levels of achievement.

Specifications and blueprints—ETS maintains item specifications for each CMA. The item specifications describe the characteristics of the items that should be written to

measure each content standard. A thorough description of the specifications can be found in Chapter 3, starting on page 66. Once the items are developed and field-tested, ETS selects all CMA test items to conform to the SBE-approved California content standards and test blueprints. Test blueprints for the CMA were proposed by ETS and reviewed and approved by the Assessment Review Panels (ARPs), which are advisory panels to the CDE and ETS on areas related to item development for the CMA. Test blueprints were also reviewed and approved by the CDE and presented to the SBE for adoption. There have been no recent changes in the blueprints for the CMA. The test blueprints for the CMA can be found on the CDE STAR CMA Blueprints Web page at http://www.cde.ca.gov/ta/tg/sr/cmablueprints.asp.

Item development process—A detailed description of the item development process for the CMA is presented in Chapter 3, starting on page 66.

Item review process—Chapter 3 explains in detail the extensive item review process applied to items written for use in the CMA. In brief, items written for the CMA undergo multiple review cycles and involve multiple groups of reviewers. One of the reviews is carried out by an external reviewer, that is, the ARPs. The ARPs are responsible for reviewing all newly developed items for alignment to the California content standards.

Form construction process—For each test, the content standards, blueprints, and test specifications are used as the basis for choosing items. Additional targets for item difficulty and discrimination that are used for test construction were defined in light of what are desirable statistical characteristics in test items and statistical evaluations of the CMA items.

Guidelines for test construction were established with the goal of maintaining parallel forms to the greatest extent possible from year to year. Details can be found in Chapter 4, starting on page 78.

Additionally, an external review panel, the Statewide Pupil Assessment Review (SPAR), is responsible for reviewing and approving the achievement tests to be used statewide for the testing of students in California public schools, grades two through eleven. More information about the SPAR is given in Chapter 3, starting on page 73.

Evidence Based on Relations to Other Variables

Empirical results concerning the relationships between the score on a test and measures of other variables external to the test can also provide evidence of validity when these relationships are found to be consistent with the definition of the construct that the test is intended to measure. As indicated in the *Test Standards* (AERA, APA, & NCME, 1999), the variables investigated can include other tests that measure the same construct and different constructs, criterion measures that scores on the test are expected to predict, as well as demographic characteristics of examinees that are expected to be related and unrelated to test performance.

Differential Item Functioning Analyses

Analyses of DIF can provide evidence of the degree to which a score interpretation or use is valid for individuals who differ in particular demographic characteristics. For the CMA, DIF analyses were performed on all operational items and all field-test items for which sufficient student samples were available.

The results of the DIF analyses are presented in Appendix 8.E, which starts on page 306. The vast majority of the items exhibited little or no significant DIF, suggesting that, in

general, scores based on the CMA items would have the same meaning for individuals who differed in their demographic characteristics.

Correlations Between Content-area Test Scores

To the degree that students' content-area test scores correlate as expected, evidence of the validity in regarding those scores as measures of the intended constructs is provided. Table 8.5 on the next page provides the correlations between scores on the 2012 CMA content-area tests and the numbers of students on which these correlations were based. Sample sizes for individual tests are shown in bold font on the diagonals of the correlation matrices, and the numbers of students on which the correlations were based are shown on the lower off-diagonals. The correlations are provided in the upper off-diagonals. Results are based on all students with valid CMA scores and are provided by grade to account for different course taking patterns in the upper grades.

Results for these students appear to be consistent with expectations. In general, students' ELA scores correlated moderately with their mathematics scores. They correlated more highly with their scores on the science CMA.

Table 8.C.1 through Table 8.C.9 in Appendix 8.C provide the content-area test score correlations by gender, ethnicity, English-language fluency, economic status, and primary disability. Similar patterns of correlations between students' ELA, mathematics, and science scores were found within the subgroups.

Note that, while the correlations are reported only for samples that comprise 11 or more examinees, results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes. Correlations between scores on any two content-area tests where 10 or fewer examinees took the tests are expressed as hyphens. Correlations between scores on two content-area tests that cannot be administered together to the same group of students are expressed as "N/A."

Note: Due to limited column space, test names were not repeated on the column heading of each correlation matrix in Table 8.C.1 through Table 8.C.9. Instead, numerical headings, such as "1." or "2." were used.

Table 8.5 CMA Content-area Correlations (All Valid Scores)

Grade	CMA	ELA	Mathematics	
3	**ELA**	**19,718**	0.62	
	Mathematics	15,692	**16,973**	
Grade	**CMA**	**ELA**	**Mathematics**	
4	**ELA**	**26,694**	0.57	
	Mathematics	21,298	**22,340**	
Grade	**CMA**	**ELA**	**Mathematics**	**Science**
5	**ELA**	**29,080**	0.52	0.63
	Mathematics	23,975	**25,586**	0.54
	Science	26,209	23,136	**26,838**
Grade	**CMA**	**ELA**	**Mathematics**	
6	**ELA**	**28,737**	0.55	
	Mathematics	24,395	**26,222**	
Grade	**CMA**	**ELA**	**Mathematics**	**Algebra I**
7	**ELA**	**26,908**	0.51	0.45
	Mathematics	23,810	**26,130**	N/A
	Algebra I	40	0	**47**

Grade	CMA	ELA	Algebra I	Geometry	Science
8	**ELA**	**25,174**	0.48	–	0.61
	Algebra I	5,467	**6,115**	N/A	0.57
	Geometry	3	N/A	**3**	–
	Science	22,088	5,207	3	**23,112**
Grade	**CMA**	**ELA**	**Algebra I**	**Geometry**	
9	**ELA**	**19,950**	0.48	0.55	
	Algebra I	8,763	**9,945**	N/A	
	Geometry	450	N/A	**530**	
Grade	**CMA**	**ELA**	**Algebra I**	**Geometry**	**Life Science**
10	**ELA**	**17,163**	0.48	0.47	0.63
	Algebra I	7,084	**8,240**	N/A	0.49
	Geometry	2,891	N/A	**3,426**	0.55
	Life Science	13,669	6,205	2,541	**14,356**
Grade	**CMA**	**ELA**	**Algebra I**	**Geometry**	
11	**ELA**	**13,936**	0.42	0.45	
	Algebra I	3,932	**4,549**	N/A	
	Geometry	2,564	N/A	**3,032**	

Correlations between the reporting cluster scores are presented in Table 8.B.1 through Table 8.B.3 for the CMA. Results are also reported in Table 8.B.4 for grade-specific samples of the EOC mathematics tests for Algebra I and Geometry.

In general, moderate correlations between cluster scores should be expected since, by design, the clusters measure various aspects of the same construct. The findings given in Table 8.5 show that, in general, moderate intercorrelations were obtained. As also would be expected, the correlations were higher among clusters that assessed more similar skills than they were among clusters that assessed somewhat dissimilar skills. For example, in mathematics, the clusters related to number sense correlated more highly with the cluster Algebra and Data Analysis than they did with Measurement and Geometry.

Generalizability Analyses for Writing

Generalizability analyses were performed on students' writing scores for grades four and seven to assess the proportion of variance explained by raters, writing prompt, and persons. The details on the design and methodology are described in the subsection "Generalizability Analyses" in the "Writing Score Reliability" section on page 192. Details about the results can be found in Table 8.B.76 and Table 8.B.77 on page 266.

A decision study (d-study) was conducted to look at the generalizability-coefficient (g-coefficient) for the writing scores; the g-coefficient for grade four was 0.80 and the g-coefficient for grade seven was 0.74. The largest variance component was attributed to the "person" variation, which is the desired variation to occur among the examinee or "person" scores. Variation attributable to the construct-irrelevant rater variable was small, and the variation attributable to the prompt was negligible for both grades.

Evidence Based on Response Processes

As noted in the APA, AERA, and NCME *Standards* (1999), additional support for a particular score interpretation or use can be provided by theoretical and empirical evidence indicating that examinees are using the intended response processes when responding to the items in a test. This evidence may be gathered from interacting with examinees in order to understand what processes underlie their item responses. Finally, evidence may also be

derived from feedback provided by observers or judges involved in the scoring of examinee responses.

Evidence of Rater Reliability and Interrater Agreement

Rater consistency for the writing prompt is critical to the CMA writing scores and their interpretations. These findings provide evidence of the degree to which raters agree in their observations about the qualities evident in students' essay responses. In order to evaluate the reliability of the student scores on the writing prompts administered in grades four and seven, two raters scored approximately 10 percent of the examinee responses. The data collected were used to evaluate interrater reliability and interrater agreement.

Interrater Reliability

Cohen's Kappa statistics findings provide evidence of the degree to which a student's score may vary from rater to rater. Without explicit criteria to guide the rating process, two independent raters may not assign the same score to a given response. Research has shown the value of Kappa statistics between 0.41 and 0.60 as exhibiting moderate levels of agreement between the two ratings (Landis & Koch, 1977). The results in Table 8.B.72 and Table 8.B.73 showed moderate levels of agreement between raters that scored examinees' written responses to the prompts administered in grades four and seven.

Interrater Agreement

As noted previously, approximately 10 percent of the test population's responses to the writing prompts in grades four and seven were scored by two raters. The percentage of students for whom the raters were in exact agreement was 65 percent for grade four and 67 percent for grade seven The percentage of essay responses for which there was exact or adjacent agreement between the two sets of ratings was 99 percent for grade four and 98 percent for grade seven.

Evidence Based on Internal Structure

As suggested by the *Standards* (AERA, APA, & NCME, 1999), evidence of validity can also be obtained from studies of the properties of the item scores and the relationship between these scores and scores on components of the test. To the extent that the score properties and relationships found are consistent with the definition of the construct measured by the test, support is gained for interpreting these scores as measures of the construct.

For the CMA, it is assumed that a single construct underlies the total scores obtained on each test. Evidence to support this assumption can be gathered from the results of item analyses, evaluations of internal consistency, and studies of model-data fit, dimensionality, and reliability.

With respect to the subscores that are reported, these scores are intended to reflect examinees' knowledge and/or skill in an area that is part of the construct underlying the total test. Analyses of the intercorrelations among the subscores themselves and between the subscores and total test score can be used for studying this aspect of the construct. Information about the internal consistency of the items on which each subscore is based is also useful to provide.

Classical Statistics

Point-biserial correlations calculated for the items in a test show the degree to which the items discriminate between students with low and high scores on a test. To the degree that the correlations are high, evidence that the items assess the same construct is provided. As shown in Table 8.2, the mean point-biserial was between 0.31 and 0.37 for 13 out of 21

CMA tests and was between 0.25 and 0.29 for the other 8 CMA tests. The point-biserials for the individual items in the CMA are presented in Table 8.A.1 through Table 8.A.3.

Also germane to the validity of a score interpretation are the ranges of item difficulty for the items on which a test score will be based. The finding that items have difficulties that span the range of examinee ability provides evidence that examinees at all levels of ability are adequately measured by the items. Information on average item *p*-values is given in Table 8.2; individual item *p*-values are presented in Table 8.A.1 through Table 8.A.3. (The distributions of IRT difficulty indicator *b*-values, are given in Table 8.D.26 through Table 8.D.28 for operational items.)

The data in Table 8.2 indicate that CMA tests had average *p*-values that ranged from 0.45 to 0.62. Taken together with the distribution of item *b*-values provided in Table 8.D.26 through Table 8.D.28, these results indicate a wide range of item difficulty that spanned the ability range.

Reliability

Reliability is a prerequisite for validity. The finding of reliability in student scores supports the validity of the inference that the scores reflect a stable construct. This section will describe briefly findings concerning the total test level, as well as reliability results for the reporting clusters.

Overall reliability—The reliability analyses on each of the operational CMA tests are presented in Table 8.3. The results indicate that the reliabilities of the CMA for ELA, mathematics, and science tests were moderately high, ranging from 0.72 to 0.87.

Reporting cluster reliabilities—For each CMA, number-correct scores are computed for the reporting clusters. The reliabilities of these scores are presented in Table 8.B.1 through Table 8.B.4. The reliabilities of reporting clusters are invariably lower than those for the total tests because they are based on very few items. Consistent with the findings of previous years, the cluster reliabilities also are affected by the number of items in each cluster, with cluster scores based on fewer items having somewhat lower reliabilities than cluster scores based on more items.

Because the reliabilities of scores at the cluster level are lower, schools supplement the score results with other information when interpreting the results.

Subgroup reliabilities—The reliabilities of the operational CMA tests and the two grade-specific CMA were also examined for various subgroups of the examinee population that differed in their demographic characteristics. The characteristics considered were gender, ethnicity, economic status, primary disabilities, English-language fluency, and ethnicity-by-economic status. The results of these analyses can be found in Table 8.B.5 though Table 8.B.20.

Reliability of performance classifications—The methodology used for estimating the reliability of classification decisions is described in the section “Decision Classification Analyses” on page 191. The results of these analyses are presented in Table 8.B.49 through Table 8.B.71 in Appendix 8.B; these tables start on page 258. When the classifications are collapsed to below proficient versus proficient and above, which are the critical categories for AYP analyses, the proportion of students that were classified accurately ranged from 0.86 to 0.95 across all the CMA. Similarly, the proportion of students that were classified consistently ranged from 0.81 to 0.93 for students classified into below proficient versus proficient and advanced.

These levels of accuracy and consistency are high and they are consistent with levels seen in previous years.

Dimensionality

Dimensionality analyses were conducted by a CDE psychometrics team (Gaffney et al., 2010; Gaffney & Perryman, 2009). The study investigated the factor structures of the CMA in grades three and five as part of the peer review for ESEA.

Two factors corresponding to the ELA and mathematics domain were found for the CMA in these grades, as would be expected, since these tests were designed to measure different constructs.

Evidence Based on Consequences of Testing

As observed in the *Standards*, tests are usually administered "with the expectation that some benefit will be realized from the intended use of the scores" (AERA, APA, & NCME, 1999, p. 18). When this is the case, evidence that the expected benefits accrue will provide support for intended use of the scores. The CDE and ETS are in the process of determining what kinds of information can be gathered to assess the consequences of administration of the CMA.

IRT Analyses

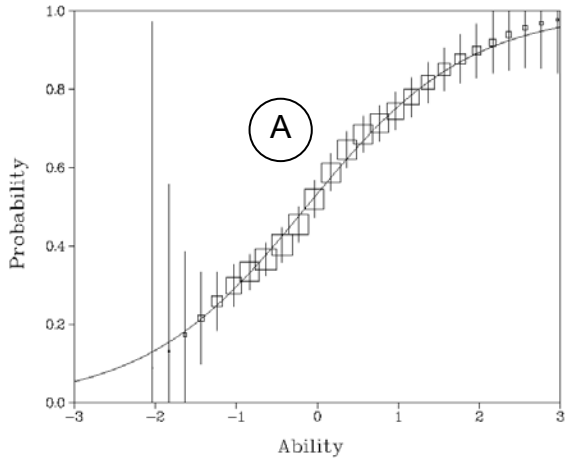
The CMA are equated to a reference form using a common-item nonequivalent groups design and methods based on IRT. The "base" or "reference" calibrations for the CMA were established by calibrating samples of data from a specific administration. Doing so established a scale to which subsequent item calibrations could be linked. The 2012 items were placed on the reference scale through a set of linking items that appeared in the 2011 operational forms and were readministered in 2012.

The procedures used for equating the CMA involve three steps: item calibration, item parameter scaling, and production of raw-score-to-scale-score conversions using the scaled item parameters. ETS uses GENASYS for the IRT item calibration and equating work. As part of this system, a proprietary version of the PARSCALE computer program (Muraki & Bock, 1995) is used and parameterized to result in one-parameter calibrations. Research at ETS has suggested that PARSCALE calibrations done in this manner produce results that are virtually identical to results based on WINSTEPS (Way, Kubiak, Henderson, & Julian, 2002). The details on all equating procedures are given in Chapter 2 starting on page 15.

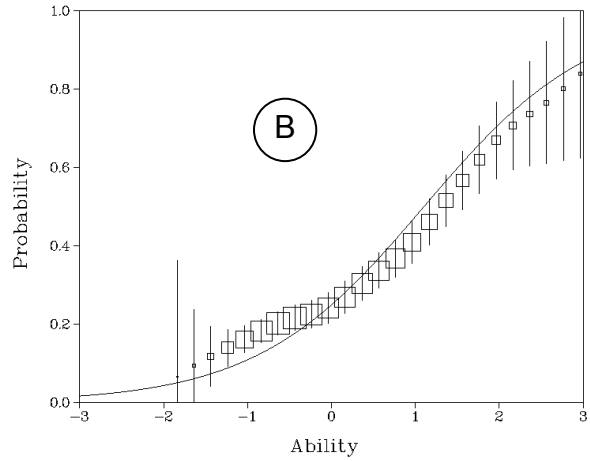
IRT Model-Data Fit Analyses

Because the Rasch model is used in equating the CMA, an important part of IRT analyses is the assessment of model-data fit. ETS psychometricians classify operational and field-test items for the CMA into discrete categories based on an evaluation of how well each item was fit by the Rasch model. The flagging procedure has categories of A, B, C, D, and F that are assigned based on an evaluation of graphical model-data fit information. Descriptors for each category are provided on page 204. As an illustration, the IRT item characteristic curves and empirical data (item-ability regressions) for five items field-tested in 2005 are shown in Figure 8.3. These five items represent the various rating categories. The item number in the calibration and ETS identification number for each item ("accession number") are listed next to each item, along with the corresponding rating categories.

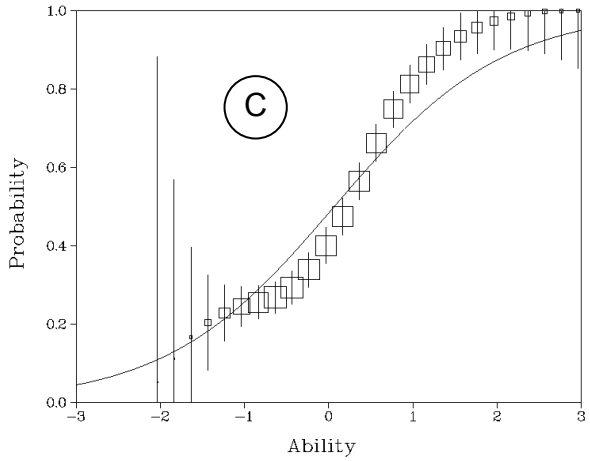
Figure 8.3 Items from the 2005 CST for History–Social Science Grade Ten Field-test Calibration



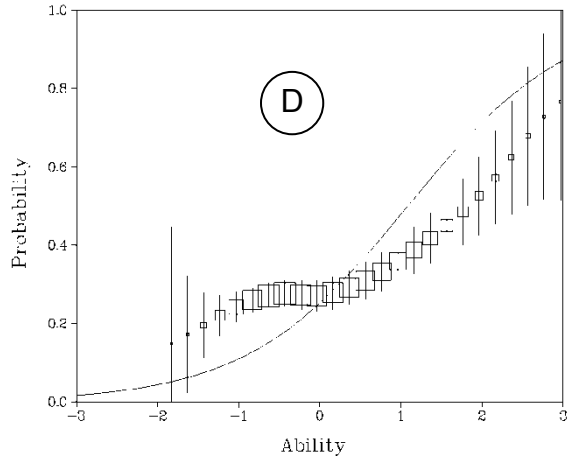
Version 30, Seq 29 (236) CSV23487 4-Choice P+ = 0.563
a = 0.588 F, b = –0.135, c = 0.000 F, CHI = 5.41, N = 5,912



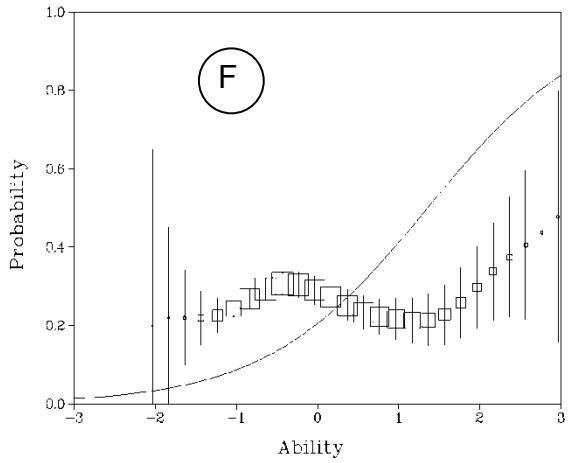
Version 1, Seq 28 (61) CSV22589 4 Choice P+ = 0.307
a = 0.588 F, b = 1.104, c = 0.000 F, CHI = 66.70, N = 6,348



Version 18, Seq 30 (165) CSV20282 4-Choice P+ = 0.523
a = 0.588 F, b = 0.066, c = 0.000 F, CHI = 208.99, N = 6,183



Version 9, Seq 32 (113) CSV20317 4-Choice P+ = 0.314
a = 0.588 F, b = 1.089, c = 0.000 F, CHI = 361.31, N = 6,047



Version 21, Seq 31 (184) CSV20311 4-Choice P+ = 0.263
a = 0.588 F, b = 1.356, c = 0.000 F, CHI = 1027.57, N = 6,277

Flag A (Item 236, CSV23487)

- Good fit of theoretical curve to empirical data along the entire ability range, may have some small divergence at the extremes
- Small Chi-square value relative to the other items in the calibration with similar sample sizes

Flag B (Item 061, CSV22589)

- Theoretical curve within error range across most of ability range, may have some small divergence at the extremes
- Acceptable Chi-square value relative to the other items in the calibration with similar sample sizes

Flag C (Item 165, CSV20282)

- Theoretical curve within error range at some regions and slightly outside of error range at remaining regions of ability range
- Moderate Chi-square value relative to the other items in the calibration with similar sample sizes
- This category often applies to items that appear to be functioning well, but that are not well fit by the Rasch model

Flag D (Item 113, CSV20317)

- Theoretical curve outside of error range at some regions across ability range
- Large Chi-square value relative to the other items in the calibration with similar sample sizes

Flag F (Item 184, CSV20311)

- Theoretical curve outside of error range at most regions across ability range
- Probability of answering item correctly may be higher at lower ability than higher ability (U-shaped empirical curve)
- Very large Chi-square value relative to the other items with similar sample sizes and classical item statistics tend also to be very poor

In general, items with flagging categories of A, B, or C are all considered acceptable. Ratings of D are considered questionable, and the ratings of F indicate a poor model fit.

Model-fit Assessment Results

The model-fit assessment is performed twice in the administration cycle. The assessment is first performed before scoring tables are produced and released. The assessment is performed again as part of the final item analyses when much larger samples are available. The flags produced as a result of this assessment are placed in the item bank. The test developers are asked to avoid the items flagged as D, if possible, and to carefully review them if they must be used. Test developers are instructed to avoid using items rated F for operational test assembly without a review by a psychometrician and by CDE content specialists.

The number of the operational items in each IRT model-data fit classification is presented in Table 8.D.1 through Table 8.D.3 on page 276. The fit classification information for the field-test items is presented in Table 8.D.4 through Table 8.D.6, which start on page 277.

Evaluation of Scaling

Calibrations of the 2012 forms were scaled to the previously obtained reference scale estimates in the item bank using the Stocking and Lord (1983) procedure for the CMA for ELA in grades three through eleven, science in grades five, eight, and ten, mathematics in grades three through seven, Algebra I, and Geometry. Details on the scaling procedures are provided on page 16 of Chapter 2.

The linking process is carried out iteratively by inspecting differences between the transformed new and old (reference) estimates for the linking items and removing items for which the item difficulty estimates changed significantly. Items with large weighted root-mean-square differences (WRMSDs) between item characteristic curves (ICCs) on the basis of the old and new difficulty estimates are removed from the linking set. Based on established procedures, any linking items for which the WRMSD is greater than 0.125 are eliminated. This criterion has produced reasonable results over time in similar equating work done for other testing programs at ETS.

Table 8.6 presents, for each grade-level CMA in grades three through eight, the number of linking items between the 2012 (new) and the test form to which it was linked (2011); the numbers of items removed from the linking item sets; the correlation between the final set of new and reference difficulty estimates for the linking items; and the average WRMSD statistic across the final set of linking items.

Table 8.6 Evaluation of Common Items Between New and Reference Test Forms

Content Area	CMA *	No. of Linking Items	Linking Items Removed	Final Correlation	WRMSD †
English–Language Arts	3	23	0	0.97	0.02
	4	24	0	0.99	0.01
	5	24	0	0.98	0.03
	6	24	0	0.96	0.03
	7	27	0	0.99	0.01
	8	23	0	0.98	0.03
	9	30	0	0.98	0.02
	10	56	0	0.99	0.02
	11	59	0	0.99	0.01
Mathematics	3	22	0	0.99	0.02
	4	23	0	1.00	0.01
	5	22	0	0.98	0.03
	6	27	0	0.97	0.02
	7	26	0	0.95	0.03
	Algebra I	28	0	0.96	0.02
	Geometry	59	0	0.99	0.01
Science	5	22	0	0.98	0.02
	8	26	0	0.99	0.02
	10 Life Science	29	0	0.97	0.02

* CMA named by number only are grade-level tests.

† Average over retained items

Summaries of Scaled IRT *b*-values

Once the IRT *b*-values are placed on the item bank scale analyses are performed to assess the overall test difficulty, the difficulty level of reporting clusters, and the distribution of items in a particular range of item difficulty.

Table 8.D.7 through Table 8.D.25 present univariate statistics (mean, standard deviation, minimum, and maximum) for the scaled IRT *b*-values based on the equating sample for operational items and the P1 data file for field-test items. The results for the overall test are presented separately for the operational items, the field test items, and for each reporting cluster (operational items).

Table 8.D.26 through Table 8.D.31 show the distributions of operational and field-test items across 16 intervals of *b*-values. In these tables the intervals range from "greater than or equal to 3.5" to "less than –3.5"points within each interval.

Post-equating Results

As described on page 15 of Chapter 2, once the new item calibrations for each test are transformed to the base scale, raw-score-to-theta scoring tables are generated for the CMA. The thetas in these tables are linearly transformed to scale scores.

Complete raw-to-scale score conversion tables for the 2012 CMA are presented in Table 8.D.32 through Table 8.D.53 starting on page 282. The raw scores and corresponding transformed scale scores are listed on those tables. The scale scores were truncated at both ends of the scale so that the minimum reported scale score was 150 and the maximum reported scale score was 600. The scale scores defining the various performance-level cut points are presented in Table 2.1 which is in Chapter 2 on page 18.

Differential Item Functioning Analyses

Analyses of DIF assess differences in the item performance of groups of students that differ in their demographic characteristics.

DIF analyses were performed on all operational items and all field-test items for which sufficient student samples were available. The sample size requirements for the DIF analyses were 100 in the focal group and 400 in the combined focal and reference groups. These sample sizes were based on standard operating procedures with respect to DIF analyses at ETS. The DIF analyses utilized the Mantel-Haenszel (MH) DIF statistic (Mantel & Haenszel, 1959; Holland & Thayer, 1985). This statistic is based on the estimate of constant odds ratio and is described as the following:

The α_{MH} is the constant odds ratio taken from Dorans and Holland (1993, equation 7) and computed as:

$$\alpha_{MH} = \frac{\left(\sum_m R_{rm} \frac{W_{fm}}{N_{tm}}\right)}{\left(\sum_m R_{fm} \frac{W_{rm}}{N_{tm}}\right)} \tag{8.9}$$

$$MH\ D\text{-}DIF = -2.35 \ln[\alpha_{MH}] \tag{8.10}$$

where,

R = number right,

W = number wrong,

N = total in:

fm = focal group at ability m,

rm = reference group at ability m, and

tm = total group at ability m.

Items analyzed for DIF at ETS are classified into one of three categories: A, B, or C. Category A contains items with negligible DIF. Category B contains items with slight to moderate DIF. Category C contains items with moderate to large values of DIF.

These categories have been used by ETS testing programs for more than 15 years. The definitions of the categories based on evaluations of the item-level MH D-DIF statistics are as follows:

DIF Category	Definition
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-.”

The factors considered in the DIF analyses included gender, ethnicity, level of English-language fluency, and primary disability. The results of the DIF analyses are presented in Appendix 8.E. Note, however, that analyses of English learners on the CMA for ELA are presented for readers’ interest. Differential performance on an ELA item that is due to the language difficulties of nonnative speakers does not indicate that an item is unfair or biased.

Table 8.E.1 on page 306 lists the operational items exhibiting significant DIF (C-DIF). Table 8.E.2 on page 307 represents the analogous list for the field-test items. Test developers are instructed to avoid selecting field-test items flagged as having shown DIF that disadvantages a focal group (C-DIF) for future operational test forms unless their inclusion is deemed essential to meeting test-content specifications.

Table 8.E.3 through Table 8.E.21 show the distributions of operational items across the DIF category classifications for the CMA. In these tables, classifications of B- or C- indicate DIF against a focal group; classifications of B+ and C+ indicate DIF in favor of a focal group. The last two columns of each table show the total number of items flagged for DIF in one or more comparisons. Table 8.E.22 to Table 8.E.40 provide the analogous results for the field-test items. Table 8.7 lists specific subgroups that were used for DIF analyses for the CMA.

Table 8.7 Subgroup Classification for DIF Analyses

DIF Type	Reference Group	Focal Group
Gender	Male	Female
Race/Ethnicity	White	African American American Indian Asian Combined Asian Group (Asian/Pacific Islander/Filipino) Filipino Hispanic/Latin American Pacific Islander
Disability	Specific Learning Disability	Autism Deaf-Blindness Deafness Emotional disturbance Hard of hearing Mental retardation/Intellectual disability (MR/ID) Multiple disabilities Orthopedic impairment Other health impairment Speech or language impairment Traumatic brain injury Visual impairment

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Appendix 8.A—Classical Analyses

Table 8.A.1 Item-by-item *p*-value and Point-Biserial for ELA

Item-by-item *p*-value and Point-Biserial for ELA																		
CMA	**Grade 3**		**Grade 4**		**Grade 5**		**Grade 6**		**Grade 7**		**Grade 8**		**Grade 9**		**Grade 10**		**Grade 11**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
1	0.55	0.33	0.71	0.42	0.74	0.27	0.59	0.34	0.75	0.41	0.91	0.37	0.82	0.29	0.71	0.39	0.39	0.11
2	0.71	0.35	0.67	0.32	0.63	0.36	0.76	0.39	0.52	0.24	0.85	0.35	0.65	0.29	0.58	0.25	0.57	0.29
3	0.61	0.29	0.71	0.30	0.83	0.33	0.76	0.44	0.56	0.31	0.69	0.21	0.46	0.26	0.72	0.40	0.65	0.36
4	0.81	0.47	0.67	0.40	0.63	0.35	0.76	0.42	0.78	0.46	0.88	0.40	0.57	0.31	0.82	0.41	0.34	0.12
5	0.72	0.43	0.62	0.26	0.70	0.38	0.70	0.38	0.60	0.35	0.72	0.44	0.67	0.39	0.74	0.37	0.64	0.19
6	0.63	0.27	0.52	0.37	0.76	0.42	0.65	0.48	0.54	0.30	0.80	0.39	0.70	0.36	0.54	0.31	0.71	0.36
7	0.44	0.26	0.65	0.44	0.67	0.40	0.55	0.35	0.66	0.41	0.63	0.37	0.54	0.34	0.44	0.28	0.61	0.33
8	0.50	0.24	0.61	0.43	0.51	0.24	0.74	0.44	0.77	0.39	0.40	0.28	0.45	0.28	0.54	0.29	0.50	0.12
9	0.41	0.36	0.52	0.30	0.49	0.26	0.67	0.36	0.60	0.34	0.79	0.46	0.66	0.40	0.38	0.10	0.30	0.18
10	0.41	0.33	0.70	0.40	0.45	0.35	0.67	0.38	0.85	0.43	0.63	0.36	0.65	0.44	0.72	0.36	0.52	0.37
11	0.59	0.41	0.71	0.39	0.51	0.32	0.54	0.23	0.70	0.38	0.63	0.32	0.55	0.43	0.54	0.27	0.41	0.24
12	0.47	0.30	0.60	0.45	0.52	0.42	0.56	0.37	0.74	0.44	0.79	0.40	0.33	0.21	0.44	0.30	0.45	0.35
13	0.60	0.42	0.50	0.35	0.63	0.39	0.61	0.15	0.70	0.45	0.52	0.37	0.40	0.21	0.48	0.33	0.51	0.32
14	0.60	0.35	0.41	0.27	0.49	0.20	0.60	0.39	0.60	0.41	0.43	0.22	0.59	0.42	0.26	0.16	0.49	0.25
15	0.67	0.39	0.73	0.43	0.56	0.26	0.45	0.25	0.50	0.30	0.47	0.29	0.44	0.40	0.52	0.31	0.52	0.15
16	0.60	0.38	0.54	0.39	0.53	0.34	0.51	0.33	0.70	0.48	0.53	0.34	0.54	0.38	0.52	0.35	0.52	0.41
17	0.42	0.24	0.47	0.15	0.48	0.27	0.44	0.28	0.43	0.29	0.39	0.21	0.53	0.32	0.46	0.15	0.46	0.27
18	0.58	0.37	0.64	0.36	0.43	0.31	0.32	0.20	0.55	0.45	0.38	0.16	0.51	0.39	0.59	0.38	0.53	0.37
19	0.59	0.38	0.54	0.34	0.51	0.36	0.52	0.34	0.67	0.47	0.42	0.26	0.71	0.40	0.60	0.38	0.43	0.26
20	0.63	0.31	0.34	0.17	0.51	0.33	0.71	0.43	0.60	0.39	0.64	0.35	0.63	0.41	0.36	0.24	0.34	0.27
21	0.56	0.36	0.40	0.18	0.56	0.37	0.58	0.37	0.50	0.33	0.60	0.35	0.45	0.24	0.45	0.22	0.47	0.25
22	0.50	0.32	0.61	0.44	0.55	0.34	0.40	0.20	0.46	0.30	0.66	0.39	0.45	0.19	0.43	0.22	0.49	0.29
23	0.61	0.32	0.64	0.47	0.49	0.33	0.68	0.36	0.47	0.36	0.77	0.44	0.50	0.29	0.35	0.22	0.62	0.37
24	0.79	0.44	0.65	0.44	0.54	0.33	0.48	0.40	0.38	0.23	0.60	0.37	0.51	0.24	0.52	0.40	0.51	0.42
25	0.50	0.28	0.72	0.49	0.59	0.36	0.59	0.41	0.61	0.35	0.59	0.29	0.56	0.40	0.51	0.32	0.59	0.36
26	0.50	0.41	0.39	0.24	0.48	0.28	0.68	0.33	0.60	0.45	0.46	0.33	0.54	0.34	0.39	0.20	0.34	0.25
27	0.51	0.20	0.71	0.33	0.76	0.38	0.48	0.36	0.68	0.37	0.67	0.36	0.51	0.36	0.58	0.33	0.45	0.23
28	0.65	0.40	0.48	0.27	0.63	0.38	0.69	0.43	0.62	0.44	0.73	0.47	0.57	0.36	0.57	0.35	0.36	0.14
29	0.61	0.35	0.49	0.24	0.41	0.14	0.43	0.23	0.57	0.41	0.69	0.43	0.51	0.31	0.39	0.33	0.40	0.25
30	0.64	0.41	0.52	0.35	0.82	0.30	0.68	0.30	0.45	0.19	0.45	0.31	0.49	0.30	0.28	0.02	0.28	0.11
31	0.50	0.17	0.57	0.34	0.63	0.32	0.63	0.43	0.51	0.32	0.66	0.28	0.49	0.30	0.57	0.36	0.37	0.18
32	0.73	0.33	0.47	0.33	0.59	0.41	0.58	0.41	0.68	0.30	0.61	0.29	0.51	0.32	0.51	0.44	0.31	0.15
33	0.58	0.44	0.51	0.32	0.48	0.35	0.53	0.34	0.54	0.22	0.33	0.15	0.22	0.05	0.46	0.24	0.31	0.07
34	0.56	0.43	0.64	0.45	0.53	0.37	0.73	0.44	0.46	0.21	0.46	0.26	0.51	0.34	0.33	0.08	0.42	0.26
35	0.58	0.32	0.54	0.34	0.41	0.22	0.66	0.29	0.41	0.32	0.47	0.26	0.49	0.34	0.41	0.23	0.51	0.35
36	0.62	0.38	0.56	0.32	0.70	0.40	0.50	0.23	0.54	0.35	0.45	0.29	0.42	0.27	0.34	0.10	0.47	0.34

Item-by-item *p*-value and Point-Biserial for ELA																		
CMA	**Grade 3**		**Grade 4**		**Grade 5**		**Grade 6**		**Grade 7**		**Grade 8**		**Grade 9**		**Grade 10**		**Grade 11**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
37	0.53	0.39	0.71	0.46	0.63	0.31	0.58	0.25	0.53	0.26	0.48	0.30	0.45	0.21	0.57	0.31	0.39	0.28
38	0.64	0.48	0.69	0.36	0.70	0.46	0.42	0.17	0.43	0.21	0.46	0.29	0.67	0.34	0.45	0.27	0.41	0.22
39	0.67	0.46	0.49	0.33	0.68	0.43	0.72	0.41	0.49	0.37	0.60	0.35	0.57	0.35	0.53	0.36	0.46	0.26
40	0.73	0.46	0.54	0.37	0.68	0.42	0.44	0.26	0.59	0.44	0.48	0.27	0.72	0.49	0.49	0.25	0.41	0.26
41	0.62	0.39	0.61	0.41	0.43	0.27	0.51	0.35	0.58	0.34	0.69	0.40	0.46	0.25	0.36	0.15	0.44	0.19
42	0.67	0.46	0.72	0.49	0.73	0.44	0.47	0.24	0.61	0.34	0.78	0.41	0.43	0.25	0.61	0.42	0.41	0.21
43	0.68	0.46	0.69	0.46	0.50	0.27	0.50	0.33	0.66	0.46	0.77	0.32	0.40	0.25	0.55	0.33	0.33	0.24
44	0.61	0.47	0.57	0.40	0.54	0.41	0.51	0.21	0.56	0.30	0.76	0.36	0.57	0.35	0.46	0.25	0.30	0.15
45	0.59	0.47	0.67	0.32	0.58	0.42	0.60	0.36	0.52	0.30	0.77	0.34	0.50	0.27	0.53	0.28	0.55	0.42
46	0.62	0.47	0.49	0.30	0.68	0.39	0.78	0.37	0.72	0.39	0.61	0.40	0.38	0.13	0.40	0.30	0.41	0.23
47	0.62	0.47	0.70	0.44	0.35	0.22	0.62	0.37	0.64	0.37	0.45	0.23	0.44	0.27	0.36	0.13	0.43	0.29
48	0.53	0.25	0.51	0.30	0.39	0.24	0.76	0.49	0.64	0.40	0.59	0.38	0.47	0.31	0.47	0.27	0.40	0.19
49	.	.	.	.	.	.	0.65	0.35	0.53	0.39	0.68	0.43	0.50	0.38	0.53	0.39	0.41	0.19
50	.	.	.	.	.	.	0.56	0.30	0.74	0.45	0.72	0.34	0.70	0.42	0.69	0.46	0.54	0.38
51	.	.	.	.	.	.	0.54	0.38	0.75	0.42	0.71	0.47	0.59	0.42	0.45	0.30	0.58	0.38
52	.	.	.	.	.	.	0.48	0.28	0.62	0.36	0.71	0.42	0.50	0.27	0.57	0.41	0.44	0.32
53	.	.	.	.	.	.	0.58	0.32	0.58	0.35	0.72	0.40	0.50	0.30	0.54	0.34	0.63	0.37
54	.	.	.	.	.	.	0.53	0.21	0.45	0.27	0.78	0.44	0.45	0.24	0.56	0.35	0.42	0.23
55	.	.	.	.	.	.	.	.	.	.	.	.	0.47	0.29	0.36	0.22	0.32	0.11
56	.	.	.	.	.	.	.	.	.	.	.	.	0.54	0.35	0.43	0.29	0.47	0.30
57	.	.	.	.	.	.	.	.	.	.	.	.	0.40	0.24	0.45	0.25	0.39	0.20
58	.	.	.	.	.	.	.	.	.	.	.	.	0.54	0.33	0.62	0.44	0.39	0.31
59	.	.	.	.	.	.	.	.	.	.	.	.	0.45	0.26	0.53	0.35	0.42	0.20
60	.	.	.	.	.	.	.	.	.	.	.	.	0.46	0.28	0.45	0.26	0.35	0.11

Table 8.A.2 Item-by-item *p*-value and Point-Biserial for Mathematics

Item-by-item *p*-value and Point-Biserial for Mathematics														
CMA	**Grade 3**		**Grade 4**		**Grade 5**		**Grade 6**		**Grade 7**		**Algebra I**		**Geometry**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	***p*-value**	**Pt-Bis**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
1	0.66	0.43	0.82	0.32	0.62	0.26	0.80	0.21	0.29	0.32	0.65	0.17	0.69	0.25
2	0.75	0.31	0.62	0.45	0.62	0.35	0.72	0.27	0.37	0.31	0.63	0.29	0.56	0.36
3	0.49	0.40	0.83	0.43	0.64	0.47	0.50	0.32	0.51	0.19	0.50	0.29	0.56	0.33
4	0.59	0.40	0.82	0.39	0.81	0.44	0.56	0.21	0.43	0.22	0.63	0.44	0.56	0.22
5	0.60	0.35	0.62	0.41	0.72	0.44	0.45	0.21	0.56	0.19	0.50	0.43	0.63	0.19
6	0.58	0.37	0.49	0.44	0.65	0.31	0.72	0.26	0.29	0.12	0.48	0.23	0.49	0.28
7	0.63	0.49	0.54	0.43	0.69	0.44	0.54	0.36	0.33	0.23	0.57	0.31	0.51	0.37
8	0.45	0.37	0.57	0.45	0.66	0.40	0.68	0.32	0.40	0.19	0.30	0.24	0.51	0.35
9	0.60	0.40	0.79	0.41	0.74	0.29	0.43	0.30	0.61	0.19	0.50	0.32	0.47	0.32
10	0.52	0.25	0.39	0.23	0.61	0.44	0.49	0.23	0.48	0.27	0.60	0.46	0.48	0.24
11	0.54	0.39	0.39	0.27	0.82	0.39	0.52	0.34	0.47	0.25	0.67	0.35	0.40	0.14
12	0.66	0.47	0.80	0.35	0.45	0.37	0.50	0.26	0.35	0.14	0.61	0.33	0.49	0.23
13	0.59	0.41	0.54	0.33	0.59	0.31	0.52	0.28	0.38	0.25	0.57	0.34	0.34	0.17
14	0.53	0.18	0.46	0.30	0.44	0.22	0.57	0.27	0.44	0.21	0.61	0.35	0.60	0.37
15	0.56	0.32	0.76	0.34	0.72	0.46	0.45	0.24	0.59	0.32	0.58	0.40	0.39	0.15
16	0.43	0.26	0.67	0.41	0.71	0.47	0.61	0.31	0.39	0.19	0.43	0.19	0.44	0.16
17	0.57	0.43	0.56	0.40	0.48	0.23	0.59	0.31	0.65	0.37	0.40	0.29	0.50	0.27
18	0.61	0.32	0.86	0.39	0.79	0.50	0.58	0.33	0.62	0.25	0.32	0.21	0.52	0.27
19	0.68	0.47	0.70	0.28	0.77	0.45	0.50	0.25	0.55	0.29	0.42	0.19	0.68	0.44
20	0.72	0.48	0.55	0.31	0.64	0.31	0.49	0.27	0.57	0.35	0.32	0.18	0.33	0.11
21	0.65	0.53	0.51	0.42	0.60	0.44	0.48	0.37	0.49	0.26	0.56	0.20	0.35	0.26
22	0.60	0.47	0.82	0.33	0.72	0.44	0.73	0.38	0.41	0.19	0.48	0.29	0.50	0.32
23	0.51	0.27	0.82	0.42	0.47	0.28	0.55	0.32	0.42	0.24	0.48	0.23	0.49	0.36
24	0.50	0.32	0.59	0.32	0.39	0.17	0.57	0.28	0.72	0.33	0.49	0.27	0.49	0.38
25	0.47	0.17	0.49	0.34	0.57	0.51	0.59	0.46	0.59	0.27	0.37	0.20	0.57	0.38
26	0.60	0.34	0.69	0.43	0.43	0.33	0.57	0.40	0.44	0.25	0.40	0.26	0.53	0.34
27	0.61	0.39	0.56	0.46	0.70	0.51	0.49	0.29	0.35	0.17	0.56	0.32	0.35	0.11
28	0.67	0.40	0.47	0.34	0.60	0.35	0.46	0.18	0.32	0.06	0.48	0.29	0.54	0.30
29	0.68	0.46	0.67	0.37	0.69	0.45	0.59	0.36	0.51	0.35	0.54	0.33	0.49	0.32
30	0.70	0.39	0.43	0.30	0.62	0.39	0.52	0.36	0.61	0.35	0.59	0.31	0.51	0.31
31	0.65	0.37	0.46	0.15	0.73	0.49	0.28	0.11	0.53	0.29	0.35	0.10	0.44	0.27
32	0.64	0.32	0.60	0.43	0.66	0.47	0.55	0.33	0.42	0.26	0.57	0.41	0.51	0.27
33	0.73	0.31	0.46	0.26	0.48	0.26	0.71	0.41	0.65	0.30	0.55	0.40	0.47	0.35
34	0.57	0.35	0.63	0.31	0.44	0.21	0.73	0.49	0.48	0.31	0.42	0.18	0.50	0.39
35	0.61	0.27	0.83	0.29	0.39	0.35	0.75	0.38	0.52	0.31	0.46	0.32	0.41	0.20
36	0.68	0.46	0.53	0.27	0.55	0.26	0.67	0.38	0.43	0.15	0.57	0.44	0.28	0.20
37	0.67	0.33	0.49	0.31	0.43	0.16	0.76	0.43	0.40	0.28	0.32	0.18	0.48	0.25
38	0.62	0.21	0.64	0.41	0.52	0.36	0.41	0.25	0.30	0.28	0.41	0.21	0.45	0.15

Item-by-item *p*-value and Point-Biserial for Mathematics														
CMA	**Grade 3**		**Grade 4**		**Grade 5**		**Grade 6**		**Grade 7**		**Algebra I**		**Geometry**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	***p*-value**	**Pt-Bis**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
39	0.77	0.42	0.64	0.34	0.64	0.45	0.57	0.31	0.50	0.25	0.44	0.18	0.36	0.23
40	0.65	0.44	0.47	0.34	0.69	0.38	0.33	0.19	0.54	0.30	0.38	0.12	0.49	0.39
41	0.80	0.43	0.59	0.32	0.54	0.36	0.51	0.33	0.48	0.28	0.40	0.12	0.37	0.18
42	0.83	0.36	0.35	0.10	0.63	0.37	0.44	0.17	0.47	0.28	0.54	0.29	0.37	0.20
43	0.50	0.30	0.54	0.21	0.45	0.29	0.55	0.23	0.15	-.06	0.50	0.33	0.71	0.36
44	0.58	0.48	0.64	0.30	0.76	0.45	0.48	0.28	0.36	0.17	0.55	0.33	0.32	0.10
45	0.62	0.43	0.73	0.44	0.74	0.45	0.50	0.25	0.40	0.35	0.38	0.14	0.52	0.28
46	0.49	0.21	0.57	0.22	0.67	0.42	0.68	0.36	0.47	0.32	0.38	0.20	0.45	0.18
47	0.69	0.46	0.57	0.36	0.59	0.38	0.50	0.22	0.46	0.28	0.54	0.39	0.58	0.31
48	0.67	0.51	0.30	0.06	0.55	0.21	0.46	0.28	0.45	0.11	0.44	0.27	0.66	0.38
49	.	.	.	.	.	.	0.43	0.24	0.61	0.33	0.49	0.32	0.38	0.18
50	.	.	.	.	.	.	0.78	0.37	0.63	0.34	0.46	0.32	0.56	0.31
51	.	.	.	.	.	.	0.38	0.32	0.56	0.28	0.63	0.38	0.48	0.29
52	.	.	.	.	.	.	0.36	0.08	0.50	0.33	0.42	0.30	0.47	0.23
53	.	.	.	.	.	.	0.38	0.17	0.52	0.32	0.39	0.23	0.45	0.28
54	.	.	.	.	.	.	0.46	0.27	0.40	0.18	0.53	0.34	0.43	0.26
55	.	.	.	.	.	.	.	.	.	.	0.44	0.25	0.50	0.38
56	.	.	.	.	.	.	.	.	.	.	0.39	0.16	0.49	0.26
57	.	.	.	.	.	.	.	.	.	.	0.50	0.36	0.38	0.17
58	.	.	.	.	.	.	.	.	.	.	0.42	0.27	0.35	0.22
59	.	.	.	.	.	.	.	.	.	.	0.49	0.27	0.40	0.18
60	.	.	.	.	.	.	.	.	.	.	0.55	0.30	0.39	0.20

