2022-2023 LEAP 2025 High School Operational Technical Report English I, English II, Algebra I, and Geometry

Submitted to the
Louisiana Department of Education

December 2023

DATA RECOGNITION
DRC
CORPORATION

This online-only document was published at a cost of $33,533. This document was published for the Louisiana Department of Education, P.O. Box 94064, Baton Rouge, LA 70804-9064, by Data Recognition Corporation, 13490 Bass Lake Road, Maple Grove, MN 55311. This material was printed in accordance with the standards for printing by State Agencies established pursuant to R.S. 43:31.

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Executive Summary

This report is a technical summary of the 2022-2023 administrations of the Louisiana Educational Assessment Program (LEAP 2025) in English language arts (ELA) and mathematics for high school. The LEAP 2025 summative assessments in ELA and mathematics are administered in grades 3 through 8 and high school. These tests are designed to measure students' readiness for the next grade or course of study and proficiency in ELA and mathematics. The ELA and mathematics test forms were developed by Data Recognition Corporation (DRC) test development staff using the New Meridian item bank as well as items from the Louisiana Department of Education's own item bank. Items taken from these banks were on pre-established item response theory (IRT) scales. This section provides a summary of the 2022-2023 operational technical report.

E.1 Overview of This Report

This technical report documents the major activities of the testing cycle and provides details that confirm that the processes and procedures applied in the LEAP 2025 assessments adhered to appropriate professional standards and practices of educational assessment. Ultimately, this report serves to document evidence that valid inferences about Louisiana student performance in ELA and mathematics can be derived from the LEAP 2025 assessments. An overview of major activities documented within this report is provided below.

The Louisiana Department of Education and Data Recognition Corporation implemented rigorous quality control procedures throughout the test development, administration, scoring, analyses, and reporting processes for the LEAP 2025 assessments. The system and procedures for monitoring, maintaining, and improving the quality of the state assessment system is described in each section of the technical report as an integral part of the activities.

The Uses of Test Scores (Chapter 2)

Chapter 2 of the technical report discusses the concept of validity evidence. This technical report is composed of evidence that supports the intended uses of the LEAP 2025 test scores, and Chapter 2 discusses some of those uses.

Test Content Development (Chapter 3)

Chapter 3 of the technical report provides a summary of the test development activities that occurred to create the 2022-2023 operational test forms. This includes quality control of Item Development, the Item Bank, and the Item Review process.

Test Administration (Chapter 4)

Chapter 4 of the technical report describes the processes implemented and the information disseminated to help ensure standardized test administration procedures and, thus, uniform test administration conditions for students. This includes quality control processes including, but not limited to, LDOE site visits, review rounds of materials, Security Checklists, and Test Security Measures (Data Forensics Analysis, Response-Change Analysis, Web Monitoring, and Plagiarism Detection).

Constructed-Response and Technology-Enhanced Scoring (Chapter 5)

Chapter 5 of the technical report describes the processes used to score constructed-response and technology-enhanced items. The quality control measures in this section include the recruitment and interview process, security protocols, and training process, including material development and qualifying procedures. This chapter discusses how scorers are trained and the measures used to ensure consistency among scorers. Finally, this chapter presents the results of the inter-rater reliability studies. Inter-rater reliability studies along with validity and reader monitoring are additional quality control processes of scoring.

Operational Data Analyses (Chapter 6)

Chapter 6 of the technical report includes a detailed description of the operational data analyses and quality control of the 2022-2023 LEAP 2025 ELA and mathematics assessments, which include the following major parts: the classical item analysis; calibration, scaling, and linking using IRT models; and student scoring. This chapter also describes the demographics of the calibration samples and compares them to state census data. It reports the results of the classical item analysis and the results of the calibration, scaling, and linking processes.

Test Results (Chapter 7)

Chapter 7 of the technical report contains information on the results of the 2022-2023 LEAP 2025 assessments. Detailed summary statistics based on scale scores and achievement levels are also provided. Finally, this chapter presents information on the score reports sent to school systems.

Performance-Level Setting (Chapter 8)

Chapter 8 of the technical report briefly discusses performance-level setting. It provides a brief overview of the quality-controlled procedures for performance-level setting and for derivation of the cut scores used to classify students into achievement levels for ELA and mathematics.

Evidence of Construct-Related Reliability (Chapter 9)

Chapter 9 of the technical report provides evidence of the system and procedures for monitoring, maintaining, and improving the quality, reliability, and validity of the LEAP 2025 test scores. This chapter provides detailed evidence of the reliability of the tests and information on the classification consistency of the cut scores. It also provides evidence of construct validity for the LEAP 2025 test scores.

Fairness (Chapter 10)

Chapter 10 of the technical report discusses fairness and how the LEAP 2025 assessments are constructed with quality control procedures in place, to be fair to all Louisiana students. This chapter summarizes the results of the differential item functioning (DIF) analysis. It also discusses the results of an impact analysis designed to determine whether large differences exist within the test results of different demographic groups in Louisiana.

E.2 Administration

Louisiana administered the LEAP 2025 summative assessments in ELA and mathematics to high school students in 2022-2023. Computer-based tests (CBT) were administered during the following three testing windows: November 29 through December 16, 2022, or January 5-25, 2023; April 18 through May 24, 2023; and June 26–30, 2023. Test administration is discussed in Chapter 4 of this report.

One hundred three school systems and thirty charter schools administered the ELA and mathematics LEAP 2025 high school tests across the three administrations.

E.3 Student Performance

Table E.1 presents the percentage of students in 2022-2023 who were classified in each of the achievement levels for each subject. In general students that make up the population for each administration are:

- Fall: students from schools with block schedules and students retesting
- Spring: students from schools with block and regular schedules, as well as students retesting
- Summer: primarily students retesting

Table E.1 Percentage of Students Classified in Achievement Levels Using 2022-2023 Census Data: English Language Arts and Mathematics

Administration	Subject	Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced
Fall	English I	37.8	22.4	15.4	18.1	6.3
	English II	33.8	14.4	15.0	23.3	13.4
	Algebra I	23.1	33.5	20.7	20.6	2.1
	Geometry	7.1	29.7	31.4	26.2	5.5
Spring	English I	16.0	20.0	23.2	31.0	9.7
	English II	20.3	15.5	19.8	30.9	13.5
	Algebra I	12.5	25.9	24.3	30.9	6.4
	Geometry	10.1	29.9	29.4	23.7	6.9
Summer	English I	60.2	30.8	7.6	1.4	0.0
	English II	76.8	17.9	3.8	1.2	0.3
	Algebra I	35.3	47.5	15.3	1.9	0.1
	Geometry	18.7	65.0	14.5	1.8	0.0

More information on student performance may be found in Chapter 7 of this report.

E.4 Validity and Test Scores

Most sections of this technical report are designed to provide validity evidence to support the use of the LEAP 2025 test scores. Chapter 2 discusses the uses of the LEAP 2025 test scores. Chapter 3 discusses the test development process used to create the LEAP 2025 tests, which is important to the content-related validity of the LEAP 2025 test scores. Chapter 4 presents information on test administration. Chapter 5 discusses the scoring process and the results of the inter-rater reliability studies. Chapter 6 presents the test scaling and linking procedures, student scoring methodology, and the results of other operational data analyses. Chapter 7 reviews the results of the 2022-2023 administrations and gives an overview of the score reports that were electronically delivered to the school systems for distribution to schools and parents. Chapter 8 highlights the procedures for performance-level setting implemented by Partnership for Assessment of Readiness for College and Careers (PARCC), which were used because PARCC's standards and achievement levels were used for the LEAP 2025. Chapter 9 discusses reliability and construct-related validity. Chapter 10 gives an overview of the statistical processes used to evaluate bias to ensure the fairness of the LEAP 2025 for all examinees.

Chapter 1: Introduction

The LEAP 2025 assessment system is designed to measure students' knowledge of ELA, mathematics, science, and social studies. This report provides a technical overview of the LEAP 2025 ELA and mathematics high school assessments administered in the 2022-2023 academic year and presents evidence for the validity of the 2022-2023 LEAP 2025 ELA and mathematics high school assessment scores.

This chapter describes the background, purpose, and design of the LEAP 2025 assessments.

1.1 Background

In 2010, the Board of Elementary and Secondary Education (BESE) approved the Common Core State Standards (CCSS) in ELA and mathematics. After adopting the CCSS, Louisiana became a governing member of PARCC, a group of states working to develop high-quality assessments that measure the full range of the CCSS. Beginning in 2015, students in grades 3–8 began taking these newly aligned assessments.

In 2016, Louisiana ELA and mathematics academic content standards underwent a review process resulting in the adoption of the Louisiana Student Standards in English language arts and mathematics. In spring 2017, ELA and mathematics students in grades 3–8, except those qualifying for the LEAP Alternate Assessment Level 1 (LAA 1), took the LEAP 2025 assessments.

Beginning in the 2017–2018 school year, the Louisiana Department of Education (LDOE) transitioned to LEAP 2025 ELA and mathematics high school assessments, which were aligned to the Louisiana Student Standards in ELA and mathematics. The five-performance-level LEAP 2025 high school assessments replaced the four-performance-level End-of-Course (EOC) tests. Students enrolled in English I, English II, Algebra I, and Geometry took the LEAP 2025 high school assessments.

The information that follows describes the technical aspects of the 2022-2023 LEAP 2025 ELA and mathematics assessments and provides information about how to read and interpret the data on the 2022-2023 assessment reports.

1.2 Purpose of the LEAP 2025

The BESE and the LDOE are committed to ensuring that every student is on track to be successful in either postsecondary education or the workforce. The LEAP 2025 supports this vision by measuring the full range of student performance and providing information for educators and parents about student readiness for college and careers.

1.3 Design of the LEAP 2025

High school students were administered computer-based tests (CBTs) in both ELA and mathematics. Additionally, a braille form was available for each course and content area. Online tools allowed students to magnify assessment items as needed. See Section 3.5 in Chapter 3 for more information about the accommodations and designated supports available for students taking the LEAP 2025. All mathematics assessments were translated into Spanish forms.

The 2022-2023 LEAP 2025 test blueprints and test design are based on the ELA https://resources.newmeridiancorp.org/ela-test-design/ and mathematics https://resources.newmeridiancorp.org/math-test-design/ blueprints of New Meridian's full forms. The 2022-2023 LEAP 2025 test blueprints and test design for ELA and mathematics differ from the New Meridian

blueprints and design in order to reduce testing time while maintaining full coverage and including a variety of standards.

The 2022-2023 LEAP 2025 ELA blueprints kept a similar design as the design of New Meridian's full form, including both performance-based tasks and stand-alone passage sets; however, to address concerns about overtesting, only two of the three types of performance tasks—Research Simulation Task and Literary Analysis Task **or** Narrative Writing Task—are included on each of the LEAP 2025 English I and English II assessments. All three task types are represented across administrations, which encourages teachers to focus equally on all three writing types. Besides having two (instead of three) performance tasks, the 2022-2023 LEAP 2025 ELA blueprints are also different with respect to testing time and percentage of reading and writing points. Since the choice of Literary Analysis Task or Narrative Writing Task is determined during the forms construction process, alternative blueprints—one with a Literary Analysis Task and a Research Simulation Task and the other with a Research Simulation Task and a Narrative Writing Task—were created for each course's assessment.

The passages chosen for the 2022-2023 LEAP 2025 English I and English II assessments contain a variety of texts of different genres and a diverse set of authors. The assessments also contain texts that appeal to a diverse student population. Chosen passages are authentic and contain a variety of different types of text that cover a range of text complexities—Readily Accessible (RA), Moderately Complex (MOD), and Very Complex (VC). They are rich in content, engaging, high-quality, and challenging. Additionally, paired passages, which allow a mix of text complexities and sometimes types of texts—both informational and literary— are selected with careful consideration of the standards that require the use of more than one text. This combination of criteria during passage selection allows students to demonstrate their ability to read and comprehend a range of grade-appropriate texts and topics and helps ensure as much coverage of the standards as possible.

The LEAP 2025 ELA assessments focus on an integrated approach to reading and writing that reflects instruction in an effective ELA classroom and measures students' ability to understand what they read and express that understanding in writing. This means careful, close reading of complex grade-level literary and informational texts; a full range of texts from across the disciplines, including science, social studies, and the arts; tasks that integrate key ELA skills by asking students to read texts, answer reading and vocabulary questions about the texts, and then write using evidence from what they have read; questions worth answering, ordered in a way that builds meaning; a focus on students citing evidence from texts when answering questions about a specific passage or when writing about a set of related passages; and a focus on words that matter most in texts, that are essential to understanding a particular text, and that include context that allows students to determine literal and figurative meanings.

The LDOE has finalized an ELA test design that takes into account several key considerations:

- Since testing time continues to be a significant factor in test design decisions, it was determined that two of the three task types will be used in each form.
- The test must include opportunities for students to write about both literary and informational texts; therefore, each test includes a Research Simulation Task and either a Literary Analysis Task (LAT) or a Narrative Writing Task (NWT). By having both blueprints available for each course each administration and selecting forms based on using the best of the tasks in each form rather than following a pre-specified plan for alternating LAT/NWT forms, both of the literary task types maintain their place in the curriculum.

- The passages associated with each task and the standalone passage sets used across a form represent a range of text complexities, depending on the course and test design.
- Although the items are dependent on the topic and complexity of the passages, the goal is to include a range of DOK levels, with more DOK 2 than DOK 3 items across a form. Item complexity is also dependent on other factors, such as item type and language complexity.
- The third session also includes a field test slot to allow for embedded field testing of one passage set per form, which provides opportunities for field testing with all students without increasing testing time. In fact, the testing time for LEAP 2025 including the field test positions is less than the testing time for New Meridian's full form. All students that are administered the ELA assessment take field test items. The field test positions contain placeholder items when field testing is not being conducted.

The 2022-2023 LEAP 2025 mathematics blueprints kept a similar design as the design of New Meridian's full form, with a few notable exceptions:

- Both assessment designs have three sessions, with Session 1 split into non-calculator and calculator sections. However, New Meridian's full form has three sessions that last 90 minutes each (for a total of 270 minutes), while LEAP 2025 has three sessions that last 80 minutes each (for a total of 240 minutes).
- In Algebra I, both assessment designs have the same number of Type II items worth 4 points. The LEAP 2025 design uses 1 more Type I item worth 1 point, 2 fewer Type I items worth 2 points, 1 fewer Type I item worth 4 points, 1 fewer Type II item worth 3 points, 1 more Type III item worth 3 points, and 1 fewer Type III item worth 6 points.
- In Geometry, both assessment designs have the same number of Type II items worth 4 points. The LEAP 2025 design uses 1 fewer Type I item worth 1 point, 1 fewer Type I item worth 2 points, 1 fewer Type I item worth 4 points, 1 fewer Type II item worth 3 points, 1 more Type III item worth 3 points, and 1 fewer Type III item worth 6 points.
    - The LEAP 2025 mathematics assessments focus on testing the Louisiana Student Standards for Mathematics (LSSM) according to the components of rigor reflected in high-quality mathematics instructional tasks that
        - require students to demonstrate understanding of mathematical reasoning in mathematical and applied contexts;
        - assess accurate, efficient, and flexible application of procedures and algorithms;
        - rely on application of procedural skill and fluency to solve complex problems; and
        - require students to demonstrate mathematical reasoning and modeling in real-world contexts.

The LSSM support students in becoming mathematically proficient by focusing on three components of rigor: conceptual understanding, procedural skill and fluency, and application.

- Conceptual understanding refers to understanding mathematical concepts, operations, and relations. It is more than knowing isolated facts and methods. Students should be able to make sense of why a mathematical idea is important and the kinds of contexts in which it is useful. It also allows students to connect prior knowledge to new ideas and concepts.
- Procedural skill and fluency is the ability to apply procedures accurately, efficiently, and flexibly. It requires speed and accuracy in calculation while giving students opportunities to practice basic skills. Students' ability to solve more complex application tasks is dependent on procedural skill and fluency.

- Application provides a valuable context for learning and solving problems in a relevant and meaningful way. It is through real-world application that students learn to select an efficient method to find a solution, determine whether the solution(s) makes sense by reasoning, and develop critical thinking skills.

Each item on the LEAP 2025 Algebra I and Geometry assessments is referred to as a task and is identified by one of three types: Type I, Type II, or Type III. The tasks on the LEAP 2025 mathematics tests are aligned directly to the LSSM for all reporting categories.

- Type I tasks, designed to assess conceptual understanding, fluency, and application, are aligned to the major, additional, and supporting content for each grade. Some Type I tasks may be further aligned to LEAP 2025 evidence statements for the Major Content and Additional & Supporting reporting categories and allow for the testing of more than one LSSM on a single task.
- Type II tasks are designed to assess student reasoning ability of selected major content for the grade or the previous grade in applied contexts. Type II tasks are further aligned to LEAP 2025 evidence statements for the Expressing Mathematical Reasoning and Modeling & Application reporting categories.
- Type III tasks are designed to assess student modeling ability of selected content for the grade or the previous grade in applied contexts. Type III tasks are further aligned to LEAP 2025 evidence statements for the Expressing Mathematical Reasoning and Modeling & Application reporting categories.

Each of the three task types is aligned to one of four reporting categories: Major Content, Additional & Supporting Content, Expressing Mathematical Reasoning, or Modeling & Application. Each task type is designed to align with at least one of the Louisiana Student Standards for Mathematical Practice (MP). Additional details about the design of the ELA and mathematics assessments can be found in Chapter 3.

Chapter 2: The Uses of Test Scores

Validity is the central component of the LEAP 2025 assessments. The following excerpt is from the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014):

Ultimately, the validity of an intended interpretation of test scores relies on all the available evidence relevant to the technical quality of a testing system. Different components of validity evidence include evidence of careful test construction; adequate score reliability; appropriate test administration and scoring; accurate score scaling, equating, and standard setting; and careful attention to fairness for all test takers, as appropriate to the test interpretation in question (22).

As stated by the *Standards*, the validity of a testing program hinges on the use of the test scores. Validity evidence that supports the use of the LEAP 2025 test scores is provided in this technical report. This chapter examines some possible uses of the LEAP 2025 test scores. However, this technical report cannot anticipate all possible interpretations and uses of the LEAP 2025 test scores.

2.1 Uses of Test Scores

To understand whether a test score is being used properly, one must understand the purpose of the test. The intended uses of the LEAP 2025 test scores include the following:

- evaluating students' overall proficiency of the Louisiana Student Standards
- identifying students' general strengths and weaknesses
- evaluating programs at the school, school system, and/or state level
- informing stakeholders, including students, teachers, school administrators, school system administrators, LDOE staff members, parents, and the public, of the status of students' progress toward meeting college- and career-readiness standards

This technical report refers to the uses of test-level scores (i.e., scale scores and achievement levels), category-level scores and achievement-level classifications, and subcategory-level scores and achievement-level classifications.

2.2 Test-Level Scores

At the test level, an overall scale score that is based on student performance on the entire test is reported. In addition, an associated level of achievement is reported. These scores and achievement levels indicate, in varying ways, a student's achievement. Test-level scores are reported at four reporting levels: the state, the school system, the school, and the student.

The LEAP 2025 high school ELA and mathematics test forms were developed by DRC's test development staff using New Meridian's item bank as well as items from the Louisiana Department of Education's own item bank. Items taken from these banks were on pre-established item response theory (IRT) scales for ELA and mathematics and were reviewed and approved for use by LDOE content experts and committees of Louisiana educators. Braille forms and Spanish translations of mathematics forms were also developed. See Chapter 3, "Test Content Development," for additional details about the processes used to develop these test forms.

The following sections discuss two types of test-level scores that are reported to indicate a student's achievement on the LEAP 2025 assessments: the scale score and its associated level of achievement.

2.3 Scale Scores

A scale score indicates a student's total performance on the LEAP 2025 assessments. The overall scale score quantifies the achievement being measured by the assessments. In other words, the scale score represents the student's level of achievement, where higher scale scores indicate higher levels of achievement on the test and lower scale scores indicate lower levels of achievement. For all LEAP 2025 test forms, the lowest obtainable scale score (LOSS) is 650 and the highest obtainable scale score (HOSS) is 850.

Scale scores are derived from raw scores (i.e., the number of items answered correctly). Raw scores depend on the items in a particular form of a test and can only be interpreted in terms of that particular set of test questions. This does not allow year-to-year or form-to-form comparison. Scale scores are more meaningful than raw scores because they maintain their meaning year-to-year, thus allowing comparisons of different test forms across the entire range of the ability scale.

2.4 Levels of Achievement

A student's performance on the LEAP 2025 assessments is reported in one of five levels of achievement: *Advanced, Mastery, Basic, Approaching Basic*, or *Unsatisfactory*. The cut scores for the ELA and mathematics achievement levels were established by PARCC using the Evidence-Based Standard Setting (EBSS) method (Beimers, Way, McClarty, & Miles, 2012) for the PARCC Performance-Level Setting (PLS) process. Details regarding the PLS process can be found in the *Performance Level Setting Technical Report* (Pearson, 2015).

Descriptions of each level of achievement, in terms of what a student should know and be able to do, are provided with the *LEAP 2025 Interpretive Guide* (see Chapter 7).

2.5 Use of Test-Level Scores

The LEAP 2025 scale scores and achievement levels provide summary evidence of student performance relative to the Louisiana Student Standards. Classroom teachers may use these scores as evidence of student achievement in English I, English II, Algebra I, and Geometry. At the aggregate level, school system and school administrators may use this information for activities such as curriculum planning. The results presented in this technical report provide evidence that the scale scores and achievement levels are valid and reliable indicators of what students know, understand, and are able to do relative to the Louisiana Student Standards in ELA and mathematics.

2.6 Category- and Subcategory-Level Subscores

A student's performance on the ELA reporting categories (i.e., reading and writing) is reported by one of three ratings: *Strong*, *Moderate*, or *Weak*.

Additionally, subcategory subscores are reported at the student level for ELA and mathematics. ELA has three subcategories for reading and two subcategories for writing, as described in Table 3.1, ELA Reporting Categories and Subcategories. Mathematics has four reporting categories. Algebra I has three subcategories for Major Content, and Geometry has two subcategories for Major Content. A student's performance on these reporting categories and subcategories is reported in one of three ratings: *Strong*, *Moderate*, or *Weak*.

Although the performance ratings are determined only by the items included within a category or subcategory, the level of knowledge and ability needed to demonstrate a performance rating is connected to the level of knowledge and ability required by the assessments: a *Strong* rating requires similar knowledge and ability as the Mastery or Advanced achievement levels, a *Moderate* rating requires similar knowledge and ability as the Basic achievement level, and a *Weak* rating requires similar knowledge and ability as the Unsatisfactory and Approaching Basic achievement levels.

2.7 Use of the Category- and Subcategory-Level Ratings

The purpose of reporting category- or subcategory-level subscores on LEAP 2025 assessments is to show, for each student, the relationship between the overall achievement being measured and the skills in each of the areas defined by the reporting categories and subcategories. These ratings for individual students are best corroborated by other evidence, such as grades, teacher feedback, and scores on other tests. Chapter 3 of this technical report provides evidence of content validity that supports the use of the category- or subcategory-level subscores. Chapter 9 of this technical report provides evidence of construct-related validity that further supports the use of these subscores.

Chapter 3: Test Content Development

Content-related validity in achievement tests is evidenced by a correspondence between test content and the range of knowledge and skills that compose the construct the assessment is designed to measure (i.e., the ELA or mathematics Louisiana Student Standards). Content-related validity can be demonstrated through consistent adherence to test blueprints, through a high-quality test development process that includes review of items for accessibility to English Learners and students with disabilities, and through alignment studies performed by independent groups. This chapter provides a detailed discussion of the test development process. In particular, it shows how rigorous procedures were followed to construct tests that reflect the full range of content that the 2022-2023 LEAP 2025 high school assessments were expected to cover.

This chapter is particularly relevant to the following sections of the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014): Standards 4.0, 4.1, and 4.7. It also addresses Standards 3.1, 3.2, 3.9, and 4.12, which are discussed in pertinent sections of this chapter.

Standard 4.0 states the following:

> Tests and testing programs should be designed and developed in a way that supports the validity of interpretations of the test scores for their intended uses. Test developers and publishers should document steps taken during the design and development process to provide evidence of fairness, reliability, and validity for intended uses for individuals in the intended examinee population (85).

Standard 4.1 states the following:

> Test specifications should describe the purpose(s) of the test, the definition of the construct or domain measured, the intended examinee population, and interpretations for intended uses. The specifications should include a rationale supporting the interpretations and uses of test results for the intended purpose(s) (85).

The 2022-2023 LEAP 2025 high school test specifications consisted of a blueprint and a design for each of the following tests: English I, English II, Algebra I, and Geometry. The 2022-2023 blueprints and test designs were closely aligned to blueprints of New Meridian's full forms. The test blueprints for the 2022-2023 LEAP 2025 high school ELA assessments were designed with the goal of having all students read, understand, and express their understanding of complex, grade-level texts. The test blueprints for the 2022-2023 LEAP 2025 mathematics assessments were designed with the goal of supporting students to become mathematically proficient by focusing on three components of rigor: conceptual understanding, procedural skill and fluency, and application. The 2022-2023 LEAP 2025 high school ELA and mathematics assessments provided questions that were reviewed by Louisiana educators to ensure their alignment to the Louisiana Student Standards and appropriateness for Louisiana students, measured the full range of student performance, and informed educators and parents about student readiness in ELA and mathematics and whether students are "on track" for college and careers. For ELA and mathematics, the 2022-2023 LEAP 2025 assessments use the same blueprints and reporting categories and subcategories that were used in 2021-2022.

To construct the assessments following the LDOE-approved test blueprints and test designs, LDOE and DRC collaborated to use items from the New Meridian and Louisiana-owned item banks. Both item banks are

comprised of items aligned to the Louisiana Student Standards. DRC contracted with New Meridian and was provided access to the entire bank of items and passage sets that could potentially be used on operational forms. The acquired items and passages and the Louisiana-owned items and passage sets made up the available item pool used for the 2022-2023 LEAP 2025 high school forms construction. LDOE and DRC confirmed that all items selected for use on the LEAP 2025 forms were appropriate for use on Louisiana assessments by convening committees of Louisiana educators who reviewed and approved items from the item banks prior to form selection.

The ELA and mathematics LEAP 2025 assessments for high school were developed based on the requirements of "RFP #678PUR-LEAP 2025 English Language Arts and Mathematics Assessment System" as follows:

The assessments shall be

- aligned to the ELA and mathematics Louisiana Student Standards;
- designed to be accessible for use by the widest possible range of students, including, but not limited to, students with disabilities and students with limited English proficiency [English Learners];
- constructed to yield valid and reliable test results;
- constructed to report student performance using achievement level policy definitions and reporting categories that are comparable to a significant number of other states;
- developed to limit the amount of testing time required and to be in compliance with all state laws regarding testing time;
- developed and reviewed with Louisiana educator involvement;
- non-computer adaptive;
- used in assessing students' readiness to successfully transition to postsecondary education and the workplace; and
- administered, scored, and reported through a separate administration contract.

The products of the above requirements are computer-based tests (CBTs) comprised of New Meridian and Louisiana-owned items aligned to the Louisiana Student Standards. Louisiana had access to the complete New Meridian item bank for forms administered during the 2022-2023 school year. Items and passage sets were deemed appropriate for use on Louisiana assessments by Louisiana educators during an item alignment review. These items and passage sets were approved because they aligned to the Louisiana Student Standards and/or Louisiana Evidence Statements for mathematics and because they were free of issues related to bias, fairness, and sensitivity. These items and passage sets became the available item pool used to construct the forms administered during the 2022-2023 school year. For each course, forms administered were selected from the available pool of items and/or passage sets. DRC and LDOE content experts scrutinized each final blueprint to ensure optimal content coverage and prudent use of time and resources. In general, the blueprints represent content sampling proportions that reflect intended emphasis in instruction and mastery in each course and are comparable to the New Meridian full form test blueprints. The test specifications provide the numbers of items by reporting category, assessment focus, and item type, and they demonstrate the desired proportions within test delivery and available item pool constraints. These specifications can be found in the *2022-2023 LEAP 2025 High School English Language Arts and Mathematics Assessment Frameworks*. All assessments were fixed forms, which means that all students who received the same form were administered the same set of items, as the forms were not adaptive.

The LEAP 2025 high school assessments are administered in fall, spring, and summer each school year. For fall and summer administrations, two forms are administered: an operational form and an administrative

error form, which is used only if there is an administrative testing error (see Chapter 4 for additional details regarding the administrative error form). For spring administrations, two operational forms and one administrative error form are administered. In addition, spring administrations also include a senior-only form to allow students who will be graduating to receive their assessment results earlier than students who take the operational forms. The forms are administered on a rotating schedule, so they are not the same from administration to administration.

3.1 Defining the Specific Test Blueprint

The test blueprints for the 2022-2023 assessments were designed based on two primary factors: (1) the content requirements of the Louisiana Student Standards and (2) the reporting needs of the assessments.

English I and English II Test Blueprints and Test Designs

The English I and English II tests were administered during operational testing windows: November 29 through December 16, 2022, or January 5–25, 2023; April 18 through May 24, 2023; and June 26–30, 2023. Only two of the three types of performance tasks—Research Simulation Task, Literary Analysis Task, and Narrative Writing Task—were included on each of the Louisiana tests. All three types were represented across administrations (fall, spring, and summer), which encourages educators to focus on all three writing types. Since the choice of Literary Analysis Task or Narrative Writing Task is determined during the forms construction process, alternative blueprints—one with a Literary Analysis Task and a Research Simulation Task and the other with a Research Simulation Task and a Narrative Writing Task—are created for each course.

Student performance on the LEAP 2025 high school ELA assessments is reported by category and subcategory as outlined in the following table.

Table 3.1 ELA Categories and Subcategories

Category	Subcategory	Subcategory Description
Reading	Reading Literary Text	Students read and demonstrate comprehension of grade-level fiction, drama, and poetry.
	Reading Informational Text	Students read and demonstrate comprehension of grade-level nonfiction, including texts about history, science, art, and music.
	Reading Vocabulary	Students use context to determine the meaning of words and phrases in grade-level texts.
Writing	Written Expression	Students use details from provided texts to compose well-developed, organized, clear writing.
	Knowledge and Use of Language Conventions	Students use the rules of Standard English (grammar, mechanics, and usage) to compose writing.

These reporting categories provide parents and educators with valuable information about

- overall student performance, including readiness to continue further study in English language arts;
- student performance broken down by subcategory, which may help identify when students need additional support or more challenging work in reading and writing; and
- how well schools and school systems help students achieve expectations.

The session testing times shown in the ELA test designs (see Tables 3.2 and 3.3) are based on New Meridian testing times proportioned to be comparable based on the passage type being tested. The passage set that comes after the Narrative Writing Task or the Literary Analysis Task is designed to balance the reading load between the Narrative Writing Task or the Literary Analysis Task and the Research Simulation Task and to provide consistent timing in sessions 1 and 2.

Table 3.2 English I and English II Test Design—Literary Analysis Task and Research Simulation Task

Session	Task/ Item Set	Number of Passages	Categories/ Subcategories	Number of Two-Point SR Items	Number of Points from Two-Point SR Items	Number of PCR Items	Number of Points from PCR Items	Total Number of Items	Total Number of Points	Assessable ELA Student Standards (by subcategory)	Testing Time (minutes)
1	Literary Analysis Task	2	Reading: Reading Literary Text/Reading Vocabulary*	6	12	1	4	6	16	RL Standards 1-3, 5-10; vocabulary standards RL.4, L.4, L.5	90
			Writing: Written Expression	0	0		12	1	12	Writing standards W.1-2, 4, 9, 10	
			Writing: Knowledge and Use of Language Conventions	0	0		3		3	Convention standards L.1, 2, plus language skills from previous grades	
	Reading Literary / Informational Texts	1	Reading (Reading Literary Text/Reading Informational Text/Reading Vocabulary*)	4	8	0	0	4	8	RL Standards 1-3, 5-10; RI standards 1-3, 5-10; vocabulary standards RL.4, RI.4, L.4, L.5	
	Totals	3		10	20	1	19	11	39		
2	Research Simulation Task	3	Reading: Reading Informational Text/ Reading Vocabulary*	8	16	1	4	8	20	RI standards 1-3, 5-10; vocabulary standards RI.4, L.4, L.5	90
			Writing: Written Expression	0	0		12	1	12	Writing standards W.1-2, 4, 7- 10,	
			Writing: Knowledge and Use of Language Conventions	0	0		3		3	Convention standards L.1, 2, plus language skills from previous grades	
	Totals	3		8	16	1	19	9	35		
3	Reading Literary Texts	2-3	Reading: Reading Literary Text/Reading Vocabulary*	10	20	0	0	10	20	RL Standards 1-3, 5-10; vocabulary standards RL.4, L.4, L.5	80**
	Reading Informational Texts		Reading: Reading Informational Text/Reading Vocab*			0	0			RI standards 1-3, 5-10; vocabulary standards RI.4, L.4, L.5	
	Totals	2-3		10	20	0	0	10	20		
English I & II Totals		8-9	Reading: Reading Literary Text/Reading Vocabulary*	28	56	2	4	28	64	64	260
			Reading: Reading Informational Text/Reading Vocabulary*				4				
			Writing: Written Expression	0	0		24	2	24	30	
			Writing: Knowledge and Use of Language Conventions	0	0		6		6		
			Total	28	56	2	38	30	94	94	

*Reading vocabulary items must constitute at least eight points on the test.
**The time in session 3 allows for an additional passage set that is a field-test or placeholder passage set.
As described in section 1.3, the passages associated with each task and the standalone passage sets used across a form should represent a range of text complexities as appropriate for the grade level and test design.

Table 3.3 English I and English II Test Design—Research Simulation Task and Narrative Writing Task

Session	Task/ Item Set	Number of Passages	Categories/ Subcategories	Number of Two-Point SR Items	Number of Points from Two-Point SR Items	Number of PCR Items	Number of Points from PCR Items	Total Number of Items	Total Number of Points	Assessable ELA Student Standards (by subcategory)	Testing Time (minutes)
1	Research Simulation Task	3	Reading: Reading Informational Text/Reading Vocabulary*	8	16	1	4	8	20	RI standards 1-3, 5-10; vocabulary standards RI.4, L.4, L.5	90
			Writing: Written Expression	0	0		12	1	12	Writing standards W.1-2, 4, 7-10	
			Writing: Knowledge and Use of Language Conventions	0	0		3		3	Convention standards L.1, 2, plus language skills from previous grades	
	Totals	3		8	16	1	19	9	35		
2	Narrative Writing Task	1	Reading: Reading Literary Text/Reading Vocabulary*	4	8	1	0	4	8	RL Standards 1-3, 5-10; vocabulary standards RL.4, L.4, L.5	90
			Writing: Written Expression	0	0		12	1	12	Writing standards W.3, 4, 10	
			Writing: Knowledge and Use of Language Conventions	0	0		3		3	Convention standards L.1, 2, plus language skills from previous grades	
	Reading Literary / Informational Texts	1-2	Reading (Reading Literary Text/Reading Informational Text/Reading Vocabulary*)	6	12	0	0	6	12	RL Standards 1-3, 5-10; RI standards 1-3, 5-10; vocabulary standards RL.4, RI.4, L.4, L.5	
	Totals	2-3		10	20	1	15	11	35		
3	Reading Literary Texts	2-3	Reading: Reading Literary Text/Reading Vocabulary*	10	20	0	0	10	20	RL Standards 1-3, 5-10; vocabulary standards RL.4, L.4, L.5	80**
	Reading Informational Texts		Reading: Reading Informational Text/Reading Vocabulary*			0	0			RI.1-3, 5-10; vocabulary standards RI.4, L.4, L.5	
	Totals	2-3		10	20	0	0	10	20		
English I & II Totals		**7-9**	Reading: Reading Literary Text/Reading Vocabulary*	28	56	2	0	28	60	60	260
			Reading: Reading Informational Text/Reading Vocabulary*				4				
			Writing: Written Expression	0	0		24	2	24	30	
			Writing: Knowledge and Use of Language Conventions	0	0		6		6		
			Total	28	56	2	34	30	90	90	

*Reading vocabulary items must constitute at least eight points on the test.
**The time in session 3 allows for an additional passage set that is a field-test or placeholder passage set.
As described in section 1.3, the passages associated with each task and the standalone passage sets used across a form should represent a range of text complexities as appropriate for the grade level and test design.

The LEAP 2025 high school ELA assessments consist of tasks and reading passage sets. The tasks are described below.

- Narrative Writing Task
    - This task asks students to read a literary text, answer a set of selected-response questions about the text, and create a narrative related to the text (e.g., finish the story or retell the story in another narrative form, such as a journal entry).
    - This task focuses on students' ability to use narrative elements (e.g., dialogue, description) when writing.
- Literary Analysis Task
    - This task provides students with an opportunity to show their understanding of literature. It asks students to read two literary texts, answer a set of selected-response questions about the texts, and write an extended response that compares and/or explains key ideas or elements in the texts (e.g., central idea/message, contribution of illustrations, characterization).
    - This task focuses on students' ability to read complex text closely and asks them to carefully consider literature worthy of close study.
- Research Simulation Task
    - This task mirrors the research process by presenting three texts on a given topic. Students answer a set of selected-response questions about the texts and then write an extended response about some aspect of the related texts (e.g., relationship between a series of events, ideas, or concepts; comparison/contrast of key details; presentation of information).
    - This task requires students to synthesize information from related informational resources.

The following item types were included in the 2022-2023 LEAP 2025 high school ELA assessments:

- Selected-Response Items:
    - Evidence-based selected response – EBSR: This item type consists of two parts; one part asks students to show their understanding of a text and the other part asks students to identify evidence to support that understanding. The evidence supports a generalization, conclusion, or inference. This type of item is designed to provide students opportunities to make explicit the evidence that supports their close analysis of a specific text.
    - Multiple select – MS: This item type requires students to select more than one correct answer and may appear as a one-part question or as part of an EBSR item. This type of item allows for the assessment of students' ability to identify multiple pieces of evidence to support a claim.
    - Technology enhanced – TE: This item type allows measurement of learning that may not be sufficiently measured by traditional multiple-choice items: ordering of ideas within a summary; ordering of steps in a process; sorting, classifying, and categorizing ideas; matching of two themes/ideas to their unique evidence, etc. The technology offers students additional ways to show understanding that parallels the classroom instructional techniques teachers use to determine whether students are able to comprehend grade-level, complex text.

TE Items may involve any of the following:

- Highlighting text: requires a student to select text-based answer(s) from within a larger text
- Drag and drop: requires a student to move draggable elements (e.g., words, phrases, or sentences) into one or more drop boxes (e.g., cells within a table or part[s] of a diagram)
- Drop-down menu: requires a student to select from one or more drop-down menus to complete a phrase or sentence
- Match interaction table: requires a student to select a checkbox in each row from two or more columns to classify statements presented in each row

- Prose constructed response – PCR: This item type appears at the end of each of the tasks and asks students to create an extended, complete written response. It elicits evidence that students have understood a text or texts they have read and can communicate that understanding well, both in terms of written expression and in terms of knowledge and use of language conventions.

A variety of item types allows for the measurement of the full range of student performance. To ensure a range of item complexity beyond the DOK level, the list below includes some of the key elements that are considered when creating items or new passage sets and selecting items for a passage set and across a form:

- The item type that best addresses the standards the item measures (e.g., standard RI.2 at some grade levels requires students to identify two main ideas, so an MS or TE item should be used when measuring this standard fully; a TEI should be using when measuring the ordering required in an RL.2 summary item.)
- A variety of items to assess more complex standards across a passage set and form (e.g., RL.6 at grades 6-8 includes point of view and purpose, which would require separate items to assess the standard fully. See the Grades 3-11 Reading and Writing Evidence Statements for more information about how each standard should be assessed.)
- The reading load and other demands of an item, which include the number of correct answers required and number of distractors for EBSR and MS items and number of interactions and distractors for TE items

All items and tasks are clearly aligned to specific standards. Most include a primary standard, as well as standard 1, which requires evidence to support the primary standard. The PCRs align to several standards since they measure reading and/or writing skills that are articulated in the RST/LAT and NWT grade-level rubrics.

The following tables detail the number of items and points by session and item type for English I and English II forms.

Table 3.4 Distribution of English I Items and Points by Session and Item Type

Form	Session	EBSR		MS		TE		PCR		Total No. of Pts.
		No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	
A	1. Research Simulation Task	6	12	0	0	2	4	1	19	90
	2. Narrative Writing Task/ Reading Passage	5	10	2	4	3	6	1	15	
	3. Reading Literary/ Informational Texts	8	16	1	2	1	2	0	0	
B	1. Literary Analysis Task/ Reading Passage	8	16	0	0	2	4	1	19	94
	2. Research Simulation Task	6	12	0	0	2	4	1	19	
	3. Reading Literary/ Informational Texts	6	12	1	2	3	6	0	0	
E	1. Research Simulation Task	4	8	2	4	2	4	1	19	90
	2. Narrative Writing Task/ Reading Passage	4	8	2	4	4	8	1	15	
	3. Reading Literary/ Informational Texts	6	12	1	2	3	6	0	0	
F	1. Literary Analysis Task/ Reading Passage	5	10	2	4	3	6	1	19	94
	2. Research Simulation Task	6	12	1	2	1	2	1	19	
	3. Reading Literary/ Informational Texts	8	16	0	0	2	4	0	0	
G	1. Research Simulation Task	6	12	1	2	1	2	1	19	90
	2. Narrative Writing Task/ Reading Passage	4	8	3	6	3	6	1	15	
	3. Reading Literary/ Informational Texts	6	12	1	2	3	6	0	0	
H	1. Literary Analysis Task/ Reading Passage	5	10	2	4	3	6	1	19	94
	2. Research Simulation Task	3	6	3	6	2	4	1	19	
	3. Reading Literary/ Informational Texts	7	14	1	2	2	4	0	0	

Form	Session	EBSR		MS		TE		PCR		Total No. of Pts.
		No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	
J	1. Research Simulation Task	3	6	3	6	2	4	1	19	90
	2. Narrative Writing Task/ Reading Passage	5	10	3	6	2	4	1	15	
	3. Reading Literary/ Informational Texts	6	12	2	4	2	4	0	0	

Table 3.5 Distribution of English II Items and Points by Session and Item Type

Form	Session	EBSR		MS		TE		PCR		Total No. of Pts.
		No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	
A	1. Research Simulation Task	5	10	2	4	1	2	1	19	90
	2. Narrative Writing Task/ Reading Passage	2	4	7	14	1	2	1	15	
	3. Reading Literary/ Informational Texts	5	10	4	8	1	2	0	0	
B	1. Literary Analysis Task/ Reading Passage	4	8	3	6	3	6	1	19	94
	2. Research Simulation Task	5	10	2	4	1	2	1	19	
	3. Reading Literary/ Informational Texts	4	8	4	8	2	4	0	0	
D	1. Literary Analysis Task/ Reading Passage	4	8	3	6	3	6	1	19	94
	2. Research Simulation Task	4	8	2	4	2	4	1	19	
	3. Reading Literary/ Informational Texts	6	12	1	2	3	6	0	0	
E	1. Research Simulation Task	4	8	2	4	2	4	1	19	90
	2. Narrative Writing Task/ Reading Passage	7	14	1	2	2	4	1	15	
	3. Reading Literary/ Informational Texts	2	4	5	10	3	6	0	0	
F	1. Literary Analysis Task/Reading Passage	8	16	0	0	2	4	1	19	94
	2. Research Simulation Task	6	12	1	2	1	2	1	19	
	3. Reading Literary/ Informational Texts	8	16	0	0	2	4	0	0	
G	1. Research Simulation Task	6	12	1	2	1	2	1	19	90
	2. Narrative Writing Task/ Reading Passage	6	12	2	4	2	4	1	15	
	3. Reading Literary/ Informational Texts	6	12	2	4	2	4	0	0	
H	Literary Analysis Task/Reading Passage	7	14	1	2	2	4	1	19	94

Form	Session	EBSR		MS		TE		PCR		Total No. of Pts.
		No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	No. of Items	No. of Pts.	
	2. Research Simulation Task	5	10	1	2	2	4	1	19	
	3. Reading Literary/ Informational Texts	7	14	1	2	2	4	0	0	
J	1. Research Simulation Task	5	10	1	2	2	4	1	19	90
	2. Narrative Writing Task/ Reading Passage	5	10	2	4	3	6	1	15	
	3. Reading Literary/ Informational Texts	5	10	2	4	3	6	0	0	

Mathematics Test Blueprints and Test Designs

The mathematics assessments were administered during operational testing windows: November 29 through December 16, 2022, or January 5–25, 2023; April 18 through May 24, 2023; and June 26–30, 2023. The 2022-2023 mathematics assessments included three test sessions, and each test session included the four mathematics reporting categories and the three mathematics task types. See Table 3.6 for details about categories and task types.

Each item on the LEAP 2025 mathematics assessment is referred to as a task and is identified by one of three types: Type I, Type II, and Type III. As shown in the following table, each task type is aligned to one or two of four reporting categories: Major Content, Additional & Supporting Content, Expressing Mathematical Reasoning, or Modeling & Application. Each task type is designed to align to at least one of the Standards for Mathematical Practice (MP).

Table 3.6 Overview of LEAP 2025 Mathematics Task Types and Reporting Categories

Task Type	Description	Reporting Categories	Mathematical Practice(s)
Type I	Conceptual understanding, fluency, and application	*Major Content:* solve problems involving the major content for the grade level. *Additional & Supporting Content:* solve problems involving the additional and supporting content for the grade level.	Can involve any or all practices
Type II	Written arguments/ justifications, critique of reasoning, or precision in mathematical statements	*Expressing Mathematical Reasoning:* express mathematical reasoning by constructing mathematical arguments and critiques.	Primarily MP.3 and MP.6 but may also involve any of the other practices
Type III	Modeling/application in a real-world context or scenario	*Modeling & Application:* solve real-world problems engaging particularly in the modeling practice.	Primarily MP.4 but may also involve any of the other practices

These reporting categories provide parents and educators with valuable information about

- overall student performance, including readiness to continue further study in mathematics;
- student performance broken down by mathematics subcategories, which may help identify when students need additional support or more challenging work; and
- how well schools and school systems help students achieve higher expectations.

Tables 3.7 and 3.8 provide the distribution of operational points by reporting category and by form for each mathematics course.

Table 3.7 Distribution of Points by Reporting Category—Algebra I

	Form						
Reporting Category	**BR**	**D**	**E**	**FR**	**GR**	**H**	**J**
Major Content	28	28	28	28	28	28	28
Additional & Supporting Content	14	14	14	14	14	14	14
Expressing Mathematical Reasoning	11	11	11	11	11	11	11
Modeling & Application	15	15	15	15	15	15	15
Total	**68**	**68**	**68**	**68**	**68**	**68**	**68**

Table 3.8 Distribution of Points by Reporting Category—Geometry

	Form						
Reporting Category	**BR**	**D**	**E**	**F**	**G**	**H**	**J**
Major Content	26	26	26	26	26	26	26
Additional & Supporting Content	16	16	16	16	16	16	16
Expressing Mathematical Reasoning	11	11	11	11	11	11	11
Modeling & Application	15	15	15	15	15	15	15
Total	**68**	**68**	**68**	**68**	**68**	**68**	**68**

The Major Content category for mathematics is broken into subcategories by course as follows:

Table 3.9 Major Content Subcategories by Course

Course	Major Content Subcategories
Algebra I	• Interpreting Functions • Solving Algebraically • Solving Graphically/Rate of Change
Geometry	• Congruence Transformations/Similarity • Similarity in Trigonometry/Modeling & Applying

The resulting 2022-2023 LEAP 2025 mathematics test blueprints are shown in Tables 3.10 and 3.11.

Table 3.10 Algebra I Test Blueprint

Reporting Category	Major Content	Additional & Supporting Content	Expressing Mathematical Reasoning	Modeling & Application
Task Type	Type I: I.1 (24 items, 24 points) I.2 (7 items, 14 points) I.4 (1 item, 4 points) Total: 32 items, 42 points (62% of total)		Type II: II.3 (1 item, 3 points) II.4 (2 items, 8 points) Total: 3 items, 11 points (16% of total)	Type III: III.3 (3 items, 9 points) III.6 (1 item, 6 points) Total 4 items, 15 points (22% of total)
Total OP Points	28 (41% of total)	14 (21% of total)	11 (16 % of total)	15 (22% of total)
Assessable Content	A1: A-APR.A.1 A1: A-CED.A.3 A1: A-CED.A.4 A1: A-REI.B.3 A1: A-REI.B.4a A1: A-REI.B.4b A1: A-REI.D.10 A1: A-REI.D.11 A1: A-REI.D.12 A1: A-SSE.A.1a A1: A-SSE.A.1b A1: A-SSE.A.2 A1: F-IF.A.1 A1: F-IF.A.2 A1: F-IF.B.4 A1: F-IF.B.5 A1: F-IF.B.6 LEAP.I.A1.1 LEAP.I.A1.2 LEAP.I.A1.3 LEAP.I.A1.4 LEAP.I.A1.5 LEAP.I.A1.6	A1: A-APR.B.3 A1: A-REI.C.6 A1: A-SSE.B.3a A1: A-SSE.B.3b A1: A-SSE.B.3c A1: F-BF.B.3 A1: F-IF.C.7a A1: F-IF.C.7b A1: F-IF.C.8a A1: F-IF.C.9 A1: F-LE.A.2 A1: S-ID.B.5 LEAP.I.A1.7	LEAP.II.A1.1 LEAP.II.A1.2 LEAP.II.A1.3 LEAP.II.A1.4 LEAP.II.A1.5 LEAP.II.A1.6 LEAP.II.A1.7 LEAP.II.A1.8 LEAP.II.A1.9 LEAP.II.A1.10	LEAP.III.A1.1 LEAP.III.A1.2 LEAP.III.A1.3 LEAP.III.A1.4

Table 3.11 Geometry Test Blueprint

Reporting Category	Major Content	Additional & Supporting Content	Expressing Mathematical Reasoning	Modeling & Application
Task Type	Type I: I.1 (24 items, 24 points) I.2 (7 items, 14 points) I.4 (1 item, 4 points) Total: 32 items, 42 points (62% of total)		Type II: II.3 (1 item, 3 points) II.4 (2 items, 8 points) Total: 3 items, 11 points (16% of total)	Type III: III.3 (3 items, 9 points) III.6 (1 item, 6 points) Total 4 items, 15 points (22% of total)
Total OP Points	26 (38% of total)	16 (24% of total)	11 (16% of total)	15 (22% of total)
Assessable Content	GM: G-CO.B.6 GM: G-GPE.B.6 GM: G-SRT.A.1a GM: G-SRT.A.1b GM: G-SRT.A.2 GM: G-SRT.B.5 GM: G-SRT.C.6 GM: G-SRT.C.7 GM: G-SRT.C.8 LEAP.I.GM.1 LEAP.I.GM.2	GM: G-C.A.2 GM: G-CO.A.1 GM: G-CO.A.3 GM: G-CO.A.5 GM: G-GMD.A.1 GM: G-GMD.A.3 GM: G-GMD.B.4 GM: G-GPE.A.1 LEAP.I.GM.3 LEAP.I.GM.4 LEAP.I.GM.5	LEAP.II.GM.1 LEAP.II.GM.2 LEAP.II.GM.3 LEAP.II.GM.4	LEAP.III.GM.1 LEAP.III.GM.2 LEAP.III.GM.3 LEAP.III.GM.4 LEAP.III.GM.5

Unlike the ELA test blueprints, which were organized by test sessions one through three, the mathematics test blueprints were organized by reporting categories, so it was necessary to define the general structure of the test forms by test session. The design goal was to have balanced test sessions with a variety of task types and equivalent testing times. For session 1a of the mathematics assessments, students were prohibited from using calculators, except those students with a calculator accommodation. Calculators were allowed to be used by all students in sessions 1b, 2, and 3. The general test structures (see Tables 3.12 and 3.13) guided test form sequencing and design. The LEAP 2025 Calculator Policy provided the basis for calculator designation of tasks and items.

Table 3.12 Algebra I Testing Sessions

Reporting Category	Session 1a: No Calculator	Session 1b: Calculator	Session 2: Calculator	Session 3: Calculator	Total
Major Content (points)	5	5	9	9	28
Additional & Supporting Content (points)	4	2	4	4	14
Expressing Mathematical Reasoning (points)	0	3	4	4	11
Modeling & Application (points)	0	3	6	6	15
Total Operational Points	9	13	23	23	68
Test Duration *(minutes)	25	55	80	80	240
# of Operational Items	I.1: 5 I.2: 2 I.4: 0 II.3: 0 II.4: 0 III.3: 0 III.6: 0	I.1: 3 I.2: 0 I.4: 1 II.3: 1 II.4: 0 III.3: 1 III.6: 0	I.1: 9 I.2: 2 I.4: 0 II.3: 0 II.4: 1 III.3: 0 III.6: 1	I.1: 7 I.2: 3 I.4: 0 II.3: 0 II.4: 1 III.3: 2 III.6: 0	I.1: 24 I.2: 7 I.4: 1 II.3: 1 II.4: 2 III.3: 3 III.6: 1

* Six Embedded Field Test Items were included throughout the assessment; they are included in the total time.

Table 3.13 Geometry Testing Sessions

Reporting Category	Session 1a: No Calculator	Session 1b: Calculator	Session 2: Calculator	Session 3: Calculator	Total
Major Content (points)	5	5	8	8	26
Additional & Supporting Content (points)	4	2	5	5	16
Expressing Mathematical Reasoning (points)	0	3	4	4	11
Modeling & Application (points)	0	3	6	6	15
Total Operational Points	9	13	23	23	68
Test Duration *(minutes)	25	55	80	80	240
# of Operational Items	I.1: 5 I.2: 2 I.4: 0 II.3: 0 II.4: 0 III.3: 0 III.6: 0	I.1: 3 I.2: 0 I.4: 1 II.3: 1 II.4: 0 III.3: 1 III.6: 0	I.1: 7 I.2: 3 I.4: 0 II.3: 0 II.4: 1 III.3: 0 III.6: 1	I.1: 9 I.2: 2 I.4: 0 II.3: 0 II.4: 1 III.3: 2 III.6: 0	I.1: 24 I.2: 7 I.4: 1 II.3: 1 II.4: 2 III.3: 3 III.6: 1

* Six Embedded Field Test Items were included throughout the assessment; they are included in the total time.

The following item types were used in the 2022-2023 LEAP 2025 mathematics assessments:

- Multiple-choice: This item type requires students to select one correct answer from four answer choices. It may appear as a one-part question, as part of a two-part question, or as part of a constructed-response item. The multiple-choice items are worth one point.
- Multiple select: This item type requires students to select more than one correct answer from more than four answer choices. It may appear as a one-part question, as part of a two-part question, or as part of a constructed-response item. The multiple select items are worth one point. Students must choose all correct answers and no incorrect answers to receive credit.
- Short answer: This item type requires students to enter a numeric response by typing from the keyboard. It may appear as a one-part question, as part of a two-part question, or as part of a constructed-response item. The short answer items are worth one point. Unless specified in the question, students will earn credit for an answer that is equivalent to the correct numerical answer. Proper rounding may be required. Answers to short answer items can be positive or negative and must be entered in integer or decimal form.

- Keypad input items: This item type requires students to enter a mathematical response using a customized pallet of numbers, operations, variables, and/or mathematical symbols; allows the use of all rational and irrational numbers, expressions, and equations; and scores all equivalent responses as correct unless noted otherwise. This item type may appear as a one-part question, as part of a two-part question, or as part of a constructed-response item.
- Constructed-response items: This item type requires students to respond to an open-ended question, which must be typed into a response box; students may use the equation builder tool (specific to the course) to insert mathematical characters. This item type can be a single- or multi-part item. Constructed-response items ask students to write explanations or justifications, model a process, and/or solve real-world, multistep contextual problems. Students may receive partial or full credit on constructed-response items, and maximum point values will vary by constructed-response task. Maximum values for constructed-response items are 3, 4, or 6 points.
- Technology enhanced items: This item type uses technology to capture student responses. Technology-enhanced items may appear as a one-part question, as part of a two-part question, or as part of a constructed-response item. The technology-enhanced items are worth one point. Technology-enhanced items may involve any of the following:
    - Bar graph: requires students to complete a bar graph or histogram by raising/lowering each bar to a value
    - Drag and drop: requires students to move draggable elements into one or more drop boxes
    - Drop-down menu: requires students to select from one or more drop-down menus to complete a sentence, phrase, or expression/equation/inequality
    - Hot spot: requires students to select one or more responses by choosing selectable areas on the screen
    - Match interaction table: requires students to select a checkbox in each row from two or more columns
    - Graph input: requires students to enter a response on a coordinate grid
    - Number line input: requires students to enter a response on a number line
    - Line plot: requires students to complete a line plot with “X” as the input

A variety of item types allows for the measurement of the full range of student performance.

The following table details the number of items by point value and task type and the number of points per task type for each form.