Table 8.A.3 Item-by-item *p*-value and Point-Biserial for Science

Item-by-item *p*-value and Point-Biserial for Science						
CMA	**Grade 5**		**Grade 8**		**Grade 10**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
1	0.64	0.29	0.70	0.35	0.69	0.29
2	0.57	0.26	0.77	0.29	0.43	0.27
3	0.45	0.28	0.65	0.27	0.59	0.24
4	0.58	0.35	0.63	0.22	0.69	0.28
5	0.56	0.30	0.70	0.33	0.47	0.22
6	0.51	0.33	0.50	0.27	0.38	0.24
7	0.62	0.25	0.60	0.35	0.31	–0.05
8	0.85	0.31	0.57	0.33	0.46	0.25
9	0.84	0.27	0.87	0.36	0.42	0.19
10	0.43	0.31	0.60	0.36	0.55	0.30
11	0.51	0.28	0.64	0.36	0.42	0.19
12	0.44	0.29	0.52	0.34	0.60	0.29
13	0.80	0.38	0.53	0.32	0.59	0.25
14	0.61	0.28	0.58	0.39	0.49	0.26
15	0.56	0.27	0.54	0.40	0.52	0.26
16	0.58	0.19	0.51	0.19	0.44	0.29
17	0.74	0.40	0.67	0.29	0.58	0.36
18	0.60	0.46	0.61	0.23	0.47	0.31
19	0.67	0.33	0.47	0.26	0.48	0.30
20	0.37	0.20	0.53	0.37	0.54	0.33
21	0.45	0.29	0.67	0.37	0.62	0.40
22	0.66	0.25	0.57	0.22	0.50	0.26
23	0.46	0.29	0.52	0.34	0.63	0.38
24	0.52	0.28	0.50	0.39	0.61	0.36
25	0.63	0.36	0.46	0.28	0.51	0.39
26	0.80	0.37	0.45	0.29	0.61	0.43
27	0.54	0.36	0.47	0.23	0.50	0.32
28	0.69	0.43	0.45	0.30	0.69	0.42
29	0.61	0.36	0.45	0.32	0.65	0.46
30	0.63	0.41	0.58	0.37	0.61	0.38
31	0.73	0.39	0.66	0.42	0.51	0.27
32	0.83	0.42	0.68	0.46	0.51	0.35
33	0.72	0.40	0.44	0.26	0.61	0.49
34	0.62	0.24	0.52	0.23	0.55	0.41
35	0.82	0.38	0.57	0.35	0.58	0.39
36	0.49	0.30	0.41	0.21	0.44	0.26
37	0.41	0.25	0.62	0.39	0.59	0.44
38	0.74	0.42	0.75	0.41	0.47	0.25
39	0.82	0.32	0.82	0.38	0.65	0.42
40	0.28	0.14	0.56	0.20	0.63	0.54
41	0.41	0.23	0.72	0.33	0.56	0.39
42	0.47	0.28	0.61	0.38	0.51	0.30
43	0.47	0.26	0.68	0.41	0.65	0.41
44	0.49	0.22	0.54	0.40	0.45	0.27
45	0.53	0.34	0.44	0.17	0.33	0.14
46	0.51	0.34	0.54	0.35	0.67	0.43
47	0.77	0.44	0.46	0.30	0.46	0.23
48	0.83	0.39	0.50	0.33	0.42	0.25
49	.	.	0.39	0.18	0.70	0.37
50	.	.	0.59	0.32	0.26	0.08
51	.	.	0.54	0.37	0.62	0.34
52	.	.	0.35	0.14	0.47	0.34
53	.	.	0.55	0.34	0.36	0.15
54	.	.	0.64	0.40	0.56	0.38
55	.	.	.	.	0.39	0.26
56	.	.	.	.	0.66	0.47
57	.	.	.	.	0.41	0.21
58	.	.	.	.	0.42	0.30
59	.	.	.	.	0.62	0.41
60	.	.	.	.	0.60	0.29

Table 8.A.4 Item-by-item *p*-value and Point-Biserial for Grade-specific CMA

Item-by-item *p*-value and Point-Biserial for Grade-specific CMA				
CMA	**Algebra I (Grade 8)**		**Geometry (Grade 9)**	
Items	***p*-value**	**Pt-Bis**	***p*-value**	**Pt-Bis**
1	0.65	0.19	0.63	0.20
2	0.63	0.30	0.55	0.38
3	0.47	0.31	0.55	0.37
4	0.60	0.46	0.52	0.25
5	0.48	0.44	0.59	0.20
6	0.46	0.22	0.48	0.33
7	0.56	0.32	0.48	0.41
8	0.28	0.27	0.49	0.40
9	0.51	0.31	0.43	0.36
10	0.57	0.48	0.42	0.34
11	0.67	0.36	0.42	0.15
12	0.58	0.29	0.52	0.19
13	0.55	0.34	0.33	0.17
14	0.58	0.37	0.61	0.36
15	0.59	0.39	0.39	0.14
16	0.44	0.23	0.44	0.17
17	0.40	0.31	0.51	0.23
18	0.33	0.23	0.52	0.31
19	0.43	0.20	0.67	0.44
20	0.33	0.20	0.34	0.15
21	0.57	0.18	0.36	0.26
22	0.48	0.30	0.49	0.34
23	0.50	0.25	0.46	0.37
24	0.51	0.29	0.50	0.40
25	0.37	0.22	0.58	0.34
26	0.41	0.28	0.53	0.34
27	0.58	0.33	0.33	0.15
28	0.50	0.31	0.49	0.28
29	0.52	0.32	0.48	0.36
30	0.57	0.30	0.52	0.27
31	0.35	0.08	0.37	0.24
32	0.57	0.42	0.52	0.30
33	0.55	0.40	0.46	0.37
34	0.44	0.19	0.48	0.43
35	0.49	0.37	0.39	0.18
36	0.55	0.45	0.28	0.17
37	0.33	0.20	0.46	0.33
38	0.44	0.24	0.47	0.18
39	0.45	0.17	0.38	0.25
40	0.36	0.11	0.49	0.38
41	0.41	0.12	0.39	0.26
42	0.58	0.29	0.35	0.28
43	0.52	0.33	0.71	0.33
44	0.59	0.34	0.31	0.10
45	0.39	0.16	0.51	0.27
46	0.39	0.24	0.44	0.21
47	0.58	0.42	0.62	0.28
48	0.45	0.29	0.64	0.37
49	0.50	0.34	0.39	0.17
50	0.49	0.33	0.57	0.36
51	0.65	0.37	0.50	0.28
52	0.45	0.33	0.46	0.29
53	0.40	0.23	0.44	0.31
54	0.51	0.37	0.48	0.23
55	0.47	0.28	0.50	0.41
56	0.40	0.15	0.47	0.31
57	0.53	0.38	0.38	0.14
58	0.41	0.26	0.42	0.30
59	0.52	0.25	0.39	0.21
60	0.54	0.28	0.40	0.23

Table 8.A.5 Distribution of Essay Scores for ELA Grade Four—Overall and by Subgroup (all %)

Score	Total	Female	Male	English only	I-FEP	EL	R-FEP	Not Econ Disadv.	Econ Disadv.
0	1.23	0.24	0.99	0.73	0.00	0.48	0.00	0.25	0.97
1	6.23	1.48	4.74	3.24	0.03	2.93	0.03	1.00	5.21
2	42.14	12.02	30.12	22.02	0.37	19.56	0.20	7.88	34.30
3	39.97	15.04	24.94	21.44	0.47	17.78	0.28	9.23	30.73
4	10.44	4.86	5.58	6.35	0.17	3.76	0.16	3.48	6.95
Total*	100	33.64	66.37	53.78	1.04	44.51	0.67	21.84	78.16

Score	American Indian	Asian	Pacific Islander	Filipino	Hispanic	African American	White	Autism	Deafness
0	0.01	0.06	0.00	0.01	0.74	0.16	0.23	0.18	0.01
1	0.08	0.24	0.02	0.07	4.03	0.79	1.01	0.76	0.12
2	0.38	1.34	0.17	0.50	28.05	4.06	7.71	3.38	0.15
3	0.30	1.14	0.22	0.37	25.80	3.88	8.25	1.71	0.06
4	0.09	0.39	0.04	0.15	5.93	0.93	2.85	0.44	0.02
Total*	0.86	3.17	0.45	1.10	64.55	9.82	20.05	6.47	0.36

Score	Emotional Dist.	Hard of Hearing	MR/ID	Mult. Disab.	Orthoped. Impair.	Other Health Impair.	Specific Learning Disab.	Speech or Lang. Disab.	Traumatic Brain Injury	Visual Impair.
0	0.08	0.02	0.03	0.00	0.01	0.11	0.59	0.17	0.01	0.00
1	0.19	0.03	0.33	0.02	0.07	0.56	3.25	0.90	0.01	0.02
2	0.83	0.33	0.74	0.05	0.30	4.12	25.77	6.44	0.09	0.09
3	0.5	0.34	0.15	0.02	0.20	4.14	26.74	5.72	0.05	0.11
4	0.11	0.09	0.00	0.00	0.04	1.08	7.00	1.61	0.01	0.03
Total*	1.71	0.81	1.25	0.09	0.62	10.01	63.35	14.84	0.17	0.25

* Note: The marginal percentage for each subgroup is the percentage of examinees in that subgroup who obtained a valid writing score.

Table 8.A.6 Distribution of Essay Scores for ELA Grade Seven—Overall and by Subgroup (all %)

Score	Total	Femal	Male	English only	I-FEP	EL	R-FEP	Not Econ Disadv.	Econ Disadv.
0	0.92	0.13	0.79	0.56	0.00	0.35	0.01	0.21	0.71
1	4.16	0.94	3.21	2.10	0.07	1.90	0.09	0.77	3.38
2	20.63	5.27	15.36	10.69	0.35	9.23	0.35	3.88	16.72
3	62.78	21.44	41.34	32.3	1.34	26.84	2.29	13.16	49.64
4	11.51	5.48	6.03	6.87	0.31	3.64	0.71	3.62	7.91
Total*	100	33.26	66.73	52.52	2.07	41.96	3.45	21.64	78.36

Score	American Indian	Asian	Pacific Islander	Filipino	Hispanic	African American	White	Autism	Deafness
0	0.00	0.03	0.00	0.01	0.55	0.14	0.18	0.10	0.01
1	0.03	0.17	0.03	0.08	2.68	0.52	0.65	0.63	0.12
2	0.17	0.56	0.08	0.17	13.8	2.36	3.50	1.54	0.18
3	0.55	1.64	0.24	0.69	41.25	6.85	11.56	2.30	0.13
4	0.11	0.39	0.07	0.12	6.71	1.20	2.89	0.34	0.01
Total*	0.86	2.79	0.42	1.07	64.99	11.07	18.78	4.91	0.45

Score	Emotional Dist.	Hard of Hearing	MR/ID	Mult. Disab.	Orthoped. Impair.	Other Health Impair.	Specific Learning Disab.	Speech or Lang. Disab.	Traumatic Brain Injury	Visual Impair.
0	0.10	0.01	0.02	0.00	0.02	0.12	0.45	0.07	0.00	0.00
1	0.15	0.06	0.38	0.00	0.06	0.33	2.14	0.34	0.01	0.00
2	0.75	0.23	0.71	0.07	0.18	1.69	13.43	1.69	0.07	0.01
3	1.37	0.55	0.56	0.07	0.44	5.85	46.68	4.58	0.13	0.19
4	0.19	0.09	0.03	0.01	0.06	1.16	8.73	0.78	0.03	0.04
Total*	2.56	0.94	1.70	0.15	0.76	9.15	71.43	7.46	0.24	0.24

* Note: The marginal percentage for each subgroup is the percentage of examinees in that subgroup who obtained a valid writing score.

Table 8.A.7 Mean Scores for ELA Grade Four Essay—Overall and by Subgroup

Overall		Female		Male		English only		I-FEP		EL		R-FEP		Not Econ Disadv		Econ Disadv	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
20,977	2.52	7,053	2.68	13,916	2.44	11,264	2.55	220	2.74	9,324	2.48	139	2.86	4,571	2.67	16,353	2.48

Am. Indian		Asian		Pac. Islander		Filipino		Hispanic		Af. American		White		Autism		Deafness	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
177	2.45	651	2.49	94	2.59	225	2.52	13,231	2.5	2,010	2.47	4,111	2.62	1,310	2.23	74	1.89

Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disabilities		Orthopedic Impair.		Other Health Impair.		Specific Learning Disability		Speech or Lang. Impair.		Traumatic Brain Injury	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
346	2.22	165	2.54	254	1.81	18	2.00	127	2.28	2,025	2.55	12,819	2.57	3,005	2.52	36	2.25

Visual Imp.	
N	Mean
54	2.52

Table 8.A.8 Mean Scores for ELA Grade Seven Essay—Overall and by Subgroup

Overall		Female		Male		English only		I-FEP		EL		R-FEP		Not Econ Disadv		Econ Disadv	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
23,433	2.8	7,794	2.94	15,635	2.73	12,290	2.82	484	2.91	9,819	2.75	809	3.04	5,063	2.89	18,330	2.77

Am. Indian		Asian		Pac. Islander		Filipino		Hispanic		Af. American		White		Autism		Deafness	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
201	2.84	645	2.79	99	2.84	247	2.77	14,981	2.78	2,553	2.76	4,328	2.87	1,128	2.44	104	2.01

Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disabilities		Orthopedic Impair.		Other Health Impair.		Specific Learning Disability		Speech or Lang. Impair.		Traumatic Brain Injury	
N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
588	2.55	214	2.7	391	2.12	35	2.57	172	2.6	2,096	2.83	16,384	2.86	1,710	2.76	53	2.74

Visual Imp.	
N	Mean
59	3.03

Table 8.A.9 Effect Sizes for ELA Grade Four Essay—by Subgroup

Gender	Econ. Status	English-language Fluency								
(M-F)	(No-Yes)	EO–I-FEP	EO-EL	EO–R-FEP	I-FEP–EL	I-FEP–R-FEP	EL–R-FEP			
–0.30	0.23	–0.23	0.09	–0.37	0.33	–0.15	–0.49			
Primary Ethnicity										
W–Am. Ind	W–Asian	W–Pac. Isl.	W–Filipino	W–Hisp.	W–Af. Am.	Am. Ind.–Asian	Am. Ind.–Pac. Isl.	Am. Ind.–Filipino	Am. Ind.–Hisp.	Am. Ind.–Af. Am.
0.20	0.16	0.04	0.12	0.15	0.18	–0.05	–0.17	–0.08	–0.06	–0.02
Asian–Pac. Isl.	Asian-Filipino	Asian-Hisp.	Asian–Af. Am.	Pac. Isl.–Filipino	Pac. Isl.–Hisp.	Pac. Isl.–Af. Am.	Filipino–Hispanic	Filipino–Af. Am.	Hisp.–Af. Am.	
–0.12	–0.03	–0.01	0.02	0.09	0.11	0.15	0.03	0.06	0.04	
Disability										
SLD–Disab Not Rptd	SLI–Disab Not Rptd									
–0.03	–0.09									

Table 8.A.10 Effect Sizes for ELA Grade Seven Essay—by Subgroup

Gender	Econ. Status	English-language Fluency								
(M-F)	(No-Yes)	EO–I-FEP	EO–EL	EO–R-FEP	I-FEP–EL	I-FEP–R-FEP	EL–R-FEP			
–0.29	0.17	–0.12	0.10	–0.30	0.23	–0.19	–0.41			
Primary Ethnicity										
W–Am. Ind	W–Asian	W–Pac. Isl.	W–Filipino	W–Hisp.	W–Af. Am.	Am. Ind.–Asian	Am. Ind.-Pac. Isl.	Am. Ind.–Filipino	Am. Ind.–Hisp.	Am. Ind.–Af. Am.
0.04	0.11	0.04	0.13	0.13	0.15	0.06	0.00	0.09	0.08	0.11
Asian–Pac. Isl.	Asian-Filipino	Asian–Hisp.	Asian–Af. Am.	Pac. Isl.–Filipino	Pac. Isl.–Hisp.	Pac. Isl.–Af. Am.	Filipino–Hispanic	Filipino–Af. Am.	Hisp.–Af. Am.	
–0.06	0.03	0.01	0.04	0.09	0.08	0.11	–0.01	0.01	0.03	
Disability										
SLD–Disab Not Rptd	SLI–Disab Not Rptd									
0.06	–0.08									

Appendix 8.B—Reliability Analyses

The reliabilities are reported only for samples that comprise 11 or more examinees. Also, in some cases in Appendix 8.B, score reliabilities were not estimable and are presented in the tables as hyphens. Finally, results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes.

Table 8.B.1 Subscore Reliabilities and Intercorrelations for ELA

Subscore Reliabilities and Intercorrelations for ELA						
Subscore Area	**No. of items**	**Intercorrelations**			**Reliab.**	**SEM**
Grade 3		**1.**	**2.**	**3.**		
1. Vocabulary	14	1.00	0.62	0.68	0.71	1.63
2. Reading for Understanding	17	0.62	1.00	0.62	0.65	1.91
3. Language	17	0.68	0.62	1.00	0.70	1.87
Grade 4		**1.**	**2.**	**3.**		
1. Vocabulary	11	1.00	0.6	0.61	0.63	1.45
2. Reading for Understanding	16	0.60	1.00	0.61	0.66	1.84
3. Language	21	0.61	0.61	1.00	0.73	2.09
Grade 5		**1.**	**2.**	**3.**		
1. Vocabulary	8	1.00	0.52	0.52	0.50	1.22
2. Reading for Understanding	18	0.52	1.00	0.59	0.64	2.01
3. Language	22	0.52	0.59	1.00	0.72	2.11
Grade 6		**1.**	**2.**	**3.**		
1. Vocabulary	9	1.00	0.62	0.55	0.62	1.29
2. Reading for Understanding	22	0.62	1.00	0.60	0.70	2.15
3. Language	23	0.55	0.60	1.00	0.70	2.21
Grade 7		**1.**	**2.**	**3.**		
1. Vocabulary	8	1.00	0.57	0.50	0.57	1.20
2. Reading for Understanding	22	0.57	1.00	0.64	0.77	2.11
3. Language	24	0.50	0.64	1.00	0.74	2.25
Grade 8		**1.**	**2.**	**3.**		
1. Vocabulary	6	1.00	0.59	0.52	0.53	0.95
2. Reading for Understanding	24	0.59	1.00	0.60	0.72	2.18
3. Language	24	0.52	0.60	1.00	0.74	2.17
Grade 9		**1.**	**2.**	**3.**		
1. Vocabulary	7	1.00	0.53	0.44	0.42	1.21
2. Reading for Understanding	27	0.53	1.00	0.61	0.74	2.41
3. Language	26	0.44	0.61	1.00	0.71	2.40
Grade 10		**1.**	**2.**	**3.**		
1. Vocabulary	7	1.00	0.54	0.51	0.45	1.15
2. Reading for Understanding	27	0.54	1.00	0.59	0.65	2.46
3. Language	26	0.51	0.59	1.00	0.67	2.41
Grade 11		1.	2.	3.		
1. Vocabulary	7	1.00	0.38	0.33	0.24	1.26
2. Reading for Understanding	29	0.38	1.00	0.53	0.61	2.55
3. Language	24	0.33	0.53	1.00	0.61	2.33

Table 8.B.2 Subscore Reliabilities and Intercorrelations for Mathematics

Subscore Reliabilities and Intercorrelations for Mathematics							
Subscore Area	**No. of items**	**Intercorrelations**				**Reliab.**	**SEM**
Grade 3		**1.**	**2.**	**3.**	**4.**		
1. Number Sense	24	1.00	0.63	0.58	.	0.78	2.22
2. Algebra and Data Analysis	13	0.63	1.00	0.60	.	0.67	1.61
3. Measurement and Geometry	11	0.58	0.60	1.00	.	0.60	1.42
Grade 4		**1.**	**2.**	**3.**	**4.**		
1. Number Sense	23	1.00	0.61	0.48	.	0.77	2.03
2. Algebra and Data Analysis	15	0.61	1.00	0.46	.	0.58	1.80
3. Measurement and Geometry	10	0.48	0.46	1.00	.	0.46	1.46
Grade 5		**1.**	**2.**	**3.**	**4.**		
1. Number Sense	21	1.00	0.66	0.51	.	0.76	1.98
2. Algebra and Data Analysis	17	0.66	1.00	0.52	.	0.73	1.82
3. Measurement and Geometry	10	0.51	0.52	1.00	.	0.52	1.47
Grade 6		**1.**	**2.**	**3.**	**4.**		
1. Number Sense	21	1.00	0.58	0.37	.	0.60	2.16
2. Algebra and Data Analysis	25	0.58	1.00	0.42	.	0.70	2.28
3. Measurement and Geometry	8	0.37	0.42	1.00	.	0.30	1.36
Grade 7		**1.**	**2.**	**3.**	**4.**		
1. Number Sense	18	1.00	0.47	0.33	.	0.43	2.02
2. Algebra and Data Analysis	25	0.47	1.00	0.40	.	0.60	2.38
3. Measurement and Geometry	11	0.33	0.40	1.00	.	0.37	1.56
Algebra I		**1.**	**2.**	**3.**	**4.**		
1. Number Properties, Operations, and Linear Equations	15	1.00	0.39	0.48	0.45	0.66	1.78
2. Graphing and Systems of Linear Equations	14	0.39	1.00	0.40	0.34	0.48	1.78
3. Quadratics and Polynomials	19	0.48	0.40	1.00	0.47	0.53	2.08
4. Functions and Rational Expressions	12	0.45	0.34	0.47	1.00	0.52	1.64
Geometry		**1.**	**2.**	**3.**	**4.**		
1. Logic and Geometric Proofs	23	1.00	0.46	0.43	0.39	0.61	2.28
2. Volume and Area Formulas	11	0.46	1.00	0.44	0.38	0.54	1.57
3. Angle Relationships, Constructions, and Lines	14	0.43	0.44	1.00	0.39	0.39	1.77
4. Trigonometry	12	0.39	0.38	0.39	1.00	0.41	1.66

Table 8.B.3 Subscore Reliabilities and Intercorrelations for Science

Subscore Reliabilities and Intercorrelations for Science							
Subscore Area	**No. of items**	**Intercorrelations**				**Reliab.**	**SEM**
Grade 5		**1.**	**2.**	**3.**	**4.**		
1. Physical Sciences	16	1.00	0.53	0.49	.	0.54	1.83
2. Life Sciences	16	0.53	1.00	0.57	.	0.66	1.77
3. Earth Sciences	16	0.49	0.57	1.00	.	0.58	1.78
Grade 8		**1.**	**2.**	**3.**	**4.**		
1. Motion	19	1.00	0.56	0.47	0.49	0.62	1.99
2. Matter	23	0.56	1.00	0.49	0.49	0.67	2.26
3. Earth Science	7	0.47	0.49	1.00	0.35	0.55	1.12
4. Investigation and Experimentation	5	0.49	0.49	0.35	1.00	0.40	1.04
Grade 10		**1.**	**2.**	**3.**	**4.**		
1. Cell Biology and Genetics	22	1.00	0.58	0.55	0.43	0.59	2.22
2. Evolution and Ecology	22	0.58	1.00	0.60	0.50	0.69	2.16
3. Physiology	10	0.55	0.60	1.00	0.43	0.62	1.44
4. Investigation and Experimentation	6	0.43	0.50	0.43	1.00	0.38	1.16

Table 8.B.4 Subscore Reliabilities and Intercorrelations for Grade-specific Tests

Subscore Area	No. of items	Intercorrelations				Reliab.	SEM
Algebra I		**1.**	**2.**	**3.**	**4.**		
1. Number Properties, Operations, and Linear Equations	15	1.00	0.42	0.52	0.48	0.67	1.78
2. Graphing and Systems of Linear Equations	14	0.42	1.00	0.44	0.37	0.51	1.78
3. Quadratics and Polynomials	19	0.52	0.44	1.00	0.50	0.55	2.08
4. Functions and Rational Expressions	12	0.48	0.37	0.50	1.00	0.54	1.64
Geometry		**1.**	**2.**	**3.**	**4.**		
1. Logic and Geometric Proofs	23	1.00	0.49	0.48	0.46	0.64	2.27
2. Volume and Area Formulas	11	0.49	1.00	0.43	0.43	0.56	1.55
3. Angle Relationships, Constructions, and Lines	14	0.48	0.43	1.00	0.48	0.43	1.77
4. Trigonometry	12	0.46	0.43	0.48	1.00	0.44	1.66

Table 8.B.5 Reliabilities and SEMs for the CMA by Gender

		Male			Female			Unknown		
Content Area	**CMA ***	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**
English–Language Arts	3	13,309	0.86	3.15	6,225	0.86	3.12	184	0.88	3.14
	4 †	17,829	0.85	3.16	8,841	0.85	3.13	24	0.73	3.30
	5	19,405	0.83	3.18	9,657	0.83	3.14	18	0.87	3.13
	6	19,099	0.85	3.38	9,621	0.85	3.32	17	0.76	3.51
	7 †	18,041	0.87	3.34	8,853	0.86	3.30	14	0.90	3.38
	8	16,876	0.85	3.27	8,239	0.84	3.18	59	0.84	3.31
	9	13,372	0.85	3.62	6,533	0.83	3.62	45	0.83	3.64
	10	11,333	0.82	3.64	5,791	0.81	3.62	39	0.81	3.60
	11	9,147	0.77	3.69	4,760	0.75	3.67	29	0.83	3.67
Mathematics	3	11,160	0.87	3.10	5,659	0.86	3.13	154	0.85	3.16
	4	14,505	0.84	3.10	7,812	0.82	3.09	23	0.83	3.19
	5	16,647	0.86	3.10	8,922	0.85	3.05	17	0.84	3.18
	6	17,132	0.80	3.43	9,072	0.78	3.43	18	0.75	3.42
	7	17,183	0.73	3.50	8,934	0.71	3.48	13	0.63	3.51
	Algebra I	18,783	0.81	3.68	10,044	0.79	3.68	69	0.77	3.72
	Geometry	4,445	0.80	3.69	2,527	0.74	3.70	19	0.69	3.70
Science	5	17,820	0.81	3.10	9,000	0.78	3.14	18	0.81	3.15
	8	15,390	0.84	3.38	7,665	0.80	3.44	57	0.77	3.48
	10 Life Science	9,380	0.86	3.61	4,951	0.81	3.64	25	0.87	3.62
Grade-Specific	Algebra I – Grade 8	3,953	0.82	3.68	2,138	0.81	3.66	24	0.78	3.71
	Geometry – Grade 9	343	0.82	3.68	181	0.79	3.68	6	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.6 Reliabilities and SEMs for the CMA by Economic Status

		Econ Disadv.			Not Econ Disadv.			Unknown		
Content Area	**CMA ***	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**
English–Language Arts	3	15,072	0.86	3.17	3,910	0.87	3.04	736	0.85	3.15
	4 †	20,735	0.84	3.18	5,838	0.87	3.05	121	0.83	3.25
	5	22,880	0.82	3.19	6,109	0.85	3.08	91	0.87	3.16
	6	22,380	0.84	3.39	6,271	0.86	3.25	86	0.85	3.40
	7 †	20,919	0.86	3.36	5,901	0.88	3.23	88	0.90	3.32
	8	19,118	0.85	3.26	5,949	0.86	3.16	107	0.84	3.34
	9	14,571	0.83	3.65	5,250	0.86	3.57	129	0.85	3.62
	10	12,293	0.81	3.65	4,772	0.83	3.61	98	0.80	3.66
	11	9,902	0.74	3.69	3,971	0.79	3.68	63	0.78	3.67
Mathematics	3	13,051	0.86	3.13	3,235	0.88	3.03	687	0.86	3.09
	4	17,599	0.83	3.11	4,634	0.84	3.04	107	0.79	3.22
	5	20,187	0.86	3.09	5,319	0.87	3.04	80	0.86	3.21
	6	20,303	0.79	3.44	5,835	0.82	3.39	84	0.80	3.45
	7	20,090	0.71	3.50	5,961	0.75	3.48	79	0.69	3.48
	Algebra I	20,940	0.80	3.69	7,774	0.81	3.67	182	0.77	3.71
	Geometry	5,176	0.75	3.70	1,788	0.81	3.66	27	0.77	3.69
Science	5	21,118	0.79	3.14	5,636	0.82	3.04	84	0.83	3.17
	8	17,526	0.82	3.42	5,482	0.85	3.33	104	0.81	3.44
	10 Life Science	10,252	0.83	3.64	4,030	0.86	3.59	74	0.85	3.66
Grade-Specific	Algebra I – Grade 8	4,724	0.82	3.68	1,356	0.82	3.67	35	0.84	3.65
	Geometry – Grade 9	436	0.77	3.70	88	0.89	3.57	6	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.7 Reliabilities and SEMs for the CMA by English-language Fluency

		English Only			I-FEP[1]			English Learner			R-FEP[2]			Unknown		
Content Area	**CMA ***	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**
English–Language Arts	3	10,583	0.87	3.11	190	0.89	3.05	8,459	0.85	3.19	60	0.87	3.06	426	0.87	3.12
	4 †	14,420	0.86	3.12	278	0.88	3.06	11,749	0.83	3.19	169	0.87	2.99	78	0.84	3.24
	5	15,412	0.84	3.14	327	0.83	3.10	12,911	0.81	3.21	368	0.85	2.97	62	0.84	3.20
	6	15,236	0.86	3.32	536	0.85	3.28	12,218	0.83	3.41	685	0.86	3.19	62	0.82	3.46
	7 †	14,320	0.87	3.29	562	0.87	3.26	11,033	0.85	3.39	919	0.87	3.11	74	0.89	3.36
	8	13,610	0.86	3.22	583	0.85	3.15	9,685	0.83	3.31	1,222	0.85	2.99	74	0.84	3.31
	9	10,493	0.86	3.60	401	0.85	3.59	7,890	0.80	3.68	1,060	0.86	3.49	106	0.84	3.61
	10	9,417	0.82	3.63	416	0.81	3.62	6,429	0.78	3.66	830	0.85	3.50	71	0.79	3.63
	11	7,749	0.78	3.68	404	0.77	3.68	5,108	0.71	3.68	628	0.80	3.64	47	0.76	3.67
Mathematics	3	9,059	0.87	3.10	144	0.88	3.07	7,316	0.86	3.12	66	0.87	3.00	388	0.86	3.11
	4	12,051	0.84	3.09	219	0.83	3.02	9,863	0.82	3.10	140	0.88	3.01	67	0.81	3.19
	5	13,874	0.86	3.10	270	0.87	2.96	11,083	0.86	3.08	306	0.87	2.89	53	0.85	3.20
	6	14,317	0.80	3.43	481	0.79	3.38	10,754	0.78	3.44	607	0.81	3.33	63	0.76	3.48
	7	14,299	0.73	3.49	537	0.75	3.48	10,313	0.70	3.50	912	0.76	3.45	69	0.58	3.51
	Algebra I	15,731	0.80	3.68	722	0.80	3.68	10,735	0.79	3.69	1,574	0.84	3.60	134	0.78	3.70
	Geometry	3,503	0.79	3.68	200	0.79	3.69	2,780	0.74	3.71	482	0.79	3.65	26	0.75	3.69
Science	5	14,358	0.82	3.09	291	0.84	3.00	11,795	0.77	3.15	337	0.78	2.99	57	0.82	3.11
	8	12,549	0.84	3.38	516	0.86	3.31	8,819	0.80	3.45	1,151	0.84	3.26	77	0.81	3.46
	10 Life Science	7,844	0.86	3.60	343	0.85	3.60	5,428	0.80	3.67	692	0.86	3.48	49	0.81	3.67
Grade-Specific	Algebra I – Grade 8	3,208	0.81	3.68	165	0.83	3.66	2,355	0.81	3.68	365	0.85	3.60	22	0.75	3.72
	Geometry – Grade 9	211	0.83	3.67	15	0.83	3.71	242	0.75	3.70	55	0.77	3.60	7	–	–

[1] Initially Fluent English Proficient

[2] Reclassified Fluent English Proficient

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.8 Reliabilities and SEMs for the CMA by Primary Ethnicity

		African American			American Indian			Asian			Filipino			Hispanic			Pacific Islander			White			Unknown		
Content Area	CMA*	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM
English–Language Arts	3	1,811	0.86	3.16	183	0.86	3.16	599	0.86	3.08	196	0.86	3.03	12,323	0.86	3.17	77	0.85	3.14	3,778	0.87	3.05	751	0.88	3.11
	4 †	2,654	0.84	3.20	232	0.87	3.12	832	0.85	3.14	310	0.85	3.10	16,671	0.85	3.17	127	0.87	3.10	5,237	0.87	3.07	631	0.85	3.10
	5	3,070	0.83	3.20	303	0.84	3.18	909	0.83	3.15	308	0.82	3.18	18,476	0.82	3.19	128	0.82	3.16	5,286	0.85	3.08	600	0.85	3.12
	6	3,043	0.84	3.40	240	0.86	3.34	887	0.85	3.33	304	0.81	3.33	18,171	0.84	3.38	150	0.82	3.40	5,348	0.87	3.26	594	0.87	3.30
	7 †	3,099	0.86	3.36	246	0.87	3.31	743	0.88	3.28	278	0.86	3.23	16,943	0.86	3.36	113	0.87	3.29	5,038	0.88	3.23	448	0.88	3.27
	8	2,889	0.85	3.27	258	0.83	3.26	673	0.85	3.22	262	0.84	3.24	15,719	0.85	3.26	136	0.84	3.24	4,763	0.86	3.17	474	0.85	3.22
	9	2,254	0.84	3.64	185	0.86	3.61	511	0.85	3.58	169	0.86	3.54	12,507	0.83	3.65	82	0.82	3.64	3,798	0.87	3.55	444	0.86	3.58
	10	1,923	0.79	3.66	183	0.83	3.63	436	0.79	3.65	159	0.81	3.61	10,550	0.81	3.64	61	0.83	3.64	3,499	0.84	3.60	352	0.81	3.65
	11	1,546	0.76	3.68	151	0.79	3.67	349	0.73	3.67	128	0.73	3.66	8,451	0.74	3.68	61	0.70	3.69	3,002	0.80	3.68	248	0.77	3.69
Mathematics	3	1,746	0.86	3.17	158	0.86	3.12	517	0.89	3.00	178	0.88	3.05	10,655	0.86	3.12	80	0.84	3.11	2,984	0.88	3.05	655	0.87	3.11
	4	2,417	0.81	3.16	211	0.83	3.07	666	0.86	3.02	247	0.85	3.04	14,061	0.83	3.10	109	0.85	3.07	4,117	0.84	3.05	512	0.83	3.09
	5	3,001	0.86	3.15	269	0.83	3.17	721	0.89	3.00	269	0.86	3.06	16,064	0.86	3.08	111	0.86	3.07	4,612	0.86	3.06	539	0.87	3.06
	6	2,963	0.77	3.47	238	0.80	3.44	758	0.83	3.36	266	0.78	3.41	16,311	0.79	3.44	136	0.77	3.47	4,986	0.82	3.40	564	0.78	3.43
	7	3,102	0.69	3.50	253	0.72	3.51	646	0.80	3.44	261	0.76	3.47	16,191	0.71	3.50	113	0.74	3.47	5,112	0.74	3.48	452	0.72	3.49
	Algebra I	3,632	0.76	3.70	250	0.82	3.67	681	0.84	3.61	244	0.83	3.65	17,937	0.80	3.69	124	0.82	3.64	5,393	0.81	3.66	635	0.81	3.67
	Geometry	886	0.70	3.72	51	0.82	3.64	190	0.81	3.65	65	0.78	3.69	4,509	0.76	3.70	26	0.79	3.71	1,155	0.83	3.64	109	0.81	3.66
Science	5	2,905	0.80	3.18	285	0.82	3.11	838	0.80	3.14	278	0.79	3.14	16,982	0.79	3.13	121	0.81	3.11	4,887	0.83	3.02	542	0.82	3.07
	8	2,671	0.81	3.45	234	0.82	3.41	589	0.85	3.34	238	0.83	3.37	14,403	0.82	3.42	122	0.85	3.36	4,417	0.85	3.31	438	0.84	3.38
	10 Life Science	1,585	0.83	3.66	156	0.87	3.58	370	0.84	3.59	133	0.86	3.54	8,877	0.83	3.64	49	0.84	3.59	2,902	0.86	3.56	284	0.86	3.59
Grade-Specific	Algebra I – 8	914	0.77	3.70	34	0.89	3.58	164	0.86	3.60	65	0.85	3.64	3,880	0.81	3.68	37	0.87	3.63	879	0.82	3.65	142	0.82	3.68
	Geometry – 9	74	0.77	3.70	6	–	–	14	0.86	3.61	5	–	–	377	0.78	3.70	1	–	–	42	0.89	3.53	11	0.77	3.68

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.9 Reliabilities and SEMs for the CMA by Primary Ethnicity-for-Not-Economically-Disadvantaged

		African American			American Indian			Asian			Filipino			Hispanic			Pacific Islander			White			Unknown		
Content Area	CMA *	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM
English–Language Arts	3	266	0.86	3.14	32	0.87	3.10	258	0.86	3.01	91	0.86	2.98	1,267	0.86	3.08	17	0.82	3.07	1,785	0.87	3.00	194	0.88	3.01
	4 †	430	0.86	3.12	55	0.88	3.00	349	0.87	3.06	150	0.86	3.06	1,882	0.86	3.08	29	0.89	2.91	2,696	0.87	3.01	247	0.87	3.04
	5	533	0.85	3.14	76	0.84	3.15	361	0.84	3.12	159	0.82	3.15	2,017	0.84	3.11	37	0.86	3.11	2,703	0.85	3.04	223	0.86	3.06
	6	575	0.87	3.34	62	0.87	3.29	343	0.85	3.27	162	0.83	3.30	2,084	0.86	3.28	45	0.85	3.26	2,788	0.87	3.21	212	0.88	3.23
	7 †	589	0.88	3.30	73	0.89	3.22	270	0.88	3.22	157	0.88	3.21	2,095	0.87	3.26	35	0.79	3.24	2,537	0.88	3.20	145	0.88	3.18
	8	623	0.86	3.24	69	0.81	3.26	268	0.86	3.16	151	0.84	3.21	2,150	0.86	3.17	48	0.87	3.19	2,491	0.86	3.13	149	0.81	3.22
	9	609	0.85	3.62	64	0.88	3.53	204	0.85	3.54	95	0.87	3.51	2,030	0.85	3.60	28	0.84	3.60	2,050	0.87	3.53	170	0.87	3.50
	10	559	0.82	3.63	61	0.83	3.60	147	0.81	3.63	95	0.80	3.62	1,822	0.83	3.62	28	0.82	3.63	1,931	0.84	3.59	129	0.83	3.62
	11	425	0.77	3.67	70	0.77	3.64	122	0.78	3.65	68	0.74	3.66	1,488	0.78	3.68	26	0.69	3.70	1,681	0.81	3.67	91	0.80	3.69
Mathematics	3	256	0.87	3.12	28	0.80	3.05	227	0.89	2.94	86	0.89	2.96	1,079	0.87	3.06	18	0.83	3.14	1,374	0.87	3.01	167	0.89	3.02
	4	377	0.82	3.13	51	0.87	2.96	273	0.86	3.03	113	0.87	3.02	1,549	0.83	3.06	24	0.83	3.01	2,055	0.85	3.00	192	0.84	3.05
	5	527	0.87	3.10	63	0.84	3.14	290	0.89	2.96	147	0.87	3.02	1,735	0.87	3.05	34	0.84	3.07	2,332	0.86	3.03	191	0.89	3.00
	6	556	0.79	3.46	59	0.80	3.43	297	0.83	3.33	144	0.80	3.41	1,909	0.81	3.40	35	0.82	3.36	2,628	0.82	3.38	207	0.79	3.40
	7	584	0.71	3.49	76	0.74	3.48	225	0.82	3.41	146	0.79	3.44	2,111	0.73	3.49	32	0.79	3.42	2,628	0.75	3.48	159	0.74	3.49
	Algebra I	1,028	0.80	3.68	99	0.83	3.66	252	0.85	3.59	133	0.83	3.64	3,082	0.79	3.69	44	0.78	3.64	2,915	0.82	3.65	221	0.83	3.63
	Geometry	237	0.75	3.70	22	0.88	3.54	59	0.78	3.66	42	0.80	3.67	702	0.78	3.69	9	–	–	682	0.84	3.61	35	0.82	3.66
Science	5	507	0.83	3.14	67	0.82	3.04	331	0.82	3.10	153	0.80	3.12	1,858	0.81	3.07	37	0.81	3.11	2,480	0.83	2.98	203	0.80	3.02
	8	571	0.83	3.42	58	0.82	3.35	233	0.86	3.29	132	0.83	3.36	1,982	0.83	3.37	47	0.84	3.33	2,324	0.86	3.27	135	0.86	3.31
	10 Life Science	476	0.83	3.66	50	0.86	3.60	132	0.86	3.53	83	0.84	3.57	1,543	0.84	3.62	19	0.83	3.46	1,617	0.87	3.54	110	0.88	3.51
Grade-Specific	Algebra I – 8	209	0.80	3.68	13	0.91	3.52	62	0.87	3.59	32	0.86	3.62	536	0.79	3.69	12	0.75	3.74	453	0.82	3.64	39	0.84	3.66
	Geometry – 9	18	0.84	3.62	1	–	–	5	0.90	3.69	3	–	–	40	0.83	3.65	0	–	–	19	0.94	3.30	2	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.10 Reliabilities and SEMs for the CMA by Primary Ethnicity-for-Economically-Disadvantaged

		African American			American Indian			Asian			Filipino			Hispanic			Pacific Islander			White			Unknown		
Content Area	CMA *	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM
English–Language Arts	3	1,481	0.86	3.17	146	0.86	3.18	329	0.86	3.13	97	0.85	3.08	10,754	0.85	3.18	57	0.85	3.16	1,866	0.87	3.10	342	0.86	3.17
	4 †	2,216	0.84	3.21	177	0.86	3.16	480	0.82	3.19	156	0.83	3.15	14,732	0.84	3.19	98	0.85	3.15	2,518	0.86	3.13	358	0.84	3.12
	5	2,529	0.82	3.21	227	0.84	3.19	547	0.82	3.17	147	0.81	3.20	16,417	0.81	3.20	90	0.80	3.17	2,564	0.85	3.13	359	0.84	3.16
	6	2,455	0.84	3.41	178	0.86	3.36	543	0.85	3.37	141	0.78	3.37	16,063	0.83	3.40	104	0.78	3.46	2,538	0.86	3.31	358	0.86	3.33
	7 †	2,499	0.86	3.37	172	0.85	3.35	471	0.87	3.31	121	0.84	3.26	14,812	0.86	3.37	78	0.88	3.30	2,478	0.87	3.26	288	0.87	3.32
	8	2,256	0.85	3.28	187	0.84	3.26	401	0.84	3.25	110	0.83	3.28	13,540	0.84	3.27	87	0.83	3.27	2,251	0.86	3.21	286	0.87	3.21
	9	1,627	0.83	3.65	120	0.83	3.66	307	0.84	3.60	74	0.84	3.57	10,444	0.82	3.66	54	0.81	3.66	1,728	0.86	3.58	217	0.84	3.63
	10	1,361	0.78	3.67	122	0.83	3.64	288	0.78	3.65	64	0.82	3.59	8,699	0.81	3.64	31	0.85	3.61	1,549	0.83	3.62	179	0.77	3.67
	11	1,115	0.75	3.68	81	0.78	3.68	227	0.69	3.68	59	0.70	3.68	6,945	0.73	3.68	35	0.72	3.68	1,311	0.78	3.69	129	0.72	3.69
Mathematics	3	1,427	0.85	3.18	125	0.86	3.15	278	0.89	3.05	84	0.85	3.12	9,288	0.86	3.13	59	0.85	3.10	1,487	0.87	3.08	303	0.85	3.17
	4	2,033	0.81	3.17	160	0.82	3.10	389	0.86	3.01	131	0.85	3.05	12,464	0.82	3.10	85	0.86	3.09	2,040	0.83	3.10	297	0.83	3.10
	5	2,468	0.86	3.15	206	0.83	3.18	430	0.89	3.02	120	0.84	3.10	14,295	0.86	3.08	76	0.87	3.06	2,260	0.87	3.09	332	0.86	3.09
	6	2,393	0.76	3.48	179	0.81	3.44	460	0.83	3.38	121	0.76	3.42	14,383	0.78	3.44	100	0.74	3.50	2,336	0.81	3.42	331	0.78	3.44
	7	2,509	0.68	3.50	177	0.71	3.52	419	0.79	3.46	114	0.72	3.50	14,050	0.71	3.50	81	0.71	3.49	2,461	0.72	3.49	279	0.70	3.49
	Algebra I	2,585	0.75	3.71	150	0.81	3.67	429	0.84	3.63	110	0.83	3.66	14,802	0.80	3.69	78	0.84	3.63	2,449	0.80	3.68	337	0.79	3.69
	Geometry	649	0.67	3.72	29	0.70	3.72	131	0.82	3.64	23	0.73	3.73	3,800	0.75	3.71	17	0.84	3.71	472	0.79	3.68	55	0.80	3.67
Science	5	2,391	0.79	3.19	218	0.81	3.12	506	0.78	3.17	123	0.77	3.16	15,087	0.78	3.14	83	0.82	3.10	2,388	0.82	3.05	322	0.82	3.08
	8	2,089	0.80	3.46	174	0.82	3.42	353	0.84	3.37	105	0.84	3.38	12,394	0.81	3.43	75	0.85	3.39	2,074	0.85	3.35	262	0.82	3.40
	10 Life Science	1,107	0.83	3.67	106	0.88	3.58	237	0.83	3.61	50	0.88	3.49	7,308	0.83	3.65	29	0.83	3.66	1,268	0.85	3.59	147	0.84	3.63
Grade-Specific	Algebra I – 8	699	0.75	3.71	21	0.86	3.61	102	0.86	3.61	33	0.83	3.67	3,337	0.82	3.68	25	0.89	3.60	421	0.82	3.67	86	0.82	3.68
	Geometry – 9	56	0.73	3.72	5	–	–	9	0.83	3.56	2	–	–	337	0.77	3.70	1	–	–	23	0.74	3.73	3	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.11 Reliabilities and SEMs for the CMA by Gender by Economic Status