Table 3.14 Distribution of Mathematics Tasks and Points by Task Type

Form	Content Area	Type I				Type II			Type III			Total Number of Points
		1 pt. Tasks	2 pt. Tasks	4 pt. Tasks	Points	3 pt. Tasks	4 pt. Tasks	Points	3 pt. Tasks	6 pt. Tasks	Points	
BR	Algebra I	24	7	1	42	1	2	11	3	1	15	68
D	Algebra I	24	7	1	42	1	2	11	3	1	15	68
E	Algebra I	24	7	1	42	1	2	11	3	1	15	68
FR	Algebra I	24	7	1	42	1	2	11	3	1	15	68
GR	Algebra I	24	7	1	42	1	2	11	3	1	15	68
H	Algebra I	24	7	1	42	1	2	11	3	1	15	68
J	Algebra I	24	7	1	42	1	2	11	3	1	15	68

Form	Content Area	Type I				Type II			Type III			Total Number of Points
		1 pt. Tasks	2 pt. Tasks	4 pt. Tasks	Points	3 pt. Tasks	4 pt. Tasks	Points	3 pt. Tasks	6 pt. Tasks	Points	
AR	Geometry	24	7	1	42	1	2	11	1	2	15	68
BR	Geometry	24	7	1	42	1	2	11	1	2	15	68
D	Geometry	24	7	1	42	1	2	11	3	1	15	68
E	Geometry	24	7	1	42	1	2	11	3	1	15	68
F	Geometry	24	7	1	42	1	2	11	3	1	15	68
G	Geometry	24	7	1	42	1	2	11	3	1	15	68
H	Geometry	24	7	1	42	1	2	11	1	2	15	68
J	Geometry	24	7	1	42	1	2	11	1	2	15	68

Item Development and Selection

The processes of item development and selection are discussed in this section in compliance with the *Standards*.

Standard 4.7 states the following:

> The procedures used to develop, review, and try out items and to select items from the item pool should be documented (87).

The items used in the 2022-2023 LEAP 2025 high school ELA and mathematics assessments came from the New Meridian's item bank and the Louisiana-owned item bank.

The items selected for use on the 2022-2023 LEAP high school forms were used to equate to the LEAP 2025 scale, which is comparable to the PARCC scale. Operational forms were selected based on LEAP 2025 high school test blueprint specifications, which were supported by statistical data from New Meridian operational testing.

Considerations of Test Fairness in Item Development

Standard 3.2 is particularly relevant to fairness in item development:

> Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics (64).

Bias and sensitivity guidelines used to develop the New Meridian and Louisiana-owned items help ensure the assessments are fair for all groups of test takers, despite differences in characteristics that include, but are not limited to, disability status, ethnic group, race, gender, regional background, native language, religion, sexual orientation, and socioeconomic status. DRC relied strongly on the bias and sensitivity guidelines in the development of the assessments, particularly in item selection and review. To be included in the assessments, items had to comply with the bias and sensitivity guidelines and be approved by Louisiana educators involved in the Louisiana alignment and item review meetings.

New Meridian Item Reviews

As part of New Meridian's ongoing item development practices, several educator committees had already been convened to conduct rigorous reviews of every passage and item developed for the New Meridian assessment system prior to the items becoming a part of the item bank that included items and passages available for selection on Louisiana forms. These reviews include

- text reviews of all passages (during which participants review and edit passages independently and then discuss content and bias concerns as a grade-level group),
- item reviews (during which committees review and edit items for adherence to basic principles of universal design, accessibility guidelines, selected metadata fields, and a style guide),
- bias and sensitivity reviews (during which educators and community members review items and tasks to confirm the absence of issues relating to bias, fairness, and sensitivity to ensure that items and tasks do not unfairly advantage or disadvantage any student subgroup over another subgroup),
- editorial reviews (during which the review committee completes a copy edit review and records member comments), and
- data reviews (during which educators evaluate item-level statistics to determine eligibility of items and tasks to move forward to the operational assessments).

Additional information on New Meridian's item review processes and procedures can be found at the New Meridian Resource Center. Only items that have been approved by expert reviewers during text reviews (ELA only), item reviews, bias and sensitivity reviews, and editorial reviews are moved forward for field-testing. Of the field-tested items, only those determined to have acceptable statistics, either by having acceptable item parameters according to the data-review flagging criteria or by being approved by expert reviewers during data review, are eligible for review by Louisiana educators for potential use on an operational assessment. These processes follow the criteria set forth by the *Standards*.

Standard 3.1 states the following:

> Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid score interpretations for intended score uses for the widest possible range of individuals and relevant subgroups in the intended population (63).

Standard 3.2 states the following:

> Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics (64).

Independent studies of New Meridian passages and items have found that the content being licensed assesses the skills that matter most and is rigorous, aligned to standards, and accessible to students with disabilities and English Learners. For more information on the studies performed, refer to New Meridian's website: https://resources.newmeridiancorp.org/research/.

3.2 Louisiana Development and Item Review

Mathematics Item Development

To determine the mathematics item development needs for field-testing in the Spring 2022 administration, the LDOE determined the count of items needed per course and then DRC content experts analyzed the item pool to determine the number of type I, type II or type III items and the evidence statements/standards based on that analysis. DRC content experts reviewed standards coverage on the previous year's test by looking at the number and types of items used to cover each content standard, the difficulty range, the level of cognitive complexity covered by each content standard, and the topic/material presented in items (to ensure a variety of engaging topics are included). DRC determined gaps or holes in coverage, based on these criteria, to create an item development plan for the number and types of items to be newly developed for possible field-testing in spring 2022. DRC presented the item development plan to LDOE content experts, who then provided feedback to DRC. DRC and the LDOE collaborated to finalize the item development plan. For the 2019 development, DRC subcontracted with Pearson to have items written. For the 2021 item development, DRC contracted with various content experts having backgrounds in both mathematics and education. These content experts have multiple years of experience writing to the Louisiana Student Standards and work directly with DRC test developers to create items that best assess each of the standards. For both rounds of development, item writers participated in item writing training prior to developing items. The training included:

- an overview of the assessable content and task types,
- a description of the type I, type II, and type III items,
- an explanation of how to use the standards and evidence statements when writing items,
- examples of type I, type II, and type III items,
- a discussion that covered item writing guidelines,

- examples of items with issues,
- training on security and confidentiality, and
- training on universal design and issues of bias, fairness, and sensitivity

These items were reviewed by LDOE and revised by Pearson/DRC. Once items were approved by the LDOE, they became part of the set of items that were taken to item content and bias reviews with Louisiana educators.

At the mathematics item content and bias reviews, committees met to provide feedback on the alignment and appropriateness of items. Louisiana educators reviewed items for: alignment to content standards; grade appropriateness; issues of bias, fairness, and/or sensitivity; and difficulty and cognitive complexity (including determining whether the difficulty and cognitive complexity were appropriate for each item and whether the items available represented a range of difficulty and cognitive complexity). Louisiana educators edited items as needed to ensure they were appropriate for use on Louisiana assessments, which allowed the items to move forward for possible field-testing. Any items deemed inappropriate were rejected if educators were not able to revise those items. Items that successfully passed through the content and bias reviews were then placed on a test form in a field test position, and data was collected on each field test item. Once field testing was complete, the items were taken to rangefinding, where committees of Louisiana educators reviewed Louisiana student responses to assign true scores to responses that would be used in training materials for the scoring of items. The field-tested constructed response items were then scored, and the data were analyzed by DRC psychometricians.

3.3 Guidelines on Bias, Fairness, and Sensitivity

Item writers and content and bias committee members were provided with guidelines on bias, fairness, and sensitivity issues as they pertain to testing. The information included definitions of bias and sensitivity, examples of different types of bias, and topics of concern, which were specific to given content areas. Writers were also provided with sample items that contained bias, fairness, and sensitivity issues and examples of how to revise items and graphics to ensure universal design is applied. The writers were also given information on accessibility and accommodations, including information on how to address language, visual elements, and design issues when considering students in special populations (e.g., students with disabilities and English Learners).

Types of Bias:

- Stereotyping
  - may result when an image is formed by relating certain characteristics to ALL members of a group and may include physical characteristics, intellectual characteristics, emotions, careers, activities, and domestic or social roles
- Gender Bias
  - may result when people of any gender are unnecessarily presented in stereotypical activities, occupations, and/or situations or are unnecessarily presented as having stereotypical emotions or characteristics
- Regionalism
  - may result from the inclusion of terms that are not commonly used nationwide or within a particular region of the state in which the test will be given
- Ethnic or Cultural Bias

    - may result from the inclusion of terms, concepts, or situations that are demeaning and/or offensive to a particular ethnic group or culture
- Socioeconomic or Class Bias
    - may result from the inclusion of activities, possessions, or ideas that may not be common to all students
- Religious Bias
    - may result from the inclusion of terms, concepts, or situations that are demeaning and/or offensive to a particular religious group
- Ageism
    - may result from the inclusion of terms, concepts, or situations that are demeaning and/or offensive to elders or to older persons (defined as people older than the reference group) and may also involve issues of bias with other age groups, including teenagers and young children, or even with the age of the reference group itself, where the grade (age) of a student is depicted negatively
- Bias against Persons with Disabilities
    - may result from the inclusion of terms, concepts, or situations that are demeaning and/or offensive to persons with disabilities

Louisiana Item Alignment Review

Independent of New Meridian reviews, DRC conducts the Louisiana item alignment reviews, during which Louisiana educators review items and passage sets for alignment to the Louisiana Student Standards and for appropriateness of the items and tasks for students in Louisiana, including being free of issues of bias, fairness, and sensitivity.

DRC, with guidance from LDOE, conducted the virtual Louisiana item alignment reviews in July 2022 with committees of Louisiana educators. Course-specific committees met for three days for mathematics and ELA to provide feedback on the alignment and appropriateness of items that made up the New Meridian item bank. To the extent possible, each committee included educators from different parts of Louisiana to represent all Louisiana students (e.g., special education students, English Learners, students with disabilities). Committee members were also representative of the diverse demographics of the state.

As described in the preceding sections, items presented at these reviews went through a rigorous review process before and after the items were field-tested by New Meridian to ensure quality and appropriateness. Items were selected for inclusion in the form selection pool, imported into IDEAS (DRC's item banking system), and formatted for use on Louisiana test forms. They were placed on mock test forms to allow them to be reviewed as students would see them. Louisiana educators reviewed these items to confirm they were acceptable for use on a Louisiana assessment. Educators reviewed items individually to verify that each item aligned to the Louisiana Student Standard(s) for that item prior to discussing the items as a group. In addition, educators reviewed item keys and discussed the difficulty and cognitive complexity of each item and task. The groups came to a consensus regarding the status of each item: Accepted with Current Alignment, Accepted with Realignment, or Rejected. Items that were accepted were determined to appropriately measure the intended standard(s) and be free of issues of bias, fairness, or sensitivity that could impact student responses to the item.

3.4 Operational Test Selection

Operational item selection for the 2022-2023 administration took place from June through September 2022 by LDOE and DRC. The New Meridian and Louisiana item pools were used to select fixed LEAP 2025 ELA and mathematics high school forms.

The LEAP 2025 high school assessments were given as computer-based tests (CBTs). For students unable to participate in a CBT administration, accommodated print forms were available for secure download and printing by authorized users. Test administrators transcribed all student responses into the appropriate CBT test form. (See Chapter 4 for additional details.)

Item and Passage Selection Process and Criteria

The item and passage selection process used for forms construction was a content-focused, collaborative process between the LDOE and DRC ELA and mathematics content specialists, and it was followed by a psychometric evaluation of each selection. The critical psychometric consideration, other than individual item performance, was the degree to which the selected items reflected the 2022-2023 LEAP 2025 targets, which were supposed to match the Spring 2019 LEAP 2025 operational forms. Although the item pool was limited, items that were determined to be very difficult (i.e., IRT difficulty parameter b > 2.0) and/or not discriminating (i.e., IRT discrimination parameter a < 0.3) were avoided when possible.

Item Selection Guidelines

- Using the acquired pool of items, content-area assessment specialists select ELA passage sets and tasks that consist of quality texts displaying diversity in topics and authors and mathematics tasks that match the blueprint. The sets and tasks include items that cover a range of Louisiana Student Standards and/or Evidence Statements and address the appropriate reporting categories.
- Content-area assessment specialists and research analysts verify that each item meets psychometric guidelines for excellence as available item-performance data allows.
- Forms include adequate content coverage, as required by the detailed test blueprint.
- Each form contains an anchor set that includes passage sets or tasks from a previous administration. The anchor set, which is a mini-blueprint of the form, ensures comparability between the 2019 form and the 2023 form. The remaining sets or tasks selected for a form complete the blueprint requirements.
- No item in a form should “clue” (or provide the answer to) another item on that same form.
- Clang association should be avoided. Clang is when a distractor can be associated with, or is too similar to, a stem word, or when a statement or quote is used multiple times across items in a set.
- Passage sets in ELA forms should be diverse.
- Forms should be diverse, including a variety of text types, including texts that appeal to a diverse student population.
- Forms should include a wide range of topics and a variety of questions.
- Correct answer distributions should follow best practice (no more than 3 keys of the same answer option in a row).
- Forms **must not** contain any items that have been released to the public.

Review of the ELA Items and Forms

DRC and LDOE ELA content specialists and members of educator committees verified that the items were in compliance with the guidelines provided by LDOE, including alignment to the content standards and appropriateness for Louisiana students. Because establishing content validity is one of the most important aspects in the legal defensibility of a test, the alignment of the items to the content standards must be reviewed and verified at every stage of the test development process. As a result, it is essential that an item selected for a form link directly to the content standard(s) that it purports to measure. The ELA content specialists also verified all items against their designated content codes and metadata, both to evaluate the correctness of the coding and to ensure that the given item measures what it purports to measure.

In addition, the ELA content specialists reviewed each item for item quality, ensuring that the items were in compliance with industry guidelines for clarity, style, accuracy, and appropriateness for Louisiana students. While there are many published guidelines for reviewing assessment items, the following list serves to summarize the major considerations content specialists followed when reviewing items to ensure the items conformed to item quality standards for good, reliable, and fair test questions.

Guidelines for Reviewing Items Selected for Forms

A good item should

- have the appropriate number of correct answer(s) based on the item type;
- have only one clear, correct answer for each part of an evidence-based selected response (ESR) item that has only four answer options in each part;
- have only the indicated number of correct answers for a multiple select (MS) item or item part;
- have a correctly assigned content code (i.e., item map);
- measure one main idea or standard, unless the item is a complex item, such as a prose constructed-response (PCR) item;
- measure the objective or content standard it is designed to measure;
- be at the appropriate level of rigor;
- be simple, direct, and free of ambiguity;
- make use of vocabulary and sentence structure that is appropriate for the grade level assessed;
- be based on content that is accurate and current;
- when appropriate, contain stimulus material that is clear and concise and provides all the information needed;
- contain graphics that are clearly labeled, when appropriate;
- contain answer choices that are reasonably parallel in length and structure;
- contain answer choices that are plausible and reasonable in terms of the requirements of the question and the students' grade-level expectations;
- contain distractors that relate to the question in the same way and can be supported by a rationale;
- reflect current teaching and learning practices for the content area; and
- be free of gender, ethnic, racial, cultural, socioeconomic, regional, and other forms of bias.

Review of the Mathematics Items and Forms

DRC and LDOE mathematics content specialists also ensured the items were in compliance with the guidelines provided by LDOE, including alignment to the content standards and appropriateness for Louisiana students. Since establishing content validity is one of the most important aspects in the legal defensibility of a test, the alignment of the items to the content standards must be reviewed and verified at every stage of the test development process. As a result, it is essential that an item selected for a form link directly to the content standard(s) that it purports to measure. The mathematics content specialists also verified all items against their designated content codes and metadata, both to evaluate the accuracy of the coding and to ensure that the given item measures what it purports to measure.

In addition, the mathematics content specialists reviewed each item for item quality, ensuring that the test items are in compliance with industry guidelines for clarity, style, accuracy, and appropriateness for Louisiana students. While there were many published guidelines for reviewing assessment items, the list below serves to summarize the major considerations mathematics content specialists followed when reviewing items to ensure they conformed to item quality standards for good, reliable, and fair test questions.

Guidelines for Reviewing Items Selected for Forms

A good item should

- contain answer choices that are reasonably parallel in length and structure;
- have the appropriate number of correct answer(s) based on item type:
  - only one clear, correct answer for a multiple-choice (MC) item
  - only the indicated number of correct answers for a multiple select (MS) item;
- have a correctly assigned content code;
- measure one content standard or evidence statement;
- measure the content standard or evidence statement it is designed to measure;
- be at the appropriate level of rigor;
- be simple, direct, and free of ambiguity;
- make use of vocabulary and sentence structure that is appropriate for the grade level assessed;
- be based on content that is accurate and current;
- when appropriate, contain stimulus material that is clear and concise and provides all the necessary information;
- when appropriate, contain graphics that are clearly labeled;
- contain answer choices that are plausible and reasonable in terms of the requirements of the question and the student's level of knowledge;
- contain distractors that relate to the question in the same way and can be supported by a rationale;
- reflect current teaching and learning practices in the content area; and
- be free of gender, ethnic, racial, cultural, socioeconomic, regional, and other forms of bias.

Item-Selection Options for Special Cases

While every effort is made to select a test form that meets all psychometric guidelines for excellence, it may not be possible to comply with all the psychometric criteria for item/form difficulty due to item pool

limitations. In these cases, critical psychometric guidelines are followed while allowing some tolerance on less critical item-selection guidelines. The tolerance of meeting target characteristics, the relative exposure of previously used operational items, and other considerations (e.g., content coverage) may possibly be affected in such cases.

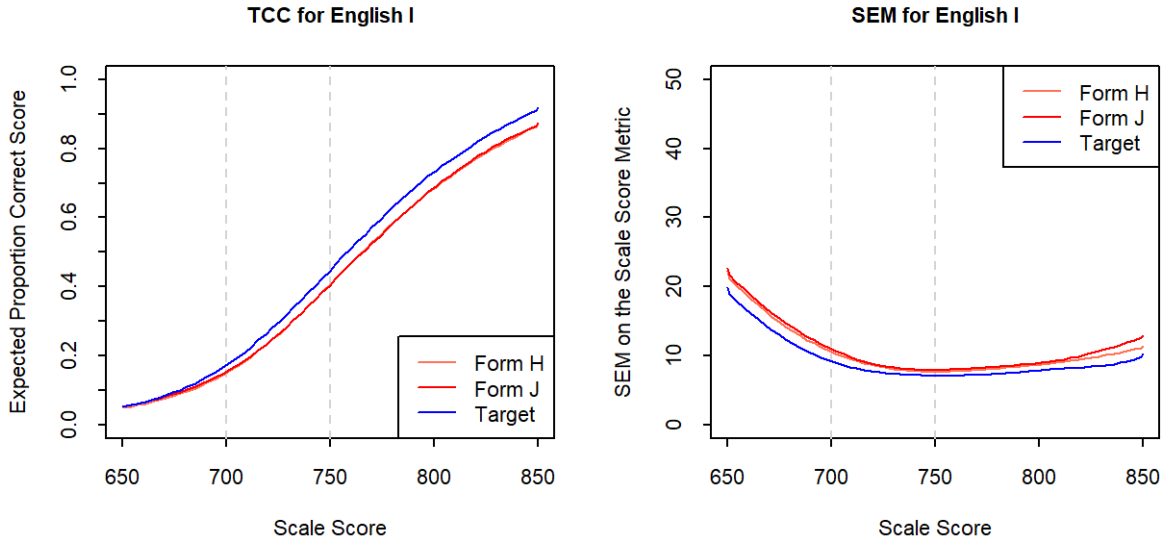
Psychometric Review

The psychometric evaluation of each selection was centered on reviewing the PARCC items with operational item parameters.

Selecting Targets

The spring 2019 LEAP 2025 operational form was selected to be the target form in 2022–2023 LEAP 2025 form construction. The rationale for the choice of the targets was that each 2018–2019 LEAP 2025 form should be on the PARCC scale and be closely comparable to PARCC assessments. Figure 3.1 and Figure 3.2 for English I and II and Figure 3.3 and Figure 3.4 for Algebra I and Geometry show the test characteristic curves (TCCs) and standard errors of measurement (SEMs) of the final forms compared to those of the target forms. The left line graph displays the TCC of the target form and the selected 2022–2023 forms, summarizing the expected proportion of the maximum raw score needed to achieve the raw score. The right line graph displays the SEM of the scale score of the target form and the selected 2022–2023 forms. This summarizes the amount of measurement error surrounding a scale score.

Figure 3.1 Spring English I Form-Building Evaluation for 2022–2023 Administrations



Notes:

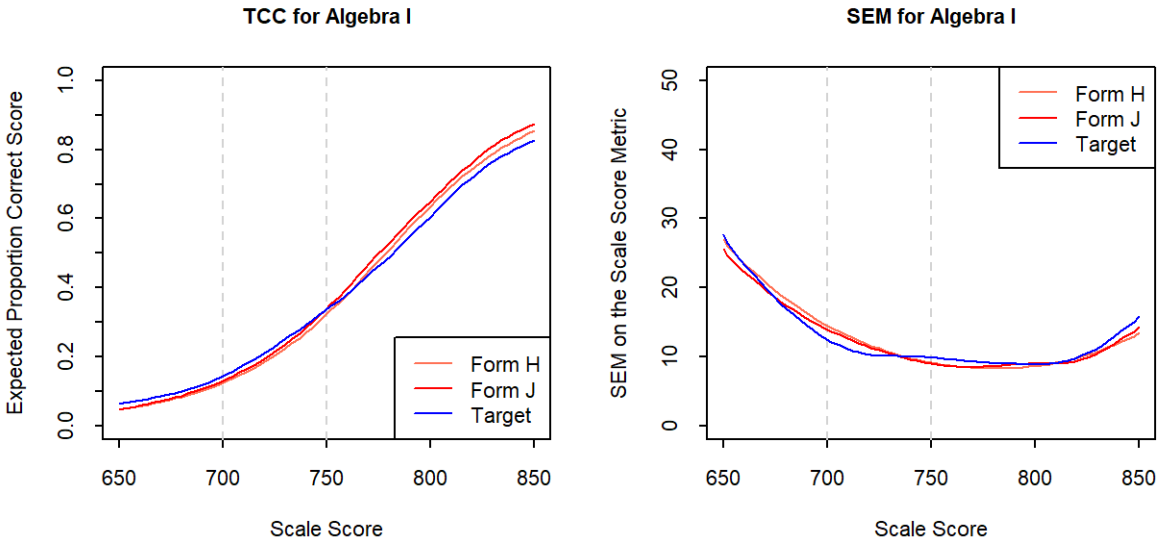
- The target form is the Spring 2019 LEAP 2025 HS test form.
- Forms H and J are Spring 2023 LEAP 2025 HS test forms.

Figure 3.2 Spring English II Form-Building Evaluation for 2022–2023 Administrations

Notes:

- The target form is the Spring 2019 LEAP 2025 HS test form.
- Forms H and J are Spring 2023 LEAP 2025 HS test forms.

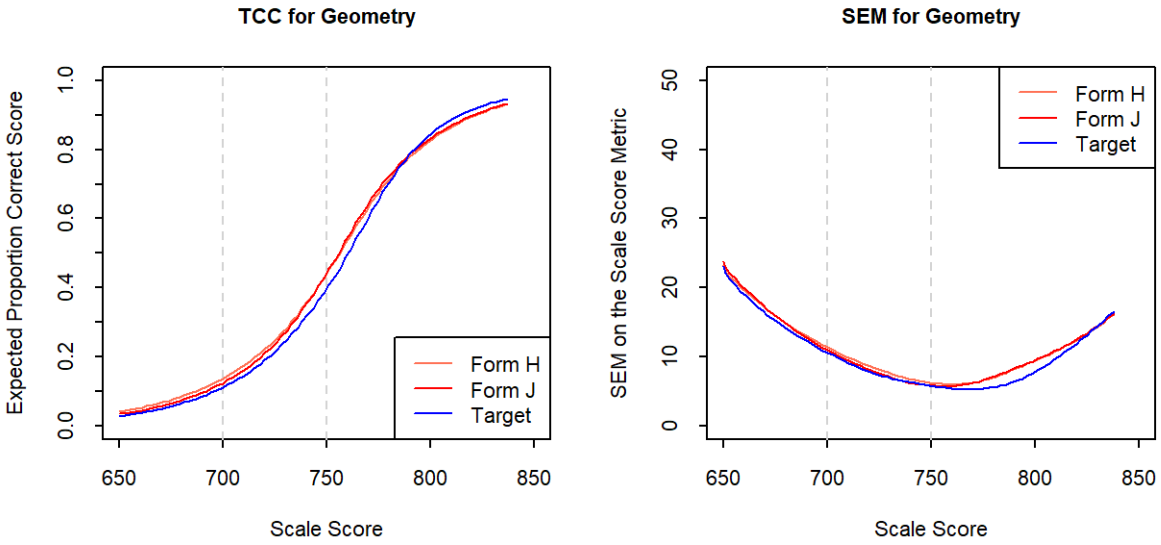
Figure 3.3 Algebra I Form-Building Evaluation for 2022–2023 Administrations



Notes:

- The target form is the Spring 2019 LEAP 2025 HS test form.
- Forms H and J are Spring 2023 LEAP 2025 HS test forms.

Figure 3.4 Geometry Form-Building Evaluation for 2022–2023 Administrations



Notes:

- The target form is the Spring 2019 LEAP 2025 HS test form.
- Forms H and J are Spring 2023 LEAP 2025 HS test forms.

Selecting Anchors

Anchor sets used in the common item nonequivalent group design underwent considerable scrutiny due to the generally accepted guideline that the anchor set should mirror the total (or reference) test in terms of content and item characteristics. One of the critical psychometric considerations for an anchor set is the extent to which the TCC and SEM of the anchor set aligns to that of the total test.

3.5 Universal Design

Course-level assessments that follow universal design guidelines allow participation of the widest possible range of students, resulting in more valid inferences about students' performances. Such assessments may reduce the need for accommodations by reducing or eliminating access barriers associated with the tests themselves. Table 3.16 presents the elements of universal design (Thompson & Thurlow, 2002). The elements of universal design are relevant to both item development and form construction. This section describes how the elements of universal design were addressed in the construction of the test forms administered in 2022-2023 in compliance with AERA, APA, & NCME (2014) Standard 3.1, which states the following:

> Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid score interpretations for intended score uses for the widest possible range of individuals and relevant subgroups in the intended population (63).

Universal design requires that assessments measure the performance of students with a wide range of abilities and skills, ensuring that students with diverse learning needs receive opportunities to demonstrate competence on the same content. To ensure that students can access the tests, the LEAP 2025 assessments include simple, clear, and intuitive instructions and procedures; maximum readability and comprehensibility;

and maximum legibility. The online test specifications define how directions and test items are formatted online, including the spacing between an item stem and answer choices and other page elements (such as online tools and Help files) to ensure consistent, clean visual appearance. Test directions at the beginning of each test session are clearly and simply stated, and the wording of such instructions is standardized as much as possible across tests to ensure clarity and consistency while being comparable to New Meridian.

Table 3.15 Elements of Universal Design

Element	Explanation
Inclusive Assessment Population	Tests designed for state, school system, or school accountability must include every student except those in the alternate assessment, and this is reflected in assessment design and field testing procedures.
Precisely Defined Constructs	The specific constructs tested must be clearly defined so that all construct-irrelevant cognitive, sensory, emotional, and physical barriers can be removed.
Accessible, Non-Biased Items	Accessibility is built into items from the beginning, and bias review procedures ensure that quality is retained in all items.
Amenable to Accommodations	The test design facilitates the use of needed accommodations (e.g., all items can be in braille form).
Simple, Clear, and Intuitive Instructions and Procedures	All instructions and procedures are simple, clear, and presented in understandable language.
Maximum Readability and Comprehensibility	A variety of readability and plain language guidelines are followed (e.g., sentence length and number of difficult words are kept to a minimum) to produce readable and comprehensible text.
Maximum Legibility	Characteristics that ensure easy decipherability are applied to text, tables, figures, illustrations, and response formats.

3.6 Accommodations and Designated Supports

AERA, APA, & NCME (2014) Standard 3.9 states the following:

> Test developers and/or test users are responsible for developing and providing test accommodations, when appropriate and feasible, to remove construct-irrelevant barriers that otherwise would interfere with examinees' ability to demonstrate their standing on the target constructs (67).

Students with disabilities, students with 504 plans, and English Learners (ELs) may be provided test administration accommodations based on their accommodation plan. More information on accommodations can be found in Chapter 4. Accommodation coding instructions can be found in the *Test Coordinator Manual*.

Accommodated print forms were developed for the high school ELA and mathematics tests for those students who were unable to participate in an online administration. For a detailed description of the process used to develop the accommodated print forms and how to modify technology-enhanced items for use in an accommodated print form, see Appendix A.

Braille forms were constructed for each course to enable students with visual impairments to participate in the LEAP 2025 assessments. Braille forms were based on the accommodated print forms. There are no large-print versions of the accommodated print forms. Instead, students needing a large-print version use larger-sized monitors and/or the magnification features of the online testing system. All online test content has been developed to scale in relation to the available area on larger monitors while maintaining the correct aspect ratio. Specific recommendations on how to transcribe items into braille were provided by the braille publisher to produce the braille version of the LEAP 2025 high school assessments and the test administrator's notes that accompany the braille forms. The goal was to maximize the number of items on the braille forms that could be transcribed into braille.

The following assessment features were available to all students and do not require any documentation either prior to or during the assessment:

- blank scratch paper and graph paper
- calculators (to be used in the calculator section only)
- color overlay
- contrasting colors/reverse colors
- directions in native language
- equation builder
- bookmark
- general administration directions clarified
- general administration directions read aloud and repeated as necessary
- general masking
- headphones
- highlighters
- line guides
- magnifiers/variable zoom
- measurement tools
- redirection of student to the test
- specialized furniture or equipment
- sticky note/notepad
- strikethrough
- and writing/formatting tools (for ELA constructed-response items only).

Accessibility features were available for all students with the particular need documented in their Individualized Education Programs (IEPs), Individual Accommodation Plans (IAPs), English Learner (EL) plans, or Personal Needs Profiles (PNPs). The following accessibility features were available: individual testing, small group testing, student reads assessment aloud to himself or herself, adaptive and specialized equipment or furniture, and mathematics read aloud (text-to-speech or human reader).

Accommodations were available for students who have an IEP, IAP, or EL plan. The following accommodations were available: braille test materials, calculation device and mathematics tools for non-calculator sections of mathematics assessments, transferred answers, recorded answers, mathematics Spanish read aloud, translated mathematics test, and test read aloud (text-to-speech). For details on these accessibility features and accommodations, see the *LEAP 2025 Accommodations and Accessibility Features User Guide*.

For a detailed description of the process used to develop the Spanish translation forms of the mathematics tests, see Appendix B.

3.7 Item and Task Specifications

AERA, APA, & NCME (2014) Standard 4.12 states the following:

> Test developers should document the extent to which the content domain of a test represents the domain defined in the test specifications (89).

The item and task specifications are designed to ensure that the assessment items measure the assessment's claims. The purpose of the item and task specifications is to define the characteristics of the items and tasks that will provide the evidence to support one or more claims. To do this, the item and task specifications delineate the types of evidence, or targets, that should be elicited for each reporting category within a grade level. The specifications provide explicit guidance on how to write items to elicit the desired evidence.

The item and task specifications provide guidance on how to measure the targets (i.e., standards) first found in the content specifications and guidelines on how to create the items that are specific to each assessment target and reporting category. In ELA and mathematics, item specifications describe the knowledge, skills, and processes being measured by each item type aligned to particular standards.

These item specifications were developed for each course and standard to delineate the expectations of knowledge and skill to be included on test questions. In addition, the ELA and mathematics item and stimulus specifications provide guidance on determining the appropriateness of task and stimulus materials (i.e., the materials that a student must refer to when working on a test question). The stimulus specifications also provide information on the characteristics of stimuli or activities that should be avoided because they are not important to the knowledge, skill, or process being measured. This underscores DRC's efforts to select items that are accessible to the widest range of students possible; in other words, 2022-2023 LEAP 2025 items were selected according to the elements of universal design.

3.8 Summary

In summary, the overall purpose of this chapter is to explicate the procedures used in the development of the forms administered during the 2022-2023 LEAP 2025 high school administrations. The efforts by LDOE and DRC in developing the LEAP 2025 high school assessments are in alignment with multiple best practices of the test industry but, in particular, support the following AERA, APA, & NCME (2014) standards:

> *Standard 3.1* Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid score interpretations for intended score uses for the widest possible range of individuals and relevant subgroups in the intended population (63).
>
> *Standard 3.2* Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics (64).
>
> *Standard 3.9* Test developers and/or test users are responsible for developing and providing test accommodations, when appropriate and feasible, to remove construct-irrelevant barriers that otherwise would interfere with examinees' ability to demonstrate their standing on the target constructs (67).

Standard 4.0 Tests and testing programs should be designed and developed in a way that supports the validity of interpretations of the test scores for their intended uses. Test developers and publishers should document steps taken during the design and development process to provide evidence of fairness, reliability, and validity for intended uses for individuals in the intended examinee population (85).

Standard 4.1 Test specifications should describe the purpose(s) of the test, the definition of the construct or domain measured, the intended examinee population, and interpretations for intended uses. The specifications should include a rationale supporting the interpretations and uses of test results for the intended purpose(s) (85).

Standard 4.7 The procedures used to develop, review, and try out items and to select items from the item pool should be documented (87).

Standard 4.12 Test developers should document the extent to which the content domain of a test represents the domain defined in the test specifications (89).

Chapter 4: Test Administration

Chapter 4 of the technical report describes the processes implemented and the information disseminated to help ensure standardized test administration procedures and, thus, uniform test administration conditions for students. According to the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014), "The usefulness and interpretability of test scores require that a test be administered and scored according to the test developer's instructions" (111). This chapter examines how test administration procedures implemented for the 2022–2023 Louisiana Education Assessment Program (LEAP 2025) strengthen and support the intended score interpretations and reduce construct-irrelevant variance that could threaten the validity of score interpretations.

Chapter 4 demonstrates how the LEAP 2025 assessments adhere to AERA, APA, & NCME (2014) Standards 4.15, 6.1, 6.2, 6.3, 6.4, 6.6, and 6.7. Each standard will be explicated in the relevant section of this chapter.

To ensure that the LEAP 2025 assessments are administered in accordance with the department's mandates, the LDOE takes a primary role in communicating with and training school system personnel. The development of the assessments is a collaborative effort between LDOE and DRC. The LDOE conveys to school systems the purpose of the assessments and the importance of test administration being consistent with test industry standards. The tests and administration standards must also meet the State Board of Elementary and Secondary Education policies and the mandates of both state and federal legislation.

To accomplish these goals, the LDOE provides train-the-trainer opportunities for school system test coordinators, who, in turn, administer test-administration training to schools within their school systems. The LDOE conducts quality assurance visits during testing to ensure that school systems adhere to the standardized administration of the tests.

The school system test coordinators are responsible for the schools within their school systems. They disseminate information to each school, assist with test administration, and serve as liaisons between the LDOE and the schools in their system. The LDOE also provides assistance with and interpretation of assessment data and test results.

Ancillary materials for the LEAP 2025 test administration contribute to the body of evidence of the validity of score interpretation. This section examines how the test materials address the standards related to test administration procedures.

For the administration of the LEAP 2025 High School assessments, DRC produced the following test administration manuals (TAMs): *High School Test Administration Manual: LEAP 2025, Fall 2022; High School Test Administration Manual, Spring 2023; High School Test Administration Manual, Summer 2023.* DRC also produced the following test coordinator manuals (TCMs): *Test Coordinator Manual: LEAP 2025, Fall 2022; Test Coordinator Manual: LEAP 2025, Spring 2023; Test Coordinator Manual: LEAP 2025, Summer 2023*. LDOE assessment administration and development staff review these manuals, provide feedback, and give final approval. Each TCM includes information about LEAP 2025 HS ELA, mathematics, U.S. history, and biology. It provides detailed instructions for school system and school test coordinators on distributing and collecting test materials and for returning them to DRC as outlined in its table of contents.

Test Coordinator Manual Table of Contents

The TAMs provide detailed instructions for administering the LEAP 2025 assessments. The manuals include instructions for test security, test preparation, administration of tests, and post-test procedures. Information included in the TAMs is listed below.

Test Administrators Manual Table of Contents

18.1. Test Administrator and Proctor Post-Administration Oath of Security and Confidentiality Statement
18.2. Returning Test Materials to the School Test Coordinator
19. Index

The *Standards* contain multiple references that are relevant to test administration. Information in the TAMs addresses these standards.

The directions for test administration found in the manual address Standard 4.15, which states:

> The directions for test administration should be presented with sufficient clarity so that it is possible for others to replicate the administration conditions under which the data on reliability, validity, and (where appropriate) norms were obtained. Allowable variations in administration procedures should be clearly described. The process for reviewing requests for additional testing variations should also be documented (90).

The LEAP 2025 Test Administration Manuals provide instructions for activities conducted before, during, and after testing with sufficient detail and clarity to support reliable test administrations by qualified test administrators. To ensure uniform administration conditions throughout the state, instructions in the manuals describe the following: general rules of online testing; assessment duration, timing, and sequencing information; and the materials required for testing.

Furthermore, the standardized procedures addressed in the test administration manual need to be followed. The *Standards* state in Standard 6.1:

> "Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer and any instructions from the test user" (114).

It was essential that the LEAP 2025 was administered according to the prescribed test administration manual to ensure the usefulness and interpretability of the test scores and to minimize sources of construct-irrelevant variance. It should be noted that adhering to the test schedule is also a critical component. The test administration manuals include instructions for scheduling the test within the state testing window. The test administration manuals also contain the schedule for timing each test session. The test timing schedule is presented in Table 4.1.

> *Standard 6.3* Changes or disruptions to standardized test administration procedures or scoring should be documented and reported to the test user (115).

The LDOE staff administer reports on testing concerns that describe a wide range of improper activities that may occur during testing, including the following: copying and reviewing test questions with students; cueing students during testing, verbally or with written materials on the classroom walls; cueing students nonverbally, such as by tapping or nodding the head; allowing students to use a calculator on parts of the test where it is not allowed; allowing students to correct or complete answers after tests have been submitted; splitting sessions into two parts; ignoring the standardized directions in the online assessment; reading the ELA assessment to students (with the exception of those students with the read-aloud accommodation); paraphrasing parts of the test to students; changing or completing (or allowing other school personnel to change or complete) student answers; allowing accommodations that are not written in the Individualized Education Program (IEP); allowing accommodations for students who do not have an IEP; or defining terms on the test.

Each administration includes an administrative error retest, which provides an opportunity for students to retake a test that was voided during the regular test window because of improper activities that occurred during testing (e.g., the student was not given enough time to complete the test, the student was not provided proper accommodations during the testing time, the teacher or administrator provided information or answers that resulted in the test being voided).

> *Standard 6.4* The testing environment should furnish reasonable comfort with minimal distractions to avoid construct-irrelevant variance (116).

The test administration manuals outline the steps that teachers should take to prepare classroom environments for administering the LEAP 2025 assessments. These steps include the following:

- Determine the layout of the classroom environment.
- Plan seating arrangements. Allow enough space between students to prevent the sharing of answers.
- Eliminate distractions such as bells or telephones.
- Use a Do Not Disturb sign on the door of the testing room.
- Make sure classroom maps, charts, and any other materials that relate to the content and processes of the test are covered, removed, or out of students' view.

> *Standard 6.6* Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to attain scores by fraudulent or deceptive means (116).

The test administration manuals present instructions for post-test activities to ensure that online tests are submitted and that printed test materials are handled properly to maintain the integrity of student information and test scores. Detailed instructions guide test examiners in submitting all online test records. For students who were administered a braille test form, examiners are instructed to transcribe students' responses from the braille test form into the online testing system (INSIGHT) exactly as the responses appear in the original form.

> *Standard 6.7* Test users have the responsibility of protecting the security of test materials at all times (117).

Throughout the manuals, test coordinators and examiners are reminded of test security requirements and procedures to maintain test security. Specific actions that are direct violations of test security are so noted. Detailed information about test security procedures is presented under "Test Security" in the test administration manuals.

4.1 Return Material Forms and Guidelines

The test coordinator manual instructs test coordinators on how to organize, pack, and return testing materials to DRC for secure inventory purposes. The LDOE assessment administration and development staff have opportunities to review these materials, provide feedback, and give final approval. The purpose of the instructions is to ensure that the secure test materials are properly accounted for and organized appropriately for return shipment.

4.2 Security Checklists

As soon as printed test materials are received by a school system, the district test coordinator ensures the first and last security barcodes on the tests match the packing list they received. The district test coordinator

then packages the test materials to be sent to schools. District test coordinators are required to return communication assistance scripts (CAS) and braille test materials to DRC. School systems are required to document nonstandard situations, including lost, damaged, destroyed, extra, or missing materials. Any material not accounted for is placed on a missing materials list, which is used by DRC and LDOE to follow up with all districts to ensure security of all materials.

4.3 Interpretive Guides

An understanding of what test scores mean and how to interpret score reports is essential to making valid interpretations of the test scores. The *LEAP 2025 HS Interpretive Guide* is written for Louisiana teachers and administrators who receive the LEAP 2025 score reports. More details about the guide can be found in Chapter 7.

4.4 Test Security Measures

Maintaining the security of all test materials is crucial to preventing the possibility of random or systematic errors, such as unauthorized exposure of test items, that would affect the valid interpretation of test scores. Several test security measures are implemented for the LEAP 2025 assessments. Test security procedures are discussed throughout the Test Coordinator Manuals and Test Administration Manuals.

Test coordinators and administrators are instructed to keep all test materials in locked storage, except during actual test administration, and access to secure materials must be restricted to authorized individuals only (e.g., test administrators and the school test coordinator). During testing sessions, the test administrators are directly responsible for the security of the LEAP 2025 assessments, must account for all test materials, and supervise the test administration at all times.

Data Forensic Analyses

Due to the importance of the LEAP 2025 assessments, it is prudent to ensure that the results from the assessments are based on effective instruction and true student achievement. While there are many ways to achieve meaningful understanding of student knowledge via test scores, there are also ways to obtain higher test scores that are not related to actual learning. To assist in ensuring that assessment results are valid, data forensic analyses are conducted to help separate meaningful gains from spurious gains. It is important to note that although the results may be used to identify potential problems within a school, the identification of a problem is not an accusation of misconduct.

Multiple methods of analysis were incorporated into the forensic analysis. The following methods were applied:

- Response-Change Analysis
- Score-Fluctuation Analysis
- Web Monitoring
- Plagiarism Detection

Response-Change Analysis

Students make changes to answer choices when taking the LEAP 2025, and this is expected behavior. Unfortunately, changing student answers is also an opportunity for school personnel to improve classroom performance. The response-change analysis focuses on identifying school- and test-administrator level response-change patterns that are statistically improbable when compared to the expected pattern at the state level.

Score-Fluctuation Analysis

It is anticipated that performance on the LEAP 2025 will improve over time from legitimate sources such as changes in the curriculum and improvement in instruction. However, large and unexpected score changes may be a sign of testing impropriety. The LDOE applied an approach wherein the state's change in performance from one year to the next is compared to a schools' and test administrators' change in performance during the same time frame. Schools and test administrators were identified when the level of change was statistically unexpected.

Web Monitoring

LEAP 2025 operational test content should not appear outside the boundaries of the forms administered. To protect Louisiana test content, the internet is monitored for postings which contain, or appear to contain, potentially exposed and/or copied LDOE test content. When test content is verified, steps are taken so that the infringing content is removed quickly.

Plagiarism Detection

The LDOE monitors for two different plagiarism situations: copying from student to student and copying from an outside source, such as Wikipedia or other internet sources. Instances of plagiarism are identified regardless of whether an item is scored by human scorers or artificial intelligence. Alerts are set to identify responses that may indicate teacher interference, plagiarism, or disturbing content (e.g., possible physical or emotional abuse, suicidal ideation, threats of harm to the student in question or others, etc.). Alerted responses are given additional review so the appropriate response can be taken.

4.5 Test Administration

The 2022–2023 assessments were administered to students within the state testing windows November 29 through December 16, 2022, or January 5-25, 2023; April 18 through May 24, 2023; and June 26–30, 2023. Each session of the LEAP 2025 assessments was required to be administered in one block of time.

Time

All sessions of the LEAP 2025 high school ELA and mathematics assessments were timed. Only students with an extended time accommodation were permitted to exceed the established time limits of any given session. The timing schedule of the LEAP 2025 assessments is presented in Table 4.1.

Table 4.1 LEAP 2025 Administration Schedule Timing by Session

Course	Session	Minutes
English I	1	90
	2	90
	3	80
English II	1	90
	2	90
	3	80
Algebra I	1a 1b	25 55
	2	80
	3	80
Geometry	1a 1b	25 55
	2 3	80 80

For the CBT administrations, data is available of how much time test takers took for each item. These time-on-items were summed and average time on test were calculated for each subject and summarized in Table 4.2. The table reports at the session level and summarizes the number of students included in this analysis, the average number of items the students were administered (operational and field test), the average amount of minutes spent across all items, and the standard deviation. There are extreme test times on both ends (some are very small, and some are very large), therefore, the median is included as it is less influenced by these extremes. In this circumstance, it may be a more useful description of expected values than the mean. The test times are smaller than the session-level time guidelines in Table 4.1. This indicates that test takers should have sufficient time to complete their tests.

Table 4.2 LEAP 2025 Time on Test for the Spring 2023 Administration (Time in Minutes)

Subject	Session	Number of Students	Number of Items	Test Mean	Test SD	Median
English I	1	≥48,670	10.07	66.60	23.38	68.31
	2	≥49,030	9.90	59.15	23.22	59.05
	3	≥49,480	15.98	45.18	17.81	44.55
English II	1	≥43,160	10.17	62.18	36.21	61.94
	2	≥43,150	9.81	56.19	22.52	54.78
	3	≥43,740	15.97	42.72	16.34	41.50
Algebra I	1a	≥50,220	7.99	17.86	6.67	17.12
	1b	≥49,590	6.99	40.71	14.75	41.87
	2	≥49,220	13.98	49.92	19.81	49.72
	3	≥49,220	15.98	46.88	19.26	46.56
Geometry	1a	≥36,330	7.99	17.16	6.33	16.51
	1b	≥35,950	6.99	38.72	13.69	39.38
	2	≥35,680	12.98	48.09	17.69	47.87
	3	≥35,660	15.99	47.69	18.44	47.68

Accommodations

Accommodations are allowed on the LEAP 2025 assessments.

Accommodations may be used by a student who qualifies under the Individual with Disabilities Act (IDEA), has an IEP or a Section 504 plan of the Americans with Disabilities Act, or identifies as an English Learner (EL). Accommodations must be specified in the qualifying student's individual plan and must be consistent with accommodations used during daily classroom instruction and testing. The use of any accommodation must be indicated on the student information sheet at the time of test administration. AERA, APA, & NCME Standard 6.2 states:

> When formal procedures have been established for requesting and receiving accommodations, test takers should be informed of these procedures in advance of testing (115).

In compliance with this standard, the LEAP 2025 Test Administration Manuals contain the list of universal tools, designated supports, and accommodations permissible for the LEAP 2025 assessments. Further guidance can be found in the LEAP 2025 Accommodations and Accessibility Features User Guide.

Visually impaired students may be provided braille forms for any assessment.

Tables 4.2 through 4.4 summarize the numbers of reportable students receiving accommodations or designated features by type for the 2022-2023 LEAP 2025 HS administrations. Accommodation assignment guidance is provided in the *LEAP 2025 Accommodations and Accessibility Features User Guide*. The analyses are based on census data and include only those students who were eligible to have accommodations or designated features and received a scale score on the ELA or mathematics LEAP 2025 high school assessments. The percentage represents the percentage of the census population receiving that accommodation or designated feature.

Table 4.3 Fall 2022 Number and Percentage of Students Receiving Accommodations by Accommodation/Designated Feature Type, as identified in DRC INSIGHT Portal

Accommodation/Designated Feature Type: Fall 2022					
		Window 1		Window 2	
Content	Accommodation/Designated Feature	Number	Percentage	Number	Percentage
English I	Text-to-Speech	≥1,370	14.7	≥70	16.6
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	≥60	0.7	<50	NR
	Native Language Word-to-Word Dictionary	≥780	8.4	<50	NR
	Directions in Native Language	≥120	1.3	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	<50	NR	<50	NR
	Extended Time	≥3,350	36.0	≥180	40.9
	Individual/Small Group Administration	≥1,790	19.2	≥110	25.3
	Braille	<50	NR	<50	NR
English II	Text-to-Speech	≥820	9.2	≥50	14.1
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	<50	NR	<50	NR
	Native Language Word-to-Word Dictionary	≥610	6.9	<50	NR
	Directions in Native Language	≥60	0.7	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	<50	NR	<50	NR
	Extended Time	≥2,440	27.3	≥150	38.6
	Individual/Small Group Administration	≥1,230	13.8	≥90	24.0
	Braille	<50	NR	<50	NR

Accommodation/Designated Feature Type: Fall 2022					
		Window 1		Window 2	
Content	Accommodation/Designated Feature	Number	Percentage	Number	Percentage
Algebra I	Text-to-Speech	≥1,050	16.0	≥50	20.2
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	<50	NR	<50	NR
	Native Language Word-to-Word Dictionary	≥350	5.4	<50	NR
	Directions in Native Language	≥50	0.8	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	<50	NR	<50	NR
	Calculator	≥790	12.0	≥50	19.8
	Scientific Calculator	≥680	10.3	<50	NR
	Graphing Calculator	≥580	8.9	<50	NR
	Extended Time	≥1,810	27.4	≥70	29.8
	Individual/Small Group Administration	≥890	13.4	≥50	19.8
	Braille	<50	NR	<50	NR
	Spanish Test	<50	NR	<50	NR
Geometry	Text-to-Speech	≥380	7.8	<50	NR
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	<50	NR	<50	NR
	Native Language Word-to-Word Dictionary	≥180	3.8	<50	NR
	Directions in Native Language	<50	NR	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	<50	NR	<50	NR
	Calculator	≥250	5.1	<50	NR
	Scientific Calculator	≥210	4.3	<50	NR
	Graphing Calculator	≥180	3.8	<50	NR
	Extended Time	≥800	16.2	<50	NR
	Individual/Small Group Administration	≥440	8.9	<50	NR
	Braille	<50	NR	<50	NR
	Spanish Test	<50	NR	<50	NR

Table 4.3 Spring 2023 Number and Percentage of Students Receiving Accommodations by Accommodation/Designated Feature Type, as identified in DRC INSIGHT Portal

Accommodation/Designated Feature Type: Spring 2023					
		Form H		Form J	
Content	Accommodation/Designated Feature	Number	Percentage	Number	Percentage
English I	Text-to-Speech	≥4,840	17.8	<50	NR
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	≥280	1.0	<50	NR
	Native Language Word-to-Word Dictionary	≥770	2.8	≥620	2.9
	Directions in Native Language	≥140	0.5	≥130	0.6
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	≥60	0.2	<50	NR
	Extended Time	≥8,140	30.0	≥3,010	13.8
	Individual/Small Group Administration	≥5,010	18.4	≥1,310	6.0
	Braille	<50	NR	<50	NR
English II	Text-to-Speech	≥3,750	14.2	<50	NR
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	≥210	0.8	<50	NR
	Native Language Word-to-Word Dictionary	≥530	2.0	≥370	2.3
	Directions in Native Language	≥100	0.4	≥70	0.5
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	≥50	0.2	<50	NR
	Extended Time	≥6,700	25.4	≥2,110	12.6
	Individual/Small Group Administration	≥4,030	15.3	≥880	5.3
	Braille	<50	NR	<50	NR

Accommodation/Designated Feature Type: Spring 2023					
		Form H		Form J	
Content	Accommodation/Designated Feature	Number	Percentage	Number	Percentage
Algebra I	Text-to-Speech	≥6,180	22.1	<50	NR
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	≥280	1.0	<50	NR
	Native Language Word-to-Word Dictionary	≥1,030	3.7	≥230	1.1
	Directions in Native Language	≥250	0.9	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	≥70	0.3	<50	NR
	Calculator	≥4,630	16.6	≥510	2.4
	Scientific Calculator	≥4,260	15.3	≥440	2.1
	Graphing Calculator	≥3,830	13.7	≥390	1.8
	Extended Time	≥8,580	30.7	≥2,280	10.6
	Individual/Small Group Administration	≥5,270	18.9	≥1,000	4.7
	Braille	<50	NR	<50	NR
	Spanish Test	≥230	0.8	<50	NR
Geometry	Text-to-Speech	≥2,460	12.9	<50	NR
	Accommodated Paper	<50	NR	<50	NR
	Human Read Aloud	≥130	0.7	<50	NR
	Native Language Word-to-Word Dictionary	≥400	2.1	≥120	0.8
	Directions in Native Language	≥90	0.5	<50	NR
	Communication Assistance	<50	NR	<50	NR
	Transferred Answers	<50	NR	<50	NR
	Answers Recorded	<50	NR	<50	NR
	Calculator	≥1,840	9.6	≥250	1.5
	Scientific Calculator	≥1,680	8.8	≥210	1.3
	Graphing Calculator	≥1,560	8.2	≥200	1.2
	Extended Time	≥3,910	20.4	≥1,410	8.5
	Individual/Small Group Administration	≥2,280	11.9	≥580	3.5
	Braille	<50	NR	<50	NR
	Spanish Test	≥90	0.5	<50	NR

Table 4.4 Summer 2023 Number and Percentage of Students Receiving Accommodations by Accommodation/Designated Feature Type, as identified in DRC INSIGHT Portal

Accommodation/Designated Feature Type: Summer 2023			
Content	**Accommodation/Designated Feature**	**Number**	**Percentage**
English I	Text-to-Speech	≥740	23.3
	Accommodated Paper	<50	NR
	Human Read Aloud	<50	NR
	Native Language Word-to-Word Dictionary	≥320	10.2
	Directions in Native Language	≥100	3.4
	Communication Assistance	<50	NR
	Transferred Answers	<50	NR
	Answers Recorded	<50	NR
	Extended Time	≥1,520	47.9
	Individual/Small Group Administration	≥790	25.1
	Braille	<50	NR
English II	Text-to-Speech	≥280	21.0
	Accommodated Paper	<50	NR
	Human Read Aloud	<50	NR
	Native Language Word-to-Word Dictionary	≥210	15.4
	Directions in Native Language	≥60	4.8
	Communication Assistance	<50	NR
	Transferred Answers	<50	NR
	Answers Recorded	<50	NR
	Extended Time	≥670	49.5
	Individual/Small Group Administration	≥310	22.8
	Braille	<50	NR
Algebra I	Text-to-Speech	≥580	25.5
	Accommodated Paper	<50	NR
	Human Read Aloud	<50	NR
	Native Language Word-to-Word Dictionary	≥120	5.2
	Directions in Native Language	≥40	2.1
	Communication Assistance	<50	NR
	Transferred Answers	<50	NR
	Answers Recorded	<50	NR
	Calculator	≥470	20.4
	Scientific Calculator	≥420	18.3
	Graphing Calculator	≥390	17.2
	Extended Time	≥830	36.4
	Individual/Small Group Administration	≥440	19.3
	Braille	<50	NR
	Spanish Test	<50	NR

Accommodation/Designated Feature Type: Summer 2023			
Content	**Accommodation/Designated Feature**	**Number**	**Percentage**
Geometry	Text-to-Speech	≥100	20.5
	Accommodated Paper	<50	NR
	Human Read Aloud	<50	NR
	Native Language Word-to-Word Dictionary	≥50	10.5
	Directions in Native Language	<50	NR
	Communication Assistance	<50	NR
	Transferred Answers	<50	NR
	Answers Recorded	<50	NR
	Calculator	≥70	14.9
	Scientific Calculator	≥60	12.5
	Graphing Calculator	≥50	10.3
	Extended Time	≥150	32.0
	Individual/Small Group Administration	≥90	19.7
	Braille	<50	NR
	Spanish Test	<50	NR

4.6 Summary

In summary, the overall purpose of each of the test administration trainings and the ancillary materials is to keep school systems informed about policies and procedures related to testing in general and the LEAP 2025 program in particular. The information imparted is clearly related to standardizing the administration of the LEAP 2025, maintaining the security of the assessment, allowing access to the assessments for special populations through appropriate accommodations, and maintaining the integrity of the scores. These communication and training efforts by LDOE and the ancillary information developed by DRC address multiple best practices of the testing industry but, in particular, are related to the following standards:

> *Standard 4.15* The directions for test administration should be presented with sufficient clarity so that it is possible for others to replicate the administration conditions under which the data on reliability, validity, and (where appropriate) norms were obtained. Allowable variations in administration procedures should be clearly described. The process for reviewing requests for additional testing variations should also be documented (90).
>
> *Standard 6.1* Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer and any instructions from the test user (114).
>
> *Standard 6.3* Changes or disruptions to standardized test administration procedures or scoring should be documented and reported to the test user (115).
>
> *Standard 6.4* The testing environment should furnish reasonable comfort with minimal distractions to avoid construct-irrelevant variance (116).
>
> *Standard 6.6* Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to attain scores by fraudulent or deceptive means (116).