		Economically Disadvantaged									Not Economically Disadvantaged								
		Male			Female			Unknown			Male			Female			Unknown		
Content Area	CMA *	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM
English–Language Arts	3	10,195	0.86	3.18	4,831	0.85	3.15	46	0.89	3.17	2,703	0.87	3.05	1,197	0.87	3.00	10	–	–
	4 †	13,680	0.85	3.19	7,046	0.84	3.16	9	–	–	4,078	0.86	3.06	1,760	0.87	3.01	0	–	–
	5	15,239	0.82	3.21	7,633	0.82	3.17	8	–	–	4,107	0.85	3.10	2,001	0.85	3.05	1	–	–
	6	14,803	0.84	3.40	7,571	0.83	3.35	6	–	–	4,241	0.86	3.29	2,027	0.87	3.17	3	–	–
	7 †	13,995	0.86	3.37	6,915	0.85	3.33	9	–	–	3,992	0.88	3.24	1,909	0.87	3.20	0	–	–
	8	12,748	0.85	3.29	6,347	0.83	3.21	23	0.84	3.35	4,079	0.86	3.20	1,866	0.86	3.08	4	–	–
	9	9,729	0.84	3.64	4,833	0.82	3.64	9	–	–	3,575	0.87	3.57	1,672	0.86	3.56	3	–	–
	10	8,038	0.81	3.65	4,249	0.80	3.63	6	–	–	3,251	0.83	3.63	1,520	0.83	3.58	1	–	–
	11	6,370	0.74	3.69	3,521	0.74	3.67	11	0.80	3.72	2,745	0.80	3.68	1,225	0.78	3.66	1	–	–
Mathematics	3	8,638	0.87	3.12	4,370	0.85	3.14	43	0.80	3.25	2,128	0.88	3.01	1,097	0.86	3.07	10	–	–
	4	11,334	0.83	3.11	6,257	0.81	3.10	8	–	–	3,110	0.85	3.04	1,524	0.84	3.03	0	–	–
	5	13,147	0.86	3.11	7,032	0.85	3.06	8	–	–	3,448	0.87	3.06	1,870	0.86	3.00	1	–	–
	6	13,247	0.80	3.44	7,050	0.77	3.44	6	–	–	3,831	0.82	3.39	2,001	0.80	3.39	3	–	–
	7	13,215	0.72	3.50	6,867	0.70	3.48	8	–	–	3,920	0.76	3.48	2,041	0.72	3.47	0	–	–
	Algebra I	13,569	0.80	3.69	7,350	0.79	3.68	21	0.75	3.74	5,122	0.82	3.67	2,649	0.80	3.66	3	–	–
	Geometry	3,253	0.78	3.70	1,919	0.71	3.71	4	–	–	1,186	0.83	3.65	601	0.78	3.68	1	–	–
Science	5	14,013	0.80	3.12	7,096	0.76	3.16	9	–	–	3,753	0.83	3.03	1,882	0.81	3.06	1	–	–
	8	11,620	0.83	3.40	5,884	0.78	3.46	22	0.72	3.53	3,721	0.86	3.31	1,758	0.82	3.36	3	–	–
	10 Life Science	6,629	0.85	3.63	3,617	0.80	3.66	6	–	–	2,714	0.87	3.58	1,315	0.83	3.59	1	–	–
Grade-Specific	Algebra I – 8	3,052	0.81	3.68	1,664	0.82	3.67	8	–	–	891	0.83	3.67	463	0.81	3.65	2	–	–
	Geometry – 9	288	0.78	3.71	148	0.74	3.70	0	–	–	55	0.89	3.54	33	0.88	3.60	0	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.12 Reliabilities and SEMs for the CMA by Primary Disability

Content Area	CMA *	Autism			Deaf-Blindness			Deafness			Emotional Dist.			Hard of Hearing			MR/ID			Mult. Disab.		
		N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM	N	Rel	SEM
English–Language Arts	3	1,510	0.87	3.13	5	–	–	88	0.83	3.25	298	0.89	3.10	169	0.84	3.13	323	0.81	3.28	49	0.86	3.23
	4 †	1,793	0.86	3.14	3	–	–	123	0.77	3.29	469	0.88	3.10	221	0.85	3.16	389	0.71	3.32	25	0.81	3.24
	5	1,711	0.84	3.16	4	–	–	121	0.77	3.24	596	0.86	3.13	252	0.83	3.14	446	0.71	3.30	30	0.82	3.26
	6	1,477	0.86	3.35	3	–	–	133	0.74	3.46	752	0.88	3.33	243	0.84	3.39	457	0.76	3.51	45	0.83	3.47
	7 †	1,328	0.89	3.27	3	–	–	127	0.85	3.44	790	0.89	3.28	241	0.86	3.35	460	0.75	3.50	39	0.83	3.45
	8	1,209	0.86	3.25	1	–	–	156	0.82	3.40	829	0.88	3.24	214	0.86	3.25	496	0.77	3.47	37	0.84	3.37
	9	847	0.87	3.54	2	–	–	122	0.73	3.65	678	0.88	3.56	226	0.83	3.62	413	0.64	3.71	37	0.81	3.68
	10	619	0.84	3.61	2	–	–	149	0.74	3.67	735	0.86	3.61	176	0.82	3.63	404	0.66	3.68	33	0.77	3.66
	11	487	0.81	3.66	2	–	–	150	0.46	3.66	547	0.81	3.67	137	0.75	3.65	361	0.50	3.68	14	0.78	3.70
Mathematics	3	1,501	0.89	3.08	5	–	–	77	0.83	3.04	279	0.89	3.10	156	0.87	3.02	320	0.79	3.27	49	0.87	3.22
	4	1,655	0.86	3.09	3	–	–	98	0.82	3.15	430	0.83	3.15	192	0.85	3.04	387	0.72	3.29	28	0.85	3.21
	5	1,607	0.88	3.11	3	–	–	104	0.90	3.01	582	0.84	3.21	207	0.88	2.98	441	0.78	3.28	29	0.86	3.16
	6	1,410	0.85	3.39	3	–	–	126	0.76	3.46	779	0.81	3.45	218	0.79	3.42	454	0.71	3.50	42	0.80	3.48
	7	1,309	0.77	3.46	4	–	–	112	0.72	3.47	808	0.70	3.51	239	0.76	3.45	457	0.43	3.48	38	0.67	3.50
	Algebra I	1,086	0.84	3.63	5	–	–	118	0.80	3.66	1,105	0.78	3.69	280	0.82	3.64	576	0.63	3.70	37	0.85	3.67
	Geometry	251	0.86	3.60	0	–	–	76	0.77	3.67	194	0.81	3.68	72	0.79	3.63	71	0.56	3.66	7	–	–
Science	5	1,623	0.84	3.10	3	–	–	114	0.77	3.23	543	0.86	3.12	231	0.79	3.15	434	0.73	3.28	29	0.87	3.12
	8	1,153	0.86	3.33	1	–	–	140	0.80	3.46	780	0.85	3.41	195	0.83	3.38	474	0.67	3.54	38	0.76	3.46
	10 Life Science	533	0.88	3.53	2	–	–	129	0.76	3.71	619	0.88	3.59	150	0.84	3.59	355	0.66	3.73	28	0.87	3.61
Grade-Specific	Algebra I – 8	267	0.86	3.62	0	–	–	13	0.83	3.65	167	0.74	3.70	53	0.84	3.62	116	0.62	3.68	8	–	–
	Geometry – 9	12	0.88	3.46	0	–	–	4	–	–	9	–	–	3	–	–	2	–	–	0	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.13 Reliabilities and SEMs for the CMA by Primary Disability (continued)

		Orthoped. Impair.			Other Health Impair.			Specific Lrn Disab.			Speech or Lang Impair.			Traumatic Brain Injury			Visual Impair.			Unknown		
Content Area	**CMA ***	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**	**N**	**Rel**	**SEM**
English–Language Arts	3	158	0.88	3.09	1,878	0.87	3.10	11,078	0.86	3.15	3,312	0.86	3.12	53	0.85	3.15	45	0.88	3.13	752	0.86	3.17
	4 †	158	0.88	3.11	2,537	0.86	3.09	15,423	0.85	3.16	3,699	0.84	3.13	48	0.83	3.23	65	0.91	3.00	1,741	0.84	3.15
	5	191	0.86	3.15	2,648	0.85	3.13	18,334	0.83	3.17	3,171	0.81	3.17	64	0.87	3.18	62	0.82	3.20	1,450	0.82	3.18
	6	186	0.88	3.31	2,716	0.86	3.30	18,855	0.84	3.36	2,551	0.83	3.36	60	0.89	3.31	77	0.87	3.28	1,182	0.83	3.38
	7 †	197	0.88	3.28	2,448	0.87	3.26	18,319	0.86	3.34	1,873	0.85	3.34	60	0.84	3.36	67	0.85	3.29	956	0.87	3.33
	8	161	0.88	3.22	2,462	0.86	3.18	17,749	0.85	3.23	1,536	0.83	3.25	69	0.84	3.29	51	0.88	3.26	204	0.84	3.28
	9	150	0.87	3.57	1,926	0.87	3.57	14,319	0.84	3.63	945	0.82	3.65	59	0.84	3.64	53	0.89	3.54	173	0.85	3.62
	10	149	0.85	3.61	1,493	0.84	3.62	12,404	0.81	3.64	759	0.78	3.64	52	0.77	3.70	44	0.86	3.58	144	0.76	3.67
	11	119	0.74	3.69	1,206	0.80	3.67	10,145	0.75	3.69	610	0.72	3.68	49	0.76	3.68	34	0.81	3.65	75	0.78	3.68
Mathematics	3	156	0.87	3.13	1,639	0.86	3.11	9,183	0.86	3.11	2,838	0.87	3.08	51	0.88	3.12	42	0.88	3.13	677	0.85	3.17
	4	156	0.84	3.12	2,169	0.83	3.10	12,702	0.82	3.10	2,989	0.84	3.06	45	0.83	3.24	60	0.88	3.09	1,426	0.82	3.07
	5	187	0.89	3.10	2,453	0.86	3.08	15,822	0.86	3.07	2,707	0.86	3.07	58	0.89	3.14	62	0.87	3.15	1,324	0.84	3.08
	6	192	0.82	3.44	2,659	0.80	3.43	16,843	0.79	3.43	2,210	0.79	3.43	55	0.85	3.41	76	0.81	3.41	1,155	0.80	3.44
	7	208	0.73	3.47	2,567	0.75	3.49	17,532	0.72	3.50	1,780	0.71	3.48	58	0.71	3.50	61	0.77	3.48	957	0.72	3.51
	Algebra I	201	0.80	3.68	2,890	0.80	3.68	20,949	0.80	3.68	1,238	0.81	3.66	86	0.81	3.66	68	0.87	3.61	257	0.77	3.71
	Geometry	60	0.79	3.66	659	0.82	3.66	5,306	0.76	3.70	214	0.79	3.68	18	0.81	3.69	22	0.77	3.70	41	0.77	3.70
Science	5	183	0.84	3.14	2,459	0.82	3.09	16,812	0.80	3.11	2,949	0.77	3.13	61	0.83	3.20	56	0.77	3.20	1,341	0.77	3.13
	8	155	0.81	3.42	2,282	0.84	3.37	16,177	0.82	3.40	1,405	0.79	3.42	64	0.83	3.42	49	0.84	3.37	199	0.81	3.44
	10 Life Science	127	0.85	3.61	1,234	0.86	3.59	10,345	0.84	3.63	638	0.82	3.63	39	0.77	3.73	42	0.87	3.58	115	0.83	3.67
Grade-Specific	Algebra I – 8	39	0.84	3.67	619	0.80	3.69	4,446	0.81	3.68	284	0.85	3.64	16	0.79	3.61	17	0.89	3.60	70	0.83	3.67
	Geometry – 9	4	–	–	57	0.78	3.70	409	0.80	3.68	15	0.81	3.67	1	–	–	1	–	–	13	0.56	3.77

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.14 Overall Subgroup Reliabilities

Content Area	CMA *	*Gender*		*Econ. Dis.*		*Language Fluency*			
		Male	Female	No	Yes	EO	I-FEP	EL	R-FEP
English–Language Arts	3	0.86	0.86	0.87	0.86	0.87	0.89	0.85	0.87
	4 †	0.85	0.85	0.87	0.84	0.86	0.88	0.83	0.87
	5	0.83	0.83	0.85	0.82	0.84	0.83	0.81	0.85
	6	0.85	0.85	0.86	0.84	0.86	0.85	0.83	0.86
	7 †	0.87	0.86	0.88	0.86	0.87	0.87	0.85	0.87
	8	0.85	0.84	0.86	0.85	0.86	0.85	0.83	0.85
	9	0.85	0.83	0.86	0.83	0.86	0.85	0.80	0.86
	10	0.82	0.81	0.83	0.81	0.82	0.81	0.78	0.85
	11	0.77	0.75	0.79	0.74	0.78	0.77	0.71	0.80
Mathematics	3	0.87	0.86	0.88	0.86	0.87	0.88	0.86	0.87
	4	0.84	0.82	0.84	0.83	0.84	0.83	0.82	0.88
	5	0.86	0.85	0.87	0.86	0.86	0.87	0.86	0.87
	6	0.80	0.78	0.82	0.79	0.80	0.79	0.78	0.81
	7	0.73	0.71	0.75	0.71	0.73	0.75	0.70	0.76
	Algebra I	0.81	0.79	0.81	0.80	0.80	0.80	0.79	0.84
	Geometry	0.80	0.74	0.81	0.75	0.79	0.79	0.74	0.79
Science	5	0.81	0.78	0.82	0.79	0.82	0.84	0.77	0.78
	8	0.84	0.80	0.85	0.82	0.84	0.86	0.80	0.84
	10 Life Science	0.86	0.81	0.86	0.83	0.86	0.85	0.80	0.86
Grade-Specific	Algebra I – 8	0.82	0.81	0.82	0.82	0.81	0.83	0.81	0.85
	Geometry – 9	0.82	0.79	0.89	0.77	0.83	0.83	0.75	0.77

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.15 Overall Subgroup Reliabilities—Primary Ethnicity

Content Area	CMA *	*Primary Ethnicity*						
		African American	American Indian	Asian	Filipino	Hispanic	Pacific Islander	White
English–Language Arts	3	0.86	0.86	0.86	0.86	0.86	0.85	0.87
	4 †	0.84	0.87	0.85	0.85	0.85	0.87	0.87
	5	0.83	0.84	0.83	0.82	0.82	0.82	0.85
	6	0.84	0.86	0.85	0.81	0.84	0.82	0.87
	7 †	0.86	0.87	0.88	0.86	0.86	0.87	0.88
	8	0.85	0.83	0.85	0.84	0.85	0.84	0.86
	9	0.84	0.86	0.85	0.86	0.83	0.82	0.87
	10	0.79	0.83	0.79	0.81	0.81	0.83	0.84
	11	0.76	0.79	0.73	0.73	0.74	0.70	0.80
Mathematics	3	0.86	0.86	0.89	0.88	0.86	0.84	0.88
	4	0.81	0.83	0.86	0.85	0.83	0.85	0.84
	5	0.86	0.83	0.89	0.86	0.86	0.86	0.86
	6	0.77	0.80	0.83	0.78	0.79	0.77	0.82
	7	0.69	0.72	0.80	0.76	0.71	0.74	0.74
	Algebra I	0.76	0.82	0.84	0.83	0.80	0.82	0.81
	Geometry	0.70	0.82	0.81	0.78	0.76	0.79	0.83
Science	5	0.80	0.82	0.80	0.79	0.79	0.81	0.83
	8	0.81	0.82	0.85	0.83	0.82	0.85	0.85
	10 Life Science	0.83	0.87	0.84	0.86	0.83	0.84	0.86
Grade-Specific	Algebra I – 8	0.77	0.89	0.86	0.85	0.81	0.87	0.82
	Geometry – 9	0.77	–	0.86	–	0.78	–	0.89

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.16 Overall Subgroup Reliabilities by Primary Ethnicity—Not Economically Disadvantaged

Content Area	CMA*	*Ethnicity*						
		African American	American Indian	Asian	Filipino	Hispanic	Pacific Islander	White
English–Language Arts	3	0.86	0.87	0.86	0.86	0.86	0.82	0.87
	4 †	0.86	0.88	0.87	0.86	0.86	0.89	0.87
	5	0.85	0.84	0.84	0.82	0.84	0.86	0.85
	6	0.87	0.87	0.85	0.83	0.86	0.85	0.87
	7 †	0.88	0.89	0.88	0.88	0.87	0.79	0.88
	8	0.86	0.81	0.86	0.84	0.86	0.87	0.86
	9	0.85	0.88	0.85	0.87	0.85	0.84	0.87
	10	0.82	0.83	0.81	0.80	0.83	0.82	0.84
	11	0.77	0.77	0.78	0.74	0.78	0.69	0.81
Mathematics	3	0.87	0.80	0.89	0.89	0.87	0.83	0.87
	4	0.82	0.87	0.86	0.87	0.83	0.83	0.85
	5	0.87	0.84	0.89	0.87	0.87	0.84	0.86
	6	0.79	0.80	0.83	0.80	0.81	0.82	0.82
	7	0.71	0.74	0.82	0.79	0.73	0.79	0.75
	Algebra I	0.80	0.83	0.85	0.83	0.79	0.78	0.82
	Geometry	0.75	0.88	0.78	0.80	0.78	–	0.84
Science	5	0.83	0.82	0.82	0.80	0.81	0.81	0.83
	8	0.83	0.82	0.86	0.83	0.83	0.84	0.86
	10 Life Science	0.83	0.86	0.86	0.84	0.84	0.83	0.87
Grade-Specific	Algebra I – 8	0.80	0.91	0.87	0.86	0.79	0.75	0.82
	Geometry – 9	0.84	–	0.90	–	0.83	–	0.94

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.17 Overall Subgroup Reliabilities by Primary Ethnicity—Economically Disadvantaged

		Primary Ethnicity						
Content Area	**CMA***	**African American**	**American Indian**	**Asian**	**Filipino**	**Hispanic**	**Pacific Islander**	**White**
English–Language Arts	3	0.86	0.86	0.86	0.85	0.85	0.85	0.87
	4 †	0.84	0.86	0.82	0.83	0.84	0.85	0.86
	5	0.82	0.84	0.82	0.81	0.81	0.80	0.85
	6	0.84	0.86	0.85	0.78	0.83	0.78	0.86
	7 †	0.86	0.85	0.87	0.84	0.86	0.88	0.87
	8	0.85	0.84	0.84	0.83	0.84	0.83	0.86
	9	0.83	0.83	0.84	0.84	0.82	0.81	0.86
	10	0.78	0.83	0.78	0.82	0.81	0.85	0.83
	11	0.75	0.78	0.69	0.70	0.73	0.72	0.78
Mathematics	3	0.85	0.86	0.89	0.85	0.86	0.85	0.87
	4	0.81	0.82	0.86	0.85	0.82	0.86	0.83
	5	0.86	0.83	0.89	0.84	0.86	0.87	0.87
	6	0.76	0.81	0.83	0.76	0.78	0.74	0.81
	7	0.68	0.71	0.79	0.72	0.71	0.71	0.72
	Algebra I	0.75	0.81	0.84	0.83	0.80	0.84	0.80
	Geometry	0.67	0.70	0.82	0.73	0.75	0.84	0.79
Science	5	0.79	0.81	0.78	0.77	0.78	0.82	0.82
	8	0.80	0.82	0.84	0.84	0.81	0.85	0.85
	10 Life Science	0.83	0.88	0.83	0.88	0.83	0.83	0.85
Grade-Specific	Algebra I – 8	0.75	0.86	0.86	0.83	0.82	0.89	0.82
	Geometry – 9	0.73	–	0.83	–	0.77	–	0.74

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.18 Overall Subgroup Reliabilities by Gender/Economic Status

		Economically Disadvantaged		Not Economically Disadvantaged	
Content Area	**CMA***	**Male**	**Female**	**Male**	**Female**
English–Language Arts	3	0.86	0.85	0.87	0.87
	4 †	0.85	0.84	0.86	0.87
	5	0.82	0.82	0.85	0.85
	6	0.84	0.83	0.86	0.87
	7 †	0.86	0.85	0.88	0.87
	8	0.85	0.83	0.86	0.86
	9	0.84	0.82	0.87	0.86
	10	0.81	0.80	0.83	0.83
	11	0.74	0.74	0.80	0.78
Mathematics	3	0.87	0.85	0.88	0.86
	4	0.83	0.81	0.85	0.84
	5	0.86	0.85	0.87	0.86
	6	0.80	0.77	0.82	0.80
	7	0.72	0.70	0.76	0.72
	Algebra I	0.80	0.79	0.82	0.80
	Geometry	0.78	0.71	0.83	0.78
Science	5	0.80	0.76	0.83	0.81
	8	0.83	0.78	0.86	0.82
	10 Life Science	0.85	0.80	0.87	0.83
Grade-Specific	Algebra I – 8	0.81	0.82	0.83	0.81
	Geometry – 9	0.78	0.74	0.89	0.88

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.19 Overall Subgroup Reliabilities by Primary Disability

Content Area	CMA *	Autism	Deaf-Blindness	Deafness	Emotional Dist.	Hard of Hearing	MR/ID	Mult. Disab.
English–Language Arts	3	0.87	–	0.83	0.89	0.84	0.81	0.86
	4 †	0.86	–	0.77	0.88	0.85	0.71	0.81
	5	0.84	–	0.77	0.86	0.83	0.71	0.82
	6	0.86	–	0.74	0.88	0.84	0.76	0.83
	7 †	0.89	–	0.85	0.89	0.86	0.75	0.83
	8	0.86	–	0.82	0.88	0.86	0.77	0.84
	9	0.87	–	0.73	0.88	0.83	0.64	0.81
	10	0.84	–	0.74	0.86	0.82	0.66	0.77
	11	0.81	–	0.46	0.81	0.75	0.50	0.78
Mathematics	3	0.89	–	0.83	0.89	0.87	0.79	0.87
	4	0.86	–	0.82	0.83	0.85	0.72	0.85
	5	0.88	–	0.90	0.84	0.88	0.78	0.86
	6	0.85	–	0.76	0.81	0.79	0.71	0.80
	7	0.77	–	0.72	0.70	0.76	0.43	0.67
	Algebra I	0.84	–	0.80	0.78	0.82	0.63	0.85
	Geometry	0.86	–	0.77	0.81	0.79	0.56	–
Science	5	0.84	–	0.77	0.86	0.79	0.73	0.87
	8	0.86	–	0.80	0.85	0.83	0.67	0.76
	10 Life Science	0.88	–	0.76	0.88	0.84	0.66	0.87
Grade-Specific	Algebra I – 8	0.86	–	0.83	0.74	0.84	0.62	–
	Geometry – 9	0.88	–	0.48	–	–	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.20 Overall Subgroup Reliabilities by Primary Disability (continued)

Content Area	CMA *	Orthoped. Impair.	Other Health Impair.	Specific Lrn Disab.	Speech or Lang Impair.	Traumatic Brain Injury	Visual Impair.
English–Language Arts	3	0.88	0.87	0.86	0.86	0.85	0.88
	4 †	0.88	0.86	0.85	0.84	0.83	0.91
	5	0.86	0.85	0.83	0.81	0.87	0.82
	6	0.88	0.86	0.84	0.83	0.89	0.87
	7 †	0.88	0.87	0.86	0.85	0.84	0.85
	8	0.88	0.86	0.85	0.83	0.84	0.88
	9	0.87	0.87	0.84	0.82	0.84	0.89
	10	0.85	0.84	0.81	0.78	0.77	0.86
	11	0.74	0.80	0.75	0.72	0.76	0.81
Mathematics	3	0.87	0.86	0.86	0.87	0.88	0.88
	4	0.84	0.83	0.82	0.84	0.83	0.88
	5	0.89	0.86	0.86	0.86	0.89	0.87
	6	0.82	0.80	0.79	0.79	0.85	0.81
	7	0.73	0.75	0.72	0.71	0.71	0.77
	Algebra I	0.80	0.80	0.80	0.81	0.81	0.87
	Geometry	0.79	0.82	0.76	0.79	0.81	0.77
Science	5	0.84	0.82	0.80	0.77	0.83	0.77
	8	0.81	0.84	0.82	0.79	0.83	0.84
	10 Life Science	0.85	0.86	0.84	0.82	0.77	0.87
Grade-Specific	Algebra I – 8	0.84	0.80	0.81	0.85	0.79	0.89
	Geometry – 9	–	0.78	0.80	0.81	–	–

* CMA tests named by number only are grade-level tests.

† MC items

Table 8.B.21 Subscore Reliabilities and SEM for ELA by Gender/Economic Status

Subscore Reliabilities and SEM for ELA by *Gender/Economic Status*									
Subscore Area	**N of**	**Male**		**Female**		**Not Econ. Dis.**		**Econ. Dis.**	
	Items	**Reliab.**	**SEM**	**Reliab.**	**SEM**	**Reliab.**	**SEM**	**Reliab.**	**SEM**
Grade 3									
1. Vocabulary	14	0.72	1.63	0.70	1.63	0.72	1.55	0.71	1.65
2. Reading for Understanding	17	0.65	1.92	0.66	1.90	0.68	1.87	0.64	1.92
3. Language	17	0.70	1.88	0.69	1.86	0.71	1.81	0.70	1.89
Grade 4									
1. Vocabulary	11	0.64	1.45	0.62	1.45	0.63	1.39	0.63	1.46
2. Reading for Understanding	16	0.66	1.84	0.65	1.82	0.70	1.77	0.63	1.85
3. Language	21	0.73	2.10	0.72	2.08	0.75	2.03	0.71	2.11
Grade 5									
1. Vocabulary	8	0.51	1.22	0.48	1.22	0.50	1.17	0.49	1.24
2. Reading for Understanding	18	0.65	2.01	0.63	2.00	0.70	1.96	0.62	2.02
3. Language	22	0.72	2.12	0.72	2.07	0.74	2.05	0.71	2.12
Grade 6									
1. Vocabulary	9	0.62	1.30	0.61	1.29	0.64	1.21	0.61	1.32
2. Reading for Understanding	22	0.70	2.16	0.69	2.12	0.73	2.09	0.68	2.16
3. Language	23	0.69	2.23	0.69	2.18	0.72	2.16	0.69	2.23
Grade 7									
1. Vocabulary	8	0.59	1.20	0.54	1.20	0.55	1.14	0.57	1.21
2. Reading for Understanding	22	0.77	2.11	0.75	2.10	0.78	2.05	0.75	2.13
3. Language	24	0.74	2.26	0.72	2.22	0.76	2.19	0.73	2.26
Grade 8									
1. Vocabulary	6	0.54	0.96	0.51	0.93	0.53	0.90	0.53	0.97
2. Reading for Understanding	24	0.72	2.19	0.71	2.16	0.74	2.14	0.71	2.20
3. Language	24	0.74	2.19	0.71	2.12	0.76	2.11	0.73	2.19
Grade 9									
1. Vocabulary	7	0.44	1.20	0.39	1.22	0.47	1.17	0.40	1.22
2. Reading for Understanding	27	0.75	2.41	0.72	2.41	0.77	2.36	0.73	2.42
3. Language	26	0.71	2.40	0.70	2.39	0.74	2.37	0.69	2.41
Grade 10									
1. Vocabulary	7	0.46	1.16	0.43	1.13	0.46	1.13	0.45	1.16
2. Reading for Understanding	27	0.66	2.46	0.64	2.44	0.68	2.44	0.64	2.46
3. Language	26	0.67	2.41	0.67	2.40	0.70	2.39	0.66	2.42
Grade 11									
1. Vocabulary	7	0.25	1.27	0.22	1.26	0.28	1.27	0.22	1.26
2. Reading for Understanding	29	0.62	2.55	0.60	2.53	0.65	2.54	0.59	2.55
3. Language	24	0.61	2.33	0.60	2.32	0.65	2.32	0.58	2.33

Table 8.B.22 Subscore Reliabilities and SEM for Mathematics by Gender/Economic Status

Subscore Reliabilities and SEM for Mathematics by *Gender/Economic Status*									
Subscore Area	N of	Male		Female		Not Econ. Dis.		Econ. Dis.	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3									
1. Number Sense	24	0.79	2.21	0.77	2.23	0.80	2.18	0.78	2.23
2. Algebra and Data Analysis	13	0.68	1.60	0.65	1.62	0.68	1.56	0.67	1.62
3. Measurement and Geometry	11	0.61	1.42	0.58	1.43	0.62	1.38	0.59	1.44
Grade 4									
1. Number Sense	23	0.78	2.03	0.75	2.03	0.78	1.98	0.76	2.05
2. Algebra and Data Analysis	15	0.60	1.80	0.55	1.80	0.62	1.77	0.57	1.80
3. Measurement and Geometry	10	0.45	1.46	0.46	1.44	0.48	1.43	0.45	1.46
Grade 5									
1. Number Sense	21	0.77	1.99	0.76	1.94	0.77	1.94	0.76	1.99
2. Algebra and Data Analysis	17	0.74	1.83	0.72	1.81	0.74	1.79	0.73	1.83
3. Measurement and Geometry	10	0.53	1.47	0.51	1.47	0.53	1.46	0.51	1.47
Grade 6									
1. Number Sense	21	0.61	2.15	0.60	2.15	0.62	2.14	0.60	2.16
2. Algebra and Data Analysis	25	0.71	2.29	0.67	2.28	0.73	2.24	0.68	2.29
3. Measurement and Geometry	8	0.32	1.36	0.27	1.37	0.35	1.35	0.29	1.36
Grade 7									
1. Number Sense	18	0.45	2.01	0.40	2.01	0.48	2.02	0.41	2.02
2. Algebra and Data Analysis	25	0.61	2.38	0.58	2.36	0.62	2.36	0.59	2.38
3. Measurement and Geometry	11	0.37	1.57	0.37	1.55	0.41	1.56	0.35	1.57
Algebra I									
1. Number Properties, Operations, and Linear Equations	15	0.67	1.78	0.65	1.77	0.68	1.75	0.66	1.78
2. Graphing and Systems of Linear Equations	14	0.50	1.78	0.45	1.78	0.50	1.78	0.47	1.78
3. Quadratics and Polynomials	19	0.54	2.08	0.52	2.08	0.55	2.08	0.53	2.08
4. Functions and Rational Expressions	12	0.52	1.64	0.52	1.64	0.53	1.64	0.52	1.64
Geometry									
1. Logic and Geometric Proofs	23	0.64	2.27	0.55	2.29	0.64	2.25	0.59	2.28
2. Volume and Area Formulas	11	0.55	1.56	0.50	1.57	0.59	1.54	0.50	1.58
3. Angle Relationships, Constructions, and Lines	14	0.42	1.77	0.34	1.76	0.47	1.76	0.36	1.77
4. Trigonometry	12	0.44	1.66	0.33	1.67	0.47	1.65	0.38	1.66

Table 8.B.23 Subscore Reliabilities and SEM for Science by Gender/Economic Status

Subscore Reliabilities and SEM for Science by *Gender/Economic Status*									
Subscore Area	N of	Male		Female		Not Econ. Dis.		Econ. Dis.	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5 Science									
1. Physical Sciences	16	0.57	1.82	0.48	1.84	0.58	1.80	0.52	1.84
2. Life Sciences	16	0.67	1.77	0.63	1.79	0.68	1.71	0.64	1.79
3. Earth Sciences	16	0.59	1.77	0.55	1.80	0.61	1.74	0.56	1.79
Grade 8 Science									
1. Motion	19	0.64	1.97	0.58	2.03	0.65	1.94	0.61	2.01
2. Matter	23	0.69	2.26	0.62	2.28	0.71	2.23	0.65	2.27
3. Earth Science	7	0.59	1.11	0.47	1.15	0.58	1.07	0.54	1.14
4. Investigation and Experimentation	5	0.41	1.04	0.37	1.05	0.44	1.02	0.38	1.05
Grade 10 Life Science									
1. Cell Biology and Genetics	22	0.62	2.22	0.54	2.23	0.62	2.21	0.58	2.23
2. Evolution and Ecology	22	0.71	2.16	0.64	2.17	0.72	2.14	0.67	2.17
3. Physiology	10	0.64	1.42	0.58	1.45	0.65	1.40	0.61	1.45
4. Investigation and Experimentation	6	0.40	1.16	0.35	1.16	0.40	1.15	0.37	1.16

Table 8.B.24 Subscore Reliabilities and SEM for Grade-specific CMA by Gender/Economic Status

Subscore Reliabilities and SEM for Grade-specific CMA by *Gender/Economic Status*									
Subscore Area	N of	Male		Female		Not Econ. Dis.		Econ. Dis.	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – Grade 8									
1. Number Properties, Operations, and Linear Equations	15	0.66	1.79	0.66	1.76	0.67	1.76	0.66	1.78
2. Graphing and Systems of Linear Equations	14	0.51	1.78	0.51	1.77	0.54	1.77	0.50	1.78
3. Quadratics and Polynomials	19	0.56	2.08	0.53	2.07	0.55	2.08	0.55	2.08
4. Functions and Rational Expressions	12	0.53	1.64	0.54	1.64	0.53	1.64	0.54	1.64
Geometry – Grade 9									
1. Logic and Geometric Proofs	23	0.66	2.27	0.61	2.28	0.72	2.24	0.62	2.28
2. Volume and Area Formulas	11	0.58	1.55	0.53	1.55	0.69	1.49	0.52	1.57
3. Angle Relationships, Constructions, and Lines	14	0.42	1.77	0.45	1.75	0.65	1.69	0.32	1.78
4. Trigonometry	12	0.49	1.66	0.34	1.67	0.64	1.60	0.38	1.67

Table 8.B.25 Subscore Reliabilities and SEM for ELA by English-language Fluency

Subscore Reliabilities and SEM for ELA by *English-language Fluency*									
Subscore Area	N of	English Learner		English Only		I-FEP		R-FEP	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3									
1. Vocabulary	14	0.68	1.67	0.73	1.60	0.77	1.55	0.77	1.55
2. Reading for Understanding	17	0.63	1.93	0.67	1.90	0.70	1.88	0.64	1.92
3. Language	17	0.69	1.89	0.71	1.86	0.75	1.81	0.67	1.80
Grade 4									
1. Vocabulary	11	0.63	1.47	0.64	1.43	0.68	1.37	0.69	1.31
2. Reading for Understanding	16	0.60	1.87	0.68	1.81	0.72	1.78	0.65	1.78
3. Language	21	0.70	2.12	0.74	2.08	0.77	2.06	0.76	2.01
Grade 5									
1. Vocabulary	8	0.48	1.25	0.51	1.20	0.44	1.19	0.47	1.12
2. Reading for Understanding	18	0.58	2.03	0.67	1.99	0.69	1.96	0.72	1.91
3. Language	22	0.70	2.13	0.74	2.09	0.72	2.06	0.76	1.96
Grade 6									
1. Vocabulary	9	0.57	1.35	0.64	1.25	0.62	1.23	0.61	1.19
2. Reading for Understanding	22	0.66	2.18	0.71	2.12	0.70	2.10	0.73	2.06
3. Language	23	0.68	2.23	0.71	2.20	0.71	2.18	0.71	2.11
Grade 7									
1. Vocabulary	8	0.56	1.24	0.57	1.17	0.54	1.15	0.52	1.09
2. Reading for Understanding	22	0.73	2.15	0.77	2.08	0.79	2.05	0.78	1.97
3. Language	24	0.70	2.28	0.76	2.23	0.75	2.22	0.76	2.10
Grade 8									
1. Vocabulary	6	0.49	1.01	0.55	0.92	0.51	0.89	0.50	0.83
2. Reading for Understanding	24	0.67	2.23	0.73	2.17	0.71	2.12	0.74	2.03
3. Language	24	0.71	2.20	0.75	2.16	0.77	2.10	0.72	2.01
Grade 9									
1. Vocabulary	7	0.33	1.24	0.46	1.19	0.39	1.19	0.37	1.17
2. Reading for Understanding	27	0.68	2.45	0.77	2.38	0.75	2.38	0.76	2.29
3. Language	26	0.65	2.42	0.72	2.39	0.72	2.38	0.72	2.33
Grade 10									
1. Vocabulary	7	0.40	1.17	0.47	1.14	0.40	1.13	0.45	1.06
2. Reading for Understanding	27	0.60	2.47	0.66	2.45	0.65	2.44	0.73	2.37
3. Language	26	0.62	2.43	0.69	2.41	0.65	2.42	0.73	2.34
Grade 11									
1. Vocabulary	7	0.17	1.26	0.27	1.26	0.30	1.27	0.29	1.26
2. Reading for Understanding	29	0.54	2.55	0.64	2.55	0.64	2.54	0.64	2.51
3. Language	24	0.54	2.34	0.63	2.33	0.62	2.33	0.69	2.30

Table 8.B.26 Subscore Reliabilities and SEM for Mathematics by English-language Fluency

Subscore Reliabilities and SEM for Mathematics by *English-language Fluency*									
Subscore Area	N of	English Learner		English Only		I-FEP		R-FEP	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3									
1. Number Sense	24	0.78	2.22	0.79	2.22	0.83	2.16	0.74	2.18
2. Algebra and Data Analysis	13	0.66	1.62	0.68	1.60	0.68	1.60	0.71	1.52
3. Measurement and Geometry	11	0.58	1.44	0.61	1.41	0.57	1.44	0.59	1.38
Grade 4									
1. Number Sense	23	0.76	2.03	0.77	2.03	0.76	1.99	0.83	1.95
2. Algebra and Data Analysis	15	0.56	1.80	0.60	1.80	0.63	1.75	0.70	1.75
3. Measurement and Geometry	10	0.46	1.46	0.46	1.45	0.44	1.42	0.46	1.46
Grade 5									
1. Number Sense	21	0.75	1.97	0.77	1.99	0.74	1.91	0.76	1.82
2. Algebra and Data Analysis	17	0.73	1.82	0.73	1.82	0.74	1.74	0.74	1.70
3. Measurement and Geometry	10	0.51	1.47	0.52	1.47	0.60	1.41	0.58	1.43
Grade 6									
1. Number Sense	21	0.60	2.15	0.60	2.16	0.61	2.14	0.62	2.11
2. Algebra and Data Analysis	25	0.67	2.29	0.71	2.28	0.69	2.23	0.70	2.19
3. Measurement and Geometry	8	0.27	1.37	0.32	1.36	0.30	1.36	0.34	1.35
Grade 7									
1. Number Sense	18	0.39	2.02	0.44	2.02	0.45	2.01	0.54	1.99
2. Algebra and Data Analysis	25	0.58	2.38	0.61	2.37	0.64	2.37	0.65	2.33
3. Measurement and Geometry	11	0.33	1.57	0.39	1.56	0.42	1.56	0.38	1.55
Algebra I									
1. Number Properties, Operations, and Linear Equations	15	0.65	1.79	0.67	1.77	0.64	1.77	0.67	1.70
2. Graphing and Systems of Linear Equations	14	0.47	1.78	0.47	1.78	0.51	1.78	0.57	1.77
3. Quadratics and Polynomials	19	0.52	2.08	0.53	2.08	0.51	2.09	0.60	2.04
4. Functions and Rational Expressions	12	0.51	1.65	0.51	1.64	0.55	1.63	0.61	1.59
Geometry									
1. Logic and Geometric Proofs	23	0.56	2.29	0.63	2.27	0.63	2.27	0.58	2.25
2. Volume and Area Formulas	11	0.47	1.58	0.56	1.56	0.58	1.55	0.55	1.54
3. Angle Relationships, Constructions, and Lines	14	0.35	1.78	0.42	1.77	0.39	1.76	0.39	1.75
4. Trigonometry	12	0.37	1.66	0.42	1.66	0.40	1.68	0.44	1.66

Table 8.B.27 Subscore Reliabilities and SEM for Science by English-language Fluency

Subscore Reliabilities and SEM for Science by *English-language Fluency*									
Subscore Area	N of	English Learner		English Only		I-FEP		R-FEP	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5 Science									
1. Physical Sciences	16	0.49	1.83	0.57	1.82	0.64	1.77	0.50	1.80
2. Life Sciences	16	0.61	1.81	0.68	1.75	0.70	1.68	0.63	1.67
3. Earth Sciences	16	0.54	1.79	0.60	1.77	0.62	1.73	0.58	1.69
Grade 8 Science									
1. Motion	19	0.58	2.03	0.63	1.98	0.66	1.94	0.62	1.91
2. Matter	23	0.61	2.29	0.69	2.25	0.71	2.22	0.71	2.20
3. Earth Science	7	0.52	1.15	0.56	1.11	0.61	1.05	0.53	1.04
4. Investigation and Experimentation	5	0.35	1.06	0.41	1.04	0.48	1.01	0.44	0.99
Grade 10 Life Science									
1. Cell Biology and Genetics	22	0.53	2.24	0.62	2.22	0.57	2.22	0.61	2.17
2. Evolution and Ecology	22	0.63	2.19	0.71	2.15	0.72	2.13	0.71	2.07
3. Physiology	10	0.56	1.47	0.65	1.42	0.60	1.43	0.63	1.36
4. Investigation and Experimentation	6	0.30	1.18	0.41	1.15	0.48	1.13	0.46	1.11

Table 8.B.28 Subscore Reliabilities and SEM for Grade-specific CMA by English-language Fluency

Subscore Reliabilities and SEM for Grade-specific CMA by *English-language Fluency*									
Subscore Area	N of	English Learner		English Only		I-FEP		R-FEP	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – Grade 8									
1. Number Properties, Operations, and Linear Equations	15	0.65	1.79	0.67	1.78	0.67	1.76	0.64	1.73
2. Graphing and Systems of Linear Equations	14	0.51	1.78	0.49	1.78	0.61	1.76	0.58	1.77
3. Quadratics and Polynomials	19	0.55	2.08	0.53	2.08	0.53	2.07	0.65	2.03
4. Functions and Rational Expressions	12	0.52	1.64	0.52	1.64	0.62	1.61	0.63	1.58
Geometry – Grade 9									
1. Logic and Geometric Proofs	23	0.59	2.29	0.67	2.26	0.79	2.22	0.52	2.22
2. Volume and Area Formulas	11	0.47	1.58	0.62	1.53	0.54	1.56	0.46	1.53
3. Angle Relationships, Constructions, and Lines	14	0.42	1.75	0.40	1.78	0.37	1.82	0.42	1.72
4. Trigonometry	12	0.31	1.67	0.51	1.64	0.47	1.69	0.37	1.66

Table 8.B.29 Subscore Reliabilities and SEM for ELA by Primary Ethnicity

Subscore Reliabilities and SEM for ELA by *Primary Ethnicity*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Vocabulary	14	0.73	1.63	0.70	1.64	0.69	1.59	0.75	1.51	0.70	1.66	0.68	1.61	0.73	1.55
2. Reading for Understanding	17	0.64	1.92	0.67	1.91	0.65	1.90	0.53	1.92	0.63	1.92	0.61	1.92	0.69	1.87
3. Language	17	0.69	1.89	0.68	1.90	0.71	1.82	0.72	1.77	0.69	1.89	0.67	1.89	0.71	1.83
Grade 4															
1. Vocabulary	11	0.61	1.48	0.66	1.43	0.59	1.45	0.61	1.43	0.64	1.46	0.65	1.41	0.64	1.40
2. Reading for Understanding	16	0.64	1.86	0.69	1.81	0.64	1.84	0.66	1.81	0.64	1.85	0.68	1.81	0.69	1.78
3. Language	21	0.72	2.12	0.76	2.08	0.72	2.07	0.74	2.04	0.71	2.11	0.76	2.06	0.75	2.05
Grade 5															
1. Vocabulary	8	0.50	1.23	0.55	1.22	0.45	1.22	0.51	1.22	0.49	1.24	0.47	1.21	0.51	1.17
2. Reading for Understanding	18	0.64	2.01	0.65	2.01	0.63	2.02	0.58	2.03	0.61	2.02	0.64	2.01	0.71	1.96
3. Language	22	0.71	2.14	0.74	2.12	0.74	2.07	0.70	2.10	0.71	2.12	0.69	2.10	0.75	2.05
Grade 6															
1. Vocabulary	9	0.62	1.31	0.68	1.24	0.63	1.29	0.53	1.29	0.60	1.32	0.61	1.27	0.65	1.20
2. Reading for Understanding	22	0.70	2.16	0.71	2.14	0.71	2.13	0.67	2.14	0.68	2.16	0.67	2.16	0.73	2.09
3. Language	23	0.69	2.24	0.71	2.22	0.71	2.19	0.61	2.18	0.69	2.22	0.64	2.26	0.73	2.17
Grade 7															
1. Vocabulary	8	0.57	1.21	0.55	1.18	0.58	1.18	0.58	1.13	0.57	1.21	0.47	1.17	0.56	1.14
2. Reading for Understanding	22	0.76	2.12	0.76	2.09	0.77	2.11	0.74	2.09	0.75	2.13	0.76	2.10	0.78	2.04
3. Language	24	0.74	2.27	0.77	2.24	0.75	2.19	0.76	2.14	0.73	2.26	0.78	2.21	0.77	2.20
Grade 8															
1. Vocabulary	6	0.54	0.95	0.47	0.95	0.54	0.97	0.43	0.99	0.52	0.97	0.49	0.99	0.56	0.88
2. Reading for Understanding	24	0.71	2.20	0.69	2.19	0.73	2.19	0.70	2.22	0.71	2.19	0.72	2.17	0.74	2.14
3. Language	24	0.74	2.20	0.70	2.20	0.71	2.12	0.74	2.11	0.73	2.18	0.72	2.17	0.76	2.13
Grade 9															
1. Vocabulary	7	0.44	1.21	0.50	1.17	0.41	1.19	0.44	1.18	0.38	1.22	0.41	1.21	0.48	1.15
2. Reading for Understanding	27	0.74	2.42	0.76	2.40	0.73	2.39	0.77	2.35	0.72	2.43	0.73	2.41	0.79	2.34
3. Language	26	0.70	2.41	0.71	2.41	0.73	2.35	0.72	2.33	0.69	2.41	0.70	2.41	0.74	2.38

Subscore Reliabilities and SEM for ELA by *Primary Ethnicity*															
Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 10															
1. Vocabulary	7	0.43	1.17	0.53	1.12	0.42	1.15	0.38	1.13	0.44	1.15	0.43	1.17	0.48	1.13
2. Reading for Understanding	27	0.62	2.47	0.66	2.45	0.62	2.46	0.65	2.45	0.64	2.46	0.68	2.46	0.69	2.43
3. Language	26	0.64	2.42	0.68	2.41	0.64	2.42	0.68	2.38	0.66	2.42	0.71	2.40	0.72	2.39
Grade 11															
1. Vocabulary	7	0.23	1.26	0.38	1.25	0.26	1.25	0.29	1.26	0.21	1.26	0.11	1.27	0.30	1.26
2. Reading for Understanding	29	0.60	2.55	0.66	2.54	0.52	2.55	0.57	2.52	0.59	2.55	0.59	2.53	0.66	2.55
3. Language	24	0.60	2.32	0.62	2.32	0.56	2.33	0.57	2.32	0.58	2.33	0.49	2.36	0.66	2.32

Table 8.B.30 Subscore Reliabilities and SEM for Mathematics by Primary Ethnicity

Subscore Reliabilities and SEM for Mathematics by *Primary Ethnicity*															
Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Number Sense	24	0.76	2.26	0.78	2.25	0.83	2.13	0.80	2.16	0.78	2.22	0.75	2.22	0.80	2.19
2. Algebra and Data Analysis	13	0.66	1.65	0.68	1.58	0.67	1.57	0.64	1.61	0.66	1.62	0.70	1.60	0.68	1.56
3. Measurement and Geometry	11	0.59	1.46	0.56	1.43	0.65	1.38	0.58	1.41	0.59	1.43	0.39	1.44	0.62	1.38
Grade 4															
1. Number Sense	23	0.75	2.09	0.76	2.02	0.80	1.96	0.79	1.97	0.76	2.04	0.79	2.01	0.78	2.00
2. Algebra and Data Analysis	15	0.54	1.83	0.62	1.78	0.63	1.77	0.62	1.79	0.57	1.80	0.63	1.79	0.61	1.78
3. Measurement and Geometry	10	0.43	1.48	0.42	1.45	0.53	1.43	0.50	1.44	0.45	1.46	0.52	1.44	0.47	1.44
Grade 5															
1. Number Sense	21	0.77	2.03	0.75	2.03	0.80	1.90	0.77	1.94	0.76	1.97	0.79	1.93	0.77	1.97
2. Algebra and Data Analysis	17	0.73	1.86	0.69	1.88	0.78	1.78	0.72	1.83	0.73	1.82	0.70	1.84	0.73	1.80
3. Measurement and Geometry	10	0.50	1.48	0.47	1.49	0.56	1.45	0.49	1.47	0.51	1.47	0.54	1.45	0.54	1.46
Grade 6															
1. Number Sense	21	0.57	2.18	0.54	2.17	0.65	2.12	0.57	2.16	0.60	2.15	0.60	2.17	0.62	2.14
2. Algebra and Data Analysis	25	0.66	2.33	0.73	2.28	0.74	2.21	0.66	2.26	0.68	2.29	0.68	2.31	0.73	2.25
3. Measurement and Geometry	8	0.28	1.36	0.31	1.37	0.37	1.35	0.29	1.36	0.28	1.36	0.30	1.37	0.35	1.35
Grade 7															
1. Number Sense	18	0.39	2.02	0.47	2.02	0.57	1.99	0.50	2.00	0.41	2.02	0.53	1.98	0.46	2.01
2. Algebra and Data Analysis	25	0.57	2.38	0.58	2.39	0.69	2.33	0.66	2.34	0.60	2.38	0.63	2.37	0.62	2.37
3. Measurement and Geometry	11	0.33	1.57	0.36	1.57	0.42	1.56	0.37	1.58	0.35	1.57	0.35	1.55	0.42	1.55