> *Standard 6.7* Test users have the responsibility of protecting the security of test materials at all times (117).

Chapter 5: Scoring of Constructed-Response and Technology-Enhanced Items

In this chapter, the scoring process used for the 2022-2023 LEAP 2025 high school ELA and mathematics assessments is described, with a particular focus on the handscoring of constructed-response items and the automated scoring of technology-enhanced items. At the end of this section, the results of the inter-rater reliability for the handscoring of the 2022-2023 LEAP 2025 constructed-response items are presented.

Chapter 5 demonstrates how the LEAP 2025 assessments adhere to the American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (AERA, APA, & NCME, 2014) Standards 4.18, 4.20, 6.8, and 6.9. Each standard is presented in the pertinent section of this chapter. Standard 4.18 provides some general guidance for Chapter 5:

> Procedures for scoring and, if relevant, scoring criteria, should be presented by the test developer with sufficient detail and clarity to maximize the accuracy of scoring. Instructions for using rating scales or for deriving scores obtained by coding, scaling, or classifying constructed responses should be clear. This is especially critical for extended-response items such as performance tasks, portfolios, and essays (91).

Chapter 5 explains the procedures used for scoring the LEAP 2025 ELA and mathematics constructed-response items and technology-enhanced items. The scoring criteria used for each item are not presented in this chapter to preserve the integrity of the items for future use.

5.1 Constructed-Response Item Scoring Process

Constructed-response items were scored by human raters who were trained by DRC. Handscoring and Artificial Intelligence (AI) processing rules are detailed in Appendix C. Some ELA items across English I and English II (noted in Table 5.1) were scored by an AI engine, Pearson's Intelligent Essay Assessor (IEA), using scoring models previously developed by Pearson. Second reads of 10% of these responses were completed by human scorers; handscoring supervisors also reviewed the responses that IEA was not able to score.

Table 5.1 Constructed-Response Operational Scoring

Administration	Course	Handscoring Only	AI Scoring	AI Vendor
Fall 2022	English I	N/A	902194, 914552 983197, 983215	Pearson
	English II	N/A	906181, 902349, 983642, 983688	Pearson
	Algebra I	All CRs	N/A	
	Geometry	All CRs	N/A	
Spring 2023	English I	1031686, 902161, 902152	902194, 983215, 983197, 983184	Pearson
	English II	902331, 906197	902349, 983642, 906190, 906181, 1032126	Pearson
	Algebra I	All CRs	N/A	
	Geometry	All CRs	N/A	
Summer 2023	English I	N/A	902152, 902161, 914552	Pearson
	English II	N/A	906197, 902331 983688	Pearson
	Algebra I	All CRs	N/A	
	Geometry	All CRs	N/A	

Selection of Scoring Evaluators

Standard 4.20 states the following:

> The process for selecting, training, qualifying, and monitoring scorers should be specified by the test developer. The training materials, such as the scoring rubrics and examples of test takers' responses that illustrate the levels on the rubric score scale, and the procedures for training scorers should result in a degree of accuracy and agreement among scorers that allows the scores to be interpreted as originally intended by the test developer. Specifications should also describe processes for assessing scorer consistency and potential drift over time in raters' scoring (92).

The following sections explain how scorers were selected and trained for the LEAP 2025 ELA and mathematics handscoring process and how scorers were monitored throughout the handscoring process.

The Recruitment and Interview Process

DRC strives to develop a highly qualified, experienced core of evaluators to appropriately maintain the integrity of all projects. All readers hired by DRC to score the 2022-2023 LEAP 2025 high school ELA and mathematics test responses had at least a four-year college degree.

DRC has a human resources director dedicated solely to recruiting and retaining the handscoring staff. Applications for reader positions are screened by the handscoring project manager, the human resources director, or recruiting staff to create a large pool of potential readers. In the screening process, preference is given to candidates with previous experience scoring large-scale assessments and with degrees emphasizing the appropriate content areas. At the personal interview, reader candidates are asked to demonstrate their proficiency in writing by responding to a DRC writing topic and their proficiency in mathematics by solving word problems with correct work shown. These steps result in a highly qualified and diverse workforce. DRC personnel files for readers and team leaders include evaluations for each project completed. DRC uses these

evaluations to place individuals on projects that best fit their professional backgrounds, their college degrees, and their performances on similar projects at DRC. Once placed, all readers go through rigorous training and qualifying procedures specific to the project on which they are placed. Any scorer who does not complete this training and demonstrate the ability to apply the scoring criteria by qualifying at the end of the process is not allowed to score live student responses.

Security

Whether training and scoring are conducted within a DRC facility or done remotely, security is essential to our handscoring process. When users log into DRC's secure, web-based scoring application, ScoreBoard, they are required to read and accept our security policy before they are allowed to access any project. For each project, scorers are also required to read and sign non-disclosure agreements, and during training emphasis is always given to what security means, the importance of maintaining security, and how this is accomplished.

Readers only have access to student responses they are qualified to score. Each scorer is assigned a unique username and password to access DRC's imaging system and must qualify before viewing any live student responses. DRC maintains full control of who may access the system and which item each scorer may score. No demographic data is available to scorers at any time.

Handscoring Training Process

Standard 6.9 specifies:

> Those responsible for test scoring should establish and document quality control processes and criteria. Adequate training should be provided. The quality of scoring should be monitored and documented. Any systematic source of scoring errors should be documented and corrected (118).

Training Material Development

DRC scoring supervisors trained scorers using training materials from two sources.

1. Approved training materials provided by New Meridian. These materials include the following:

    - Passages, prompts, and associated stimuli
    - Rubrics
    - Anchor sets
    - Practice sets
    - Qualifying sets (for prototype items only)

2. Mathematics training materials developed by DRC in conjunction with and approved by LDOE. These materials were made for use with DRC-developed mathematics items according to processes described in DRC's response to the LDOE's "REQUEST FOR PROPOSALS For LEAP 2025 Assessment Administration (RFP #: 815200-20150723001)".

    - Prompts
    - Rubrics
    - Anchor sets
    - Practice sets
    - Qualifying sets (for all DRC-developed items)

Training and Qualifying Procedures

Handscoring involves training and qualifying team leaders and evaluators, monitoring scoring accuracy and production, and ensuring security of both the test materials and the scoring facilities. LDOE reviews training materials and oversees the training process. An explanation of the training and qualification procedures follows.

DRC used the approved mathematics and ELA training and qualifying materials to score two categories of items: "prototype" items and "abbreviated" items. Note that, like the PARCC "prototype" items for math, full sets of training and qualifying materials were also developed for all DRC-developed mathematics items. The training and qualifying procedures DRC used for these items was the same process outlined below for "prototype" mathematics items.

Prototype Items

A small number of items (two each for Algebra I and Geometry and one for ELA) included in the Louisiana forms were prototype items, meaning they had full sets of associated training materials, including anchor sets, practice sets, and qualifying sets. DRC started the training process with a review of passages and items, rubrics, and anchor sets, followed by the scoring and discussion of practice sets and qualifying sets. Once this process was completed for a prototype item included on the Louisiana form, qualified readers started scoring live student responses for that item.

Abbreviated Items

Abbreviated items required a two-step training and qualifying process. First, scorers trained and qualified as described above using approved materials for an associated prototype item that was similar to the abbreviated one they would be scoring on the Louisiana form.[1] Readers who did not qualify on the prototype item training were not allowed to continue the training.

After qualifying on the associated prototype item training, readers received additional item-specific training on the abbreviated item they were going to score. This consisted of an item-specific anchor set and two item-specific practice sets. After completing the abbreviated item training, readers could begin scoring live student responses for the abbreviated item. The following tables detail the composition of the training materials provided by New Meridian for mathematics and ELA.

Table 5.2 Mathematics Training Set Composition

Set Type	Prototype Item Training	Abbreviated Item Training	Annotated
Anchor Set	3 responses per score point (Composite items had 3 responses per composite score.)	3 responses per score point (Composite items had 3 responses per composite score.)	Yes
Practice Set 1	10 responses representing the range of responses	10 responses representing the range of responses	Yes
Practice Set 2	10 responses representing the range of responses	10 responses representing the range of responses	Yes

[1] *Item associations were determined by PARCC/Pearson with the understanding that aspects of training are generalizable across similar items. For mathematics, the determination of prototype versus abbreviated items was made by PARCC and Pearson based on similar item types and evidence statements. For ELA items, this determination by PARCC and Pearson was based on grade and task type.*

Qualifying Set 1	10 responses comparable to the anchor set responses		No
Qualifying Set 2	10 responses comparable to the anchor set responses		No
Qualifying Set 3	10 responses comparable to the anchor set responses		No
For DRC-developed mathematics items, examples of responses at the top score points may not have been present in some anchor, training, and qualifying sets as there were few or no examples found during rangefinding or subsequent field test scoring. In such cases, DRC Scoring Directors identified examples of these scores during live scoring to supplement reader training.			

Table 5.3 ELA Training Set Composition

Set Type	Prototype Item Training	Abbreviated Item Training	Annotated
Anchor Set*	3 responses per score point	16 responses per item: • Anchor Sets for abbreviated RST and LAT item training include scores for the combined trait Reading Comprehension and Written Expression (RCWE). • Anchor Sets for abbreviated NWT item training include scores for Written Expression (WE).	Yes
Practice Set 1	5 responses representing the range of responses for • the Reading Comprehension and Written Expression (RCWE) trait (for LAT and RST items) • the Written Expression trait (for NWT items)	10 responses representing the range of responses for the trait appropriate to the task type	Yes
Practice Set 2	5 responses representing the range of responses for the Knowledge and Use of Language Conventions trait	10 responses representing the range of responses for the conventions trait	Yes
Practice Set 3	10 responses representing the range of responses for both traits appropriate to the task type		Yes
Practice Set 4	10 responses representing the range of responses for both traits appropriate to the task type		Yes
Qualifying Set 1	10 responses comparable to the anchor set responses (included both traits appropriate to the task type)		No
Qualifying Set 2	10 responses comparable to the anchor set responses (included both traits appropriate to the task type)		No
Qualifying Set 3	10 responses comparable to the anchor set responses (included both traits appropriate to the task type)		No
Direct Copy Set**	3-5 responses composed entirely or partially of text copied from passage or passages (included both traits appropriate to the task type)	3-5 responses composed entirely or partially of text copied from passage or passages (include both traits appropriate to the task type)	Yes

**For the ELA Knowledge and Use of Language Conventions trait, there were two mixed-prompt anchor sets per grade level (one for the narrative task and the other for the literary analysis and research simulation tasks). In addition to the mixed-prompt anchor set, depending on the task, the practice sets for prototype and abbreviated items required readers to practice scoring the Knowledge and Use of Language Conventions trait along with the Reading Comprehension and Written Expression trait (for LAT and RST items) or with the Written Expression trait (NWT). Readers were also required to qualify on the Knowledge and Use of Language Conventions trait during each prototype item qualifying session.*

***These approved sets provided additional annotated sample responses explaining the scoring rationale for responses composed entirely or partially of text copied from the source passage(s) associated with an item. DRC scoring supervisors reviewed these item-specific sets with the readers prior to scoring the associated item.*

Some items selected were previously only field-tested by New Meridian. Consequently, the abbreviated training materials available for use with these items were abridged versions of typical abbreviated sets of materials. They consisted of:

- An Anchor Set (for ELA, some have annotations and some lack examples of the top scores)
- One Practice Set of 5 responses (scored but not annotated in the case of ELA)
- Approximately 10 validity responses

Since these materials were somewhat limited compared to typical abbreviated materials (the main difference being a lack of formal written annotations and fewer practice responses), DRC bolstered the training by using the field test validity responses provided by New Meridian as additional practice responses. It is important to note that readers still had to qualify via standard qualification procedures on the prototype items for all items by first going through full training with the appropriate prototype Anchor Set, Practice Sets 1-4, and Qualifying Sets 1-3 (as well as the Conventions sets).

Qualifying Standards

DRC followed the same qualification standards that Pearson used for PARCC and New Meridian. Scorers demonstrated their ability to apply the scoring criteria by qualifying (i.e., scoring with acceptable agreement with true scores on qualifying sets). After each qualifying set was scored, the DRC scoring director responsible for training led the scorers in a discussion of the set. Any scorer who did not qualify by the end of the qualifying process for an item was not allowed to score live student responses.

Table 5.4 Mathematics Qualifying Standards

	Perfect Agreement	Perfect Plus Adjacent Agreement
0, 1, 2 Rubric	80% on two of three sets	96% on two of three sets
0, 1, 2, 3 Rubric	70% on two of three sets	96% on two of three sets
0, 1, 2, 3, 4 Rubric	70% on two of three sets	95% on two of three sets

Table 5.5 Mathematics Qualifying Standards (Composite Items)*

Composite (multipart) Items	Perfect Agreement	Perfect Plus Adjacent Agreement
0, 1 Rubric	90% on two of three sets	100% on two of three sets
0, 1, 2 Rubric	80% on two of three sets	96% on two of three sets
0, 1, 2, 3 Rubric	70% on two of three sets	96% on two of three sets
0, 1, 2, 3, 4 Rubric	70% on two of three sets	95% on two of three sets

*For mathematics composite items, the appropriate qualifying standard had to be achieved on each part of the item. For example, if an item had Part A with a top score of 1, Part B with a top score of 2, and Part C with a top score of 3, a scorer/supervisor would need to achieve 90% perfect agreement on Part A, 80% perfect agreement on Part B, and 70% perfect agreement on Part C, with no more than one nonadjacent score per part across all three qualifying sets.

Table 5.6 ELA Qualifying Standards

Perfect Agreement	Perfect Plus Adjacent Agreement
70% average for both traits on two of three qualifying sets	96% across the three qualifying sets combined on both traits
70% on each trait at least once across three qualifying sets	

ELA readers were required to meet all three of the qualifications listed in Table 5.6. Perfect plus adjacent agreement of 96% means that out of the entire pool of scores that a reader gave across the three qualifying sets for an item, no more than 4% of those scores could be nonadjacent. In other words, no more than 2 of the 60 applied scores could be nonadjacent (3 sets x 10 responses/set x 2 traits = 60 applied scores).

Monitoring the Scoring Process

Standard 6.8 states:

> Those responsible for test scoring should establish scoring protocols. Test scoring that involves human judgment should include rubrics, procedures, and criteria for scoring. When scoring of complex responses is done by computer, the accuracy of the algorithm and processes should be documented (118).

The following section explains the monitoring procedures that DRC uses to ensure that handscoring evaluators follow established scoring criteria while items are being scored. Detailed scoring rubrics, which specify the criteria for scoring, are available for handscoring evaluators for all constructed-response items.

Reader Monitoring Procedures

Throughout the handscoring process, DRC project managers, scoring directors, and team leaders reviewed the statistics that were generated on a daily basis. DRC used one team leader for every 10 to 12 readers, which was the same ratio that Pearson used for PARCC and New Meridian. If scoring concerns were apparent among individual scorers, team leaders dealt with those issues on an individual basis. If a scorer appeared to need clarification of the scoring rules, DRC supervisors typically monitored one out of five of the scorer's readings, making adjustments to that ratio as needed. If a supervisor disagreed with a reader's scores during monitoring, they provided retraining in the form of direct feedback to the reader, using rubric language and applicable training responses.

Validity Sets and Inter-Rater Reliability

In addition to the feedback that supervisors provided to readers during regular read-behinds and the continuous monitoring of inter-rater reliability and score point distributions, DRC also conducted validity scoring. Validity responses were inserted among the live student responses.

The validity responses were added to DRC's image handscoring system prior to the beginning of scoring. Validity reports compared readers' scores to pre-determined scores and were used to help detect potential room drift and individual scorer drift. This data was used to make decisions regarding the retraining and/or release of scorers, as well as the rescoring of responses.

Approximately 10% of all live student responses were scored by a second reader to establish inter-rater reliability statistics for all constructed-response items. This procedure is called a "double-blind read" because the second reader does not know the first reader's score. DRC monitored inter-rater reliability based on the responses that were scored by two readers. If a scorer fell below the expected rate of agreement, the team leader or scoring director retrained the scorer. If a scorer failed to improve after retraining and feedback,

DRC removed the scorer from the project. In this situation, DRC removed all scores assigned by the scorer in question. The responses were then reassigned and rescored.

To monitor inter-rater reliability, DRC produced scoring summary reports on a daily basis. DRC's scoring summary reports display exact, adjacent, and nonadjacent agreement rates for each reader. These rates are calculated based on responses that are scored by two readers, and their definitions are included below.

- **Percentage Exact (%EX)**—total number of responses by reader where scores are the same, divided by the number of responses that were scored twice
- **Percentage Adjacent (%AD)**—total number of responses by reader where scores are one point apart, divided by the number of responses that were scored twice
- **Percentage Nonadjacent (%NA)**—total number of responses by reader where scores are more than one score point apart, divided by the number of responses that were scored twice

The following table provided by Pearson shows the expectations for validity and inter-rater reliability:

Table 5.7 Agreement Rate Requirements for Validity and Inter-Rater Reliability

Subject	Score Point Range	Perfect Agreement	Perfect Agreement + Adjacent
Mathematics	0–1	90%	100%
	0–2	80%	95%
	0–3	70%	95%
	0–4	65%	95%
ELA	Multi-trait 0–3 or 0–4 (varies by grade and trait)	65% (each trait)	96% each trait)

Each reader was required to maintain a level of exact agreement on validity responses and on inter-rater reliability as shown under "Perfect Agreement" in the table above. Additionally, readers were required to maintain an acceptably low rate of nonadjacent agreement. To monitor this, DRC summed each reader's exact and adjacent agreement rates and required each reader to maintain the levels shown under "Perfect Agreement + Adjacent" in the table above.

Calibration Sets

New Meridian provided DRC with approved calibration responses for all operational items that came from the leased item pool. DRC pulled calibration responses for DRC-developed mathematics items. DRC used these sets to perform calibration across the entire scorer population for an item if trends were detected (e.g., low agreement between certain score points if a certain type of response was missing from initial training). These calibrations were designed to help refocus scorers on how to properly use the scoring guidelines. They were selected to help illustrate particular points and familiarize scorers with the types of responses commonly seen during operational scoring. After readers scored a calibration set, the scoring director reviewed it with the readers, using rubric language and scoring concepts exemplified by the anchor responses to explain the reasoning behind each response's score.

Reports and Reader Feedback

Reader performance and intervention information were recorded in reader feedback logs. These logs tracked information about actions taken with individual readers to ensure scoring consistency in regard to reliability,

score point distribution, and validity performance. In addition to the reader feedback logs, DRC provided LDOE with handscoring quality control reports for review throughout the scoring window. Further detail about these reports can be found in Appendix C.

5.2 Inter-Rater Reliability

A minimum of 10% of the constructed responses in ELA and mathematics were scored independently by a second reader. This was the case regardless of whether the first reader was human or AI. The statistics for inter-rater reliability were calculated for all items at all grades. To determine the reliability of scoring, the percentage of perfect agreement and adjacent agreement between the first and second scores was examined.

A total of 79 operational items were scored by human readers across all LEAP 2025 high school ELA and mathematics assessments. The inter-rater reliability rates and the total numbers of reads are shown in Tables 5.8–5.10 for ELA items, Tables 5.11–5.13 for mathematics items, Tables 5.14–5.16 for Spanish mathematics items, and Table 5.17 for mathematics field test items.

As shown in Tables 5.8–5.10, raters demonstrated 100% perfect and adjacent agreement for all ELA handscored items. As shown in Tables 5.11–5.13, raters demonstrated at least 99% perfect and adjacent agreement for mathematics items. As shown in Tables 5.14–5.16, raters demonstrated at least 99% perfect and adjacent agreement for Spanish mathematics items. As shown in Table 5.17, raters demonstrated 100% perfect and adjacent agreement for mathematics field test items.

Table 5.8 Inter-Rater Agreement, English Language Arts Items, Fall 2022 Window 1

Course	Task Type	Question	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
						EX	AD	EX + AD
English I	Research Simulation (AI)	902194	Reading Comprehension and Written Expression	≥10,920	≥3,490	89	11	100
			Knowledge and Use of Language Conventions	≥10,920	≥3,490	89	11	100
	Literary Analysis (AI)	983197	Reading Comprehension and Written Expression	≥10,920	≥3,620	89	11	100
			Knowledge and Use of Language Conventions	≥10,920	≥3,620	89	11	100
English II	Research Simulation (AI)	902349	Reading Comprehension and Written Expression	≥10,370	≥3,280	94	6	100
			Knowledge and Use of Language Conventions	≥10,370	≥3,280	93	7	100
	Literary Analysis (AI)	906181	Reading Comprehension and Written Expression	≥10,480	≥3,450	93	7	100
			Knowledge and Use of Language Conventions	≥10,480	≥3,450	94	6	100

Table 5.9 Inter-Rater Agreement, English Language Arts Items, Fall 2022 Window 2

Course	Task Type	Question	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
						EX	AD	EX + AD
English I	Research Simulation (AI)	914552	Reading Comprehension and Written Expression	≥520	≥170	90	10	100
			Knowledge and Use of Language Conventions	≥520	≥170	90	10	100
	Narrative Writing (AI)	983215	Written Expression	≥560	≥260	96	4	100
			Knowledge and Use of Language Conventions	≥560	≥260	98	2	100
English II	Research Simulation (AI)	983688	Reading Comprehension and Written Expression	≥490	≥200	97	3	100
			Knowledge and Use of Language Conventions	≥490	≥200	96	4	100
	Narrative Writing (AI)	983642	Written Expression	≥490	≥200	100	0	100
			Knowledge and Use of Language Conventions	≥490	≥200	95	5	100

Table 5.10 Inter-Rater Agreement, English Language Arts Items, Spring 2023

Course	Task Type	Question /Form	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
						EX	AD	EX + AD
English I	Narrative Analysis (AI)	983215 (Seniors)	Written Expression	≥1,170	≥680	95	5	100
			Knowledge and Use of Language Conventions	≥1,170	≥680	95	5	100
	Research Simulation (AI)	902194 (Seniors)	Reading Comprehension and Written Expression	≥1,140	≥560	92	8	100
			Knowledge and Use of Language Conventions	≥1,140	≥560	87	13	100
	Narrative Writing (AI)	983184	Written Expression	≥25,400	≥7,060	87	13	100
			Knowledge and Use of Language Conventions	≥25,400	≥7,060	83	17	100
	Literary Analysis (AI)	983197	Reading Comprehension and Written Expression	≥31,640	≥8,740	88	12	100
			Knowledge and Use of Language Conventions	≥31,640	≥8,740	87	13	100
	Research Simulation (AI)	1031686	Reading Comprehension and Written Expression	≥55,280	≥12,140	83	17	100
			Knowledge and Use of Language Conventions	≥55,280	≥12,140	82	18	100

Course	Task Type	Question /Form	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
						EX	AD	EX + AD
English II	Narrative Writing (AI)	983642 (Seniors)	Written Expression	≥1,580	≥830	98	2	100
			Knowledge and Use of Language Conventions	≥1,580	≥830	98	2	100
	Research Simulation (AI)	902349 (Seniors)	Reading Comprehension and Written Expression	≥1,580	≥760	99	1	100
			Knowledge and Use of Language Conventions	≥1,580	≥760	98	2	100
	Narrative Writing (AI)	1032126	Written Expression	≥19,250	≥5,000	89	11	100
			Knowledge and Use of Language Conventions	≥19,250	≥5,000	89	11	100
	Research Simulation (AI)	906190	Reading Comprehension and Written Expression	≥49,090	≥12,730	87	13	100
			Knowledge and Use of Language Conventions	≥49,090	≥12,730	87	13	100
	Literary Analysis (AI)	906181	Reading Comprehension and Written Expression	≥30,170	≥7,690	86	14	100
			Knowledge and Use of Language Conventions	≥30,170	≥7,690	86	14	100

Table 5.11 Inter-Rater Agreement, English Language Arts Items, Summer 2023

Course	Task Type	Question	Trait	Total Reads	Read 2x	Inter-Rater Reliability %		
						EX	AD	EX + AD
English I	Literary Analysis (AI)	902152	Reading Comprehension and Written Expression	≥3,980	≥1,640	96	4	100
			Knowledge and Use of Language Conventions	≥3,980	≥1,640	96	4	100
	Research Simulation (AI)	914552	Reading Comprehension and Written Expression	≥3,800	≥1,380	92	8	100
			Knowledge and Use of Language Conventions	≥3,800	≥1,380	91	9	100
English II	Research Simulation (AI)	983688	Reading Comprehension and Written Expression	≥1,740	≥840	95	5	100
			Knowledge and Use of Language Conventions	≥1,740	≥840	94	6	100
	Literary Analysis (AI)	906197	Reading Comprehension and Written Expression	≥1,650	≥640	96	4	100
			Knowledge and Use of Language Conventions	≥1,650	≥640	95	5	100

Table 5.12 Inter-Rater Agreement, Mathematics Items, Fall 2022 Window 1

Course	Question	Part(s)**	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	901832	Part A	≥7,350	≥1,350	100	0	100
		Part B	≥7,350	≥1,350	88	12	100
	938741	N/A	≥7,300	≥1,880	96	4	100
	980927	Part A	≥7,520	≥1,980	99	1	100
		Part B	≥7,520	≥1,980	99	1	100
		Part C	≥7,520	≥1,980	97	3	100
	938735	Part A	≥7,300	≥1,330	100	0	100
		Part B	≥7,300	≥1,330	97	3	100
	938744	N/A	≥7,180	≥1,920	98	2	100
	938737	N/A	≥7,540	≥2,600	98	2	100
	938769	N/A	≥7,110	≥2,190	97	3	100
Geometry	902012	N/A	≥5,610	≥1,290	97	3	100
	980937	N/A	≥5,550	≥1,280	99	1	100
	939083	N/A	≥5,400	≥1,310	98	2	100
	980942	Part A	≥5,440	≥1,240	93	6	99*
		Part B	≥5,440	≥1,240	95	5	100
	939077	N/A	≥5,400	≥1,370	99	1	100
	980938	N/A	≥5,550	≥1,440	99	1	100
	980936	N/A	≥5,520	≥1,300	95	4	99*

*Total Ex + AD does not add up to 100% due to rounding
**N/A if an item does not have multiple parts

Table 5.13 Inter-Rater Agreement, Mathematics Items, Fall 2022 Window 2

Course	Question	Part(s)**	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	980924	N/A	≥270	≥70	92	8	100
	980909	N/A	≥280	≥100	100	0	100
	980911	Part A	≥270	≥80	100	0	100
		Part B	≥270	≥80	98	3	101*
	901851	N/A	≥280	≥80	98	2	100
	980923	N/A	≥270	≥80	98	2	100
Geometry	980929	N/A	≥180	≥50	100	0	100
	902042	Part A	≥180	≥50	100	0	100
		Part B	≥180	≥50	100	0	100
		Part C	≥180	≥50	100	0	100
	980930	Part A	≥180	≥30	100	0	100
		Part B	≥180	≥30	100	0	100

*Total Ex + AD does not add up to 100% due to rounding
**N/A if an item does not have multiple parts

Table 5.14 Inter-Rater Agreement, Mathematics Items, Spring 2023

Course	Question	Part(s)**	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	1117650	N/A	≥30,500	≥7,850	90	9	99 (N/A=0)
	1117654	Part A	≥30,160	≥5,490	100	0	100
		Part B	≥30,160	≥5,490	90	10	100
	901832	Part A	≥55,380	≥10,110	100	0	100
		Part B	≥55,380	≥10,110	88	12	100
	901836	N/A	≥30,930	≥7,710	93	7	100
	901851	N/A	≥54,320	≥13,890	91	9	99 (N/A=1)
	938741	N/A	≥23,520	≥5,130	92	7	100
	938746	Part A	≥23,780	≥4,360	100	0	100
		Part B	≥23,780	≥4,360	100	0	100
		Part C	≥23,780	≥4,360	91	8	99 (N/A=1)
	980911	Part A	≥54,580	≥13,800	97	3	100
		Part B	≥54,580	≥13,800	96	4	100
	980916	Part A	≥23,790	≥5,090	86	14	100
		Part B	≥23,790	≥5,090	90	10	100
	980924	N/A	≥23,860	≥5,700	86	13	99 (N/A=1)
	987007	Part A	≥30,990	≥5,630	100	0	100
		Part B	≥30,990	≥5,630	98	2	100
		Part C	≥30,990	≥5,630	89	11	100
Algebra I Seniors	938745	N/A	≥260	≥40	100	0	100
	938746	Part A	≥270	≥20	100	0	100
		Part B	≥270	≥20	100	0	100
		Part C	≥270	≥20	100	0	100
	938769	N/A	≥250	≥50	100	0	100
	980910	N/A	≥260	≥50	100	0	100
	980914	Part A	≥260	≥40	100	0	100

		Part B	≥260	≥40	100	0	100
		Part C	≥260	≥40	100	0	100
	980916	Part A	≥260	≥30	100	0	100
		Part B	≥260	≥30	100	0	100
	980922	N/A	≥260	≥40	95	5	100

Table 5.14 Inter-Rater Agreement, Mathematics Items, Spring 2023 (cont.)

Course	Question	Part(s)**	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Geometry	1036794	Part A	≥39,790	≥7,210	100	0	100
		Part B	≥39,790	≥7,210	100	0	100
		Part C	≥39,790	≥7,210	92	8	100
	1118087	Part A	≥39,520	≥7,130	100	0	100
		Part B	≥39,520	≥7,130	93	7	100
	1118092	N/A	≥18,090	≥4,080	87	13	100
	902012	N/A	≥39,100	≥8,670	93	7	100
	902027	N/A	≥20,760	≥4,860	94	6	100
	939083	N/A	≥18,040	≥4,170	94	6	100
	939101	Part A	≥39,800	≥7,190	100	0	100
		Part B	≥39,800	≥7,190	100	0	100
		Part C	≥39,800	≥7,190	84	15	99 (N/A=1)
	986940	N/A	≥20,810	≥4,680	96	4	100
Geometry Seniors	901986	Part A	≥390	≥10	100	0	100
		Part B	≥390	≥10	100	0	100
	901995	N/A	≥330	≥10	100	0	100
	902033	Part A	≥380	≥50	100	0	100
		Part B	≥380	≥50	100	0	100
	980929	N/A	≥370	≥60	100	0	100

	980938	N/A	≥350	≥30	100	0	100
	980943	Part A	≥360	≥10	100	0	100
		Part B	≥360	≥10	100	0	100
		Part C	≥360	≥10	100	0	100
	986940	N/A	≥390	≥50	100	0	100

*Total Ex + AD does not add up to 100% due to rounding
**N/A if an item does not have multiple parts

Table 5.15 Inter-Rater Agreement, Mathematics Items, Summer 2023

Course	Question	Part(s)*	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	901832	Part A	≥2,570	≥470	100	0	100
		Part B	≥2,570	≥470	91	9	100
	938741	N/A	≥2,550	≥710	98	2	100
	980927	Part A	≥2,530	≥720	100	0	100
		Part B	≥2,530	≥720	100	0	100
		Part C	≥2,530	≥720	100	0	100
	938735	Part A	≥2,550	≥470	100	0	100
		Part B	≥2,550	≥470	100	0	100
	938744	N/A	≥2,490	≥670	99	1	100
	938737	N/A	≥2,610	≥1,010	100	0	100
	938769	N/A	≥2,470	≥770	99	1	100
Geometry	902012	N/A	≥520	≥130	100	0	100
	980937	N/A	≥520	≥140	100	0	100
	939083	N/A	≥530	≥150	100	0	100
	980942	Part A	≥530	≥160	99	1	100
		Part B	≥530	≥160	100	0	100
	939077	Part A	≥510	≥140	100	0	100
	980938	N/A	≥510	≥140	100	0	100
	980936	N/A	≥510	≥160	100	0	100

*N/A if an item does not have multiple parts

Table 5.16 Inter-Rater Agreement, Spanish Mathematics Items, Fall 2022 Window 1

Course	Question	Part(s)*	Total Reads	Read 2x**	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	901756	Part A	≥40	<10	NR	NR	NR
		Part B	≥40	<10	NR	NR	NR
	1017677	N/A	≥30	<10	NR	NR	NR
	1017724	Part A	≥30	<10	NR	NR	NR
		Part B	≥30	<10	NR	NR	NR
		Part C	≥30	<10	NR	NR	NR
	1017725	Part A	≥40	<10	NR	NR	NR
		Part B	≥40	<10	NR	NR	NR
	1017751	N/A	≥30	<10	NR	NR	NR
	1017609	N/A	≥30	<10	NR	NR	NR
	1017608	N/A	≥30	<10	NR	NR	NR
Geometry	939889	N/A	≥10	<10	NR	NR	NR
	1017732	N/A	≥10	<10	NR	NR	NR
	967190	N/A	<10	<10	NR	NR	NR
	1017753	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
	1017766	N/A	<10	<10	NR	NR	NR
	1017767	N/A	≥10	<10	NR	NR	NR
	1006309	N/A	≥10	<10	NR	NR	NR

*N/A if an item does not have multiple parts

** Due to low numbers of Spanish mathematics test takers in fall 2020, some Spanish mathematics responses were scored directly by expert scorers/supervisors and not routed for second reads. As a result, no inter-rater reliability percentages were generated for those items.

Table 5.17 Inter-Rater Agreement, Spanish Mathematics Items, Fall 2022 Window 2

Course	Question	Part(s)*	Total Reads	Read 2x**	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	980924	N/A	<10	<10	NR	NR	NR
	980909	N/A	<10	<10	NR	NR	NR
	980911	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
	901851	N/A	<10	<10	NR	NR	NR
	980923	N/A	<10	<10	NR	NR	NR
Geometry	1037205	N/A	<10	<10	NR	NR	NR
	933402	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
		Part C	<10	<10	NR	NR	NR
	1037193	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR

*N/A if an item does not have multiple parts
** Due to low numbers of Spanish mathematics test takers in fall 2020, some Spanish mathematics responses were scored directly by expert scorers/supervisors and not routed for second reads. As a result, no inter-rater reliability percentages were generated for those items.

Table 5.18 Inter-Rater Agreement, Spanish Mathematics Items, Spring 2023

Course	Question	Part(s)*	Total Reads	Read 2x**	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	1036746	Part A	≥320	≥110	95	5	100
		Part B	≥320	≥110	100	0	100
	1134103	Part A	≥310	≥40	100	0	100
		Part B	≥310	≥40	100	0	100
		Part C	≥310	≥40	100	0	100
	1134220	Part A	≥300	≥50	100	0	100
		Part B	≥300	≥50	96	4	100
	1134222	N/A	≥310	≥110	96	4	100
	901756	Part A	≥320	≥50	100	0	100
		Part B	≥320	≥50	93	7	100
	933373	N/A	≥330	≥130	99	1	100
	939732	N/A	≥320	≥110	100	0	100
Algebra I Seniors	1017608	N/A	<10	<10	NR	NR	NR
	1051171	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
		Part C	<10	<10	NR	NR	NR
	1051200	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
	1051241	N/A	<10	<10	NR	NR	NR
	1051243	N/A	<10	<10	NR	NR	NR
	1051251	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
		Part C	<10	<10	NR	NR	NR
	1051256	N/A	<10	<10	NR	NR	NR

Course	Question	Part(s)*	Total Reads	Read 2x**	Inter-Rater Reliability %		
					EX	AD	EX + AD
Geometry	1017605	Part A	≥110	<10	NR	NR	NR
		Part B	≥110	<10	NR	NR	NR
		Part C	≥110	<10	NR	NR	NR
	1051468	N/A	≥110	≥20	100	0	100
	1134505	Part A	≥110	≥10	100	0	100
		Part B	≥110	≥10	100	0	100
		Part C	≥110	≥10	100	0	100
	1134561	Part A	≥110	≥10	100	0	100
		Part B	≥110	≥10	100	0	100
	933416	N/A	≥100	≥30	100	0	100
	939889	N/A	≥90	<10	NR	NR	NR
Geometry Seniors	1017767	N/A	<10	<10	NR	NR	NR
	1037205	N/A	<10	<10	NR	NR	NR
	1051466	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
	1051468	N/A	<10	<10	NR	NR	NR
	1053244	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
		Part C	<10	<10	NR	NR	NR
	1053255	Part A	<10	<10	NR	NR	NR
		Part B	<10	<10	NR	NR	NR
	1053256	N/A	<10	<10	NR	NR	NR

*N/A if an item does not have multiple parts

** Second Reads may be less than 10% of Total Reads or N/A for some items, because the smaller quantities of responses allowed scoring to be done directly by expert scorers/supervisors or via paired scoring between a supervisor and scorer. As a result, fewer were routed through the 10% read-behind process.

Table 5.19 Inter-Rater Agreement, Spanish Mathematics Items, Summer 2023

Course	Question	Part(s)*	Total Reads	Read 2x**	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	901756	Part A	≥40	<10	NR	NR	NR
		Part B	≥40	<10	NR	NR	NR
	1017677	N/A	≥40	≥20	100	0	100
	1017724	Part A	≥40	≥10	100	0	100
		Part B	≥40	≥10	100	0	100
		Part C	≥40	≥10	100	0	100
	1017725	Part A	≥40	<10	NR	NR	NR
		Part B	≥40	<10	NR	NR	NR
	1017751	N/A	≥40	≥10	100	0	100
	1017609	N/A	≥40	≥10	100	0	100
	1017608	N/A	≥40	≥10	100	0	100
Geometry	939889	N/A	≥20	<10	NR	NR	NR
	1017732	N/A	≥20	<10	NR	NR	NR
	967190	N/A	≥10	<10	NR	NR	NR
	1017753	Part A	≥10	<10	NR	NR	NR
		Part B	≥10	<10	NR	NR	NR
	1017766	Part A	≥10	<10	NR	NR	NR
	1017767	N/A	≥20	<10	NR	NR	NR
	1006309	N/A	≥20	<10	NR	NR	NR

*N/A if an item does not have multiple parts

** Due to low numbers of Spanish mathematics test takers in spring 2021, some Spanish mathematics responses were scored directly by expert scorers/supervisors and not routed for second reads. As a result, no inter-rater reliability percentages were generated for those items.

Table 5.20 Inter-Rater Agreement, Mathematics Items, Field Test 2023

Course	Question	Part(s)*	Total Reads	Read 2x	Inter-Rater Reliability %		
					EX	AD	EX + AD
Algebra I	1112013	N/A	≥1,610	≥380	95	5	100
	1112630	Part A	≥1,710	≥340	95	5	100
		Part B	≥1,710	≥340	95	5	100
Geometry	1113003	Part A	≥1,560	≥290	100	0	100
		Part B	≥1,560	≥290	96	4	100
		Part C	≥1,560	≥290	98	2	100
	1113325	N/A	≥1,590	≥290	93	7	100

5.3 Technology-Enhanced Item Scoring Process

All technology-enhanced items, as well as EBSR, MPSR, and SA items, were processed through DRC's autoscoring engine and scored according to the assigned scoring rules established during content development by PARCC or DRC in conjunction with LDOE. DRC ensured that all rubrics and scoring rules were verified for accuracy before scoring any technology-enhanced items. DRC established an adjudication process for technology-enhanced items and short answer responses to verify that correct answers were identified. DRC's technology-enhanced scoring process included the following procedures:

- A scoring rubric was created for each technology-enhanced item. The rubric described the one and only correct answer for dichotomously scored items (i.e., items scored as either right or wrong). If partial credit was possible, the rubric described in detail the type of response that could receive credit for each score point.
- The information from the scoring rubric was entered into the scoring system within the item banking system so that the rubric resided in one place along with the item image and other metadata. This scoring information included details that varied by item type. For example, for a drag-and-drop item, the information included which object is to be placed in each drop region to receive credit.
- The information was then verified by another autoscoring expert.
- After testing started, reports were generated that showed every response, how many students gave that response, and the score the scoring system provided for that response.
- The scoring was then checked against the scoring rubric using two levels of verification.
- If any discrepancies were found, the scoring information was modified and verified again. The scoring process was then rerun. This checking and modification process continued until no other issues were found.

- As a final check, a report was generated that showed all student responses, their frequencies, and their received scores.

5.4 Multiple-Choice and Multiple-Select Item Scoring Process

Responses to multiple-choice and multiple-select items were captured during test administration. In the case of braille forms, student responses to these items were transcribed into the online system by a test administrator.

5.5 Summary

The information presented in this chapter summarizes the scoring procedures for different types of items and the steps taken by DRC to ensure accuracy in the autoscoring and handscoring processes. The inter-rater reliability statistics presented in Section 5.2 demonstrate that the items were scored reliably. These efforts by DRC address multiple best practices of the testing industry but are particularly related to AERA, APA, & NCME (2014) Standards 4.18, 4.20, 6.8, and 6.9:

Standard 4.18 Procedures for scoring and, if relevant, scoring criteria, should be presented by the test developer with sufficient detail and clarity to maximize the accuracy of scoring. Instructions for using rating scales or for deriving scores obtained by coding, scaling, or classifying constructed responses should be clear. This is especially critical for extended-response items such as performance tasks, portfolios, and essays (91).

Standard 4.20 The process for selecting, training, qualifying, and monitoring scorers should be specified by the test developer. The training materials, such as the scoring rubrics and examples of test takers' responses that illustrate the levels on the rubric score scale, and the procedures for training scorers should result in a degree of accuracy and agreement among scorers that allows the scores to be interpreted as originally intended by the test developer. Specifications should also describe processes for assessing scorer consistency and potential drift over time in raters' scoring (92).

Standard 6.8 Those responsible for test scoring should establish scoring protocols. Test scoring that involves human judgment should include rubrics, procedures, and criteria for scoring. When scoring of complex responses is done by computer, the accuracy of the algorithm and processes should be documented (118).

Standard 6.9 Those responsible for test scoring should establish and document quality control processes and criteria. Adequate training should be provided. The quality of scoring should be monitored and documented. Any systematic source of scoring errors should be documented and corrected (118).

Chapter 6: Operational Data Analyses

This chapter of the LEAP 2025 High School technical report describes the analyses that were conducted on the operational data. These include a classical item analysis and examination of the raw scores and an item response theory (IRT) analysis involving calibrating, scaling, and linking.

This section presents the classical item statistics, including aggregate raw score statistics and individual item-level statistics. Next, this section discusses the IRT models used for calibrating the data and addresses the purpose of data calibration and scaling for each content area. The calibration samples are then presented, followed by the data calibration results, including the model-data fit for the Louisiana student data. If the IRT models fit the empirical item response distributions for the population about which generalizations are to be made (i.e., Louisiana students), then the claim that the scores are valid indicators of an underlying ability is strengthened. The lowest obtainable scale score (LOSS) and highest obtainable scale score (HOSS) for the LEAP 2025 tests are also presented.

Chapter 6 demonstrates how LEAP 2025 assessments adhere to American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (AERA, APA, & NCME, 2014) Standards 1.8, 4.14, 5.2, 5.13, 5.15, and 7.2. Each standard is explicated within the appropriate section of this chapter. Standard 7.2 provides general guidance that is relevant to this chapter. It states the following:

> The population for whom a test is intended and specifications for the test should be documented (126).

Unless otherwise specified, the analyses in Chapter 6 are based on initial test takers who were administered the English language version of the test forms. In Section 6.3, the characteristics of calibration samples, such as subgroups, are discussed. Chapter 3 presents the test specifications. Information regarding reported data is discussed in detail in Chapter 7.

6.1 Classical Item Statistics

In this section, summary test statistics for each form and subject area of the LEAP 2025 high school tests are presented. These statistics are followed by item-level statistics for each subject area of the LEAP 2025 test. These statistics were produced using census data with first-time test takers. Students whose results were included in the item-level statistics summary needed to meet at least the following psychometric analysis criteria (note that the criteria used to filter data for item statistics analyses are slightly different than those used to produce students' performance statistics in this report):

- Student has total raw score in the data
- Student did not take administration error form
- Student did not take braille form
- Student did not take Spanish form
- Student's test score was not voided
- Student took the assessment for the first time (initial testers)
- Student finished all sessions
- Student's constructed-response items were scored

Test-Level Statistics

Table 6.1 presents the number of items, score points, mean and standard deviation of the raw scores, and the average form difficulty for each subject for each administration. Form difficulty for a student was calculated by dividing the student's raw score by the total score points of the test.

As can be seen in the table, average form difficulty in the summer administration was lower for all tests than in the fall and spring administrations, likely due to the summer form was a retest form. The average form difficulty for ELA ranged from 0.32 to 0.45 with the fall and spring administrations. The difficulty of the spring administration forms were 0.38 (form H) and 0.41 (Form J) for English I and 0.39 (Form H) and 0.45 (Form J) for English II. The average form difficulty for mathematics ranged from 0.21 to 0.37 for the fall and spring administrations. The average form difficulty of the spring administration of mathematics were 0.31 (Form H) and 0.35 (Form J) for Algebra I and 0.35 (Form H) and 0.37 (Form J) for Geometry. In general, the 2022-2023 LEAP 2025 High School tests were relatively difficult, and the mathematics tests were more difficult than the ELA tests.

Table 6.1 LEAP 2025 High School Means and Standard Deviations for Raw Scores and Form Difficulty

Administration	Course	Form	Total Items*	Total Points	Mean Raw Score (Std. Dev.)	Average Form Difficulty (Std. Dev.)
Fall 2022	English I	E	33	90	28.80 (18.46)	0.32 (0.21)
		F	34	94	42.52 (20.14)	0.45 (0.21)
	English II	E	33	90	34.27 (19.10)	0.38 (0.21)
		F	34	94	41.26 (20.25)	0.44 (0.22)
	Algebra I	D	39	68	22.87 (12.17)	0.34 (0.18)
		E	39	68	14.45 (8.04)	0.21 (0.12)
	Geometry	D	39	68	21.40 (12.96)	0.31 (0.19)
		E	39	68	14.71 (10.64)	0.22 (0.16)
Spring 2023	English I	H	34	94	35.27 (17.99)	0.38 (0.19)
		J	33	90	36.89 (16.59)	0.41 (0.18)
	English II	H	34	94	36.73 (18.40)	0.39 (0.20)
		J	33	90	40.14 (17.06)	0.45 (0.19)
	Algebra I	H	39	68	20.92 (12.68)	0.31 (0.19)
		J	39	68	23.78 (13.18)	0.35 (0.19)
	Geometry	H	38	68	23.59 (13.94)	0.35 (0.21)
		J	38	68	24.83 (14.84)	0.37 (0.22)
Summer 2023	English I	DR	34	94	21.78 (14.29)	0.23 (0.15)
	English II	D	34	94	24.78 (16.33)	0.26 (0.17)
	Algebra I	D	39	68	13.56 (7.87)	0.20 (0.12)
	Geometry	D	39	68	11.41 (7.86)	0.17 (0.12)

*For English I and English II, each writing prompt component is counted as one item. The WE writing component is weighted in total points.

Table 6.2 presents the number of items, mean and standard deviation of the item *p*-values, and item-total correlations (i.e., item discrimination values) for each subject for each administration.

The mean *p*-value is the average of all item *p*-values in a specific subject area and administration. The mean item-total correlation (R_{it}) is the average of all item point-biserial correlations of a specific subject area. The *p*-value and item-total correlation are explained in the next section.

Table 6.2 LEAP 2025 High School *p*-Values and Item-Total Correlation (R_{it}) Descriptive Statistics

				Item *p*-Value				Average Item-Total Correlation			
Admin.	**Course**	**Form**	**Total Items***	**Mean**	**Std. Dev.**	**Min.**	**Max**	**Mean**	**Std. Dev.**	**Min.**	**Max**
Fall 2022	English I	E	32	0.37	0.12	0.19	0.69	0.50	0.15	0.23	0.85
		F	32	0.49	0.13	0.29	0.76	0.48	0.16	0.20	0.84
	English II	E	32	0.40	0.10	0.23	0.65	0.47	0.19	0.24	0.87
		F	32	0.47	0.13	0.27	0.70	0.49	0.16	0.26	0.86
	Algebra I	D	39	0.38	0.15	0.12	0.82	0.41	0.15	0.16	0.65
		E	39	0.25	0.15	0.03	0.79	0.33	0.22	-0.09	0.72
	Geometry	D	39	0.37	0.15	0.07	0.70	0.47	0.15	0.20	0.73
		E	39	0.26	0.13	0.03	0.48	0.45	0.19	0.09	0.81
Spring 2023	English I	H	32	0.42	0.12	0.20	0.69	0.44	0.16	0.14	0.81
		J	32	0.44	0.12	0.23	0.70	0.41	0.16	0.13	0.79
	English II	H	32	0.43	0.14	0.12	0.71	0.44	0.16	0.18	0.81
		J	32	0.48	0.12	0.13	0.72	0.42	0.16	0.15	0.78
	Algebra I	H	39	0.35	0.11	0.09	0.59	0.44	0.15	0.19	0.72
		J	39	0.38	0.11	0.14	0.70	0.44	0.15	0.15	0.70
	Geometry	H	38	0.39	0.11	0.15	0.66	0.47	0.15	0.22	0.76
		J	38	0.41	0.12	0.20	0.68	0.50	0.14	0.24	0.77
Summer 2023	English I	DR	32	0.30	0.13	0.10	0.61	0.43	0.14	0.18	0.77
	English II	D	32	0.32	0.10	0.15	0.57	0.46	0.18	0.12	0.80
	Algebra I	D	39	0.24	0.13	0.03	0.68	0.32	0.19	0.01	0.69
	Geometry	D	39	0.20	0.13	0.00	0.48	0.41	0.21	0.03	0.80

*For English I and English II, each writing prompt component is counted as one item. The WE writing component is weighted in total points.

Item-Level Statistics

Tables in Appendix D present the item statistics for each operational item included in the regular forms, organized by content area and administration. The tables include item number, *p*-value, item-total correlation (R_{it}), omit rates, total N, adjusted N (adjusted N excludes omitted responses, responses that were not scored, or responses that received a non-score code), the percentage at each score point for polytomous items, and the percentage that chose each option for multiple-choice (MC) items. The *p*-value and item-total correlations calculations used the adjusted N to determine the values. The rest of the statistics in the table are based on the total N.

The summer administration population is not state representative, and the number of students was very small, so the interpretation of statistics in the summer administration should be done with caution.

p-Value

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

In terms of *p*-values, test scores tend to be more precise when their average *p*-values are between the mid-0.50s and the low 0.70s. However, it is important to select items based on content rather than on purely statistical criteria when building a criterion-referenced test. As shown in Table 6.2, the average *p*-values of the fall and spring administrations ranged from 0.25 to 0.49. The range of average *p*-values was lower in the summer administration, ranging from 0.20 to 0.32. The average *p*-values of the English I and English II forms were higher than the average p-values of the Algebra I and Geometry forms.

It is important that one examines the range of *p*-values, not just the average *p*-value, to determine whether a test measures well. It is desirable for a test to measure well throughout the range of skills present in the test form. That is, it is important that the items measure the performance of students at all levels of achievement, not just students in the center of the distribution. Having a range of *p*-values also helps to prevent floor and/or ceiling effects so that the test does not have large numbers of students at the minimum or maximum possible scores. The fall and spring English forms have items with *p*-values ranging from 0.12 to 0.76 (see Appendix D) and the summer English forms have items with p-values ranging from 0.1 to 0.61. The *p*-values on the mathematics forms range from 0.03 to 0.82 (see Appendix D) for the fall and spring administrations and from 0.01 to 0.68 for the summer administration. Such a broad range of *p*-values, which indicates that the items measure well throughout the range of skill levels at a given grade, supports the accuracy of the LEAP 2025 high school test scores.

Item-Total Correlations

An item-total correlation is the correlation between an item score and the total test score, where the item score is not included in the total score. It indicates how well an item differentiates student performance across all levels of achievement. In general, items with correlations below 0.20 are said to be poorly discriminating. The majority of the items on the LEAP 2025 High School forms had item-total correlations above this threshold. Any item with an item-total correlation below the 0.20 threshold was further analyzed to ensure that the item was correctly keyed. It was not unusual for items to have lower item-total correlations from the summer administration due to being administered to a re-test population.

Omit Rates

The omit rate for each item indicates the percentage of students who did not answer the item. Omit rates can be used to examine possible speededness issues on tests. A test may be speeded if students do not have adequate time to answer all questions on the test. In general, an item is said to have a high omit rate if more than 5% of students failed to respond to the item. Evidence of speededness is considered a threat to validity because student test scores may not reflect their ability. Additionally, content validity may be threatened because the items that were not completed are needed to fulfill content blueprint specifications (Lu & Sireci, 2007).

This examination of omit rates complies with Standard 4.14 of the *Standards*. This standard is concerned with the speededness of a test and states the following:

> For a test that has a time limit, test development research should examine the degree to which scores include a speed component and should evaluate the appropriateness of that component, given the domain the test is designed to measure (90).

The results in this section will show that, overall, student test scores are not adversely affected by the rate at which the students complete the test. In general, students have ample time to complete all sections of the test, and there is not a threat to construct or content validity.

The results presented in the Tables in Appendix D show that the percentage of students who omitted most of the items on the fall and spring LEAP 2025 High School tests was less than 5, suggesting that most students were able to complete the test in the prescribed amount of time. There were a small number of Algebra I and Geometry items that exceeded the omit rate of 5%. This is likely due to the difficulty of the items, given that these items also have low *p*-values. Lu & Sireci (2007) report that the Education Testing Service has used an approach where a test was considered unspeeded if at least 80% of examinees reach the last item and all examinees reach at least 75% of the items. The reported omit rates fall within these ranges.

These item level statistics are reviewed at the beginning of the operational analysis process to ensure that items are not flawed, and a careful review is given to determine that the answer key is correct.

An MC item is reviewed during the key check process if

- it has a *p*-value less than 0.25 or more than .95,
- a greater number of high-performing students (top 20%) are choosing a distractor than are choosing the key,
- the item-total correlation is less than 0.20,
- any of the incorrect answer options yields a positive distractor-total correlation, or
- the percentage of students omitting or not reaching each item is 5 or greater.

Other types of autoscored items are also flagged during the key check for review if the

- *p*-value is less than 0.30 or more than .80,
- percentage of students who reached any possible score point is less than 3%,
- item-total correlation is less than 0.30, or
- percentage of students omitting or not reaching the item is 15% or greater.

Item Response Theory (IRT)

Item parameters for items included in the LEAP 2025 High School tests were estimated using a marginal maximum-likelihood (MML) procedure and the 2-parameter logistic (2PL) model for MC items and the generalized partial credit (GPC) model (Muraki, 1992) for non-MC items. Under the 2PL model, the probability that a student with a trait or scale score of θ will respond correctly to MC item *j* is

$$P_j(\theta) = \frac{1}{1+\exp\left[-Da_j(\theta-b_j)\right]},$$

where *D* is 1.7, a_j is the item discrimination, and b_j is the item difficulty. Under the GPC model, the probability that a student with a trait or scale score of θ will respond in category *x* to partial-credit item *j* is

$$P_{jx}(\theta) = \frac{exp\left[\sum_{k=0}^{x} Da_j(\theta-b_j+d_{jk})\right]}{\sum_{h=0}^{m_i} exp\left[\sum_{k=0}^{h} Da_j(\theta-b_j+d_{jk})\right]},$$

where d_{jk} is the relative difficulty of score category *x* of item *j*, and m_i is the maximum item score for item *j*.

The software IRTPRO (Cai, Thissen, & du Toit, 2011) was used for the IRT calibrations. IRTPRO is a multipurpose program that implements a variety of IRT models associated with mixed-item formats and associated statistics. IRTPRO has been used to calibrate large data sets, such as those of PARCC and Smarter

Balanced assessments. The program implements MML estimation techniques for items and MLE estimation of theta.

6.2 Calibration Sample

This section describes the calibration sample in adherence to Standard 1.8 of the AERA, APA, & NCME (2014) Standards for Educational and Psychological Testing. Standard 1.8 states the following:

> The composition of any sample of test takers from which validity evidence is obtained should be described in as much detail as is practical and permissible, including major relevant socio-demographic and developmental characteristics (25).

Sample data was used for calibration with all subjects for the spring 2023 administration. Intact forms with established scoring tables were used for the fall and summer administrations, making calibration unnecessary. Since full census data was not available, the intention was to use data files that had at least 5,000 test takers for a form, or 10,000 test takers for a subject, scored to completion. The sample was evaluated using spring 2019 demographic information and student performance information to confirm that the sample was representative of the state's student population. The 2019 demographic information was used for the comparison as it was the last administration prior to any disruptions due to COVID 19. Tables 6.3 and 6.4 show the representativeness of the calibration samples compared to the census data from the spring 2023 administration, including data for initial testers only. The census data in these tables included initial testers who received a scale score. With LEAP 2025 High School tests, psychometric analyses such as item calibration and item statistics are computed excluding re-testers since students taking the exam again are not representative of the general population. The calibration samples were representative of census data. The spring 2023 resampling strategy was successful in sampling a group that was representative of Louisiana students.

Table 6.3 Summary of Calibration and Census Data: Spring Administration Form H

Calibration and Census Data: Spring Form H Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	**Group or Subgroup**	**N**	**%**	**N**	**%**	**Census % - Calib %**
English I	All Students	≥13,510	100.00%	≥23,450	100.00%	0.00%
	Gender					
	Male	≥6,800	50.34%	≥11,940	50.91%	0.57%
	Female	≥6,710	49.66%	≥11,510	49.09%	-0.57%)
	Race/Ethnicity					
	Hispanic/Latino	≥1,100	8.19%	≥2,320	9.93%	1.73%
	American Indian or Alaska Native	≥90	0.70%	≥150	0.67%	-0.03%)
	Asian	≥230	1.73%	≥400	1.74%	0.00%
	Black or African American	≥5,370	39.80%	≥9,870	42.08%	2.28%
	Native Hawaiian or Other Pacific	≥10	0.10%	≥20	0.10%	0.00%
	White	≥6,250	46.27%	≥9,950	42.45%	-3.83%
	Two or More Races	≥430	3.20%	≥710	3.04%	-0.16%
	Economic Status					
	Economically Disadvantaged	≥8,030	59.45%	≥14,940	63.73%	4.28%
	Not Economically Disadvantaged	≥4,680	34.66%	≥8,280	35.33%	0.67%

Calibration and Census Data: Spring Form H Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	Group or Subgroup	N	%	N	%	Census % - Calib %
English II	All Students	≥14,940	100.00%	≥25,710	100.00%	0.00%
	Gender					
	Male	≥7,450	49.84%	≥12,900	50.17%	0.33%
	Female	≥7,490	50.16%	≥12,810	49.83%	-0.33%
	Race/Ethnicity					
	Hispanic/Latino	≥1,080	7.28%	≥2,070	8.08%	0.80%
	American Indian or Alaska Native	≥80	0.60%	≥130	0.52%	-0.07%
	Asian	≥240	1.62%	≥410	1.62%	0.00%
	Black or African American	≥5,970	40.00%	≥11,120	43.24%	3.24%
	Native Hawaiian or Other Pacific	≥10	0.09%	≥20	0.08%	-0.01%
	White	≥7,080	47.37%	≥11,200	43.56%	-3.81%
	Two or More Races	≥450	3.06%	≥740	2.90%	-0.16%
	Economic Status					
	Economically Disadvantaged	≥8,870	59.40%	≥16,190	62.96%	3.57%
	Not Economically Disadvantaged	≥5,240	35.09%	≥9,320	36.25%	1.15%
Algebra I	All Students	≥9,130	100.00%	≥24,640	100.00%	0.00%
	Gender					
	Male	≥4,600	50.40%	≥12,580	51.06%	0.66%
	Female	≥4,530	49.60%	≥12,060	48.94%	-0.66%
	Race Ethnicity					
	Hispanic/Latino	≥740	8.16%	≥2,520	10.24%	2.08%
	American Indian or Alaska Native	≥70	0.80%	≥150	0.62%	-0.17%
	Asian	≥110	1.28%	≥420	1.70%	0.42%
	Black or African American	≥3,880	42.56%	≥10,310	41.83%	-0.74%
	Native Hawaiian or Other Pacific	<10	NR	≥20	0.08%	NR
	White	≥4,040	44.22%	≥10,440	42.37%	-1.84%
	Two or More Races	≥260	2.89%	≥770	3.15%	0.26%
	Economic Status					
	Economically Disadvantaged	≥5,680	62.21%	≥15,980	64.85%	2.64%
	Not Economically Disadvantaged	≥2,870	31.50%	≥8,430	34.21%	2.71%

Calibration and Census Data: Spring Form H Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	Group or Subgroup	N	%	N	%	Census % - Calib %
Geometry	All Students	≥7,090	100.00%	≥19,090	100.00%	0.00%
	Gender					
	Male	≥3,260	45.98%	≥9,160	47.98%	2.00%
	Female	≥3,830	54.02%	≥9,930	52.02%	-2.00%
	Race Ethnicity					
	Hispanic/Latino	≥470	6.73%	≥1,570	8.24%	1.52%
	American Indian or Alaska Native	≥40	0.66%	≥100	0.56%	-0.11%
	Asian	≥130	1.86%	≥400	2.10%	0.24%
	Black or African American	≥3,150	44.42%	≥8,070	42.26%	-2.16%
	Native Hawaiian or Other Pacific	<10	NR	≥10	0.10%	NR
	White	≥3,100	43.71%	≥8,410	44.05%	0.34%
	Two or More Races	≥170	2.51%	≥510	2.70%	0.19%
	Economic Status					
	Economically Disadvantaged	≥4,010	56.58%	≥11,480	60.15%	3.57%
	Not Economically Disadvantaged	≥2,620	36.96%	≥7,450	39.01%	2.06%

Table 6.4 Summary of Calibration and Census Data: Spring Administration Form J

Calibration and Census Data: Spring Form J Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	Group or Subgroup	N	%	N	%	Census % - Calib %
English I	All Students	≥11,120	100.00%	≥19,800	100.00%	0.00%
	Gender					
	Male	≥5,360	48.22%	≥9,570	48.36%	0.14%
	Female	≥5,760	51.78%	≥10,220	51.64%	-0.14%
	Race Ethnicity					
	Hispanic/Latino	≥890	8.07%	≥2,020	10.20%	2.13%
	American Indian or Alaska Native	≥80	0.79%	≥110	0.57%	-0.22%
	Asian	≥190	1.79%	≥370	1.90%	0.11%
	Black or African American	≥4,220	38.02%	≥7,800	39.42%	1.40%
	Native Hawaiian or Other Pacific	≥10	0.10%	≥20	0.12%	0.02%
	White	≥5,350	48.10%	≥8,840	44.68%	-3.42%
	Two or More Races	≥340	3.13%	≥610	3.11%	-0.02%
	Economic Status					
	Economically Disadvantaged	≥6,480	58.27%	≥12,290	62.09%	3.82%
	Not Economically Disadvantaged	≥3,930	35.40%	≥7,290	36.84%	1.45%

Calibration and Census Data: Spring Form J Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	Group or Subgroup	N	%	N	%	Census % - Calib %
English II	All Students	≥9,530	100.00%	≥16,490	100.00%	0.00%
	Gender					
	Male	≥4,540	47.72%	≥7,930	48.09%	0.37%
	Female	≥4,980	52.28%	≥8,560	51.91%	-0.37%
	Race Ethnicity					
	Hispanic/Latino	≥760	8.01%	≥1,450	8.80%	0.79%
	American Indian or Alaska Native	≥60	0.69%	≥100	0.64%	-0.06%
	Asian	≥160	1.68%	≥290	1.79%	0.11%
	Black or African American	≥3,590	37.76%	≥6,720	40.75%	2.99%
	Native Hawaiian or Other Pacific	≥10	0.13%	≥10	0.11%	-0.02%
	White	≥4,660	48.95%	≥7,450	45.19%	-3.76%
	Two or More Races	≥260	2.79%	≥450	2.73%	-0.06%
	Economic Status					
	Economically Disadvantaged	≥5,480	57.53%	≥10,130	61.43%	3.90%
	Not Economically Disadvantaged	≥3,460	36.34%	≥6,230	37.79%	1.44%
Algebra I	All Students	≥6,200	100.00%	≥18,570	100.00%	0.00%
	Gender					
	Male	≥3,000	48.40%	≥9,080	48.89%	0.49%
	Female	≥3,190	51.60%	≥9,490	51.11%	-0.49%
	Race Ethnicity					
	Hispanic/Latino	≥480	7.87%	≥1,640	8.87%	1.00%
	American Indian or Alaska Native	≥50	0.90%	≥110	0.60%	-0.30%
	Asian	≥70	1.27%	≥340	1.83%	0.56%
	Black or African American	≥2,540	41.05%	≥7,380	39.77%	-1.28%
	Native Hawaiian or Other Pacific	<10	NR	≥10	0.09%	NR
	White	≥2,830	45.65%	≥8,460	45.56%	-0.09%
	Two or More Races	≥190	3.21%	≥610	3.29%	0.08%
	Economic Status					
	Economically Disadvantaged	≥3,780	61.08%	≥11,410	61.47%	0.39%
	Not Economically Disadvantaged	≥1,980	31.95%	≥6,990	37.66%	5.71%

Calibration and Census Data: Spring Form J Administration						
		Calibration Sample		Census Data Initial Testers Only		
Course	Group or Subgroup	N	%	N	%	Census % - Calib %
Geometry	All Students	≥5,970	100.00%	≥16,630	100.00%	0.00%
	Gender					
	Male	≥2,710	45.36%	≥7,750	46.63%	1.27%
	Female	≥3,260	54.64%	≥8,870	53.37%	-1.27%
	Race Ethnicity					
	Hispanic/Latino	≥400	6.73%	≥1,260	7.60%	0.87%
	American Indian or Alaska Native	≥30	0.60%	≥70	0.44%	-0.16%
	Asian	≥120	2.14%	≥350	2.14%	-0.00%
	Black or African American	≥2,520	42.25%	≥6,650	40.02%	-2.23%
	Native Hawaiian or Other Pacific	<10	NR	≥20	0.14%	NR
	White	≥2,720	45.51%	≥7,800	46.92%	1.41%
	Two or More Races	≥150	2.64%	≥450	2.74%	0.09%
	Economic Status					
	Economically Disadvantaged	≥3,290	55.19%	≥9,530	57.36%	2.17%
	Not Economically Disadvantaged	≥2,270	38.08%	≥6,940	41.77%	3.69%

6.3 Calibration and Linking

Item calibration and linking for the LEAP 2025 high school assessments were performed based on item response theory (IRT). The calibration and linking methodology used for the spring 2023 LEAP 2025 High School administration closely followed most of the PARCC methods referenced in the PARCC document *Final Technical Report for 2015 Administration*. To maintain comparability to PARCC, the 2PL/GPC IRT model was applied to item calibration using the software IRTPRO (Cai et al., 2011).

The Stocking & Lord (1983) procedure was applied using the transformation and scaling software STUIRT (Kim & Kolen, 2004), which can be downloaded at http://www.education.uiowa.edu/centers/casma/computer-programs#c0748e48-f88c-6551-b2b8-ff00000648cd. PARCC scale score transformation constants for the PARCC 2016 baseline scale were used to generate final scoring tables. All IRTPRO and STUIRT command files were prepared following PARCC examples. Descriptions of the PARCC calibration and equating approach can be found in the PARCC documents *Final Technical Report for 2015 Administration* (see https://eric.ed.gov/?q=source%3a%22Partnership+for+Assessment+of+Readiness+for+College+and+Careers%22&id=ED599097) and *Final Technical Report for 2016 Administration* (see https://eric.ed.gov/?q=PARCC+Final+Technical+Report&id=ED599197).

There were two CBT test forms per course for the spring administration. Table 6.5 summarizes the student count and item count by course.

The following steps were taken to place the 2022-2023 LEAP 2025 tests on the 2018 LEAP 2025 baseline scale:

1.1.1 Calibrate the LEAP 2025 High School tests.

1.1.2 Link the 2022-2023 LEAP 2025 High School tests to the 2018 LEAP 2025 baseline scale under the nonequivalent common item design.

PARCC established a new baseline scale using 2016 PARCC spring tests. The fall 2017 and spring 2018 LEAP 2025 High School tests were directly linked to this PARCC 2016 baseline scale using PARCC item parameters as anchor item parameters. Therefore, the fall 2017 and spring 2018 LEAP 2025 High School tests were placed on the PARCC scale. Since the fall 2017 and spring 2018 LEAP 2025 High School tests were calibrated with Louisiana students, the scale for the fall 2017 and spring 2018 LEAP 2025 High School tests will be referred to as the LEAP 2025 scale, although the scale was placed on PARCC scales built with PARCC associated states' data. Spring 2023 LEAP 2025 forms were linked to the LEAP 2025 scale using LEAP 2025 items, which were administered on previous spring operational LEAP 2025 forms, as anchors by the Stocking & Lord procedure. Since the 2023 anchor items are on the PARCC scale, future LEAP 2025 forms will continue to be considered on the PARCC scale.

Calibration of the 2022–2023 LEAP 2025 Tests

For the LEAP 2025 item calibration, the 2PL/GPC IRT model was applied to the Louisiana students' calibration samples using the software IRTPRO (Cai et al., 2011). Table 6.5 shows the number of students in the calibration samples and the number of items. Spring calibration included samples of students that were representative of the general population. For English I and II, reading items (RL/RI) in the writing prompts are not counted in the N-Items column because the calibration does not include reading item scores; it only includes WE item scores. A RL/RI score and a WE item score for the same writing prompt are the same. There were 32 English items and 38-39 mathematics items in the administrations. Common items were included in forms H and J, thus the total N-item per calibration for a course is less than the sum of the N-Items counts in each form.

Table 6.5 Summary of Student Count and Item Count

Course	Form	N-Students	N-Items	Total N-Items
English I	H	≥23,450	32	50
	J	≥19,800	32	
English II	H	≥25,710	32	50
	J	≥16,490	32	
Algebra I	H	≥24,640	39	62
	J	≥18,570	39	
Geometry	H	≥19,090	38	60
	J	≥16,630	38	

Figure 6.1 illustrates the common items, equating item sets, and unique items per form. There are separate equating item sets for forms H and J, and when combined, the set mirrors the form blueprint and is used to link to the 2018 LEAP 2025 scale. These across-year equating items were on forms H and J without overlap to mitigate item exposure as the LEAP 2025 assessment will use intact forms for future fall and summer administrations. The two forms were calibrated concurrently and the common items among forms allowed the forms to be on the same scale.

Figure 6.1 LEAP 2025 HS Spring Administration Forms

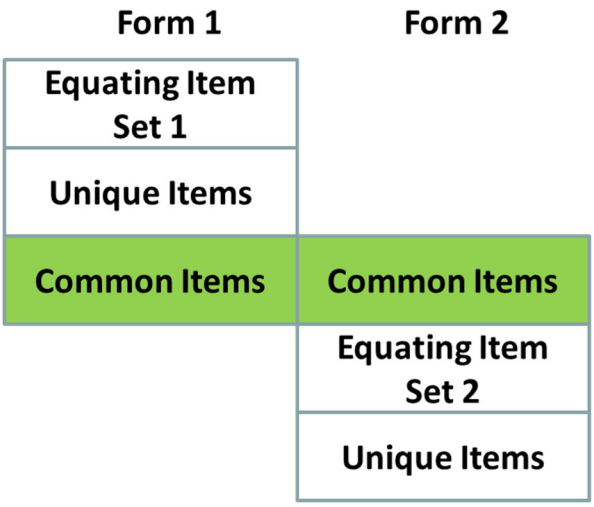
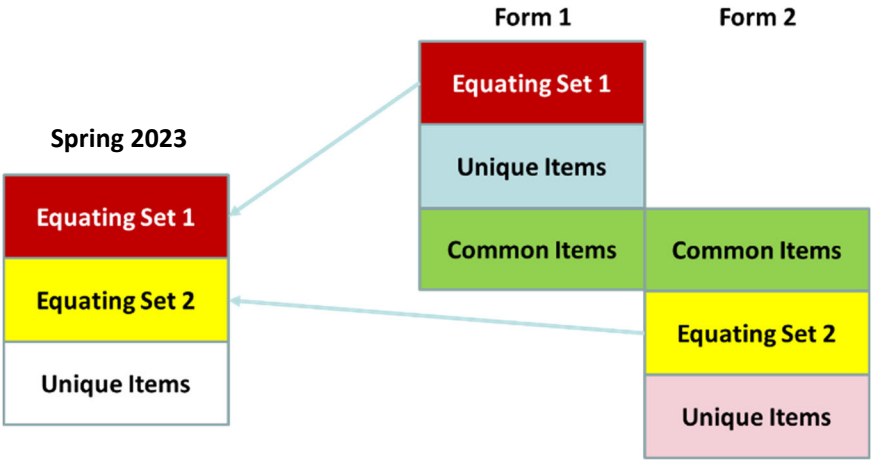


Figure 6.2 illustrates how the 2022-2023 LEAP 2025 forms were linked to the 2019 spring administration. Both Equating Set 1 and Equating Set 2 from forms 1 and 2 (Forms H and J) were used together to obtain one set of Stocking & Lord equating parameters.

Figure 6.2 LEAP 2025 HS Spring Administration Year-to-Year Equating



Separate Calibration for ELA Prose Constructed-Response Tasks

For English I and II, the same sample repeated design was applied to the WE and WKL calibration to address the issue of local independence for ELA prose constructed response (PCR) tasks. For English I, for example, two datasets of responses were generated. One calibration dataset included two WE responses and the responses to the other items but excluded the WKL responses. The other calibration dataset included two WKL responses and the response of the other items but excluded the WE responses. Therefore, these datasets were the same except for WE and WKL items, and each dataset included either WE or WKL responses. After each dataset was separately calibrated, the item parameters with WKL responses were

equated to those with WE responses using all common items as anchor items. Table 6.6 and Table 6.7 illustrate the calibration data structure for the WE and WKL components.

Table 6.6 Calibration Data Structure for ELA WE

Form	Unique Form 1 WE	Unique Form 2 WE	Other Unique Form 1 Items	Other Unique Form 2 Items	Other Items
1	X		XXXX		XXXXXXXX
2		X		XXXX	XXXXXXXX

* No responses for WKL

Table 6.7 Calibration Data Structure for ELA WE

Form	Unique Form 1 WKL	Unique Form 2 WKL	Other Unique Form 1 Items	Other Unique Form 2 Items	Other Items
1	X		XXXX		XXXXXXXX
2		X		XXXX	XXXXXXXX

* No responses for WE

IRT Item Fit

The usefulness of IRT models is dependent on the extent to which they effectively reflect the data. Hambleton, Swaminathan, and Rogers (1991) explain, “The advantages of item response models can be obtained only when the fit between the model and the test data of interest is satisfactory. A poorly fitting IRT model will not yield invariant item and ability parameters” (p. 53).

It is important to note that while items may be flagged for misfit, these flags may not be of practical importance. Misfitting items that have content validity are often retained for use in one assessment and monitored over a period of usage. Many misfitting items in an assessment would indicate that caution should be exercised in the interpretation of the overall score.

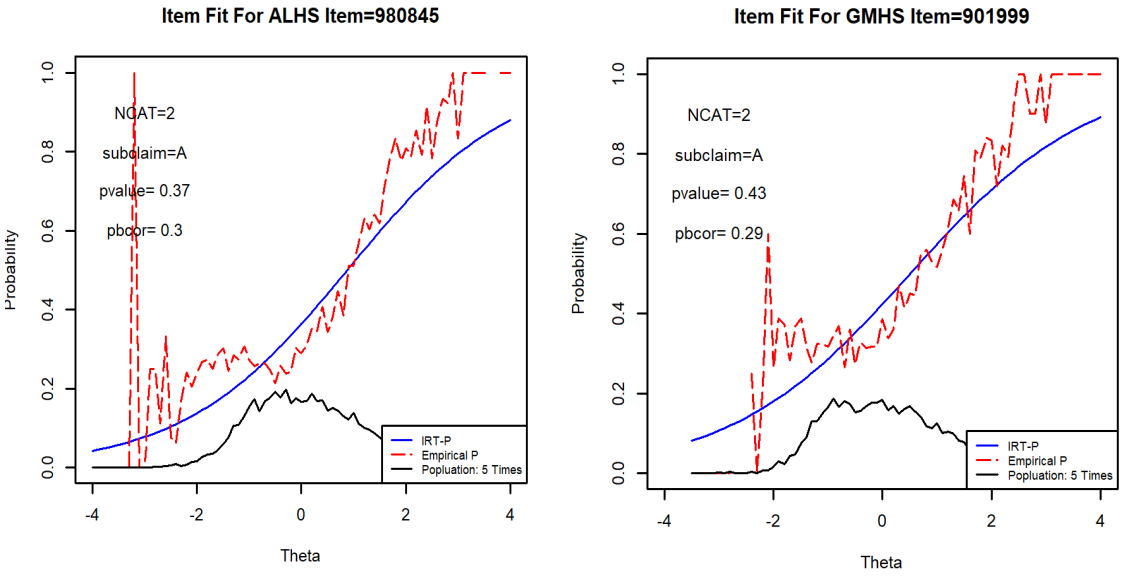
After convergence was achieved for each IRT data set, an item characteristic curve (ICC) for each item was plotted with empirical students’ performances from theta ability -4 to 4. No items were suppressed from calibration and scoring due to poor fit. Items were, however, removed from anchor sets due to poor fit in all subjects. The count of Items removed from Anchor 1 included two in English I, one item in English II, five items in Algebra I, and two items in Geometry. Two items total were removed from Anchor 2, one each in Algebra I and Geometry. Table 6.8 summarizes the number and score points of the initially selected anchor sets and the anchor set after removing items due to misfit. Figure 6.3 displays the fit plots for the items removed from Anchor 2.

Table 6.8 The Number of Anchor Items After Item Fit Review for Linking LEAP 2025 Spring 2023 to LEAP 2025 HS Spring 2018

Course		Anchor 1		Anchor 2	
		N. of Items	Score Points	N. of Items	Score Points
English I	Initial	40	89	14	31
	After Item Fit Review	38	85	14	31
English II	Initial	34	77	14	31
	After Item Fit Review	33	75	14	31
Algebra I	Initial	32	46	16	26
	After Item Fit Review	27	31	15	25
Geometry	Initial	31	49	16	23
	After Item Fit Review	29	46	15	22

*Following OP2 approach for counting Writing dimensions: Count WE and WKL only

Figure 6.3 Item Fit Plots of Items Removed from Anchor 2 Sets



After calibration, the IRT model fit was evaluated by reviewing item chi-square values that were calculated using IRTPRO item parameters and item responses from students in the calibration sample. Adjusted fit values were calculated and flagged if they exceeded 0.35 (Pearson, 2017).

Since chi-square values are sensitive to sample size, these statistics are not easily compared when the number of students varies across items. As a result, adjusted fit values were calculated by dividing the chi-square fit statistic by the sample size using the following formula:

$$C = \sqrt{\frac{\chi^2}{\chi^2 + N}}.$$

Table 6.9 shows the adjusted item fit C values using the chi-square statistics and calibration sample sizes for the English and mathematics content. The average adjusted fit ranged from 0.09 to 0.13 for the spring administration. No items were excluded based on model fit statistics because the adjusted item fits for all items were lower than the criterion value of 0.45, as can be seen in the maximum values. The largest adjusted fit value was 0.30 for Algebra I.

Table 6.9 Summary of Adjusted Fit for Spring Administration

Course	N-Items	Mean	Std. Dev.	Min.	Max.	N- Flagged Items
English I	50	0.13	0.05	0.04	0.27	0
English II	50	0.13	0.06	0.04	0.26	0
Algebra I	62	0.09	0.05	0.03	0.30	0
Geometry	60	0.09	0.04	0.03	0.18	0

Linking 2022–2023 LEAP 2025 to PARCC Scale

This section explains the linking procedure used to place the LEAP 2025 High School spring 2023 administration onto the LEAP 2025 scale. The 2017–2018 fall and spring administrations were the first administrations of the LEAP 2025 High School tests, and the Stocking & Lord procedure (1983) was used to link the LEAP 2025 tests to the PARCC scale using intact PARCC items embedded in the test forms. This yielded item parameters on the PARCC scale. The post-equated Louisiana item parameters were based on only Louisiana students' responses; therefore, to distinguish these two sets of item parameters, item parameters based on only Louisiana students' responses will be called LEAP 2025 item parameters and the corresponding scale will be called the LEAP 2025 scale.

Two anchor sets were used in the spring 2023 LEAP 2025 High School assessments equating process. One anchor set was used to link to the LEAP 2025 scale. The other will assist in establishing comparability between the LEAP 2025 scale and the PARCC scale for current and future administrations.

Anchor 1 items were intact PARCC items embedded in the spring 2023 LEAP 2025 forms. Anchor 2 items were items common to previous spring LEAP 2025 High School forms. These parameters were generated using Louisiana student data and were used to place the spring administration onto the LEAP 2025 scale. Table 6.10 summarizes the number and score points of the initial anchor item selection before equating. Table 6.10 also summarizes the number and score points of the final anchor item selections. The difference between the initial number of anchor items and the final number of anchor items is the number of anchor items that were dropped.

Table 6.10 The Number of Linking Items for Linking LEAP 2025 Spring 2023 to LEAP 2025 HS Spring 2018

Course		Anchor 1		Anchor 2	
		N. of Items	Score Points	N. of Items	Score Points
English I	Initial	40	89	14	31
	Final	36	81	14	31
English II	Initial	34	77	14	31
	Final	31	70	14	31
Algebra I	Initial	32	46	16	26
	Final	25	39	15	25
Geometry	Initial	31	49	16	23
	Final	29	46	15	22

*Following OP2 approach for counting Writing dimensions: Count WE and WKL only

Table 6.11 presents the slope and intercept equating constants for each anchor set for each subject. The constants from Anchor 2 were used to bring the 2019 LEAP 2025 estimated parameters onto the LEAP 2025 scale.

Table 6.11 Stocking & Lord Transformation Constants for Linking LEAP 2025 Spring 2023 to LEAP 2025 HS Spring 2018

Course	Anchor 1		Anchor 2	
	Slope	Intercept	Slope	Intercept
English I	0.880572	0.243684	0.962984	0.240013
English II	0.923811	0.212676	0.974898	0.200789
Algebra I	0.979891	0.004333	1.040507	0.108248
Geometry	0.99223	0.044696	1.040377	0.056893

Figures 6.4 through 6.7 show test characteristic curves (TCCs) for the anchor items, the corresponding LEAP 2025 spring 2023 estimated anchor items before equating (ANC) and after equating (EQ_ANC), intact PARCC parameters (Pre_EQ), and all 2023 LEAP 2025 estimated items (EQ_ALL) for the LEAP 2025 High School Spring 2023 assessments after applying the Stocking & Lord equating procedure. The blue solid line illustrates the pre-equated anchor items, the red dotted line is the 2022 LEAP 2025 equated anchor items, the black solid line is the form construction target (2018 LEAP 2025), and the green dotted line and the brown solid line are the 2023 LEAP 2025 High School equated items from forms H and J, respectively. Anchor items for anchor sets 1 and 2 are different as mentioned above. For all tests, the TCCs for anchor items and the corresponding 2023 estimated anchor items overlapped across most ability levels.

When anchor (blue) and pre-equated (black) TCCs are close to each other, it means the anchor value in the condition is similar to the TCC with parameters' pre-equated form. The anchor and pre-equated TCCs are closely overlapped with most tests with the Anchor 1 condition.

Pre-equated (black) and equated (green) TCCs overlapped closely with all tests with the Anchor 1 condition. Under the Anchor 2 condition, those TCCs were slightly farther from each other with English I and English II. The number of anchor items with Anchor 2 conditions is small, thus it is likely that the parameter difference as well as the limited number of anchor items resulted in the TCCs difference. To clarify, the results from Anchor 2 were used as the final equating results for the spring 2023 LEAP 2025 High School tests.

Figures 6.8 to 6.11 present scatterplots of slope item parameters and difficulty item parameters and their correlation after linking 2023 LEAP 2025 to the LEAP 2025 scale.

The parameters were mostly close to the identity line with Anchor 2, and the correlation ranged from 0.90 to 1. Most parameters were around the identity line with Anchor 2, as the anchor parameters were from Louisiana students. The correlation for Anchor 1 ranged from 0.87 to 0.98.

Compared to English I and English II, Algebra I and Geometry item discrimination parameters were a little scattered from the identity line. It is usual to find higher correlations for difficulty parameters than those for slope parameters.

Figure 6.4 English I TCC between Anchor, 2023 LEAP 2025 Equated Anchor, LEAP 2025 Spring 2018, and Forms H and J with ALL 2023 LEAP 2025 Items

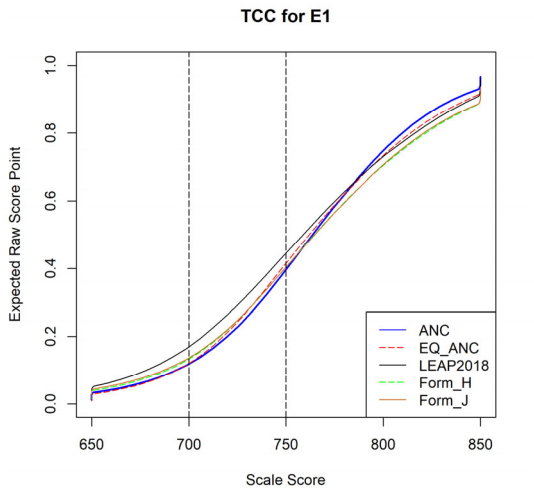
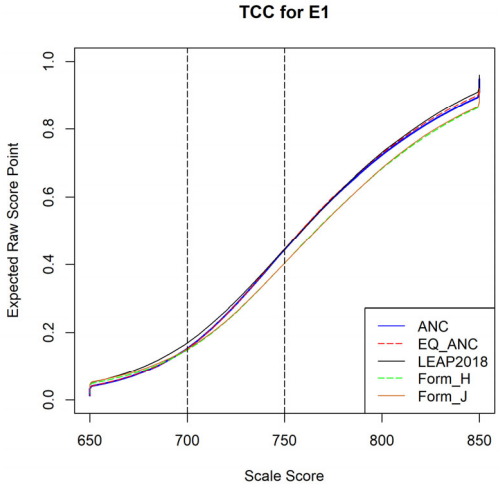
Anchor 1	Anchor 2
	

Figure 6.5 English II TCC between Anchor, 2023 LEAP 2025 Equated Anchor, LEAP 2025 Spring 2018, and Forms H and J with ALL 2023 LEAP 2025 Items

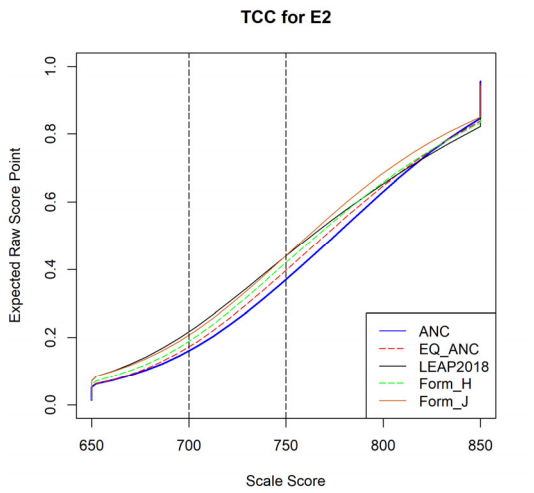
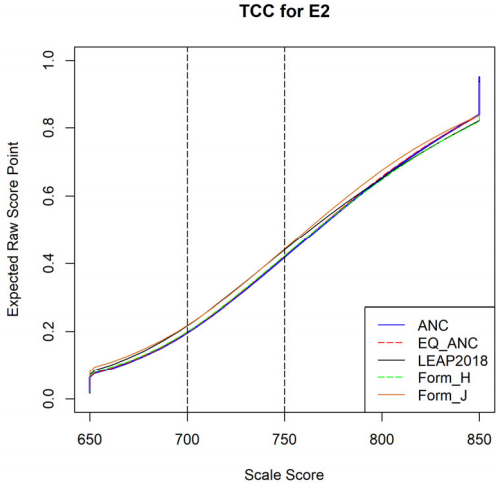
Anchor 1	Anchor 2
	

Figure 6.6 Algebra I TCC between Anchor, 2023 LEAP 2025 Equated Anchor, LEAP 2025 Spring 2018, and Forms H and J with ALL 2023 LEAP 2025 Items

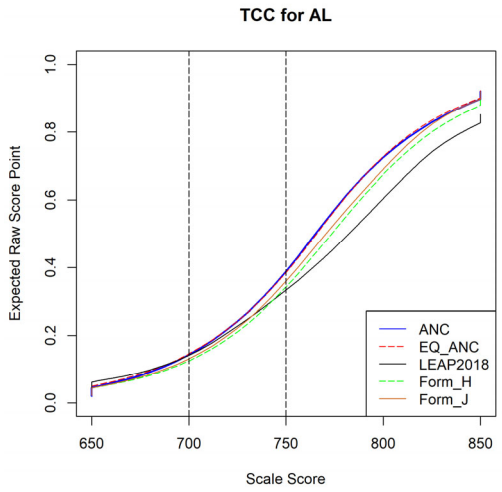
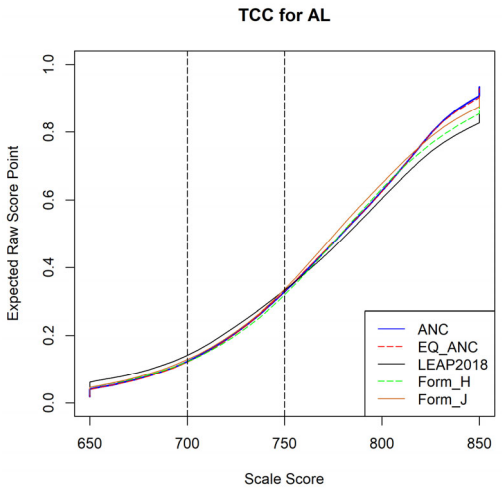
Anchor 1	Anchor 2
	

Figure 6.7 Geometry TCC between Anchor, 2023 LEAP 2025 Equated Anchor, LEAP 2025 Spring 2018, and Forms H and J with ALL 2023 LEAP 2025 Items

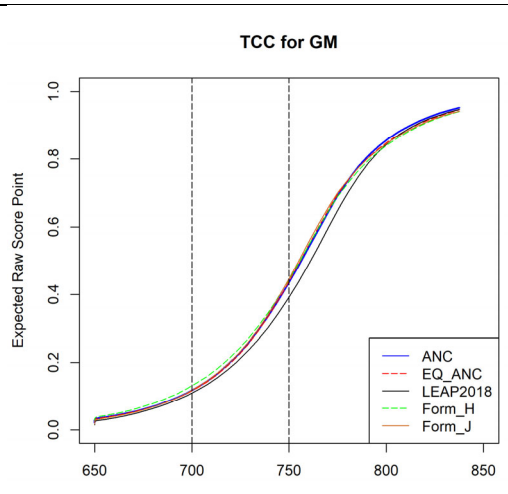
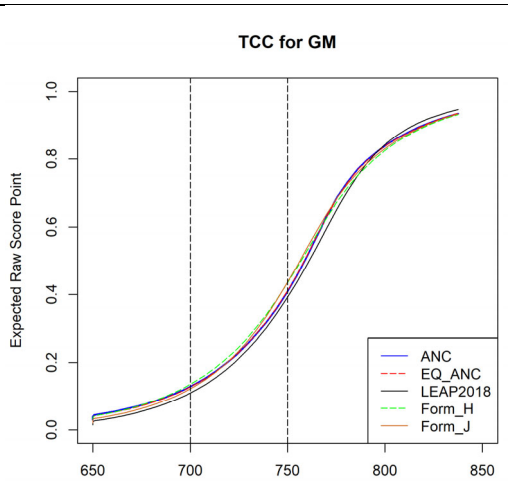
Anchor 1	Anchor 2
	

Figure 6.8 English I Anchor Slope and Difficulty between Equated Anchor Item Parameters and Anchor Item Parameters

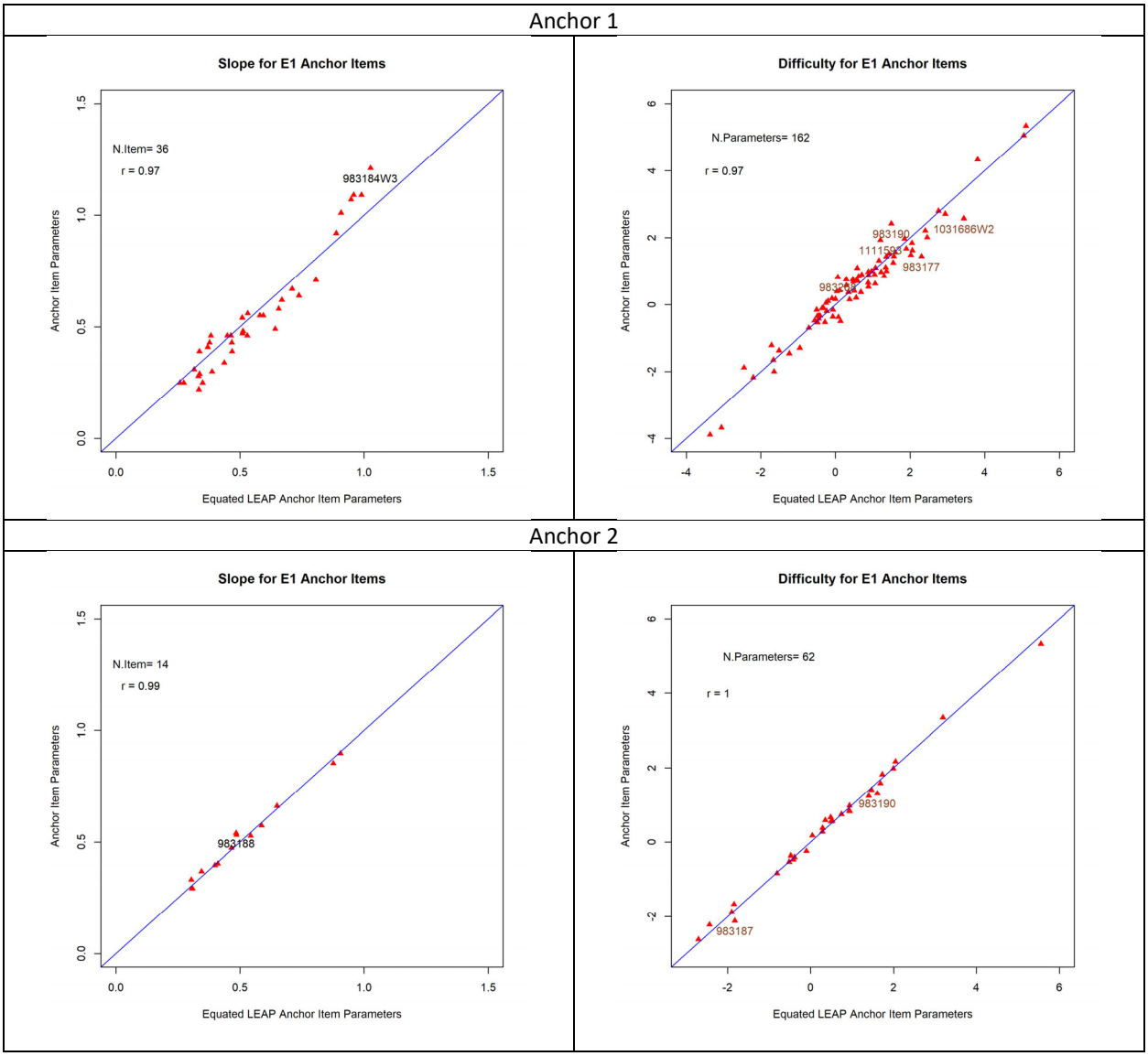


Figure 6.9 English II Anchor Slope and Difficulty between Equated Anchor Item Parameters and Anchor Item Parameters

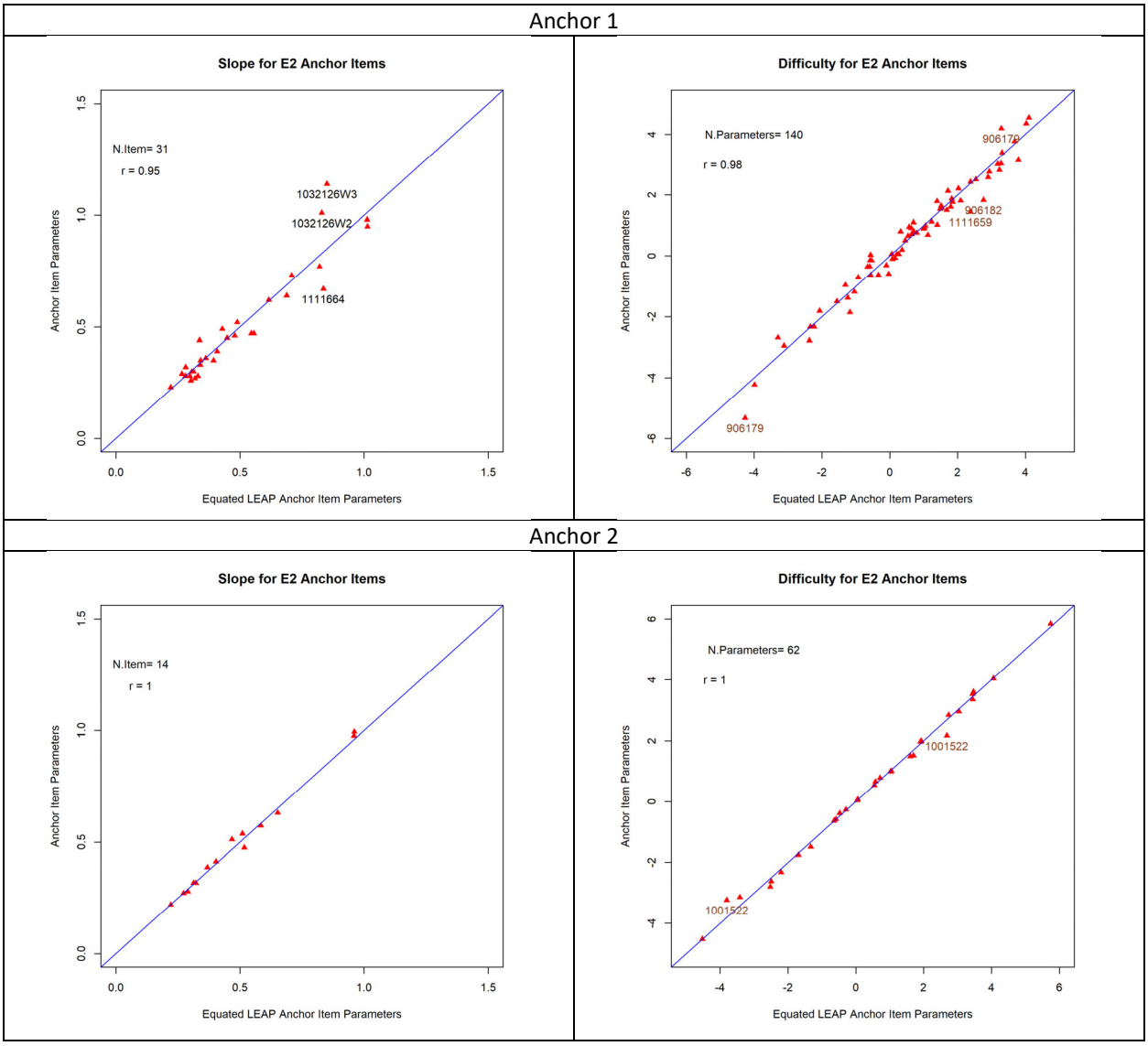


Figure 6.10 Algebra I Anchor Slope and Difficulty between Equated Anchor Item Parameters and Anchor Item Parameters

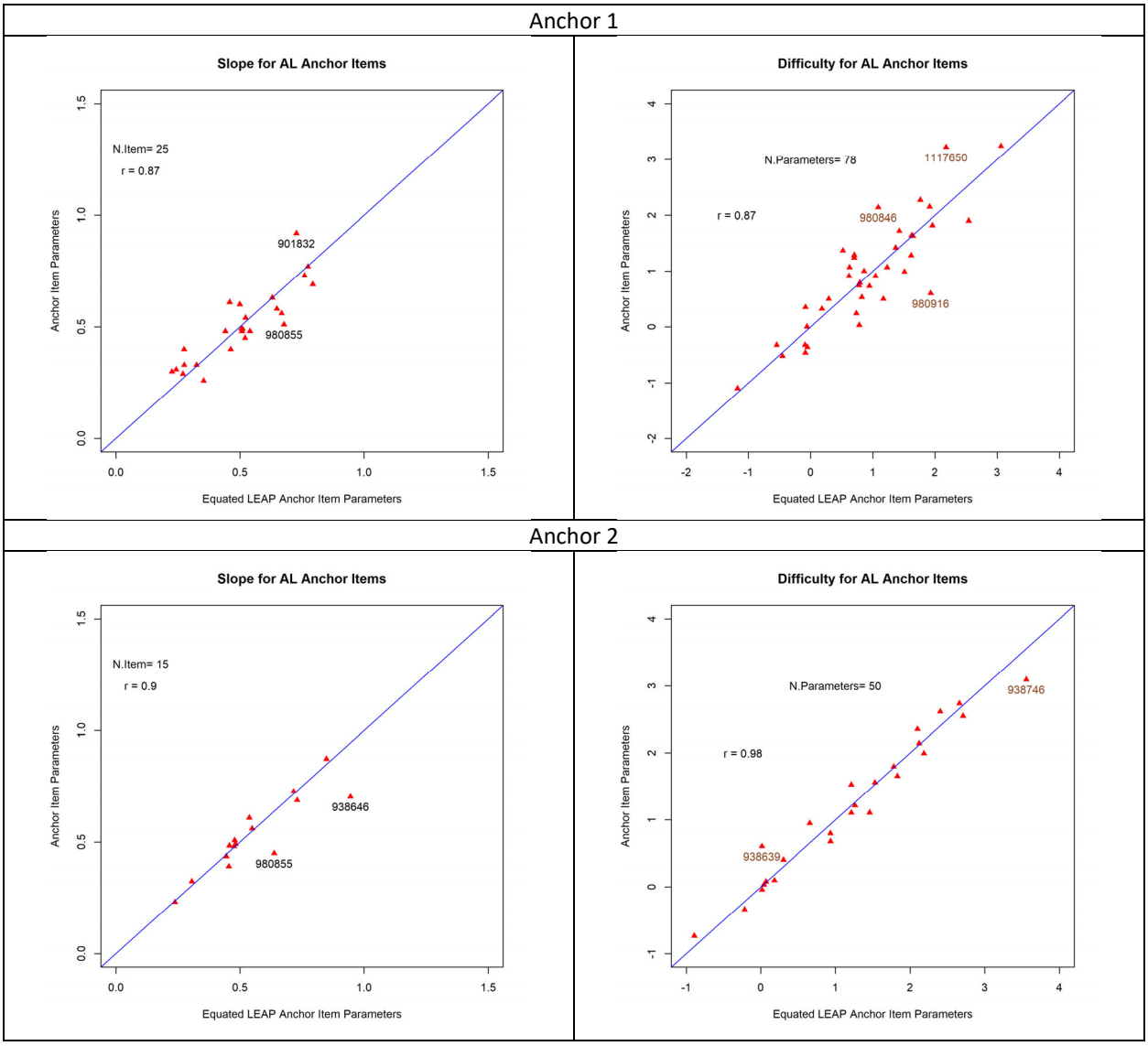
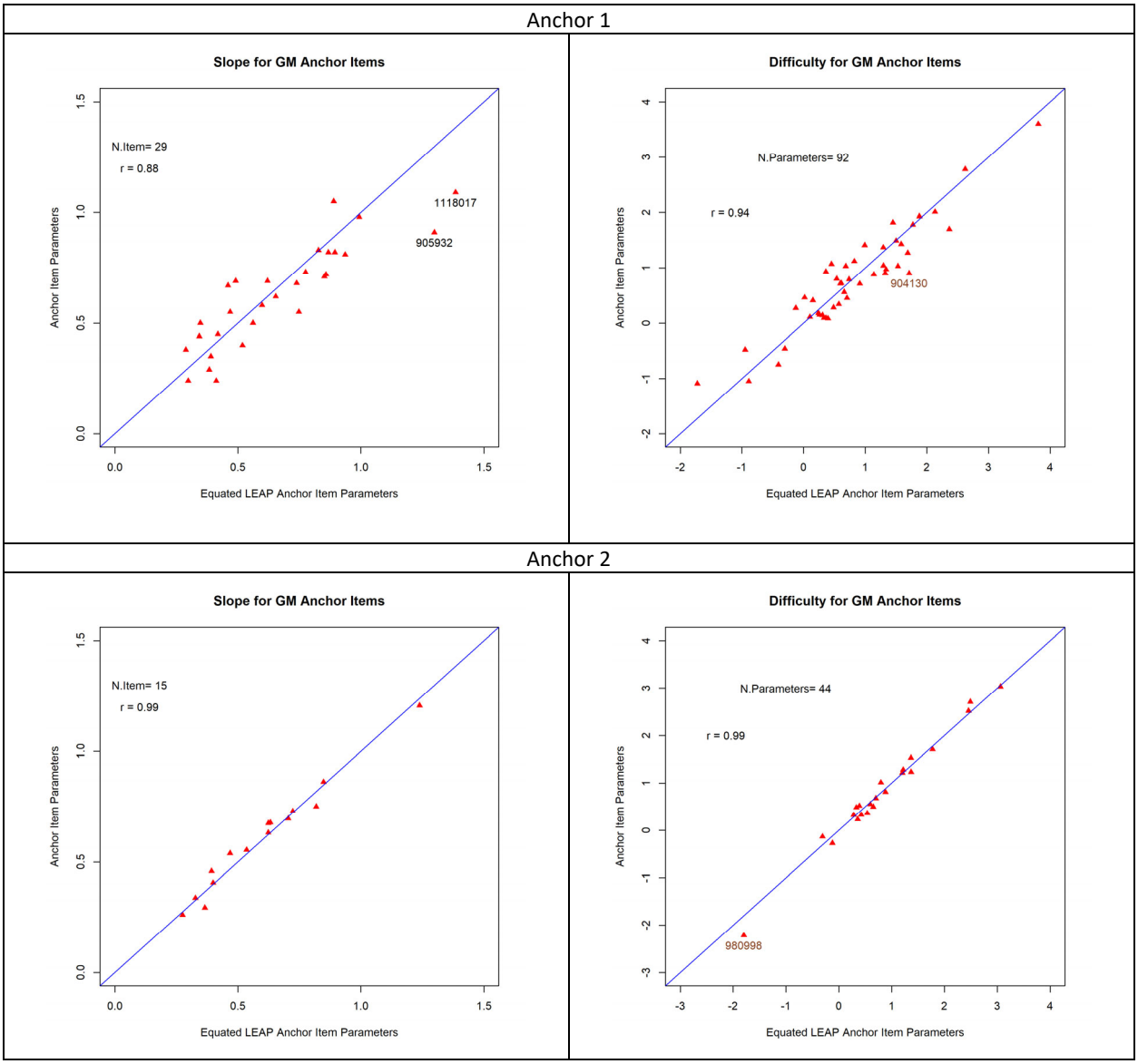


Figure 6.11 Geometry Anchor Slope and Difficulty between Equated Anchor Item Parameters and Anchor Item Parameters



Evaluation of Anchor Item Stability

Standard 5.15 requires that information about the anchors be presented, stating the following:

> In equating studies that employ an anchor test design, the characteristics of the anchor test and its similarity to the forms being equated should be presented, including both content specifications and empirically determined relationships among test scores. If anchor items are used in the equating study, the representativeness and psychometric characteristics of the anchor items should be presented (105).

One of the key requirements of anchor items in deriving valid reliable linking results is that the anchor items should form a miniature version of the test in terms of content coverage or test blueprint. Dropping flagged anchor items based solely on statistical criteria may change the content coverage and invalidate results.

Before an anchor item may be dropped from an anchor set, the item characteristics, adequacy of the content coverage, and impact to the size of the anchor set should be evaluated.

Outliers of anchor items were reviewed with the Robust *Z* (Huynh & Meyer, 2010) and the weighted root mean square difference (WRMSD) method in addition to being reviewed from a content perspective, when reviewers considered aspects of the outliers such as the number of items and score points for each category and subcategory. If approved by LDOE, the outliers were dropped from anchor sets and considered to be common but non-anchor items during equating. The following evaluation rules were applied in order to check the quality of anchor items and the anchor set.

- Exclude CR items from anchor set if categories were collapsed due to small sample size.
- Exclude items with content or parameter estimation issues.
- Run Robust *Z* method and flag items from anchor set using the criterion value of |1.96|.
- Run STUIRT and flag items if the WRMSD is greater than the values in Table 6.12.
- Remove an item from the anchor set if it is flagged by both Robust Z and WRMSD.
- Flag outliers using the plots of slope and difficulty item parameters with their correlations (Kolen & Brennan, 2014).
- Check score points and the numbers of items by category and subcategory before and after dropping an anchor item.

Huynh (2010) suggested applying a *z* statistic that is robust under the presence of outliers. The robustification is established by replacing mean with median and standard deviation with interquartile range (IQR) for anchor items. A multiplicative constant (0.74) is applied to IQR to emulate the standard deviation of the normal distribution:

$$Z = \frac{(D - Md)}{0.74 \times IQR},$$

where *D* is the difference between intact and estimated item parameters of an anchor item and *Md* is a median of differences between intact and estimated item parameters for all items. The critical value of ±1.96 is often used to evaluate estimated robust *z* values.

The WRMSD values were calculated to compare to the ICCs using intact and estimated anchor item parameters. WRMSD is defined as

$$WRMSD = SQRT\{\sum_{Q=1}^{41} W_Q[\mathrm{ICC}_Q(EST) - \mathrm{ICC}_Q\ (INTACT)]^2\},$$

where *Q* represents a quadrature point (i.e., node), *W* represents its weight given quadrature point *Q* from IRTPRO output, *INTACT* represents intact PARCC item parameters, and *EST* represents estimated item parameters corresponding to intact PARCC item parameters. Table 6.12 summarizes WRMSD flagging criteria for inspection and possible removal of linking items.

Table 6.12 PARCC WRMSD Flagging Criteria

Categories	Points	WRMSD/Points	WRMSD
2	1	0.100	0.100
3	2	0.075	0.150
4	3	0.075	0.225
5	4	0.075	0.300
6	5	0.075	0.375
7	6	0.075	0.450
> = 8	> = 7	0.090	0.999

Lowest and Highest Obtainable Scale Scores

A maximum likelihood (MML) procedure cannot produce scale score estimates for students with perfect scores or scores below the level expected when students are guessing. In addition, although MML estimates are available for students with extreme scores other than zero or perfect, occasionally these estimates have standard errors of measurement that are very large, and differences between these extreme values have little meaning. Therefore, scores are established for these students based on a rational but necessary non-MML procedure. These values, which are set separately by course, are called the lowest obtainable scale score (LOSS) and the highest obtainable scale score (HOSS). All LEAP 2025 High School content areas in 2018 used the same LOSS and HOSS values established by PARCC. The LOSS value was 650, and the HOSS value was 850.

Category- and Subcategory-Level Subscores

A student's performance on the ELA reporting categories (i.e., reading and writing) is reported in one of three ratings: *Strong*, *Moderate*, or *Weak*.

Additionally, subcategory ratings are reported at the student level. English I and English II have three subcategories for reading (i.e., literary text, informational text, and vocabulary) and two subcategories for writing (i.e., written expression and knowledge and use of language conventions).

Algebra I and Geometry have four reporting categories. Category A, Major Content, is further reported at three subcategories in Algebra I and two subcategories in Geometry. Category and subcategory performance are reported in one of three ratings: *Strong*, *Moderate*, or *Weak*.

Although the performance ratings are determined only by the items included within a category or subcategory, the level of knowledge and ability needed to achieve a performance rating is connected to the level of knowledge and ability required to reach the achievement levels in the overall test: a *Weak* rating requires similar knowledge and ability as the *Unsatisfactory* and *Approaching Basic* achievement levels, a *Moderate* rating requires similar knowledge and ability as the *Basic* achievement level, and a *Strong* rating requires similar knowledge and ability as the *Mastery* or *Advanced* achievement levels.

The 2022-2023 LEAP 2025 High School reporting categories are summarized in Table 6.13.

Table 6.13 LEAP 2025 High School Reporting Categories

Course	Category	Subcategory
English I/II	1. Reading 2. Writing	1. Reading Informational Texts—RI 2. Reading Literature—RL 3. Reading Vocabulary—RV 4. Written Expression—WE 5. Written Knowledge of Language—WKL
Algebra I	1. A—Major Content 2. B—Additional and Supporting Content 3. C—Expressing Mathematical Reasoning 4. D—Modeling and Application	1. A.1—Interpreting Functions 2. A.2—Solving Algebraically 3. A.3—Solving Graphically/Rate of Change
Geometry	1. A—Major Content 2. B—Additional and Supporting Content 3. C—Expressing Mathematical Reasoning 4. D—Modeling and Application	1. A.1—Congruence Transformations/Similarity 2. A.2—Similarity in Trigonometry/ Modeling and Applying

Reading and writing category scores were produced for English I and English II. The reading category score range was 10–90 and the writing category score range was 10–60. The method for scaling the reporting category scores followed the PARCC methodology (Pearson, 2017). For the reading category, two theta score points corresponding to English I and English II scale scores of 725 and 750 were used for scaling. Linear transformation constants mapping the two theta points to the scale score points of 40 and 50 were calculated for the reading category. After these transformation values were applied to item parameters belonging to the reading category, a scoring table was generated using the TCC inverse method. A similar approach was applied to scale the writing category, using two scale score points of 30 and 35. Two cut scores, 40 and 50 for reading and 30 and 35 for writing, were used to produce three performance-level ratings for each category (see Table 6.14 for cut scores for summatives, categories, and subcategories).