Subscore Reliabilities and SEM for Mathematics by *Primary Ethnicity*															
Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I															
1. Number Properties, Operations, and Linear Equations	15	0.63	1.80	0.65	1.77	0.72	1.70	0.67	1.75	0.66	1.78	0.63	1.74	0.68	1.75
2. Graphing and Systems of Linear Equations	14	0.40	1.79	0.51	1.78	0.56	1.77	0.57	1.77	0.48	1.78	0.41	1.80	0.51	1.78
3. Quadratics and Polynomials	19	0.48	2.09	0.60	2.07	0.60	2.05	0.60	2.05	0.53	2.08	0.56	2.07	0.55	2.08
4. Functions and Rational Expressions	12	0.46	1.65	0.52	1.63	0.57	1.62	0.55	1.64	0.52	1.64	0.63	1.60	0.53	1.63
Geometry															
1. Logic and Geometric Proofs	23	0.54	2.29	0.52	2.29	0.60	2.26	0.58	2.28	0.59	2.28	0.59	2.29	0.67	2.23
2. Volume and Area Formulas	11	0.45	1.59	0.68	1.50	0.59	1.51	0.56	1.56	0.50	1.58	0.51	1.59	0.62	1.52
3. Angle Relationships, Constructions, and Lines	14	0.23	1.79	0.57	1.70	0.48	1.76	0.59	1.70	0.36	1.77	0.33	1.83	0.50	1.75
4. Trigonometry	12	0.35	1.66	0.47	1.66	0.41	1.67	0.39	1.68	0.39	1.66	0.44	1.64	0.47	1.65

Table 8.B.31 Subscore Reliabilities and SEM for Science by Primary Ethnicity

Subscore Reliabilities and SEM for Science by *Primary Ethnicity*															
Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Science Grade 5															
1. Physical Sciences	16	0.54	1.86	0.58	1.82	0.53	1.83	0.48	1.84	0.51	1.83	0.52	1.82	0.60	1.79
2. Life Sciences	16	0.65	1.81	0.67	1.77	0.66	1.79	0.65	1.80	0.63	1.79	0.68	1.79	0.69	1.68
3. Earth Sciences	16	0.57	1.82	0.60	1.77	0.57	1.79	0.54	1.79	0.55	1.78	0.62	1.75	0.61	1.73
Science Grade 8															
1. Motion	19	0.59	2.03	0.59	2.00	0.65	1.97	0.61	1.99	0.61	2.01	0.64	1.98	0.66	1.92
2. Matter	23	0.65	2.28	0.65	2.26	0.70	2.23	0.70	2.24	0.65	2.28	0.68	2.25	0.72	2.22
3. Earth Science	7	0.54	1.16	0.51	1.13	0.54	1.11	0.45	1.11	0.53	1.13	0.59	1.11	0.60	1.06
4. Investigation and Experimentation	5	0.34	1.06	0.40	1.05	0.43	1.01	0.45	1.02	0.38	1.05	0.36	1.04	0.44	1.02
Grade 10 Life Science															
1. Cell Biology and Genetics	22	0.59	2.23	0.59	2.22	0.60	2.21	0.62	2.19	0.57	2.23	0.63	2.17	0.64	2.20
2. Evolution and Ecology	22	0.66	2.20	0.77	2.12	0.68	2.14	0.69	2.11	0.67	2.17	0.69	2.15	0.73	2.12
3. Physiology	10	0.62	1.45	0.72	1.37	0.61	1.42	0.66	1.40	0.60	1.45	0.58	1.44	0.67	1.38
4. Investigation and Experimentation	6	0.36	1.17	0.45	1.15	0.36	1.16	0.52	1.10	0.37	1.16	0.45	1.13	0.41	1.15

Table 8.B.32 Subscore Reliabilities and SEM for Grade-specific CMA by Primary Ethnicity

Subscore Reliabilities and SEM for Grade-specific CMA by *Primary Ethnicity*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – 8															
1. Number Properties, Operations, and Linear Equations	15	0.62	1.80	0.74	1.71	0.74	1.71	0.61	1.79	0.66	1.79	0.66	1.76	0.69	1.75
2. Graphing and Systems of Linear Equations	14	0.41	1.78	0.57	1.77	0.63	1.74	0.60	1.75	0.51	1.78	0.46	1.81	0.53	1.77
3. Quadratics and Polynomials	19	0.47	2.09	0.66	2.05	0.65	2.04	0.65	2.04	0.55	2.08	0.57	2.07	0.54	2.08
4. Functions and Rational Expressions	12	0.45	1.65	0.66	1.60	0.55	1.62	0.60	1.62	0.54	1.64	0.74	1.55	0.53	1.63
Geometry – 9															
1. Logic and Geometric Proofs	23	0.60	2.28	–	–	0.71	2.20	–	–	0.62	2.28	–	–	0.80	2.17
2. Volume and Area Formulas	11	0.46	1.57	–	–	0.68	1.43	–	–	0.52	1.57	–	–	0.77	1.42
3. Angle Relationships, Constructions, and Lines	14	0.27	1.80	–	–	0.29	1.84	–	–	0.39	1.77	–	–	0.57	1.70
4. Trigonometry	12	0.40	1.66	–	–	0.45	1.69	–	–	0.41	1.67	–	–	0.67	1.58

Table 8.B.33 Subscore Reliabilities and SEM for ELA by Primary Ethnicity-for-Not Economically Disadvantaged

Subscore Reliabilities and SEM for ELA by *Primary Ethnicity-for-Not Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Vocabulary	14	0.72	1.60	0.71	1.59	0.67	1.54	0.78	1.43	0.71	1.58	0.63	1.57	0.72	1.52
2. Reading for Understanding	17	0.62	1.92	0.71	1.86	0.67	1.87	0.47	1.92	0.66	1.90	0.47	1.90	0.70	1.84
3. Language	17	0.68	1.88	0.72	1.87	0.70	1.78	0.75	1.73	0.72	1.83	0.60	1.86	0.70	1.80
Grade 4															
1. Vocabulary	11	0.59	1.45	0.60	1.38	0.61	1.41	0.55	1.42	0.63	1.40	0.73	1.28	0.64	1.36
2. Reading for Understanding	16	0.68	1.82	0.75	1.72	0.71	1.81	0.69	1.79	0.68	1.79	0.74	1.73	0.70	1.74
3. Language	21	0.74	2.07	0.78	2.01	0.78	2.00	0.75	2.01	0.74	2.05	0.79	1.93	0.75	2.01
Grade 5															
1. Vocabulary	8	0.53	1.20	0.49	1.23	0.45	1.20	0.55	1.20	0.48	1.19	0.40	1.22	0.49	1.14
2. Reading for Understanding	18	0.68	1.99	0.56	2.03	0.65	2.01	0.63	2.02	0.67	1.98	0.75	1.96	0.72	1.93
3. Language	22	0.73	2.10	0.76	2.07	0.75	2.04	0.68	2.08	0.74	2.06	0.75	2.06	0.75	2.02
Grade 6															
1. Vocabulary	9	0.65	1.27	0.67	1.22	0.63	1.25	0.58	1.28	0.63	1.23	0.55	1.21	0.65	1.17
2. Reading for Understanding	22	0.72	2.14	0.76	2.09	0.72	2.11	0.69	2.13	0.71	2.10	0.75	2.04	0.73	2.06
3. Language	23	0.73	2.20	0.74	2.18	0.70	2.15	0.65	2.15	0.72	2.17	0.66	2.22	0.73	2.14
Grade 7															
1. Vocabulary	8	0.53	1.19	0.53	1.18	0.49	1.17	0.63	1.14	0.56	1.16	0.16	1.20	0.54	1.12
2. Reading for Understanding	22	0.78	2.08	0.77	2.05	0.77	2.08	0.77	2.07	0.78	2.07	0.73	2.04	0.79	2.01
3. Language	24	0.76	2.23	0.81	2.16	0.78	2.13	0.77	2.12	0.75	2.21	0.59	2.20	0.77	2.17

Subscore Reliabilities and SEM for ELA by *Primary Ethnicity-for-Not Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 8															
1. Vocabulary	6	0.60	0.92	0.34	0.94	0.55	0.94	0.34	0.99	0.51	0.92	0.51	0.95	0.54	0.87
2. Reading for Understanding	24	0.72	2.18	0.67	2.18	0.75	2.16	0.70	2.21	0.72	2.15	0.75	2.15	0.75	2.12
3. Language	24	0.76	2.18	0.64	2.23	0.72	2.08	0.75	2.09	0.76	2.11	0.75	2.14	0.76	2.10
Grade 9															
1. Vocabulary	7	0.46	1.20	0.50	1.14	0.41	1.18	0.45	1.18	0.44	1.20	0.52	1.14	0.48	1.14
2. Reading for Understanding	27	0.77	2.39	0.79	2.34	0.74	2.37	0.78	2.33	0.76	2.39	0.75	2.39	0.79	2.33
3. Language	26	0.73	2.40	0.74	2.37	0.75	2.33	0.76	2.30	0.72	2.39	0.69	2.40	0.75	2.36
Grade 10															
1. Vocabulary	7	0.42	1.16	0.55	1.08	0.48	1.13	0.31	1.12	0.44	1.14	0.37	1.17	0.49	1.11
2. Reading for Understanding	27	0.65	2.45	0.71	2.44	0.65	2.45	0.66	2.44	0.67	2.45	0.70	2.45	0.69	2.43
3. Language	26	0.69	2.41	0.66	2.40	0.63	2.42	0.68	2.40	0.69	2.40	0.62	2.41	0.72	2.38
Grade 11															
1. Vocabulary	7	0.22	1.27	0.32	1.26	0.30	1.25	0.26	1.27	0.24	1.27	0.35	1.25	0.33	1.26
2. Reading for Understanding	29	0.62	2.55	0.61	2.50	0.52	2.55	0.62	2.53	0.62	2.55	0.58	2.53	0.67	2.54
3. Language	24	0.64	2.31	0.66	2.28	0.64	2.31	0.53	2.31	0.64	2.32	0.47	2.36	0.67	2.32

Table 8.B.34 Subscore Reliabilities and SEM for Mathematics by Primary Ethnicity-for-Not Economically Disadvantaged

Subscore Reliabilities and SEM for Mathematics by *Primary Ethnicity-for-Not Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Number Sense	24	0.78	2.24	0.77	2.20	0.83	2.09	0.83	2.09	0.79	2.20	0.70	2.28	0.80	2.17
2. Algebra and Data Analysis	13	0.68	1.61	0.58	1.53	0.65	1.54	0.68	1.55	0.68	1.58	0.63	1.64	0.68	1.54
3. Measurement and Geometry	11	0.62	1.44	0.27	1.38	0.68	1.32	0.58	1.38	0.60	1.40	0.58	1.36	0.63	1.36
Grade 4															
1. Number Sense	23	0.76	2.06	0.79	1.92	0.80	1.96	0.82	1.95	0.76	2.01	0.76	1.93	0.78	1.95
2. Algebra and Data Analysis	15	0.55	1.82	0.63	1.76	0.62	1.78	0.62	1.78	0.61	1.78	0.58	1.81	0.64	1.76
3. Measurement and Geometry	10	0.50	1.45	0.45	1.42	0.57	1.42	0.50	1.44	0.44	1.45	0.25	1.44	0.48	1.42
Grade 5															
1. Number Sense	21	0.79	1.98	0.77	2.00	0.81	1.87	0.76	1.92	0.77	1.95	0.63	1.97	0.76	1.94
2. Algebra and Data Analysis	17	0.74	1.84	0.69	1.86	0.79	1.76	0.76	1.81	0.74	1.79	0.72	1.84	0.73	1.78
3. Measurement and Geometry	10	0.53	1.47	0.59	1.45	0.53	1.45	0.55	1.43	0.52	1.47	0.50	1.48	0.53	1.46
Grade 6															
1. Number Sense	21	0.58	2.18	0.54	2.14	0.63	2.12	0.55	2.17	0.62	2.15	0.64	2.14	0.62	2.13
2. Algebra and Data Analysis	25	0.69	2.31	0.74	2.28	0.73	2.19	0.69	2.25	0.72	2.25	0.74	2.20	0.74	2.22
3. Measurement and Geometry	8	0.30	1.36	0.15	1.39	0.43	1.33	0.31	1.37	0.34	1.35	0.32	1.36	0.35	1.35
Grade 7															
1. Number Sense	18	0.45	2.01	0.36	2.02	0.61	1.98	0.55	1.98	0.45	2.02	0.62	1.93	0.48	2.02
2. Algebra and Data Analysis	25	0.60	2.37	0.63	2.36	0.70	2.31	0.68	2.31	0.61	2.37	0.64	2.35	0.63	2.36
3. Measurement and Geometry	11	0.33	1.57	0.39	1.57	0.51	1.53	0.37	1.58	0.40	1.56	0.39	1.56	0.42	1.55

Subscore Reliabilities and SEM for Mathematics by *Primary Ethnicity-for-Not Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I															
1. Number Properties, Operations, and Linear Equations	15	0.68	1.77	0.65	1.77	0.72	1.68	0.65	1.74	0.66	1.77	0.52	1.74	0.68	1.73
2. Graphing and Systems of Linear Equations	14	0.42	1.78	0.59	1.76	0.60	1.76	0.56	1.77	0.47	1.78	0.41	1.78	0.52	1.77
3. Quadratics and Polynomials	19	0.51	2.08	0.61	2.06	0.59	2.04	0.60	2.05	0.53	2.08	0.53	2.08	0.55	2.07
4. Functions and Rational Expressions	12	0.51	1.64	0.56	1.63	0.56	1.61	0.58	1.63	0.51	1.64	0.48	1.63	0.54	1.63
Geometry															
1. Logic and Geometric Proofs	23	0.59	2.28	0.69	2.21	0.50	2.27	0.55	2.27	0.60	2.27	–	–	0.68	2.22
2. Volume and Area Formulas	11	0.49	1.58	0.67	1.45	0.59	1.50	0.63	1.55	0.55	1.56	–	–	0.64	1.50
3. Angle Relationships, Constructions, and Lines	14	0.26	1.79	0.50	1.74	0.51	1.76	0.63	1.70	0.42	1.76	–	–	0.54	1.74
4. Trigonometry	12	0.41	1.65	0.64	1.58	0.35	1.69	0.31	1.70	0.42	1.66	–	–	0.51	1.64

Table 8.B.35 Subscore Reliabilities and SEM for Science by Primary Ethnicity-for-Not Economically Disadvantaged

Subscore Reliabilities and SEM for Science by *Primary Ethnicity-for-Not Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5 Science															
1. Physical Sciences	16	0.58	1.85	0.56	1.79	0.59	1.81	0.42	1.85	0.56	1.82	0.49	1.84	0.60	1.77
2. Life Sciences	16	0.71	1.76	0.72	1.72	0.67	1.77	0.68	1.78	0.65	1.74	0.69	1.74	0.69	1.66
3. Earth Sciences	16	0.60	1.80	0.50	1.76	0.61	1.76	0.56	1.78	0.60	1.74	0.65	1.77	0.60	1.71
Grade 8 Science															
1. Motion	19	0.60	2.01	0.62	1.95	0.68	1.92	0.58	2.00	0.61	1.97	0.63	1.96	0.67	1.90
2. Matter	23	0.67	2.27	0.64	2.26	0.70	2.21	0.71	2.23	0.68	2.25	0.67	2.24	0.72	2.20
3. Earth Science	7	0.56	1.14	0.47	1.10	0.53	1.08	0.49	1.09	0.55	1.10	0.60	1.07	0.60	1.03
4. Investigation and Experimentation	5	0.37	1.05	0.37	1.03	0.40	1.01	0.43	1.03	0.42	1.03	0.39	1.01	0.47	1.00
Grade 10 Life Science															
1. Cell Biology and Genetics	22	0.58	2.23	0.61	2.24	0.61	2.19	0.55	2.20	0.60	2.22	0.56	2.15	0.64	2.19
2. Evolution and Ecology	22	0.67	2.20	0.73	2.14	0.72	2.11	0.67	2.12	0.68	2.16	0.67	2.06	0.75	2.10
3. Physiology	10	0.61	1.45	0.72	1.35	0.59	1.41	0.60	1.44	0.61	1.43	0.66	1.31	0.68	1.36
4. Investigation and Experimentation	6	0.39	1.16	0.38	1.16	0.50	1.11	0.50	1.12	0.37	1.16	0.40	1.11	0.39	1.14

Table 8.B.36 Subscore Reliabilities and SEM for Grade-specific CMA by Primary Ethnicity-for-Not Economically Disadvantaged

Subscore Reliabilities and SEM for Grade-specific CMA by Primary Ethnicity-for-Not Economically Disadvantaged															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – 8															
1. Number Properties, Operations, and Linear Equations	15	0.66	1.79	0.80	1.67	0.75	1.69	0.63	1.79	0.63	1.79	0.32	1.85	0.67	1.73
2. Graphing and Systems of Linear Equations	14	0.45	1.76	0.73	1.69	0.61	1.76	0.64	1.72	0.51	1.78	0.26	1.83	0.55	1.77
3. Quadratics and Polynomials	19	0.48	2.09	0.68	2.03	0.66	2.03	0.68	2.02	0.51	2.09	0.37	2.15	0.58	2.06
4. Functions and Rational Expressions	12	0.44	1.66	0.64	1.63	0.54	1.62	0.68	1.59	0.53	1.64	0.60	1.62	0.52	1.63
Geometry – 9															
1. Logic and Geometric Proofs	23	0.6	2.27	–	–	–	–	–	–	0.57	2.28	–	–	0.88	2.02
2. Volume and Area Formulas	11	0.66	1.51	–	–	–	–	–	–	0.53	1.56	–	–	0.75	1.35
3. Angle Relationships, Constructions, and Lines	14	0.59	1.71	–	–	–	–	–	–	0.62	1.72	–	–	0.77	1.55
4. Trigonometry	12	0.58	1.6	–	–	–	–	–	–	0.56	1.63	–	–	0.77	1.5

Table 8.B.37 Subscore Reliabilities and SEM for ELA by Primary Ethnicity-for-Economically Disadvantaged

Subscore Reliabilities and SEM for ELA by *Ethnicity—Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Vocabulary	14	0.73	1.63	0.70	1.65	0.70	1.62	0.71	1.57	0.69	1.67	0.69	1.62	0.73	1.59
2. Reading for Understanding	17	0.64	1.92	0.66	1.92	0.63	1.92	0.56	1.92	0.63	1.93	0.62	1.93	0.67	1.90
3. Language	17	0.69	1.89	0.68	1.91	0.72	1.85	0.70	1.81	0.69	1.89	0.70	1.89	0.71	1.86
Grade 4															
1. Vocabulary	11	0.62	1.49	0.67	1.45	0.58	1.47	0.64	1.43	0.63	1.46	0.62	1.44	0.62	1.44
2. Reading for Understanding	16	0.63	1.87	0.66	1.84	0.57	1.87	0.61	1.84	0.62	1.86	0.66	1.84	0.67	1.81
3. Language	21	0.71	2.13	0.74	2.10	0.66	2.12	0.72	2.07	0.71	2.12	0.74	2.09	0.74	2.08
Grade 5															
1. Vocabulary	8	0.49	1.24	0.57	1.22	0.44	1.24	0.48	1.25	0.49	1.24	0.49	1.21	0.52	1.20
2. Reading for Understanding	18	0.62	2.02	0.67	2.00	0.61	2.02	0.53	2.05	0.60	2.02	0.58	2.03	0.68	1.98
3. Language	22	0.70	2.15	0.72	2.14	0.72	2.09	0.71	2.11	0.70	2.13	0.65	2.12	0.74	2.08
Grade 6															
1. Vocabulary	9	0.61	1.32	0.69	1.25	0.63	1.31	0.47	1.31	0.59	1.33	0.60	1.30	0.65	1.24
2. Reading for Understanding	22	0.69	2.17	0.69	2.16	0.69	2.15	0.64	2.16	0.67	2.17	0.59	2.21	0.72	2.12
3. Language	23	0.68	2.25	0.70	2.23	0.71	2.21	0.54	2.22	0.68	2.23	0.61	2.28	0.72	2.20
Grade 7															
1. Vocabulary	8	0.57	1.21	0.56	1.18	0.60	1.19	0.50	1.14	0.56	1.22	0.55	1.16	0.57	1.15
2. Reading for Understanding	22	0.75	2.13	0.75	2.11	0.77	2.12	0.72	2.11	0.75	2.14	0.75	2.13	0.77	2.06
3. Language	24	0.73	2.28	0.73	2.27	0.73	2.23	0.76	2.17	0.72	2.27	0.80	2.22	0.76	2.22
Grade 8															
1. Vocabulary	6	0.52	0.96	0.48	0.95	0.53	0.99	0.53	0.98	0.52	0.98	0.48	1.00	0.57	0.90
2. Reading for Understanding	24	0.71	2.20	0.70	2.19	0.71	2.21	0.71	2.23	0.70	2.20	0.70	2.19	0.73	2.15
3. Language	24	0.73	2.21	0.71	2.19	0.69	2.15	0.72	2.15	0.72	2.19	0.71	2.19	0.74	2.18
Grade 9															
1. Vocabulary	7	0.44	1.21	0.46	1.20	0.42	1.20	0.44	1.19	0.36	1.23	0.35	1.24	0.47	1.17
2. Reading for Understanding	27	0.72	2.43	0.72	2.44	0.71	2.40	0.75	2.38	0.71	2.43	0.71	2.42	0.78	2.36
3. Language	26	0.68	2.42	0.67	2.43	0.71	2.37	0.67	2.36	0.68	2.41	0.68	2.41	0.72	2.40
Grade 10															
1. Vocabulary	7	0.42	1.18	0.52	1.13	0.39	1.16	0.45	1.15	0.44	1.15	0.47	1.16	0.48	1.14
2. Reading for Understanding	27	0.61	2.48	0.64	2.46	0.60	2.46	0.64	2.44	0.64	2.46	0.67	2.46	0.68	2.44
3. Language	26	0.61	2.43	0.69	2.42	0.64	2.43	0.68	2.36	0.66	2.42	0.76	2.36	0.71	2.40
Grade 11															
1. Vocabulary	7	0.23	1.26	0.38	1.24	0.24	1.25	0.34	1.25	0.20	1.26	–0.32	1.29	0.27	1.27
2. Reading for Understanding	29	0.59	2.55	0.66	2.55	0.51	2.55	0.51	2.52	0.58	2.55	0.61	2.53	0.64	2.56
3. Language	24	0.59	2.33	0.56	2.34	0.50	2.33	0.59	2.34	0.57	2.33	0.52	2.34	0.64	2.32

Table 8.B.38 Subscore Reliabilities and SEM for Mathematics by Primary Ethnicity-for-Economically Disadvantaged

Subscore Reliabilities and SEM for Mathematics by *Ethnicity—Economically Disadvantaged*															
Subscore Area	N of	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3															
1. Number Sense	24	0.76	2.27	0.78	2.26	0.83	2.16	0.77	2.22	0.78	2.23	0.77	2.20	0.79	2.21
2. Algebra and Data Analysis	13	0.65	1.65	0.69	1.59	0.68	1.58	0.59	1.66	0.66	1.62	0.71	1.60	0.69	1.59
3. Measurement and Geometry	11	0.59	1.46	0.57	1.45	0.63	1.42	0.53	1.43	0.59	1.44	0.35	1.46	0.61	1.41
Grade 4															
1. Number Sense	23	0.75	2.10	0.74	2.05	0.80	1.95	0.77	1.98	0.76	2.04	0.80	2.02	0.76	2.04
2. Algebra and Data Analysis	15	0.54	1.83	0.62	1.78	0.65	1.75	0.62	1.80	0.57	1.80	0.65	1.79	0.58	1.80
3. Measurement and Geometry	10	0.41	1.49	0.41	1.46	0.51	1.44	0.50	1.44	0.45	1.46	0.56	1.44	0.45	1.45
Grade 5															
1. Number Sense	21	0.76	2.04	0.75	2.04	0.80	1.92	0.77	1.95	0.75	1.98	0.82	1.91	0.77	1.99
2. Algebra and Data Analysis	17	0.73	1.87	0.69	1.88	0.77	1.80	0.66	1.84	0.73	1.82	0.70	1.84	0.73	1.81
3. Measurement and Geometry	10	0.49	1.48	0.42	1.51	0.57	1.45	0.38	1.52	0.51	1.47	0.56	1.44	0.55	1.47
Grade 6															
1. Number Sense	21	0.56	2.18	0.54	2.18	0.65	2.13	0.57	2.16	0.60	2.16	0.58	2.17	0.61	2.15
2. Algebra and Data Analysis	25	0.65	2.33	0.72	2.29	0.75	2.22	0.63	2.26	0.68	2.29	0.66	2.33	0.72	2.27
3. Measurement and Geometry	8	0.27	1.36	0.36	1.36	0.32	1.36	0.27	1.35	0.28	1.37	0.27	1.38	0.34	1.35
Grade 7															
1. Number Sense	18	0.37	2.02	0.51	2.02	0.53	2.00	0.40	2.02	0.40	2.02	0.47	2.00	0.44	2.01
2. Algebra and Data Analysis	25	0.56	2.39	0.55	2.40	0.69	2.33	0.62	2.37	0.59	2.38	0.63	2.37	0.60	2.37
3. Measurement and Geometry	11	0.33	1.56	0.35	1.56	0.35	1.57	0.36	1.57	0.34	1.57	0.34	1.55	0.41	1.56
Algebra I															
1. Number Properties, Operations, and Linear Equations	15	0.61	1.81	0.65	1.77	0.72	1.71	0.69	1.75	0.66	1.78	0.68	1.73	0.67	1.77
2. Graphing and Systems of Linear Equations	14	0.38	1.79	0.45	1.79	0.53	1.77	0.58	1.77	0.48	1.78	0.42	1.81	0.49	1.78
3. Quadratics and Polynomials	19	0.46	2.09	0.59	2.07	0.60	2.05	0.59	2.06	0.53	2.08	0.58	2.06	0.53	2.08
4. Functions and Rational Expressions	12	0.44	1.66	0.50	1.63	0.57	1.62	0.51	1.65	0.52	1.64	0.69	1.58	0.50	1.64
Geometry															
1. Logic and Geometric Proofs	23	0.52	2.29	0.22	2.35	0.63	2.25	0.64	2.30	0.58	2.29	0.67	2.31	0.64	2.25
2. Volume and Area Formulas	11	0.44	1.59	0.68	1.51	0.59	1.52	0.36	1.60	0.49	1.58	0.60	1.55	0.58	1.55
3. Angle Relationships, Constructions, and Lines	14	0.22	1.79	0.60	1.68	0.47	1.76	0.51	1.70	0.35	1.77	0.41	1.83	0.41	1.77
4. Trigonometry	12	0.33	1.66	0.18	1.71	0.44	1.66	0.50	1.67	0.38	1.66	0.48	1.63	0.38	1.67

Table 8.B.39 Subscore Reliabilities and SEM for Science by Primary Ethnicity-for-Economically Disadvantaged

Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5 Science															
1. Physical Sciences	16	0.53	1.86	0.58	1.83	0.47	1.85	0.55	1.83	0.50	1.84	0.54	1.81	0.58	1.81
2. Life Sciences	16	0.64	1.82	0.65	1.78	0.64	1.81	0.61	1.82	0.63	1.80	0.66	1.82	0.69	1.71
3. Earth Sciences	16	0.56	1.82	0.62	1.77	0.54	1.81	0.53	1.80	0.54	1.79	0.62	1.73	0.62	1.74
Grade 8 Science															
1. Motion	19	0.59	2.03	0.58	2.02	0.62	1.99	0.65	1.97	0.60	2.01	0.65	1.99	0.64	1.95
2. Matter	23	0.63	2.28	0.65	2.27	0.70	2.24	0.70	2.25	0.64	2.28	0.69	2.26	0.70	2.24
3. Earth Science	7	0.53	1.16	0.52	1.14	0.53	1.13	0.37	1.16	0.53	1.14	0.58	1.13	0.59	1.08
4. Investigation and Experimentation	5	0.32	1.06	0.42	1.05	0.44	1.01	0.46	1.02	0.37	1.05	0.36	1.06	0.40	1.03
Grade 10 Life Science															
1. Cell Biology and Genetics	22	0.59	2.24	0.59	2.21	0.59	2.21	0.70	2.17	0.56	2.23	0.68	2.17	0.63	2.21
2. Evolution and Ecology	22	0.65	2.20	0.79	2.11	0.66	2.16	0.71	2.09	0.67	2.17	0.68	2.20	0.70	2.14
3. Physiology	10	0.62	1.45	0.72	1.38	0.62	1.43	0.73	1.32	0.59	1.46	0.44	1.52	0.65	1.41
4. Investigation and Experimentation	6	0.34	1.17	0.47	1.14	0.28	1.18	0.54	1.07	0.37	1.16	0.41	1.17	0.41	1.15

Table 8.B.40 Subscore Reliabilities and SEM for Grade-specific CMA by Primary Ethnicity-for-Economically Disadvantaged

Subscore Reliabilities and SEM for Grade-specific CMA by *Ethnicity—Economically Disadvantaged*															
Subscore Area	N of Items	African American		American Indian		Asian		Filipino		Hispanic		Pacific Islander		White	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – 8															
1. Number Properties, Operations, and Linear Equations	15	0.60	1.81	0.71	1.72	0.73	1.73	0.60	1.80	0.66	1.78	0.74	1.72	0.69	1.77
2. Graphing and Systems of Linear Equations	14	0.40	1.79	0.41	1.79	0.65	1.73	0.55	1.78	0.51	1.78	0.54	1.80	0.51	1.78
3. Quadratics and Polynomials	19	0.46	2.09	0.63	2.07	0.65	2.04	0.63	2.06	0.56	2.08	0.64	2.07	0.49	2.09
4. Functions and Rational Expressions	12	0.45	1.65	0.66	1.59	0.55	1.63	0.52	1.64	0.54	1.64	0.78	1.53	0.54	1.63
Geometry – 9															
1. Logic and Geometric Proofs	23	0.60	2.28	–	–	–	–	–	–	0.62	2.28	–	–	0.55	2.29
2. Volume and Area Formulas	11	0.37	1.59	–	–	–	–	–	–	0.51	1.57	–	–	0.72	1.48
3. Angle Relationships, Constructions, and Lines	14	0.07	1.81	–	–	–	–	–	–	0.33	1.77	–	–	0.10	1.83
4. Trigonometry	12	0.31	1.67	–	–	–	–	–	–	0.38	1.67	–	–	0.43	1.67

Table 8.B.41 Subscore Reliabilities and SEM for ELA by Disability

Subscore Reliabilities and SEM for ELA by *Disability*													
Subscore Area	N of	Autism		Deafness		Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disability	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3													
1. Vocabulary	14	0.73	1.61	0.66	1.73	0.74	1.59	0.67	1.63	0.68	1.73	0.72	1.70
2. Reading for Understanding	17	0.64	1.92	0.55	1.96	0.70	1.88	0.65	1.91	0.48	1.96	0.70	1.91
3. Language	17	0.71	1.85	0.68	1.90	0.76	1.85	0.70	1.83	0.60	1.95	0.65	1.94
Grade 4													
1. Vocabulary	11	0.60	1.46	0.55	1.57	0.66	1.41	0.63	1.46	0.42	1.60	0.55	1.57
2. Reading for Understanding	16	0.69	1.83	0.48	1.89	0.69	1.80	0.62	1.86	0.41	1.92	0.53	1.84
3. Language	21	0.74	2.08	0.65	2.14	0.78	2.06	0.72	2.08	0.55	2.18	0.69	2.15
Grade 5													
1. Vocabulary	8	0.52	1.22	0.40	1.32	0.55	1.20	0.48	1.23	0.38	1.34	0.56	1.25
2. Reading for Understanding	18	0.63	2.01	0.47	2.02	0.71	1.97	0.65	2.00	0.39	2.03	0.74	1.97
3. Language	22	0.76	2.08	0.71	2.14	0.78	2.08	0.71	2.05	0.59	2.22	0.54	2.24
Grade 6													
1. Vocabulary	9	0.66	1.30	0.40	1.41	0.67	1.26	0.60	1.34	0.47	1.41	0.54	1.41
2. Reading for Understanding	22	0.73	2.15	0.46	2.21	0.75	2.12	0.70	2.16	0.51	2.23	0.66	2.22
3. Language	23	0.71	2.19	0.61	2.26	0.76	2.20	0.67	2.22	0.61	2.30	0.70	2.25
Grade 7													
1. Vocabulary	8	0.61	1.18	0.52	1.31	0.61	1.16	0.51	1.24	0.44	1.33	0.51	1.28
2. Reading for Understanding	22	0.79	2.10	0.73	2.17	0.79	2.08	0.72	2.16	0.59	2.22	0.65	2.23
3. Language	24	0.79	2.18	0.68	2.31	0.79	2.23	0.74	2.22	0.57	2.34	0.66	2.31
Grade 8													
1. Vocabulary	6	0.52	1.01	0.46	1.14	0.60	0.93	0.55	0.98	0.41	1.14	0.69	0.95
2. Reading for Understanding	24	0.73	2.23	0.71	2.25	0.75	2.17	0.74	2.20	0.55	2.32	0.70	2.28
3. Language	24	0.74	2.13	0.64	2.26	0.79	2.18	0.74	2.15	0.63	2.31	0.71	2.24
Grade 9													
1. Vocabulary	7	0.50	1.16	0.18	1.27	0.53	1.14	0.39	1.21	0.25	1.26	0.47	1.22
2. Reading for Understanding	27	0.77	2.38	0.58	2.44	0.81	2.35	0.71	2.41	0.50	2.47	0.68	2.47
3. Language	26	0.76	2.33	0.54	2.39	0.76	2.38	0.70	2.39	0.41	2.45	0.66	2.40
Grade 10													
1. Vocabulary	7	0.52	1.14	0.25	1.20	0.52	1.15	0.45	1.14	0.21	1.23	0.32	1.24
2. Reading for Understanding	27	0.66	2.46	0.50	2.48	0.74	2.43	0.60	2.47	0.44	2.48	0.60	2.44
3. Language	26	0.72	2.38	0.60	2.42	0.73	2.39	0.71	2.40	0.47	2.43	0.49	2.44
Grade 11													
1. Vocabulary	7	0.25	1.27	0.02	1.24	0.36	1.26	0.30	1.21	0.06	1.24	0.16	1.27
2. Reading for Understanding	29	0.65	2.53	0.36	2.53	0.69	2.54	0.56	2.54	0.38	2.54	0.71	2.52
3. Language	24	0.70	2.30	0.17	2.35	0.66	2.32	0.63	2.31	0.25	2.35	0.62	2.37

Table 8.B.42 Subscore Reliabilities and SEM for ELA by Disability (continued)

Subscore Reliabilities and SEM for ELA by *Disability* (continued)													
Subscore Area	N of	Orthopedic Impairment		Other Health Impairment		Specific Learning Disability		Speech or Language Impairment		Traumatic Brain Injury		Visual Impairment	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3													
1. Vocabulary	14	0.74	1.58	0.73	1.59	0.70	1.64	0.71	1.61	0.73	1.59	0.73	1.62
2. Reading for Understanding	17	0.71	1.88	0.67	1.89	0.65	1.91	0.63	1.91	0.57	1.95	0.67	1.89
3. Language	17	0.70	1.86	0.72	1.85	0.70	1.88	0.69	1.86	0.67	1.87	0.70	1.91
Grade 4													
1. Vocabulary	11	0.69	1.43	0.63	1.41	0.64	1.45	0.60	1.45	0.60	1.50	0.71	1.41
2. Reading for Understanding	16	0.70	1.83	0.69	1.80	0.65	1.84	0.64	1.83	0.55	1.89	0.78	1.73
3. Language	21	0.76	2.06	0.75	2.07	0.72	2.10	0.71	2.08	0.72	2.13	0.81	1.97
Grade 5													
1. Vocabulary	8	0.58	1.21	0.51	1.18	0.50	1.22	0.47	1.22	0.59	1.26	0.38	1.27
2. Reading for Understanding	18	0.65	2.01	0.68	1.98	0.64	2.01	0.59	2.02	0.66	2.02	0.66	2.00
3. Language	22	0.76	2.10	0.74	2.09	0.72	2.11	0.70	2.09	0.81	2.08	0.71	2.13
Grade 6													
1. Vocabulary	9	0.66	1.26	0.64	1.23	0.61	1.30	0.58	1.31	0.65	1.31	0.62	1.25
2. Reading for Understanding	22	0.75	2.12	0.72	2.11	0.69	2.14	0.67	2.15	0.76	2.13	0.76	2.09
3. Language	23	0.72	2.19	0.72	2.19	0.69	2.22	0.68	2.20	0.79	2.15	0.66	2.20
Grade 7													
1. Vocabulary	8	0.61	1.16	0.54	1.14	0.57	1.20	0.55	1.21	0.51	1.21	0.54	1.15
2. Reading for Understanding	22	0.78	2.09	0.76	2.07	0.76	2.11	0.74	2.13	0.74	2.15	0.67	2.13
3. Language	24	0.76	2.22	0.77	2.21	0.73	2.25	0.71	2.24	0.66	2.26	0.78	2.20
Grade 8													
1. Vocabulary	6	0.65	0.93	0.53	0.89	0.52	0.95	0.45	0.98	0.57	1.01	0.64	0.93
2. Reading for Understanding	24	0.78	2.17	0.72	2.15	0.71	2.18	0.66	2.21	0.68	2.22	0.74	2.21
3. Language	24	0.75	2.17	0.75	2.14	0.73	2.17	0.72	2.15	0.70	2.19	0.78	2.17
Grade 9													
1. Vocabulary	7	0.43	1.18	0.48	1.16	0.40	1.21	0.34	1.23	0.43	1.24	0.49	1.21
2. Reading for Understanding	27	0.77	2.39	0.78	2.36	0.73	2.41	0.70	2.43	0.78	2.41	0.82	2.32
3. Language	26	0.77	2.35	0.75	2.38	0.69	2.41	0.68	2.40	0.60	2.43	0.80	2.34
Grade 10													
1. Vocabulary	7	0.47	1.14	0.49	1.13	0.44	1.15	0.43	1.14	0.51	1.17	0.54	1.11
2. Reading for Understanding	27	0.73	2.43	0.68	2.44	0.65	2.45	0.58	2.47	0.55	2.49	0.71	2.45
3. Language	26	0.70	2.40	0.70	2.40	0.67	2.41	0.63	2.42	0.62	2.45	0.75	2.34
Grade 11													
1. Vocabulary	7	0.26	1.26	0.28	1.27	0.22	1.26	0.28	1.24	0.19	1.23	0.27	1.28
2. Reading for Understanding	29	0.60	2.56	0.67	2.53	0.60	2.55	0.55	2.55	0.62	2.56	0.64	2.52
3. Language	24	0.56	2.33	0.67	2.32	0.60	2.33	0.56	2.33	0.63	2.31	0.67	2.32

Table 8.B.43 Subscore Reliabilities and SEM for Mathematics by Disability

Subscore Reliabilities and SEM for Mathematics by *Disability*													
Subscore Area	N of Items	Autism		Deafness		Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disability	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3													
1. Number Sense	24	0.82	2.19	0.76	2.14	0.79	2.23	0.79	2.14	0.63	2.30	0.76	2.29
2. Algebra and Data Analysis	13	0.68	1.61	0.55	1.62	0.72	1.59	0.71	1.55	0.56	1.70	0.67	1.66
3. Measurement and Geometry	11	0.64	1.42	0.53	1.39	0.70	1.41	0.55	1.40	0.57	1.55	0.68	1.50
Grade 4													
1. Number Sense	23	0.81	2.03	0.79	2.06	0.76	2.09	0.78	1.98	0.63	2.25	0.78	2.16
2. Algebra and Data Analysis	15	0.63	1.79	0.40	1.84	0.60	1.81	0.60	1.79	0.47	1.84	0.64	1.79
3. Measurement and Geometry	10	0.48	1.45	0.28	1.50	0.39	1.50	0.46	1.44	0.19	1.53	0.43	1.52
Grade 5													
1. Number Sense	21	0.79	2.00	0.83	1.89	0.75	2.09	0.78	1.89	0.71	2.14	0.76	2.08
2. Algebra and Data Analysis	17	0.74	1.85	0.76	1.82	0.69	1.89	0.75	1.77	0.57	1.95	0.73	1.83
3. Measurement and Geometry	10	0.55	1.47	0.60	1.44	0.47	1.49	0.55	1.44	0.36	1.51	0.42	1.49
Grade 6													
1. Number Sense	21	0.69	2.12	0.62	2.16	0.63	2.16	0.59	2.16	0.49	2.20	0.57	2.20
2. Algebra and Data Analysis	25	0.75	2.27	0.67	2.29	0.73	2.31	0.70	2.25	0.61	2.37	0.73	2.31
3. Measurement and Geometry	8	0.41	1.34	0.13	1.38	0.29	1.35	0.31	1.36	0.14	1.33	0.37	1.34
Grade 7													
1. Number Sense	18	0.52	1.99	0.28	2.02	0.43	2.01	0.44	2.00	0.17	2.00	–0.40	2.09
2. Algebra and Data Analysis	25	0.62	2.36	0.54	2.36	0.57	2.39	0.67	2.33	0.32	2.37	0.69	2.31
3. Measurement and Geometry	11	0.42	1.56	0.50	1.54	0.38	1.57	0.35	1.57	0.24	1.55	0.37	1.57
Algebra I													
1. Number Properties, Operations, and Linear Equations	15	0.70	1.75	0.72	1.70	0.66	1.80	0.68	1.74	0.45	1.82	0.71	1.75
2. Graphing and Systems of Linear Equations	14	0.54	1.77	0.53	1.76	0.46	1.78	0.50	1.77	0.34	1.77	0.56	1.79
3. Quadratics and Polynomials	19	0.60	2.05	0.52	2.07	0.45	2.09	0.58	2.05	0.35	2.09	0.52	2.08
4. Functions and Rational Expressions	12	0.53	1.63	0.31	1.68	0.49	1.63	0.53	1.63	0.29	1.64	0.56	1.66
Geometry													
1. Logic and Geometric Proofs	23	0.66	2.23	0.59	2.28	0.68	2.26	0.56	2.25	0.42	2.25	–	–
2. Volume and Area Formulas	11	0.63	1.52	0.60	1.54	0.64	1.53	0.67	1.51	0.42	1.57	–	–
3. Angle Relationships, Constructions, and Lines	14	0.59	1.72	0.44	1.72	0.42	1.78	0.45	1.71	0.20	1.77	–	–
4. Trigonometry	12	0.55	1.63	0.35	1.66	0.44	1.65	0.40	1.65	0.22	1.62	–	–

Table 8.B.44 Subscore Reliabilities and SEM for Mathematics by Disability (continued)

Subscore Area	N of Items	Orthopedic Impairment		Other Health Impairment		Specific Learning Disability		Speech or Language Impairment		Traumatic Brain Injury		Visual Impairment	
		Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 3													
1. Number Sense	24	0.77	2.25	0.78	2.23	0.77	2.22	0.79	2.20	0.84	2.18	0.80	2.25
2. Algebra and Data Analysis	13	0.73	1.58	0.66	1.61	0.67	1.61	0.67	1.60	0.68	1.64	0.65	1.63
3. Measurement and Geometry	11	0.58	1.46	0.60	1.42	0.58	1.42	0.60	1.42	0.51	1.47	0.69	1.41
Grade 4													
1. Number Sense	23	0.79	2.05	0.76	2.04	0.75	2.03	0.78	2.00	0.80	2.16	0.84	2.03
2. Algebra and Data Analysis	15	0.62	1.80	0.60	1.80	0.56	1.80	0.61	1.78	0.56	1.84	0.58	1.81
3. Measurement and Geometry	10	0.49	1.45	0.47	1.45	0.45	1.46	0.46	1.45	0.42	1.49	0.52	1.45
Grade 5													
1. Number Sense	21	0.81	1.99	0.76	1.99	0.75	1.97	0.76	1.96	0.81	2.02	0.77	2.04
2. Algebra and Data Analysis	17	0.75	1.84	0.74	1.81	0.73	1.81	0.72	1.82	0.74	1.87	0.77	1.84
3. Measurement and Geometry	10	0.55	1.47	0.51	1.47	0.52	1.47	0.53	1.47	0.66	1.45	0.46	1.51
Grade 6													
1. Number Sense	21	0.65	2.16	0.61	2.15	0.59	2.15	0.59	2.15	0.68	2.14	0.60	2.17
2. Algebra and Data Analysis	25	0.75	2.29	0.71	2.28	0.68	2.28	0.68	2.27	0.78	2.25	0.73	2.25
3. Measurement and Geometry	8	0.28	1.35	0.29	1.36	0.29	1.36	0.30	1.36	0.50	1.32	0.24	1.35
Grade 7													
1. Number Sense	18	0.49	1.99	0.44	2.02	0.42	2.02	0.42	2.02	0.43	2.00	0.46	2.01
2. Algebra and Data Analysis	25	0.56	2.37	0.63	2.37	0.60	2.38	0.58	2.36	0.47	2.41	0.70	2.34
3. Measurement and Geometry	11	0.37	1.56	0.40	1.56	0.36	1.56	0.38	1.56	0.51	1.54	0.35	1.59
Algebra I													
1. Number Properties, Operations, and Linear Equations	15	0.62	1.78	0.67	1.76	0.66	1.78	0.67	1.75	0.61	1.76	0.76	1.69
2. Graphing and Systems of Linear Equations	14	0.47	1.79	0.49	1.78	0.47	1.78	0.51	1.78	0.51	1.78	0.62	1.78
3. Quadratics and Polynomials	19	0.48	2.09	0.52	2.09	0.53	2.08	0.55	2.07	0.63	2.03	0.66	2.03
4. Functions and Rational Expressions	12	0.52	1.64	0.52	1.64	0.52	1.64	0.53	1.64	0.52	1.65	0.53	1.63
Geometry													
1. Logic and Geometric Proofs	23	0.57	2.27	0.66	2.25	0.59	2.28	0.59	2.27	0.65	2.28	0.49	2.26
2. Volume and Area Formulas	11	0.46	1.57	0.59	1.54	0.51	1.58	0.61	1.54	0.75	1.47	0.69	1.52
3. Angle Relationships, Constructions, and Lines	14	0.53	1.73	0.46	1.76	0.36	1.77	0.43	1.76	0.39	1.77	0.14	1.86
4. Trigonometry	12	0.44	1.65	0.42	1.66	0.39	1.66	0.43	1.65	0.11	1.71	0.29	1.65

Table 8.B.45 Subscore Reliabilities and SEM for Science by Disability

Subscore Reliabilities and SEM for Science by *Disability*													
Subscore Area	N of	Autism		Deafness		Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disability	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5													
1. Physical Science	16	0.59	1.82	0.58	1.83	0.64	1.84	0.50	1.84	0.45	1.90	0.69	1.78
2. Life Science	16	0.71	1.77	0.57	1.88	0.74	1.76	0.63	1.80	0.57	1.88	0.76	1.79
3. Earth Science	16	0.59	1.77	0.52	1.86	0.66	1.79	0.59	1.80	0.49	1.88	0.60	1.84
Grade 8													
1. Motion	19	0.67	1.97	0.60	2.07	0.68	1.99	0.64	2.00	0.52	2.10	0.61	2.00
2. Matter	23	0.72	2.22	0.60	2.27	0.68	2.27	0.67	2.26	0.39	2.31	0.59	2.29
3. Earth Science	7	0.60	1.07	0.53	1.16	0.62	1.13	0.59	1.08	0.34	1.26	0.44	1.19
4. Investigation and Experimentation	5	0.45	1.02	0.34	1.06	0.42	1.04	0.51	0.99	0.00	1.07	0.28	1.05
Life Science													
1. Cell Biology	22	0.67	2.19	0.50	2.26	0.69	2.20	0.65	2.19	0.38	2.27	0.62	2.22
2. Evolution	22	0.75	2.09	0.53	2.23	0.75	2.15	0.64	2.16	0.44	2.23	0.74	2.17
3. Physiology	10	0.67	1.39	0.48	1.51	0.68	1.40	0.64	1.41	0.47	1.50	0.70	1.41
4. Investigation and Experimentation	6	0.45	1.13	0.17	1.17	0.49	1.13	0.38	1.14	0.13	1.19	0.38	1.17