For mathematics categories and ELA and mathematics subcategories, only performance-level ratings were reported. Therefore, there is no need to scale them. Using the item parameters belonging to a given subcategory, a raw-score-to-theta scoring table is generated by applying the TCC inverse method. The two raw scores corresponding to Θ_{L3} and Θ_{L4} are cut scores for the subcategory.

Table 6.14 Cut Scores for Summative, Category, and Subcategory

Performance Level	Summative Test	ELA Category		ELA Subcategory/ Mathematics Category/Subcategory*
		Reading	Writing	
1				
2	700	30	25	
3	725	40	30	Θ_{L3}
4	750	50	35	Θ_{L4}
5	Around 800			

*Thetas are those from summative tests (i.e., 725 & 750).
Note: Yellow highlight shows cut scores for category and subcategory.

6.4 Item Difficulty-Student Ability Maps

LEAP 2025 item difficulties based on item response theory (IRT) were plotted to show the distribution of the item difficulties across student performance. The plots allow easy visualization regarding the relationship between the distributions of item difficulty and student ability. While the item difficulty parameters estimated with the Rasch model directly place item difficulty on the student performance scale (i.e., ability/theta), those estimated with the 2PL/GPC model cannot be placed on the student performance scale because of an additional parameter, item slope. LEAP 2025 uses the 2PL/GPC model. To resolve this issue, the concept of response probability (RP) from item mapping procedures, such as the Bookmark Standard Setting Procedure (BSSP; Lewis, Mitzel & Green, 1996), was applied to all spring 2023 LEAP 2025 operational items.

In the BSSP, an RP specifies the probability with which a student with a given ability would be able to correctly answer an item of the same difficulty. For example, if the RP criterion is 0.67 (RP67), students with a given ability would have a 67% chance of correctly answering items with difficulty at the same level. For a BSSP, it is common to use an RP67 to clearly define when students have mastery of an item (Huynh, 1988). The choice of RP criterion to use in a BSSP is a policy decision, and many other states have selected different RP criteria for different purposes, and other RP criteria are often used (Cizek & Bunch, 2007, p. 162; Mitzel, et al., 2001). For the purposes of aligning item difficulty with student performance, an RP50 was selected. This indicates that students with a given ability would have a 50% chance of correctly answering items with difficulty at the same level.

Figure 6.12 through Figure 6.15 plot the subject level distributions. There is one RP50 value for a multiple-choice item. There is one value where it is considered that test takers of a certain achievement level will answer the MC item correctly 1/2 of the time. In a BSSP, the RP for a polytomous item is generally split by score point; however, in this study, one RP50 was estimated under the assumption that the RP50 of a polytomous item can be considered as an appropriate mastery of the item.

The upper plot presents the scale score distribution of the test takers based on census data. The X-axis shows the scale score. The Y-axis is the density of the scale scores: The density is the number of students with a scale score divided by the total number of students who received a score.

The lower plot presents the RP50 values, as expressed on the scale score metric, for the spring 2023 LEAP 2025 operational items. The X-axis shows the scale score; this is the same scale as the upper plot. The Y-axis is a subcategory: RI, RL, RV, WE, & WKL for ELA and A, B, C, and D for Math. Each red dot represents the RP50 value of an item aligned to the subcategory. The four vertical lines are the cut scores. Across subjects most RP50 values were located in performance level 2, 3, and 4 where most students were located.

Figure 6.12 Item Difficulty-Student Ability Map: English I

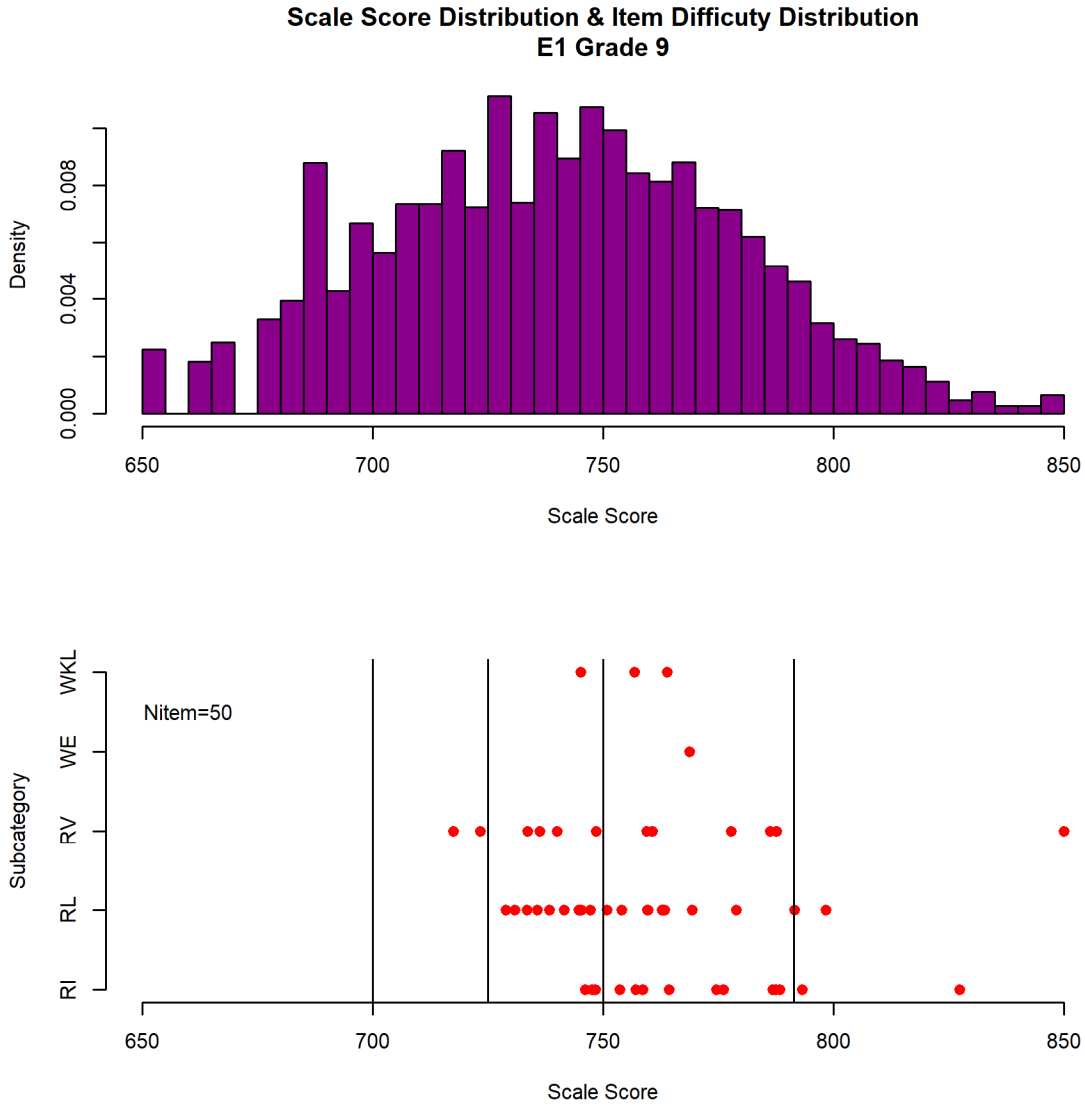


Figure 6.13 Item Difficulty-Student Ability Map: English II

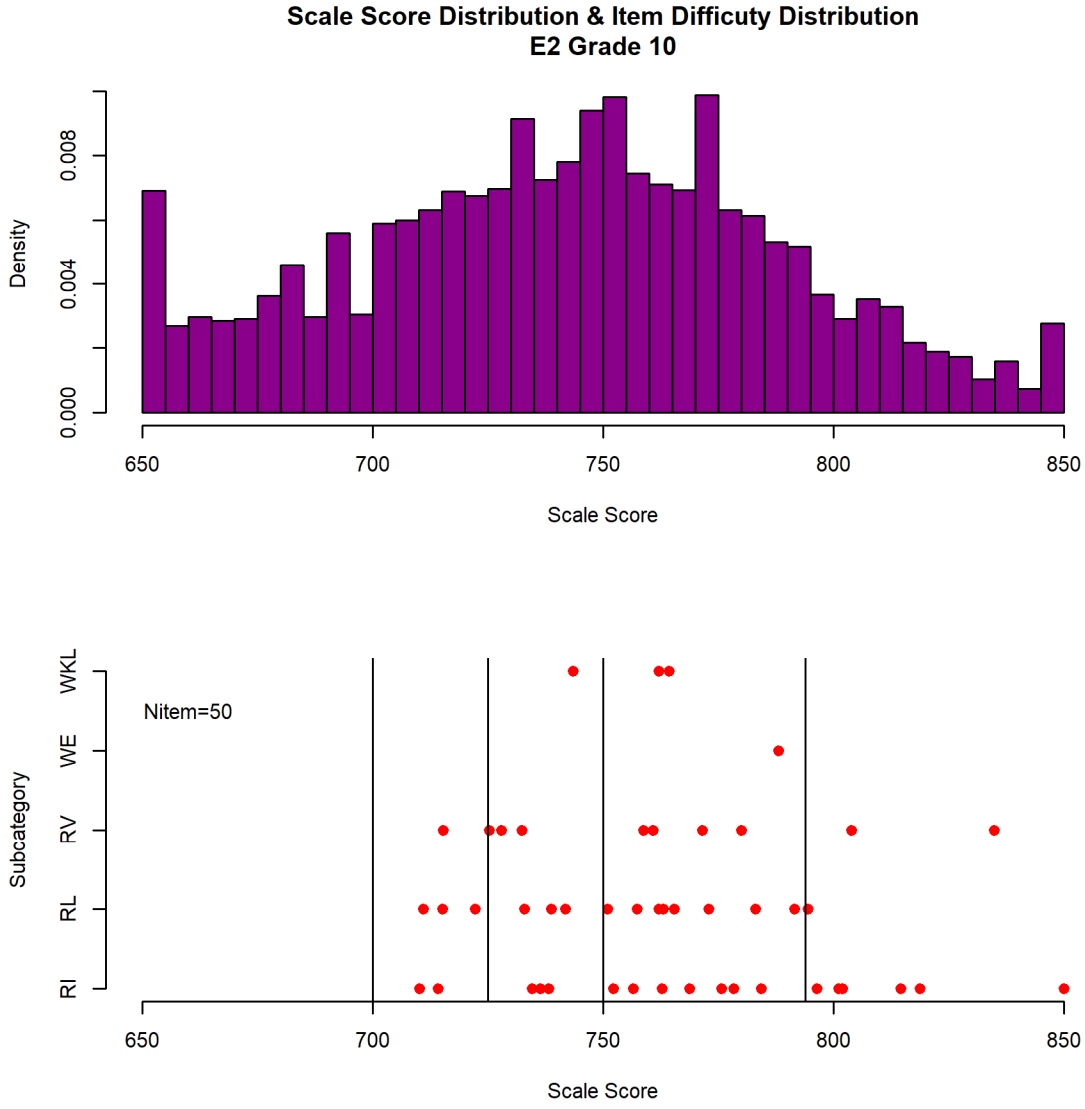


Figure 6.14 Item Difficulty-Student Ability Map: Algebra I

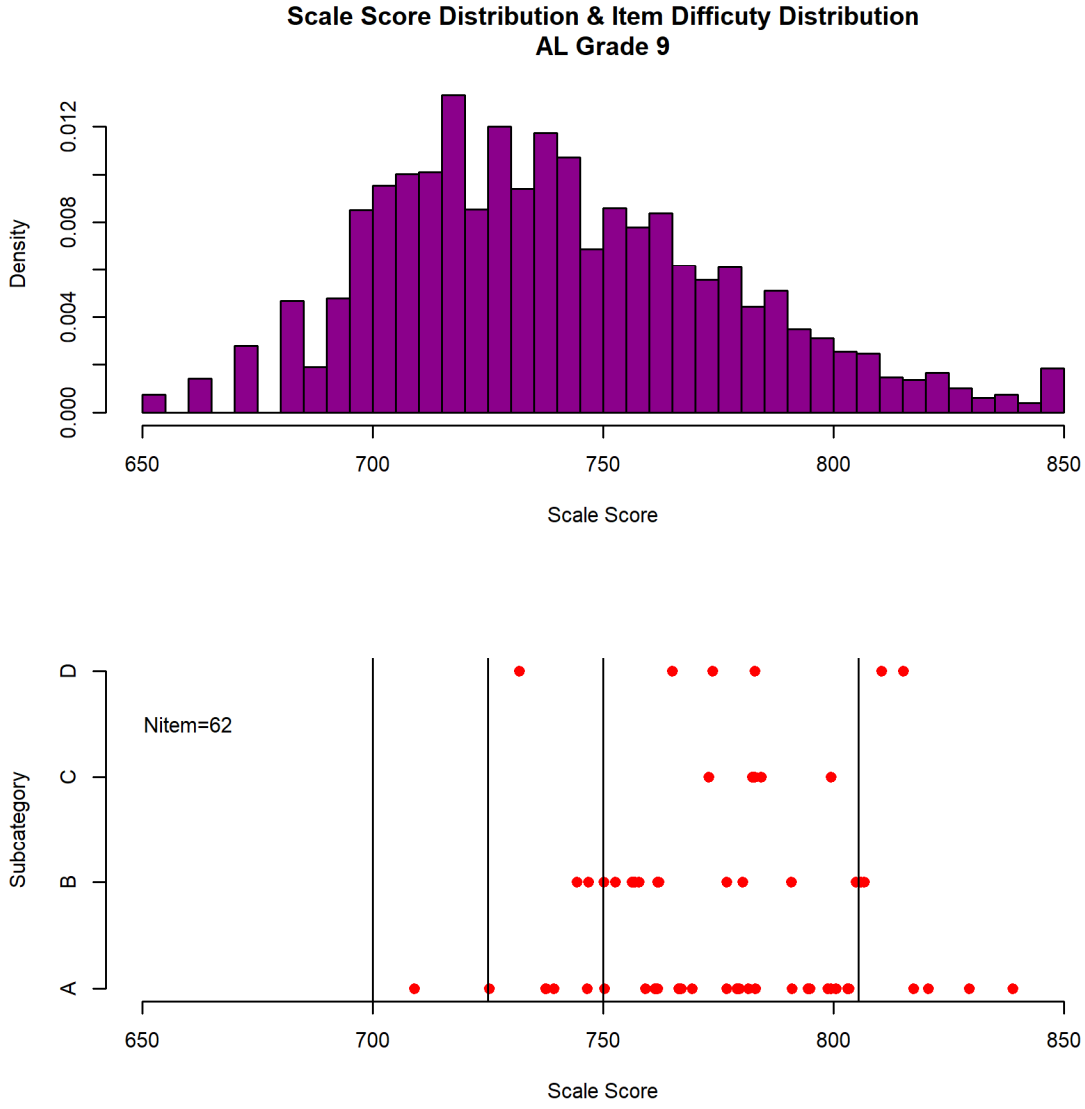
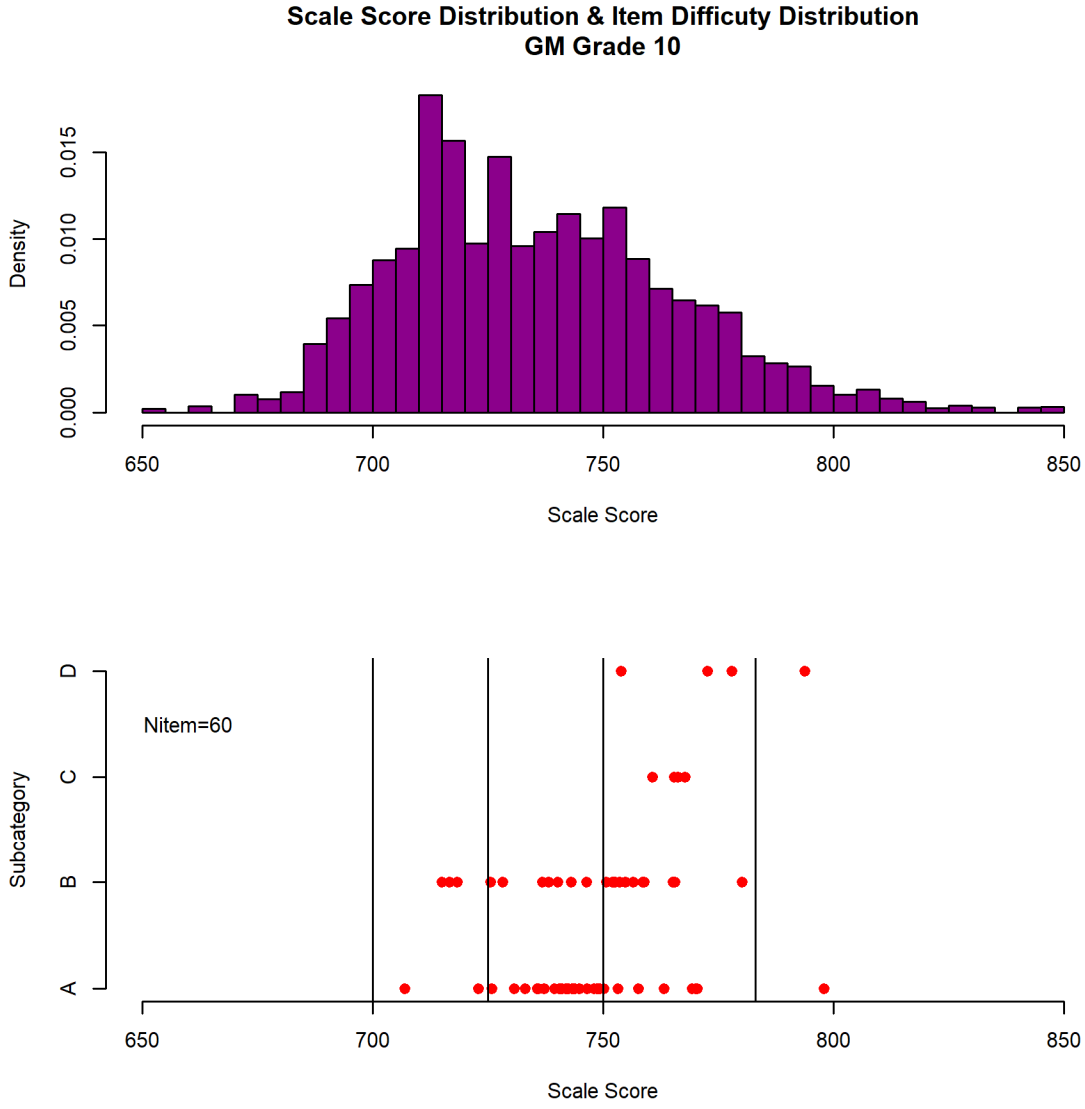


Figure 6.15 Item Difficulty-Student Ability Map: Geometry



6.5 Comparability: Form Equating

The primary purpose of form equating is to establish score equivalency between two (or more) forms. Equivalency is established by first building the forms to be equated according to tight content specifications. Then the form scores are placed on the same scale (by equating), such that students performing on two scaled assessments at the same level of underlying achievement should receive the same scale score on both forms, although they may not receive the same number-correct score (or raw score). The raw-to-scale-score relationship performs this leveling function based on form-equating studies. Theoretically, differences in the raw-to-scale-score relationship between the two forms can be partially due to differences in the samples utilized for calibration and differences in item difficulty. LDOE and DRC strive to maintain equivalent samples or use near-census samples over the years, minimizing the potential differences caused by the different samples. Differences in the raw-to-scale-score relationship, therefore, can be primarily attributed to the differences in item difficulty.

In the spring of 2023, the forms used were post-equated forms linking to the LEAP 2025 scale. The equating was conducted using the test characteristic transformation function method in the common-item non-equivalent-groups design (Stocking & Lord, 1983). The fall 2022 and summer 2023 forms were intact forms.

Table 6.15 through Table 6.18 provide scale scores at selected percentiles that can be used to compare the distributional characteristics of the LEAP 2025 2018–2023 spring operational forms across administrations, based on census data. Although these scale scores are rounded values, there were differences in the scale score values for a given percentile across the forms. These variations could arise for several reasons: (1) differences in the proficiency (i.e., achievement) of the students in the samples or growth in student achievement across years; (2) unevenness in the respective distributions that combine with the number-correct-to-scale-score scoring method, leaving "gaps" in the scale; or (3) other sources of equating error. Other sources of equating error can include subtle content differences between forms, handscoring differences, or unusual student samples. Some equating errors will always be present between forms. This means that the forms will not measure identically, even under optimal testing conditions. In general, however, the test characteristic function equating techniques will "level" the equated forms through the raw-to-scale-score adjustment.

Table 6.15 Comparisons of Scale Scores at Selected Percentiles—English I

	2018	2019	2019	2021	2022	2022	2023	2023
Percentile	**Spring**	**Spring Form D**	**Spring Form E**	**Spring Form E**	**Spring Form F**	**Spring Form G**	**Spring Form H**	**Spring Form J**
99	824	820	824	821	829	829	828	827
95	799	796	802	797	799	803	802	806
90	788	785	790	786	784	791	789	792
85	778	777	782	778	776	782	779	784
80	773	769	776	770	768	774	771	778
75	767	764	770	765	762	768	764	772
70	762	759	765	759	756	762	759	766
65	757	753	759	754	751	759	752	760
60	754	748	756	749	745	753	747	757
55	749	743	753	744	740	749	741	751
50	745	738	748	741	735	744	736	746
45	740	732	744	736	730	741	730	742
40	737	729	739	731	724	735	726	736
35	731	723	734	726	719	730	720	730
30	728	717	729	720	714	725	713	726
25	722	713	726	714	707	720	708	720
20	716	706	718	707	701	714	700	713
15	707	699	712	700	692	706	693	704
10	697	686	705	691	683	697	686	694
5	685	674	691	679	672	686	676	681
1	660	650	669	656	655	664	655	662

Table 6.16 Comparisons of Scale Scores at Selected Percentiles—English II

	2018	2019	2019	2021	2022	2022	2023	2023
Percentile	**Spring**	**Spring Form D**	**Spring Form E**	**Spring Form E**	**Spring Form F**	**Spring Form G**	**Spring Form H**	**Spring Form J**
99	846	842	847	850	844	850	850	849
95	817	810	818	821	812	821	820	822
90	799	795	802	805	799	806	800	806
85	788	787	791	794	787	795	790	795
80	780	779	783	783	778	788	780	785
75	773	771	778	775	771	780	773	780
70	765	764	770	768	764	773	766	773
65	761	759	765	763	758	766	759	766
60	754	752	761	756	750	760	753	762
55	749	745	754	749	743	753	746	755
50	745	741	749	745	737	749	740	750
45	738	734	743	739	731	743	735	744
40	733	728	739	732	723	736	728	739
35	726	722	732	726	716	730	721	732
30	722	715	726	720	710	724	714	725
25	714	705	720	711	700	717	706	718
20	707	697	713	703	691	707	695	710
15	699	688	703	693	678	697	684	701
10	687	672	693	679	669	685	672	688
5	668	656	675	667	653	670	656	667
1	650	650	650	650	650	650	650	650

Table 6.17 Comparisons of Scale Scores at Selected Percentiles—Algebra I

	2018	2019	2019	2021	2022	2022	2023	2023
Percentile	**Spring**	**Spring Form D**	**Spring Form E**	**Spring Form E**	**Spring Form F**	**Spring Form G**	**Spring Form H**	**Spring Form J**
99	827	836	839	822	835	839	845	848
95	800	799	803	795	803	806	807	813
90	787	786	789	780	785	791	788	797
85	777	776	780	770	774	780	777	785
80	769	768	772	761	764	773	768	776
75	763	761	766	756	757	766	761	769
70	757	753	761	749	748	758	756	762
65	751	748	756	743	742	752	748	755
60	748	745	751	737	736	746	742	750
55	744	739	746	734	732	743	736	745
50	738	735	740	730	728	736	733	740
45	734	728	737	727	724	732	726	737
40	731	725	734	723	720	728	722	731
35	727	721	730	719	716	724	718	727
30	723	717	723	714	716	720	714	720
25	715	712	719	710	711	715	709	716
20	711	708	714	704	705	710	704	711
15	707	703	710	699	699	704	698	707
10	702	697	704	692	699	698	691	701
5	690	691	692	685	685	692	683	689
1	673	668	677	668	666	675	662	672

Table 6.18 Comparisons of Scale Scores at Selected Percentiles—Geometry

	2018	2019	2019	2021	2022	2022	2023	2023
Percentile	Spring	Spring Form D	Spring Form E	Spring Form E	Spring Form F	Spring Form G	Spring Form H	Spring Form J
99	796	801	801	801	803	802	816	820
95	779	783	784	784	781	782	788	792
90	771	774	774	774	770	773	774	778
85	764	767	768	768	762	766	766	769
80	758	761	763	763	756	759	760	763
75	754	755	758	758	750	754	754	758
70	749	750	753	753	746	749	749	752
65	746	746	750	750	742	745	744	748
60	742	742	746	746	737	740	739	743
55	738	738	742	742	735	736	735	739
50	734	734	738	738	730	733	730	736
45	731	731	733	733	727	730	726	732
40	727	729	731	731	725	727	723	728
35	724	726	728	728	722	724	717	723
30	721	723	725	725	718	721	714	720
25	718	719	722	722	715	717	711	714
20	715	716	719	719	711	714	707	711
15	707	712	711	711	707	709	703	707
10	702	707	706	706	702	705	699	703
5	697	694	701	701	697	694	694	693
1	677	675	686	686	674	678	675	680

Additional evidence of comparability can be found by reviewing the test characteristic curves (TCCs) of the 2018 baseline administration and the current administration of the LEAP 2025 assessments, as can be seen in Figure 6.16.

Figure 6.17 shows SEMs for the 2018 baseline administration for the current administration of the LEAP 2025 HS assessments. For most content areas, the SEMs were similar across ability ranges, especially in the middle ability ranges.

Figure 6.16 TCCs Across Years: Spring Administrations

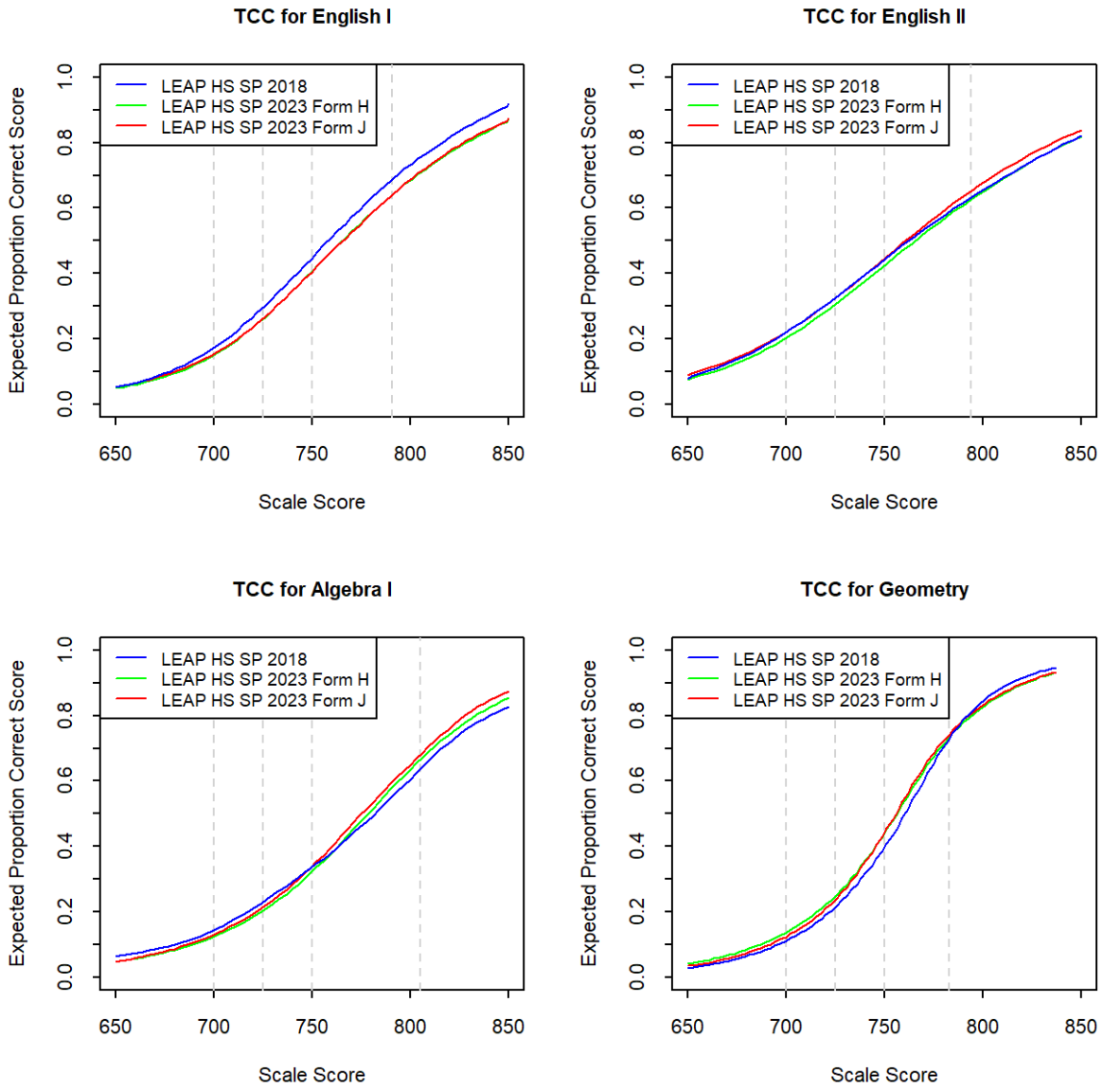
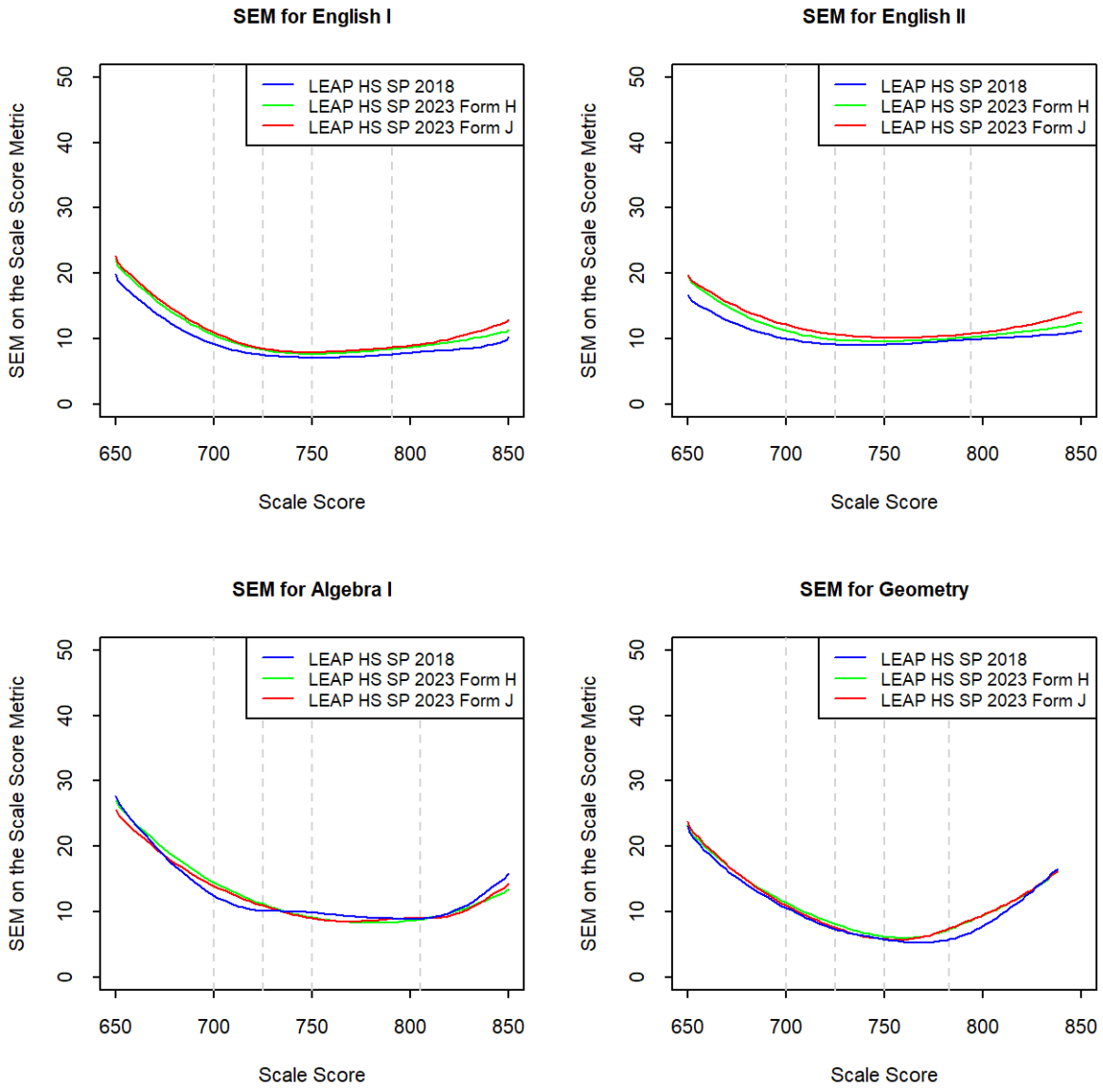


Figure 6.17 SEM Across Years: Spring Administrations



6.6 Summary

In summary, the overall purpose of the operational data analyses is to ensure that the test items, as well as the overall test, are functioning appropriately. Operational data analyses also help maintain the test scale so that test results may be appropriately compared across years. The data analyses undertaken by DRC address multiple best practices of the testing industry but are particularly related to the following standards:

> *Standard 1.8* The composition of any sample of test takers from which validity evidence is obtained should be described in as much detail as is practical and permissible, including major relevant socio-demographic and developmental characteristics (25).
>
> *Standard 4.14* For a test that has a time limit, test development research should examine the degree to which scores include a speed component and should evaluate the appropriateness of that component, given the domain the test is designed to measure (90).
>
> *Standard 5.2* The procedures for constructing scales used for reporting scores and the rationale for these procedures should be described clearly (102).
>
> *Standard 5.13* When claims of form-to-form score equivalence are based on equating procedures, detailed technical information should be provided on the method by which equating functions were established and on the accuracy of the equating functions (105).
>
> *Standard 5.15* In equating studies that employ an anchor test design, the characteristics of the anchor test and its similarity to the forms being equated should be presented, including both content specifications and empirically determined relationships among test scores. If anchor items are used in the equating study, the representativeness and psychometric characteristics of the anchor items should be presented (105).
>
> *Standard 7.2* The population for whom a test is intended and specifications for the test should be documented. If normative data are provided, the procedures used to gather the data should be explained; the norming population should be described in terms of relevant demographic variables; and the year(s) in which the data were collected should be reported (126).

Chapter 7: Test Results

This chapter of the technical report contains information on the results of the Spring LEAP 2025 High School administration of English I, English II, Algebra I, and Geometry. The scale score results, and achievement level information are presented here. Presenting the results by achievement level translates the quantitative scale provided through scale scores into a qualitative description of student achievement. The levels are *Advanced*, *Mastery*, *Basic*, *Approaching Basic*, and *Unsatisfactory*.

While the scale score provides an essential quantitative reference for student achievement, the achievement level information plainly outlines the meanings of the scores to parents, students, and educators. When combined, scale scores and achievement levels provide a comprehensive set of tools to assess Louisiana student achievement by course.

This chapter also provides descriptions of the score reports, data structure, and interpretive guide for the LEAP 2025 administrations. The American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (AERA, APA, & NCME, 2014) *Standards for Educational & Psychological Testing* addressed in Chapter 7 are 5.1, 6.10, 7.0, and 12.18. Each standard is presented in the pertinent section of this chapter.

The results presented in this chapter are based on census data. The results presented here may differ slightly from the official state summary report of all student populations due to ongoing resolution of test materials and student information. The results in the tables in this chapter are presented as evidence of the reliability and validity of the scores from the LEAP 2025 high school ELA and mathematics assessments and should not be used for state accountability purposes.

7.1 Student Participation

The following are subgroups reported during the administration of the LEAP 2025 tests:

- Gender: Female and Male
- Race and Ethnicity: Hispanic/Latino, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, and Two or More Races
- Education Classification
- Economic Status
- English Learner (EL)
- Migrant Status
- Homeless Status
- Military Affiliation
- Foster Care Status

The number of students who attempted each test, the number of students whose results were reportable from each test, and the number of students whose results were included in the technical report sample for each test are summarized by grade in Tables 7.1–7.4. The “Attempted” category includes all the students who attempted at least one item on the assessment. The “Reportable” category includes students who finished all sections in the assessment, which includes students in private school and home-study programs. The “Technical Report Sample” category represents the sample of students included in many of the analyses for this report, and they are the students who finished all sections of the assessment and counted toward the state total score; students in private school and home-study programs were excluded from this sample.

Table 7.1 Count of Students who Attempted, were Reportable, and Included in the Technical Report Sample: English I

Administration	Group	Grade							
		6	7	8	9*	10	11	12	Total
Fall 2022	Attempted	<10	<10	<10	≥5,050	≥2,610	≥1,140	≥1,120	≥9,950
	Reportable	<10	<10	<10	≥5,010	≥2,540	≥1,100	≥1,100	≥9,770
	Technical Report	<10	<10	<10	≥5,010	≥2,540	≥1,100	≥1,100	≥9,760
Spring 2023	Attempted	<10	<10	≥2,930	≥43,050	≥3,540	≥800	≥890	≥51,230
	Reportable	<10	<10	≥2,920	≥42,570	≥3,300	≥730	≥860	≥50,400
	Technical Report	<10	<10	≥2,860	≥42,080	≥3,290	≥730	≥860	≥49,850
Summer 2023	Attempted	<10	<10	≥40	≥2,150	≥610	≥230	≥230	≥3,280
	Reportable	<10	<10	≥40	≥2,080	≥600	≥230	≥230	≥3,190
	Technical Report	<10	<10	≥30	≥2,070	≥600	≥230	≥230	≥3,170

* Grade 9 includes the grade that is coded as "T9."

Table 7.2 Count of Students who Attempted, were Reportable, and Included in the Technical Report Sample: English II

Administration	Group	Grade							
		6	7	8	9*	10	11	12	Total
Fall 2022	Attempted	<10	<10	<10	≥1,080	≥5,500	≥1,430	≥1,430	≥9,460
	Reportable	<10	<10	<10	≥1,080	≥5,480	≥1,380	≥1,400	≥9,350
	Technical Report	<10	<10	<10	≥1,070	≥5,480	≥1,380	≥1,400	≥9,350
Spring 2023	Attempted	<10	<10	<10	≥2,980	≥38,260	≥2,660	≥1,240	≥45,160
	Reportable	<10	<10	<10	≥2,940	≥38,020	≥2,600	≥1,210	≥44,780
	Technical Report	<10	<10	<10	≥2,900	≥37,650	≥2,600	≥1,210	≥44,370
Summer 2023	Attempted	<10	<10	<10	≥80	≥850	≥260	≥210	≥1,410
	Reportable	<10	<10	<10	≥80	≥820	≥250	≥210	≥1,370
	Technical Report	<10	<10	<10	≥70	≥820	≥250	≥210	≥1,360

* Grade 9 includes the grade that is coded as "T9."

Table 7.3 Count of Students who Attempted, were Reportable, and included in the Technical Report Sample: Algebra I

Administration	Group	Grade							
		6	7	8	9*	10	11	12	Total
Fall 2022	Attempted	<10	<10	<10	≥3,260	≥2,430	≥770	≥520	≥7,000
	Reportable	<10	<10	<10	≥3,240	≥2,380	≥740	≥500	≥6,870
	Technical Report	<10	<10	<10	≥3,240	≥2,380	≥740	≥500	≥6,870
Spring 2023	Attempted	<10	≥150	≥7,450	≥37,520	≥4,930	≥660	≥270	≥51,010
	Reportable	<10	≥150	≥7,440	≥37,100	≥4,740	≥620	≥260	≥50,340
	Technical Report	<10	≥150	≥7,330	≥36,650	≥4,730	≥620	≥260	≥49,770
Summer 2023	Attempted	<10	<10	≥30	≥1,780	≥440	≥100	≥20	≥2,380
	Reportable	<10	<10	≥30	≥1,730	≥430	≥100	≥20	≥2,320
	Technical Report	<10	<10	≥20	≥1,720	≥430	≥100	≥20	≥2,300

* Grade 9 includes the grade that is coded as "T9."

Table 7.4 Count of Students who Attempted, were Reportable, and Included in the Technical Report Sample: Geometry

Administration	Group	Grade							
		6	7	8	9*	10	11	12	Total
Fall 2022	Attempted	<10	<10	<10	≥850	≥2,740	≥1,100	≥480	≥5,180
	Reportable	<10	<10	<10	≥850	≥2,730	≥1,070	≥470	≥5,140
	Technical Report	<10	<10	<10	≥850	≥2,730	≥1,070	≥470	≥5,140
Spring 2023	Attempted	<10	≥10	≥160	≥6,470	≥25,640	≥4,120	≥400	≥36,820
	Reportable	<10	≥10	≥160	≥6,450	≥25,470	≥4,070	≥390	≥36,570
	Technical Report	<10	≥10	≥160	≥6,370	≥25,210	≥4,010	≥390	≥36,180
Summer 2023	Attempted	<10	<10	<10	≥40	≥390	≥70	≥10	≥520
	Reportable	<10	<10	<10	≥40	≥370	≥70	≥10	≥500
	Technical Report	<10	<10	<10	≥30	≥370	≥70	≥10	≥490

* Grade 9 includes the grade that is coded as "T9."

The test takers included in the "Technical Report Sample" include those who are taking the assessments for the first time and those who have had multiple attempts. Table 7.5 summarizes the count and percentage of students classified as initial testers, retesters, and those who have taken the test and previously passed.

The counts and percentages of students in demographic groups by grade for the group of students comprising the technical report sample for the spring 2023 administration are summarized in Table 7.5 through Table 7.20. The same information regarding the technical report samples for the fall 2022 and summer 2023 administrations can be found in Appendix E.

Table 7.5 Count of Students Administered the Spring 2023 LEAP 2025 Administration: English I Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥1,440	≥23,120	≥2,130	≥470	<10	≥27,170
Gender								
Female	<10	<10	≥810	≥11,100	≥750	≥160	<10	≥12,840
Male	<10	<10	≥630	≥12,010	≥1,370	≥300	<10	≥14,330
Ethnicity								
Hispanic/Latino	<10	<10	≥210	≥2,070	≥320	≥110	<10	≥2,730
American Indian or Alaska Native	<10	<10	<10	≥150	≥10	<10	<10	≥170
Asian	<10	<10	≥70	≥310	≥20	<10	<10	≥420
Black or African American	<10	<10	≥500	≥10,230	≥1,150	≥280	<10	≥12,170
Native Hawaiian or Other Pacific	<10	<10	<10	≥10	<10	<10	<10	≥20
White	<10	<10	≥580	≥9,640	≥560	≥50	<10	≥10,840
Two or More Races	<10	<10	≥60	≥690	≥40	<10	<10	≥800
Education Classification								
Regular Education	<10	<10	≥1,130	≥18,790	≥1,400	≥350	<10	≥21,680
Special Education	<10	<10	≥30	≥3,280	≥710	≥110	<10	≥4,150
Gifted or Talented	<10	<10	≥280	≥1,040	<10	<10	<10	≥1,330
Economic Status								
Economically Disadvantaged	<10	<10	≥750	≥15,180	≥1,720	≥380	<10	≥18,050
Not Economically Disadvantaged	<10	<10	≥690	≥7,820	≥390	≥80	<10	≥8,990
English Learner Status								
Not English Learner	<10	<10	≥1,430	≥22,310	≥1,860	≥350	<10	≥25,960
English Learner	<10	<10	≥10	≥810	≥270	≥110	<10	≥1,210
Migrant Status								
Nonmigrant	<10	<10	≥1,440	≥23,090	≥2,120	≥460	<10	≥27,130
Migrant	<10	<10	<10	≥20	<10	<10	<10	≥30
Section 504 Status								
Non-Section 504	<10	<10	≥1,360	≥20,440	≥1,770	≥390	<10	≥23,970
Section 504	<10	<10	≥80	≥2,670	≥350	≥70	<10	≥3,200
Homeless Status								
Not Homeless	<10	<10	≥1,430	≥22,650	≥2,070	≥450	<10	≥26,620
Homeless	<10	<10	≥10	≥460	≥50	≥10	<10	≥550
Military Affiliation								
Not Military Affiliated	<10	<10	≥1,400	≥22,770	≥2,120	≥470	<10	≥26,770
Military Affiliated	<10	<10	≥40	≥340	≥10	<10	<10	≥400
Foster Care Status								
Not in Foster Care	<10	<10	≥1,440	≥23,050	≥2,110	≥460	<10	≥27,080
Foster Care	<10	<10	<10	≥70	≥10	<10	<10	≥90

*Economic Status was not available for all students.

Table 7.6 Count of Students Administered the Spring 2023 LEAP 2025 Administration: English I Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥1,410	≥18,960	≥1,160	≥260	<10	≥21,800
Gender								
Female	<10	<10	≥810	≥9,660	≥440	≥90	<10	≥11,020
Male	<10	<10	≥590	≥9,290	≥720	≥170	<10	≥10,780
Ethnicity								
Hispanic/Latino	<10	<10	≥210	≥1,700	≥240	≥80	<10	≥2,240
American Indian or Alaska Native	<10	<10	<10	≥120	<10	<10	<10	≥120
Asian	<10	<10	≥70	≥320	<10	<10	<10	≥400
Black or African American	<10	<10	≥470	≥7,800	≥590	≥120	<10	≥9,000
Native Hawaiian or Other Pacific	<10	<10	<10	≥10	<10	<10	<10	≥20
White	<10	<10	≥580	≥8,390	≥290	≥40	<10	≥9,310
Two or More Races	<10	<10	≥60	≥590	≥30	<10	<10	≥690
Education Classification								
Regular Education	<10	<10	≥1,110	≥17,340	≥1,090	≥240	<10	≥19,790
Special Education	<10	<10	≥10	≥590	≥70	≥10	<10	≥700
Gifted or Talented	<10	<10	≥280	≥1,020	<10	<10	<10	≥1,310
Economic Status								
Economically Disadvantaged	<10	<10	≥750	≥12,030	≥970	≥220	<10	≥13,980
Not Economically Disadvantaged	<10	<10	≥650	≥6,820	≥190	≥40	<10	≥7,710
English Learner Status								
Not English Learner	<10	<10	≥1,400	≥18,300	≥960	≥170	<10	≥20,840
English Learner	<10	<10	≥10	≥660	≥200	≥80	<10	≥960
Migrant Status								
Nonmigrant	<10	<10	≥1,410	≥18,930	≥1,160	≥260	<10	≥21,770
Migrant	<10	<10	<10	≥20	<10	<10	<10	≥30
Section 504 Status								
Non-Section 504	<10	<10	≥1,320	≥17,450	≥1,030	≥250	<10	≥20,060
Section 504	<10	<10	≥90	≥1,500	≥130	≥10	<10	≥1,740
Homeless Status								
Not Homeless	<10	<10	≥1,400	≥18,600	≥1,130	≥250	<10	≥21,400
Homeless	<10	<10	≥10	≥350	≥30	≥10	<10	≥400
Military Affiliation								
Not Military Affiliated	<10	<10	≥1,360	≥18,650	≥1,160	≥260	<10	≥21,450
Military Affiliated	<10	<10	≥40	≥300	<10	<10	<10	≥350
Foster Care Status								
Not in Foster Care	<10	<10	≥1,410	≥18,910	≥1,160	≥260	<10	≥21,760
Foster Care	<10	<10	0	≥40	<10	<10	<10	≥40

*Economic Status was not available for all students.

Table 7.7 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: English I Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	5.33	85.09	7.85	1.73	0.00	100
Gender								
Female	0.00	0.00	6.33	86.49	5.90	1.29	0.00	100
Male	0.00	0.00	4.44	83.84	9.59	2.13	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	7.97	75.80	11.99	4.24	0.00	100
American Indian or Alaska Native	0.00	0.00	2.26	87.01	9.04	1.69	0.00	100
Asian	0.00	0.00	18.68	74.47	4.96	1.89	0.00	100
Black or African American	0.00	0.00	4.12	84.09	9.49	2.30	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	4.35	78.26	13.04	4.35	0.00	100
White	0.00	0.00	5.40	88.88	5.18	0.53	0.00	100
Two or More Races	0.00	0.00	7.49	86.14	5.87	0.50	0.00	100
Education Classification								
Regular Education	0.00	0.00	5.22	86.66	6.48	1.63	0.00	100
Special Education	0.00	0.00	0.79	79.18	17.31	2.72	0.00	100
Gifted or Talented	0.00	0.00	21.18	78.07	0.52	0.22	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.00	4.18	84.13	9.56	2.13	0.00	100
Not Economically Disadvantaged	0.00	0.00	7.71	87.03	4.37	0.89	0.00	100
English Learner Status								
Not English Learner	0.00	0.00	5.52	85.93	7.17	1.38	0.00	100
English Learner	0.00	0.00	1.32	67.11	22.40	9.17	0.00	100
Migrant Status								
Nonmigrant	0.00	0.00	5.34	85.11	7.82	1.73	0.00	100
Migrant	0.00	0.00	0.00	74.36	23.08	2.56	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	5.67	85.28	7.41	1.64	0.00	100
Section 504	0.00	0.00	2.78	83.66	11.12	2.44	0.00	100
Homeless Status								
Not Homeless	0.00	0.00	5.39	85.11	7.79	1.71	0.00	100
Homeless	0.00	0.00	2.71	84.09	10.67	2.53	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	5.25	85.08	7.92	1.76	0.00	100
Military Affiliated	0.00	0.00	10.97	86.28	2.74	0.00	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	5.35	85.12	7.80	1.72	0.00	100
Foster Care	0.00	0.00	0.00	76.09	20.65	3.26	0.00	100

*Economic Status was not available for all students.

Table 7.8 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: English I Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	6.49	86.94	5.35	1.22	0.00	100
Gender								
Female	0.00	0.00	7.41	87.72	4.01	0.86	0.00	100
Male	0.00	0.00	5.54	86.14	6.72	1.59	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	9.60	75.72	10.72	3.96	0.00	100
American Indian or Alaska Native	0.00	0.00	3.15	95.28	1.57	0.00	0.00	100
Asian	0.00	0.00	17.33	79.70	1.73	1.24	0.00	100
Black or African American	0.00	0.00	5.24	86.71	6.61	1.43	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	13.04	78.26	8.70	0.00	0.00	100
White	0.00	0.00	6.32	90.13	3.11	0.44	0.00	100
Two or More Races	0.00	0.00	8.93	86.31	4.32	0.43	0.00	100
Education Classification								
Regular Education	0.00	0.00	5.62	87.62	5.51	1.26	0.00	100
Special Education	0.00	0.00	2.42	84.78	10.24	2.56	0.00	100
Gifted or Talented	0.00	0.00	21.82	77.80	0.38	0.00	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.00	5.42	86.05	6.94	1.59	0.00	100
Not Economically Disadvantaged	0.00	0.00	8.51	88.47	2.48	0.54	0.00	100
English Learner Status								
Not English Learner	0.00	0.00	6.73	87.80	4.62	0.86	0.00	100
English Learner	0.00	0.00	1.24	68.39	21.24	9.12	0.00	100
Migrant Status								
Nonmigrant	0.00	0.00	6.49	86.94	5.34	1.23	0.00	100
Migrant	0.00	0.00	3.03	81.82	15.15	0.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	6.60	86.99	5.14	1.27	0.00	100
Section 504	0.00	0.00	5.21	86.33	7.72	0.74	0.00	100
Homeless Status								
Not Homeless	0.00	0.00	6.56	86.93	5.31	1.20	0.00	100
Homeless	0.00	0.00	2.48	87.38	7.43	2.72	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	6.38	86.96	5.41	1.24	0.00	100
Military Affiliated	0.00	0.00	12.89	85.43	1.68	0.00	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	6.50	86.92	5.35	1.23	0.00	100
Foster Care	0.00	0.00	0.00	95.56	4.44	0.00	0.00	100

*Economic Status was not available for all students.

Table 7.9 Count of Students Administered the Spring 2023 LEAP 2025 Administration: English II Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥1,710	≥22,900	≥1,740	<10	≥26,370
Gender								
Female	<10	<10	<10	≥840	≥11,470	≥660	<10	≥12,980
Male	<10	<10	<10	≥870	≥11,430	≥1,070	<10	≥13,380
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥240	≥1,680	≥220	<10	≥2,150
American Indian or Alaska Native	<10	<10	<10	≥10	≥120	<10	<10	≥130
Asian	<10	<10	<10	≥50	≥340	≥10	<10	≥410
Black or African American	<10	<10	<10	≥720	≥9,870	≥980	<10	≥11,570
Native Hawaiian or Other Pacific	<10	<10	<10	<10	≥10	<10	<10	≥20
White	<10	<10	<10	≥620	≥10,180	≥480	<10	≥11,290
Two or More Races	<10	<10	<10	≥50	≥670	≥30	<10	≥750
Education Classification								
Regular Education	<10	<10	<10	≥1,340	≥19,010	≥1,220	<10	≥21,570
Special Education	<10	<10	<10	≥170	≥2,640	≥510	<10	≥3,330
Gifted or Talented	<10	<10	<10	≥190	≥1,240	≥10	<10	≥1,460
Economic Status								
Economically Disadvantaged	<10	<10	<10	≥1,170	≥14,220	≥1,380	<10	≥16,780
Not Economically Disadvantaged	<10	<10	<10	≥530	≥8,580	≥350	<10	≥9,480
English Learner Status								
Not English Learner	<10	<10	<10	≥1,650	≥22,270	≥1,560	<10	≥25,490
English Learner	<10	<10	<10	≥60	≥630	≥180	<10	≥870
Migrant Status								
Nonmigrant	<10	<10	<10	≥1,710	≥22,870	≥1,740	<10	≥26,340
Migrant	<10	<10	<10	<10	≥20	<10	<10	≥20
Section 504 Status								
Non-Section 504	<10	<10	<10	≥1,540	≥20,520	≥1,470	<10	≥23,540
Section 504	<10	<10	<10	≥160	≥2,380	≥270	<10	≥2,830
Homeless Status								
Not Homeless	<10	<10	<10	≥1,680	≥22,590	≥1,700	<10	≥25,980
Homeless	<10	<10	<10	≥30	≥310	≥40	<10	≥380
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥1,690	≥22,570	≥1,730	<10	≥26,000
Military Affiliated	<10	<10	<10	≥20	≥320	<10	<10	≥360
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥1,700	≥22,860	≥1,740	<10	≥26,320
Foster Care	<10	<10	<10	<10	≥30	<10	<10	≥40

*Economic Status was not available for all students.

Table 7.10 Count of Students Administered the Spring 2023 LEAP 2025 Administration: English II Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥1,180	≥14,750	≥850	<10	≥16,790
Gender								
Female	<10	<10	<10	≥600	≥7,690	≥360	<10	≥8,650
Male	<10	<10	<10	≥580	≥7,050	≥490	<10	≥8,130
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥210	≥1,110	≥160	<10	≥1,490
American Indian or Alaska Native	<10	<10	<10	<10	≥90	<10	<10	≥100
Asian	<10	<10	<10	≥30	≥250	<10	<10	≥290
Black or African American	<10	<10	<10	≥470	≥6,010	≥440	<10	≥6,920
Native Hawaiian or Other Pacific	<10	<10	<10	<10	≥10	<10	<10	≥10
White	<10	<10	<10	≥410	≥6,840	≥220	<10	≥7,490
Two or More Races	<10	<10	<10	≥30	≥410	≥10	<10	≥450
Education Classification								
Regular Education	<10	<10	<10	≥1,030	≥13,450	≥760	<10	≥15,260
Special Education	<10	<10	<10	≥30	≥400	≥70	<10	≥500
Gifted or Talented	<10	<10	<10	≥110	≥890	≥10	<10	≥1,020
Economic Status								
Economically Disadvantaged	<10	<10	<10	≥800	≥8,900	≥690	<10	≥10,400
Not Economically Disadvantaged	<10	<10	<10	≥380	≥5,780	≥150	<10	≥6,320
English Learner Status								
Not English Learner	<10	<10	<10	≥1,140	≥14,350	≥710	<10	≥16,210
English Learner	<10	<10	<10	≥40	≥390	≥130	<10	≥580
Migrant Status								
Nonmigrant	<10	<10	<10	≥1,180	≥14,720	≥840	<10	≥16,760
Migrant	<10	<10	<10	<10	≥20	<10	<10	≥30
Section 504 Status								
Non-Section 504	<10	<10	<10	≥1,110	≥13,640	≥760	<10	≥15,530
Section 504	<10	<10	<10	≥70	≥1,100	≥80	<10	≥1,250
Homeless Status								
Not Homeless	<10	<10	<10	≥1,170	≥14,550	≥830	<10	≥16,550
Homeless	<10	<10	<10	≥10	≥190	≥20	<10	≥230
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥1,180	≥14,550	≥840	<10	≥16,580
Military Affiliated	<10	<10	<10	<10	≥190	<10	<10	≥200
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥1,180	≥14,720	≥850	<10	≥16,760
Foster Care	<10	<10	<10	<10	≥20	<10	<10	≥20

*Economic Status was not available for all students.