Table 8.B.46 Subscore Reliabilities and SEM for Science by Disability (continued)

Subscore Reliabilities and SEM for Science by *Disability* (continued)													
Subscore Area	N of	Orthopedic Impairment		Other Health Impairment		Specific Learning Disability		Speech or Language Impairment		Traumatic Brain Injury		Visual Impairment	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Grade 5													
1. Physical Science	16	0.57	1.86	0.57	1.82	0.53	1.83	0.50	1.83	0.58	1.89	0.47	1.88
2. Life Science	16	0.72	1.77	0.66	1.75	0.65	1.77	0.61	1.79	0.67	1.81	0.59	1.85
3. Earth Science	16	0.64	1.79	0.61	1.77	0.57	1.77	0.54	1.78	0.60	1.85	0.51	1.81
Grade 8													
1. Motion	19	0.58	2.02	0.62	1.97	0.61	1.99	0.54	2.01	0.65	2.01	0.64	2.00
2. Matter	23	0.63	2.27	0.70	2.25	0.67	2.27	0.63	2.27	0.64	2.27	0.67	2.26
3. Earth Science	7	0.59	1.11	0.57	1.11	0.55	1.12	0.47	1.13	0.59	1.11	0.33	1.11
4. Investigation and Experimentation	5	0.48	1.01	0.43	1.03	0.39	1.04	0.34	1.05	0.42	1.05	0.60	0.96
Life Science													
1. Cell Biology	22	0.61	2.20	0.63	2.22	0.58	2.23	0.57	2.22	0.60	2.24	0.57	2.25
2. Evolution	22	0.66	2.18	0.72	2.15	0.68	2.17	0.64	2.17	0.45	2.26	0.76	2.12
3. Physiology	10	0.67	1.42	0.66	1.40	0.62	1.44	0.57	1.46	0.30	1.55	0.65	1.38
4. Investigation and Experimentation	6	0.40	1.15	0.40	1.15	0.37	1.16	0.39	1.16	0.29	1.19	0.64	1.06

Table 8.B.47 Subscore Reliabilities and SEM for Grade-specific CMA by Disability

Subscore Reliabilities and SEM for Grade-specific CMA by *Disability*													
Subscore Area	N of	Autism		Deafness		Emotional Disturbance		Hard of Hearing		MR/ID		Multiple Disability	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – 8													
1. Number Properties, Operations, and Linear Equations	15	0.71	1.75	0.73	1.66	0.58	1.83	0.66	1.75	0.44	1.83	–	–
2. Graphing and Systems of Linear Equations	14	0.55	1.76	0.64	1.75	0.35	1.77	0.37	1.81	0.29	1.77	–	–
3. Quadratics and Polynomials	19	0.63	2.05	0.48	2.12	0.40	2.10	0.66	2.02	0.35	2.07	–	–
4. Functions and Rational Expressions	12	0.57	1.62	0.49	1.67	0.48	1.62	0.57	1.62	0.39	1.62	–	–
Geometry – 9													
1. Logic and Geometric Proofs	23	0.49	2.23	–	–	–	–	–	–	–	–	–	–
2. Volume and Area Formulas	11	0.81	1.36	–	–	–	–	–	–	–	–	–	–
3. Angle Relationships, Constructions, and Lines	14	0.65	1.69	–	–	–	–	–	–	–	–	–	–
4. Trigonometry	12	0.75	1.39	–	–	–	–	–	–	–	–	–	–

Table 8.B.48 Subscore Reliabilities and SEM for Grade-specific CMA by Disability (continued)

Subscore Reliabilities and SEM for Grade-specific CMA by *Disability* (continued)													
Subscore Area	N of	Orthopedic Impairment		Other Health Impairment		Specific Learning Disability		Speech or Language Impairment		Traumatic Brain Injury		Visual Impairment	
	Items	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM	Reliab.	SEM
Algebra I – 8													
1. Number Properties, Operations, and Linear Equations	15	0.68	1.78	0.67	1.78	0.66	1.78	0.70	1.76	0.33	1.79	0.76	1.70
2. Graphing and Systems of Linear Equations	14	0.58	1.77	0.46	1.79	0.51	1.78	0.59	1.76	0.31	1.84	0.76	1.71
3. Quadratics and Polynomials	19	0.55	2.09	0.50	2.09	0.54	2.08	0.64	2.05	0.62	1.94	0.67	2.05
4. Functions and Rational Expressions	12	0.43	1.65	0.50	1.65	0.54	1.64	0.52	1.64	0.48	1.67	0.31	1.68
Geometry – 9													
1. Logic and Geometric Proofs	23	–	–	0.62	2.28	0.65	2.27	0.39	2.34	–	–	–	–
2. Volume and Area Formulas	11	–	–	0.52	1.57	0.56	1.55	0.53	1.54	–	–	–	–
3. Angle Relationships, Constructions, and Lines	14	–	–	0.29	1.79	0.42	1.76	0.57	1.69	–	–	–	–
4. Trigonometry	12	–	–	0.46	1.64	0.44	1.66	0.55	1.66	–	–	–	–

Table 8.B.49 Reliability of Classification for ELA, Grade Three

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 16	0.04	0.05	0.00	0.00	0.00	0.09
	17 – 28	0.02	0.33	0.05	0.00	0.00	0.40
	29 – 35	0.00	0.05	0.17	0.04	0.00	0.26
	36 – 40	0.00	0.00	0.05	0.10	0.02	0.17
	41 – 48	0.00	0.00	0.00	0.04	0.04	0.08
	Estimated Proportion Correctly Classified: Total = 0.68, Proficient & Above = 0.91						
Decision Consistency Alternate Form	0 – 16	0.04	0.05	0.00	0.00	0.00	0.09
	17 – 28	0.05	0.29	0.06	0.00	0.00	0.40
	29 – 35	0.00	0.07	0.13	0.05	0.01	0.26
	36 – 40	0.00	0.00	0.05	0.08	0.04	0.17
	41 – 48	0.00	0.00	0.00	0.03	0.04	0.08
	Estimated Proportion Consistently Classified: Total = 0.58, Proficient & Above = 0.88						

Table 8.B.50 Reliability of Classification for ELA, Grade Four (without essay)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 18	0.07	0.05	0.00	0.00	0.00	0.12
	19 – 25	0.03	0.17	0.05	0.00	0.00	0.26
	26 – 31	0.00	0.05	0.14	0.04	0.00	0.23
	32 – 36	0.00	0.00	0.05	0.10	0.03	0.19
	37 – 48	0.00	0.00	0.00	0.04	0.15	0.19
	Estimated Proportion Correctly Classified: Total = 0.64, Proficient & Above = 0.90						
Decision Consistency Alternate Form	0 – 18	0.07	0.05	0.01	0.00	0.00	0.12
	19 – 25	0.05	0.14	0.06	0.01	0.00	0.26
	26 – 31	0.00	0.06	0.11	0.05	0.01	0.23
	32 – 36	0.00	0.01	0.05	0.08	0.05	0.19
	37 – 48	0.00	0.00	0.01	0.04	0.14	0.19
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.86						

Table 8.B.51 Reliability of Classification for ELA, Grade Four (with essay)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 20	0.08	0.06	0.01	0.00	0.00	0.15
	21 – 27	0.03	0.15	0.07	0.01	0.00	0.25
	28 – 33	0.00	0.05	0.12	0.04	0.00	0.22
	34 – 39	0.00	0.01	0.07	0.11	0.03	0.21
	40 – 52	0.00	0.00	0.01	0.05	0.10	0.16
	Estimated Proportion Correctly Classified: Total = 0.56, Proficient & Above = 0.86						
Decision Consistency Alternate Form	0 – 20	0.08	0.06	0.02	0.00	0.00	0.15
	21 – 27	0.05	0.11	0.07	0.02	0.00	0.25
	28 – 33	0.01	0.06	0.09	0.05	0.01	0.22
	34 – 39	0.00	0.02	0.06	0.08	0.05	0.21
	40 – 52	0.00	0.00	0.02	0.05	0.10	0.16
	Estimated Proportion Consistently Classified: Total = 0.45, Proficient & Above = 0.81						

Table 8.B.52 Reliability of Classification for ELA, Grade Five

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 14	0.00	0.03	0.00	0.00	0.00	0.03
	15 – 24	0.00	0.26	0.06	0.00	0.00	0.33
	25 – 31	0.00	0.06	0.20	0.04	0.00	0.30
	32 – 36	0.00	0.00	0.06	0.10	0.03	0.19
	37 – 48	0.00	0.00	0.00	0.04	0.10	0.14
	Estimated Proportion Correctly Classified: Total = 0.67, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 14	0.01	0.02	0.00	0.00	0.00	0.03
	15 – 24	0.03	0.22	0.08	0.01	0.00	0.33
	25 – 31	0.00	0.08	0.16	0.06	0.01	0.30
	32 – 36	0.00	0.01	0.06	0.08	0.04	0.19
	37 – 48	0.00	0.00	0.01	0.04	0.10	0.14
	Estimated Proportion Consistently Classified: Total = 0.56, Proficient & Above = 0.85						

Table 8.B.53 Reliability of Classification for ELA, Grade Six

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.12	0.05	0.00	0.00	0.00	0.17
	23 – 30	0.03	0.19	0.05	0.00	0.00	0.27
	31 – 35	0.00	0.05	0.10	0.04	0.00	0.20
	36 – 40	0.00	0.01	0.05	0.10	0.03	0.18
	41 – 54	0.00	0.00	0.00	0.04	0.13	0.18
	Estimated Proportion Correctly Classified: Total = 0.64, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 22	0.11	0.06	0.00	0.00	0.00	0.17
	23 – 30	0.05	0.15	0.06	0.01	0.00	0.27
	31 – 35	0.00	0.06	0.07	0.05	0.01	0.19
	36 – 40	0.00	0.02	0.05	0.07	0.05	0.18
	41 – 54	0.00	0.00	0.01	0.04	0.12	0.18
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.85						

Table 8.B.54 Reliability of Classification for ELA, Grade Seven (without essay)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.13	0.05	0.00	0.00	0.00	0.18
	23 – 31	0.03	0.21	0.05	0.00	0.00	0.29
	32 – 37	0.00	0.05	0.13	0.04	0.00	0.22
	38 – 42	0.00	0.00	0.05	0.09	0.03	0.17
	43 – 54	0.00	0.00	0.00	0.04	0.11	0.14
	Estimated Proportion Correctly Classified: Total = 0.66, Proficient & Above = 0.91						
Decision Consistency Alternate Form	0 – 22	0.12	0.05	0.00	0.00	0.00	0.18
	23 – 31	0.05	0.18	0.06	0.01	0.00	0.29
	32 – 37	0.00	0.06	0.10	0.05	0.01	0.22
	38 – 42	0.00	0.01	0.05	0.07	0.04	0.17
	43 – 54	0.00	0.00	0.01	0.04	0.10	0.14
	Estimated Proportion Consistently Classified: Total = 0.56, Proficient & Above = 0.87						

Table 8.B.55 Reliability of Classification for ELA, Grade Seven (with essay)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 24	0.12	0.06	0.00	0.00	0.00	0.18
	25 – 34	0.04	0.22	0.05	0.00	0.00	0.31
	35 – 40	0.00	0.06	0.10	0.04	0.00	0.21
	41 – 45	0.00	0.01	0.05	0.08	0.03	0.16
	46 – 58	0.00	0.00	0.01	0.05	0.09	0.14
	Estimated Proportion Correctly Classified: Total = 0.60, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 24	0.10	0.07	0.01	0.00	0.00	0.18
	25 – 34	0.06	0.17	0.06	0.01	0.00	0.31
	35 – 40	0.01	0.06	0.08	0.05	0.02	0.21
	41 – 45	0.00	0.02	0.05	0.06	0.04	0.16
	46 – 58	0.00	0.00	0.02	0.04	0.08	0.14
	Estimated Proportion Consistently Classified: Total = 0.49, Proficient & Above = 0.84						

Table 8.B.56 Reliability of Classification for ELA, Grade Eight

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 24	0.12	0.05	0.00	0.00	0.00	0.17
	25 – 32	0.03	0.19	0.05	0.00	0.00	0.27
	33 – 37	0.00	0.05	0.11	0.05	0.00	0.21
	38 – 42	0.00	0.01	0.05	0.11	0.03	0.20
	43 – 54	0.00	0.00	0.00	0.04	0.11	0.15
	Estimated Proportion Correctly Classified: Total = 0.63, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 24	0.11	0.05	0.01	0.00	0.00	0.17
	25 – 32	0.05	0.15	0.06	0.01	0.00	0.27
	33 – 37	0.00	0.06	0.08	0.05	0.01	0.21
	38 – 42	0.00	0.02	0.05	0.08	0.05	0.20
	43 – 54	0.00	0.00	0.01	0.04	0.10	0.15
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.85						

Table 8.B.57 Reliability of Classification for ELA, Grade Nine

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 24	0.20	0.07	0.00	0.00	0.00	0.27
	25 – 32	0.06	0.21	0.05	0.00	0.00	0.31
	33 – 39	0.00	0.06	0.12	0.03	0.00	0.21
	40 – 46	0.00	0.00	0.04	0.08	0.01	0.15
	47 – 60	0.00	0.00	0.00	0.02	0.04	0.07
	Estimated Proportion Correctly Classified: Total = 0.66, Proficient & Above = 0.92						
Decision Consistency Alternate Form	0 – 24	0.17	0.08	0.01	0.00	0.00	0.27
	25 – 32	0.08	0.16	0.06	0.01	0.00	0.31
	33 – 39	0.01	0.06	0.10	0.04	0.00	0.21
	40 – 46	0.00	0.01	0.04	0.07	0.02	0.15
	47 – 60	0.00	0.00	0.00	0.02	0.04	0.07
	Estimated Proportion Consistently Classified: Total = 0.54, Proficient & Above = 0.89						

Table 8.B.58 Reliability of Classification for ELA, Grade Ten

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 23	0.18	0.07	0.00	0.00	0.00	0.25
	24 – 31	0.06	0.23	0.05	0.00	0.00	0.34
	32 – 38	0.00	0.06	0.14	0.03	0.00	0.23
	39 – 45	0.00	0.00	0.04	0.08	0.01	0.13
	46 – 60	0.00	0.00	0.00	0.02	0.02	0.05
	Estimated Proportion Correctly Classified: Total = 0.65, Proficient & Above = 0.93						
Decision Consistency Alternate Form	0 – 23	0.16	0.08	0.01	0.00	0.00	0.25
	24 – 31	0.08	0.18	0.07	0.01	0.00	0.34
	32 – 38	0.01	0.07	0.11	0.04	0.00	0.23
	39 – 45	0.00	0.01	0.04	0.06	0.02	0.13
	46 – 60	0.00	0.00	0.00	0.02	0.02	0.05
	Estimated Proportion Consistently Classified: Total = 0.54, Proficient & Above = 0.89						

Table 8.B.59 Reliability of Classification for ELA, Grade Eleven

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.21	0.09	0.00	0.00	0.00	0.31
	23 – 29	0.08	0.23	0.05	0.00	0.00	0.35
	30 – 36	0.00	0.07	0.12	0.02	0.00	0.22
	37 – 43	0.00	0.00	0.04	0.05	0.00	0.09
	44 – 60	0.00	0.00	0.00	0.01	0.02	0.03
	Estimated Proportion Correctly Classified: Total = 0.62, Proficient & Above = 0.94						
Decision Consistency Alternate Form	0 – 22	0.18	0.11	0.01	0.00	0.00	0.31
	23 – 29	0.10	0.17	0.07	0.01	0.00	0.35
	30 – 36	0.01	0.07	0.10	0.03	0.00	0.22
	37 – 43	0.00	0.01	0.03	0.04	0.01	0.09
	44 – 60	0.00	0.00	0.00	0.01	0.02	0.03
	Estimated Proportion Consistently Classified: Total = 0.51, Proficient & Above = 0.91						

Table 8.B.60 Reliability of Classification for Mathematics, Grade Three

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 15	0.01	0.03	0.00	0.00	0.00	0.05
	16 – 27	0.01	0.30	0.05	0.00	0.00	0.36
	28 – 34	0.00	0.05	0.17	0.04	0.00	0.26
	35 – 42	0.00	0.00	0.05	0.21	0.01	0.27
	43 – 48	0.00	0.00	0.00	0.03	0.02	0.05
	Estimated Proportion Correctly Classified: Total = 0.72, Proficient & Above = 0.91						
Decision Consistency Alternate Form	0 – 15	0.02	0.03	0.00	0.00	0.00	0.05
	16 – 27	0.03	0.26	0.06	0.00	0.00	0.36
	28 – 34	0.00	0.07	0.14	0.06	0.00	0.26
	35 – 42	0.00	0.00	0.06	0.18	0.03	0.27
	43 – 48	0.00	0.00	0.00	0.03	0.02	0.05
	Estimated Proportion Consistently Classified: Total = 0.62, Proficient & Above = 0.87						

Table 8.B.61 Reliability of Classification for Mathematics, Grade Four

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 18	0.04	0.05	0.00	0.00	0.00	0.09
	19 – 26	0.02	0.22	0.06	0.00	0.00	0.30
	27 – 31	0.00	0.06	0.13	0.05	0.00	0.23
	32 – 37	0.00	0.00	0.06	0.15	0.02	0.23
	38 – 48	0.00	0.00	0.00	0.04	0.10	0.14
	Estimated Proportion Correctly Classified: Total = 0.63, Proficient & Above = 0.88						
Decision Consistency Alternate Form	0 – 18	0.04	0.04	0.00	0.00	0.00	0.09
	19 – 26	0.04	0.17	0.07	0.02	0.00	0.30
	27 – 31	0.00	0.07	0.09	0.06	0.01	0.23
	32 – 37	0.00	0.02	0.06	0.12	0.04	0.23
	38 – 48	0.00	0.00	0.01	0.04	0.09	0.14
	Estimated Proportion Consistently Classified: Total = 0.52, Proficient & Above = 0.84						

Table 8.B.62 Reliability of Classification for Mathematics, Grade Five (pencil-and-paper version)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 15	0.02	0.03	0.00	0.00	0.00	0.05
	16 – 24	0.01	0.19	0.05	0.00	0.00	0.25
	25 – 30	0.00	0.04	0.14	0.05	0.00	0.22
	31 – 37	0.00	0.00	0.06	0.19	0.04	0.29
	38 – 48	0.00	0.00	0.00	0.05	0.14	0.19
	Estimated Proportion Correctly Classified: Total = 0.68, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 15	0.02	0.03	0.00	0.00	0.00	0.05
	16 – 24	0.03	0.15	0.06	0.01	0.00	0.25
	25 – 30	0.00	0.06	0.10	0.06	0.00	0.22
	31 – 37	0.00	0.01	0.06	0.15	0.06	0.29
	38 – 48	0.00	0.00	0.00	0.05	0.14	0.19
	Estimated Proportion Consistently Classified: Total = 0.57, Proficient & Above = 0.85						

Table 8.B.63 Reliability of Classification for Mathematics, Grade Six

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 20	0.07	0.06	0.00	0.00	0.00	0.12
	21 – 27	0.03	0.20	0.06	0.00	0.00	0.29
	28 – 32	0.00	0.06	0.12	0.05	0.00	0.24
	33 – 39	0.00	0.01	0.06	0.15	0.02	0.24
	40 – 54	0.00	0.00	0.00	0.04	0.07	0.10
	Estimated Proportion Correctly Classified: Total = 0.61, Proficient & Above = 0.88						
Decision Consistency Alternate Form	0 – 20	0.06	0.05	0.01	0.00	0.00	0.12
	21 – 27	0.05	0.15	0.07	0.02	0.00	0.29
	28 – 32	0.01	0.07	0.09	0.06	0.00	0.24
	33 – 39	0.00	0.02	0.06	0.12	0.04	0.24
	40 – 54	0.00	0.00	0.00	0.04	0.06	0.10
	Estimated Proportion Consistently Classified: Total = 0.49, Proficient & Above = 0.83						

Table 8.B.64 Reliability of Classification for Mathematics, Grade Seven

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 20	0.15	0.09	0.01	0.00	0.00	0.25
	21 – 25	0.06	0.17	0.06	0.01	0.00	0.30
	26 – 29	0.01	0.07	0.08	0.04	0.00	0.20
	30 – 36	0.00	0.02	0.06	0.11	0.01	0.19
	37 – 54	0.00	0.00	0.00	0.03	0.03	0.06
	Estimated Proportion Correctly Classified: Total = 0.54, Proficient & Above = 0.88						
Decision Consistency Alternate Form	0 – 20	0.13	0.09	0.02	0.00	0.00	0.25
	21 – 25	0.09	0.12	0.06	0.03	0.00	0.30
	26 – 29	0.02	0.06	0.06	0.05	0.00	0.20
	30 – 36	0.00	0.03	0.05	0.09	0.02	0.19
	37 – 54	0.00	0.00	0.00	0.02	0.03	0.06
	Estimated Proportion Consistently Classified: Total = 0.44, Proficient & Above = 0.83						

Table 8.B.65 Reliability of Classification for Algebra I

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.14	0.08	0.00	0.00	0.00	0.23
	23 – 30	0.07	0.26	0.05	0.00	0.00	0.38
	31 – 38	0.00	0.07	0.15	0.02	0.00	0.25
	39 – 46	0.00	0.00	0.04	0.07	0.01	0.11
	47 – 60	0.00	0.00	0.00	0.01	0.02	0.03
	Estimated Proportion Correctly Classified: Total = 0.65, Proficient & Above = 0.94						
Decision Consistency Alternate Form	0 – 22	0.13	0.09	0.01	0.00	0.00	0.23
	23 – 30	0.10	0.21	0.08	0.00	0.00	0.38
	31 – 38	0.01	0.08	0.12	0.04	0.00	0.25
	39 – 46	0.00	0.00	0.04	0.06	0.01	0.11
	47 – 60	0.00	0.00	0.00	0.01	0.02	0.03
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.91						

Table 8.B.66 Reliability of Classification for Geometry

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.14	0.09	0.00	0.00	0.00	0.23
	23 – 30	0.07	0.29	0.05	0.00	0.00	0.41
	31 – 39	0.00	0.07	0.16	0.02	0.00	0.25
	40 – 48	0.00	0.00	0.03	0.05	0.00	0.09
	49 – 60	0.00	0.00	0.00	0.01	0.01	0.02
	Estimated Proportion Correctly Classified: Total = 0.65, Proficient & Above = 0.95						
Decision Consistency Alternate Form	0 – 22	0.12	0.10	0.01	0.00	0.00	0.23
	23 – 30	0.11	0.23	0.08	0.00	0.00	0.41
	31 – 39	0.01	0.08	0.14	0.03	0.00	0.25
	40 – 48	0.00	0.00	0.03	0.05	0.01	0.09
	49 – 60	0.00	0.00	0.00	0.01	0.01	0.02
	Estimated Proportion Consistently Classified: Total = 0.54, Proficient & Above = 0.93						

Table 8.B.67 Reliability of Classification for Science, Grade Five

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 15	0.01	0.02	0.00	0.00	0.00	0.03
	16 – 23	0.00	0.13	0.06	0.00	0.00	0.20
	24 – 30	0.00	0.04	0.24	0.06	0.00	0.34
	31 – 36	0.00	0.00	0.07	0.18	0.03	0.28
	37 – 48	0.00	0.00	0.00	0.05	0.09	0.15
	Estimated Proportion Correctly Classified: Total = 0.65, Proficient & Above = 0.86						
Decision Consistency Alternate Form	0 – 15	0.01	0.02	0.00	0.00	0.00	0.03
	16 – 23	0.02	0.11	0.07	0.01	0.00	0.20
	24 – 30	0.00	0.07	0.18	0.08	0.01	0.34
	31 – 36	0.00	0.01	0.08	0.14	0.05	0.28
	37 – 48	0.00	0.00	0.01	0.05	0.09	0.15
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.81						

Table 8.B.68 Reliability of Classification for Science, Grade Eight

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 21	0.08	0.05	0.01	0.00	0.00	0.14
	22 – 26	0.03	0.10	0.06	0.00	0.00	0.19
	27 – 33	0.00	0.05	0.19	0.05	0.00	0.30
	34 – 40	0.00	0.00	0.06	0.15	0.02	0.23
	41 – 54	0.00	0.00	0.00	0.04	0.10	0.14
	Estimated Proportion Correctly Classified: Total = 0.62, Proficient & Above = 0.89						
Decision Consistency Alternate Form	0 – 21	0.07	0.05	0.02	0.00	0.00	0.14
	22 – 26	0.05	0.07	0.06	0.01	0.00	0.19
	27 – 33	0.02	0.06	0.15	0.07	0.01	0.30
	34 – 40	0.00	0.01	0.07	0.12	0.04	0.23
	41 – 54	0.00	0.00	0.01	0.04	0.09	0.14
	Estimated Proportion Consistently Classified: Total = 0.51, Proficient & Above = 0.84						

Table 8.B.69 Reliability of Classification for Life Science (Grade 10)

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 23	0.15	0.07	0.00	0.00	0.00	0.22
	24 – 31	0.05	0.21	0.05	0.00	0.00	0.30
	32 – 39	0.00	0.06	0.17	0.03	0.00	0.26
	40 – 47	0.00	0.00	0.05	0.10	0.01	0.17
	48 – 60	0.00	0.00	0.00	0.02	0.03	0.05
	Estimated Proportion Correctly Classified: Total = 0.66, Proficient & Above = 0.92						
Decision Consistency Alternate Form	0 – 23	0.13	0.08	0.01	0.00	0.00	0.22
	24 – 31	0.07	0.16	0.07	0.00	0.00	0.30
	32 – 39	0.01	0.07	0.14	0.05	0.00	0.26
	40 – 47	0.00	0.01	0.05	0.09	0.02	0.17
	48 – 60	0.00	0.00	0.00	0.02	0.03	0.05
	Estimated Proportion Consistently Classified: Total = 0.55, Proficient & Above = 0.89						

Table 8.B.70 Reliability of Classification for Algebra I – Grade 8

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.14	0.08	0.00	0.00	0.00	0.23
	23 – 30	0.07	0.26	0.05	0.00	0.00	0.37
	31 – 38	0.00	0.07	0.15	0.02	0.00	0.24
	39 – 46	0.00	0.00	0.04	0.07	0.01	0.11
	47 – 60	0.00	0.00	0.00	0.01	0.03	0.04
	Estimated Proportion Correctly Classified: Total = 0.65, Proficient & Above = 0.94						
Decision Consistency Alternate Form	0 – 22	0.12	0.10	0.01	0.00	0.00	0.23
	23 – 30	0.10	0.20	0.07	0.00	0.00	0.37
	31 – 38	0.01	0.07	0.12	0.04	0.00	0.24
	39 – 46	0.00	0.00	0.04	0.06	0.01	0.11
	47 – 60	0.00	0.00	0.00	0.01	0.03	0.04
	Estimated Proportion Consistently Classified: Total = 0.53, Proficient & Above = 0.91						

Table 8.B.71 Reliability of Classification for Geometry – Grade 9

	Placement Score	Far Below Basic	Below Basic	Basic	Proficient	Advanced	Category Total
Decision Accuracy All-forms Average	0 – 22	0.18	0.08	0.00	0.00	0.00	0.26
	23 – 30	0.05	0.26	0.08	0.01	0.00	0.40
	31 – 39	0.00	0.05	0.19	0.00	0.00	0.24
	40 – 48	0.00	0.00	0.04	0.05	0.00	0.08
	49 – 60	0.00	0.00	0.01	0.01	0.00	0.02
	Estimated Proportion Correctly Classified: Total = 0.67, Proficient & Above = 0.94						
Decision Consistency Alternate Form	0 – 22	0.17	0.08	0.01	0.00	0.00	0.26
	23 – 30	0.08	0.20	0.10	0.01	0.00	0.40
	31 – 39	0.00	0.06	0.15	0.02	0.00	0.24
	40 – 48	0.00	0.00	0.04	0.04	0.00	0.08
	49 – 60	0.00	0.01	0.01	0.01	0.00	0.02
	Estimated Proportion Consistently Classified: Total = 0.57, Proficient & Above = 0.91						

Table 8.B.72 Interrater Agreement Analyses for ELA, Grade Four

		Rater 1								
		1	**%**	**2**	**%**	**3**	**%**	**4**	**%**	**Total**
	1	72	3.51	50	2.44	1	0.05	0	0.00	123
	2	42	2.05	594	28.96	212	10.34	9	0.44	857
	3	3	0.15	185	9.02	556	27.11	87	4.24	831
Rater 2	**4**	0	0.00	14	0.68	112	5.46	114	5.56	240
	Total	117	5.70	843	41.10	881	42.95	210	10.24	2,051

Percent Exact = 65.14%

Percent Adjacent = 33.54%

Percent Exact + Adjacent = 98.68%

Kappa = 0.45

Weighted Kappa =0.55

Table 8.B.73 Interrater Agreement Analyses for ELA, Grade Seven

		Rater 1								
		1	%	2	%	3	%	4	%	Total
	1	53	2.27	42	1.80	11	0.47	0	0.00	106
	2	37	1.59	249	10.69	212	9.10	11	0.47	509
	3	8	0.34	185	7.94	1,128	48.41	132	5.67	1,453
Rater 2	4	1	0.04	5	0.21	135	5.79	121	5.19	262
	Total	99	4.25	481	20.64	1,486	63.78	264	11.33	2,330

Percent Exact = 66.57%
Percent Adjacent = 31.89%
Percent Exact + Adjacent = 98.45%
Kappa = 0.38
Weighted Kappa =0.47

Table 8.B.74 Descriptive Statistics for the Ratings by the Two Raters, Grade Four

N *	Rater 1		Rater 2		
	Mean	Std	Mean	Std	Pearson Correlation
2,051	2.58	0.77	2.58	0.75	0.67

* Number of students who received valid ratings of 1–4

Table 8.B.75 Descriptive Statistics for the Ratings by the Two Raters, Grade Seven

N *	Rater 1		Rater 2		
	Mean	Std	Mean	Std	Pearson Correlation
2,330	2.80	0.69	2.82	0.68	0.59

* Number of students who received valid ratings of 1–4

Table 8.B.76 Generalizability Analyses for Grade Four Essay—[(Person: Essay) x Rater)]

Effect	Degrees of Freedom	Sum of Squares	Mean Squares	Estimated Variance Components	Percentage of Total Variance
E	1	1.13	1.13	0.00	0.00
P:E	2049	1981.25	0.97	0.39	66.01
R	1	0.00	0.00	0.00	0.00
ER	1	0.46	0.46	0.00	0.85
PR:E	2049	397.54	0.19	0.19	33.14
Note: E = Essay Prompt, P = Person, and R = Rater				**G-Coefficient= 0.80**	

Table 8.B.77 Generalizability Analyses for Grade Seven Essay—[(Person: Essay) x Rater)]

Effect	Degrees of Freedom	Sum of Squares	Mean Squares	Estimated Variance Components	Percentage of Total Variance
E	1	0.16	0.16	0.00	0.00
P:E	2328	1725.92	0.74	0.28	58.51
R	1	0.42	0.42	0.00	0.78
ER	1	0.05	0.05	0.00	0.00
PR:E	2328	445.54	0.19	0.19	40.72
Note: E = Essay Prompt, P = Person, and R = Rater				**G-Coefficient= 0.74**	

Appendix 8.C—Validity Analyses

Note that, while the correlations are reported only for samples that comprise 11 or more examinees, results based on samples that contain 50 or fewer examinees should be interpreted with caution due to small sample sizes. Correlations between scores on any two content-area tests where 10 or fewer examinees took the tests are expressed as hyphens. Correlations between scores on two content-area tests that cannot be administered together to the same group of students are expressed as "N/A."

Table 8.C.1 CMA Content Area Correlations (Gender)

		Male				Female				Gender Unknown			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**13,309**	0.63			**6,225**	0.63			**184**	0.62		
	2. Mathematics	10,414	**11,160**			5,137	**5,659**			141	**154**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**17,829**	0.58			**8,841**	0.56			**24**	0.63		
	2. Mathematics	13,955	**14,505**			7,320	**7,812**			23	**23**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**19,405**	0.51	0.64		**9,657**	0.53	0.64		**18**	0.54	0.69	
	2.Mathematics	15,739	**16,647**	0.55		8,221	**8,922**	0.54		15	**17**	0.63	
	3. Science	17,463	15,180	**17,820**		8,729	7,940	**9,000**		17	16	**18**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**19,099**	0.55			**9,621**	0.53			**17**	0.54		
	2. Mathematics	16,049	**17,132**			8,330	**9,072**			16	**18**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**18,041**	0.52	0.50		**8,853**	0.51	–		**14**	0.62	N/A	
	2. Mathematics	15,783	**17,183**	N/A		8,015	**8,934**	N/A		12	**13**	N/A	
	3. Algebra I	31	N/A	**37**		9	N/A	**10**		0	N/A	N/A	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**16,876**	0.46	–	0.62	**8,239**	0.51	–	0.60	**59**	0.27	N/A	0.59
	2. Algebra I	3,594	**3,953**	N/A	0.58	1,859	**2,138**	N/A	0.59	14	**24**	N/A	0.49
	3. Geometry	1	N/A	**1**	–	2	N/A	**2**	–	0	N/A	**0**	N/A
	4. Science	14,766	3,413	1	**15,390**	7,271	1,777	2	**7,665**	51	17	0	**57**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**13,372**	0.48	0.50		**6,533**	0.48	0.67		**45**	0.09	–	
	2. Algebra I	5,794	**6,516**	N/A		2,955	**3,411**	N/A		14	**18**	N/A	
	3. Geometry	298	N/A	**343**		146	N/A	**181**		6	N/A	**6**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**11,333**	0.49	0.48	0.64	**5,791**	0.44	0.47	0.62	**39**	0.51	–	0.41
	2. Algebra I	4,626	**5,339**	N/A	0.50	2,446	**2,884**	N/A	0.47	12	**17**	N/A	–
	3. Geometry	1,849	N/A	**2,165**	0.56	1,036	N/A	**1,251**	0.55	6	N/A	**10**	–
	4. Life Science	8,969	4,036	1,615	**9,380**	4,677	2,160	920	**4,951**	23	9	6	**25**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**9,147**	0.41	0.45		**4,760**	0.42	0.46		**29**	–	–	
	2. Algebra I	2,597	**2,938**	N/A		1,328	**1,601**	N/A		7	**10**	N/A	
	3. Geometry	1,667	N/A	**1,936**		895	N/A	**1,093**		2	N/A	**3**	

Table 8.C.2 CMA Content Area Correlations (Primary Ethnicity)

		American Indian				Asian American				Pacific Islander			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**183**	0.61			**599**	0.68			**77**	0.53		
	2. Mathematics	148	**158**			467	**517**			71	**80**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**232**	0.56			**832**	0.61			**127**	0.63		
	2. Mathematics	198	**211**			624	**666**			102	**109**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**303**	0.43	0.60		**909**	0.61	0.67		**128**	0.59	0.68	
	2. Mathematics	254	**269**	0.49		674	**721**	0.61		102	**111**	0.54	
	3. Science	280	246	**285**		817	659	**838**		118	102	**121**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**240**	0.57			**887**	0.57			**150**	0.55		
	2. Mathematics	210	**238**			711	**758**			128	**136**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**246**	0.56	N/A		**743**	0.56	N/A		**113**	0.49	N/A	
	2. Mathematics	230	**253**	N/A		607	**646**	N/A		99	**113**	N/A	
	3. Algebra I	0	N/A	N/A		0	N/A	N/A		0	N/A	N/A	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**258**	0.53	N/A	0.57	**673**	0.56	–	0.68	**136**	0.76	N/A	0.69
	2. Algebra I	32	**34**	N/A	0.48	150	**164**	N/A	0.64	34	**37**	N/A	0.68
	3. Geometry	0	N/A	**0**	N/A	1	N/A	**1**	–	0	N/A	**0**	–
	4. Science	221	25	0	**234**	560	138	1	**589**	118	33	0	**122**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**185**	0.48	–		**511**	0.42	0.53		**82**	0.47	N/A	
	2. Algebra I	64	**76**	N/A		187	**211**	N/A		31	**39**	N/A	
	3. Geometry	6	N/A	**6**		11	N/A	**14**		0	N/A	**1**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**183**	0.54	0.48	0.58	**436**	0.45	0.31	0.63	**61**	0.70	–	0.73
	2. Algebra I	75	**90**	N/A	0.49	176	**201**	N/A	0.47	22	**30**	N/A	0.61
	3. Geometry	12	N/A	**16**	–	83	N/A	**97**	0.43	8	N/A	**8**	–
	4. Life Science	146	73	9	**156**	346	149	76	**370**	47	18	7	**49**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**151**	0.46	0.48		**349**	0.42	0.55		**61**	0.11	0.65	
	2. Algebra I	40	**50**	N/A		94	**105**	N/A		17	**18**	N/A	
	3. Geometry	25	N/A	**29**		71	N/A	**78**		15	N/A	**17**	

Table 8.C.3 CMA Content Area Correlations (Primary Ethnicity, continued)

		Filipino				Hispanic				African American			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**196**	0.73			**12,323**	0.61			**1,811**	0.61		
	2. Mathematics	161	**178**			10,020	**10,655**			1,597	**1,746**		
Grade		**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**310**	0.55			**16,671**	0.57			**2,654**	0.58		
	2. Mathematics	240	**247**			13,555	**14,061**			2,296	**2,417**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**308**	0.48	0.61		**18,476**	0.51	0.61		**3,070**	0.56	0.64	
	2. Mathematics	251	**269**	0.50		15,328	**16,064**	0.54		2,787	**3,001**	0.57	
	3. Science	271	238	**278**		16,679	14,674	**16,982**		2,821	2,712	**2,905**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**304**	0.59			**18,171**	0.53			**3,043**	0.53		
	2. Mathematics	238	**266**			15,462	**16,311**			2,769	**2,963**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**278**	0.58	N/A		**16,943**	0.50	0.35		**3,099**	0.52	0.00	
	2. Mathematics	232	**261**	N/A		15,081	**16,191**	N/A		2,834	**3,102**	N/A	
	3. Algebra I	0	N/A	**0**		18	N/A	**21**		12	N/A	**15**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**262**	0.54	N/A	0.66	**15,719**	0.49	–	0.60	**2,889**	0.47	N/A	0.60
	2. Algebra I	61	**65**	N/A	0.54	3,555	**3,880**	N/A	0.56	820	**914**	N/A	0.54
	3. Geometry	0	N/A	**0**	N/A	2	N/A	**2**	–	0	N/A	**0**	–
	4. Science	228	52	0	**238**	13,916	3,370	2	**14,403**	2,534	785	0	**2,671**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**169**	0.51	–		**12,507**	0.48	0.56		**2,254**	0.47	0.53	
	2. Algebra I	59	**70**	N/A		5,743	**6,373**	N/A		1,114	**1,280**	N/A	
	3. Geometry	4	N/A	**5**		328	N/A	**377**		58	N/A	**74**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**159**	0.62	0.39	0.62	**10,550**	0.48	0.47	0.63	**1,923**	0.47	0.47	0.60
	2. Algebra I	66	**71**	N/A	0.51	4,421	**4,984**	N/A	0.49	756	**908**	N/A	0.47
	3. Geometry	29	N/A	**34**	0.55	1,933	N/A	**2,212**	0.54	383	N/A	**450**	0.54
	4. Life Science	128	57	24	**133**	8,503	3,858	1,703	**8,877**	1,502	648	332	**1,585**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**128**	0.49	–0.33		**8,451**	0.38	0.46		**1,546**	0.42	0.43	
	2. Algebra I	30	**38**	N/A		2,364	**2,679**	N/A		445	**515**	N/A	
	3. Geometry	23	N/A	**26**		1,678	N/A	**1,918**		291	N/A	**362**	

Table 8.C.4 CMA Content Area Correlations (Primary Ethnicity, continued)

		White				Unknown			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**3,778**	0.62			**751**	0.69		
	2. Mathematics	2,633	**2,984**			595	**655**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**5,237**	0.58			**631**	0.56		
	2. Mathematics	3,798	**4,117**			485	**512**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**5,286**	0.54	0.64		**600**	0.56	0.68	
	2. Mathematics	4,085	**4,612**	0.54		494	**539**	0.61	
	3. Science	4,692	4,033	**4,887**		531	472	**542**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**5,348**	0.58			**594**	0.55		
	2. Mathematics	4,372	**4,986**			505	**564**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**5,038**	0.53	–		**448**	0.53	–	
	2. Mathematics	4,342	**5,112**	N/A		385	**452**	N/A	
	3. Algebra I	7	N/A	**8**		3	N/A	**3**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**4,763**	0.45	N/A	0.60	**474**	0.40	N/A	0.59
	2. Algebra I	710	**879**	N/A	0.59	105	**142**	N/A	0.61
	3. Geometry	0	N/A	**0**	N/A	0	N/A	**0**	N/A
	4. Science	4,108	691	0	**4,417**	403	113	0	**438**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**3,798**	0.46	0.44		**444**	0.63	–	
	2. Algebra I	1,390	**1,681**	N/A		175	**215**	N/A	
	3. Geometry	33	N/A	**42**		10	N/A	**11**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**3,499**	0.46	0.45	0.63	**352**	0.39	0.65	0.61
	2. Algebra I	1,429	**1,787**	N/A	0.50	139	**169**	N/A	0.53
	3. Geometry	406	N/A	**552**	0.57	37	N/A	**57**	0.52
	4. Life Science	2,728	1,275	359	**2,902**	269	127	31	**284**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**3,002**	0.48	0.45		**248**	0.56	0.26	
	2. Algebra I	857	**1,038**	N/A		85	**106**	N/A	
	3. Geometry	434	N/A	**561**		27	N/A	**41**	

Table 8.C.5 CMA Content Area Correlations (English-language Fluency)

		English Only				Initially Fluent English Proficient				English Learner			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**10,583**	0.63			**190**	0.65			**8,459**	0.62		
	2. Mathematics	8,191	**9,059**			124	**144**			6,954	**7,316**		
Grade		**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**14,420**	0.58			**278**	0.58			**11,749**	0.56		
	2. Mathematics	11,328	**12,051**			206	**219**			9,575	**9,863**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**15,412**	0.54	0.65		**327**	0.56	0.60		**12,911**	0.51	0.59	
	2. Mathematics	12,732	**13,874**	0.56		244	**270**	0.62		10,693	**11,083**	0.53	
	3. Science	13,934	12,421	**14,358**		284	229	**291**		11,620	10,174	**11,795**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**15,236**	0.57			**536**	0.49			**12,218**	0.51		
	2. Mathematics	12,982	**14,317**			437	**481**			10,392	**10,754**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**14,320**	0.53	0.44		**562**	0.46	N/A		**11,033**	0.49	0.30	
	2. Mathematics	12,633	**14,299**	N/A		475	**537**	N/A		9,892	**10,313**	N/A	
	3. Algebra I	27	N/A	**34**		0	0	**0**		12	0	**12**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**13,610**	0.48	N/A	0.61	**583**	0.48	–	0.57	**9,685**	0.47	–	0.58
	2. Algebra I	2,772	**3,208**	N/A	0.58	142	**165**	N/A	0.63	2,243	**2,355**	N/A	0.54
	3. Geometry	0	N/A	**0**	N/A	1	N/A	**1**	–	1	N/A	**1**	–
	4. Science	11,856	2,674	0	**12,549**	493	132	1	**516**	8,612	2,095	1	**8,819**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**10,493**	0.49	0.56		**401**	0.40	0.38		**7,890**	0.45	0.52	
	2. Algebra I	4,378	**5,141**	N/A		186	**209**	N/A		3,641	**3,936**	N/A	
	3. Geometry	170	N/A	**211**		12	N/A	**15**		218	N/A	**242**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**9,417**	0.47	0.49	0.63	**416**	0.37	0.39	0.58	**6,429**	0.47	0.43	0.59
	2. Algebra I	3,871	**4,683**	N/A	0.51	183	**205**	N/A	0.51	2,691	**2,927**	N/A	0.46
	3. Geometry	1,371	N/A	**1,716**	0.58	73	N/A	**85**	0.49	1,241	N/A	**1,354**	0.50
	4. Life Science	7,417	3,398	1,203	**7,844**	324	160	67	**343**	5,242	2,355	1,084	**5,428**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**7,749**	0.44	0.48		**404**	0.32	0.42		**5,108**	0.39	0.41	
	2. Algebra I	2,264	**2,665**	N/A		109	**143**	N/A		1,363	**1,505**	N/A	
	3. Geometry	1,265	N/A	**1,576**		83	N/A	**99**		1,095	N/A	**1,183**	

Table 8.C.6 CMA Content Area Correlations (English-language Fluency, continued)

		Reclassified Fluent English Proficient				English-language Fluency Unknown			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**60**	0.57			**426**	0.62		
	2. Mathematics	51	**66**			372	**388**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**169**	0.74			**78**	0.42		
	2. Mathematics	124	**140**			65	**67**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**368**	0.58	0.63		**62**	0.38	0.64	
	2. Mathematics	258	**306**	0.49		48	**53**	0.54	
	3. Science	316	262	**337**		55	50	**57**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**685**	0.59			**62**	0.36		
	2. Mathematics	528	**607**			56	**63**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**919**	0.51	–		**74**	0.61	N/A	
	2. Mathematics	751	**912**	N/A		59	**69**	N/A	
	3. Algebra I	1	N/A	**1**		0	0	**0**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**1,222**	0.49	–	0.58	**74**	0.15	N/A	0.62
	2. Algebra I	297	**365**	N/A	0.60	13	**22**	N/A	0.70
	3. Geometry	1	N/A	**1**	–	0	N/A	**0**	N/A
	4. Science	1,061	289	1	**1,151**	66	17	0	**77**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**1,060**	0.43	0.23		**106**	0.61	–	
	2. Algebra I	510	**602**	N/A		48	**57**	N/A	
	3. Geometry	43	N/A	**55**		7	N/A	**7**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**830**	0.52	0.41	0.69	**71**	0.40	–	0.63
	2. Algebra I	312	**393**	N/A	0.50	27	**32**	N/A	0.36
	3. Geometry	197	N/A	**257**	0.48	9	N/A	**14**	–
	4. Life Science	639	271	180	**692**	47	21	7	**49**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**628**	0.40	0.45		**47**	0.53	–	
	2. Algebra I	180	**213**	N/A		16	**23**	N/A	
	3. Geometry	118	N/A	**169**		3	N/A	**5**	

Table 8.C.7 CMA Content Area Correlations (Economic Status)

		Not Economically Disadvantaged				Economically Disadvantaged				Unknown Economic Status			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**3,910**	0.63			**15,072**	0.61			**736**	0.63		
	2. Mathematics	2,795	**3,235**			12,232	**13,051**			665	**687**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**5,838**	0.59			**20,735**	0.56			**121**	0.44		
	2. Mathematics	4,272	**4,634**			16,924	**17,599**			102	**107**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**6,109**	0.55	0.67		**22,880**	0.51	0.61		**91**	0.56	0.67	
	2. Mathematics	4,761	**5,319**	0.56		19,139	**20,187**	0.54		75	**80**	0.57	
	3. Science	5,422	4,681	**5,636**		20,704	18,380	**21,118**		83	75	**84**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**6,271**	0.57			**22,380**	0.54			**86**	0.59		
	2. Mathematics	5,118	**5,835**			19,201	**20,303**			76	**84**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**5,901**	0.54	0.68		**20,919**	0.50	0.18		**88**	0.61	N/A	
	2. Mathematics	5,041	**5,961**	N/A		18,698	**20,090**	N/A		71	**79**	N/A	
	3. Algebra I	13	N/A	**19**		27	N/A	**28**		0	N/A	**0**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**5,949**	0.51	–	0.61	**19,118**	0.47	–	0.60	**107**	0.29	N/A	0.74
	2. Algebra I	1,152	**1,356**	N/A	0.61	4,290	**4,724**	N/A	0.56	25	**35**	N/A	0.60
	3. Geometry	1	N/A	**1**	–	2	N/A	**2**	–	0	N/A	**0**	–
	4. Science	5,135	1,122	1	**5,482**	16,861	4,055	2	**17,526**	92	30	0	**104**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**5,250**	0.49	0.60		**14,571**	0.47	0.53		**129**	0.51	–	
	2. Algebra I	2,145	**2,577**	N/A		6,557	**7,293**	N/A		61	**75**	N/A	
	3. Geometry	59	N/A	**88**		385	N/A	**436**		6	N/A	**6**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**4,772**	0.46	0.41	0.64	**12,293**	0.48	0.48	0.62	**98**	0.48	–	0.66
	2. Algebra I	2,008	**2,463**	N/A	0.50	5,037	**5,729**	N/A	0.48	39	**48**	N/A	0.49
	3. Geometry	654	N/A	**839**	0.50	2,227	N/A	**2,572**	0.55	10	N/A	**15**	–
	4. Life Science	3,797	1,794	576	**4,030**	9,800	4,379	1,957	**10,252**	72	32	8	**74**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**3,971**	0.45	0.51		**9,902**	0.40	0.42		**63**	0.35	–	
	2. Algebra I	1,130	**1,359**	N/A		2,785	**3,166**	N/A		17	**24**	N/A	
	3. Geometry	694	N/A	**860**		1,866	N/A	**2,166**		4	N/A	**6**	