Table 7.11 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: English II Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.01	6.50	86.86	6.63	0.00	100
Gender								
Female	0.00	0.00	0.02	6.51	88.33	5.15	0.00	100
Male	0.00	0.01	0.00	6.50	85.43	8.06	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	11.40	78.08	10.52	0.00	100
American Indian or Alaska Native	0.00	0.00	0.00	7.25	87.68	5.07	0.00	100
Asian	0.00	0.00	0.00	12.23	83.69	4.08	0.00	100
Black or African American	0.00	0.01	0.02	6.23	85.27	8.47	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	13.64	81.82	4.55	0.00	100
White	0.00	0.00	0.00	5.57	90.17	4.27	0.00	100
Two or More Races	0.00	0.00	0.00	7.25	88.41	4.35	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.00	6.23	88.10	5.66	0.00	100
Special Education	0.00	0.00	0.03	5.17	79.49	15.32	0.00	100
Gifted or Talented	0.00	0.00	0.00	13.61	85.29	1.09	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.00	0.01	6.97	84.78	8.24	0.00	100
Not Economically Disadvantaged	0.00	0.01	0.00	5.67	90.54	3.77	0.00	100
English Learner Status								
Not English Learner	0.00	0.00	0.01	6.49	87.36	6.14	0.00	100
English Learner	0.00	0.00	0.00	6.87	72.16	20.96	0.00	100
Migrant Status								
Nonmigrant	0.00	0.00	0.01	6.51	86.86	6.62	0.00	100
Migrant	0.00	0.00	0.00	0.00	86.21	13.79	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.01	6.57	87.17	6.24	0.00	100
Section 504	0.00	0.00	0.00	5.94	84.24	9.82	0.00	100
Homeless Status								
Not Homeless	0.00	0.00	0.01	6.48	86.94	6.56	0.00	100
Homeless	0.00	0.00	0.00	8.09	80.94	10.97	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.01	6.50	86.80	6.69	0.00	100
Military Affiliated	0.00	0.00	0.00	6.65	90.86	2.49	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.01	6.49	86.88	6.62	0.00	100
Foster Care	0.00	0.00	0.00	14.29	75.51	10.20	0.00	100

*Economic Status was not available for all students.

Table 7.12 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: English II Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.01	7.08	87.84	5.07	0.00	100
Gender								
Female	0.00	0.00	0.01	6.99	88.83	4.17	0.00	100
Male	0.00	0.00	0.00	7.17	86.79	6.04	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	14.46	74.63	10.91	0.00	100
American Indian or Alaska Native	0.00	0.00	0.00	6.48	88.89	4.63	0.00	100
Asian	0.00	0.00	0.00	11.86	85.76	2.37	0.00	100
Black or African American	0.00	0.00	0.00	6.83	86.82	6.35	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	5.26	73.68	21.05	0.00	100
White	0.00	0.00	0.01	5.59	91.42	2.98	0.00	100
Two or More Races	0.00	0.00	0.00	8.10	89.72	2.19	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.01	6.78	88.18	5.03	0.00	100
Special Education	0.00	0.00	0.00	6.73	79.41	13.86	0.00	100
Gifted or Talented	0.00	0.00	0.00	11.63	87.00	1.37	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.00	0.00	7.72	85.61	6.67	0.00	100
Not Economically Disadvantaged	0.00	0.00	0.02	6.01	91.49	2.48	0.00	100
English Learner Status								
Not English Learner	0.00	0.00	0.01	7.03	88.54	4.42	0.00	100
English Learner	0.00	0.00	0.00	8.28	68.28	23.45	0.00	100
Migrant Status								
Nonmigrant	0.00	0.00	0.01	7.08	87.86	5.05	0.00	100
Migrant	0.00	0.00	0.00	3.33	76.67	20.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.01	7.18	87.86	4.95	0.00	100
Section 504	0.00	0.00	0.00	5.72	87.68	6.60	0.00	100
Homeless Status								
Not Homeless	0.00	0.00	0.01	7.08	87.90	5.01	0.00	100
Homeless	0.00	0.00	0.00	6.41	84.19	9.40	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.01	7.13	87.76	5.11	0.00	100
Military Affiliated	0.00	0.00	0.00	2.94	94.61	2.45	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.01	7.08	87.84	5.08	0.00	100
Foster Care	0.00	0.00	0.00	3.85	92.31	3.85	0.00	100

*Economic Status was not available for all students.

Table 7.13 Count of Students Administered the Spring 2023 LEAP 2025 Administration: Algebra I Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	≥80	≥3,700	≥20,740	≥2,990	≥410	<10	≥27,930
Gender								
Female	<10	≥40	≥1,890	≥10,070	≥1,200	≥170	<10	≥13,380
Male	<10	≥30	≥1,800	≥10,660	≥1,790	≥240	<10	≥14,540
Ethnicity								
Hispanic/Latino	<10	<10	≥340	≥2,240	≥380	≥80	<10	≥3,050
American Indian or Alaska Native	<10	<10	≥10	≥130	≥20	<10	<10	≥160
Asian	<10	≥10	≥140	≥250	≥10	<10	<10	≥430
Black or African American	<10	≥10	≥860	≥9,360	≥1,630	≥220	<10	≥12,100
Native Hawaiian or Other Pacific	<10	<10	<10	≥10	<10	<10	<10	≥20
White	<10	≥40	≥2,190	≥8,090	≥860	≥90	<10	≥11,280
Two or More Races	<10	<10	≥130	≥630	≥70	<10	<10	≥860
Education Classification								
Regular Education	<10	≥50	≥2,920	≥16,970	≥2,060	≥300	<10	≥22,310
Special Education	<10	<10	≥80	≥3,130	≥900	≥100	<10	≥4,220
Gifted or Talented	<10	≥20	≥690	≥630	≥30	<10	<10	≥1,390
Economic Status								
Economically Disadvantaged	<10	≥10	≥1,620	≥14,370	≥2,330	≥310	<10	≥18,660
Not Economically Disadvantaged	<10	≥60	≥2,070	≥6,250	≥640	≥90	<10	≥9,130
English Learner Status								
Not English Learner	<10	≥80	≥3,650	≥19,640	≥2,710	≥340	<10	≥26,430
English Learner	<10	<10	≥40	≥1,090	≥280	≥60	<10	≥1,490
Migrant Status								
Nonmigrant	<10	≥80	≥3,690	≥20,700	≥2,980	≥400	<10	≥27,880
Migrant	<10	<10	<10	≥30	<10	<10	<10	≥40
Section 504 Status								
Non-Section 504	<10	≥80	≥3,490	≥18,270	≥2,530	≥350	<10	≥24,720
Section 504	<10	<10	≥210	≥2,470	≥460	≥50	<10	≥3,200
Homeless Status								
Not Homeless	<10	≥80	≥3,680	≥20,330	≥2,920	≥380	<10	≥27,400
Homeless	<10	<10	≥20	≥410	≥70	≥20	<10	≥520
Military Affiliation								
Not Military Affiliated	<10	≥80	≥3,580	≥20,440	≥2,970	≥400	<10	≥27,490
Military Affiliated	<10	<10	≥120	≥290	≥20	<10	<10	≥430
Foster Care Status								
Not in Foster Care	<10	≥80	≥3,700	≥20,670	≥2,970	≥400	<10	≥27,840
Foster Care	<10	<10	<10	≥60	≥10	<10	<10	≥80

*Economic Status was not available for all students.

Table 7.14 Count of Students Administered the Spring 2023 LEAP 2025 Administration: Algebra I Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	≥70	≥3,630	≥15,900	≥1,730	≥210	<10	≥21,570
Gender								
Female	<10	≥30	≥1,870	≥8,140	≥790	≥90	<10	≥10,930
Male	<10	≥40	≥1,750	≥7,760	≥940	≥120	<10	≥10,640
Ethnicity								
Hispanic/Latino	<10	<10	≥310	≥1,280	≥170	≥20	<10	≥1,800
American Indian or Alaska Native	<10	<10	<10	≥110	≥10	<10	<10	≥140
Asian	<10	≥10	≥160	≥170	<10	<10	<10	≥360
Black or African American	<10	≥10	≥850	≥7,060	≥980	≥110	<10	≥9,030
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	≥10
White	<10	≥40	≥2,140	≥6,750	≥510	≥60	<10	≥9,510
Two or More Races	<10	<10	≥130	≥510	≥40	<10	<10	≥700
Education Classification								
Regular Education	<10	≥40	≥2,920	≥14,860	≥1,660	≥200	<10	≥19,700
Special Education	<10	<10	≥50	≥400	≥60	≥10	<10	≥530
Gifted or Talented	<10	≥20	≥650	≥630	≥10	<10	<10	≥1,330
Economic Status								
Economically Disadvantaged	<10	≥10	≥1,560	≥10,580	≥1,350	≥160	<10	≥13,680
Not Economically Disadvantaged	<10	≥60	≥2,060	≥5,240	≥360	≥50	<10	≥7,790
English Learner Status								
Not English Learner	<10	≥70	≥3,600	≥15,580	≥1,640	≥200	<10	≥21,120
English Learner	<10	<10	≥20	≥320	≥90	≥10	<10	≥440
Migrant Status								
Nonmigrant	<10	≥70	≥3,620	≥15,880	≥1,730	≥210	<10	≥21,540
Migrant	<10	<10	<10	≥20	<10	<10	<10	≥30
Section 504 Status								
Non-Section 504	<10	≥70	≥3,460	≥14,620	≥1,540	≥190	<10	≥19,900
Section 504	<10	<10	≥160	≥1,280	≥190	≥20	<10	≥1,670
Homeless Status								
Not Homeless	<10	≥70	≥3,610	≥15,570	≥1,700	≥210	<10	≥21,180
Homeless	<10	<10	≥10	≥330	≥30	<10	<10	≥380
Military Affiliation								
Not Military Affiliated	<10	≥70	≥3,520	≥15,670	≥1,720	≥210	<10	≥21,210
Military Affiliated	<10	<10	≥100	≥230	≥10	<10	<10	≥350
Foster Care Status								
Not in Foster Care	<10	≥70	≥3,620	≥15,870	≥1,730	≥210	<10	≥21,520
Foster Care	<10	<10	<10	≥30	<10	<10	<10	≥40

*Economic Status was not available for all students.

Table 7.15 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: Algebra I Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.29	13.25	74.26	10.73	1.47	0.00	100
Gender								
Female	0.00	0.32	14.15	75.28	8.98	1.27	0.00	100
Male	0.00	0.26	12.43	73.32	12.34	1.65	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.07	11.23	73.51	12.57	2.62	0.00	100
American Indian or Alaska Native	0.00	0.59	6.51	79.29	11.83	1.78	0.00	100
Asian	0.00	4.40	33.33	57.87	3.47	0.93	0.00	100
Black or African American	0.00	0.09	7.17	77.40	13.52	1.83	0.00	100
Native Hawaiian or Other Pacific	0.00	8.70	17.39	65.22	4.35	4.35	0.00	100
White	0.00	0.36	19.45	71.70	7.65	0.83	0.00	100
Two or More Races	0.00	0.58	15.81	73.72	9.07	0.81	0.00	100
Education Classification								
Regular Education	0.00	0.23	13.11	76.06	9.24	1.36	0.00	100
Special Education	0.00	0.05	1.99	74.04	21.42	2.51	0.00	100
Gifted or Talented	0.00	1.94	49.86	45.97	2.16	0.07	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.09	8.69	77.00	12.52	1.70	0.00	100
Not Economically Disadvantaged	0.00	0.71	22.74	68.48	7.08	0.99	0.00	100
English Learner Status								
Not English Learner	0.00	0.31	13.82	74.32	10.26	1.29	0.00	100
English Learner	0.00	0.00	3.15	73.21	19.02	4.62	0.00	100
Migrant Status								
Nonmigrant	0.00	0.29	13.26	74.26	10.72	1.47	0.00	100
Migrant	0.00	0.00	6.82	72.73	18.18	2.27	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.32	14.12	73.88	10.24	1.44	0.00	100
Section 504	0.00	0.03	6.56	77.15	14.55	1.72	0.00	100
Homeless Status								
Not Homeless	0.00	0.30	13.44	74.18	10.67	1.41	0.00	100
Homeless	0.00	0.00	3.80	78.14	13.69	4.37	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.29	13.03	74.37	10.82	1.49	0.00	100
Military Affiliated	0.00	0.23	27.46	67.28	4.81	0.23	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.29	13.29	74.26	10.70	1.47	0.00	100
Foster Care	0.00	1.16	1.16	74.42	20.93	2.33	0.00	100

*Economic Status was not available for all students.

Table 7.16 Reportable Percentage of Students Administered the Spring 2023 LEAP 2025 Administration: Algebra I Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.36	16.83	73.75	8.06	1.01	0.00	100
Gender								
Female	0.00	0.28	17.14	74.49	7.24	0.84	0.00	100
Male	0.00	0.43	16.50	72.99	8.90	1.17	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.11	17.48	71.37	9.66	1.39	0.00	100
American Indian or Alaska Native	0.00	0.00	6.43	81.43	10.00	2.14	0.00	100
Asian	0.00	3.85	44.23	48.63	2.20	1.10	0.00	100
Black or African American	0.00	0.17	9.50	78.17	10.85	1.32	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	50.00	50.00	0.00	0.00	0.00	100
White	0.00	0.46	22.51	70.94	5.41	0.67	0.00	100
Two or More Races	0.00	0.29	19.54	73.04	6.85	0.29	0.00	100
Education Classification								
Regular Education	0.00	0.24	14.83	75.45	8.44	1.04	0.00	100
Special Education	0.00	0.19	10.65	75.51	11.40	2.24	0.00	100
Gifted or Talented	0.00	2.10	48.91	47.78	1.13	0.08	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.10	11.40	77.38	9.92	1.20	0.00	100
Not Economically Disadvantaged	0.00	0.81	26.50	67.32	4.71	0.67	0.00	100
English Learner Status								
Not English Learner	0.00	0.36	17.09	73.78	7.80	0.97	0.00	100
English Learner	0.00	0.00	4.68	72.16	20.49	2.67	0.00	100
Migrant Status								
Nonmigrant	0.00	0.36	16.85	73.75	8.04	1.01	0.00	100
Migrant	0.00	0.00	3.33	70.00	26.67	0.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.38	17.42	73.46	7.78	0.95	0.00	100
Section 504	0.00	0.06	9.75	77.14	11.43	1.62	0.00	100
Homeless Status								
Not Homeless	0.00	0.36	17.06	73.52	8.05	1.01	0.00	100
Homeless	0.00	0.00	4.13	86.30	8.79	0.78	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.35	16.62	73.86	8.14	1.02	0.00	100
Military Affiliated	0.00	0.57	29.18	67.14	3.12	0.00	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.36	16.86	73.73	8.04	1.01	0.00	100
Foster Care	0.00	0.00	2.17	80.43	17.39	0.00	0.00	100

*Economic Status was not available for all students.

Table 7.17 Count of Students Administered the Spring 2023 LEAP 2025 Administration: Geometry Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥90	≥3,250	≥13,580	≥2,220	<10	≥19,150
Gender								
Female	<10	<10	≥40	≥1,650	≥7,110	≥1,130	<10	≥9,940
Male	<10	<10	≥40	≥1,590	≥6,470	≥1,090	<10	≥9,200
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥290	≥1,110	≥230	<10	≥1,640
American Indian or Alaska Native	<10	<10	<10	<10	≥80	≥10	<10	≥100
Asian	<10	<10	≥10	≥140	≥200	≥30	<10	≥400
Black or African American	<10	<10	≥20	≥830	≥5,920	≥1,320	<10	≥8,100
Native Hawaiian or Other Pacific	<10	<10	<10	<10	≥10	<10	<10	≥10
White	<10	<10	≥40	≥1,880	≥5,870	≥550	<10	≥8,350
Two or More Races	<10	<10	<10	≥90	≥360	≥50	<10	≥510
Education Classification								
Regular Education	<10	<10	≥60	≥2,630	≥11,640	≥1,870	<10	≥16,210
Special Education	<10	<10	<10	≥90	≥1,340	≥280	<10	≥1,730
Gifted or Talented	<10	<10	≥20	≥520	≥580	≥60	<10	≥1,210
Economic Status								
Economically Disadvantaged	<10	<10	≥20	≥1,330	≥8,570	≥1,630	<10	≥11,570
Not Economically Disadvantaged	<10	<10	≥60	≥1,910	≥4,940	≥570	<10	≥7,500
English Learner Status								
Not English Learner	<10	<10	≥90	≥3,190	≥13,120	≥2,090	<10	≥18,510
English Learner	<10	<10	<10	≥60	≥450	≥120	<10	≥640
Migrant Status								
Nonmigrant	<10	<10	≥90	≥3,250	≥13,560	≥2,220	<10	≥19,130
Migrant	<10	<10	<10	<10	≥10	<10	<10	≥10
Section 504 Status								
Non-Section 504	<10	<10	≥80	≥3,080	≥12,220	≥2,010	<10	≥17,410
Section 504	<10	<10	<10	≥170	≥1,360	≥200	<10	≥1,740
Homeless Status								
Not Homeless	<10	<10	≥90	≥3,230	≥13,410	≥2,170	<10	≥18,920
Homeless	<10	<10	<10	≥10	≥160	≥40	<10	≥230
Military Affilitation								
Not Military Affiliated	<10	<10	≥80	≥3,170	≥13,410	≥2,160	<10	≥18,840
Military Affiliated	<10	<10	<10	≥80	≥160	≥50	<10	≥300
Foster Care Status								
Not in Foster Care	<10	<10	≥90	≥3,250	≥13,560	≥2,220	<10	≥19,130
Foster Care	<10	<10	<10	<10	<10	<10	<10	≥20

*Economic Status was not available for all students.

Table 7.18 Count of Students Administered the Spring 2023 LEAP 2025 Administration: Geometry Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥70	≥3,110	≥11,620	≥1,790	<10	≥16,610
Gender								
Female	<10	<10	≥30	≥1,600	≥6,290	≥950	<10	≥8,890
Male	<10	<10	≥40	≥1,500	≥5,320	≥840	<10	≥7,720
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥240	≥830	≥160	<10	≥1,250
American Indian or Alaska Native	<10	<10	<10	≥10	≥50	<10	<10	≥70
Asian	<10	<10	≥10	≥130	≥170	≥20	<10	≥350
Black or African American	<10	<10	≥10	≥730	≥4,920	≥1,020	<10	≥6,700
Native Hawaiian or Other Pacific	<10	<10	<10	<10	≥10	<10	<10	≥20
White	<10	<10	≥40	≥1,910	≥5,270	≥520	<10	≥7,750
Two or More Races	<10	<10	<10	≥70	≥340	≥40	<10	≥460
Education Classification								
Regular Education	<10	<10	≥50	≥2,550	≥10,850	≥1,680	<10	≥15,140
Special Education	<10	<10	<10	≥30	≥220	≥40	<10	≥300
Gifted or Talented	<10	<10	≥20	≥520	≥540	≥50	<10	≥1,160
Economic Status								
Economically Disadvantaged	<10	<10	≥10	≥1,200	≥7,080	≥1,240	<10	≥9,560
Not Economically Disadvantaged	<10	<10	≥50	≥1,890	≥4,480	≥530	<10	≥6,980
English Learner Status								
Not English Learner	<10	<10	≥70	≥3,080	≥11,440	≥1,720	<10	≥16,330
English Learner	<10	<10	<10	≥20	≥180	≥60	<10	≥280
Migrant Status								
Nonmigrant	<10	<10	≥70	≥3,110	≥11,610	≥1,790	<10	≥16,600
Migrant	<10	<10	<10	<10	<10	<10	<10	≥10
Section 504 Status								
Non-Section 504	<10	<10	≥70	≥2,960	≥10,840	≥1,670	<10	≥15,560
Section 504	<10	<10	<10	≥140	≥780	≥120	<10	≥1,050
Homeless Status								
Not Homeless	<10	<10	≥70	≥3,100	≥11,490	≥1,760	<10	≥16,440
Homeless	<10	<10	<10	≥10	≥130	≥20	<10	≥170
Military Affiliation								
Not Military Affiliated	<10	<10	≥70	≥3,040	≥11,510	≥1,730	<10	≥16,380
Military Affiliated	<10	<10	<10	≥60	≥100	≥60	<10	≥230
Foster Care Status								
Not in Foster Care	<10	<10	≥70	≥3,110	≥11,600	≥1,790	<10	≥16,590
Foster Care	<10	<10	<10	<10	≥20	<10	<10	≥20

*Economic Status was not available for all students.

Table 7.19 Reportable Percentage of Students Administered the Spring 2023 Administration: Geometry Form H

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.04	0.47	16.98	70.90	11.61	0.00	100
Gender								
Female	0.00	0.04	0.44	16.65	71.47	11.39	0.00	100
Male	0.00	0.03	0.50	17.34	70.28	11.85	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.30	17.64	67.82	14.23	0.00	100
American Indian or Alaska Native	0.00	0.00	0.00	10.19	74.07	15.74	0.00	100
Asian	0.00	1.75	3.50	35.00	52.00	7.75	0.00	100
Black or African American	0.00	0.00	0.25	10.29	73.08	16.38	0.00	100
Native Hawaiian or Other Pacific	0.00	0.00	5.56	27.78	66.67	0.00	0.00	100
White	0.00	0.00	0.55	22.51	70.28	6.65	0.00	100
Two or More Races	0.00	0.00	0.77	17.53	70.52	11.18	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.38	16.23	71.83	11.55	0.00	100
Special Education	0.00	0.00	0.00	5.66	77.87	16.46	0.00	100
Gifted or Talented	0.00	0.58	2.31	43.20	48.47	5.44	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.00	0.20	11.53	74.12	14.15	0.00	100
Not Economically Disadvantaged	0.00	0.09	0.88	25.49	65.82	7.71	0.00	100
English Learner Status								
Not English Learner	0.00	0.04	0.49	17.24	70.91	11.32	0.00	100
English Learner	0.00	0.00	0.00	9.46	70.54	20.00	0.00	100
Migrant Status								
Nonmigrant	0.00	0.04	0.47	17.00	70.88	11.61	0.00	100
Migrant	0.00	0.00	0.00	0.00	89.47	10.53	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.03	0.48	17.71	70.18	11.60	0.00	100
Section 504	0.00	0.06	0.34	9.75	78.08	11.76	0.00	100
Homeless Status								
Not Homeless	0.00	0.04	0.48	17.09	70.90	11.49	0.00	100
Homeless	0.00	0.00	0.00	8.15	70.82	21.03	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.04	0.47	16.82	71.19	11.49	0.00	100
Military Affiliated	0.00	0.00	0.65	26.80	53.27	19.28	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.04	0.47	16.99	70.89	11.61	0.00	100
Foster Care	0.00	0.00	0.00	13.04	78.26	8.70	0.00	100

*Economic Status was not available for all students.

Table 7.20 Reportable Percentage of Students Administered the Spring 2023 Administration: Geometry Form J

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.04	0.47	18.75	69.95	10.79	0.00	100
Gender								
Female	0.00	0.04	0.38	18.08	70.81	10.68	0.00	100
Male	0.00	0.04	0.57	19.52	68.97	10.91	0.00	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.32	19.76	66.88	13.04	0.00	100
American Indian or Alaska Native	0.00	0.00	0.00	13.70	78.08	8.22	0.00	100
Asian	0.00	1.40	2.80	38.94	49.30	7.56	0.00	100
Black or African American	0.00	0.01	0.28	10.89	73.54	15.27	0.00	100
Native Hawaiian or Other Pacific	0.00	4.35	4.35	21.74	52.17	17.39	0.00	100
White	0.00	0.00	0.53	24.64	68.02	6.81	0.00	100
Two or More Races	0.00	0.00	0.65	16.09	74.13	9.13	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.34	16.85	71.68	11.12	0.00	100
Special Education	0.00	0.32	0.00	11.69	72.08	15.91	0.00	100
Gifted or Talented	0.00	0.52	2.24	45.35	46.82	5.08	0.00	100
Economic Status								
Economically Disadvantaged	0.00	0.01	0.20	12.64	74.11	13.04	0.00	100
Not Economically Disadvantaged	0.00	0.09	0.84	27.18	64.21	7.68	0.00	100
English Learner Status								
Not English Learner	0.00	0.04	0.47	18.89	70.03	10.57	0.00	100
English Learner	0.00	0.00	0.71	10.32	65.48	23.49	0.00	100
Migrant Status								
Nonmigrant	0.00	0.04	0.47	18.75	69.95	10.79	0.00	100
Migrant	0.00	0.00	0.00	25.00	66.67	8.33	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.04	0.49	19.07	69.66	10.74	0.00	100
Section 504	0.00	0.00	0.19	14.06	74.26	11.49	0.00	100
Homeless Status								
Not Homeless	0.00	0.04	0.47	18.86	69.87	10.75	0.00	100
Homeless	0.00	0.00	0.00	8.57	77.14	14.29	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.04	0.46	18.60	70.31	10.58	0.00	100
Military Affiliated	0.00	0.00	0.84	28.99	44.96	25.21	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.04	0.47	18.77	69.93	10.79	0.00	100
Foster Care	0.00	0.00	0.00	7.69	80.77	11.54	0.00	100

*Economic Status was not available for all students.

Tables 7.21 through 7.24 summarize the mean scale scores, standard deviations, and the percentage of students in each achievement level for the 2022-2023 administration of the LEAP 2025 high school ELA and mathematics assessments. All three administrations are presented.

Table 7.21 Comparison of Percentage of Students in Each Achievement Level: English I

	Year	Administration	Form	*N*	Scale Score		Percentage in Achievement Level				
					Mean	SD	1	2	3	4	5
All	2022	Fall	E	≥440	702.69	33.66	54.8	23.0	13.0	6.9	2.2
			F	≥9,320	720.91	41.14	37.0	22.3	15.5	18.7	6.5
	2023	Spring	H	≥27,170	736.88	38.85	18.1	21.7	22.1	28.9	9.2
			J	≥21,800	745.28	37.33	12.1	17.4	25.0	34.7	10.8
	2023	Summer	DR	≥3,170	693.58	23.19	60.2	30.8	7.6	1.4	0.0
First-Time Testers	2022	Fall	E	≥170	723.16	38.87	33.0	20.7	23.5	17.3	5.6
			F	≥5,260	742.88	39.08	14.2	19.0	23.4	32.0	11.4
	2023	Spring	H	≥24,980	740.19	38.01	14.9	20.8	23.3	31.1	9.9
			J	≥20,550	747.74	36.25	9.9	16.6	25.6	36.4	11.4
	2023	Summer	D	≥160	708.34	32.19	42.2	30.1	15.1	12.7	0.0
Retesters	2022	Fall	E	≥260	688.31	19.84	70.7	24.3	4.9	0.0	0.0
			F	≥3,710	689.80	18.96	70.8	25.6	3.3	0.3	0.0
	2023	Spring	H	≥1,610	690.75	18.86	66.8	29.5	3.5	0.2	0.0
			J	≥760	691.65	20.65	64.3	30.3	4.7	0.7	0.0
	2023	Summer	D	≥2,900	691.90	21.54	62.3	31.0	6.4	0.3	0.0
Previously Passed	2022	Fall	E	<10	NR	NR	NR	NR	NR	NR	NR
			F	≥340	720.98	27.76	21.1	38.3	24.9	14.6	1.2
	2023	Spring	H	≥570	722.59	29.97	19.9	38.7	23.7	15.4	2.4
			J	≥480	725.61	33.26	22.6	27.2	29.7	17.0	3.5
	2023	Summer	D	≥100	716.99	29.16	30.8	26.9	27.9	14.4	0.0

Levels: 1 = *Unsatisfactory*, 2 = *Approaching Basic*, 3 = *Basic*, 4 = *Mastery*, 5 = *Advanced*

Table 7.22 Comparison of Percentage of Students in Each Achievement Level: English II

	Year	Administration	Form	*N*	Scale Score		Percentage in Achievement Level				
					Mean	SD	1	2	3	4	5
All	2022	Fall	E	≥400	705.80	45.77	54.5	16.6	11.4	12.1	5.4
			F	≥8,950	730.02	52.94	32.9	14.3	15.2	23.8	13.7
	2023	Spring	H	≥26,370	739.31	47.57	21.7	16.1	19.8	29.3	13.1
			J	≥16,790	747.99	44.96	14.9	14.1	20.5	35.3	15.1
	2023	Summer	D	≥1,360	679.49	26.66	76.8	17.9	3.8	1.2	0.3
First-Time Testers	2022	Fall	E	≥190	731.38	48.56	26.0	21.9	16.8	24.5	10.7
			F	≥6,650	747.72	48.08	16.8	14.5	18.6	31.6	18.5
	2023	Spring	H	≥25,400	741.32	46.92	20.0	15.9	20.2	30.3	13.6
			J	≥16,270	749.70	44.13	13.4	14.0	20.8	36.2	15.6
	2023	Summer	D	≥70	709.07	42.53	48.6	16.2	16.2	14.9	4.1
Retesters	2022	Fall	E	≥200	680.06	23.13	82.6	11.9	5.0	0.5	0.0
			F	≥2,160	676.10	23.64	83.0	13.0	3.4	0.6	0.0
	2023	Spring	H	≥770	678.47	25.37	77.7	17.8	3.8	0.8	0.0
			J	≥370	680.58	26.81	77.1	16.3	5.3	1.1	0.3
	2023	Summer	D	≥1,270	677.53	24.19	78.7	17.8	3.1	0.4	0.0
Previously Passed	2022	Fall	E	<10	NR	NR	NR	NR	NR	NR	NR
			F	≥130	722.24	28.64	20.5	28.8	35.6	15.2	0.0
	2023	Spring	H	≥190	718.07	33.04	29.9	28.4	27.3	10.8	3.6
			J	≥130	729.66	35.52	20.1	22.3	29.5	25.2	2.9
	2023	Summer	D	≥20	695.25	32.44	60.0	35.0	0.0	0.0	5.0

Levels: 1 = *Unsatisfactory*, 2 = *Approaching Basic*, 3 = *Basic*, 4 = *Mastery*, 5 = *Advanced*

Table 7.23 Comparison of Percentage of Students in Each Achievement Level: Algebra I

	Year	Administration	Form	*N*	Scale Score		Percentage in Achievement Level				
					Mean	SD	1	2	3	4	5
All	2022	Fall	D	≥6,620	725.72	34.14	22.4	33.3	21.0	21.1	2.2
			E	≥250	707.91	25.94	40.9	38.5	13.1	7.5	0.0
	2023	Spring	H	≥27,930	737.51	37.64	15.5	25.7	24.4	28.7	5.7
			J	≥21,570	744.69	37.22	8.4	25.9	24.3	34.1	7.4
	2023	Summer	D	≥2,300	706.33	19.93	35.3	47.5	15.3	1.9	0.1
First-Time Testers	2022	Fall	D	≥3,520	743.10	34.61	10.1	21.7	26.0	38.2	4.0
			E	≥110	718.49	28.01	27.8	35.7	20.0	16.5	0.0
	2023	Spring	H	≥26,050	739.43	37.62	14.1	24.6	25.0	30.2	6.0
			J	≥20,410	746.39	37.00	7.5	24.6	24.7	35.5	7.7
	2023	Summer	D	≥180	713.47	26.57	31.0	40.8	17.4	9.8	1.1
Retesters	2022	Fall	D	≥2,780	704.36	18.41	38.3	47.3	13.7	0.6	0.0
			E	≥120	699.50	19.34	52.0	40.9	7.1	0.0	0.0
	2023	Spring	H	≥990	702.30	19.51	45.5	44.1	9.1	1.3	0.0
			J	≥580	704.22	19.11	33.7	55.2	9.8	1.2	0.0
	2023	Summer	D	≥2,030	705.64	18.88	35.9	48.0	15.0	1.1	0.0
Previously Passed	2022	Fall	D	≥310	719.55	25.57	20.5	40.4	28.2	9.9	1.0
			E	≥10	693.10	30.19	50.0	40.0	10.0	0.0	0.0
	2023	Spring	H	≥870	720.60	29.19	23.4	36.4	25.5	13.3	1.4
			J	≥580	725.41	29.37	15.2	42.1	23.6	17.2	1.9
	2023	Summer	D	≥80	707.56	24.48	28.2	50.6	16.5	4.7	0.0

Levels: 1 = *Unsatisfactory*, 2 = *Approaching Basic*, 3 = *Basic*, 4 = *Mastery*, 5 = *Advanced*

Table 7.24 Comparison of Percentage of Students in Each Achievement Level: Geometry

	Year	Administration	Form	*N*	Scale Score		Percentage in Achievement Level				
					Mean	SD	1	2	3	4	5
All	2022	Fall	D	≥4,970	736.67	28.23	6.8	28.9	31.9	26.7	5.7
			E	≥160	718.10	24.47	16.0	54.4	17.2	11.2	1.2
	2023	Spring	H	≥19,150	734.31	29.96	11.4	31.1	28.5	22.5	6.5
			J	≥16,610	737.97	30.09	8.5	27.9	30.7	25.4	7.5
	2023	Summer	D	≥490	710.27	17.12	18.7	65.0	14.5	1.8	0.0
First-Time Testers	2022	Fall	D	≥4,490	739.41	27.59	5.2	25.7	33.8	29.1	6.2
			E	≥120	722.46	25.74	10.9	51.6	21.1	14.8	1.6
	2023	Spring	H	≥18,930	734.57	29.96	11.2	30.8	28.7	22.7	6.6
			J	≥16,420	738.22	30.10	8.3	27.6	30.8	25.7	7.6
	2023	Summer	D	≥80	714.30	22.17	15.1	58.1	18.6	8.1	0.0
Retesters	2022	Fall	D	≥340	706.76	16.28	25.1	65.7	8.6	0.6	0.0
			E	≥30	705.41	12.25	31.3	65.6	3.1	0.0	0.0
	2023	Spring	H	≥80	704.20	14.86	38.6	55.7	4.5	1.1	0.0
			J	≥60	709.34	19.29	29.0	54.8	14.5	0.0	1.6
	2023	Summer	D	≥370	708.86	15.55	20.1	67.0	12.6	0.3	0.0
Previously Passed	2022	Fall	D	≥130	721.92	24.44	14.5	41.2	30.5	11.5	2.3
			E	<10	NR	NR	NR	NR	NR	NR	NR
	2023	Spring	H	≥130	717.95	22.18	21.9	47.4	23.4	5.8	1.5
			J	≥130	720.21	19.76	14.6	46.7	31.4	6.6	0.7
	2023	Summer	D	≥30	714.95	16.94	13.2	60.5	23.7	2.6	0.0

Levels: 1 = *Unsatisfactory*, 2 = *Approaching Basic*, 3 = *Basic*, 4 = *Mastery*, 5 = *Advanced*

7.2 Reports

Score reports are the primary means of communicating test scores to appropriate school system personnel (e.g., testing coordinators or superintendents), teachers, and parents. Standard 6.10 of the *Standards* states:

> When test score information is released, those responsible for testing programs should provide interpretations appropriate to the audience. The interpretations should describe in simple language what the test covers, what scores represent, the precision/reliability of the scores, and how scores are intended to be used (119).

Standard 5.1 is related to Standard 6.10. It states:

> Test users should be provided with clear explanations of the characteristics, meaning, and intended interpretation of scale scores, as well as their limitations (102).

Interpretations of test scores from each administration are disseminated in two ways: the individual score report and the *LEAP Interpretive Guide*.

In addition to providing interpretations of test results, the LDOE and DRC must ensure that those interpretations are understandable for the target audience. Standard 7.0 states:

> Information relating to tests should be clearly documented so that those who use tests can make informed decisions regarding which test to use for a specific purpose, how to administer the chosen test, and how to interpret test scores (125).

The LDOE and DRC strive to create documents that will be accessible to parents, teachers, and all other stakeholders.

The Individual Student-Level Report (ISR) is the primary means for sharing student test results with parents. As such, it is a stand-alone document from which parents can glean information that is relevant to understanding their children's test scores. For more information about the test, parents are provided Parent Guide to the LEAP 2025 Student Reports. In the 2022-2023 administration year, student reports for each school were posted by subject, then downloaded and printed from DRC INSIGHT Portal by the school systems and schools. DRC INSIGHT Portal is DRC's secure online system that provides schools and districts access to student tests and reports.

7.3 Description of Each Type of Report

In this section, descriptions of the School Roster Report and the ISR are provided.

In compliance with AERA, APA, & NCME (2014) Standard 12.18, the LEAP 2025 score reports provide clear information about the results of individual students and of specific groups of students. Standard 12.18 states:

> In educational settings, score reports should be accompanied by a clear presentation of information on how to interpret the scores, including the degree of measurement error associated with each score or classification level, and by supplementary information related to group summary scores. In addition, dates of test administration and relevant norming studies should be included in score reports (200).

School Roster Report

A School Roster Report, which provides summary information about student performance on the LEAP 2025 high school ELA and mathematics assessments, is available to school systems and schools through DRC INSIGHT Portal. Total test scores and achievement level indicators are shown for the test of interest. Category and subcategory performance ratings are also reported for students. At the school level, the percentage of students at each achievement level and rating by category and subcategory are summarized. More details can be found in the LEAP 2025 Interpretive Guide.

Individual Student-Level Report

The ISR is another type of report available through the DRC INSIGHT Portal system. ISRs may be downloaded and printed by schools to be sent home to parents. At the top of the page, overall student performance is reported by scale score and achievement level. In the middle of the page, category and subcategory performance indicators are reported. When a student does not receive a scale score, their achievement level will be left blank. ISRs for students whose scores were invalidated will display a blank scale score for a given course.

A data file referred to as Louisiana Department of Education Student File (LDESTD) was provided to LDOE by DRC. It contains one record for every student tested; each record contains demographic information, responses for multiple-choice (MC) items, scores for items that are not MC items, raw scores, content and process standard raw scores, scale scores, and performance-level data for each content area.

The LEAP Interpretive Guide was written to help Louisiana school system and school administrators, teachers, parents, and the general public understand the LEAP 2025 ELA and mathematics tests. The *LEAP Interpretive*

Guide was developed collaboratively by DRC and LDOE staff. LDOE staff had opportunities to review the guide, provide feedback, and give final approval.

The LEAP Interpretive Guide has three sections. The first section presents an introduction and an overview of key terms and test-related concepts. The second section discusses assessment terms and types of scores that are presented on the ISRs. Sample ISRs are included in the guide. The third section discusses information that is presented on the School Roster Report and an example of the report.

7.4 Summary

In summary, the overall purpose of reporting test results is to communicate information on student performance to stakeholders. These results are presented in the context of score reports that aid the user in understanding the meaning of the test scores. The reports and ancillary information developed by DRC address multiple best practices of the testing industry but are particularly related to the following standards:

> *Standard 5.1* Test users should be provided with clear explanations of the characteristics, meaning, and intended interpretation of scale scores, as well as their limitations (102).
>
> *Standard 6.10* When test score information is released, those responsible for testing programs should provide interpretations appropriate to the audience. The interpretations should describe in simple language what the test covers, what scores represent, the precision/reliability of the scores, and how scores are intended to be used (119).
>
> *Standard 7.0* Information relating to tests should be clearly documented so that those who use tests can make informed decisions regarding which test to use for a specific purpose, how to administer the chosen test, and how to interpret test scores (125).
>
> *Standard 12.18* In educational settings, score reports should be accompanied by a clear presentation of information on how to interpret the scores, including the degree of measurement error associated with each score or classification level, and by supplementary information related to group summary scores. In addition, dates of test administration and relevant norming studies should be included in score reports (200).

Chapter 8: Performance-Level Setting

This chapter briefly describes the LEAP 2025 high school performance-level setting and presents the cut scores and achievement-level descriptors derived from the performance-level setting. Since the LDOE used PARCC cut scores for the LEAP 2025 high school tests, a brief overview of the PARCC performance-level setting procedures is included in this chapter. A more detailed discussion and the results of the PARCC performance-level setting may be found in the *Performance Level Setting Technical Report* (Pearson, 2015).

The AERA, APA, & NCME (2014) *Standards* addressed by the *Performance Level Setting Technical Report* (Pearson, 2015) are 5.21 and 5.22.

Starting in the 2017–2018 administrations, the LEAP 2025 High School assessments measured different content and constructs than did previous tests administered to Louisiana students. The new tests were built using the PARCC item bank and were fully aligned to the Louisiana Student Standards. The new tests were reported on new scales, and students were classified by achievement levels based on their knowledge and ability to perform different tasks in relation to the new test content and standards.

In terms of the validity of the LEAP 2025 test scores, it is essential to understand that descriptors and cut scores are established in a collaborative and participatory process. The descriptors clearly establish, in plain language, the proper frame of reference for understanding how to interpret test scores, particularly cut scores.

8.1 PARCC Performance-Level Setting Process for English Language Arts and Mathematics

According to the *Performance Level Setting Technical Report* (Pearson, 2015), PARCC used the evidence-based standard setting (EBSS) method (Beimers, Way, McClarty, & Miles, 2012) for the PARCC performance-level setting (PLS) process. The EBSS method is used to combine various considerations into the process for setting performance levels, including policy considerations, content standards, research, and educator judgment about what students should know and be able to demonstrate to support PARCC's policy goals related to college- and career-readiness expectations. Additional details about the EBSS method can be found in the *Performance Level Setting Technical Report* (Pearson, 2015).

8.2 Cut Scores

This section presents the cut scores for each grade and content area of the LEAP 2025 High School assessments. Table 8.1 summarizes the cut scores.

Table 8.1 LEAP 2025 High School Assessment Cut Scores

Content	Approaching Basic	Basic	Mastery	Advanced
English I	700	725	750	791
English II	700	725	750	794
Algebra I	700	725	750	805
Geometry	700	725	750	783

8.3 Category Cut Scores

As stated in Chapter 6, section "Category- and Subcategory-Level Subscores," student performance on ELA and mathematics reporting categories and subcategories was classified into one of three performance ratings: *Strong*, *Moderate*, and *Weak*. Detailed rules for calculating performance ratings for ELA and mathematics categories and subcategories can be found in that section.

8.4 Achievement-Level Definitions

The cut scores divide the continuum of student achievement into the following five achievement levels used by LDOE for reporting purposes:

- *Advanced*: Students performing at this level have **exceeded** college- and career-readiness expectations and are well prepared for the next level of study in this content area.
- *Mastery*: Students performing at this level have **met** college- and career-readiness expectations and are prepared for the next level of study in this content area.
- *Basic*: Students performing at this level have **nearly met** college- and career-readiness expectations and may need additional support to be fully prepared for the next level of study in this content area.
- *Approaching Basic*: Students performing at this level have **partially met** college- and career-readiness expectations and will need much support to be prepared for the next level of study in this content area.
- *Unsatisfactory*: Students performing at this level have **not yet met** the college- and career-readiness expectations and will need extensive support to be prepared for the next level of study in this content area.

Table 8.2 summarizes the LEAP 2025 High School scale-score ranges for each level of achievement.

Table 8.2 Achievement-Level Scale-Score Ranges

Content	Unsatisfactory	Approaching Basic	Basic	Mastery	Advanced
English I	650–699	700–724	725–749	750–790	791–850
English II	650–699	700–724	725–749	750–793	794–850
Algebra I	650–699	700–724	725–749	750–804	805–850
Geometry	650–699	700–724	725–749	750–782	783–850

8.5 Summary

This chapter presented a brief overview of PARCC's performance-level setting process, which set the cut scores used by LDOE for reporting student performance on the LEAP 2025 High School tests. These procedures are addressed in more detail in relevant technical reports.

The performance-level setting process undertaken by PARCC addresses the following standards:

> *Standard 5.21* When proposed score interpretations involve one or more cut scores, the rationale and procedures used for establishing cut scores should be documented clearly (107).
>
> *Standard 5.22* When cut scores defining pass-fail or proficiency levels are based on direct judgments about the adequacy of item or test performances, the judgmental process should be designed so that the participants providing the judgments can bring their knowledge and experience to bear in a reasonable way (108).

Chapter 9: Evidence of Construct-Related Validity

Evidence for construct-related validity—the meaning of test scores and the inferences they support—is the central concept underlying the LEAP 2025 validation process. Validity evidence, from the design of the test to item development and scoring, is created throughout the entire assessment process. Therefore, evidence of validity is described throughout the LEAP 2025 technical report. Table 9.1 summarizes the sources of validity evidence and indicates where the evidence can be found in the technical report.

Table 9.1 Evidence of Validity and the Corresponding Technical Report Chapter

Source of Validity	Related Information	Related Chapter/Source
Evidence Based on Test Content	Item Development Process	Chapter 3 2022-2023 LEAP 2025 High School ELA and Mathematics Assessment Frameworks
	Test Blueprint and Item Alignment to Curriculum and Standards	Chapter 3 2022-2023 LEAP 2025 High School ELA and Mathematics Assessment Frameworks
	Item Bias, Sensitivity, and Content Appropriateness	Chapter 3
	Accommodations	Chapters 3 and 4
Evidence Based on Response Processes	Testing Time	Chapter 4
	Evaluation of the criteria used by hand scorers	Spring 2023 LEAP 2025 Handscoring Specifications Chapter 5
	Features Scored by Artificial Intelligence (AI) Engines	2023 LEAP 2025 Handscoring Specifications Chapter 5
Evidence Based on Internal Structure	Inter-rater Agreement	Chapter 5
	Reliability and Standard Errors of Measurement	Chapter 9
	Decision Accuracy	Chapter 9
	Dimensionality	Chapter 9
	Differential Item Functioning	Chapter 10
	Student Group Reliability	Chapter 10
Evidence Based on Relations to Other Variables	Convergent and Divergent Validity	Chapter 9

Source of Validity	Related Information	Related Chapter/Source
Evidence Based on the Consequences of Testing	Scale Score and Performance Level Information	Chapter 7
	Test Interpretive Guide	Chapter 4

In this chapter, DRC presents evidence of construct-related validity through studies of test reliability, convergent validity, and divergent validity All analyses in this chapter are based on the initial who were administered the English language version of the form. Since the summer administration is made up of primarily a re-test population, summer results are not reported.

Chapter 9 of this report demonstrates adherence to the American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (AERA, APA, & NCME, 2014) Standards 1.13, 1.21, 2.0, 2.3, 2.13, 2.14, 2.16, and 2.19. Each standard is discussed in the pertinent section of this chapter.

9.1 Construct-Irrelevant Variance and Construct Underrepresentation

Minimization of construct-irrelevant variance and construct underrepresentation is addressed in the following steps of the test development process: (1) specification, (2) item writing, (3) review, (4) field-testing, (5) test construction, and (6) item calibration (see Chapter 3 for more information on steps 1–5 and Chapter 6 for more information on step 6).

Construct-irrelevant variance refers to error variance that is caused by factors unrelated to the constructs measured by the test. For example, when tests are not administered under standardized conditions (e.g., one administration may be timed, but another administration is untimed), differences in student performance related to different administration conditions may result. Careful specification of content and review of the items representing that content are first steps in minimizing construct-irrelevant variance. Then, empirical evidence, especially item-level data, is used to infer construct irrelevance.

Construct underrepresentation occurs when the content of the assessment does not reflect the full range of content that the assessment is expected to cover. Specification and review, a process through which test blueprints are developed and reviewed, are primary steps in the development process designed to ensure that content is appropriately represented.

9.2 Reliability

Reliability refers to the consistency of students' test scores on parallel forms of a test. A reliable test is one that produces scores that are expected to be relatively stable if the test is administered repeatedly under similar conditions. Often, however, it is impractical to administer multiple forms of the test, and reliability is estimated on a single administration of the test. This type of reliability, known as internal consistency, provides an estimate of how consistently examinees perform across items within a test during a single test administration (Crocker & Algina, 1986). Reliability is a necessary, but not sufficient, condition of validity.

The 2014 *Standards* indicates the following:

> The term *reliability* has been used in two ways in the measurement literature. First, the term has been used to refer to the reliability coefficients of classical test theory, defined as the

> correlation between scores on two equivalent forms of the test, presuming that taking one form has no effect on performance on the second form. Second, the term has been used in a more general sense, to refer to the consistency of scores across replications of a testing procedure, regardless of how this consistency is estimated or reported (e.g., in terms of standard errors, reliability coefficients per se, generalizability coefficients, error/tolerance ratios, item response theory (IRT) information functions, or various indices of classification consistency) (33).

In accordance with the *Standards* in developing and maintaining tests of the highest quality, DRC has calculated the reliability of each LEAP 2025 test in a variety of ways: reliability of raw scores, overall standard error of measurement (SEM), IRT-based conditional SEM, and decision consistency of achievement-level classifications.

There are several specific standards that this chapter addresses. These include Standards 2.0, 2.3, 2.13, and 2.19, each of which is articulated below.

> *Standard 2.0* Appropriate evidence of reliability/precision should be provided for the interpretation for each intended score use (42).

> *Standard 2.3* For each total score, subscore, or combination of scores that is to be interpreted, estimates of relevant indices of reliability/precision should be reported (43).

The total score reliabilities are discussed in Section 9.3 of this chapter. The category and subcategory reliabilities and SEMs are presented in Sections 9.11 and 9.4 and 9.11. The SEM of the total score is discussed in Section 9.4.

> *Standard 2.13* The standard error of measurement, both overall and conditional (if reported), should be provided in units of each reported score (45).

The SEM based on raw scores is discussed in Section 9.3 and is reported in raw score units. The conditional SEM is discussed in Section 9.5 and is presented in scale score units.

> *Standard 2.19* Each method of quantifying the reliability/precision of scores should be described clearly and expressed in terms of statistics appropriate to the method. The sampling procedures used to select test takers for reliability/precision analyses and the descriptive statistics on these samples, subject to privacy obligations where applicable, should be reported (47).

Section 9.3 discusses different ways of measuring test reliability, including reliability of raw scores and test-form SEM, IRT-based conditional SEM, and decision consistency of achievement-level classifications. These statistics were computed based on initial testers. Since the summer forms are primarily administered to students retesting, statistics for the summer form will not be reported. The summer form had been previously administered to a spring or fall population; therefore, the form's reliability information can be found in earlier technical reports.

9.3 Test Reliability

The reliability of raw scores by test form was evaluated using Cronbach's (1951) coefficient alpha, which is a lower-bound estimate of test reliability. The reliability coefficient is a ratio of the variance of true test scores to the variance of the total observed scores, with the values ranging from 0 to 1. The closer the value of the reliability coefficient is to 1, the more consistent the scores, where 1 refers to a

perfectly consistent test. In general, reliability coefficients that are equal to or greater than 0.8 are considered acceptable for tests of moderate lengths.

Cronbach's coefficient alpha was computed using the formula

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum_{i=1}^{n} \sigma_i^2}{\sigma_X^2}\right], \quad (9.1)$$

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

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

The reliability coefficients for the fall and spring LEAP 2025 HS assessments are reported in Table 9.2. English I and English II have one writing component (RI or RL) that has the same score as another component (WE). The item score for the RI/RL writing component was excluded from the reliability computation. The reliability statistics ranged from 0.85 to 0.92 and from 0.89 to 0.93 for the fall and spring administrations, respectively. The two administrations had very similar reliability statistics. These results indicate acceptable reliability coefficients for the LEAP 2025 high school tests.

Table 9.2 Reliability

Administration	Course	Form	Number of Items	Number of Score Points	SEM	Cronbach's Alpha	N-Count
Fall 2022	English I	E	32	86	5.18	0.92	≥170
		F	32	86	5.77	0.92	≥5,120
	English II	E	32	86	5.66	0.91	≥190
		F	32	86	5.77	0.92	≥6,640
	Algebra I	D	39	68	3.81	0.90	≥3,450
		E	39	68	3.12	0.85	≥110
	Geometry	D	39	68	3.70	0.92	≥4,480
		E	39	68	3.23	0.91	≥120

Administration	Course	Form	Number of Items	Number of Score Points	SEM	Cronbach's Alpha	N-Count
Spring 2023	English I	H	32	86	5.71	0.90	≥22,970
		J	32	86	5.61	0.89	≥19,380
	English II	H	32	86	5.79	0.90	≥25,370
		J	32	86	5.76	0.89	≥16,260
	Algebra I	H	39	68	3.63	0.92	≥24,110
		J	39	68	3.82	0.92	≥19,510
	Geometry	H	38	68	3.96	0.92	≥18,820
		J	38	68	4.00	0.93	≥16,410

The reliability statistics by subgroup are reported and discussed in Chapter 10.

9.4 Standard Error of Measurement

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

$$\text{SEM} = SD\sqrt{1 - R_{xx'}}\,, \tag{9.2}$$

where SD represents standard deviation of the raw score distribution, and $R_{xx'}$ is estimated by $\hat{\alpha}$ as expressed in Equation 9.1.

The SEM at the test-form level was computed in raw score metric and is also presented in Table 9.2. With English I and English II, the raw score used to calculate the SD included the RI/RL component and weighting of WE.

9.5 Conditional Standard Error of Measurement

In contrast to SEM, conditional standard error of measurement (CSEM) expresses the degree of measurement error in scale score units and is conditioned on the ability of the student. DRC reports the CSEM in accordance with Standard 2.14, which states:

> When possible and appropriate, conditional standard errors of measurement should be reported at several score levels unless there is evidence that the standard error is constant across score levels. Where cut scores are specified for selection or classification, the standard errors of measurement should be reported in the vicinity of each cut score (46).

In further compliance with Standard 2.14, the CSEM of each cut score is reported in Table 9.3.

The CSEMs are defined as the reciprocal of the square root of the test information function and can be estimated across all points of the ability continuum (Hambleton & Swaminathan, 1985). The CSEM is defined in the following equation:

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

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

$$I(\theta_i) = \sum_j \frac{p'_{ij}(\theta_i)^2}{p_{ij}(\theta_i) q_{ij}(\theta_i)}, \quad (9.4)$$

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

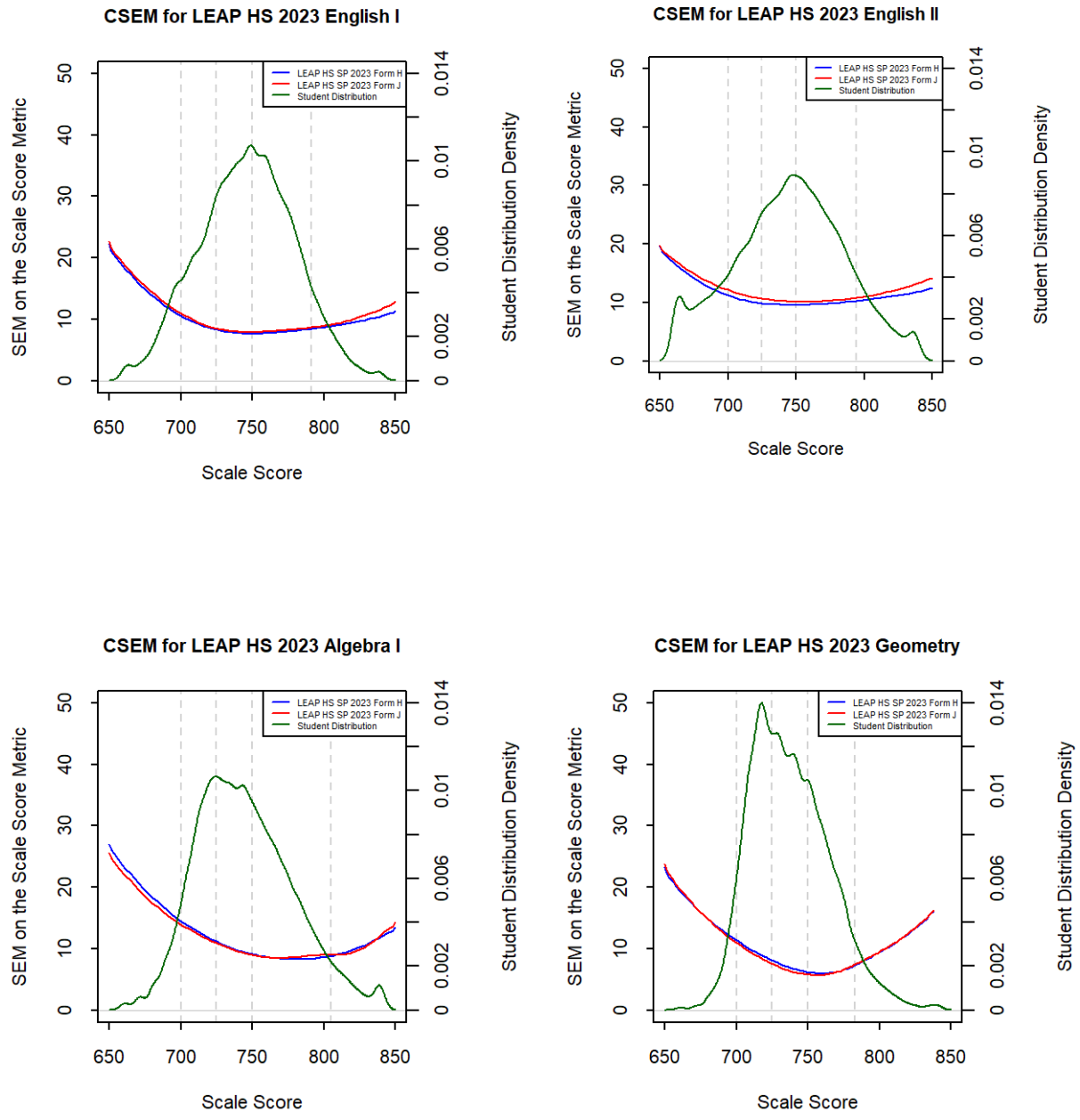
Note that the CSEMs vary in magnitude across the entire range of student ability estimates (i.e., scale scores) and are smaller in the middle of the score distribution and larger at the tails. This pattern is expected when IRT methods are used. Since LEAP 2025 was first administered, every effort has been made to make the TCC and CSEM values at the cut scores between the PARCC assessments and the LEAP 2025 assessments similar. Both TCC and CSEM values have been similar across the LEAP 2025 alternate forms given the same content because similar or the same statistical properties are important for alternate forms. To provide context regarding the magnitude of the CSEMs, it is important to also refer to sections 9.3 Test Reliability and 9.6 Classification Accuracy and Consistency where evidence is provided of high measures of form reliability and levels of accurate student classification at the cutpoints to support the use of the LEAP 2025 assessments. The CSEMs at the four cut scores that define the performance levels are presented in Table 9.3.