Table 8.C.8 CMA Content Area Correlations (Primary Disability)

		Autism				MR/ID				Specific Learning Disability			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**1,510**	0.65			**323**	0.61			**11,078**	0.60		
	2. Mathematics	1,347	**1,501**			312	**320**			8,587	**9,183**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**1,793**	0.62			**389**	0.53			**15,423**	0.55		
	2. Mathematics	1,551	**1,655**			386	**387**			12,211	**12,702**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**1,711**	0.58	0.70		**446**	0.42	0.51		**18,334**	0.50	0.61	
	2. Mathematics	1,493	**1,607**	0.60		438	**441**	0.52		14,938	**15,822**	0.53	
	3. Science	1,584	1,459	**1,623**		432	428	**434**		16,467	14,321	**16,812**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**1,477**	0.61			**457**	0.53			**18,855**	0.53		
	2. Mathematics	1,287	**1,410**			452	**454**			15,827	**16,843**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**1,328**	0.58	–		**460**	0.34	–		**18,319**	0.50	0.27	
	2. Mathematics	1,181	**1,309**	N/A		451	**457**	N/A		16,098	**17,532**	N/A	
	3. Algebra I	5	N/A	**5**		1	N/A	**1**		26	N/A	**28**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**1,209**	0.49	–	0.70	**496**	0.41	N/A	0.48	**17,749**	0.48	–	0.59
	2. Algebra I	225	**267**	N/A	0.61	115	**116**	N/A	0.51	4,024	**4,446**	N/A	0.56
	3. Geometry	1	N/A	**1**	–	0	N/A	**0**	N/A	2	N/A	**2**	–
	4. Science	1,094	221	1	**1,153**	462	107	0	**474**	15,512	3,811	2	**16,177**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**847**	0.47	–		**413**	0.31	–		**14,319**	0.48	0.57	
	2. Algebra I	323	**380**	N/A		149	**159**	N/A		6,478	**7,287**	N/A	
	3. Geometry	8	N/A	**12**		2	N/A	**2**		355	N/A	**409**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**619**	0.47	0.51	0.72	**404**	0.35	0.63	0.62	**12,404**	0.47	0.46	0.61
	2. Algebra I	224	**277**	N/A	0.51	157	**167**	N/A	0.46	5,164	**5,920**	N/A	0.48
	3. Geometry	112	N/A	**147**	0.57	31	N/A	**31**	0.44	2,226	N/A	**2,598**	0.54
	4. Life Science	503	208	98	**533**	343	143	25	**355**	9,885	4,513	1,966	**10,345**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**487**	0.33	0.52		**361**	0.54	0.41		**10,145**	0.42	0.44	
	2. Algebra I	135	**157**	N/A		125	**133**	N/A		2,850	**3,268**	N/A	
	3. Geometry	79	N/A	**91**		37	N/A	**38**		1,954	N/A	**2,297**	

Table 8.C.9 CMA Content Area Correlations (Primary Disability, continued)

		Speech or Language Impairment				Other Health Impairment			
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
3	**1. ELA**	**3,312**	0.64			**1,878**	0.64		
	2. Mathematics	2,596	**2,838**			1,478	**1,639**		
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
4	**1. ELA**	**3,699**	0.60			**2,537**	0.59		
	2. Mathematics	2,867	**2,989**			2,040	**2,169**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
5	**1. ELA**	**3,171**	0.53	0.64		**2,648**	0.54	0.65	
	2. Mathematics	2,577	**2,707**	0.53		2,226	**2,453**	0.56	
	3. Science	2,893	2,527	**2,949**		2,375	2,168	**2,459**	
Grade	**CMA**	**1.**	**2.**			**1.**	**2.**		
6	**1. ELA**	**2,551**	0.55			**2,716**	0.56		
	2. Mathematics	2,095	**2,210**			2,379	**2,659**		
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
7	**1. ELA**	**1,873**	0.53	N/A		**2,448**	0.54	–	
	2. Mathematics	1,651	**1,780**	N/A		2,207	**2,567**	N/A	
	3. Algebra I	0	N/A	**0**		4	N/A	**7**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
8	**1. ELA**	**1,536**	0.48	N/A	0.58	**2,462**	0.48	N/A	0.60
	2. Algebra I	262	**284**	N/A	0.58	513	**619**	N/A	0.57
	3. Geometry	0	N/A	**0**	N/A	0	N/A	**0**	N/A
	4. Science	1,356	244	0	**1,405**	2,143	494	0	**2,282**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
9	**1. ELA**	**945**	0.49	0.72		**1,926**	0.47	0.53	
	2. Algebra I	342	**394**	N/A		855	**1,012**	N/A	
	3. Geometry	12	N/A	**15**		43	N/A	**57**	
Grade	**CMA**	**1.**	**2.**	**3.**	**4.**	**1.**	**2.**	**3.**	**4.**
10	**1. ELA**	**759**	0.47	0.34	0.66	**1,493**	0.49	0.55	0.66
	2. Algebra I	325	**369**	N/A	0.41	639	**822**	N/A	0.48
	3. Geometry	78	N/A	**87**	0.52	239	N/A	**320**	0.66
	4. Life Science	604	282	73	**638**	1,147	553	207	**1,234**
Grade	**CMA**	**1.**	**2.**	**3.**		**1.**	**2.**	**3.**	
11	**1. ELA**	**610**	0.35	0.36		**1,206**	0.47	0.49	
	2. Algebra I	171	**191**	N/A		356	**430**	N/A	
	3. Geometry	96	N/A	**112**		225	N/A	**282**	

Appendix 8.D—IRT Analyses

Table 8.D.1 IRT Model Data Fit Distribution for ELA, Grades Three through Eleven

Items	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 9		Grade 10		Grade 11	
Flag	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	22	46%	22	45%	19	40%	18	33%	20	36%	15	28%	31	52%	26	43%	30	50%
B	10	21%	11	22%	20	42%	13	24%	13	24%	17	31%	12	20%	16	27%	14	23%
C	16	33%	15	31%	8	17%	22	41%	22	40%	22	41%	16	27%	17	28%	16	27%
D	0	0%	1	2%	1	2%	1	2%	0	0%	0	0%	1	2%	1	2%	0	0%
F	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	48	100%	49	100%	48	100%	54	100%	55	100%	54	100%	60	100%	60	100%	60	100%

Table 8.D.2 IRT Model Data Fit Distribution for Mathematics, Grade Three through Geometry

Items	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Algebra I		Geometry	
Flag	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	19	40%	14	29%	9	19%	27	50%	29	54%	17	28%	31	52%
B	13	27%	16	33%	13	27%	12	22%	15	28%	17	28%	16	27%
C	16	33%	16	33%	25	52%	14	26%	8	15%	23	38%	13	22%
D	0	0%	2	4%	1	2%	1	2%	2	4%	3	5%	0	0%
F	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Total	48	100%	48	100%	48	100%	54	100%	54	100%	60	100%	60	100%

Table 8.D.3 IRT Model Data Fit Distribution for Science, Grades Five, Eight, and Ten

Items	Grade 5		Grade 8		Grade 10	
Flag	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	23	48%	23	43%	22	37%
B	11	23%	17	31%	19	32%
C	14	29%	14	26%	18	30%
D	0	0%	0	0%	0	0%
F	0	0%	0	0%	1	2%
Total	48	100%	54	100%	60	100%

Table 8.D.4 IRT Model Data Fit Distribution for ELA, Grades Three through Eleven (field-test items)

Items	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 9		Grade 10		Grade 11	
Flag	**N**	**Pct.**	**N**	Pct.	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	10	19%	14	33%	16	33%	10	36%	5	15%	7	21%	11	28%	12	30%	15	41%
B	10	19%	7	17%	12	25%	5	18%	10	29%	5	15%	7	18%	12	30%	9	24%
C	23	44%	18	43%	13	27%	10	36%	13	38%	20	61%	15	38%	11	28%	13	35%
D	8	15%	1	2%	4	8%	1	4%	4	12%	0	0%	5	13%	2	5%	0	0%
F	1	2%	2	5%	3	6%	2	7%	2	6%	1	3%	2	5%	3	8%	0	0%
Total	52	100%	42	100%	48	100%	28	100%	34	100%	33	100%	40	100%	40	100%	37	100%

Table 8.D.5 IRT Model Data Fit Distribution for Mathematics, Grade Three through Geometry (field-test items)

Items	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Algebra I		Geometry	
Flag	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	12	22%	8	18%	10	19%	11	31%	15	42%	7	18%	10	25%
B	7	13%	14	31%	19	35%	11	31%	12	33%	11	28%	12	30%
C	27	50%	20	44%	16	30%	12	33%	8	22%	17	43%	10	25%
D	5	9%	0	0%	7	13%	1	3%	0	0%	2	5%	4	10%
F	3	6%	3	7%	2	4%	1	3%	1	3%	3	8%	4	10%
Total	54	100%	45	100%	54	100%	36	100%	36	100%	40	100%	40	100%

Table 8.D.6 IRT Model Data Fit Distribution for Science, Grades Five, Eight, and Ten (field-test items)

Items	Grade 5		Grade 8		Grade 10	
Flag	**N**	**Pct.**	**N**	**Pct.**	**N**	**Pct.**
A	23	43%	12	22%	10	28%
B	14	26%	19	35%	10	28%
C	11	21%	21	39%	9	25%
D	2	4%	1	2%	5	14%
F	3	6%	1	2%	2	6%
Total	53	100%	54	100%	36	100%

Table 8.D.7 IRT *b*-values for ELA, Grade Three

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	14	–0.63	0.42	–1.57	–0.11
Reading for Understanding	17	–0.16	0.45	–0.99	0.51
Language	17	–0.39	0.35	–1.02	0.09
All operational items	48	–0.38	0.44	–1.57	0.51
Field-test items	52	0.36	0.42	–0.75	1.38

Table 8.D.8 IRT *b*-values for ELA, Grade Four

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	11	–0.55	0.35	–0.87	0.17
Reading for Understanding	16	–0.07	0.52	–0.84	0.95
Language	21	–0.17	0.47	–0.90	0.74
Writing Applications	1	2.13	–	–	–
All operational items	49	–0.23	0.49	–0.90	0.95
Field-test items	42	0.39	0.52	–1.10	1.47

Table 8.D.9 IRT *b*-values for ELA, Grade Five

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	8	–0.68	0.59	–1.61	0.26
Reading for Understanding	18	0.02	0.27	–0.66	0.43
Language	22	–0.27	0.65	–1.60	0.84
All operational items	48	–0.23	0.57	–1.61	0.84
Field-test items	48	0.26	0.71	–1.82	2.46

Table 8.D.10 IRT *b*-values for ELA, Grade Six

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	9	–0.66	0.42	–1.24	0.02
Reading for Understanding	22	–0.24	0.57	–1.20	0.92
Language	23	–0.27	0.50	–1.35	0.45
All operational items	54	–0.32	0.53	–1.35	0.92
Field-test items	28	0.31	0.59	–0.87	1.94

Table 8.D.11 IRT *b*-values for ELA, Grade Seven

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	8	–0.81	0.65	–1.89	–0.04
Reading for Understanding	22	–0.35	0.52	–1.34	0.63
Language	24	–0.32	0.46	–1.20	0.44
Writing Applications	1	–0.27	–	–	–
All operational items	55	–0.42	0.53	–1.89	0.63
Field-test items	34	0.21	0.80	–2.36	1.74

Table 8.D.12 IRT *b*-values for ELA, Grade Eight

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	6	–1.16	0.52	–1.82	–0.34
Reading for Understanding	24	–0.35	0.82	–2.37	0.74
Language	24	–0.43	0.67	–1.34	0.94
All operational items	54	–0.47	0.75	–2.37	0.94
Field-test items	33	0.37	0.48	–0.75	1.27

Table 8.D.13 IRT *b*-values for ELA, Grade Nine

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	7	–0.31	0.65	–1.59	0.47
Reading for Understanding	27	–0.07	0.52	–0.97	1.48
Language	26	0.03	0.41	–1.00	0.61
All operational items	60	–0.06	0.49	–1.59	1.48
Field-test items	40	0.46	0.54	–1.61	1.32

Table 8.D.14 IRT *b*-values for ELA, Grade Ten

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	7	–0.37	0.96	–1.67	1.11
Reading for Understanding	27	–0.01	0.49	–1.05	1.02
Language	26	0.07	0.41	–0.86	0.78
All operational items	60	–0.02	0.54	–1.67	1.11
Field-test items	40	0.39	0.32	–0.33	1.03

Table 8.D.15 IRT *b*-values for ELA, Grade Eleven

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Vocabulary	7	0.32	0.36	–0.11	0.70
Reading for Understanding	29	0.13	0.50	–0.93	0.96
Language	24	0.24	0.34	–0.54	0.89
All operational items	60	0.20	0.43	–0.93	0.96
Field-test items	37	0.27	0.34	–0.43	0.86

Table 8.D.16 IRT *b*-values for Mathematics, Grade Three

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Number Sense	24	–0.27	0.39	–1.17	0.48
Algebra and Data Analysis	13	–0.44	0.34	–0.78	0.27
Measurement and Geometry	11	–0.76	0.55	–1.67	0.14
All operational items	48	–0.43	0.46	–1.67	0.48
Field-test items	54	0.35	0.70	–1.01	2.18

Table 8.D.17 IRT *b*-values for Mathematics, Grade Four

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Number Sense	23	–0.64	0.79	–1.88	0.62
Algebra and Data Analysis	15	–0.10	0.53	–0.95	1.07
Measurement and Geometry	10	–0.22	0.66	–1.65	0.84
All operational items	48	–0.38	0.72	–1.88	1.07
Field-test items	45	0.47	0.62	–1.08	1.76

Table 8.D.18 IRT *b*-values for Mathematics, Grade Five

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Number Sense	21	–0.41	0.55	–1.35	0.62
Algebra and Data Analysis	17	–0.18	0.56	–0.97	0.86
Measurement and Geometry	10	0.24	0.47	–0.51	0.88
All operational items	48	–0.19	0.58	–1.35	0.88
Field-test items	54	0.72	0.78	–1.17	2.40

Table 8.D.19 IRT *b*-values for Mathematics, Grade Six

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Number Sense	21	–0.23	0.46	–1.45	0.30
Algebra and Data Analysis	25	–0.25	0.66	–1.39	1.06
Measurement and Geometry	8	0.14	0.35	–0.27	0.80
All operational items	54	–0.19	0.56	–1.45	1.06
Field-test items	36	0.47	0.52	–1.01	1.47

Table 8.D.20 IRT *b*-values for Mathematics, Grade Seven

Content Area	Number of Items	Mean	Standard Deviation	Minimum	Maximum
Number Sense	18	0.17	0.50	–0.69	0.94
Algebra and Data Analysis	25	–0.01	0.46	–1.02	0.85
Measurement and Geometry	11	0.23	0.60	–0.55	1.82
All operational items	54	0.10	0.51	–1.02	1.82
Field-test items	36	0.68	0.57	–1.26	1.69

Table 8.D.21 IRT *b*-values for Algebra I

Content Area	Number of items	Mean	Standard Deviation	Minimum	Maximum
Number Properties, Operations, and Linear Equations	15	–0.27	0.42	–0.77	0.93
Graphing and Systems of Linear Equations	14	0.24	0.35	–0.27	0.82
Quadratics and Polynomials	19	0.17	0.39	–0.42	0.81
Functions and Rational Expressions	12	0.10	0.32	–0.61	0.49
All operational items	60	0.06	0.42	–0.77	0.93
Field-test items	40	0.73	0.40	–0.02	1.65

Table 8.D.22 IRT *b*-values for Geometry

Content Area	Number of items	Mean	Standard Deviation	Minimum	Maximum
Logic and Geometric Proofs	23	–0.06	0.46	–0.94	0.76
Volume and Area Formulas	11	–0.03	0.26	–0.37	0.61
Angle Relationships, Constructions, and Lines	14	0.13	0.58	–1.05	1.01
Trigonometry	12	0.22	0.28	–0.30	0.62
All operational items	60	0.05	0.44	–1.05	1.01
Field-test items	40	0.45	0.47	–1.07	1.67

Table 8.D.23 IRT *b*-values for Science, Grade Five

Content Area	Number of items	Mean	Standard Deviation	Minimum	Maximum
Physical Sciences	16	–0.39	0.68	–1.79	0.39
Life Sciences	16	–0.52	0.65	–1.69	0.66
Earth Sciences	16	–0.36	0.86	–1.62	1.11
All operational items	48	–0.43	0.72	–1.79	1.11
Field-test items	53	0.02	0.74	–1.55	1.35

Table 8.D.24 IRT *b*-values for Science, Grade Eight

Content Area	Number of items	Mean	Standard Deviation	Minimum	Maximum
Motion	19	–0.47	0.54	–2.03	0.22
Matter	23	0.05	0.39	–0.73	0.82
Earth Science	7	–0.78	0.47	–1.55	–0.17
Investigation and Experimentation	5	–0.08	0.29	–0.53	0.30
All operational items	54	–0.25	0.54	–2.03	0.82
Field-test items	54	0.28	0.55	–0.93	1.67

Table 8.D.25 IRT *b*-values for Life Science (Grade 10)

Content Area	Number of items	Mean	Standard Deviation	Minimum	Maximum
Cell Biology and Genetics	22	–0.02	0.46	–0.81	0.90
Evolution and Ecology	22	–0.03	0.58	–0.88	1.26
Physiology	10	–0.24	0.34	–0.78	0.31
Investigation and Experimentation	6	–0.01	0.25	–0.32	0.40
All operational items	60	–0.06	0.47	–0.88	1.26
Field-test items	36	0.33	0.46	–1.09	1.27

Table 8.D.26 Distribution of IRT *b*-values for ELA

IRT *b*-value	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
>=3.5									
3.0 < 3.5									
2.5 < 3.0									
2.0 < 2.5									
1.5 < 2.0									
1.0 < 1.5							1	2	
0.5 < 1.0	1	4	4	2	1	4	3	8	13
0.0 < 0.5	10	15	15	15	11	13	29	19	27
–0.5 < 0.0	19	13	16	17	23	11	16	24	15
–1.0 < –0.5	15	17	8	13	12	14	9	3	5
–1.5 < –1.0	2		3	7	7	9	1	3	
–2.0 < –1.5	1		2		1	1	1	1	
–2.5 < –2.0						2			
–3.0 < –2.5									
–3.5 < –3.0									
< –3.5									
Total	48	49	48	54	55	54	60	60	60

Table 8.D.27 Distribution of IRT *b*-values for Mathematics

IRT *b*-value	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Algebra I	Geometry
>=3.5							
3.0 < 3.5							
2.5 < 3.0							
2.0 < 2.5							
1.5 < 2.0					1		
1.0 < 1.5		1		1	0		1
0.5 < 1.0		3	8	4	10	9	10
0.0 < 0.5	9	10	8	18	21	24	18
–0.5 < 0.0	19	16	16	19	14	22	25
–1.0 < –0.5	15	8	13	5	7	5	5
–1.5 < –1.0	4	4	3	7	1		1
–2.0 < –1.5	1	6					
–2.5 < –2.0							
–3.0 < –2.5							
–3.5 < –3.0							
< –3.5							
Total	48	48	48	54	54	60	60

Table 8.D.28 Distribution of IRT *b*-values for Science

IRT *b*-value	Grade 5	Grade 8	Grade 10
>=3.5			
3.0 < 3.5			
2.5 < 3.0			
2.0 < 2.5			
1.5 < 2.0			
1.0 < 1.5	1		1
0.5 < 1.0	1	3	5
0.0 < 0.5	14	16	23
–0.5 < 0.0	13	20	21
–1.0 < –0.5	7	11	10
–1.5 < –1.0	6	2	
–2.0 < –1.5	6	1	
–2.5 < –2.0		1	
–3.0 < –2.5			
–3.5 < –3.0			
< –3.5			
Total	48	54	60

Table 8.D.29 Distribution of IRT *b*-values for ELA (field-test items)

IRT *b*-value	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11
>=3.5									
3.0 < 3.5									
2.5 < 3.0									
2.0 < 2.5			1						
1.5 < 2.0			0	1	1				
1.0 < 1.5	2	4	4	1	2	2	5	2	
0.5 < 1.0	17	15	12	8	10	13	16	11	12
0.0 < 0.5	22	17	18	10	12	10	14	23	18
–0.5 < 0.0	9	3	7	6	5	6	4	4	7
–1.0 < –0.5	2	2	3	2	2	2			
–1.5 < –1.0		1	2		0				
–2.0 < –1.5			1		1				
–2.5 < –2.0					1				
–3.0 < –2.5									
–3.5 < –3.0									
< –3.5									
Total	52	42	48	28	34	33	40	40	37

Table 8.D.30 Distribution of IRT *b*-values for Mathematics (field–test items)

IRT *b*-value	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Algebra I	Geometry
>=3.5							
3.0 < 3.5							
2.5 < 3.0							
2.0 < 2.5	1		1				
1.5 < 2.0	1	1	9		3	1	1
1.0 < 1.5	7	8	8	3	7	8	3
0.5 < 1.0	13	14	20	17	12	20	14
0.0 < 0.5	15	13	9	10	12	10	18
–0.5 < 0.0	9	6	3	4	1	1	3
–1.0 < –0.5	7	2	3	1	0		0
–1.5 < –1.0	1	1	1	1	1		1
–2.0 < –1.5							
–2.5 < –2.0							
–3.0 < –2.5							
–3.5 < –3.0							
< –3.5							
Total	54	45	54	36	36	40	40

Table 8.D.31 Distribution of IRT *b*-values for Science (field-test items)

IRT *b*-value	Grade 5	Grade 8	Grade 10
>=3.5			
3.0 < 3.5			
2.5 < 3.0			
2.0 < 2.5			
1.5 < 2.0		1	
1.0 < 1.5	6	3	1
0.5 < 1.0	11	16	11
0.0 < 0.5	12	15	19
–0.5 < 0.0	10	15	4
–1.0 < –0.5	8	4	0
–1.5 < –1.0	4		1
–2.0 < –1.5	2		
–2.5 < –2.0			
–3.0 < –2.5			
–3.5 < –3.0			
< –3.5			
Total	53	54	36

Table 8.D.32 New Conversions for ELA, Grade Three

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**25**	680	–0.2884	279	Below Basic
1	0	–4.3192	150		**26**	699	–0.2010	285	
2	0	–3.6002	150		**27**	693	–0.1131	292	
3	0	–3.1683	150		**28**	703	–0.0242	298	
4	0	–2.8536	150		**29**	680	0.0658	305	Basic
5	0	–2.6031	150		**30**	690	0.1575	311	
6	2	–2.3929	150		**31**	749	0.2511	318	
7	6	–2.2103	150		**32**	777	0.3472	325	
8	11	–2.0478	153		**33**	752	0.4462	332	
9	27	–1.9005	164		**34**	740	0.5487	339	
10	46	–1.7650	173		**35**	768	0.6555	347	
11	77	–1.6389	183		**36**	783	0.7674	355	Proficient
12	120	–1.5204	191		**37**	680	0.8855	363	
13	208	–1.4082	199		**38**	710	1.0112	372	
14	352	–1.3011	207		**39**	628	1.1462	382	
15	398	–1.1983	214		**40**	550	1.2931	392	
16	485	–1.0991	221		**41**	459	1.4550	404	Advanced
17	505	–1.0028	228	Below Basic	**42**	367	1.6370	417	
18	648	–0.9090	235		**43**	285	1.8465	432	
19	666	–0.8172	241		**44**	197	2.0964	450	
20	626	–0.7270	248		**45**	135	2.4102	472	
21	740	–0.6381	254		**46**	57	2.8412	503	
22	687	–0.5501	260		**47**	29	3.5592	555	
23	627	–0.4627	267		**48**	3	N/A	600	
24	673	–0.3755	273						

Table 8.D.33 New Conversions for ELA, Grade Four (with essay)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**27**	787	–0.1677	295	Below Basic
1	0	–4.3099	150		**28**	701	–0.0832	303	Basic
2	0	–3.6035	150		**29**	765	0.0017	311	
3	0	–3.1815	150		**30**	782	0.0874	319	
4	0	–2.8746	150		**31**	784	0.1740	327	
5	0	–2.6298	150		**32**	755	0.2619	335	
6	0	–2.4238	150		**33**	786	0.3514	343	
7	0	–2.2441	150		**34**	806	0.4427	352	Proficient
8	1	–2.0836	150		**35**	843	0.5364	360	
9	5	–1.9375	150		**36**	787	0.6328	369	
10	11	–1.8026	150		**37**	786	0.7324	379	
11	21	–1.6768	156		**38**	802	0.8359	388	
12	48	–1.5583	167		**39**	670	0.9438	398	
13	67	–1.4460	177		**40**	693	1.0573	408	Advanced
14	110	–1.3387	187		**41**	650	1.1772	420	
15	157	–1.2357	197		**42**	558	1.3050	431	
16	241	–1.1364	206		**43**	504	1.4425	444	
17	344	–1.0402	215		**44**	451	1.5922	458	
18	431	–0.9466	223		**45**	363	1.7573	473	
19	512	–0.8553	232		**46**	277	1.9429	490	
20	616	–0.7659	240		**47**	222	2.1568	510	
21	673	–0.6780	248	Below Basic	**48**	113	2.4113	534	
22	710	–0.5913	256		**49**	65	2.7305	563	
23	663	–0.5056	264		**50**	33	3.1677	600	
24	756	–0.4206	272		**51**	17	3.8927	600	
25	836	–0.3361	280		**52**	1	N/A	600	
26	774	–0.2519	288						

Table 8.D.34 New Conversions for ELA, Grade Four (without essay)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**25**	187	–0.1395	298	Below Basic
1	0	–4.1776	150		**26**	196	–0.0511	306	Basic
2	0	–3.4593	150		**27**	182	0.0380	314	
3	1	–3.0281	150		**28**	230	0.1281	323	
4	0	–2.7140	150		**29**	177	0.2194	331	
5	0	–2.4638	150		**30**	186	0.3123	340	
6	0	–2.2539	150		**31**	185	0.4072	348	
7	0	–2.0715	150		**32**	201	0.5046	357	Proficient
8	5	–1.9091	150		**33**	194	0.6050	367	
9	12	–1.7618	150		**34**	173	0.7089	376	
10	20	–1.6262	161		**35**	192	0.8171	386	
11	43	–1.4999	172		**36**	191	0.9305	397	
12	61	–1.3811	183		**37**	162	1.0501	408	Advanced
13	90	–1.2685	194		**38**	138	1.1773	420	
14	105	–1.1610	204		**39**	150	1.3139	432	
15	165	–1.0577	213		**40**	117	1.4624	446	
16	183	–0.9579	222		**41**	98	1.6259	461	
17	200	–0.8610	231		**42**	80	1.8096	478	
18	226	–0.7665	240		**43**	79	2.0209	497	
19	235	–0.6740	249	Below Basic	**44**	33	2.2724	521	
20	197	–0.5830	257		**45**	20	2.5881	550	
21	241	–0.4932	265		**46**	14	3.0209	590	
22	250	–0.4042	274		**47**	5	3.7406	600	
23	253	–0.3158	282		**48**	1	N/A	600	
24	239	–0.2277	290						

Table 8.D.35 New Conversions for ELA, Grade Five

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**25**	1,290	–0.1332	302	Basic
1	2	–4.2397	150		**26**	1,273	–0.0434	310	
2	1	–3.5166	150		**27**	1,240	0.0470	317	
3	0	–3.0808	150		**28**	1,300	0.1381	325	
4	0	–2.7624	150		**29**	1,285	0.2305	333	
5	1	–2.5081	150		**30**	1,219	0.3244	341	
6	3	–2.2942	150		**31**	1,248	0.4202	349	
7	3	–2.1081	150		**32**	1,262	0.5184	357	Proficient
8	11	–1.9421	150		**33**	1,162	0.6195	366	
9	36	–1.7914	162		**34**	1,077	0.7240	375	
10	54	–1.6525	173		**35**	986	0.8328	384	
11	109	–1.5232	184		**36**	959	0.9467	394	
12	182	–1.4015	195		**37**	842	1.0667	404	Advanced
13	246	–1.2861	204		**38**	765	1.1943	415	
14	368	–1.1759	214		**39**	642	1.3312	426	
15	550	–1.0701	223	Below Basic	**40**	556	1.4798	439	
16	668	–0.9680	231		**41**	468	1.6435	453	
17	764	–0.8688	240		**42**	362	1.8271	468	
18	871	–0.7722	248		**43**	257	2.0384	486	
19	1002	–0.6776	256		**44**	162	2.2899	508	
20	1048	–0.5847	264		**45**	84	2.6053	534	
21	1130	–0.4930	272		**46**	41	3.0379	571	
22	1153	–0.4024	279		**47**	12	3.7572	600	
23	1230	–0.3124	287		**48**	2	N/A	600	
24	1154	–0.2228	295						

Table 8.D.36 New Conversions for ELA, Grade Six

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**28**	992	–0.2435	278	Below Basic
1	0	–4.4236	150		**29**	1,005	–0.1643	287	
2	0	–3.7066	150		**30**	1,106	–0.0847	297	
3	0	–3.2767	150		**31**	1,091	–0.0045	307	Basic
4	0	–2.9641	150		**32**	1,063	0.0766	316	
5	1	–2.7156	150		**33**	1,172	0.1588	326	
6	2	–2.5076	150		**34**	1,162	0.2422	336	
7	0	–2.3272	150		**35**	1,114	0.3274	347	
8	2	–2.1671	150		**36**	1,173	0.4144	357	Proficient
9	10	–2.0222	150		**37**	1,096	0.5038	368	
10	19	–1.8892	150		**38**	1,046	0.5960	379	
11	37	–1.7658	150		**39**	1,043	0.6913	391	
12	76	–1.6502	150		**40**	955	0.7904	402	
13	86	–1.5409	150		**41**	894	0.8941	415	Advanced
14	167	–1.4371	150		**42**	855	1.0030	428	
15	254	–1.3377	150		**43**	756	1.1184	442	
16	310	–1.2421	158		**44**	627	1.2415	457	
17	440	–1.1498	169		**45**	534	1.3742	473	
18	546	–1.0602	179		**46**	427	1.5188	490	
19	601	–0.9730	190		**47**	337	1.6787	510	
20	732	–0.8877	200		**48**	258	1.8587	531	
21	810	–0.8041	210		**49**	170	2.0665	556	
22	784	–0.7218	220		**50**	103	2.3147	586	
23	885	–0.6407	230	Below Basic	**51**	61	2.6270	600	
24	925	–0.5604	240		**52**	29	3.0567	600	
25	952	–0.4807	249		**53**	4	3.7730	600	
26	991	–0.4015	259		**54**	0	N/A	600	
27	1,034	–0.3225	268						

Table 8.D.37 New Conversions for ELA, Grade Seven (with essay)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**30**	715	–0.3752	267	Below Basic
1	0	–4.6293	150		**31**	745	–0.2990	275	
2	0	–3.9203	150		**32**	814	–0.2225	283	
3	0	–3.4978	150		**33**	828	–0.1455	291	
4	0	–3.1920	150		**34**	832	–0.0678	298	
5	0	–2.9496	150		**35**	823	0.0108	306	Basic
6	0	–2.7469	150		**36**	811	0.0905	314	
7	0	–2.5713	150		**37**	842	0.1716	323	
8	0	–2.4152	150		**38**	829	0.2542	331	
9	1	–2.2738	150		**39**	850	0.3386	340	
10	4	–2.1437	150		**40**	855	0.4253	349	
11	10	–2.0228	150		**41**	841	0.5145	358	Proficient
12	19	–1.9092	150		**42**	811	0.6067	367	
13	39	–1.8017	150		**43**	776	0.7023	377	
14	60	–1.6993	150		**44**	734	0.8021	387	
15	111	–1.6012	150		**45**	672	0.9065	397	
16	148	–1.5068	152		**46**	663	1.0167	409	Advanced
17	213	–1.4155	161		**47**	577	1.1336	420	
18	250	–1.3269	170		**48**	561	1.2586	433	
19	363	–1.2407	179		**49**	442	1.3937	447	
20	400	–1.1565	188		**50**	377	1.5412	462	
21	504	–1.0741	196		**51**	298	1.7045	479	
22	523	–0.9932	204		**52**	204	1.8887	497	
23	570	–0.9135	212		**53**	168	2.1016	519	
24	598	–0.8349	220		**54**	108	2.3560	545	
25	637	–0.7571	228	Below Basic	**55**	47	2.6757	577	
26	671	–0.6800	236		**56**	13	3.1144	600	
27	672	–0.6035	244		**57**	3	3.8418	600	
28	682	–0.5273	252		**58**	2	N/A	600	
29	717	–0.4513	259						

Table 8.D.38 New Conversions for ELA, Grade Seven (without essay)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**28**	106	–0.3232	272	Below Basic
1	0	–4.5171	150		**29**	99	–0.2441	280	
2	0	–3.7986	150		**30**	113	–0.1645	289	
3	0	–3.3674	150		**31**	126	–0.0844	297	
4	0	–3.0536	150		**32**	98	–0.0034	305	Basic
5	0	–2.804	150		**33**	101	0.0786	313	
6	0	–2.5949	150		**34**	112	0.1619	322	
7	0	–2.4137	150		**35**	133	0.2469	330	
8	0	–2.2527	150		**36**	97	0.3338	339	
9	3	–2.1070	150		**37**	108	0.4230	348	
10	0	–1.9734	150		**38**	114	0.5149	358	Proficient
11	7	–1.8493	150		**39**	105	0.6100	367	
12	19	–1.7331	150		**40**	104	0.7089	377	
13	25	–1.6234	150		**41**	109	0.8122	388	
14	31	–1.5191	151		**42**	104	0.9209	399	
15	43	–1.4193	161		**43**	103	1.0359	411	Advanced
16	61	–1.3234	171		**44**	88	1.1587	423	
17	76	–1.2308	180		**45**	67	1.2911	436	
18	82	–1.1409	189		**46**	72	1.4353	451	
19	85	–1.0535	198		**47**	54	1.5948	467	
20	108	–0.9680	207		**48**	50	1.7744	486	
21	128	–0.8842	215		**49**	25	1.9817	507	
22	105	–0.8018	224		**50**	23	2.2294	532	
23	124	–0.7205	232	Below Basic	**51**	12	2.5412	564	
24	93	–0.6402	240		**52**	7	2.9703	600	
25	113	–0.5605	248		**53**	3	3.6862	600	
26	125	–0.4812	256		**54**	0	N/A	600	
27	114	–0.4022	264						

Table 8.D.39 New Conversions for ELA, Grade Eight

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**28**	819	–0.3859	266	Below Basic
1	0	–4.7164	150		**29**	904	–0.3021	274	
2	0	–3.9915	150		**30**	873	–0.2179	282	
3	2	–3.5540	150		**31**	963	–0.1331	291	
4	0	–3.2343	150		**32**	1,018	–0.0474	299	
5	0	–2.9789	150		**33**	1,016	0.0393	308	Basic
6	0	–2.7642	150		**34**	1,074	0.1274	317	
7	0	–2.5775	150		**35**	1,036	0.2170	326	
8	1	–2.4112	150		**36**	1,076	0.3086	335	
9	1	–2.2603	150		**37**	1,101	0.4026	345	
10	10	–2.1215	150		**38**	1,117	0.4992	354	Proficient
11	13	–1.9925	150		**39**	1,068	0.5991	364	
12	29	–1.8713	150		**40**	978	0.7027	375	
13	48	–1.7567	150		**41**	913	0.8108	385	
14	81	–1.6475	150		**42**	919	0.9242	397	
15	115	–1.5430	150		**43**	799	1.0440	409	Advanced
16	192	–1.4423	160		**44**	696	1.1715	421	
17	231	–1.3449	170		**45**	609	1.3085	435	
18	279	–1.2503	179		**46**	519	1.4575	450	
19	398	–1.1582	188		**47**	423	1.6217	467	
20	436	–1.0680	197		**48**	330	1.8060	485	
21	518	–0.9796	206		**49**	220	2.0180	506	
22	596	–0.8925	215		**50**	147	2.2704	531	
23	670	–0.8066	224		**51**	75	2.5868	563	
24	641	–0.7215	232		**52**	28	3.0206	600	
25	680	–0.6372	240	Below Basic	**53**	13	3.7411	600	
26	706	–0.5533	249		**54**	4	N/A	600	
27	789	–0.4696	257						

Table 8.D.40 New Conversions for ELA, Grade Nine

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**31**	665	0.0181	289	Below Basic
1	0	–4.2533	150		**32**	661	0.0884	296	
2	0	–3.5379	150		**33**	651	0.1591	303	Basic
3	0	–3.1098	150		**34**	629	0.2301	310	
4	0	–2.7992	150		**35**	665	0.3018	317	
5	0	–2.5529	150		**36**	592	0.3743	324	
6	1	–2.3473	150		**37**	574	0.4477	332	
7	0	–2.1695	150		**38**	559	0.5222	339	
8	2	–2.0122	150		**39**	509	0.5982	347	
9	2	–1.8703	150		**40**	514	0.6758	355	Proficient
10	4	–1.7405	150		**41**	500	0.7552	362	
11	17	–1.6205	150		**42**	470	0.8368	371	
12	26	–1.5084	150		**43**	379	0.9210	379	
13	57	–1.4030	150		**44**	389	1.0081	388	
14	73	–1.3031	156		**45**	340	1.0986	397	
15	142	–1.2079	166		**46**	305	1.1931	406	
16	188	–1.1167	175		**47**	258	1.2923	416	Advanced
17	270	–1.0291	183		**48**	195	1.3970	427	
18	359	–0.9443	192		**49**	210	1.5083	438	
19	463	–0.8622	200		**50**	167	1.6275	450	
20	612	–0.7823	208		**51**	141	1.7564	463	
21	674	–0.7043	216		**52**	100	1.8974	477	
22	771	–0.6280	224		**53**	91	2.0538	493	
23	800	–0.5531	231		**54**	40	2.2306	510	
24	848	–0.4794	239		**55**	33	2.4353	531	
25	905	–0.4067	246	Below Basic	**56**	35	2.6805	556	
26	842	–0.3348	253		**57**	20	2.9900	587	
27	822	–0.2636	260		**58**	5	3.4171	600	
28	803	–0.1928	267		**59**	6	4.1315	600	
29	820	–0.1224	274		**60**	2	N/A	600	
30	744	–0.0522	281						

Table 8.D.41 New Conversions for ELA, Grade Ten

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150		**31**	628	0.0588	295	**Below Basic**
1	0	–4.2429	150		**32**	630	0.1299	302	
2	0	–3.5258	150		**33**	574	0.2013	310	
3	2	–3.0962	150		**34**	578	0.2731	317	
4	0	–2.7842	150		**35**	570	0.3455	324	**Basic**
5	0	–2.5366	150		**36**	541	0.4186	331	
6	0	–2.3296	150		**37**	542	0.4927	338	
7	2	–2.1506	150		**38**	505	0.5679	346	
8	4	–1.9920	150		**39**	419	0.6446	353	
9	2	–1.8490	150		**40**	405	0.7228	361	
10	6	–1.7181	150		**41**	372	0.8028	369	
11	13	–1.5970	150	**Far**	**42**	366	0.8851	377	**Proficient**
12	37	–1.4839	150	**Below Basic**	**43**	275	0.9698	385	
13	53	–1.3774	154		**44**	233	1.0575	394	
14	76	–1.2765	164		**45**	205	1.1485	403	
15	141	–1.1804	173		**46**	187	1.2435	412	
16	191	–1.0883	182		**47**	158	1.3432	422	
17	258	–0.9997	191		**48**	120	1.4483	433	
18	388	–0.9140	199		**49**	112	1.5600	444	
19	489	–0.8310	208		**50**	77	1.6795	455	
20	573	–0.7502	216		**51**	46	1.8087	468	
21	652	–0.6714	223		**52**	38	1.9499	482	
22	696	–0.5943	231		**53**	26	2.1066	497	**Advanced**
23	722	–0.5185	238		**54**	11	2.2834	515	
24	803	–0.4440	246		**55**	6	2.4881	535	
25	748	–0.3705	253		**56**	2	2.7332	559	
26	784	–0.2978	260		**57**	1	3.0426	590	
27	762	–0.2258	267	**Below Basic**	**58**	1	3.4693	600	
28	700	–0.1543	274		**59**	0	4.1833	600	
29	737	–0.0831	281		**60**	0	N/A	600	
30	696	–0.0121	288						

Table 8.D.42 New Conversions for ELA, Grade Eleven

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150		**30**	576	0.1980	300	
1	2	–3.9698	150		**31**	538	0.2676	307	
2	0	–3.2564	150		**32**	465	0.3373	314	
3	1	–2.8303	150		**33**	417	0.4072	321	**Basic**
4	0	–2.5216	150		**34**	374	0.4776	328	
5	0	–2.2771	150		**35**	372	0.5486	335	
6	1	–2.0731	150		**36**	293	0.6204	343	
7	1	–1.8969	150		**37**	292	0.6931	350	
8	1	–1.7411	150		**38**	244	0.7670	358	
9	4	–1.6006	150		**39**	191	0.8423	365	
10	6	–1.4722	150		**40**	167	0.9191	373	
11	28	–1.3534	150	**Far Below Basic**	**41**	156	0.9978	381	
12	27	–1.2426	154		**42**	126	1.0787	389	
13	60	–1.1383	165		**43**	113	1.1621	398	**Proficient**
14	103	–1.0395	175		**44**	89	1.2484	406	
15	164	–0.9454	184		**45**	65	1.3381	415	
16	275	–0.8553	193		**46**	60	1.4317	425	
17	359	–0.7685	202		**47**	51	1.5300	435	
18	480	–0.6848	211		**48**	40	1.6337	445	
19	562	–0.6035	219		**49**	28	1.7440	456	
20	642	–0.5245	227		**50**	20	1.8621	468	
21	771	–0.4474	235		**51**	17	1.9899	481	
22	807	–0.3719	242		**52**	8	2.1297	495	**Advanced**
23	817	–0.2978	250		**53**	11	2.2848	511	
24	728	–0.2249	257		**54**	7	2.4602	529	
25	756	–0.1529	264		**55**	4	2.6634	550	
26	677	–0.0818	272	**Below Basic**	**56**	1	2.9071	574	
27	688	–0.0113	279		**57**	0	3.2149	600	
28	617	0.0588	286		**58**	0	3.6400	600	
29	634	0.1285	293		**59**	0	4.3524	600	
					60	0	N/A	600	

Table 8.D.43 New Conversions for Mathematics, Grade Three

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**25**	601	–0.3363	286	Below Basic
1	0	–4.3770	150		**26**	576	–0.2487	292	
2	0	–3.6573	150		**27**	554	–0.1606	298	
3	0	–3.2248	150		**28**	625	–0.0715	304	Basic
4	0	–2.9095	150		**29**	585	0.0187	310	
5	0	–2.6584	150		**30**	590	0.1105	317	
6	2	–2.4476	150		**31**	666	0.2043	323	
7	1	–2.2645	154		**32**	681	0.3005	330	
8	6	–2.1015	165		**33**	680	0.3996	336	
9	15	–1.9537	175		**34**	661	0.5022	344	
10	25	–1.8177	184		**35**	636	0.6091	351	Proficient
11	62	–1.6912	193		**36**	688	0.7211	359	
12	102	–1.5723	201		**37**	621	0.8393	367	
13	158	–1.4597	209		**38**	630	0.9650	375	
14	203	–1.3522	216		**39**	597	1.1001	385	
15	266	–1.2490	223		**40**	534	1.2469	395	
16	345	–1.1495	230	Below Basic	**41**	463	1.4089	406	
17	407	–1.0529	237		**42**	422	1.5909	418	
18	435	–0.9588	243		**43**	347	1.8004	433	Advanced
19	453	–0.8667	250		**44**	242	2.0502	450	
20	515	–0.7762	256		**45**	179	2.3640	471	
21	524	–0.6870	262		**46**	100	2.7948	501	
22	569	–0.5987	268		**47**	50	3.5129	550	
23	573	–0.5110	274		**48**	8	N/A	600	
24	576	–0.4237	280						

Table 8.D.44 New Conversions for Mathematics, Grade Four

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	1	N/A	150	Far Below Basic	**25**	1,019	–0.2791	286	Below Basic
1	0	–4.4850	150		**26**	1,001	–0.1857	296	
2	1	–3.7578	150		**27**	1,014	–0.0919	305	Basic
3	0	–3.3178	150		**28**	1,017	0.0027	315	
4	0	–2.9950	150		**29**	1,049	0.0985	326	
5	1	–2.7363	150		**30**	1,056	0.1958	336	
6	1	–2.5181	150		**31**	1,006	0.2949	346	
7	0	–2.3275	150		**32**	1,017	0.3964	357	Proficient
8	3	–2.1571	150		**33**	974	0.5008	368	
9	11	–2.0019	150		**34**	907	0.6086	379	
10	21	–1.8586	150		**35**	871	0.7207	391	
11	39	–1.7249	150		**36**	755	0.8378	404	
12	73	–1.5989	150		**37**	703	0.9611	417	
13	106	–1.4792	159		**38**	653	1.0919	431	Advanced
14	197	–1.3647	171		**39**	601	1.2319	445	
15	273	–1.2547	183		**40**	503	1.3839	461	
16	362	–1.1484	194		**41**	423	1.5509	479	
17	425	–1.0452	205		**42**	328	1.7378	499	
18	542	–0.9445	215		**43**	266	1.9524	521	
19	618	–0.8459	226	Below Basic	**44**	202	2.2073	548	
20	693	–0.7491	236		**45**	118	2.5262	582	
21	745	–0.6537	246		**46**	73	2.9623	600	
22	815	–0.5592	256		**47**	23	3.6853	600	
23	885	–0.4655	266		**48**	2	N/A	600	
24	947	–0.3722	276						

Table 8.D.45 New Conversions for Mathematics, Grade Five (pencil-and-paper version)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	1	N/A	150	Far Below Basic	**25**	864	–0.1054	306	Basic
1	0	–4.1933	150		**26**	914	–0.0151	314	
2	0	–3.4726	150		**27**	942	0.0758	322	
3	1	–3.0389	150		**28**	990	0.1677	330	
4	0	–2.7224	150		**29**	1019	0.2607	338	
5	2	–2.4699	150		**30**	966	0.3554	346	
6	2	–2.2577	150		**31**	1,035	0.4521	355	Proficient
7	2	–2.0730	150		**32**	1,121	0.5513	363	
8	11	–1.9084	150		**33**	1,005	0.6533	372	
9	22	–1.7589	163		**34**	1,059	0.7590	381	
10	49	–1.6211	175		**35**	1,079	0.8689	391	
11	79	–1.4927	186		**36**	1,066	0.9840	401	
12	160	–1.3719	197		**37**	958	1.1053	411	
13	218	–1.2572	207		**38**	939	1.2341	422	Advanced
14	313	–1.1477	216		**39**	833	1.3724	434	
15	388	–1.0424	225		**40**	727	1.5224	447	
16	461	–0.9407	234	Below Basic	**41**	651	1.6876	462	
17	572	–0.8418	243		**42**	547	1.8727	478	
18	625	–0.7454	251		**43**	406	2.0855	496	
19	707	–0.6509	259		**44**	326	2.3386	518	
20	748	–0.5580	267		**45**	227	2.6556	545	
21	798	–0.4663	275		**46**	135	3.0899	583	
22	795	–0.3755	283		**47**	56	3.8108	600	
23	822	–0.2853	291		**48**	14	N/A	600	
24	920	–0.1953	299						