Table 9.3 Conditional Standard Errors of Measurement at the *Approaching Basic*, *Basic*, *Mastery*, and *Advanced* Cut Scores

			Approaching Basic		*Basic*		*Mastery*		*Advanced*	
Administration	**Course**	**Form**	**Cut Score**	**CSEM**	**Cut Score**	**CSEM**	**Cut Score**	**CSEM**	**Cut Score**	**CSEM**
Fall 2022	English I	F	700	8	725	7	750	7	791	9
		E	700	9	725	7	750	7	791	8
	English II	E	700	10	725	9	750	9	794	11
		F	700	10	725	9	750	9	794	9
	Algebra I	D	700	14	725	11	750	9	805	9
		E	700	14	725	11	750	9	805	8
	Geometry	D	700	13	725	8	750	6	783	6
		E	700	13	725	8	750	6	783	6
Spring 2023	English I	H	700	11	725	8	750	8	791	8
		J	700	11	725	8	750	8	791	9
	English II	H	700	11	725	10	750	10	794	10
		J	700	12	725	11	750	10	794	11
	Algebra I	H	700	16	725	12	750	10	805	9
		J	700	16	725	12	750	10	805	10
	Geometry	H	700	15	725	10	750	7	783	8
		J	700	13	725	8	750	6	783	8

Figure 9.1 displays the CSEM curves for each subject area as well as the student ability distribution. With fixed-form assessments, the estimates of measurement error tend to be higher at the low and high ends of the scale-score range, where few items measure the ability levels. Generally, there are few students with extreme scores, and these score levels cannot be estimated as accurately as levels toward the middle of the ability range. The middle of the ability range, where cut scores are located, shows lower measurement error than the low and high ends of the ability ranges. Figure 9.1 demonstrates that the tests are designed so that measurement error is minimized in the middle of the scale range, where most students are located.

Figure 9.1 CSEM Curves for LEAP High School Spring 2023



9.6 Classification Accuracy and Consistency

Classification Accuracy

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

Classification Consistency

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

The Livingston-Lewis (1995) methodology was used to calculate classification accuracy statistics based on the spring 2023 LEAP 2025 results. The Livingston-Lewis procedure utilizes a beta-binomial model that requires two steps: (1) fitting proportion-correct true scores to a four-parameter beta distribution and (2) using the binomial distribution to estimate classification accuracy and consistency. All calculations for classification accuracy and consistency are based on census data.

Classification consistency and classification accuracy conditioned on achievement level (sees Table 9.4 and 9.5) and on cut score (see Tables 9.6 and 9.7) are presented for the 2023 LEAP 2025 high school ELA and mathematics assessments in this section of the report. The magnitude of classification consistency and accuracy measures is influenced by several key features of a test's design, including the number of items, the location and number of cut scores, the score distribution, and the reliability and associated SEM. As seen in Table 9.4, classification accuracy conditioned on achievement level ranged from 0.24 to 0.92. As seen in Table 9.5, classification consistency conditioned on achievement level ranged from 0.24 to 0.88. For some mathematics tests, classification accuracy and consistency conditioned on the *Unsatisfactory* level were very low. A possible reason for these relatively low *Unsatisfactory* level values is the fact that there were not enough easy items to distinguish the *Unsatisfactory* level from the *Approaching Basic* performance level.

Table 9.4 Classification Accuracy Conditioned on Level of Achievement

Classification Accuracy							
Administration	**Course**	**Form**	**Unsatisfactory**	**Approaching Basic**	**Basic**	**Mastery**	**Advanced**
Fall 2022	English I	E	0.74	0.65	0.71	0.80	0.80
		F	0.76	0.70	0.69	0.79	0.75
	English II	E	0.83	0.57	0.60	0.66	0.87
		F	0.83	0.62	0.61	0.70	0.85
	Algebra I	D	0.54	0.53	0.65	0.87	0.69
		E	0.30	0.51	0.59	0.84	0.60
	Geometry	D	0.32	0.68	0.73	0.85	0.75
		E	0.24	0.67	0.71	0.85	0.74
Spring 2023	English I	H	0.86	0.41	0.50	0.52	0.84
		J	0.79	0.46	0.48	0.49	0.90
	English II	H	0.84	0.51	0.46	0.67	0.83
		J	0.88	0.38	0.40	0.50	0.87
	Algebra I	H	0.89	0.37	0.57	0.80	0.75
		J	0.92	0.34	0.50	0.79	0.75
	Geometry	H	0.90	0.45	0.63	0.79	0.73
		J	0.85	0.55	0.71	0.81	0.78

Table 9.5 Classification Consistency Conditioned on Level of Achievement

Classification Consistency							
Administration	**Course**	**Form**	**Unsatisfactory**	**Approaching Basic**	**Basic**	**Mastery**	**Advanced**
Fall 2022	English I	E	0.69	0.54	0.57	0.71	0.76
		F	0.73	0.57	0.56	0.69	0.70
	English II	E	0.80	0.46	0.46	0.56	0.79
		F	0.81	0.49	0.48	0.62	0.74
	Algebra I	D	0.49	0.40	0.51	0.82	0.67
		E	0.37	0.35	0.43	0.77	0.58
	Geometry	D	0.42	0.50	0.61	0.77	0.73
		E	0.39	0.48	0.59	0.77	0.71
Spring 2023	English I	H	0.71	0.35	0.42	0.52	0.61
		J	0.68	0.35	0.38	0.47	0.71
	English II	H	0.81	0.37	0.37	0.54	0.75
		J	0.81	0.30	0.31	0.43	0.71
	Algebra I	H	0.86	0.26	0.41	0.74	0.74
		J	0.88	0.24	0.39	0.71	0.70
	Geometry	H	0.87	0.31	0.52	0.69	0.71
		J	0.80	0.41	0.59	0.74	0.73

Perhaps the most important indices for accountability systems are those for the accuracy and consistency of classification decisions made at specific cut points. To evaluate decisions at specific cut points, the joint distribution of all the performance levels is collapsed into a dichotomized distribution around that specific cut point. As an example, for the LEAP 2025 assessments, a dichotomization at the cut point between the *Basic* and *Mastery* classifications was formed. The proportion of correct classifications below this particular cut point is equal to the sum of all the cells at the *Unsatisfactory*, *Approaching Basic*, and *Basic* levels, and the proportion of correct classifications above this particular cut point is equal to the sum of all the cells at the *Mastery* and *Advanced* levels. Table 9.6 shows the classification accuracy statistics and Table 9.7 shows the classification consistency estimates when conditioned on LEAP 2025 High School cut scores. Table 9.6 shows that classification accuracy at achievement cut points ranged from 0.81 to 0.98. Table 9.7 shows that classification consistency conditioned at achievement cut points ranged from 0.77 to 0.97. Classification consistency and accuracy at achievement cut points tend to be higher values than those conditioned on performance level.

The classification accuracy statistics are at or above 0.81, while the classification consistency statistics are at or above 0.77. These results suggest that consistent and accurate performance-level classifications are being made for students in Louisiana based on the LEAP 2025 High School assessments.

Table 9.6 Classification Accuracy at Achievement Cut Points

Classification Accuracy						
Administration	**Course**	**Form**	***Unsatisfactory/ Approaching Basic***	***Approaching Basic/ Basic***	***Basic/ Mastery***	***Mastery/ Advanced***
Fall 2022	English I	E	0.96	0.93	0.92	0.94
		F	0.95	0.93	0.91	0.95
	English II	E	0.97	0.98	0.93	0.86
		F	0.97	0.97	0.94	0.86
	Algebra I	D	0.93	0.91	0.90	0.98
		E	0.91	0.88	0.88	0.97
	Geometry	D	0.94	0.90	0.92	0.97
		E	0.94	0.89	0.92	0.97
Spring 2023	English I	H	0.90	0.97	0.97	0.81
		J	0.91	0.96	0.97	0.83
	English II	H	0.94	0.95	0.93	0.89
		J	0.93	0.97	0.95	0.85
	Algebra I	H	0.91	0.92	0.93	0.98
		J	0.91	0.92	0.93	0.98
	Geometry	H	0.91	0.91	0.94	0.98
		J	0.92	0.91	0.94	0.98

Table 9.7 Classification Consistency at Achievement Cut Points

Classification Consistency						
Administration	**Course**	**Form**	***Unsatisfactory/ Approaching Basic***	***Approaching Basic/ Basic***	***Basic/ Mastery***	***Mastery/ Advanced***
Fall 2022	English I	E	0.94	0.91	0.88	0.91
		F	0.93	0.90	0.88	0.92
	English II	E	0.96	0.96	0.90	0.81
		F	0.97	0.96	0.91	0.81
	Algebra I	D	0.90	0.87	0.86	0.97
		E	0.88	0.83	0.83	0.96
	Geometry	D	0.91	0.86	0.89	0.96
		E	0.90	0.85	0.89	0.96
Spring 2023	English I	H	0.87	0.94	0.95	0.77
		J	0.88	0.94	0.95	0.77
	English II	H	0.92	0.92	0.89	0.85
		J	0.90	0.94	0.92	0.81
	Algebra I	H	0.87	0.88	0.91	0.97
		J	0.88	0.88	0.91	0.97
	Geometry	H	0.88	0.88	0.92	0.97
		J	0.88	0.87	0.91	0.97

9.7 Convergent Validity

Convergent validity is a subtype of construct validity that can be estimated by the extent to which measures of constructs that theoretically should be related to each other are, in fact, observed as related to each other. Analyses of the internal structure of a test can indicate the extent to which the relationships among test items conform to the construct the test purports to measure. For example, the LEAP 2025 geometry test is designed to measure a single overall construct—geometry achievement; therefore, the items comprising the LEAP 2025 Geometry test should measure only geometry, not language or reading.

This technical report summarizes additional statistics that contribute to construct validity (Cronbach's coefficient alpha is reported previously in this section, and item fit is reported in Chapter 6). The internal consistency coefficient (i.e., Cronbach's alpha) reported is typically measured via correlations among the test items and indicates the degree of the same general construct (Pearson, 2015, page 128). The reliability statistics shown in Table 9.2 are all above 0.84, indicating that items on the 2023 LEAP 2025 High School assessments are homogeneous. For a group of items to be homogeneous, the items must all measure the same construct (i.e., construct validity) or represent the same content domain (i.e., content validity). Because IRT models were used to calibrate test items and to report student scores, item fit is also relevant to construct validity. The extent to which test items function as the IRT model prescribes is relevant to the validation of test scores.

9.8 Principal Components Analysis

As another measure of construct validity, DRC examined the unidimensionality of each subject-level LEAP 2025 test. One of the underlying assumptions of the IRT models used to scale the LEAP 2025 tests is that the tests being calibrated are unidimensional; that is, items in each subject area measure a single content domain. For example, Algebra I items should measure algebra ability and not reading skills. Standard 1.13 of the *Standards* states:

> If the rationale for a test score interpretation for a given use depends on premises about the relationships among test items or among parts of the test, evidence concerning the internal structure of the test should be provided (26–27).

This section examines the internal structure of the LEAP 2025 tests by evaluating the unidimensionality assumption through principal components analysis (PCA), which is one of the frequently used methods to do so (Chou and Wang, 2010). This analysis seeks evidence that there exists a single primary factor, the first principal component, which accounts for much of the relationship between items. The presence of a single or dominant factor suggests that a test is sufficiently unidimensional (i.e., that it measures one underlying construct).

A PCA was conducted for each subject of the LEAP 2025 assessments. A large first principal component is evident in each analysis. It is common to have additional eigenvalues greater than 1.0, which may suggest the presence of other factors. For the subjects of the LEAP 2025 assessments, the ratio of variance accounted for by the first factor to variance accounted for by the second factor is sufficiently large to indicate that the unidimensionality assumption holds. All the LEAP 2025 High School tests exhibit first principal components accounting for more than 20% of the test variance (

Table 9.8 through Table 9.11), except for the Algebra I fall 2022 administration of Form E. Reckase (1979) proposed that the first component should account for at least 20% of the variance to claim unidimensionality.

To further investigate the unidimensionality of the assessments, the ratio of the first eigenvalue to the second eigenvalue was found and is included in the row below the second component in each table. When the first eigenvalue is sufficiently larger than the second eigenvalue, that is considered evidence of unidimensionality (Lord, 1980, Lumsden, 1957, 1961). These ratios show that the first eigenvalue is at least four times as large as the second eigenvalue for the LEAP 2025 assessments, with the exception of 3.45 for fall Form E Algebra I. This substantial difference in magnitude indicates that one factor appears to be dominant and that the LEAP 2025 High School tests are essentially unidimensional.

This evidence supports the claim that there is a dominant dimension underlying the items and tasks in each test and that scores from each test represent performance primarily determined by that ability. Construct-irrelevant variance, such as factual knowledge irrelevant to doing well in a subject, does not appear to create significant nuisance factors.

Table 9.8 Principal Component Analysis: English I

Administration	Form	Components	Eigenvalue	Percentage of Variance Explained	Cumulative Percentage of Variance Explained
Fall 2022	E	First Component	9.92	30.99	30.99
		Second Component	1.65	5.15	36.14
		Ratio (First/Second)	6.02		
	F	First Component	9.38	29.32	29.32
		Second Component	1.46	4.57	33.88
		Ratio (First/Second)	6.42		
Spring 2023	H	First Component	8.25	25.79	25.79
		Second Component	1.48	4.62	30.41
		Ratio (First/Second)	5.58		
	J	First Component	7.51	23.46	23.46
		Second Component	1.48	4.62	28.09
		Ratio (First/Second)	5.07		

Table 9.9 Principal Component Analysis: English II

Administration	Form	Components	Eigenvalue	Percentage of Variance Explained	Cumulative Percentage of Variance Explained
Fall 2022	E	First Component	9.11	28.48	28.48
		Second Component	1.62	5.07	33.55
		Ratio (First/Second)	5.62		
	F	First Component	9.50	29.69	29.69
		Second Component	1.35	4.21	33.90
		Ratio (First/Second)	7.05		
Spring 2023	H	First Component	8.32	25.99	25.99
		Second Component	1.44	4.50	30.49
		Ratio (First/Second)	5.78		
	J	First Component	7.53	23.53	23.53
		Second Component	1.43	4.46	27.99
		Ratio (First/Second)	5.27		

Table 9.10 Principal Component Analysis: Algebra I

Administration	Form	Components	Eigenvalue	Percentage of Variance Explained	Cumulative Percentage of Variance Explained
Fall 2022	D	First Component	8.92	22.86	22.86
		Second Component	1.31	3.35	26.21
		Ratio (First/Second)	6.82		
	E	First Component	7.30	18.71	18.71
		Second Component	2.13	5.46	24.17
		Ratio (First/Second)	3.43		
Spring 2023	H	First Component	9.90	25.38	25.38
		Second Component	1.34	3.43	28.82
		Ratio (First/Second)	7.39		
	J	First Component	9.72	24.91	24.91
		Second Component	1.45	3.72	28.64
		Ratio (First/Second)	6.69		

Table 9.11 Principal Component Analysis: Geometry

Administration	Form	Components	Eigenvalue	Percentage of Variance Explained	Cumulative Percentage of Variance Explained
Fall 2022	D	First Component	10.80	27.70	27.70
		Second Component	1.48	3.81	31.51
		Ratio (First/Second)	7.28		
	E	First Component	10.60	27.18	27.18
		Second Component	2.28	5.85	33.02
		Ratio (First/Second)	4.65		
Spring 2023	H	First Component	10.51	27.66	27.66
		Second Component	1.14	3.00	30.66
		Ratio (First/Second)	9.22		
	J	First Component	11.59	30.50	30.50
		Second Component	1.11	2.93	33.43
		Ratio (First/Second)	10.40		

9.9 Analyses by Reporting Categories and Subcategories

Three sets of analyses were conducted at the reporting category and subcategory levels for ELA and mathematics content in another attempt to assess the construct validity of the LEAP 2025 assessments. First, correlation coefficients that measure the relationship between the category scores and subcategory scores were computed. Second, the reliability of each category and subcategory was computed. Finally, the SEM was computed for each reportable category and subcategory.

9.10 Correlations among Reporting Categories and Subcategories

This section reports the strength of the interrelationships among the reporting categories or subcategories by computing the correlation between them. Table 9.12 through Table 9.19 report the uncorrected Pearson product-moment (PPM) correlation coefficients, the PPM corrected for attenuation (CAPPM). The PPM among the categories and subcategories is presented below the diagonal portion of the matrix, the CAPPM is presented above the diagonal portion of the matrix, and the reliability coefficients used are shown in Table 9.12 through Table 9.19.

The uncorrected PPM in Table 9.12 through Table 9.19 should be interpreted in the context of the reliability coefficient. In general, lower PPM coefficients are expected between variables that are less reliable. In most cases, the PPM coefficients show that performance on one category or subcategory is moderately to strongly related to performance on another category or subcategory within the same grade and content area. The value of the correlation coefficients will be affected by the limited number of items measuring each category or subcategory. Therefore, caution should be used when comparing the PPM coefficients that measure the relationships between categories or subcategories to those that measure the relationships between content areas. A more modest relationship (i.e., smaller correlation coefficients) is expected to be reported between the categories or subcategories as a consequence of the lower number of items measuring each of the reporting categories. The PPM between two category subscores, for example, may be artificially low because of measurement error.

The CAPPM is reported along with the PPM as indicated by Standard 1.21:

> When statistical adjustments, such as those for restriction of range or attenuation, are made, both adjusted and unadjusted coefficients, as well as the specific procedure used, and all statistics used in the adjustment, should be reported. Estimates of the construct-criterion relationship that remove the effects of measurement error on the test should be clearly reported as adjusted estimates (29).

The attenuation of the PPM can be corrected statistically using Spearman's formula:

$$CAPPM = \frac{r_{xy}}{\sqrt{r_{xx} r_{yy}}}, \tag{9.5}$$

where r_{xy} is the PPM between two categories or GLE strands, r_{xx} is the reliability of one of those categories or GLE strands, and r_{yy} is the reliability of the other category or GLE strand.

The English I and English II assessments show moderate relationships between the reading and writing categories, indicating that these two categories measure some different traits. Across all tables, the CAPPM indicates moderate or strong relationships between the subcategories. The CAPPM for reading vocabulary, written expression, and knowledge and use of language are moderate. In some cases, the

CAPPM is greater than 1.0. “Disattenuated values greater than 1.00 indicate that measurement error is not randomly distributed” (Schumacker, 1996). The moderate or strong relationships suggested by the CAPPM in Table 9.12 through Table 9.19 are further evidence of the validity of the test construct. Since the overall content area is comprised of the category or subcategory subscores and the content area is expected to measure a single dimension, these subscores are expected to be moderately or highly related.

Table 9.12 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Categories: English I

Administration	Form	No.	Category	N Items	1	2
Fall 2022	E	1	Reading	29	.	0.83
		2	Writing	4	0.76	.
	F	1	Reading	30	.	0.84
		2	Writing	4	0.77	.
Spring 2023	H	1	Reading	30	.	0.84
		2	Writing	4	0.75	.
	J	1	Reading	29	.	0.81
		2	Writing	4	0.71	.

Table 9.13 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Subcategories: English I

	Subcategory Uncorrected and Corrected Correlation Coefficients: English I								
Administration	Form	No.	Subcategory	N Items	1	2	3	4	5
Fall 2022	E	1	Reading Literary Text	11	.	0.96	1.01	0.80	0.78
		2	Reading Information Text	12	0.74	.	1.03	0.94	0.93
		3	Reading Vocabulary	6	0.72	0.72	.	0.79	0.82
		4	Written Expression	2	0.65	0.76	0.59	.	1.07
		5	Written Knowledge & Use of Language	2	0.65	0.76	0.62	0.93	.
	F	1	Reading Literary Text	8	.	1.06	1.02	0.98	0.96
		2	Reading Information Text	13	0.77	.	1.02	0.90	0.88
		3	Reading Vocabulary	9	0.70	0.76	.	0.74	0.73
		4	Written Expression	2	0.75	0.75	0.59	.	1.08
		5	Written Knowledge & Use of Language	2	0.74	0.74	0.58	0.96	.
Spring 2023	H	1	Reading Literary Text	11	.	1.03	1.01	0.94	0.92
		2	Reading Information Text	10	0.72	.	1.02	0.95	0.94
		3	Reading Vocabulary	9	0.69	0.67	.	0.76	0.75
		4	Written Expression	2	0.73	0.71	0.55	.	1.17
		5	Written Knowledge & Use of Language	2	0.71	0.70	0.54	0.97	.
	J	1	Reading Literary Text	11	.	1.00	0.97	0.84	0.82
		2	Reading Information Text	11	0.67	.	1.00	1.01	0.99
		3	Reading Vocabulary	7	0.62	0.61	.	0.77	0.75
		4	Written Expression	2	0.61	0.70	0.51	.	1.25
		5	Written Knowledge & Use of Language	2	0.61	0.69	0.51	0.95	.

Table 9.14 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Categories: English II

Administration	Form	No.	Category	N Items	1	2
Fall 2022	E	1	Reading	29	.	0.90
		2	Writing	4	0.81	.
	F	1	Reading	30	.	0.86
		2	Writing	4	0.79	.
Spring 2023	H	1	Reading	30	.	0.83
		2	Writing	4	0.75	.
	J	1	Reading	29	.	0.79
		2	Writing	4	0.69	.

Table 9.15 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Subcategories: English II

	Subcategory Uncorrected and Corrected Correlation Coefficients: English II								
Administration	Form	No.	Subcategory	N Items	1	2	3	4	5
Fall 2022	E	1	Reading Literary Text	10	.	1.02	0.97	0.87	0.84
		2	Reading Information Text	11	0.72	.	1.07	1.08	1.05
		3	Reading Vocabulary	8	0.68	0.72	.	0.88	0.86
		4	Written Expression	2	0.69	0.83	0.66	.	1.12
		5	Written Knowledge & Use of Language	2	0.67	0.81	0.65	0.97	.
	F	1	Reading Literary Text	8	.	1.07	1.03	0.99	0.98
		2	Reading Information Text	13	0.76	.	0.99	0.91	0.90
		3	Reading Vocabulary	9	0.70	0.75	.	0.77	0.77
		4	Written Expression	2	0.75	0.76	0.61	.	1.08
		5	Written Knowledge & Use of Language	2	0.74	0.75	0.62	0.96	.
Spring 2023	H	1	Reading Literary Text	8	.	1.04	1.02	0.94	0.93
		2	Reading Information Text	13	0.73	.	1.01	0.91	0.90
		3	Reading Vocabulary	9	0.66	0.69	.	0.74	0.74
		4	Written Expression	2	0.70	0.72	0.54	.	1.12
		5	Written Knowledge & Use of Language	2	0.70	0.71	0.54	0.95	.
	J	1	Reading Literary Text	12	.	1.01	0.98	0.79	0.78
		2	Reading Information Text	11	0.69	.	1.05	0.96	0.94
		3	Reading Vocabulary	6	0.61	0.62	.	0.77	0.75
		4	Written Expression	2	0.59	0.69	0.50	.	1.19
		5	Written Knowledge & Use of Language	2	0.59	0.67	0.50	0.94	.

Table 9.16 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Categories: Algebra I

Administration	Form	No.	Category	N Items	1	2	3	4
Fall 2022	D	1	Major Content	22	.	0.99	0.97	0.96
		2	Additional & Supporting Content	10	0.73	.	0.99	0.87
		3	Expressing Mathematical Reasoning	3	0.70	0.67	.	0.93
		4	Modeling & Application	4	0.72	0.61	0.65	.
	E	1	Major Content	22	.	1.00	0.88	0.99
		2	Additional & Supporting Content	10	0.56	.	0.99	1.04
		3	Expressing Mathematical Reasoning	3	0.52	0.47	.	1.05
		4	Modeling & Application	4	0.72	0.61	0.65	.
Spring 2023	H	1	Major Content	22	.	1.01	0.99	0.95
		2	Additional & Supporting Content	10	0.78	.	0.99	0.92
		3	Expressing Mathematical Reasoning	3	0.75	0.72	.	0.98
		4	Modeling & Application	4	0.76	0.71	0.73	.
	J	1	Major Content	22	.	1.01	0.99	0.97
		2	Additional & Supporting Content	10	0.77	.	0.96	0.92
		3	Expressing Mathematical Reasoning	3	0.74	0.67	.	1.04
		4	Modeling & Application	4	0.77	0.69	0.75	.

Table 9.17 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Categories: Geometry

Administration	Form	No.	Category	N Items	1	2	3	4
Fall 2022	D	1	Major Content	19	.	0.99	1.02	0.92
		2	Additional & Supporting Content	13	0.76	.	1.00	0.94
		3	Expressing Mathematical Reasoning	3	0.76	0.68	.	1.09
		4	Modeling & Application	4	0.73	0.68	0.76	.
	E	1	Major Content	19	.	1.05	1.01	0.94
		2	Additional & Supporting Content	13	0.74	.	1.08	1.01
		3	Expressing Mathematical Reasoning	3	0.77	0.70	.	0.93
		4	Modeling & Application	4	0.73	0.67	0.68	.
Spring 2023	H	1	Major Content	19	.	1.00	1.00	1.02
		2	Additional & Supporting Content	13	0.77	.	0.97	1.00
		3	Expressing Mathematical Reasoning	3	0.80	0.72	.	1.05
		4	Modeling & Application	3	0.79	0.72	0.79	.
	J	1	Major Content	19	.	0.99	1.02	1.02
		2	Additional & Supporting Content	13	0.81	.	0.97	1.00
		3	Expressing Mathematical Reasoning	3	0.82	0.76	.	1.05
		4	Modeling & Application	3	0.78	0.75	0.77	.

Table 9.18 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Subcategories: Algebra I

Administration	Form	No.	Subcategory	N Items	1	2	3
Fall 2022	D	1	A1	6	.	1.07	1.03
		2	A2	7	0.58	.	1.11
		3	A3	6	0.55	0.56	.
	E	1	A1	7	.	1.18	1.26
		2	A2	6	0.44	.	1.40
		3	A3	6	0.52	0.41	.
Spring 2023	H	1	A1	6	.	1.03	1.05
		2	A2	7	0.55	.	1.11
		3	A3	6	0.53	0.61	.
	J	1	A1	6	.	1.01	1.08
		2	A2	6	0.50	.	1.04
		3	A3	7	0.57	0.63	.

Table 9.19 Uncorrected Correlation Coefficient (below Diagonal) and Corrected Correlation Coefficient (above Diagonal) among Categories: Geometry

Administration	Form	No.	Subcategory	N Items	1	2
Fall 2022	D	1	A1	11	.	1.01
		2	A2	8	0.74	.
	E	1	A1	11	.	1.06
		2	A2	8	0.71	.
Spring 2023	H	1	A1	10	.	0.98
		2	A2	9	0.70	.
	J	1	A1	11	.	1.01
		2	A2	8	0.74	.

9.11 Reliability of Reporting Categories, or Subcategories

Raw score summary statistics (i.e., mean and standard deviation), Cronbach's (1951) coefficient alpha, and SEM were computed for each of the categories or subcategories by subject using the census data. These statistics are presented in Tables 9.20 through 9.27. Reliability indices, such as Cronbach's coefficient alpha (and resulting SEM), are a function of the number of items on a test, the average covariance between item pairs, and the variance of a test's total score. In general, it is expected that the coefficient alpha would be lower for a category or subcategory assessed by a small number of items than for a category or subcategory assessed by a larger number of items.

9.12 Standard Error of Measurement of Reporting Categories or Subcategories

This chapter also reports the SEM associated with each of the categories and subcategories in Table 9.20 through Table 9.27. These SEMs are reported in the raw score metric.

Table 9.20 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of English I Categories

Administration	Form	Category	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	E	Reading	29	60	22.38	12.47	4.06	0.89
		Writing	4	30	6.42	7.13	1.73	0.94
	F	Reading	30	64	30.83	13.25	4.43	0.89
		Writing	4	30	11.70	8.05	1.70	0.96
Spring 2023	H	Reading	30	64	26.16	12.11	4.47	0.86
		Writing	4	30	9.11	7.02	1.77	0.94
	J	Reading	29	60	25.71	10.68	4.23	0.84
		Writing	4	30	11.18	7.20	2.16	0.91

Table 9.21 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of English I Subcategories

Admin.	Form	Subcategory	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	E	Reading Literary Text	11	22	8.91	5.17	2.39	0.79
		Reading Information Text	12	26	8.17	5.32	2.62	0.76
		Reading Vocabulary	6	12	5.29	3.23	1.92	0.65
		Written Expression	2	24	4.80	5.48	2.10	0.85
		Knowledge & Use of Language	2	6	1.62	1.75	0.61	0.88
	F	Reading Literary Text	8	18	7.99	4.01	2.32	0.67
		Reading Information Text	13	28	13.29	6.21	2.84	0.79
		Reading Vocabulary	9	18	9.55	4.29	2.34	0.70
		Written Expression	2	24	8.83	6.20	2.05	0.89
		Knowledge & Use of Language	2	6	2.87	1.91	0.64	0.89
Spring 2023	H	Reading Literary Text	11	24	10.56	5.18	2.69	0.73
		Reading Information Text	10	22	7.86	4.41	2.53	0.67
		Reading Vocabulary	9	18	7.74	3.96	2.36	0.64
		Written Expression	2	24	6.84	5.35	2.21	0.83
		Knowledge & Use of Language	2	6	2.27	1.71	0.72	0.82
	J	Reading Literary Text	11	22	10.18	4.57	2.48	0.70
		Reading Information Text	11	24	9.46	4.43	2.69	0.63
		Reading Vocabulary	7	14	6.07	3.24	2.09	0.59
		Written Expression	2	24	8.35	5.53	2.74	0.76
		Knowledge & Use of Language	2	6	2.83	1.73	0.83	0.77

Table 9.22 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of English II Categories

Administration	Form	Category	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	E	Reading	29	60	23.88	11.63	4.17	0.87
		Writing	4	30	10.39	8.39	1.91	0.95
	F	Reading	30	64	29.36	13.26	4.43	0.89
		Writing	4	30	11.91	8.08	1.77	0.95
Spring 2023	H	Reading	30	64	26.93	12.25	4.49	0.87
		Writing	4	30	9.81	7.35	1.81	0.94
	J	Reading	29	60	28.82	11.14	4.37	0.85
		Writing	4	30	11.32	7.33	2.10	0.92

Table 9.23 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of English II Subcategories

Administration	Form	Subcategory	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	E	Reading Literary Text	10	20	8.22	4.73	2.42	0.74
		Reading Information Text	11	24	8.53	4.63	2.62	0.68
		Reading Vocabulary	8	16	7.14	3.60	2.11	0.66
		Written Expression	2	24	7.87	6.48	2.45	0.86
		Knowledge & Use of Language	2	6	2.52	1.96	0.69	0.88
	F	Reading Literary Text	8	18	8.19	4.02	2.42	0.64
		Reading Information Text	13	28	12.90	6.29	2.87	0.79
		Reading Vocabulary	9	18	8.27	4.23	2.23	0.72
		Written Expression	2	24	8.97	6.23	2.13	0.88
		Knowledge & Use of Language	2	6	2.94	1.91	0.65	0.88
Spring 2023	H	Reading Literary Text	8	18	8.31	4.18	2.41	0.67
		Reading Information Text	13	28	10.69	5.58	2.81	0.75
		Reading Vocabulary	9	18	7.93	3.90	2.38	0.63
		Written Expression	2	24	7.25	5.60	2.20	0.85
		Knowledge & Use of Language	2	6	2.56	1.82	0.71	0.85
	J	Reading Literary Text	12	24	11.53	5.15	2.75	0.71
		Reading Information Text	11	24	10.73	4.60	2.72	0.65
		Reading Vocabulary	6	12	6.56	2.90	1.96	0.54
		Written Expression	2	24	8.38	5.63	2.62	0.78
		Knowledge & Use of Language	2	6	2.93	1.77	0.80	0.80

Table 9.24 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of Algebra I Categories

Administration	Form	Category	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	D	Major Content	22	28	12.14	5.34	2.45	0.79
		Additional & Supporting Content	10	14	5.18	2.99	1.68	0.69
		Expressing Mathematical Reasoning	3	11	2.26	2.59	1.49	0.67
		Modeling & Application	4	15	3.29	2.88	1.52	0.72
	E	Major Content	22	28	8.46	4.06	2.27	0.69
		Additional & Supporting Content	10	14	3.77	2.04	1.51	0.45
		Expressing Mathematical Reasoning	3	11	0.77	1.06	0.74	0.51
		Modeling & Application	4	15	1.44	2.28	1.12	0.76
Spring 2023	H	Major Content	22	28	9.83	5.40	2.40	0.80
		Additional & Supporting Content	10	14	5.11	3.24	1.65	0.74
		Expressing Mathematical Reasoning	3	11	2.51	2.31	1.24	0.71
		Modeling & Application	4	15	3.47	3.08	1.41	0.79
	J	Major Content	22	28	11.07	5.60	2.43	0.81
		Additional & Supporting Content	10	14	5.36	3.17	1.68	0.72
		Expressing Mathematical Reasoning	3	11	3.07	2.67	1.52	0.68
		Modeling & Application	4	15	4.28	3.18	1.48	0.78

Table 9.25 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of Algebra I Subcategories

Administration	Form	Subcategories	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	D	A1	6	7	2.52	1.75	1.13	0.58
		A2	7	12	5.61	2.48	1.73	0.51
		A3	6	6	2.70	1.48	1.05	0.49
	E	A1	7	9	2.61	1.86	1.26	0.54
		A2	6	7	1.59	1.24	1.06	0.26
		A3	6	9	3.49	1.68	1.38	0.32
Spring 2023	H	A1	6	6	2.24	1.53	1.08	0.50
		A2	7	12	3.62	2.42	1.58	0.57
		A3	6	7	2.54	1.77	1.23	0.52
	J	A1	6	6	2.38	1.47	1.11	0.44
		A2	6	8	2.54	1.83	1.20	0.57
		A3	7	11	4.67	2.65	1.60	0.64

Table 9.26 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of Geometry Categories

Administration	Form	Category	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	D	Major Content	19	26	11.09	5.79	2.29	0.84
		Additional & Supporting Content	13	16	6.46	3.21	1.75	0.70
		Expressing Mathematical Reasoning	3	11	2.06	2.55	1.50	0.65
		Modeling & Application	4	15	1.79	2.86	1.45	0.74
	E	Major Content	19	26	7.89	4.93	2.10	0.82
		Additional & Supporting Content	13	16	4.62	2.58	1.63	0.60
		Expressing Mathematical Reasoning	3	11	1.24	2.07	1.11	0.71
		Modeling & Application	4	15	0.96	2.31	1.18	0.74
Spring 2023	H	Major Content	19	26	10.82	5.68	2.33	0.83
		Additional & Supporting Content	13	16	6.45	3.36	1.79	0.72
		Expressing Mathematical Reasoning	3	11	2.29	2.85	1.34	0.78
		Modeling & Application	3	15	4.03	3.37	1.74	0.73
	J	Major Content	19	26	10.68	5.92	2.33	0.85
		Additional & Supporting Content	13	16	6.99	3.79	1.71	0.80
		Expressing Mathematical Reasoning	3	11	2.65	3.06	1.46	0.77
		Modeling & Application	3	15	4.50	3.37	1.84	0.70

Table 9.27 Mean, Standard Deviation, and Standard Error of Measurement (SEM) of Geometry Subcategories

Administration	Form	Subcategories	Number of Items	Number of Score Points	Mean Raw Score	Raw Score Std. Dev.	SEM	Cronbach's Alpha
Fall 2022	D	A1	11	17	7.89	3.88	1.91	0.76
		A2	8	9	3.20	2.30	1.25	0.70
	E	A1	11	17	5.62	3.41	1.74	0.74
		A2	8	9	2.27	1.88	1.18	0.61
Spring 2023	H	A1	10	15	5.95	3.55	1.78	0.75
		A2	9	11	4.87	2.60	1.49	0.67
	J	A1	11	15	6.23	3.45	1.81	0.72
		A2	8	11	4.46	2.89	1.46	0.75

9.13 Divergent (Discriminant) Validity

Measures of different constructs should not be highly correlated with each other. Divergent validity is a subtype of construct validity that can be assessed by the extent to which measures of constructs that theoretically should not be related to each other are, in fact, observed as not related to each other. Typically, correlation coefficients among measures of unrelated or distantly related constructs are examined in support of divergent validity.

To assess the divergent validity of the LEAP 2025 High School assessments, correlations were computed between the English I, English II, Algebra I and Geometry total scores for students who took more than one subject test in 2022. These correlations are based on the census data, and the results are shown in Table 9.28 and Table 9.29 for the fall 2022 and spring 2023 administrations respectively. The correlation coefficients ranged from 0.45 to 0.87. The lowest correlation was observed between Algebra I and Geometry I in the fall 2022 administration, and the highest correlation was between English I and English II in the spring 2023 administration. Similar patterns were observed in both administrations. The correlation coefficients suggest that individual student scores across subjects are moderately related, indicating that these tests measure a similar knowledge base or general underlying ability while still measuring some different traits as planned.

Table 9.28 Inter-Correlation of HS Content Area Scale Scores in Fall Administration

	English I	English II	Algebra I	Geometry
English I	-	0.87	0.77	0.79
English II	0.87 (81)*	-	0.78	0.7
Algebra I	0.77 (1109)	0.78 (292)	-	0.45
Geometry	0.79 (198)	0.70 (1166)	0.45 (88)	-

*The count of observations in the analysis is in parenthesis

Table 9.29 Inter-Correlation of HS Content Area Scale Scores in Spring Administration

	English I	English II	Algebra I	Geometry
English I	-	0.81	0.72	0.7
English II	0.81 (201)*	-	0.68	0.69
Algebra I	0.72 (32271)	0.68 (2479)	-	0.86
Geometry	0.70 (4317)	0.69 (23413)	0.86 (204)	-

*The count of observations in the analysis is in parenthesis

9.14 Summary

In summary, the overall purpose of establishing construct validity is to ensure that the interpretation of test scores is supported. Evidence of validity is necessary to justify the use of the LEAP 2025 test scores. This evidence addresses multiple best practices of the testing industry but particularly relates to the following standards.

> *Standard 1.13* If the rationale for a test score interpretation for a given use depends on premises about the relationships among test items or among parts of the test, evidence concerning the internal structure of the test should be provided (26).
>
> *Standard 1.21* When statistical adjustments, such as those for restriction of range or attenuation, are made, both adjusted and unadjusted coefficients, as well as the specific procedure used, and all statistics used in the adjustment, should be reported. Estimates of the construct-criterion relationship that remove the effects of measurement error on the test should be clearly reported as adjusted estimates (29).
>
> *Standard 2.0* Appropriate evidence of reliability/precision should be provided for the interpretation for each intended score use (42).
>
> *Standard 2.3* For each total score, subscore, or combination of scores that is to be interpreted, estimates of relevant indices of reliability/precision should be reported (43).
>
> *Standard 2.13* The standard error of measurement, both overall and conditional (if reported), should be provided in units of each reported score (45).
>
> *Standard 2.14* When possible and appropriate, conditional standard errors of measurement should be reported at several score levels unless there is evidence that the standard error is constant across score levels. Where cut scores are specified for selection or classification, the standard errors of measurement should be reported in the vicinity of each cut score (46).
>
> *Standard 2.16* When a test or combination of measures is used to make classification decisions, estimates should be provided of the percentage of test takers who would be classified in the same way on two replications of the procedure (46).
>
> *Standard 2.19* Each method of quantifying the reliability/precision of scores should be described clearly and expressed in terms of statistics appropriate to the method. The sampling procedures used to select test takers for reliability/precision analyses and the descriptive statistics on these samples, subject to privacy obligations where applicable, should be reported (47).

Chapter 10: Fairness

As noted in the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014), there are varying definitions of fairness. This chapter examines fairness as it relates to minimizing bias on a test. This chapter also discusses test performance among varying subgroups assessed by LEAP 2025 assessments. It should be noted that having differences in test performance among subgroups does not mean that a test is unfair—it simply means that groups perform differently on a test. Even when a test is carefully and properly constructed, differences may exist among subgroups as a result of differences in curriculum or learning by students in the subgroups.

This chapter demonstrates how the Leap 2025 assessments adhere to AERA, APA, & NCME Standards 3.1–3.6 and 3.16. These standards are from Chapter 3 of the *Standards*, which is titled "Fairness in Testing." Each of these standards is presented in this chapter.

Standard 3.6 states:

> Where credible evidence indicates that test scores may differ in meaning for relevant subgroups in the intended examinee population, test developers and/or users are responsible for examining the evidence for validity of score interpretations for intended uses for individuals from those subgroups. What constitutes a significant difference in subgroup scores and what actions are taken in response to such differences may be defined by applicable laws (65).

Test scores of examinee subgroups that differ in meaning are an ongoing concern in any large-scale testing program. To lessen the possibility of differences in test score meaning, DRC follows several steps in the item development and item selection processes, as is explained in Section 10.1 of this chapter. In addition, LDOE assessment research and development experts and Louisiana educators conduct content and bias reviews on items during the selection process, as explained in Chapter 3. These practices adhere to Standard 3.3, which states,

> Those responsible for test development should include relevant subgroups in validity, reliability/precision, and other preliminary studies used when constructing the test (64).

The PARCC consortium conducted differential item functioning (DIF) studies of their items prior to PARCC operational administrations. Items are typically evaluated for possible DIF in the field test phase of the test development process, and any items flagged for DIF are further examined to determine possible bias. During the ELA and mathematics test development process, DRC content experts tried to avoid including PARCC operational items flagged for DIF. Section 10.2 of this chapter explains the steps taken to evaluate LEAP 2025 items through the use of DIF to adhere to Standard 3.3.

In addition, the standardized test administration practices and the extensive training process for test score interpretation for LEAP 2025 comply with Standards 3.4 and 3.5, which state:

> *Standard 3.4* Test takers should receive comparable treatment during the test administration and scoring process (65).
>
> *Standard 3.5* Test developers should specify and document provisions that have been made to test administration and scoring procedures to remove construct-irrelevant barriers for all relevant subgroups in the test-taker population (65).

Section 10.1 of this chapter is also directly relevant to Standards 3.1 and 3.2.

> *Standard 3.1* Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid score interpretations for intended score uses for the widest possible range of individuals and relevant subgroups in the intended population (63).
>
> *Standard 3.2* Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests' being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics (64).

This chapter explains the steps taken by DRC to minimize words, phrases, and content that may be regarded as offensive by members of particular demographic subgroups. Section 3.2 of Chapter 3 discusses the content and bias review conducted for LEAP 2025. This review is also critical in fulfilling Standards 3.1 and 3.2. In addition to the Louisiana-developed items, the New Meridian operational items used in the 2023 LEAP 2025 forms were critical to the forms construction process. Refer to the New Meridian website for the bias and sensitivity guidelines used and the processes and procedures followed by New Meridian pertaining to these items (see https://newmeridiancorp.org/).

The DIF and reliability analyses in this section are based on the CIA data described in Chapter 6. The impact analyses (scale score mean and standard deviation) are based census data.

10.1 Minimizing Bias through Careful Test Development

The construction of a test that is fair for all examinees begins in the early stages of planning and development. The item and test development processes that were used to minimize bias are summarized below.

First, careful attention was paid to content validity during the item development and item selection processes. Bias can occur only if the test is measuring different things for different groups. The possibility of bias is reduced by eliminating irrelevant skills or knowledge from the items.

Second, item writers and test developers followed New Meridian Fairness and Sensitivity Guidelines for reducing or eliminating bias. DRC test development staff reviewed all items and other testing materials with these guidelines in mind. Internal editorial reviews were conducted by at least three different people: a content editor who directly supervised the item writers, a style editor, and a content supervisor. The final test was again reviewed by people in these same roles and was also subjected to an independent review by LDOE assessment research and development specialists.

Third, careful attention was given to item statistics throughout the test development process. As part of the test assembly process, attempts were made to avoid using or reusing items with poor statistical fit or distractors with positive point biserial correlations, since these conditions may indicate that an item is testing a construct irrelevant to what being measured. DIF statistics were also examined during test construction. Items that had exhibited significant DIF against one or more subgroups were removed from further consideration unless it was essential to include them to meet content specifications.

10.2 Evaluating Bias through Differential Item Functioning (DIF) Statistics

After administering the test, an empirical approach known as DIF was used to examine the items. The DIF statistics (see Tables 10.1-10.4) indicate the degree to which members of a particular subgroup perform better or worse than expected on each item as compared to the reference group. The DIF procedures used and the results of these analyses are detailed in this section. It should be noted, however, that all items

included in LEAP 2025 were thoroughly reviewed for content and bias by LDOE and DRC content experts to ensure the items do not test knowledge or ability irrelevant to the construct the test intends to measure. Therefore, DIF flags do not necessarily indicate that an item is biased; rather, DIF flags indicate that the item functions differently for equally able members of different groups (Camilli & Shepard, 1994). Items are not necessarily suppressed from operational scoring if they are flagged for DIF.

The position of DRC concerning test bias is based on two general propositions. First, students may differ in their background knowledge, cognitive and academic skills, languages, attitudes, and values. To the degree that these differences are large, no one curriculum and no one set of instructional materials will be equally suitable for all. Therefore, no one test will be equally appropriate for all. Furthermore, it is difficult to specify what amount of difference can be called large and to determine how these differences will affect the outcome of a particular test. Second, schools have been assigned the tasks of developing certain basic cognitive skills and supporting development of these skills equitably among all students. Therefore, there is a need for tests that measure the common skills and bodies of knowledge that are expected of all learners. The test publisher's task is to develop assessments that measure these key cognitive skills without introducing extraneous or construct-irrelevant elements into the performances on which the measurement is based. If these tests require that students have culturally specific knowledge and skills not taught in school, differences in performance among students can occur because of differences in student background and out-of-school learning. Such tests are measuring different things for different groups and can be called biased (Camilli & Shepard, 1994; Green, 1975).

To lessen this bias, DRC strives to minimize the role of extraneous elements, thereby increasing the number of students for whom the test is appropriate. As discussed above and in Chapter 3 of this report, careful attention is given during the item development, test development and test construction processes to lessen the influence of these elements for large numbers of students. Unfortunately, these elements may continue to play a substantial role in some cases. To assess the extent to which items may be performing differently for various subgroups of interest, DIF analyses are conducted after each operational test administration.

DIF statistics are used to quantify differences in item performance between two groups after controlling for examinees' overall achievement level. Two DIF statistics that are commonly used for this purpose are the Mantel-Haenszel (MH) statistic (1959) and the standardized mean difference (SMD) between the reference and focal groups, proposed by Dorans and Schmitt (1991).

The MH statistic is computed as follows (Zwick, Donoghue, & Grima, 1993):

$$\text{Mantel } \chi^2 = \frac{\left(\sum_k F_k - \sum_k E(F_k)\right)^2}{\sum_k \text{Var}(F_k)},$$

where F_k is the sum of scores for the focal group at the kth level of the matching variable. Note that the MH statistic is sensitive to N such that larger sample sizes increase the value of chi-square.

In addition to the MH chi-square statistic, the delta statistic (MH-D DIF) was computed for all items. Educational Testing Service (ETS) first developed the MH-D DIF statistic. To compute delta, alpha (the odds ratio) is first computed as follows:

$$\alpha_{MH} = \frac{\sum_{k=1}^{K} N_{r1k} N_{f0k} / N_k}{\sum_{k=1}^{K} N_{f1k} N_{r0k} / N_k},$$

where N_{r1k} is the number of correct responses in the reference group at ability level *k*, N_{f0k} is the number of incorrect responses in the focal group at ability level *k*, N_k is the total number of responses, N_{f1k} is the number of correct responses in the focal group at ability level *k*, and N_{r0k} is the number of incorrect responses in the reference group at ability level *k*. MH-D DIF is then computed as follows:

$$\text{MH-D DIF} = -2.35 \ln(\alpha_{MH})$$

For selected-response items, the MH (χ^2_{MH}) statistic was used to evaluate potential DIF items. In the MH procedure, subgroups are matched by their raw total test score, using a contingency table with *K* ability levels. When applying the MH procedure, the log-odds ratio α is assumed to be constant across the *K* matched levels. The χ^2_{MH} , then, estimates a pooled common-odds ratio. Taking the natural logarithm of the common-odds ratio and its confidence limits and multiplying these with the constant –2.35 may then allow the resulting values to be placed on the MH delta metric (Δ_{MH}) for interpretive purposes. Items were flagged for DIF using the following criteria:

1 Moderate DIF: Significant MH chi-square statistic ($p < 0.05$) and $1.0 \leq |\text{MH D-DIF}| < 1.5$
2 Large DIF: Significant MH chi-square statistic ($p < 0.05$) and $|\text{MH D-DIF}| \geq 1.5$

For constructed-response items, an effect size (ES) statistic based on the MH chi-square will be used. The ES is obtained by dividing the SMD statistics by the standard deviation of the item. The SMD is an effect size index of DIF, which is relatively easy to interpret. The SMD compares the mean of the reference and focal group, adjusting for the distribution of reference and focal group members on the conditioning variable, which, for these analyses, is the LEAP 2025 raw score. The SMD is computed as follows (Zwick et al., 1993):

$$SMD = p_{Fk}\left(\sum_k m_{Fk} - \sum_k m_{Rk}\right)$$

where p_{Fk} = the proportion of the focal group members at the *k*th level of the matching variable, $m_{Fk} = 1/N_{F1k}$, and $m_{Rk} = 1/N_{R1k}$. Items are flagged using the same rules that are used in NAEP:

- Moderate DIF: If the MH statistic is significant, ($p < .05$) and $|\text{ES}|$ is between 0.17 and 0.25.
- Large DIF: If the MH statistic is significant, ($p < .05$) and $|\text{ES}| \geq 0.25$.

A positive DIF value indicates that the item favors the focal group, while a negative value indicates that the item disadvantages the focal group.

DIF Statistics for Demographic Groups

DIF analyses were conducted for groups defined by demographic characteristics. Tables 10.1 to Table 10.4 show the DIF results for the following subgroups:

Gender: Focal group is females; reference group is males.

Ethnicity: Focal groups are Hispanic/Latino, American Indian or Alaska Native, Asian, Black or African American, and two or more races; reference group is white.

Education Classification: Focal group is students who are classified as special education; reference group is all others.

English Learner Status: Focal group is students who are classified as EL; reference group is all others.

Economic Status: Focal group is students who are classified as economically disadvantaged; reference group is all others.

***Section 504 Status**:* Focal group is students who are classified as Section 504; reference group is all others.

A negative SMD value implies that the focal group has a lower mean item score than the reference group, whereas a positive value implies that the focal group has a higher mean item score than the reference group, conditioned on the matching test score.

The minimum case count for the focal group was set at 200, and the minimum case count for the reference group was set at 400. The DIF analyses are not performed for subgroups of less than 200. In these cases, the statistical procedures do not have sufficient power to detect potential differences.

DIF statistics are produced and examined for all newly field-tested items and for all items from New Meridian being administered for the first time operationally in Louisiana. Tables 10.1 to Table 10.4 summarize the number of DIF flags for the spring 2023 administrations by subject for each focal group that included at least 200 students. Results are not reported (NR) for groups with an insufficient number of students. The *Number of Items* is the count of newly administered items, not all items on the test forms. The analyses were conducted by test form.

The DIF statistics for Form H of English I (see Table 10.1), where 20 items were administered for the first time on a LEAP 2025 form, can be considered an example. On the English I form, two items were flagged for moderate DIF for the female subgroup. For the ethnicity categories, two items were flagged for moderate DIF—one item for moderate negative DIF for Hispanic/Latino group and one item for moderate positive DIF for the Asian group. Two items were flagged for positive DIF in for the gifted or talented education classification group, one was moderate and one large. Finally, two items were flagged for moderate negative DIF for the English Learner group.

Table 10.1 Spring 2023 Administration DIF Statistics of English I: Number of Flagged Items

DIF Statistics				Count of Items at DIF Magnitude			
				Moderate		Large	
Form	Number of Items	Category	Focal Group	B-	B+	C-	C+
H	34	Gender	Female	2	2	0	0
		Ethnicity	Hispanic/Latino	2	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	1	1	0	0
		Ethnicity	Black or African American	0	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	0	0	0	0
		Education Classification	Gifted or Talented	0	1	0	0
		English Learner Status	English Learner	2	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0
J	33	Gender	Female	2	0	1	2
		Ethnicity	Hispanic/Latino	1	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	2	2	0	0
		Ethnicity	Black or African American	1	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	1	0	0	0
		Education Classification	Gifted or Talented	0	0	0	0
		English Learner Status	English Learner	1	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0

Table 10.2 Spring 2023 Administration DIF Statistics of English II: Number of Flagged Items

DIF Statistics				Count of Items at DIF Magnitude			
				Moderate		Large	
Form	Number of Items	Category	Focal Group	B-	B+	C-	C+
H	34	Gender	Female	0	2	0	0
		Ethnicity	Hispanic/Latino	0	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	0	0	0
		Ethnicity	Black or African American	0	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	0	0	0	0
		Education Classification	Gifted or Talented	0	0	0	0
		English Learner Status	English Learner	2	0	1	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0
J	33	Gender	Female	2	1	0	0
		Ethnicity	Hispanic/Latino	1	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	0	0	0
		Ethnicity	Black or African American	0	0	1	0
		Ethnicity	Two or more races	1	0	0	0
		Education Classification	Special Education	0	0	0	0
		Education Classification	Gifted or Talented	0	1	0	0
		English Learner Status	English Learner	1	1	1	0
		Economic Status	Economically Disadvantaged	1	0	0	0
		Section 504 Status	Section 504	0	0	0	0

Table 10.3 Spring 2023 Administration DIF Statistics of Algebra I: Number of Flagged Items

DIF Statistics				Count of Items at DIF Magnitude			
				Moderate		Large	
Form	Number of Items	Category	Focal Group	B-	B+	C-	C+
H	39	Gender	Female	0	0	0	0
		Ethnicity	Hispanic/Latino	0	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	0	0	0
		Ethnicity	Black or African American	1	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	0	2	1	0
		Education Classification	Gifted or Talented	0	0	0	1
		English Learner Status	English Learner	0	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0
J	39	Gender	Female	0	0	0	0
		Ethnicity	Hispanic/Latino	0	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	3	0	0
		Ethnicity	Black or African American	1	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	0	1	0	1
		Education Classification	Gifted or Talented	0	1	0	1
		English Learner Status	English Learner	3	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0

Table 10.4 Spring 2023 Administration DIF Statistics of Geometry: Number of Flagged Items

DIF Statistics				Count of Items at DIF Magnitude			
				Moderate		Large	
Form	Number of Items	Category	Focal Group	B-	B+	C-	C+
H	38	Gender	Female	1	0	0	0
		Ethnicity	Hispanic/Latino	0	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	3	0	0
		Ethnicity	Black or African American	1	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	1	0	0	0
		Education Classification	Gifted or Talented	0	0	0	0
		English Learner Status	English Learner	0	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0
J	38	Gender	Female	0	0	0	0
		Ethnicity	Hispanic/Latino	0	0	0	0
		Ethnicity	American Indian or Alaska Native	NR	NR	NR	NR
		Ethnicity	Asian	0	2	0	0
		Ethnicity	Black or African American	0	0	0	0
		Ethnicity	Two or more races	0	0	0	0
		Education Classification	Special Education	0	0	0	0
		Education Classification	Gifted or Talented	0	1	0	0
		English Learner Status	English Learner	2	0	0	0
		Economic Status	Economically Disadvantaged	0	0	0	0
		Section 504 Status	Section 504	0	0	0	0

10.3 Spanish and English Form Comparability

All items on one CBT form of the mathematics test are transadapted from English into Spanish. Transadaptation takes into consideration linguistic and cultural differences and grade-level appropriate words. By accounting for these differences, the achievement of Spanish speakers can be measured in the same way as the achievement of English speakers. Please refer to Appendix B for more information about the transadaptation of Spanish mathematics forms. To help confirm that the test items can be measured similarly regardless of the language in which the items are published, additional analyses were conducted.