Table 8.D.46 New Conversions for Mathematics, Grade Five (braille)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**24**	0	–0.1566	302	Basic
1	0	–4.1797	150		**25**	1	–0.0644	310	
2	0	–3.4584	150		**26**	0	0.0282	318	
3	0	–3.0241	150		**27**	1	0.1216	326	
4	0	–2.7069	150		**28**	0	0.2162	334	
5	0	–2.4538	150		**29**	0	0.3124	343	
6	0	–2.2408	150		**30**	1	0.4104	351	Proficient
7	0	–2.0554	150		**31**	1	0.5109	360	
8	0	–1.8900	152		**32**	0	0.6143	369	
9	0	–1.7397	165		**33**	1	0.7211	378	
10	0	–1.6011	177		**34**	0	0.8322	388	
11	0	–1.4718	188		**35**	0	0.9484	398	
12	0	–1.3501	199		**36**	0	1.0707	408	
13	0	–1.2344	209		**37**	0	1.2006	419	
14	1	–1.1238	218		**38**	1	1.3399	431	Advanced
15	0	–1.0175	227	Below Basic	**39**	0	1.4909	445	
16	0	–0.9145	236		**40**	0	1.6570	459	
17	0	–0.8144	245		**41**	0	1.8431	475	
18	0	–0.7167	253		**42**	0	2.0569	494	
19	0	–0.6208	262		**43**	0	2.3108	515	
20	0	–0.5264	270		**44**	0	2.6287	543	
21	2	–0.4331	278		**45**	0	3.0638	581	
22	1	–0.3406	286		**46**	0	3.7856	600	
23	1	–0.2485	294		**47**	0	N/A	600	

Table 8.D.47 New Conversions for Mathematics, Grade Six

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150		**28**	1,272	–0.1017	302	
1	0	–4.3085	150		**29**	1,259	–0.0222	312	
2	0	–3.5897	150		**30**	1,219	0.0577	322	**Basic**
3	0	–3.1580	150		**31**	1,209	0.1382	332	
4	0	–2.8438	150		**32**	1,209	0.2194	343	
5	1	–2.5937	150		**33**	1,119	0.3018	353	
6	1	–2.3841	150		**34**	1,077	0.3854	364	
7	3	–2.2023	150		**35**	938	0.4707	374	
8	3	–2.0408	150		**36**	916	0.5579	385	**Proficient**
9	5	–1.8946	150		**37**	884	0.6474	396	
10	13	–1.7604	150	**Far Below Basic**	**38**	739	0.7396	408	
11	30	–1.6358	150		**39**	668	0.8351	420	
12	53	–1.5190	150		**40**	585	0.9343	432	
13	95	–1.4087	150		**41**	493	1.0379	446	
14	137	–1.3039	151		**42**	394	1.1469	459	
15	208	–1.2036	164		**43**	345	1.2623	474	
16	335	–1.1071	176		**44**	264	1.3855	489	
17	438	–1.0140	188		**45**	173	1.5182	506	
18	509	–0.9236	199		**46**	157	1.6628	524	
19	621	–0.8357	210		**47**	116	1.8226	544	**Advanced**
20	797	–0.7497	221		**48**	98	2.0027	567	
21	896	–0.6655	231		**49**	58	2.2105	593	
22	996	–0.5827	242		**50**	30	2.4587	600	
23	1,078	–0.5010	252		**51**	20	2.7709	600	
24	1,203	–0.4202	262	**Below Basic**	**52**	6	3.2006	600	
25	1,137	–0.3401	272		**53**	1	3.9174	600	
26	1,167	–0.2604	282		**54**	1	N/A	600	
27	1,246	–0.1810	292						

Table 8.D.48 New Conversions for Mathematics, Grade Seven

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**28**	1,262	0.1740	328	Basic
1	0	–3.9825	150		**29**	1,157	0.2526	341	
2	0	–3.2664	150		**30**	1,043	0.3317	353	Proficient
3	0	–2.8375	150		**31**	915	0.4114	366	
4	2	–2.5259	150		**32**	777	0.4919	379	
5	0	–2.2784	150		**33**	699	0.5736	392	
6	1	–2.0713	150		**34**	614	0.6567	405	
7	2	–1.8919	150		**35**	550	0.7415	419	
8	7	–1.7327	150		**36**	460	0.8283	433	
9	16	–1.5888	150		**37**	340	0.9175	447	Advanced
10	42	–1.4568	150		**38**	291	1.0095	462	
11	71	–1.3344	150		**39**	224	1.1047	477	
12	125	–1.2197	150		**40**	183	1.2038	493	
13	221	–1.1114	150		**41**	147	1.3075	510	
14	316	–1.0085	150		**42**	125	1.4167	527	
15	476	–0.9100	154		**43**	80	1.5323	546	
16	686	–0.8154	170		**44**	64	1.6558	565	
17	807	–0.7239	184		**45**	43	1.7890	587	
18	1,052	–0.6352	198		**46**	33	1.9342	600	
19	1,184	–0.5488	212		**47**	23	2.0950	600	
20	1,432	–0.4644	226		**48**	11	2.2760	600	
21	1,482	–0.3816	239	Below Basic	**49**	6	2.4850	600	
22	1,561	–0.3001	252		**50**	4	2.7346	600	
23	1,655	–0.2197	265		**51**	3	3.0486	600	
24	1,634	–0.1402	278		**52**	1	3.4802	600	
25	1,492	–0.0612	290		**53**	1	4.1994	600	
26	1,462	0.0173	303	Basic	**54**	0	N/A	600	
27	1,348	0.0956	316						

Table 8.D.49 New Conversions for Algebra I

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**31**	1128	0.1311	300	Basic
1	1	–4.0936	150		**32**	1060	0.2007	306	
2	0	–3.3812	150		**33**	1002	0.2706	312	
3	0	–2.9559	150		**34**	952	0.3409	319	
4	0	–2.6479	150		**35**	803	0.4119	325	
5	0	–2.4042	150		**36**	793	0.4837	331	
6	0	–2.2009	150		**37**	744	0.5564	337	
7	0	–2.0254	150		**38**	661	0.6303	344	
8	2	–1.8701	150		**39**	590	0.7056	351	Proficient
9	2	–1.7303	150		**40**	557	0.7825	357	
10	7	–1.6024	150		**41**	474	0.8613	364	
11	30	–1.4842	158		**42**	367	0.9422	371	
12	40	–1.3739	168		**43**	372	1.0257	379	
13	95	–1.2701	177		**44**	330	1.1121	386	
14	152	–1.1718	186		**45**	277	1.2019	394	
15	269	–1.0781	194		**46**	253	1.2957	402	
16	320	–0.9884	202		**47**	181	1.3941	411	Advanced
17	505	–0.9020	209		**48**	150	1.4980	420	
18	676	–0.8186	217		**49**	150	1.6084	430	
19	865	–0.7377	224		**50**	119	1.7268	440	
20	1067	–0.6590	231		**51**	93	1.8547	451	
21	1205	–0.5822	237		**52**	70	1.9947	464	
22	1329	–0.5069	244		**53**	54	2.1501	477	
23	1411	–0.4331	251	Below Basic	**54**	53	2.3257	493	
24	1455	–0.3604	257		**55**	36	2.5292	511	
25	1385	–0.2886	263		**56**	13	2.7730	532	
26	1557	–0.2177	269		**57**	15	3.0811	559	
27	1468	–0.1473	276		**58**	0	3.5066	597	
28	1353	–0.0774	282		**59**	2	4.2192	600	
29	1213	–0.0078	288		**60**	0	N/A	600	
30	1190	0.0616	294						

Table 8.D.50 New Conversions for Geometry

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**31**	279	0.1207	300	Basic
1	0	–4.1209	150		**32**	265	0.1905	306	
2	0	–3.4074	150		**33**	248	0.2606	311	
3	0	–2.9810	150		**34**	215	0.3312	317	
4	0	–2.6721	150		**35**	192	0.4024	322	
5	0	–2.4274	150		**36**	161	0.4743	328	
6	0	–2.2232	150		**37**	153	0.5472	333	
7	1	–2.0469	150		**38**	136	0.6213	339	
8	0	–1.8909	150		**39**	111	0.6967	345	
9	3	–1.7502	156		**40**	105	0.7738	351	Proficient
10	2	–1.6217	166		**41**	102	0.8527	357	
11	6	–1.5028	175		**42**	74	0.9338	363	
12	9	–1.3918	184		**43**	99	1.0174	369	
13	23	–1.2874	192		**44**	64	1.1039	376	
14	33	–1.1885	200		**45**	58	1.1938	383	
15	46	–1.0942	207		**46**	30	1.2877	390	
16	79	–1.0040	214		**47**	30	1.3862	398	
17	120	–0.9172	221		**48**	42	1.4902	406	
18	165	–0.8333	227		**49**	23	1.6008	414	Advanced
19	222	–0.7519	233		**50**	20	1.7192	423	
20	246	–0.6728	239		**51**	22	1.8472	433	
21	295	–0.5955	245		**52**	13	1.9873	444	
22	372	–0.5199	251		**53**	9	2.1428	456	
23	372	–0.4457	257	Below Basic	**54**	12	2.3185	470	
24	372	–0.3727	262		**55**	8	2.5220	485	
25	363	–0.3006	268		**56**	3	2.7659	504	
26	361	–0.2293	273		**57**	0	3.0742	528	
27	388	–0.1587	279		**58**	0	3.4997	560	
28	380	–0.0885	284		**59**	0	4.2125	600	
29	336	–0.0187	290		**60**	0	N/A	600	
30	323	0.0510	295						

Table 8.D.51 New Conversions for Science, Grade Five

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150	Far Below Basic	**24**	1,090	–0.4164	301	Basic
1	0	–4.5249	150		**25**	1,210	–0.3230	308	
2	1	–3.7984	150		**26**	1,263	–0.2295	315	
3	0	–3.3589	150		**27**	1,339	–0.1355	322	
4	0	–3.0367	150		**28**	1,388	–0.0407	329	
5	0	–2.7785	150		**29**	1,430	0.0553	336	
6	1	–2.5607	150		**30**	1,397	0.1527	344	
7	4	–2.3706	156		**31**	1,438	0.2521	351	Proficient
8	4	–2.2005	168		**32**	1,355	0.3538	359	
9	7	–2.0456	180		**33**	1,368	0.4584	366	
10	38	–1.9027	191		**34**	1,222	0.5664	374	
11	37	–1.7691	201		**35**	1,157	0.6787	383	
12	87	–1.6433	210		**36**	1,001	0.7959	392	
13	142	–1.5237	219		**37**	903	0.9194	401	Advanced
14	212	–1.4094	227		**38**	753	1.0504	410	
15	279	–1.2995	236		**39**	625	1.1906	421	
16	368	–1.1932	243	Below Basic	**40**	524	1.3427	432	
17	436	–1.0900	251		**41**	393	1.5098	445	
18	524	–0.9892	259		**42**	285	1.6970	459	
19	640	–0.8906	266		**43**	186	1.9117	475	
20	743	–0.7938	273		**44**	118	2.1667	494	
21	821	–0.6982	280		**45**	81	2.4858	517	
22	895	–0.6037	287		**46**	44	2.9221	550	
23	1,006	–0.5098	294		**47**	20	3.6452	600	
					48	3	N/A	600	

Table 8.D.52 New Conversions for Science, Grade Eight

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	0	N/A	150		**27**	1,000	–0.2444	300	
1	1	–4.3764	150		**28**	1,007	–0.1656	307	
2	0	–3.6553	150		**29**	1,035	–0.0868	314	
3	0	–3.2217	150		**30**	1,022	–0.0075	321	**Basic**
4	0	–2.9059	150		**31**	1,020	0.0723	328	
5	0	–2.6546	150		**32**	967	0.1530	336	
6	0	–2.4440	150		**33**	920	0.2347	343	
7	0	–2.2614	150		**34**	903	0.3177	350	
8	4	–2.0992	150		**35**	886	0.4022	358	
9	8	–1.9526	150		**36**	827	0.4888	366	
10	7	–1.8181	159	**Far Below Basic**	**37**	765	0.5776	374	
11	26	–1.6934	170		**38**	741	0.6691	382	
12	27	–1.5766	181		**39**	651	0.7638	390	
13	59	–1.4663	191		**40**	649	0.8623	399	**Proficient**
14	97	–1.3616	200		**41**	560	0.9652	408	
15	165	–1.2615	209		**42**	508	1.0734	418	
16	241	–1.1653	218		**43**	452	1.1881	428	
17	315	–1.0724	226		**44**	398	1.3104	439	
18	381	–0.9824	234		**45**	341	1.4423	451	
19	530	–0.8949	242		**46**	285	1.5861	464	
20	607	–0.8094	250		**47**	217	1.7451	478	
21	698	–0.7256	257		**48**	163	1.9242	494	**Advanced**
22	756	–0.6432	264		**49**	110	2.1312	513	
23	823	–0.5621	272		**50**	101	2.3784	535	
24	868	–0.4818	279	**Below Basic**	**51**	51	2.6897	563	
25	896	–0.4023	286		**52**	26	3.1184	600	
26	984	–0.3232	293		**53**	11	3.8341	600	
					54	3	N/A	600	

Table 8.D.53 New Conversions for Life Science (Grade 10)

Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level	Raw Score	Freq. Distr.	Theta	Scale Score	Performance Level
0	1	N/A	150		**31**	534	0.0060	294	**Below Basic**
1	2	–4.2357	150		**32**	531	0.0763	300	
2	1	–3.5228	150		**33**	525	0.1470	306	
3	0	–3.0971	150		**34**	498	0.2182	312	
4	3	–2.7888	150		**35**	478	0.2900	318	
5	3	–2.5446	150		**36**	489	0.3626	325	**Basic**
6	2	–2.3408	150		**37**	432	0.4362	331	
7	0	–2.1649	150		**38**	437	0.5110	337	
8	1	–2.0092	150		**39**	398	0.5872	344	
9	2	–1.8688	150		**40**	380	0.6650	351	
10	3	–1.7405	150		**41**	374	0.7448	357	
11	3	–1.6218	155	**Far Below Basic**	**42**	359	0.8267	365	
12	16	–1.5110	164		**43**	336	0.9112	372	**Proficient**
13	18	–1.4067	173		**44**	276	0.9986	379	
14	36	–1.3078	181		**45**	229	1.0895	387	
15	63	–1.2136	190		**46**	206	1.1844	395	
16	146	–1.1233	197		**47**	216	1.2839	404	
17	182	–1.0364	205		**48**	166	1.3890	413	
18	253	–0.9524	212		**49**	134	1.5006	422	
19	363	–0.8709	219		**50**	129	1.6201	433	
20	428	–0.7916	226		**51**	88	1.7494	444	
21	470	–0.7142	232		**52**	67	1.8906	456	
22	559	–0.6383	239		**53**	53	2.0474	469	
23	572	–0.5638	245		**54**	42	2.2244	484	**Advanced**
24	587	–0.4904	252		**55**	34	2.4293	502	
25	521	–0.4180	258		**56**	20	2.6747	523	
26	542	–0.3464	264		**57**	8	2.9844	550	
27	552	–0.2754	270	**Below Basic**	**58**	3	3.4114	586	
28	570	–0.2048	276		**59**	1	4.1258	600	
29	556	–0.1344	282		**60**	0	N/A	600	
30	458	–0.0642	288						

Appendix 8.E—DIF Analyses

Table 8.E.1 Operational Items Exhibiting Significant DIF

Content Area	Accession No.	Grade	Item Seq	MHD-DIF	Comparison	In Favor Of
English–Language-Arts	VE102305	04	58	0.218	MALE/FEMALE	FEMALE
	VE102305	04	58	–0.423	SLD/AUT	SLD
	VE102305	04	58	–0.404	SLD/ED	SLD
	VE102305	04	58	–0.581	SLD/MR	SLD
	VE456478	04	35	1.81	WHITE/FILIPINO	FILIPINO
	VE456437	05	38	1.87	WHITE/FILIPINO	FILIPINO
	VE456437	05	38	1.64	WHITE/COMBASIAN	COMBASIAN
	VE456437	05	38	1.96	SLD/HH	HH
	VC743438	06	63	1.52	SLD/AUT	AUT
	VE332265	06	3	–3.27	SLD/DEAF	SLD
	VC743585	06	14	2.12	SLD/DEAF	DEAF
	VC743467	06	54	1.85	SLD/DEAF	DEAF
	VC743447	06	55	2.18	SLD/DEAF	DEAF
	VE332265	06	3	–2.86	SLD/HH	SLD
	VC743447	06	55	3.22	SLD/HH	HH
	VE332265	06	3	–1.57	SLD/MR	SLD
	VC743486	06	53	1.57	WHITE/COMBASIAN	COMBASIAN
	VC743615	06	32	–1.99	WHITE/FILIPINO	WHITE
	VC743486	06	53	1.85	WHITE/FILIPINO	FILIPINO
	VC743470	06	57	2.01	WHITE/FILIPINO	FILIPINO
	VE332169	07	27	–1.59	SLD/AUT	SLD
	VC743681	07	39	2.03	SLD/AUT	AUT
	VE102295	07	64	–0.446	SLD/AUT	SLD
	VE578880	07	1	–2.50	SLD/DEAF	SLD
	VE332172	07	31	1.91	SLD/DEAF	DEAF
	VE332169	07	27	–2.49	SLD/DEAF	SLD
	VC743669	07	59	–2.13	SLD/DEAF	SLD
	VE102295	07	64	–0.339	SLD/ED	SLD
	VE102295	07	64	–0.265	SLD/HH	SLD
	VE102295	07	64	–0.482	SLD/MR	SLD
	VE102295	07	64	–0.264	SLD/OI	SLD
	VC743635	07	53	1.79	WHITE/ASIAN	ASIAN
	VC743635	07	53	1.67	WHITE/COMBASIAN	COMBASIAN
	VE578880	07	1	–1.83	WHITE/FILIPINO	WHITE
	VC743681	07	39	1.98	WHITE/FILIPINO	FILIPINO
	VC743635	07	53	1.99	WHITE/FILIPINO	FILIPINO
	VC743884	08	4	–1.68	SLD/AUT	SLD
	VC743916	08	7	–2.84	SLD/AUT	SLD
	VC743996	08	10	–1.57	SLD/AUT	SLD
	VC743879	08	38	2.15	SLD/AUT	AUT
	VC743837	08	62	2.48	SLD/AUT	AUT
	VC743880	08	1	–2.07	SLD/DEAF	SLD
	VE064139	08	2	–1.98	SLD/DEAF	SLD
	VC743884	08	4	–2.07	SLD/DEAF	SLD
	VE578885	08	6	–2.25	SLD/DEAF	SLD

Content Area	Accession No.	Grade	Item Seq	MHD-DIF	Comparison	In Favor Of
	VC743916	08	7	–1.86	SLD/DEAF	SLD
	VC743996	08	10	–2.86	SLD/DEAF	SLD
	VC743879	08	38	2.32	SLD/DEAF	DEAF
	VC743875	08	41	2.15	SLD/DEAF	DEAF
	VC743815	08	51	4.01	SLD/DEAF	DEAF
	VE331908	08	58	2.18	SLD/DEAF	DEAF
	VC743837	08	62	2.35	SLD/DEAF	DEAF
	VC743884	08	4	–1.58	SLD/MR	SLD
	VC743916	08	7	–2.00	WHITE/ASIAN	WHITE
	VC743879	08	38	1.83	WHITE/ASIAN	ASIAN
	VC743837	08	62	2.83	WHITE/ASIAN	ASIAN
	VC743837	08	62	2.41	WHITE/COMBASIAN	COMBASIAN
	VC743879	08	38	2.31	WHITE/COMBASIAN	COMBASIAN
	VE757397	08	5	–1.63	WHITE/COMBASIAN	WHITE
	VC743837	08	62	3.18	WHITE/FILIPINO	FILIPINO
	VC743879	08	38	3.81	WHITE/FILIPINO	FILIPINO
	VE286277	09	2	–2.07	SLD/HH	SLD
	VE286270	09	1	–1.71	SLD/MR	SLD
	VE458643	10	12	–2.24	SLD/DEAF	SLD
	VE458645	10	13	1.83	SLD/DEAF	DEAF
	VE578614	10	56	–3.06	SLD/DEAF	SLD
	VE458600	10	5	–2.17	WHITE/FILIPINO	WHITE
	VE458715	11	2	–1.55	SLD/AUT	SLD
	VE458741	11	26	–1.78	WHITE/COMBASIAN	WHITE
	VE456681	11	62	1.70	WHITE/COMBASIAN	COMBASIAN
	VE458741	11	26	–2.59	WHITE/FILIPINO	WHITE
	VE456681	11	62	3.16	WHITE/FILIPINO	FILIPINO
Mathematics	VE457371	03	26	1.67	SLD/AUT	AUT
	VC326254	05	32	–1.80	WHITE/FILIPINO	WHITE
	VC744012	06	17	1.58	WHITE/ASIAN	ASIAN
	VE064100	07	11	–1.55	WHITE/COMBASIAN	WHITE
	VE286008	AL1	62	–1.70	WHITE/FILIPINO	WHITE
	VE457252	MGM	38	2.04	WHITE/COMBASIAN	COMBASIAN
Science	VE049213	05	33	2.11	SLD/HH	HH
	VC744536	08	12	–2.77	SLD/DEAF	SLD
	VC744536	08	12	–2.24	SLD/MR	SLD
	VE332420	08	2	–1.98	WHITE/ASIAN	WHITE

Table 8.E.2 Field-test Items Exhibiting Significant DIF

Content Area	Accession No.	Grade	Item Seq	MHD-DIF	Comparison	In Favor Of
English–Language-Arts	VE756861	03	48	1.80	SLD/AUT	AUT
	VE756810	06	51	1.74	SLD/AUT	AUT
	VE757405	07	3	1.69	SLD/AUT	AUT
	VE757397	08	5	–1.85	WHITE/ASIAN	WHITE
	VE757397	08	5	–1.63	WHITE/COMBASIAN	WHITE
Mathematics	VE757040	AL1	56	–1.85	SLD/AUT	SLD
Science	VE757751	08	51	–2.15	SLD/AUT	SLD

Table 8.E.3 DIF Classifications for ELA, Grade Three Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	3	6	4	8	0	0	0	0	3	6	0	0	2	4	0	0	1	2	0	0	4	8	0	0	4	8	0	0	0	0	0	0	0	0	13	27
A+	28	58	24	50	26	54	21	44	20	42	23	48	0	0	21	44	26	54	24	50	0	0	28	58	0	0	19	40	0	0	22	46	24	50	25	52	0	0	0	0	12	25
A-	20	42	24	50	21	44	23	48	21	44	25	52	0	0	24	50	22	46	21	44	0	0	16	33	0	0	22	46	0	0	17	35	24	50	23	48	0	0	0	0	15	31
B-	0	0	0	0	1	2	1	2	3	6	0	0	0	0	0	0	0	0	1	2	0	0	3	6	0	0	3	6	0	0	5	10	0	0	0	0	0	0	0	0	8	17
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	48	100	0	0	48	100	0	0	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.4 DIF Classifications for ELA, Grade Four Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	0	0	1	2	3	6	0	0	0	0	2	4	1	2	3	6	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	5	10
A+	29	59	26	53	21	43	23	47	16	33	28	57	0	0	23	47	28	57	18	37	0	0	25	51	0	0	24	49	0	0	0	0	23	47	24	49	0	0	0	0	16	33
A-	19	39	23	47	27	55	25	51	26	53	21	43	0	0	24	49	20	41	26	53	0	0	23	47	0	0	21	43	0	0	0	0	26	53	25	51	0	0	0	0	20	41
B-	0	0	0	0	1	2	0	0	3	6	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	6	12
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Small N	0	0	0	0	0	0	0	0	0	0	0	0	49	100	0	0	0	0	0	0	49	100	0	0	49	100	0	0	49	100	49	100	0	0	0	0	49	100	49	100	0	0
TOTAL	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100	49	100

Table 8.E.5 DIF Classifications for ELA, Grade Five Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	1	2	0	0	3	6	2	4	0	0	0	0	0	0	0	0	2	4	0	0	0	0	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	13
A+	24	50	26	54	23	48	22	46	21	44	24	50	0	0	23	48	25	52	21	44	0	0	25	52	18	38	26	54	0	0	25	52	24	50	27	56	0	0	0	0	16	33
A-	24	50	20	42	25	52	22	46	22	46	24	50	0	0	23	48	23	48	24	50	0	0	23	48	22	46	22	46	0	0	21	44	24	50	21	44	0	0	0	0	17	35
B-	0	0	1	2	0	0	1	2	2	4	0	0	0	0	1	2	0	0	1	2	0	0	0	0	3	6	0	0	0	0	2	4	0	0	0	0	0	0	0	0	8	17
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.6 DIF Classifications for ELA, Grade Six Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	2	4	0	0	0	0	1	2	0	0	1	2	3	6	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	11
B+	0	0	0	0	0	0	3	6	3	6	0	0	0	0	1	2	0	0	2	4	3	6	0	0	1	2	1	2	0	0	2	4	0	0	0	0	0	0	0	0	4	7
A+	26	48	26	48	25	46	21	39	24	44	30	56	0	0	22	41	30	56	26	48	19	35	26	48	21	39	31	57	0	0	25	46	27	50	26	48	0	0	0	0	16	30
A-	28	52	28	52	29	54	29	54	23	43	24	44	0	0	29	54	24	44	24	44	25	46	28	52	29	54	19	35	0	0	27	50	27	50	28	52	0	0	0	0	21	39
B-	0	0	0	0	0	0	1	2	1	2	0	0	0	0	1	2	0	0	1	2	3	6	0	0	1	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	5	9
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	4
Small N	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.7 DIF Classifications for ELA, Grade Seven Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	1	2	2	4	0	0	0	0	1	2	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5
B+	1	2	0	0	0	0	4	7	4	7	0	0	0	0	2	4	0	0	4	7	7	13	0	0	1	2	0	0	0	0	2	4	1	2	1	2	0	0	0	0	11	20
A+	32	58	31	56	28	51	24	44	19	35	29	53	0	0	28	51	30	55	23	42	21	38	27	49	29	53	27	49	0	0	26	47	25	45	26	47	0	0	0	0	14	25
A-	21	38	24	44	27	49	22	40	24	44	26	47	0	0	20	36	25	45	23	42	17	31	27	49	22	40	26	47	0	0	24	44	29	53	28	51	0	0	0	0	11	20
B-	1	2	0	0	0	0	4	7	5	9	0	0	0	0	4	7	0	0	2	4	5	9	0	0	2	4	1	2	0	0	2	4	0	0	0	0	0	0	0	0	12	22
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	4	3	5	1	2	1	2	1	2	0	0	1	2	0	0	0	0	0	0	0	0	4	7
Small N	0	0	0	0	0	0	0	0	0	0	0	0	55	100	0	0	0	0	0	0	1	2	0	0	0	0	0	0	55	100	0	0	0	0	0	0	55	100	55	100	0	0
TOTAL	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100	55	100

Table 8.E.8 DIF Classifications for ELA, Grade Eight Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	2	4	2	4	0	0	0	0	2	4	0	0	2	4	5	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9
B+	0	0	0	0	0	0	4	7	0	0	0	0	1	2	1	2	0	0	2	4	5	9	0	0	2	4	2	4	0	0	1	2	1	2	2	4	0	0	0	0	12	22
A+	23	43	23	43	30	56	17	31	22	41	26	48	25	46	21	39	27	50	25	46	12	22	29	54	28	52	26	48	0	0	28	52	26	48	25	46	0	0	0	0	12	22
A-	31	57	31	57	24	44	28	52	25	46	28	52	28	52	28	52	27	50	20	37	20	37	25	46	20	37	23	43	0	0	23	43	27	50	27	50	0	0	0	0	10	19
B-	0	0	0	0	0	0	2	4	5	9	0	0	0	0	2	4	0	0	2	4	6	11	0	0	4	7	2	4	0	0	2	4	0	0	0	0	0	0	0	0	9	17
C-	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	6	6	11	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	6	11
Small N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.9 DIF Classifications for ELA, Grade Nine Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	1	2	4	7	5	8	0	0	0	0	3	5	0	0	3	5	0	0	0	0	3	5	0	0	0	0	3	5	0	0	0	0	0	0	0	0	13	22
A+	29	48	39	65	25	42	24	40	31	52	34	57	0	0	31	52	31	52	30	50	0	0	30	50	29	48	31	52	0	0	29	48	29	48	30	50	0	0	0	0	20	33
A-	30	50	20	33	34	57	31	52	21	35	26	43	0	0	24	40	29	48	23	38	0	0	30	50	23	38	28	47	0	0	27	45	31	52	29	48	0	0	0	0	15	25
B-	1	2	1	2	0	0	1	2	3	5	0	0	0	0	2	3	0	0	4	7	0	0	0	0	4	7	0	0	0	0	1	2	0	0	1	2	0	0	0	0	10	17
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Small N	0	0	0	0	0	0	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.10 DIF Classifications for ELA, Grade Ten Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	0	0	3	5	7	12	0	0	0	0	2	3	0	0	2	3	8	13	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	14	23
A+	33	55	34	57	29	48	29	48	20	33	25	42	0	0	31	52	32	53	30	50	27	45	32	53	0	0	33	55	0	0	27	45	31	52	32	53	0	0	0	0	18	30
A-	26	43	25	42	31	52	24	40	28	47	35	58	0	0	23	38	28	47	26	43	13	22	28	47	0	0	23	38	0	0	30	50	29	48	28	47	0	0	0	0	12	20
B-	1	2	1	2	0	0	4	7	4	7	0	0	0	0	4	7	0	0	2	3	9	15	0	0	0	0	4	7	0	0	2	3	0	0	0	0	0	0	0	0	12	20
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5
Small N	0	0	0	0	0	0	0	0	0	0	0	0	60	100	0	0	0	0	0	0	0	0	0	0	60	100	0	0	60	100	0	0	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.11 DIF Classifications for ELA, Grade Eleven Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	1	2	0	0	0	0	3	5	0	0	0	0	0	0	0	0	0	0	5	8	1	2	0	0	1	2	0	0	0	0	0	0	1	2	0	0	0	0	7	12
A+	34	57	33	55	35	58	34	57	27	45	32	53	0	0	28	47	31	52	33	55	26	43	30	50	0	0	35	58	0	0	0	0	28	47	32	53	0	0	0	0	18	30
A-	25	42	26	43	22	37	20	33	26	43	28	47	0	0	30	50	29	48	26	43	19	32	28	47	0	0	19	32	0	0	0	0	32	53	27	45	0	0	0	0	15	25
B-	1	2	0	0	3	5	6	10	2	3	0	0	0	0	0	0	0	0	0	0	10	17	1	2	0	0	5	8	0	0	0	0	0	0	0	0	0	0	0	0	17	28
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3
Small N	0	0	0	0	0	0	0	0	0	0	0	0	60	100	0	0	0	0	0	0	0	0	0	0	60	100	0	0	60	100	60	100	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.12 DIF Classifications for Mathematics, Grade Three Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	2	4	2	4	3	6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	2	4	0	0	6	13	0	0	0	0	0	0	0	0	10	21
A+	24	50	21	44	24	50	23	48	21	44	25	52	0	0	23	48	28	58	23	48	0	0	22	46	0	0	22	46	0	0	18	38	24	50	26	54	0	0	0	0	14	29
A-	24	50	27	56	21	44	21	44	23	48	23	48	0	0	25	52	20	42	24	50	0	0	24	50	0	0	21	44	0	0	19	40	24	50	22	46	0	0	0	0	13	27
B-	0	0	0	0	1	2	2	4	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	6	0	0	5	10	0	0	0	0	0	0	0	0	10	21
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	48	100	0	0	48	100	0	0	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.13 DIF Classifications for Mathematics, Grade Four Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	1	2	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	6	13
A+	26	54	25	52	21	44	26	54	18	38	23	48	0	0	23	48	24	50	24	50	0	0	23	48	0	0	23	48	0	0	0	0	19	40	27	56	0	0	0	0	19	40
A-	22	46	23	48	25	52	17	35	25	52	25	52	0	0	24	50	24	50	22	46	0	0	24	50	0	0	21	44	0	0	0	0	29	60	21	44	0	0	0	0	14	29
B-	0	0	0	0	1	2	5	10	2	4	0	0	0	0	1	2	0	0	2	4	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	9	19
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	48	100	0	0	48	100	48	100	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.14 DIF Classifications for Mathematics, Grade Five Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	2	4	3	6	0	0	0	0	1	2	0	0	0	0	0	0	1	2	1	2	0	0	0	0	2	4	0	0	0	0	0	0	0	0	7	15
A+	28	58	27	56	27	56	20	42	21	44	26	54	0	0	23	48	26	54	25	52	0	0	21	44	25	52	21	44	0	0	22	46	25	52	23	48	0	0	0	0	22	46
A-	19	40	21	44	21	44	26	54	18	38	22	46	0	0	23	48	22	46	23	48	0	0	26	54	20	42	26	54	0	0	20	42	23	48	25	52	0	0	0	0	9	19
B-	1	2	0	0	0	0	0	0	5	10	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	4	1	2	0	0	4	8	0	0	0	0	0	0	0	0	9	19
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.15 DIF Classifications for Mathematics, Grade Six Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	1	2	0	0	0	0	1	2	4	7	0	0	0	0	2	4	0	0	0	0	0	0	1	2	1	2	2	4	0	0	3	6	0	0	0	0	0	0	0	0	9	17
A+	27	50	27	50	26	48	20	37	20	37	28	52	0	0	20	37	30	56	26	48	0	0	25	46	27	50	23	43	0	0	27	50	25	46	27	50	0	0	0	0	17	31
A-	26	48	27	50	27	50	30	56	27	50	26	48	0	0	30	56	24	44	28	52	0	0	28	52	25	46	27	50	0	0	21	39	29	54	27	50	0	0	0	0	19	35
B-	0	0	0	0	1	2	2	4	3	6	0	0	0	0	2	4	0	0	0	0	0	0	0	0	1	2	2	4	0	0	3	6	0	0	0	0	0	0	0	0	8	15
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.16 DIF Classifications for Mathematics, Grade Seven Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	2	4	4	7	0	0	0	0	2	4	0	0	0	0	0	0	1	2	5	9	1	2	0	0	2	4	0	0	0	0	0	0	0	0	9	17
A+	27	50	28	52	23	43	23	43	22	41	28	52	0	0	26	48	30	56	29	54	0	0	24	44	20	37	27	50	0	0	25	46	26	48	25	46	0	0	0	0	20	37
A-	26	48	26	48	30	56	26	48	26	48	26	48	0	0	24	44	24	44	25	46	0	0	28	52	27	50	25	46	0	0	23	43	28	52	29	54	0	0	0	0	15	28
B-	1	2	0	0	1	2	3	6	2	4	0	0	0	0	1	2	0	0	0	0	0	0	1	2	2	4	1	2	0	0	4	7	0	0	0	0	0	0	0	0	9	17
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Small N	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	0	0	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.17 DIF Classifications for Mathematics, Algebra I Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	0	0	1	2	0	0	0	0	0	0	0	0	4	7
A+	32	53	33	55	30	50	33	55	35	58	32	53	0	0	34	57	39	65	34	57	0	0	27	45	27	45	35	58	0	0	28	47	29	48	32	53	0	0	0	0	28	47
A-	28	47	27	45	30	50	25	42	20	33	28	47	0	0	23	38	21	35	24	40	0	0	33	55	31	52	20	33	0	0	30	50	31	52	28	47	0	0	0	0	18	30
B-	0	0	0	0	0	0	2	3	3	5	0	0	0	0	3	5	0	0	2	3	0	0	0	0	1	2	4	7	0	0	1	2	0	0	0	0	0	0	0	0	9	15
C-	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Small N	0	0	0	0	0	0	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	0	0	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.18 DIF Classifications for Mathematics, Geometry Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	3	5
A+	30	50	32	53	0	0	0	0	0	0	31	52	0	0	27	45	30	50	33	55	0	0	28	47	0	0	0	0	0	0	0	0	30	50	30	50	0	0	0	0	27	45
A-	30	50	28	47	0	0	0	0	0	0	29	48	0	0	29	48	30	50	26	43	0	0	28	47	0	0	0	0	0	0	0	0	29	48	27	45	0	0	0	0	23	38
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	1	2	0	0	3	5	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	6	10
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	60	100	60	100	60	100	0	0	60	100	0	0	0	0	0	0	60	100	0	0	60	100	60	100	60	100	60	100	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.19 DIF Classifications for Science, Grade Five Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	0	0	0	0	4	8	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	6	1	2	0	0	2	4	0	0	0	0	0	0	0	0	7	15
A+	26	54	23	48	25	52	27	56	19	40	24	50	0	0	23	48	24	50	26	54	0	0	23	48	18	38	25	52	0	0	23	48	22	46	23	48	0	0	0	0	16	33
A-	21	44	25	52	23	48	19	40	24	50	24	50	0	0	24	50	24	50	21	44	0	0	25	52	21	44	20	42	0	0	21	44	26	54	25	52	0	0	0	0	12	25
B-	1	2	0	0	0	0	2	4	1	2	0	0	0	0	0	0	0	0	1	2	0	0	0	0	5	10	2	4	0	0	2	4	0	0	0	0	0	0	0	0	12	25
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	0	0	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.20 DIF Classifications for Science, Grade Eight Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	1	2	6	11	1	2	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	11	20
A+	29	54	32	59	28	52	26	48	25	46	28	52	0	0	30	56	30	56	26	48	22	41	28	52	0	0	26	48	0	0	0	0	23	43	28	52	0	0	0	0	18	33
A-	24	44	22	41	26	48	24	44	27	50	26	48	0	0	22	41	24	44	26	48	19	35	25	46	0	0	23	43	0	0	0	0	31	57	26	48	0	0	0	0	15	28
B-	1	2	0	0	0	0	2	4	1	2	0	0	0	0	2	4	0	0	1	2	6	11	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	8	15
C-	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	4
Small N	0	0	0	0	0	0	0	0	0	0	0	0	54	100	0	0	0	0	0	0	0	0	0	0	54	100	0	0	54	100	54	100	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.21 DIF Classifications for Science, Grade Ten Life Science Operational Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	1	2	3	5	0	0	0	0	0	0	2	3	0	0	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	12
A+	31	52	28	47	35	58	26	43	0	0	30	50	0	0	27	45	30	50	27	45	0	0	32	53	0	0	28	47	0	0	0	0	30	50	32	53	0	0	0	0	23	38
A-	29	48	32	53	22	37	30	50	0	0	30	50	0	0	30	50	30	50	30	50	0	0	27	45	0	0	31	52	0	0	0	0	30	50	28	47	0	0	0	0	25	42
B-	0	0	0	0	2	3	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	5	8
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	0	0	0	0	60	100	0	0	60	100	0	0	0	0	0	0	60	100	0	0	60	100	0	0	60	100	60	100	0	0	0	0	60	100	60	100	0	0
TOTAL	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100	60	100

Table 8.E.22 DIF Classifications for ELA, Grade Three Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
A+	26	50	24	46	0	0	0	0	0	0	24	46	0	0	1	2	15	29	18	35	0	0	0	0	0	0	0	0	0	0	0	0	22	42	24	46	0	0	0	0	21	40
A-	26	50	28	54	0	0	0	0	0	0	28	54	0	0	1	2	37	71	29	56	0	0	0	0	0	0	0	0	0	0	0	0	30	58	26	50	0	0	0	0	25	48
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	3	6
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	52	100	52	100	52	100	0	0	52	100	50	96	0	0	0	0	52	100	52	100	52	100	52	100	52	100	52	100	0	0	0	0	52	100	52	100	0	0
TOTAL	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100	52	100

Table 8.E.23 DIF Classifications for ELA, Grade Four Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A+	15	36	12	29	0	0	2	5	0	0	14	33	0	0	2	5	16	38	23	55	0	0	1	2	0	0	0	0	0	0	0	0	25	60	18	43	0	0	0	0	13	31
A-	26	62	30	71	0	0	1	2	0	0	28	67	0	0	11	26	26	62	18	43	0	0	2	5	0	0	0	0	0	0	0	0	17	40	24	57	0	0	0	0	25	60
B-	1	2	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	42	100	39	93	42	100	0	0	42	100	27	64	0	0	0	0	42	100	39	93	42	100	42	100	42	100	42	100	0	0	0	0	42	100	42	100	0	0
TOTAL	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100	42	100

Table 8.E.24 DIF Classifications for ELA, Grade Five Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
A+	26	54	20	42	0	0	0	0	0	0	18	38	0	0	4	8	13	27	20	42	0	0	4	8	0	0	0	0	0	0	0	0	23	48	23	48	0	0	0	0	15	31
A-	21	44	27	56	0	0	0	0	0	0	30	63	0	0	10	21	35	73	27	56	0	0	2	4	0	0	0	0	0	0	0	0	25	52	25	52	0	0	0	0	30	63
B-	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	48	100	48	100	48	100	0	0	48	100	33	69	0	0	0	0	48	100	42	88	48	100	48	100	48	100	48	100	0	0	0	0	48	100	48	100	0	0
TOTAL	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100	48	100

Table 8.E.25 DIF Classifications for ELA, Grade Six Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
B+	0	0	0	0	0	0	1	4	0	0	0	0	0	0	2	7	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
A+	15	54	5	18	2	7	4	14	5	18	8	29	0	0	9	32	9	32	12	43	0	0	17	61	0	0	3	11	0	0	0	0	19	68	15	54	0	0	0	0	11	39
A-	13	46	23	82	6	21	3	11	2	7	20	71	0	0	16	57	19	68	12	43	0	0	11	39	0	0	5	18	0	0	0	0	9	32	13	46	0	0	0	0	10	36
B-	0	0	0	0	0	0	0	0	1	4	0	0	0	0	1	4	0	0	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	20	71	20	71	20	71	0	0	28	100	0	0	0	0	0	0	28	100	0	0	28	100	20	71	28	100	28	100	0	0	0	0	28	100	28	100	0	0
TOTAL	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100	28	100

Table 8.E.26 DIF Classifications for ELA, Grade Seven Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
B+	1	3	0	0	0	0	1	3	0	0	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	3
A+	21	62	17	50	1	3	0	0	0	0	15	44	0	0	14	41	12	35	23	68	0	0	18	53	0	0	2	6	0	0	0	0	19	56	18	53	0	0	0	0	15	44
A-	12	35	17	50	1	3	1	3	0	0	19	56	0	0	18	53	22	65	8	24	0	0	15	44	0	0	0	0	0	0	0	0	14	41	16	47	0	0	0	0	15	44
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	32	94	32	94	34	100	0	0	34	100	0	0	0	0	0	0	34	100	0	0	34	100	32	94	34	100	34	100	0	0	0	0	34	100	34	100	0	0
TOTAL	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100	34	100

Table 8.E.27 DIF Classifications for ELA, Grade Eight Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	3	9
A+	11	33	8	24	3	9	4	12	2	6	8	24	0	0	9	27	8	24	20	61	0	0	14	42	0	0	2	6	0	0	0	0	18	55	12	36	0	0	0	0	13	39
A-	21	64	23	70	6	18	4	12	0	0	24	73	0	0	6	18	23	70	11	33	0	0	19	58	0	0	8	24	0	0	0	0	15	45	19	58	0	0	0	0	13	39
B-	1	3	2	6	0	0	0	0	0	0	1	3	0	0	0	0	2	6	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	3	9
C-	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Small N	0	0	0	0	24	73	24	73	31	94	0	0	33	100	16	48	0	0	0	0	33	100	0	0	33	100	23	70	33	100	33	100	0	0	0	0	33	100	33	100	0	0
TOTAL	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100	33	100

Table 8.E.28 DIF Classifications for ELA, Grade Nine Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	5	13
A+	21	53	14	35	0	0	0	0	0	0	12	30	0	0	5	13	17	43	21	53	0	0	23	58	0	0	0	0	0	0	0	0	20	50	23	58	0	0	0	0	20	50
A-	19	48	25	63	0	0	0	0	0	0	28	70	0	0	5	13	23	58	15	38	0	0	16	40	0	0	0	0	0	0	0	0	20	50	16	40	0	0	0	0	14	35
B-	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	40	100	40	100	40	100	0	0	40	100	30	75	0	0	0	0	40	100	0	0	40	100	40	100	40	100	40	100	0	0	0	0	40	100	40	100	0	0
TOTAL	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100

Table 8.E.29 DIF Classifications for ELA, Grade Ten Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
A+	20	50	14	35	0	0	0	0	0	0	14	35	0	0	4	10	22	55	4	10	0	0	16	40	0	0	4	10	0	0	0	0	27	68	8	20	0	0	0	0	22	55
A-	20	50	24	60	0	0	0	0	0	0	26	65	0	0	5	13	18	45	6	15	0	0	13	33	0	0	6	15	0	0	0	0	13	33	2	5	0	0	0	0	15	38
B-	0	0	1	3	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	40	100	40	100	40	100	0	0	40	100	30	75	0	0	30	75	40	100	10	25	40	100	30	75	40	100	40	100	0	0	30	75	40	100	40	100	0	0
TOTAL	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100

Table 8.E.30 DIF Classifications for ELA, Grade Eleven Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	1	3	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5
A+	23	62	20	54	0	0	0	0	0	0	18	49	0	0	1	3	22	59	5	14	0	0	14	38	0	0	0	0	0	0	0	0	18	49	2	5	0	0	0	0	13	35
A-	13	35	17	46	0	0	0	0	0	0	18	49	0	0	2	5	15	41	5	14	0	0	23	62	0	0	2	5	0	0	0	0	19	51	0	0	0	0	0	0	20	54
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	3	0	0	0	0	0	0	1	3	0	0	0	0	2	5
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	37	100	37	100	37	100	0	0	37	100	34	92	0	0	26	70	37	100	0	0	37	100	34	92	37	100	37	100	0	0	34	92	37	100	37	100	0	0
TOTAL	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100	37	100

Table 8.E.31 DIF Classifications for Mathematics, Grade Three Field-test Items

DIF	M-F		W-AfrA		W-AmI		W-Asn		W-Fil		W-His		W-PacI		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	0	0	0	0	0	0	0	0	0	0	0	0	2	4	1	2	0	0	0	0	7	13
A+	20	37	23	43	0	0	0	0	0	0	24	44	0	0	0	0	18	33	27	50	0	0	0	0	0	0	0	0	0	0	0	0	26	48	25	46	0	0	0	0	19	35
A-	33	61	28	52	0	0	0	0	0	0	28	52	0	0	0	0	36	67	19	35	0	0	0	0	0	0	0	0	0	0	0	0	26	48	28	52	0	0	0	0	22	41
B-	1	2	2	4	0	0	0	0	0	0	2	4	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	11
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	54	100	54	100	54	100	0	0	54	100	54	100	0	0	0	0	54	100	54	100	54	100	54	100	54	100	54	100	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.32 DIF Classifications for Mathematics, Grade Four Field-test Items

DIF	M-F		W-AfrA		W-AmI		W-Asn		W-Fil		W-His		W-PacI		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	2	4
A+	22	49	18	40	0	0	0	0	0	0	18	40	0	0	2	4	17	38	19	42	0	0	0	0	0	0	0	0	0	0	0	0	22	49	14	31	0	0	0	0	14	31
A-	23	51	26	58	0	0	0	0	0	0	27	60	0	0	6	13	28	62	25	56	0	0	0	0	0	0	0	0	0	0	0	0	22	49	29	64	0	0	0	0	26	58
B-	0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	7
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	45	100	45	100	45	100	0	0	45	100	36	80	0	0	0	0	45	100	45	100	45	100	45	100	45	100	45	100	0	0	0	0	45	100	45	100	0	0
TOTAL	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100	45	100

Table 8.E.33 DIF Classifications for Mathematics, Grade Five Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
A+	27	50	22	41	0	0	0	0	0	0	25	46	0	0	0	0	29	54	28	52	0	0	0	0	0	0	0	0	0	0	0	0	28	52	24	44	0	0	0	0	22	41
A-	27	50	30	56	0	0	0	0	0	0	29	54	0	0	0	0	24	44	21	39	0	0	0	0	0	0	0	0	0	0	0	0	25	46	30	56	0	0	0	0	24	44
B-	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	5	9
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	54	100	54	100	54	100	0	0	54	100	54	100	0	0	0	0	54	100	54	100	54	100	54	100	54	100	54	100	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.34 DIF Classifications for Mathematics, Grade Six Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8
A+	15	42	17	47	0	0	0	0	0	0	20	56	0	0	20	56	19	53	18	50	0	0	16	44	0	0	0	0	0	0	0	0	18	50	12	33	0	0	0	0	18	50
A-	20	56	19	53	0	0	0	0	0	0	16	44	0	0	14	39	17	47	16	44	0	0	18	50	0	0	0	0	0	0	0	0	18	50	24	67	0	0	0	0	12	33
B-	1	3	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	36	100	36	100	36	100	0	0	36	100	0	0	0	0	0	0	36	100	0	0	36	100	36	100	36	100	36	100	0	0	0	0	36	100	36	100	0	0
TOTAL	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100

Table 8.E.35 DIF Classifications for Mathematics, Grade Seven Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
A+	14	39	16	44	0	0	0	0	0	0	16	44	0	0	18	50	17	47	13	36	0	0	16	44	0	0	0	0	0	0	0	0	18	50	14	39	0	0	0	0	13	36
A-	22	61	20	56	0	0	0	0	0	0	20	56	0	0	16	44	19	53	23	64	0	0	17	47	0	0	0	0	0	0	0	0	18	50	22	61	0	0	0	0	18	50
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	36	100	36	100	36	100	0	0	36	100	0	0	0	0	0	0	36	100	0	0	36	100	36	100	36	100	36	100	0	0	0	0	36	100	36	100	0	0
TOTAL	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100

Table 8.E.36 DIF Classifications for Mathematics, Algebra I Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
A+	16	40	16	40	0	0	0	0	0	0	17	43	0	0	12	30	25	63	18	45	0	0	19	48	0	0	3	8	0	0	0	0	20	50	17	43	0	0	0	0	14	35
A-	24	60	24	60	0	0	0	0	0	0	23	58	0	0	23	58	15	38	21	53	0	0	21	53	0	0	6	15	0	0	0	0	20	50	23	58	0	0	0	0	19	48
B-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	5	13
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Small N	0	0	0	0	40	100	40	100	40	100	0	0	40	100	0	0	0	0	0	0	40	100	0	0	40	100	30	75	40	100	40	100	0	0	0	0	40	100	40	100	0	0
TOTAL	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100

Table 8.E.37 DIF Classifications for Mathematics, Geometry Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4	10
A+	16	40	18	45	0	0	0	0	0	0	16	40	0	0	0	0	22	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	65	0	0	0	0	0	0	20	50
A-	22	55	17	43	0	0	0	0	0	0	23	58	0	0	0	0	18	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	33	0	0	0	0	0	0	12	30
B-	2	5	2	5	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	10
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	40	100	40	100	40	100	0	0	40	100	40	100	0	0	40	100	40	100	40	100	40	100	40	100	40	100	40	100	0	0	40	100	40	100	40	100	0	0
TOTAL	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100	40	100

Table 8.E.38 DIF Classifications for Science, Grade Five Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
A+	19	36	18	34	0	0	0	0	0	0	23	43	0	0	0	0	20	38	23	43	0	0	0	0	0	0	0	0	0	0	0	0	22	42	22	42	0	0	0	0	16	30
A-	32	60	34	64	0	0	0	0	0	0	29	55	0	0	0	0	33	62	24	45	0	0	0	0	0	0	0	0	0	0	0	0	31	58	31	58	0	0	0	0	28	53
B-	1	2	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	5	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	13
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	53	100	53	100	53	100	0	0	53	100	53	100	0	0	0	0	53	100	53	100	53	100	53	100	53	100	53	100	0	0	0	0	53	100	53	100	0	0
TOTAL	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100	53	100

Table 8.E.39 DIF Classifications for Science, Grade Eight Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4
A+	28	52	17	31	0	0	0	0	0	0	26	48	0	0	0	0	29	54	20	37	0	0	18	33	0	0	0	0	0	0	0	0	34	63	22	41	0	0	0	0	18	33
A-	24	44	35	65	0	0	0	0	0	0	28	52	0	0	0	0	25	46	28	52	0	0	26	48	0	0	0	0	0	0	0	0	19	35	30	56	0	0	0	0	24	44
B-	2	4	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	4	0	0	0	0	9	17
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Small N	0	0	0	0	54	100	54	100	54	100	0	0	54	100	54	100	0	0	0	0	54	100	9	17	54	100	54	100	54	100	54	100	0	0	0	0	54	100	54	100	0	0
TOTAL	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100	54	100

Table 8.E.40 DIF Classifications for Science, Grade Ten Life Science Field-test Items

DIF	M-F		W-AfrA		W-Aml		W-Asn		W-Fil		W-His		W-Pacl		W-ComA		E-ELnr		SLD-AUT		SLD-Deaf		SLD-ED		SLD-HH		SLD-MR		SLD-MD		SLD-OI		SLD-OHI		SLD-SLI		SLD-TBI		SLD-VI		Total	
category	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct	N	Pct
C+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B+	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	2	6
A+	17	47	17	47	0	0	0	0	0	0	15	42	0	0	0	0	17	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	56	0	0	0	0	0	0	12	33
A-	19	53	17	47	0	0	0	0	0	0	21	58	0	0	0	0	18	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	39	0	0	0	0	0	0	19	53
B-	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3	8
C-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Small N	0	0	0	0	36	100	36	100	36	100	0	0	36	100	36	100	0	0	36	100	36	100	36	100	36	100	36	100	36	100	36	100	0	0	36	100	36	100	36	100	0	0
TOTAL	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100	36	100

Chapter 9: Quality Control Procedures

Rigorous quality control procedures were implemented throughout the test development, administration, scoring, and reporting processes. As part of this effort, ETS maintains an Office of Testing Integrity (OTI) that resides in the ETS legal department. The OTI provides quality assurance services for all testing programs administered by ETS. In addition, the Office of Professional Standards Compliance at ETS publishes and maintains the *ETS Standards for Quality and Fairness,* which supports the OTI's goals and activities. The purposes of the *ETS Standards for Quality and Fairness* are to help ETS design, develop, and deliver technically sound, fair, and useful products and services; and to help the public and auditors evaluate those products and services.

In addition, each department at ETS that is involved in the testing cycle designs and implements an independent set of procedures to ensure the quality of its products. In the next sections, these procedures are described.

Quality Control of Item Development

The item development process for the CMA is described in detail in Chapter 3, starting on page 66. The next sections highlight elements of the process devoted specifically to the quality control of item development.

Item Specifications

ETS maintains item specifications for each CMA and has developed an item utilization plan to guide the development of the items for each content area. Item writing emphasis is determined in consultation with the CDE. Adherence to the specifications ensures the maintenance of quality and consistency of the item development process.

Item Writers

The items for each CMA are written by item writers who have a thorough understanding of the California content standards. The item writers are carefully screened and selected by senior ETS content staff and approved by the CDE. Only those with strong content and teaching backgrounds are invited to participate in an extensive training program for item writers.

Internal Contractor Reviews

Once items have been written, ETS assessment specialists make sure that each item goes through an intensive internal review process. Every step of this process is designed to produce items that exceed industry standards for quality. It includes three rounds of content reviews, two rounds of editorial reviews, an internal fairness review, and a high-level review and approval by a content-area director. A carefully designed and monitored workflow and detailed checklists help to ensure that all items meet the specifications for the process.

Content Review

ETS assessment specialists make sure that the test items and related materials comply with ETS's written guidelines for clarity, style, accuracy, and appropriateness and with approved item specifications.

The artwork and graphics for the items are created during the internal content review period so assessment specialists can evaluate the correctness and appropriateness of the art early in the item development process. ETS selects visuals that are relevant to the item content

and that are easily understood so students do not struggle to determine the purpose or meaning of the questions.

Editorial Review

Another step in the ETS internal review process involves a team of specially trained editors who check questions for clarity, correctness of language, grade-level appropriateness of language, adherence to style guidelines, and conformity to acceptable item-writing practices. The editorial review also includes rounds of copyediting and proofreading. ETS strives for error-free items beginning with the initial rounds of review.

Fairness Review

One of the final steps in the ETS internal review process is to have all items and stimuli reviewed for fairness. Only ETS staff members who have participated in the ETS Fairness Training, a rigorous internal training course, conduct this bias and sensitivity review. These staff members have been trained to identify and eliminate test questions that contain content that could be construed as offensive to, or biased against, members of specific ethnic, racial, or gender groups.

Assessment Director Review

As a final quality control step, the content area's assessment director or another senior-level content reviewer reads each item before it is presented to the CDE.

Assessment Review Panel Review

The ARPs are panels that advise the CDE and ETS on areas related to item development for the CMA. The ARPs are responsible for reviewing all newly developed items for alignment to the California content standards. The ARPs also review the items for accuracy of content, clarity of phrasing, and quality. See page 70 in Chapter 3 for additional information on the function of ARPs within the item-review process.

Statewide Pupil Assessment Review Panel Review

The SPAR panel is responsible for reviewing and approving the achievement tests that are to be used statewide for the testing of students in California public schools in grades two through eleven. The SPAR panel representatives ensure that the test items conform to the requirements of *EC* Section 60602. The constructed-response writing tasks are also presented to the SPAR panel for review. If the SPAR panel rejects specific items and/or constructed-response writing tasks, the items and/or tasks are replaced with other items and/or tasks. See page 73 in Chapter 3 for additional information on the function of the SPAR panel within the item-review process.

Data Review of Field-tested Items

ETS field tests newly developed items to obtain statistical information about item performance. This information is used to evaluate items that are candidates for use in operational test forms. The items and item statistics are examined carefully at data review meetings, where content experts discuss items that have poor statistics and do not meet the psychometric criteria for item quality. The CDE defines the criteria for acceptable or unacceptable item statistics. These criteria ensure that the item (1) has an appropriate level of difficulty for the target population; (2) discriminates well between examinees that differ in ability; and (3) conforms well to the statistical model underlying the measurement of the intended constructs. The results of analyses for differential item functioning (DIF) are used to make judgments about the appropriateness of items for various subgroups.

The ETS content experts make recommendations about whether to accept or reject each item for inclusion in the California item bank. The CDE content experts review the recommendations and make the final decision on each item.

Quality Control of the Item Bank

After the data review, items are placed in the item bank along with their statistics and reviewers' evaluations of their quality. ETS then delivers the items to the CDE through the California electronic item bank. The item bank database is maintained by a staff of application systems programmers, led by the Item Bank Manager, at ETS. All processes are logged; all change requests—including item bank updates for item availability status—are tracked; and all output and California item bank deliveries are quality-controlled for accuracy.

Quality of the item bank and secure transfer of the California item bank to the CDE is very important. The ETS internal item bank database resides on a server within the ETS firewall; access to the SQL Server database is strictly controlled by means of system administration. The electronic item banking application includes a login/password system to authorize access to the database or designated portions of the database. In addition, only users authorized to access the specific database are able to use the item bank. Users are authorized by a designated administrator at the CDE and at ETS.

ETS has extensive experience in accurate and secure data transfer of many types including CDs, secure remote hosting, secure Web access, and secure file transfer protocol (SFTP), which is the current method used to deliver the California electronic item bank to the CDE. In addition, all files posted on the SFTP site by the item bank staff are encrypted with a password.

The measures taken for ensuring the accuracy, confidentiality, and security of electronic files are as follows:

- Electronic forms of test content, documentation, and item banks are backed up electronically, with the backup media kept off site, to prevent loss from system breakdown or a natural disaster.
- The offsite backup files are kept in secure storage, with access limited to authorized personnel only.
- Advanced network security measures are used to prevent unauthorized electronic access to the item bank.

Quality Control of Test Form Development

The ETS Assessment Development group is committed to providing the highest quality product to the students of California and has in place a number of quality control (QC) checks to ensure that outcome. During the item development process, there are multiple senior reviews of items and passages, including one by the assessment director. Test forms certification is a formal quality control process established as a final checkpoint prior to printing. In it, content, editorial, and senior development staff review test forms for accuracy and clueing issues.

ETS also includes quality checks throughout preparation of the form planners. A form planner specifications document is developed by the test development team lead with input from ETS's item bank and statistics groups; this document is then reviewed by all team members who build forms at a training session specific to form planners before the form-

building process starts. After trained content team members sign off on a form planner, a representative from the internal QC group reviews each file for accuracy against the specifications document. Assessment directors review and sign off on form planners prior to processing.

As processes are refined and enhanced, ETS will implement further QC checks as appropriate.

Quality Control of Test Materials

Collecting Test Materials

Once the tests are administered, school districts return scorable and nonscorable materials within five working days after the last selected testing day of each test administration period. For the writing administration, school districts return the CMA writing booklets within two working days after the makeup day for each administration. The freight return kits provided to the districts contain color-coded labels identifying scorable and nonscorable materials and labels with bar-coded information identifying the school and district. The school districts apply the appropriate labels and number the cartons prior to returning the materials to the processing center by means of their assigned carrier. The use of the color-coded labels streamlines the return process.

All scorable materials are delivered to the Pearson scanning and scoring facilities in Iowa City, Iowa. The nonscorable materials, including test booklets, are returned to the Security Processing Department in Pearson's Cedar Rapids, Iowa, facility. ETS and Pearson closely monitor the return of materials. The STAR Technical Assistance Center (TAC) at ETS monitors returns and notifies school districts that do not return their materials in a timely manner. STAR TAC contacts the district STAR coordinators and works with them to facilitate the return of the test materials.

Processing Test Materials

Upon receipt of the test materials, Pearson uses precise inventory and test processing systems, in addition to quality assurance procedures, to maintain an up-to-date accounting of all the testing materials within their facilities. The materials are removed carefully from the shipping cartons and examined for a number of conditions, including physical damage, shipping errors, and omissions. A visual inspection to compare the number of students recorded on the School and Grade Identification (SGID) sheets with the number of answer documents in the stack is also conducted.

Pearson's image scanning process captures security information electronically and compares scorable material quantities reported on the SGIDs to actual documents scanned. School districts are contacted by phone if there are any missing shipments or the quantity of materials returned appears to be less than expected.

Quality Control of Scanning

Before any STAR documents are scanned, Pearson conducts a complete check of the scanning system. ETS and Pearson create test decks for every test and form. Each test deck consists of approximately 25 answer documents marked to cover response ranges, demographic data, blanks, double marks, and other responses. Fictitious students are created to verify that each marking possibility is processed correctly by the scanning program. The output file generated as a result of this activity is thoroughly checked against each answer document after each stage to verify that the scanner is capturing marks correctly. When the program output is confirmed to match the expected results, a scan

program release form is signed and the scan program is placed in the production environment under configuration management.

The intensity levels of each scanner are constantly monitored for quality control purposes. Intensity diagnostics sheets are run before and during each batch to verify that the scanner is working properly. In the event that a scanner fails to properly pick up items on the diagnostic sheets, the scanner is recalibrated to work properly before being allowed to continue processing student documents.

Documents received in poor condition (torn, folded, or water-stained) that could not be fed through the high-speed scanners are either scanned using a flat-bed scanner or keyed into the system manually.

Post-scanning Edits

After scanning, there are three opportunities for demographic data to be edited:

- After scanning, by Pearson online editors
- After Pearson online editing, by district STAR coordinators (demographic edit)
- After paper reporting, by district STAR coordinators

Demographic edits completed by the Pearson editors and by the district STAR coordinators online are included in the data used for the paper reporting and for the technical reports.

Quality Control of Image Editing

Prior to submitting any STAR operational documents through the image editing process, Pearson creates a mock set of documents to test all of the errors listed in the edit specifications. The set of test documents is used to verify that each image of the document is saved so that an editor would be able to review the documents through an interactive interface. The edits are confirmed to show the appropriate error, the correct image to edit the item, and the appropriate problem and resolution text that instructs the editor on the actions that should be taken.

Once the set of mock test documents is created, the image edit system completes the following procedures:

1. Scan the set of test documents.
2. Verify that the images from the documents are saved correctly.
3. Verify that the appropriate problem and resolution text displays for each type of error.
4. Submit the post-edit program to assure that all errors have been corrected.

Pearson checks the post file against expected results to ensure the appropriate corrections are made. The post file will have all keyed corrections and any defaults from the edit specifications.

Quality Control of Answer Document Processing and Scoring

Accountability of Answer Documents

In addition to the quality control checks carried out in scanning and image editing, the following manual quality checks are conducted to verify that the answer documents are correctly attributed to the students, schools, districts, and subgroups:

- Grade counts are compared to the District Master File Sheets.
- Document counts are compared to the School Master File Sheets.

- Document counts are compared to the SGIDs.

Any discrepancies identified in the steps outlined above are followed up by Pearson staff with the school districts for resolution.

Processing of Answer Documents

Prior to processing operational answer documents and executing subsequent data processing programs, ETS conducts an end-to-end test. As part of this test, ETS prepares approximately 700 test cases covering all tests and many scenarios designed to exercise particular business rule logic. ETS marks answer documents for those 700 test cases. They are then scanned, scored, and aggregated. The results at various inspection points are checked by psychometricians and Data Quality Services staff. Additionally, a post-scan test file of approximately 50,000 records across the STAR Program is scored and aggregated to test a broader range of scoring and aggregation scenarios. These procedures assure that students and school districts receive the correct scores when the actual scoring process is carried out.

Scoring and Reporting Specifications

ETS develops standardized scoring procedures and specifications so testing materials are processed and scored accurately. These documents include:

- General Reporting Specifications
- Form Planner Specifications
- Aggregation Rules
- “What If” . . . List
- Edit Specifications
- Reporting Cluster Names and Item Numbers
- CST and CMA Matching Criteria
- Matching Criteria for Multiple-choice and Writing Answer Documents

Each of these documents is explained in detail in Chapter 7, starting on page 122. The scoring specifications are reviewed and revised by the CDE, ETS, and Pearson each year. After a version that all parties endorse is finalized, the CDE issues a formal approval of the scoring and reporting specifications.

Matching Information on CMA Answer Documents

Answer documents are designed to produce a single complete record for each student. This record includes demographic data and scanned responses for each student; once computed, the scored responses and the total test scores for a student are also merged into the same record. All scores must comply with the ETS scoring specifications.

All STAR answer documents contain uniquely numbered lithocodes that are both scannable and eye-readable. The lithocodes allow all pages of the document to be linked throughout processing, even after the documents have been slit into single sheets for scanning. For those students using more than one answer document, lithocodes link their demographics and responses within a document while matching criteria are used to create a single record for all of the student’s documents. The documents are matched within grade using the matching criteria approved by the CDE.

Matching Multiple-choice and Writing Scores for ELA in Grades Four and Seven

The multiple-choice and writing sections of the ELA tests in grades four and seven are administered in separate settings. The answer documents from each section are subsequently matched using the matching criteria approved by the CDE, and scores from each section are combined to yield a single ELA scale score. Student documents that cannot be matched based on the approved criteria are reported separately.

In addition, school districts receive an unmatched report with their reporting package listing students in grades four and seven for whom there is either a multiple-choice score but no writing score or a writing score but no multiple-choice score.

Storing Answer Documents

After the answer documents have been scanned, edited, scored, and cleared the clean-post process, they are palletized and placed in the secure storage facilities at Pearson. The materials are stored until October 31 of each year, after which ETS requests permission to destroy the materials. After receiving CDE approval, the materials are destroyed in a secure manner.

Quality Control of Psychometric Processes

Score Key Verification Procedures

ETS and Pearson take various necessary measures to ascertain that the scoring keys are applied to the student responses as expected and the student scores are computed accurately. Scoring keys, provided in the form planners, are produced by ETS and verified thoroughly by performing multiple quality control checks. The form planners contain the information about an assembled test form; other information in the form planner includes the test name, administration year, subscore identification, and standards and statistics associated with each item. The quality control checks that are performed before keys are finalized are listed on page 124 in Chapter 7.

Quality Control of Item Analyses, DIF, and the Equating Process

The psychometric analyses conducted at ETS undergo comprehensive quality checks by a team of psychometricians and data analysts. Detailed checklists are consulted by members of the team for each of the statistical procedures performed on each CMA. Quality assurance checks also include a comparison of the current year's statistics to statistics from previous years. The results of preliminary classical item analyses that provide a check on scoring keys are also reviewed by a senior psychometrician. The items that are flagged for questionable statistical attributes are sent to test development staff for their review; their comments are reviewed by the psychometricians before items are approved to be included in the equating process.

The results of the equating process are reviewed by a psychometric manager in addition to the aforementioned team of psychometricians and data analysts. If the senior psychometrician and the manager reach a consensus that an equating result does not conform to the norm, special binders are prepared for review by senior psychometric advisors at ETS, along with several pieces of informative analyses to facilitate the process.

A few additional checks are performed for each process, as described below:

Calibrations

During the calibration process, which is described in detail in Chapter 2 starting on page 15, checks are made to ascertain that the correct options for the analyses are selected. Checks are also made on the number of items, number of examinees with valid scores, IRT Rasch

item difficulty estimates, standard errors for the Rasch item difficulty estimates, and the match of selected statistics to the results on the same statistics obtained during preliminary item analyses. Psychometricians also perform detailed reviews of plots and statistics to investigate if the model fits the data.

Scaling

During the scaling process, checks are made to ensure the following:

- The correct items are used for linking;
- The scaling evaluation process, including stability analysis and subsequent removal of items from the linking set (if any), is implemented according to specification (see details in the "Evaluation of Scaling" section in Chapter 8, on page 205); and
- The resulting scaling constants are correctly applied to transform the new item difficulty estimates on to the item bank scale.

Scoring Tables

Once the equating activities are complete and raw-to-scale score conversion tables are generated, the psychometricians carry out quality control checks on each scoring table. Scoring tables are checked to verify the following:

- All raw scores are included in the tables;
- Scale scores increase as raw scores increase;
- The minimum reported scale score is 150 and maximum reported scale score is 600; and
- The cut points for the performance levels are correctly identified.

As a check on the reasonableness of the performance levels, psychometricians compare results from the current year with results from the past year at the cut points and the percentage of students in each performance level within the equating samples. After all quality control steps are completed and any differences are resolved, a senior psychometrician inspects the scoring tables as the final step in quality control before ETS delivers them to Pearson.

Score Verification Process

Pearson utilizes the raw-to-scale scoring tables to assign scale scores for each student. ETS verifies Pearson's scale scores by independently generating the scale scores for students in a small number of school districts and comparing these scores with those generated by Pearson. The selection of districts is based on the availability of data for all schools included in those districts, known as "pilot districts."

Year-to-Year Comparison Analyses

Year-to-year comparison analyses are conducted each year for quality control of the scoring procedure in general and as reasonableness checks for the CMA results.

- The first set of year-to-year comparison analyses look at the tendencies and trends for the schools and school districts for which ETS has received complete or near-complete results by mid-June.
- The second set of year-to-year comparison analyses uses over 90 percent of the entire testing populations to look at the tendencies and trends for the state as a whole as well as a few large districts.

The results of the year-to-year comparison analyses are provided to the CDE and their reasonableness is jointly discussed. Any anomalies in the results are investigated further,

and scores are released only after explanations that satisfy both CDE and ETS are obtained.

Offloads to Test Development

The statistics based on classical item analyses and the IRT analyses are obtained at two different times in the testing cycle. The first time, the statistics are obtained on the equating samples to ensure the quality of equating and then on larger sample sizes to ensure the stability of the statistics that are to be used for future test assembly. Statistics used to generate DIF flags are also obtained from the larger samples. The resulting classical, IRT, and DIF statistics for all items are provided to test development staff in specially designed Excel spreadsheets called “statistical offloads.” The offloads are thoroughly checked by the psychometric staff before their release for test development review.

Quality Control of Reporting

For the quality control of various STAR student and summary reports, four general areas are evaluated, including the following:

1. Comparing report formats to input sources from the CDE-approved samples
2. Validating and verifying the report data by querying the appropriate student data
3. Evaluating the production print execution performance by comparing the number of report copies, sequence of report order, and offset characteristics to the CDE’s requirements
4. Proofreading reports by the CDE, ETS, and Pearson prior to any school district mailings

All reports are required to include a single, accurate CDS code, a charter school number (if applicable), a school district name, and a school name. All elements conform to the CDE’s official 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 CDS Master File is provided by the CDE to ETS throughout the year as updates are available.

For students who use more than one answer document, the matching process, as described on page 333, provides for the creation of individual student records from which reports are created.

After the reports are validated against the CDE’s requirements, a set of reports for pilot districts are provided to the CDE and ETS for review and approval. Pearson sends paper reports on the actual report forms, foldered as they are expected to look in production. The CDE and ETS review and sign off on the report package after a thorough review.

Upon the CDE’s approval of the reports generated from the pilot districts, Pearson proceeds with the first production batch test. The first production batch is selected to validate a subset of school districts that contain examples of key reporting characteristics representative of the state as a whole. The first production batch test incorporates CDE-selected school districts and provides the last check prior to generating all reports and mailing them to the districts.

Excluding Student Scores from Summary Reports

ETS provides specifications to the CDE that document when to exclude student scores from summary reports. These specifications include the logic for handling answer documents that, for example, indicate the student tested but marked no answers, 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 (for example, for a grade eight mathematics test where the specific mathematics test is unknown) are also covered in the specifications.

Reference

Educational Testing Service. (2002). *ETS standards for quality and fairness*. Princeton, NJ: Author.

Chapter 10: Historical Comparisons

Base Year Comparisons

Historical comparisons of the CMA results are routinely performed to identify the trends in examinee performance and test characteristics over time. Such comparisons were performed for ELA and mathematics in grades three through five and science in grade five over the three most recent administrations—2010, 2011, and 2012—and the base year 2009; for ELA in grades six through eight, mathematics in grades six and seven, and science in grade eight over the two most recent administrations—2011 and 2012—and the base year 2010; and for ELA in grade nine, Algebra I, and grade ten Life Science for 2012 and the base year 2011.

The indicators of examinee performance include the mean and standard deviation of scale scores, observed score ranges, and the percentage of examinees classified into proficient and advanced performance levels. Test characteristics are compared by looking at the mean proportion correct, overall reliability and SEM, as well as the mean IRT *b*-value for each CMA.

The base year of each CMA refers to the year in which the base score scale was established. Operational forms administered in the years following the base year are linked to the base year score scale using procedures described in Chapter 2.

The base years for the CMA are presented in Table 10.1.

Table 10.1 Base Years for the CMA

Content Area	CMA	Base Year
English–Language Arts	3	2009
	4	2009
	5	2009
	6	2010
	7	2010
	8	2010
	9	2011
	10	2012
	11	2012
Mathematics	3	2009
	4	2009
	5	2009
	6	2010
	7	2010
	Algebra I	2011
	Geometry	2012
Science	5	2009
	8	2010
	10 Life Science	2011

The base years differ over CMA grades and content areas. Reasons for these differences are as follows:

- In spring 2008, the CMA was first administered statewide for ELA and mathematics in grades three through five and for science in grade five. A standard setting was held in fall 2008 to establish cut scores for the below basic, basic, proficient, and advanced performance levels (the cut score for the far below basic performance level was set statistically). Spring 2009 was the first administration in which test results were reported

using the new scales and cut scores for the five performance levels; thus, 2009 became the base year for these tests.

- In spring 2009, the CMA was first administered statewide for ELA in grades six through eight, mathematics in grades six and seven, and science in grade eight. A standard setting was held in fall 2009 to establish cut scores for the below basic, basic, proficient, and advanced performance levels (the cut score for the far below basic performance level was set statistically). Spring 2010 was the first administration in which test results were reported using the new scales and cut scores for the five performance levels; thus, 2010 became the base year for these tests.
- In spring 2010, the CMA was first administered statewide for ELA in grade nine, Algebra I, and grade ten Life Science. A standard setting was held in fall 2010 to establish cut scores for the below basic, basic, proficient, and advanced performance levels (the cut score for the far below basic performance level was set statistically). Spring 2011 was the first administration in which test results were reported using the new scales and cut scores for the five performance levels; thus, 2011 became the base year for these tests.

Examinee Performance

Table 10.A.1 on page 341 contains the number of examinees assessed and the means and standard deviations of examinees' scale scores in the base year and the past one, two, or three years, depending on the test. As noted in previous chapters, the CMA reporting scales range from 150 to 600 for all content areas.

CMA scale scores are used to classify student results into one of five performance levels: far below basic, below basic, basic, proficient, and advanced. The percentages of students qualifying for the proficient and advanced levels are presented in Table 10.A.2 on page 341; please note that this information may differ slightly from information found on the CDE's STAR reporting Web page at http://star.cde.ca.gov due to differing dates on which data were accessed. The goal is for all students to achieve at or above the proficient level by 2014. This goal for all students is consistent with school growth targets for state accountability and the federal requirements under the Elementary and Secondary Education Act.

Table 10.A.3 through Table 10.A.11 show for each CMA the distribution of scale scores observed in the base year, which differs according to test, and subsequent administrations in 2010, 2011, and 2012 as applicable. Frequency counts are provided for each scale score interval of 30. A frequency count of "N/A" indicates that there are no obtainable scale scores within that scale-score range. For all tests of the CMA, a minimum score of 300 is required for a student to reach the basic level of performance and a minimum score of 350 is required for a student to reach the proficient level of performance.

Test Characteristics

The item and test analysis results of the CMA over the comparison years indicate that the CMA meet the technical criteria established in professional standards for high-stakes tests. In addition, every year, efforts are made to improve the technical quality of each CMA. For example, in recent years, efforts have been made to field test more easy items for some CMA where previous field testing resulted in over-abundance of very difficult items.

Table 10.B.1 in Appendix 10.B, which starts on page 347, present the average proportion correct values for the operational items in each CMA based on the equating samples. The

mean proportion correct is affected by both the difficulty of the items and the abilities of the students administered the items. Table 10.B.2 shows the mean equated IRT *b*-values for the CMA operational items based on the equating samples. The mean equated IRT *b*-values reflect only average item difficulty. Please note that comparisons of mean *b*-values should only be made within a given test; they should not be compared across grade levels or content areas.

The average point-biserial correlations for all CMA operational tests are presented in Table 10.B.3. The reliabilities and standard error of measurement (SEM) expressed in raw score units appear in Table 10.B.4. Like the average proportion correct, point-biserial correlations and reliabilities of the operational items are affected by both item characteristics and student characteristics.

Appendix 10.A—Historical Comparisons Tables

Table 10.A.1 Number of Examinees Tested, Scale Score Means and Standard Deviations of CMA for 2009, 2010, 2011, and 2012

Content Area	CMA	Number of Examinees (valid scores)				Scale Score Mean and Standard Deviation							
						2009		2010		2011		2012	
		2009	2010	2011	2012	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
English–Language Arts	3	**14,175**	15,991	17,609	19,718	**307**	**68**	307	66	311	71	307	63
	4	**19,370**	22,570	24,969	26,694	**315**	**72**	320	72	326	73	330	78
	5	**19,881**	23,684	27,577	29,080	**319**	**69**	322	70	326	75	326	67
	6		**22,755**	26,059	28,737			**307**	**78**	305	88	320	93
	7		**21,088**	24,392	26,908			**303**	**76**	309	84	311	85
	8		**19,030**	23,020	25,174			**303**	**75**	309	76	319	82
	9			**16,269**	19,950					**287**	64	293	72
Mathematics	3	**12,075**	13,554	15,296	16,973	**318**	**70**	324	71	327	71	320	63
	4	**16,462**	18,860	20,974	22,340	**320**	**80**	325	78	328	86	330	86
	5	**17,591**	21,157	24,044	25,586	**324**	**77**	335	75	347	81	349	78
	6		**21,543**	24,404	26,222			**315**	**79**	320	82	320	83
	7		**21,000**	23,784	26,130			**294**	**85**	297	86	295	87
	Algebra I			**22,935**	28,896					**288**	**52**	289	55
Science	5	**18,657**	21,955	25,223	26,838	**335**	**58**	341	56	343	58	339	56
	8		**17,606**	21,106	23,112			**320**	**60**	329	68	331	67
	10 Life Science			**10,786**	14,356					**294**	**58**	300	61

Note: Base year values are bolded.

Table 10.A.2 Percentage of Proficient and Above and Percentage of Advanced for 2009, 2010, 2011, and 2012

Content Area	CMA	% Proficient and Above				% Advanced			
		2009	2010	2011	2012	2009	2010	2011	2012
English–Language Arts	3	**28%**	27%	29%	25%	**11%**	10%	14%	8%
	4	**30%**	31%	36%	39%	**12%**	12%	14%	18%
	5	**34%**	32%	37%	33%	**14%**	15%	18%	14%
	6		**29%**	30%	36%		**10%**	15%	18%
	7		**28%**	31%	31%		**10%**	12%	15%
	8		**25%**	29%	35%		**9%**	11%	15%
	9			**18%**	21%			**5%**	7%
Mathematics	3	**33%**	36%	37%	33%	**8%**	8%	8%	5%
	4	**35%**	38%	40%	38%	**11%**	10%	13%	14%
	5	**36%**	39%	46%	48%	**12%**	12%	17%	19%
	6		**34%**	32%	35%		**9%**	10%	10%
	7		**26%**	24%	25%		**6%**	6%	6%
	Algebra I			**12%**	14%			**2%**	3%
Science	5	**42%**	44%	45%	43%	**14%**	13%	15%	15%
	8		**31%**	37%	37%		**10%**	14%	14%
	10 Life Science			**18%**	22%			**4%**	5%

Note: Base year values are bolded.

Table 10.A.3 Observed Score Distributions of CMA Across Base Year (2009), 2010, 2011, and 2012 for ELA, Grades Three through Five

Observed Score	ELA Grade 3				ELA Grade 4				ELA Grade 5			
	Base	2010	2011	2012	Base	2010	2011	2012	Base	2010	2011	2012
570 – 600	5	3	19	3	32	34	50	71	5	62	62	55
540 – 569	25	14	63	29	48	54	67	85	27	N/A	113	N/A
510 – 539	63	36	N/A	N/A	72	91	129	368	67	98	213	84
480 – 509	N/A	86	147	57	272	388	183	356	118	371	304	419
450 – 479	279	156	241	332	447	685	656	992	509	662	977	830
420 – 449	535	536	812	285	696	983	1,652	2,117	839	1,031	1,418	1,198
390 – 419	700	749	1,120	1,376	1,293	1,869	2,220	1,716	1,907	2,042	2,729	2,566
360 – 389	1,361	2,195	1,979	2,018	2,183	2,320	2,803	3,777	2,467	2,539	3,270	3,225
330 – 359	2,038	2,325	2,561	3,043	2,759	3,450	3,924	3,096	2,679	3,900	3,470	5,014
300 – 329	2,447	2,220	2,392	2,896	2,533	2,854	3,998	3,640	3,487	3,967	4,485	5,103
270 – 299	1,878	2,699	2,739	3,448	3,042	4,142	2,854	4,082	2,451	3,018	4,177	4,667
240 – 269	2,464	2,271	2,625	3,346	3,386	3,720	3,464	3,561	2,695	3,627	2,666	3,685
210 – 239	1,616	1,815	1,791	2,036	1,766	1,758	2,087	1,835	1,800	2,192	2,515	1,586
180 – 209	686	771	929	757	686	644	711	764	633	505	868	537
150 – 179	78	122	191	92	155	145	171	234	197	91	310	111

A frequency count of "N/A" indicates that there are no obtainable scale scores within that scale-score range.

Table 10.A.4 Observed Score Distributions of CMA Across Base Year (2010), 2011, and 2012 for ELA, Grades Six through Eight

Observed Score Distributions	ELA Grade 6			ELA Grade 7			ELA Grade 8		
	Base	2011	2012	Base	2011	2012	Base	2011	2012
570 – 600	22	64	197	26	66	75	36	35	45
540 – 569	66	60	170	19	86	120	52	43	75
510 – 539	64	266	595	100	143	191	75	93	147
480 – 509	245	235	427	108	258	279	208	308	550
450 – 479	509	664	1,161	373	620	801	378	602	942
420 – 449	870	1,144	1,611	956	1,011	1,735	571	825	1,305
390 – 419	1,250	2,362	2,892	1,455	2,005	1,542	1,153	1,747	1,718
360 – 389	2,728	1,997	2,142	1,942	2,486	2,639	1,628	2,203	2,959
330 – 359	3,148	3,203	3,449	2,346	2,625	3,827	2,679	2,578	3,294
300 – 329	3,282	3,229	3,326	2,982	3,417	2,787	2,270	3,556	3,126
270 – 299	2,973	3,105	3,103	2,937	3,160	3,663	3,161	3,729	3,758
240 – 269	2,737	2,937	3,902	3,077	2,969	3,231	3,160	2,622	2,994
210 – 239	2,190	2,594	2,479	2,726	2,688	2,833	1,940	2,904	1,907
180 – 209	1,556	2,119	1,333	1,303	1,563	1,778	1,139	1,209	1,352
150 – 179	1,115	2,080	1,950	738	1,295	1,407	580	566	1,002

Table 10.A.5 Observed Score Distributions of CMA for Base Year (2011) and 2012 for ELA, Grade Nine

Observed Score Distributions	ELA Grade 9	
	Base	2012
570 – 600	1	33
540 – 569	14	35
510 – 539	12	73
480 – 509	59	91
450 – 479	127	408
420 – 449	315	405
390 – 419	514	903
360 – 389	1,110	1,738
330 – 359	1,700	2,156
300 – 329	2,529	2,537
270 – 299	2,690	2,890
240 – 269	3,170	3,372
210 – 239	2,583	3,093
180 – 209	1,063	1,704
150 – 179	382	512

Table 10.A.6 Observed Score Distributions of CMA Across Base Year (2009), 2010, 2011, and 2012 for Mathematics, Grades Three through Five

Observed Score Distributions	Mathematics Grade 3				Mathematics Grade 4				Mathematics Grade 5			
	Base	2010	2011	2012	Base	2010	2011	2012	Base	2010	2011	2012
570 – 600	19	31	28	8	52	61	168	216	136	103	246	205
540 – 569	26	82	90	50	54	58	163	202	N/A	147	248	227
510 – 539	72	N/A	N/A	N/A	221	229	235	266	130	179	349	326
480 – 509	136	131	167	100	182	178	655	328	410	271	495	406
450 – 479	171	479	596	421	538	553	426	926	589	816	1,223	1,198
420 – 449	572	317	865	347	720	1,418	1,721	1,254	826	1,165	1,590	2,500
390 – 419	797	1,350	1,052	1,419	1,383	1,326	1,427	2,329	1,031	2,249	2,953	3,103
360 – 389	1,795	1,556	2,279	1,848	1,854	2,501	2,582	1,881	1,874	2,603	3,043	3,187
330 – 359	1,309	1,959	2,207	3,346	2,231	2,918	1,898	3,079	2,801	3,518	3,836	4,011
300 – 329	2,165	2,258	2,019	2,466	2,448	3,039	2,959	3,080	2,887	3,316	2,528	2,722
270 – 299	1,505	2,190	2,460	2,880	2,440	2,698	3,609	2,967	2,161	2,350	3,122	3,339
240 – 269	1,816	1,555	2,118	2,496	2,091	1,439	2,215	2,445	2,559	2,738	2,587	2,652
210 – 239	1,145	1,343	1,100	1,221	991	1,736	1,191	1,853	1,354	1,335	1,242	1,163
180 – 209	478	242	293	347	882	892	1,187	1,060	621	554	468	457
150 – 179	69	61	22	24	375	346	538	454	212	152	114	90

A frequency count of "N/A" indicates that there are no obtainable scale scores within that scale-score range.

Table 10.A.7 Observed Score Distributions of CMA Across Base Year (2010), 2011, and 2012 for Mathematics, Grades Six and Seven

Observed Score Distributions	Mathematics Grade 6			Mathematics Grade 7		
	Base	2011	2012	Base	2011	2012
570 – 600	75	145	116	84	119	125
540 – 569	97	74	214	111	57	144
510 – 539	90	300	157	78	209	272
480 – 509	294	199	437	270	354	183
450 – 479	517	1,114	739	436	569	515
420 – 449	820	1,113	1,746	646	774	800
390 – 419	1,908	2,145	1,623	969	1,110	1,863
360 – 389	2,510	1,831	2,931	1,953	2,464	1,692
330 – 359	3,019	3,102	3,537	1,810	2,062	2,200
300 – 329	3,057	3,409	3,750	3,391	2,486	4,072
270 – 299	3,036	3,460	3,550	2,522	4,373	3,126
240 – 269	2,711	3,165	3,277	2,506	2,912	3,216
210 – 239	1,331	2,452	2,314	3,359	2,578	4,098
180 – 209	1,344	1,295	947	1,457	1,871	1,859
150 – 179	734	600	884	1,408	1,846	1,965

Table 10.A.8 Observed Score Distributions of CMA Across Base Year (2011) and 2012 for Algebra I

Observed Score Distributions	Algebra I	
	Base	2012
570 – 600	5	2
540 – 569	4	15
510 – 539	24	49
480 – 509	23	53
450 – 479	115	217
420 – 449	261	419
390 – 419	403	711
360 – 389	1,068	1,543
330 – 359	2,644	3,345
300 – 329	4,291	4,945
270 – 299	5,486	5,224
240 – 269	4,437	7,137
210 – 239	3,384	3,813
180 – 209	633	1,246
150 – 179	157	177

Table 10.A.9 Observed Score Distributions of CMA Across Base Year (2009), 2010, 2011, and 2012 for Science, Grade Five

Observed Score Distributions	Science Grade 5			
	Base	2010	2011	2012
570 – 600	5	7	12	23
540 – 569	15	32	39	44
510 – 539	46	57	76	81
480 – 509	82	117	104	118
450 – 479	387	482	892	471
420 – 449	789	1,370	1,159	1,542
390 – 419	2,013	2,604	2,481	2,657
360 – 389	2,602	3,026	4,342	3,747
330 – 359	3,725	5,437	5,791	5,620
300 – 329	4,028	3,690	4,125	6,290
270 – 299	2,396	3,547	3,953	3,465
240 – 269	1,694	1,569	1,757	1,968
210 – 239	731	364	410	720
180 – 209	123	84	76	82
150 – 179	21	8	6	10

Table 10.A.10 Observed Score Distributions of CMA for Base Year (2010), 2011, and 2012 for Science, Grade Eight

Observed Score Distributions	Science Grade 8		
	Base	2011	2012
570 – 600	18	28	40
540 – 569	17	40	51
510 – 539	27	182	211
480 – 509	110	160	163
450 – 479	279	745	843
420 – 449	625	796	850
390 – 419	1,011	2,186	2,368
360 – 389	2,027	2,210	2,333
330 – 359	2,780	3,229	3,676
300 – 329	4,069	3,503	5,084
270 – 299	3,291	4,185	3,571
240 – 269	2,333	2,440	2,591
210 – 239	759	972	937
180 – 209	221	362	348
150 – 179	39	68	46

Table 10.A.11 Observed Score Distributions of CMA for Base Year (2011) and 2012 for Life Science (Grade 10)

Observed Score Distributions	Life Science (Grade 10)	
	Base	2012
570 – 600	5	4
540 – 569	7	8
510 – 539	11	20
480 – 509	41	76
450 – 479	67	120
420 – 449	153	351
390 – 419	457	588
360 – 389	694	1,200
330 – 359	1,307	2,021
300 – 329	1,807	2,521
270 – 299	2,261	2,670
240 – 269	2,035	2,222
210 – 239	1,602	2,073
180 – 209	273	427
150 – 179	66	55

Appendix 10.B—Historical Comparisons Tables

Table 10.B.1 Mean Proportion Correct for Operational Test Items for 2009, 2010, 2011, and 2012

		Mean *p*-value			
Content Area	**CMA**	**2009**	**2010**	**2011**	**2012**
English–Language Arts	3	**0.56**	0.58	0.62	0.59
	4	**0.53**	0.55	0.58	0.59
	5	**0.60**	0.57	0.61	0.58
	6		**0.56**	0.56	0.59
	7		**0.55**	0.60	0.59
	8		**0.54**	0.56	0.62
	9			**0.48**	0.52
Mathematics	3	**0.61**	0.63	0.63	0.62
	4	**0.56**	0.57	0.59	0.60
	5	**0.59**	0.60	0.63	0.61
	6		**0.54**	0.54	0.55
	7		**0.47**	0.46	0.47
	Algebra I			**0.48**	0.49
Science	5	**0.61**	0.60	0.59	0.60
	8		**0.53**	0.57	0.57
	10 Life Science			**0.50**	0.53

Note: Base year values are bolded.

Table 10.B.2 Mean IRT *b*-values for Operational Test Items for 2009, 2010, 2011, and 2012

		Mean IRT *b*-value			
Content Area	**CMA**	**2009**	**2010**	**2011**	**2012**
English–Language Arts	3	**–0.35**	–0.32	–0.47	–0.38
	4	**–0.12**	–0.13	–0.20	–0.23
	5	**–0.45**	–0.25	–0.42	–0.23
	6		**–0.27**	–0.33	–0.32
	7		**–0.29**	–0.45	–0.42
	8		**–0.24**	–0.26	–0.47
	9			**0.06**	–0.06
Mathematics	3	**–0.47**	–0.47	–0.45	–0.43
	4	**–0.26**	–0.25	–0.35	–0.38
	5	**–0.39**	–0.28	–0.30	–0.19
	6		**–0.20**	–0.14	–0.19
	7		**0.08**	0.14	0.10
	Algebra I			**0.07**	0.06
Science	5	**–0.54**	–0.38	–0.29	–0.43
	8		**–0.18**	–0.26	–0.25
	10 Life Science			**0.01**	–0.06

Note: Base year values are bolded.

Table 10.B.3 Mean Point-Biserial Correlation for Operational Test Items for 2009, 2010, 2011, and 2012

		Mean Point-Biserial Correlation			
Content Area	**CMA**	**2009**	**2010**	**2011**	**2012**
English–Language Arts	3	**0.37**	0.38	0.40	0.37
	4	**0.34**	0.34	0.34	0.36
	5	**0.35**	0.35	0.36	0.34
	6		**0.29**	0.32	0.34
	7		**0.33**	0.35	0.36
	8		**0.32**	0.33	0.34
	9			**0.29**	0.31
Mathematics	3	**0.40**	0.40	0.40	0.37
	4	**0.32**	0.31	0.34	0.34
	5	**0.36**	0.36	0.37	0.37
	6		**0.28**	0.29	0.29
	7		**0.25**	0.25	0.25
	Algebra I			**0.27**	0.28
Science	5	**0.33**	0.32	0.33	0.32
	8		**0.29**	0.32	0.32
	10 Life Science			**0.30**	0.31

Note: Base year values are bolded.

Table 10.B.4 Score Reliabilities (Cronbach's Alpha) and SEM for 2009, 2010, 2011, and 2012

		Reliability				SEM			
Content Area	**CMA**	**2009**	**2010**	**2011**	**2012**	**2009**	**2010**	**2011**	**2012**
English–Language Arts	3	**0.87**	0.87	0.89	0.86	**3.14**	3.11	3.07	3.15
	4	**0.83**	0.83	0.84	0.85	**3.20**	3.23	3.19	3.15
	5	**0.84**	0.84	0.85	0.83	**3.08**	3.15	3.09	3.17
	6		**0.79**	0.83	0.85		**3.40**	3.36	3.36
	7		**0.84**	0.87	0.87		**3.41**	3.33	3.33
	8		**0.83**	0.84	0.85		**3.38**	3.36	3.24
	9			**0.81**	0.84			**3.67**	3.63
Mathematics	3	**0.89**	0.89	0.89	0.87	**3.00**	3.02	3.02	3.11
	4	**0.81**	0.80	0.83	0.83	**3.14**	3.13	3.11	3.10
	5	**0.85**	0.85	0.87	0.86	**3.08**	3.10	3.03	3.08
	6		**0.78**	0.79	0.80		**3.46**	3.45	3.43
	7		**0.71**	0.72	0.72		**3.50**	3.47	3.49
	Algebra I			**0.78**	0.80			**3.70**	3.68
Science	5	**0.82**	0.81	0.82	0.80	**3.08**	3.16	3.16	3.12
	8		**0.80**	0.84	0.83		**3.44**	3.38	3.40
	10 Life Science			**0.83**	0.84			**3.65**	3.62

Note: Base year values are bolded.