Reliability of Spanish Language Forms

Table 10.5 reports the form reliability of the Spanish language forms. Cronbach's alpha values were moderate, 0.84 for Algebra I and 0.74 for Geometry. Most students' scores were low compared to the population, and the reliability values appeared moderate. Please note that the interpretation of Cronbach's alpha values needs to be careful due to small case counts, especially for Geometry.

Table 10.5 Form Reliability for the Spanish Language Forms

Administration	Course	Form	Number of Items	Number of Score Points	SEM	Cronbach's Alpha	N-Count
Spring 2023	Algebra I	H	39	68	2.94	0.84	182
	Geometry	H	38	68	2.81	0.74	91

DIF Statistics for Test Language

Two DIF analyses were performed using the 2023 LEAP 2025 mathematics operational items regardless of student count in the reference or focal group. Smaller counts for the groups needed to be tolerated since the overall count for those being administered the Spanish form was low.

Student responses for the shared operational items between 2022 and 2023 LEAP 2025 mathematics were combined. This approach increased the number of students who took the Spanish versions of the items. The Mantel-Haenszel (MH) and the Standardized Mean Difference (SMD) DIF procedures were performed on these common items.

DIF results were carefully reviewed whenever sample sizes were smaller than the required minimum sample size and when an item showed large (i.e., C) DIF. Table 10.6 summarizes how many items overall exhibited moderate or large DIF in mathematics.

Table 10.6 2022 LEAP 2025 DIF Statistics: Number of Flagged Items, Mathematics

DIF Statistics: Mathematics				Count of Items at DIF Magnitude			
				Moderate		Large	
Content Area	Number of Items	Category	Focal Group*	B-	B+	C-	C+
Algebra I	34	Test Language	Spanish	0	1	1	0
Geometry	34	Test Language	Spanish	0	0	3	0

*Reference group are those that were administered the English version of the test

Propensity Score Matching Study

The fairness of using the transadapted form was also evaluated by examining the performance of those who took either the Spanish form or the English form. A propensity score matching study (PSM) matches groups based on similar characteristics and then compares performance. The PSM study groups were selected using covariates (matching variables), such as students' spring 2023 LEAP 2025 English I score and their bio-demographic information, such as gender, ethnicity, economic status, and English learner status. Equivalent groups were created with the difference being which form – Spanish language or English language – was administered. The mathematics Spanish test was administered to a smaller number of students than the mathematics English test; therefore, the group who took the Spanish test was designated as the focal group for the PSM study (Rosenbaum & Rubin, 1983), and the English language test takers were considered to be the reference group. The Geometry Spanish test was excluded from the analysis due to small sample size.

Table 10.7 shows the number of equivalent Algebra I Spanish test takers and English test students matched by the PSM method using the R package, MatchIt for PSM. Most students were in grades 9 and 10. PSM was performed for each grade and matched students were combined. For grade 9, 117 English language students were selected out of 32,778 and for grade 10, 15 English language students were selected out of 3,149 students by PSM.

Table 10.7 Number of Students Used for Propensity Score Matching

Content	Grade	Spanish	Regular	
		Total	Total	Selected
Algebra I	9	117	≥32,770	117
Algebra I	10	15	≥3,140	15

*Total: Number of students who have information for all covariates

Scale scores of the Spanish language and English language administrations were estimated using the item parameters for score reporting, and their difference scores were calculated. Effect sizes (ES) of the difference scores were calculated as follows:

ES = (Spanish Mean – English Mean)/$\sqrt{(SPN\ \ VAR + ENG\ VAR)/2}$, where *VAR* = SD^2.

Table 10.8 summarizes, for the flagged items, the mean, standard deviation, effect size (ES), and flag for the ES for Algebra I items by Spanish and matching English tests. Two flag criteria, |0.2| and |0.5| were applied as small differences (B) and medium differences (C) flags. When |0.2| was applied, ten items of the 39 administered, were flagged. There were no items with larger ES values greater than |0.5|. Please note that the results of this PSM should be carefully used due to the relatively small sample size.

Table 10.8 Item Statistics and Effect Size

Item id	Mean		Standard Deviation		ES	Flag
	Spanish	Regular	Spanish	Regular		
938646	0.090909	0.030303	0.288575	0.172073	-0.25510	B
938732	0.530303	0.295455	0.725115	0.562690	-0.36186	B
980855	0.280303	0.409091	0.450858	0.493539	0.272463	B
980871	0.189394	0.113636	0.393314	0.318578	-0.21167	B
980888	0.166667	0.075758	0.374098	0.265618	-0.28022	B
1075586	0.234848	0.083333	0.425519	0.277438	-0.42182	B
1117650	1.159091	0.787879	1.047203	0.819889	-0.39472	B
938681	0.333333	0.212121	0.473200	0.410368	-0.27368	B
945889	0.189394	0.113636	0.393314	0.318578	-0.21167	B
980911	0.371212	0.227273	0.484970	0.420667	-0.31708	B

10.4 Evaluating Bias through Impact Analysis

The impact of achievement testing on subgroups can be determined and reported in the form of average scores and also in terms of test score reliability.

Table 10.9 through Table 10.16 present the number of students and test form reliability statistics (i.e., coefficient alpha; see Chapter 9). Scale score means, standard deviations, and effect sizes (i.e., Cohen's *d*) for the various subgroups of interest are reported by form in Table 10.17 though Table 10.24

10.5 Reliability

Tables 10.9–10.16 show the test form reliability coefficients and SEM by student gender, ethnicity, education classification, economic status, EL status, migrant status, Section 504 status, homeless status, military affiliation, and foster care status. The reliability coefficients for English I and II forms ranged from 0.72 to 0.94 and from 0.83 to 0.92 for the fall 2022 and spring 2023 administrations, respectively. For Algebra I and Geometry, the reliability coefficients ranged from 0.59 to 0.95 and from 0.71 to 0.94 for the fall 2022 and spring 2023 administrations, respectively. Since the summer administration is made up of primarily a re-test population, summer results are not reported.

These analyses show that the test reliability is of acceptable magnitude for all the subgroups. Note that the reliability coefficients are based on initial testers and are NR for subgroups with fewer than 10 students.

Table 10.9 Fall 2022 Administration English I Reliability and SEM by Subgroup

Group	Form E			Form F		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥170	0.92	5.18	≥5,120	0.92	5.77
Gender						
Female	≥80	0.93	5.19	≥2,500	0.91	5.78
Male	≥90	0.91	5.11	≥2,610	0.92	5.66
Ethnicity						
Hispanic/Latino	<10	NR	NR	≥610	0.92	5.6
American Indian or Alaska Native	<10	NR	NR	≥20	0.92	5.9
Asian	<10	NR	NR	≥60	0.9	5.87
Black or African American	≥100	0.89	4.68	≥2,070	0.9	5.69
Native Hawaiian or Other Pacific	<10	NR	NR	<10	NR	NR
White	≥50	0.9	5.66	≥2,160	0.9	5.82
Two or More Races	<10	NR	NR	≥180	0.91	5.81
Education Classification						
Regular Education	≥150	0.92	5.28	≥4,390	0.91	5.81
Special Education	≥10	0.83	4.11	≥460	0.9	5.1
Gifted or Talented	<10	NR	NR	≥250	0.87	5.3
Economic Status*						
Economically Disadvantaged	≥130	0.9	5.19	≥3,420	0.91	5.74
Not Economically Disadvantaged	≥40	0.94	5.18	≥1,680	0.91	5.77
English Learner Status						
Not English Learner	≥170	0.92	5.18	≥4,900	0.91	5.79
English Learner	<10	NR	NR	≥210	0.85	5.11
Migrant Status						
Migrant	<10	NR	NR	<10	NR	NR
Not Migrant	≥170	0.92	5.18	≥5,110	0.92	5.77
Section 504 Status						
Non-Section 504	≥150	0.92	5.22	≥4,710	0.92	5.77
Section 504	≥20	0.87	4.73	≥410	0.89	5.67
Homeless Status						
Not Homeless	≥170	0.92	5.17	≥5,060	0.92	5.77
Homeless	<10	NR	NR	≥50	0.91	5.59
Military Affiliation						
Not Military Affiliated	≥170	0.92	5.18	≥4,930	0.92	5.78
Military Affiliated	<10	NR	NR	≥180	0.91	5.54
Foster Care Status						
Not in Foster Care	≥170	0.92	5.18	≥5,110	0.92	5.77
Foster Care	<10	NR	NR	<10	NR	NR

*Economic Status was not available for all students.

Table 10.10 Spring 2023 Administration English I Reliability and SEM by Subgroup

Group	Form H			Form J		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥22,970	0.9	5.71	≥19,380	0.89	5.61
Gender						
Female	≥11,300	0.89	5.75	≥10,050	0.88	5.63
Male	≥11,660	0.9	5.59	≥9,320	0.89	5.51
Ethnicity						
Hispanic/Latino	≥2,140	0.9	5.63	≥1,810	0.9	5.51
American Indian or Alaska Native	≥150	0.89	5.75	≥110	0.86	5.72
Asian	≥390	0.9	5.83	≥380	0.88	5.56
Black or African American	≥9,710	0.87	5.58	≥7,670	0.86	5.46
Native Hawaiian or Other Pacific	≥20	0.9	5.82	≥20	0.92	5.66
White	≥9,820	0.89	5.82	≥8,730	0.87	5.69
Two or More Races	≥700	0.89	5.78	≥630	0.87	5.66
Education Classification						
Regular Education	≥18,750	0.89	5.74	≥17,550	0.88	5.6
Special Education	≥2,910	0.84	4.95	≥550	0.88	5.23
Gifted or Talented	≥1,300	0.87	5.82	≥1,270	0.84	5.66
Economic Status*						
Economically Disadvantaged	≥14,570	0.88	5.64	≥11,960	0.87	5.54
Not Economically Disadvantaged	≥8,270	0.9	5.81	≥7,310	0.88	5.67
English Learner Status						
Not English Learner	≥22,190	0.9	5.72	≥18,760	0.88	5.62
English Learner	≥770	0.86	5.14	≥610	0.85	4.79
Migrant Status						
Migrant	≥30	0.92	5.24	≥20	0.91	5.16
Not Migrant	≥22,930	0.9	5.71	≥19,350	0.89	5.61
Section 504 Status						
Non-Section 504	≥20,580	0.9	5.73	≥17,980	0.89	5.61
Section 504	≥2,380	0.88	5.48	≥1,400	0.88	5.6
Homeless Status						
Not Homeless	≥22,540	0.9	5.71	≥19,050	0.89	5.61
Homeless	≥420	0.89	5.44	≥330	0.85	5.6
Military Affiliation						
Not Military Affiliated	≥22,590	0.9	5.71	≥19,040	0.89	5.61
Military Affiliated	≥370	0.88	5.84	≥340	0.87	5.73
Foster Care Status						
Not in Foster Care	≥22,900	0.9	5.71	≥19,350	0.89	5.61
Foster Care	≥60	0.89	5.15	≥30	0.83	5.57

*Economic Status was not available for all students.

Table 10.11 Fall 2022 Administration English II Reliability and SEM by Subgroup

Group	Form E			Form F		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥190	0.91	5.66	≥6,640	0.92	5.77
Gender						
Female	≥80	0.91	5.73	≥3,350	0.91	5.8
Male	≥100	0.92	5.49	≥3,290	0.92	5.66
Ethnicity						
Hispanic/Latino	≥10	0.92	5.42	≥860	0.93	5.57
American Indian or Alaska Native	<10	NR	NR	≥50	0.91	5.55
Asian	<10	NR	NR	≥170	0.92	5.79
Black or African American	≥90	0.85	5.3	≥2,580	0.9	5.6
Native Hawaiian or Other Pacific	<10	NR	NR	≥10	0.92	5.37
White	≥80	0.88	5.76	≥2,760	0.9	5.88
Two or More Races	<10	NR	NR	≥190	0.89	5.97
Education Classification						
Regular Education	≥160	0.9	5.71	≥5,730	0.91	5.79
Special Education	≥20	0.72	4.58	≥520	0.89	5.18
Gifted or Talented	<10	NR	NR	≥390	0.87	5.68
Economic Status*						
Economically Disadvantaged	≥150	0.9	5.64	≥4,070	0.91	5.63
Not Economically Disadvantaged	≥40	0.91	5.83	≥2,560	0.9	5.86
English Learner Status						
Not English Learner	≥190	0.91	5.67	≥6,320	0.92	5.8
English Learner	<10	NR	NR	≥320	0.85	5.12
Migrant Status						
Migrant	<10	NR	NR	<10	NR	NR
Not Migrant	≥190	0.91	5.66	≥6,640	0.92	5.77
Section 504 Status						
Non-Section 504	≥170	0.91	5.69	≥6,130	0.92	5.78
Section 504	≥10	0.88	5.26	≥510	0.91	5.65
Homeless Status						
Not Homeless	≥190	0.91	5.66	≥6,570	0.92	5.77
Homeless	<10	NR	NR	≥70	0.88	5.4
Military Affiliation						
Not Military Affiliated	≥190	0.91	5.66	≥6,380	0.92	5.76
Military Affiliated	<10	NR	NR	≥260	0.89	5.86
Foster Care Status						
Not in Foster Care	≥190	0.91	5.66	≥6,630	0.92	5.77
Foster Care	<10	NR	NR	≥10	0.83	5

*Economic Status was not available for all students.

Table 10.12 Spring 2023 Administration English II Reliability and SEM by Subgroup

Group	Form H			Form J		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥25,370	0.9	5.79	≥16,260	0.89	5.76
Gender						
Female	≥12,660	0.89	5.88	≥8,460	0.88	5.79
Male	≥12,700	0.91	5.6	≥7,790	0.89	5.63
Ethnicity						
Hispanic/Latino	≥1,990	0.91	5.72	≥1,380	0.9	5.64
American Indian or Alaska Native	≥130	0.9	5.66	≥100	0.89	5.77
Asian	≥400	0.91	5.87	≥290	0.88	5.75
Black or African American	≥11,000	0.88	5.63	≥6,630	0.87	5.59
Native Hawaiian or Other Pacific	≥20	0.91	6.14	≥10	0.9	5.7
White	≥11,060	0.89	5.93	≥7,370	0.87	5.82
Two or More Races	≥740	0.9	5.94	≥450	0.87	5.87
Education Classification						
Regular Education	≥20,830	0.89	5.85	≥14,780	0.88	5.76
Special Education	≥3,090	0.85	4.95	≥450	0.89	5.34
Gifted or Talented	≥1,440	0.87	5.79	≥1,010	0.84	5.65
Economic Status*						
Economically Disadvantaged	≥15,950	0.89	5.71	≥9,960	0.88	5.69
Not Economically Disadvantaged	≥9,310	0.89	5.91	≥6,230	0.87	5.8
English Learner Status						
Not English Learner	≥24,620	0.9	5.81	≥15,770	0.88	5.77
English Learner	≥740	0.87	5.32	≥490	0.86	5.12
Migrant Status						
Migrant	≥20	0.86	5.77	≥20	0.88	5.85
Not Migrant	≥25,340	0.9	5.79	≥16,230	0.89	5.76
Section 504 Status						
Non-Section 504	≥22,710	0.9	5.81	≥15,050	0.89	5.76
Section 504	≥2,660	0.89	5.56	≥1,200	0.88	5.62
Homeless Status						
Not Homeless	≥25,020	0.9	5.79	≥16,040	0.89	5.76
Homeless	≥350	0.88	5.54	≥210	0.87	5.54
Military Affiliation						
Not Military Affiliated	≥25,020	0.9	5.79	≥16,060	0.89	5.75
Military Affiliated	≥350	0.89	5.96	≥190	0.87	5.81
Foster Care Status						
Not in Foster Care	≥25,330	0.9	5.79	≥16,230	0.89	5.76
Foster Care	≥40	0.89	5.31	≥20	0.87	5.87

*Economic Status was not available for all students.

Table 10.13 Fall 2022 Administration Algebra I Reliability and SEM by Subgroup

Group	Form D			Form E		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥3,450	0.9	3.81	≥110	0.85	3.12
Gender						
Female	≥1,770	0.9	3.8	≥50	0.83	3.21
Male	≥1,670	0.91	3.83	≥60	0.86	3.04
Ethnicity						
Hispanic/Latino	≥400	0.9	3.75	<10	NR	NR
American Indian or Alaska Native	≥10	0.87	4	<10	NR	NR
Asian	≥50	0.92	4.08	<10	NR	NR
Black or African American	≥1,390	0.88	3.51	≥50	0.59	2.77
Native Hawaiian or Other Pacific	<10	NR	NR	<10	NR	NR
White	≥1,460	0.89	4.01	≥50	0.87	3.37
Two or More Races	≥100	0.91	3.91	<10	NR	NR
Education Classification						
Regular Education	≥3,070	0.9	3.82	≥100	0.83	3.12
Special Education	≥240	0.87	3.17	≥10	0.92	3.1
Gifted or Talented	≥120	0.9	4.25	<10	NR	NR
Economic Status*						
Economically Disadvantaged	≥2,250	0.9	3.7	≥90	0.84	3.05
Not Economically Disadvantaged	≥1,180	0.89	3.99	≥20	0.87	3.39
English Learner Status						
Not English Learner	≥3,320	0.90	3.83	≥110	0.85	3.13
English Learner	≥120	0.87	3.37	<10	NR	NR
Migrant Status						
Migrant	<10	NR	NR	<10	NR	NR
Not Migrant	≥3,440	0.9	3.81	≥110	0.85	3.12
Section 504 Status						
Non-Section 504	≥3,170	0.9	3.83	≥90	0.86	3.17
Section 504	≥280	0.9	3.61	≥10	0.61	2.78
Homeless Status						
Not Homeless	≥3,420	0.9	3.82	≥110	0.85	3.12
Homeless	≥20	0.92	3.43	<10	NR	NR
Military Affiliation						
Not Military Affiliated	≥3,310	0.9	3.8	≥110	0.85	3.12
Military Affiliated	≥130	0.87	4.01	<10	NR	NR
Foster Care Status						
Not in Foster Care	≥3,440	0.9	3.81	≥110	0.85	3.13
Foster Care	<10	NR	NR	<10	NR	NR

*Economic Status was not available for all students.

Table 10.14 Spring 2023 Administration Algebra I Reliability and SEM by Subgroup

Group	Form H			Form J		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥24,110	0.92	3.63	≥19,510	0.92	3.82
Gender						
Female	≥11,820	0.91	3.68	≥10,050	0.91	3.82
Male	≥12,280	0.92	3.58	≥9,460	0.92	3.82
Ethnicity						
Hispanic/Latino	≥2,300	0.91	3.57	≥1,570	0.91	3.79
American Indian or Alaska Native	≥150	0.90	3.67	≥120	0.90	3.94
Asian	≥400	0.94	4.08	≥350	0.93	4.03
Black or African American	≥10,170	0.88	3.33	≥7,850	0.88	3.51
Native Hawaiian or Other Pacific	≥20	0.92	4.08	≥10	0.93	4.04
White	≥10,280	0.92	3.81	≥8,930	0.91	3.96
Two or More Races	≥770	0.92	3.71	≥650	0.91	3.9
Education Classification						
Regular Education	≥19,490	0.91	3.64	≥17,750	0.91	3.78
Special Education	≥3,270	0.84	3.04	≥450	0.91	3.6
Gifted or Talented	≥1,330	0.93	4.03	≥1,300	0.92	4.08
Economic Status*						
Economically Disadvantaged	≥15,560	0.90	3.46	≥12,030	0.90	3.67
Not Economically Disadvantaged	≥8,420	0.93	3.86	≥7,390	0.92	3.99
English Learner Status						
Not English Learner	≥23,210	0.92	3.65	≥19,180	0.92	3.83
English Learner	≥890	0.86	3.02	≥320	0.87	3.21
Migrant Status						
Migrant	≥30	0.9	3.45	≥20	0.91	3.71
Not Migrant	≥24,070	0.92	3.63	≥19,480	0.92	3.83
Section 504 Status						
Non-Section 504	≥21,550	0.92	3.66	≥18,130	0.92	3.84
Section 504	≥2,550	0.90	3.39	≥1,380	0.91	3.65
Homeless Status						
Not Homeless	≥23,680	0.92	3.64	≥19,170	0.92	3.83
Homeless	≥420	0.88	3.28	≥330	0.88	3.44
Military Affiliation						
Not Military Affiliated	≥23,690	0.92	3.63	≥19,170	0.92	3.82
Military Affiliated	≥410	0.93	3.88	≥330	0.92	3.96
Foster Care Status						
Not in Foster Care	≥24,040	0.92	3.64	≥19,470	0.92	3.83
Foster Care	≥60	0.85	2.97	≥30	0.82	3.51

*Economic Status was not available for all students.

Table 10.15 Fall 2022 Administration Geometry Reliability and SEM by Subgroup

Group	Form D			Form E		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥4,480	0.92	3.7	≥120	0.91	3.23
Gender						
Female	≥2,300	0.91	3.73	≥50	0.9	3.39
Male	≥2,180	0.92	3.66	≥70	0.92	3.11
Ethnicity						
Hispanic/Latino	≥550	0.9	3.52	<10	NR	NR
American Indian or Alaska Native	≥40	0.88	3.42	<10	NR	NR
Asian	≥90	0.95	4.18	<10	NR	NR
Black or African American	≥1,730	0.88	3.32	≥70	0.79	2.68
Native Hawaiian or Other Pacific	<10	NR	NR	<10	NR	NR
White	≥1,890	0.91	3.89	≥40	0.87	3.84
Two or More Races	≥140	0.92	3.94	<10	NR	NR
Education Classification						
Regular Education	≥3,900	0.9	3.64	≥120	0.9	3.22
Special Education	≥230	0.9	2.91	<10	NR	NR
Gifted or Talented	≥340	0.93	4.18	<10	NR	NR
Economic Status*						
Economically Disadvantaged	≥2,710	0.9	3.49	≥100	0.91	3.18
Not Economically Disadvantaged	≥1,760	0.92	3.92	≥20	0.91	3.39
English Learner Status						
Not English Learner	≥4,300	0.92	3.72	≥120	0.91	3.24
English Learner	≥180	0.83	2.88	<10	NR	NR
Migrant Status						
Migrant	<10	NR	NR	<10	NR	NR
Not Migrant	≥4,480	0.92	3.7	≥120	0.91	3.23
Section 504 Status						
Non-Section 504	≥4,180	0.92	3.71	≥110	0.91	3.23
Section 504	≥290	0.91	3.44	<10	NR	NR
Homeless Status						
Not Homeless	≥4,420	0.92	3.7	≥120	0.91	3.24
Homeless	≥50	0.84	3.16	<10	NR	NR
Military Affiliation						
Not Military Affiliated	≥4,310	0.92	3.68	≥120	0.91	3.23
Military Affiliated	≥170	0.88	3.97	<10	NR	NR
Foster Care Status						
Not in Foster Care	≥4,480	0.92	3.7	≥120	0.91	3.23
Foster Care	<10	NR	NR	<10	NR	NR

*Economic Status was not available for all students.

Table 10.16 Spring 2023 Administration Geometry Reliability and SEM by Subgroup

Group	Form H			Form J		
	N Count	Cronbach's Alpha	SEM	N Count	Cronbach's Alpha	SEM
All Students	≥18,820	0.92	3.96	≥16,410	0.93	4
Gender						
Female	≥9,810	0.91	3.96	≥8,780	0.92	3.99
Male	≥9,010	0.93	3.95	≥7,620	0.93	4.01
Ethnicity						
Hispanic/Latino	≥1,510	0.92	3.93	≥1,220	0.92	3.96
American Indian or Alaska Native	≥100	0.91	4.04	≥70	0.93	4.12
Asian	≥390	0.93	4.32	≥350	0.94	4.24
Black or African American	≥7,960	0.87	3.49	≥6,570	0.9	3.51
Native Hawaiian or Other Pacific	≥10	0.9	4.28	≥20	0.92	4.34
White	≥8,300	0.92	4.16	≥7,700	0.92	4.19
Two or More Races	≥510	0.92	4.06	≥450	0.92	4
Education Classification						
Regular Education	≥15,910	0.91	3.94	≥14,950	0.92	3.95
Special Education	≥1,700	0.86	3.19	≥300	0.93	3.7
Gifted or Talented	≥1,200	0.92	4.26	≥1,150	0.93	4.18
Economic Status*						
Economically Disadvantaged	≥11,290	0.9	3.7	≥9,390	0.91	3.74
Not Economically Disadvantaged	≥7,450	0.92	4.19	≥6,940	0.92	4.2
English Learner Status						
Not English Learner	≥18,280	0.92	3.97	≥16,130	0.93	4.01
English Learner	≥540	0.90	3.38	≥270	0.94	3.48
Migrant Status						
Migrant	≥10	0.9	3.94	≥10	0.9	4.06
Not Migrant	≥18,800	0.92	3.96	≥16,390	0.93	4
Section 504 Status						
Non-Section 504	≥17,110	0.92	3.98	≥15,370	0.93	4.01
Section 504	≥1,700	0.9	3.67	≥1,030	0.92	3.87
Homeless Status						
Not Homeless	≥18,590	0.92	3.96	≥16,240	0.93	4
Homeless	≥220	0.85	3.39	≥160	0.91	3.6
Military Affiliation						
Not Military Affiliated	≥18,520	0.92	3.95	≥16,170	0.93	3.99
Military Affiliated	≥300	0.93	4.23	≥230	0.92	4.27
Foster Care Status						
Not in Foster Care	≥18,800	0.92	3.96	≥16,380	0.93	4
Foster Care	≥20	0.86	3.52	≥20	0.71	2.9

*Economic Status was not available for all students.

10.6 Effect Size

One way to evaluate the magnitude of the standardized mean difference (SMD) is to calculate the ES. Cohen's *d* was used to calculate the ES and is given by the following formula:

$$d = \frac{\overline{x_a} - \overline{x_b}}{\sqrt{\frac{(n_a - 1)s_a^2 + (n_b - 1)s_b^2}{(n_a + n_b) - 2}}},$$

where $\overline{x_a}$ is the mean score of group A, $\overline{x_b}$ is the mean score of group B, s_a^2 is the variance of group A, s_b^2 is the variance of group B, n_a is the number of students in group A, and n_b is the number of students in group B.

Cohen's *d*, then, expresses the difference in group means in terms of the standard deviation. For example, if *d* = 0.34 for two groups, then it may be interpreted that the SMD between the two groups is 0.34 of the pooled standard deviation. Cohen (1988) offered guidelines for interpreting the meaning of the *d* statistic: *d* = 0.20 is a small ES, *d* = 0.50 is a medium ES, and *d* = 0.80 is a large ES.

Using Cohen's (1988) guidelines, certain trends become apparent in Tables 10.17–10.24. Results are NR for subgroups with fewer than 10 students. If the effect size is negative, that means the group outperforms the group to which it's being compared. For example, in Table 10.17 the effect size for the group female is -0.44 indicating that there is a small difference in performance and females are outperforming males. For all subjects across both the fall and spring administrations, small differences in test scores were seen between females and males, with females slightly outperforming males, except for one form each for fall and spring Geometry. Mean scale scores and ESs show that Asian and white students tend to outperform other ethnicity groups across subjects. For most ELA and mathematics tests, there were clear performance differences between regular education and special education students in Education Classification and Not English Learner and English Learner in EL status.

Table 10.17 Fall 2022 Administration Impact Analysis: English I

Group	Form E				Form F			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥440	702.69	33.66		≥9,320	720.91	41.14	
Gender								
Male	≥260	699.56	30.49		≥5,400	713.49	38.09	
Female	≥180	707.25	37.42	-0.22	≥3,910	731.16	42.96	-0.43
Ethnicity								
White	≥70	739.54	41.55		≥2,970	742.79	42.52	
Hispanic/Latino	≥60	685.73	23.96	1.56	≥1,520	706.53	37.22	0.88
American Indian or Alaska Native	<10	NR	NR	NR	≥40	725.45	42.10	0.40
Asian	<10	NR	NR	NR	≥100	742.72	51.84	0.00
Black or African American	≥290	696.77	26.13	1.42	≥4,400	709.52	33.46	0.89
Native Hawaiian or Other Pacific	<10	NR	NR	NR	≥10	740.90	74.86	0.04
Two or More Races	<10	NR	NR	NR	≥250	737.66	44.54	0.12
Education Classification								
Regular Education	≥370	705.82	34.62		≥7,580	723.90	39.78	
Special Education	≥70	686.85	22.93	0.57	≥1,450	693.00	25.42	0.81
Gifted or Talented	<10	NR	NR	NR	≥280	785.22	41.14	-1.53
Economic Status*								
Not Economically Disadvantaged	≥60	722.35	45.02		≥2,290	743.52	43.97	
Economically Disadvantaged	≥370	699.11	29.85	0.71	≥7,000	713.50	37.30	0.76
English Learner Status								
Not English Learner	≥380	705.72	34.28		≥8,260	724.99	41.22	
English Learner	≥60	683.20	20.70	0.68	≥1,050	688.92	22.05	0.91
Migrant Status								
Nonmigrant	≥440	702.66	33.69		≥9,300	720.95	41.15	
Migrant	<10	NR	NR	NR	≥20	700.10	30.47	0.50
Section 504 Status								
Non-Section 504	≥390	703.22	34.43		≥8,230	722.87	42.01	
Section 504	≥50	698.61	26.89	0.13	≥1,080	705.98	29.78	0.41
Homeless Status								
Not Homeless	≥440	702.78	33.67		≥9,150	721.31	41.22	
Homeless	<10	NR	NR	NR	≥160	699.02	29.00	0.54
Military Affiliation								
Not Military Affiliated	≥440	702.77	33.66		≥9,110	720.10	40.78	
Military Affiliated	<10	NR	NR	NR	≥200	756.43	41.08	-0.89
Foster Care Status								
Not in Foster Care	≥440	702.63	33.66		≥9,300	720.93	41.15	
Foster Care	<10	NR	NR	NR	≥10	709.89	34.98	0.26

*Economic Status was not available for all students.

Table 10.18 Spring 2023 Administration Impact Analysis: English I

Group	Form H				Form J			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥27,170	736.88	38.85		≥21,800	745.28	37.33	
Gender								
Male	≥14,330	729.86	38.71		≥10,780	739.57	37.91	
Female	≥12,840	744.72	37.47	-0.38	≥11,020	750.86	35.89	-0.30
Ethnicity								
White	≥10,840	751.06	37.89		≥9,310	759.27	34.60	
Hispanic/Latino	≥2,730	728.92	39.33	0.57	≥2,240	732.96	40.29	0.73
American Indian or Alaska Native	≥170	735.55	38.45	0.40	≥120	751.39	32.15	0.22
Asian	≥420	770.11	41.57	-0.50	≥400	769.70	36.31	-0.30
Black or African American	≥12,170	724.38	34.24	0.74	≥9,000	732.17	33.43	0.79
Native Hawaiian or Other Pacific	≥20	753.22	38.58	-0.05	≥20	750.09	42.94	0.26
Two or More Races	≥800	744.19	37.82	0.18	≥690	751.97	35.04	0.21
Education Classification								
Regular Education	≥21,680	740.30	36.51		≥19,790	743.62	36.08	
Special Education	≥4,150	704.52	27.94	1.01	≥700	720.27	34.97	0.64
Gifted or Talented	≥1,330	781.89	34.06	-1.14	≥1,310	783.73	31.87	-1.11
Economic Status*								
Not Economically Disadvantaged	≥8,990	754.60	38.60		≥7,710	761.64	35.33	
Economically Disadvantaged	≥18,050	728.16	35.86	0.71	≥13,980	736.40	35.31	0.71
English Learner Status								
Not English Learner	≥25,960	738.44	38.49		≥20,840	747.25	36.47	
English Learner	≥1,210	703.27	30.29	0.92	≥960	702.78	29.66	1.22
Migrant Status								
Nonmigrant	≥27,130	736.90	38.84		≥21,770	745.31	37.32	
Migrant	≥30	724.82	40.88	0.31	≥30	725.61	40.53	0.52
Section 504 Status								
Non-Section 504	≥23,970	738.80	39.05		≥20,060	746.02	37.31	
Section 504	≥3,200	722.52	34.00	0.42	≥1,740	736.78	36.47	0.24
Homeless Status								
Not Homeless	≥26,620	737.22	38.85		≥21,400	745.60	37.34	
Homeless	≥550	720.20	34.58	0.43	≥400	728.32	32.47	0.46
Military Affiliation								
Not Military Affiliated	≥26,770	736.55	38.79		≥21,450	744.97	37.30	
Military Affiliated	≥400	758.99	36.24	-0.57	≥350	763.98	34.61	-0.51
Foster Care Status								
Not in Foster Care	≥27,080	736.96	38.84		≥21,760	745.31	37.33	
Foster Care	≥90	713.59	33.97	0.60	≥40	727.96	34.34	0.46

*Economic Status was not available for all students.

Table 10.19 Fall 2022 Administration Impact Analysis: English II

Group	Form E				Form F			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥400	705.80	45.77		≥8,950	730.02	52.94	
Gender								
Male	≥240	699.74	42.69		≥4,810	720.08	51.79	
Female	≥150	715.14	48.82	-0.34	≥4,140	741.56	51.93	-0.41
Ethnicity								
White	≥90	754.08	48.84		≥3,100	756.65	49.31	
Hispanic/Latino	≥60	682.72	31.44	1.67	≥1,320	712.61	52.28	0.87
American Indian or Alaska Native	<10	NR	NR	NR	≥60	736.98	45.46	0.39
Asian	<10	NR	NR	NR	≥200	767.80	58.69	-0.22
Black or African American	≥230	691.85	31.38	1.66	≥4,020	711.87	45.16	0.95
Native Hawaiian or Other Pacific	<10	NR	NR	NR	≥10	752.00	49.28	0.09
Two or More Races	<10	NR	NR	NR	≥220	753.71	48.69	0.05
Education Classification								
Regular Education	≥340	709.52	45.84		≥7,580	732.18	50.93	
Special Education	≥50	675.21	20.96	0.79	≥950	686.78	36.50	0.91
Gifted or Talented	<10	NR	NR	NR	≥410	790.79	44.43	-1.15
Economic Status*								
Not Economically Disadvantaged	≥60	729.45	57.04		≥2,910	758.71	51.66	
Economically Disadvantaged	≥330	700.93	41.54	0.64	≥6,020	716.22	47.76	0.86
English Learner Status								
Not English Learner	≥350	710.50	46.66		≥8,180	734.67	52.27	
English Learner	≥50	674.02	19.73	0.82	≥770	680.63	29.87	1.06
Migrant Status								
Nonmigrant	≥400	705.88	45.80		≥8,940	730.05	52.95	
Migrant	<10	NR	NR	NR	<10	NR	NR	NR
Section 504 Status								
Non-Section 504	≥350	705.99	46.97		≥8,050	732.63	53.19	
Section 504	≥50	704.49	36.77	0.03	≥900	706.66	44.33	0.49
Homeless Status								
Not Homeless	≥390	706.29	46.02		≥8,810	730.56	52.98	
Homeless	<10	NR	NR	NR	≥140	696.31	37.42	0.64
Military Affiliation								
Not Military Affiliated	≥400	705.90	45.79		≥8,670	728.52	52.56	
Military Affiliated	<10	NR	NR	NR	≥270	776.72	42.81	-0.92
Foster Care Status								
Not in Foster Care	≥400	705.76	45.82		≥8,930	730.08	52.96	
Foster Care	<10	NR	NR	NR	≥10	695.94	29.48	0.64

*Economic Status was not available for all students.

Table 10.20 Spring 2023 Administration Impact Analysis: English II

Group	Form H				Form J			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥26,370	739.31	47.57		≥16,790	747.99	44.96	
Gender								
Male	≥13,380	730.56	47.68		≥8,130	740.40	45.25	
Female	≥12,980	748.32	45.75	-0.38	≥8,650	755.11	43.49	-0.33
Ethnicity								
White	≥11,290	755.87	44.83		≥7,490	763.38	41.16	
Hispanic/Latino	≥2,150	730.84	50.20	0.54	≥1,490	732.44	48.15	0.72
American Indian or Alaska Native	≥130	729.16	47.12	0.59	≥100	750.18	46.10	0.32
Asian	≥410	778.15	49.45	-0.49	≥290	780.71	44.72	-0.41
Black or African American	≥11,570	722.84	42.99	0.75	≥6,920	732.68	41.62	0.74
Native Hawaiian or Other Pacific	≥20	733.59	51.91	0.49	≥10	738.16	51.36	0.61
Two or More Races	≥750	748.76	46.78	0.15	≥450	757.15	42.09	0.15
Education Classification								
Regular Education	≥21,570	742.68	44.40		≥15,260	746.27	43.39	
Special Education	≥3,330	695.13	36.03	1.09	≥500	710.56	44.47	0.82
Gifted or Talented	≥1,460	790.14	39.70	-1.07	≥1,020	792.12	37.73	-1.06
Economic Status*								
Not Economically Disadvantaged	≥9,480	758.98	46.24		≥6,320	765.41	42.04	
Economically Disadvantaged	≥16,780	728.30	44.67	0.67	≥10,400	737.45	43.34	0.65
English Learner Status								
Not English Learner	≥25,490	740.80	47.10		≥16,210	749.93	43.94	
English Learner	≥870	695.62	40.08	0.96	≥580	693.57	38.46	1.28
Migrant Status								
Nonmigrant	≥26,340	739.33	47.58		≥16,760	748.03	44.94	
Migrant	≥20	721.59	39.02	0.37	≥30	720.93	46.00	0.60
Section 504 Status								
Non-Section 504	≥23,540	741.42	47.50		≥15,530	749.01	44.92	
Section 504	≥2,830	721.76	44.45	0.41	≥1,250	735.34	43.47	0.30
Homeless Status								
Not Homeless	≥25,980	739.59	47.60		≥16,550	748.31	44.92	
Homeless	≥380	720.26	42.03	0.40	≥230	725.44	41.56	0.50
Military Affiliation								
Not Military Affiliated	≥26,000	739.07	47.54		≥16,580	747.70	44.91	
Military Affiliated	≥360	756.79	46.64	-0.37	≥200	770.97	42.43	-0.51
Foster Care Status								
Not in Foster Care	≥26,320	739.36	47.57		≥16,760	747.99	44.96	
Foster Care	≥40	713.02	43.32	0.55	≥20	746.23	41.59	0.03

*Economic Status was not available for all students.

Table 10.21 Fall 2022 Administration Impact Analysis: Algebra I

	Form D				Form E			
Group	**N**	**Scale Score Mean**	**Scale Score Std. Dev.**	**Effect Size**	**N**	**Scale Score Mean**	**Scale Score Std. Dev.**	**Effect Size**
All Students	≥6,620	725.72	34.14		≥250	707.91	25.94	
Gender								
Male	≥3,410	724.12	34.22		≥130	705.41	27.03	
Female	≥3,200	727.42	33.98	-0.09	≥110	710.98	24.29	-0.21
Ethnicity								
White	≥2,150	741.43	35.87		≥70	723.58	28.55	
Hispanic/Latino	≥860	720.75	33.13	0.58	≥20	706.13	30.80	0.59
Black or African American	≥30	731.18	36.56	0.28	<10	NR	NR	NR
Two or More Races	≥70	750.60	43.57	-0.25	<10	NR	NR	NR
Black or African American	≥3,320	715.70	28.13	0.81	≥150	700.86	20.50	0.97
Native Hawaiian or Other Pacific	<10	NR	NR	NR	<10	NR	NR	NR
Two or More Races	≥170	735.29	37.31	0.17	<10	NR	NR	NR
Education Classification								
Regular Education	≥5,700	727.54	33.77		≥210	709.40	25.80	
Special Education	≥770	704.66	23.42	0.69	≥30	699.24	25.37	0.39
Gifted or Talented	≥150	764.69	37.35	-1.09	<10	NR	NR	NR
Economic Status*								
Not Economically Disadvantaged	≥1,720	740.98	36.11		≥30	716.74	31.13	
Economically Disadvantaged	≥4,880	720.32	31.74	0.62	≥210	706.34	24.66	0.40
English Learner Status								
Not English Learner	≥6,130	727.37	34.34		≥240	708.23	26.13	
English Learner	≥480	705.01	23.03	0.66	≥10	701.42	21.61	0.26
Migrant Status								
Nonmigrant	≥6,610	725.74	34.15		≥250	707.91	25.94	
Migrant	<10	NR	NR	NR	<10	NR	NR	NR
Section 504 Status								
Non-Section 504	≥5,880	726.91	34.57		≥210	709.15	26.09	
Section 504	≥740	716.25	28.89	0.31	≥30	700.20	23.87	0.34
Homeless Status								
Not Homeless	≥6,520	725.96	34.18		≥240	708.04	26.02	
Homeless	≥100	709.52	27.59	0.48	<10	NR	NR	NR
Military Affiliation								
Not Military Affiliated	≥6,460	725.00	33.82		≥250	707.91	25.94	
Military Affiliated	≥150	755.86	34.36	-0.91	<10	NR	NR	NR
Foster Care Status								
Not in Foster Care	≥6,600	725.75	34.16		≥250	708.02	25.96	
Foster Care	≥10	711.78	23.83	0.40	<10	NR	NR	NR

*Economic Status was not available for all students.

Table 10.22 Spring 2023 Administration Impact Analysis: Algebra I

Group	Form H				Form J			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥27,930	737.51	37.64		≥21,570	744.69	37.22	
Gender								
Male	≥14,540	734.77	38.16		≥10,640	743.73	38.59	
Female	≥13,380	740.49	36.84	-0.15	≥10,930	745.62	35.80	-0.05
Ethnicity								
White	≥11,280	751.49	38.34		≥9,510	757.92	37.00	
Hispanic/Latino	≥3,050	730.83	36.07	0.54	≥1,800	740.16	35.96	0.48
American Indian or Alaska Native	≥160	736.69	36.46	0.38	≥140	745.41	35.88	0.33
Asian	≥430	773.76	44.53	-0.57	≥360	785.87	40.61	-0.75
Black or African American	≥12,100	724.38	30.96	0.78	≥9,030	729.49	30.45	0.83
Native Hawaiian or Other Pacific	≥20	755.65	39.22	-0.10	≥10	760.75	39.22	-0.07
Two or More Races	≥860	744.14	38.20	0.19	≥700	750.60	36.07	0.19
Education Classification								
Regular Education	≥22,310	739.21	35.96		≥19,700	742.56	35.76	
Special Education	≥4,220	713.61	26.96	0.73	≥530	731.23	34.62	0.31
Gifted or Talented	≥1,390	783.00	40.64	-1.20	≥1,330	781.51	39.19	-1.08
Economic Status*								
Not Economically Disadvantaged	≥9,130	754.84	40.31		≥7,790	760.97	37.69	
Economically Disadvantaged	≥18,660	729.16	33.17	0.71	≥13,680	735.55	33.59	0.72
English Learner Status								
Not English Learner	≥26,430	738.87	37.68		≥21,120	745.30	37.12	
English Learner	≥1,490	713.60	27.71	0.67	≥440	715.55	29.16	0.80
Migrant Status								
Nonmigrant	≥27,880	737.53	37.65		≥21,540	744.70	37.22	
Migrant	≥40	729.73	34.91	0.20	≥30	737.03	36.06	0.20
Section 504 Status								
Non-Section 504	≥24,720	739.01	37.98		≥19,900	745.64	37.25	
Section 504	≥3,200	726.00	32.72	0.34	≥1,670	733.32	34.80	0.33
Homeless Status								
Not Homeless	≥27,400	737.82	37.70		≥21,180	745.02	37.26	
Homeless	≥520	721.52	30.30	0.43	≥380	726.60	29.72	0.49
Military Affiliation								
Not Military Affiliated	≥27,490	737.18	37.50		≥21,210	744.41	37.12	
Military Affiliated	≥430	758.70	40.52	-0.57	≥350	761.36	39.17	-0.45
Foster Care Status								
Not in Foster Care	≥27,840	737.60	37.64		≥21,520	744.73	37.22	
Foster Care	≥80	711.42	28.15	0.69	≥40	725.28	28.72	0.52

*Economic Status was not available for all students.

Table 10.23 Fall 2022 Administration Impact Analysis: Geometry

Group	Form D				Form E			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥4,970	736.67	28.23		≥160	718.10	24.47	
Gender								
Male	≥2,420	736.34	29.28		≥90	716.98	24.78	
Female	≥2,540	736.99	27.20	-0.02	≥70	719.61	24.14	-0.10
Ethnicity								
White	≥1,960	748.68	26.19		≥40	744.18	21.75	
Hispanic/Latino	≥620	729.79	26.02	0.72	≥15	709.47	13.04	1.75
Asian	≥40	732.41	23.93	0.62	<10	NR	NR	NR
Black or African American	≥100	763.55	40.88	-0.54	<10	NR	NR	NR
Two or More Races	≥2,060	725.20	23.85	0.93	≥110	708.78	16.62	1.95
Native Hawaiian or Other Pacific	<10	NR	NR	NR	<10	NR	NR	NR
Two or More Races	≥150	747.44	29.50	0.04	<10	NR	NR	NR
Education Classification								
Regular Education	≥4,330	735.44	25.81		≥150	719.40	24.10	
Special Education	≥280	713.98	24.07	0.83	≥10	706.47	25.45	0.53
Gifted or Talented	≥350	769.32	32.67	-1.28	<10	NR	NR	NR
Economic Status*								
Not Economically Disadvantaged	≥1,850	748.46	27.88		≥20	723.59	27.42	
Economically Disadvantaged	≥3,100	729.69	26.00	0.70	≥140	717.06	23.84	0.26
English Learner Status								
Not English Learner	≥4,730	737.75	28.18		≥150	718.56	24.93	
English Learner	≥230	715.19	19.36	0.81	≥10	710.80	14.45	0.31
Migrant Status								
Nonmigrant	≥4,960	736.69	28.24		≥160	718.10	24.47	
Migrant	<10	NR	NR	NR	<10	NR	NR	NR
Section 504 Status								
Non-Section 504	≥4,620	737.30	28.25		≥150	717.98	25.27	
Section 504	≥350	728.33	26.67	0.31	≥10	719.54	11.53	-0.06
Homeless Status								
Not Homeless	≥4,900	736.90	28.24		≥160	718.29	24.79	
Homeless	≥60	719.85	22.15	0.60	<10	NR	NR	NR
Military Affiliation								
Not Military Affiliated	≥4,800	736.01	28.23		≥160	718.10	24.47	
Military Affiliated	≥170	755.24	21.30	-0.68	<10	NR	NR	NR
Foster Care Status								
Not in Foster Care	≥4,960	736.69	28.23		≥160	718.10	24.47	
Foster Care	<10	NR	NR	NR	<10	NR	NR	NR

*Economic Status was not available for all students.

Table 10.24 Spring 2023 Administration Impact Analysis: Geometry

Group	Form H				Form J			
	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size	N	Scale Score Mean	Scale Score Std. Dev.	Effect Size
All Students	≥19,150	734.31	29.96		≥16,610	737.97	30.09	
Gender								
Male	≥9,200	734.43	31.27		≥7,720	739.08	31.11	
Female	≥9,940	734.20	28.71	0.00	≥8,890	737.00	29.15	0.06
Ethnicity								
White	≥8,350	746.74	29.10		≥7,750	750.07	28.45	
Hispanic/Latino	≥1,640	730.09	29.49	0.57	≥1,250	734.93	28.65	0.53
American Indian or Alaska Native	≥100	740.56	28.85	0.21	≥70	744.77	30.07	0.18
Asian	≥400	762.59	35.76	-0.53	≥350	767.61	35.82	-0.60
Black or African American	≥8,100	720.47	23.26	0.99	≥6,700	722.67	23.76	1.03
Native Hawaiian or Other Pacific	≥10	735.50	28.71	0.38	≥20	745.91	31.57	0.14
Two or More Races	≥510	740.76	30.14	0.20	≥460	740.48	28.90	0.33
Education Classification								
Regular Education	≥16,210	734.33	28.30		≥15,140	735.87	28.59	
Special Education	≥1,730	711.76	21.69	0.81	≥300	726.22	30.46	0.33
Gifted or Talented	≥1,210	766.32	32.47	-1.11	≥1,160	768.44	32.09	-1.12
Economic Status*								
Not Economically Disadvantaged	≥7,500	747.28	30.95		≥6,980	750.43	29.94	
Economically Disadvantaged	≥11,570	725.99	26.10	0.75	≥9,560	728.96	26.80	0.76
English Learner Status								
Not English Learner	≥18,510	735.00	29.88		≥16,330	738.29	29.97	
English Learner	≥640	714.53	25.35	0.68	≥280	719.10	31.10	0.64
Migrant Status								
Nonmigrant	≥19,130	734.31	29.97		≥16,600	737.97	30.09	
Migrant	≥10	738.68	26.28	-0.14	≥10	738.50	28.10	-0.01
Section 504 Status								
Non-Section 504	≥17,410	735.30	30.10		≥15,560	738.33	30.12	
Section 504	≥1,740	724.47	26.64	0.36	≥1,050	732.62	29.19	0.18
Homeless Status								
Not Homeless	≥18,920	734.52	30.00		≥16,440	738.12	30.10	
Homeless	≥230	717.48	21.49	0.56	≥170	723.27	25.42	0.49
Military Affiliation								
Not Military Affiliated	≥18,840	734.05	29.83		≥16,380	737.71	30.01	
Military Affiliated	≥300	750.36	33.95	-0.54	≥230	755.95	30.33	-0.60
Foster Care Status								
Not in Foster Care	≥19,130	734.33	29.97		≥16,590	738.01	30.09	
Foster Care	≥20	719.91	24.11	0.48	≥20	708.42	16.94	0.98

*Economic Status was not available for all students.

Additional data for scale score means are provided in Tables 10.25 and 10.28. These tables report the number of students, scale score means, and standard deviations for each Special Education Classification. Groups that have fewer than 10 students are not reported (NR) in the tables.

Table 10.25 Special Education Classification Scale Score Means and Standard Deviations: English I

Special Education Classification Scale Score Means and Standard Deviations: English I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Fall 2022	E	Gifted	<50	NR	NR	≥440	702.69	33.66
		Talented	<50	NR	NR	≥440	702.75	33.72
		Autism	<50	NR	NR	≥440	702.97	33.72
		Deaf-Blindness	<50	NR	NR	≥440	702.69	33.66
		Developmental Delay	<50	NR	NR	≥440	702.69	33.66
		Emotional Disturbance	<50	NR	NR	≥440	702.79	33.76
		HI-Deaf	<50	NR	NR	≥440	702.69	33.66
		HI-Hard-of-Hearing	<50	NR	NR	≥440	702.69	33.66
		Mild Mental Disability	<50	NR	NR	≥430	703.56	33.68
		Moderate Mental Disability	<50	NR	NR	≥440	702.69	33.66
		Orthopedic Impairment	<50	NR	NR	≥440	702.69	33.66
		Other Health Impairment	<50	NR	NR	≥430	703.18	33.71
		Specific Learning Disability	<50	NR	NR	≥410	703.31	34.43
		Speech or Language Impairment	<50	NR	NR	≥440	702.89	33.65
		Traumatic Brain Injury	<50	NR	NR	≥440	702.9	33.59
		Visual Impairment	<50	NR	NR	≥440	702.59	33.63
		Other	<50	NR	NR	≥440	702.69	33.66
	F	Gifted	≥100	810.94	25.39	≥9,210	719.91	40.16
		Talented	≥170	770.48	41.23	≥9,140	719.94	40.54
		Autism	≥60	698.18	32.62	≥9,250	721.07	41.15
		Deaf-Blindness	<50	NR	NR	≥9,320	720.91	41.14
		Developmental Delay	<50	NR	NR	≥9,320	720.91	41.14
		Emotional Disturbance	<50	NR	NR	≥9,270	721.06	41.14
		HI-Deaf	<50	NR	NR	≥9,320	720.91	41.14
		HI-Hard-of-Hearing	<50	NR	NR	≥9,300	720.92	41.15
		Mild Mental Disability	≥100	680.23	17.04	≥9,210	721.36	41.1
		Moderate Mental Disability	<50	NR	NR	≥9,310	720.92	41.13
		Orthopedic Impairment	<50	NR	NR	≥9,310	720.91	41.13

Special Education Classification Scale Score Means and Standard Deviations: English I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
		Other Health Impairment	≥300	694.22	28.97	≥9,010	721.80	41.18
		Specific Learning Disability	≥850	692.14	21.85	≥8,460	723.80	41.51
		Speech or Language Impairment	<50	NR	NR	≥9,270	720.95	41.15
		Traumatic Brain Injury	<50	NR	NR	≥9,310	720.92	41.14
		Visual Impairment	<50	NR	NR	≥9,310	720.91	41.14
		Other	<50	NR	NR	≥9,310	720.94	41.14
Spring 2023	H	Gifted	≥530	798.47	28.31	≥26,630	735.63	38.01
		Talented	≥790	770.72	33.06	≥26,370	735.85	38.55
		Autism	≥210	713.46	34.93	≥26,960	737.06	38.82
		Deaf-Blindness	<50	NR	NR	≥27,170	736.88	38.84
		Developmental Delay	<50	NR	NR	≥27,170	736.88	38.85
		Emotional Disturbance	≥140	701.53	26.04	≥27,020	737.07	38.82
		HI-Deaf	<50	NR	NR	≥27,150	736.91	38.84
		HI-Hard-of-Hearing	<50	NR	NR	≥27,130	736.91	38.83
		Mild Mental Disability	≥190	688.57	18	≥26,970	737.23	38.73
		Moderate Mental Disability	<50	NR	NR	≥27,170	736.88	38.84
		Orthopedic Impairment	<50	NR	NR	≥27,140	736.91	38.84
		Other Health Impairment	≥860	707.39	29.59	≥26,300	737.85	38.73
		Specific Learning Disability	≥2,460	702.74	25.43	≥24,700	740.29	38.3
		Speech or Language Impairment	≥130	724.83	35.65	≥27,030	736.94	38.85
		Traumatic Brain Injury	<50	NR	NR	≥27,160	736.89	38.85
		Visual Impairment	<50	NR	NR	≥27,150	736.88	38.85
		Other	<50	NR	NR	≥27,170	736.88	38.84
	J	Gifted	≥520	798.11	26.32	≥21,280	743.97	36.61
		Talented	≥780	774.09	31.64	≥21,020	744.20	37.1
		Autism	≥50	738.24	35.88	≥21,750	745.30	37.33
		Deaf-Blindness	<50	NR	NR	≥21,800	745.28	37.33
		Developmental Delay	<50	NR	NR	≥21,800	745.28	37.33
		Emotional Disturbance	<50	NR	NR	≥21,770	745.33	37.32
		HI-Deaf	<50	NR	NR	≥21,800	745.28	37.33
		HI-Hard-of-Hearing	<50	NR	NR	≥21,800	745.28	37.33
		Mild Mental Disability	<50	NR	NR	≥21,790	745.31	37.32
		Moderate Mental Disability	<50	NR	NR	≥21,800	745.29	37.33
		Orthopedic Impairment	<50	NR	NR	≥21,790	745.28	37.33

Special Education Classification Scale Score Means and Standard Deviations: English I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
		Other Health Impairment	≥200	720.24	34.06	≥21,600	745.52	37.28
		Specific Learning Disability	≥290	712.48	30.86	≥21,510	745.73	37.21
		Speech or Language Impairment	≥50	736.55	42.26	≥21,750	745.3	37.32
		Traumatic Brain Injury	<50	NR	NR	≥21,800	745.28	37.33
		Visual Impairment	<50	NR	NR	≥21,800	745.28	37.33
		Other	<50	NR	NR	≥21,800	745.28	37.33
Summer 2023	DR	Gifted	<50	NR	NR	≥3,170	693.60	23.18
		Talented	<50	NR	NR	≥3,150	693.39	23.08
		Autism	<50	NR	NR	≥3,140	693.67	23.18
		Deaf-Blindness	<50	NR	NR	≥3,170	693.59	23.19
		Developmental Delay	<50	NR	NR	≥3,170	693.58	23.19
		Emotional Disturbance	<50	NR	NR	≥3,150	693.69	23.19
		HI-Deaf	<50	NR	NR	≥3,160	693.63	23.19
		HI-Hard-of-Hearing	<50	NR	NR	≥3,170	693.61	23.19
		Mild Mental Disability	<50	NR	NR	≥3,130	693.79	23.16
		Moderate Mental Disability	<50	NR	NR	≥3,170	693.59	23.19
		Orthopedic Impairment	<50	NR	NR	≥3,170	693.58	23.18
		Other Health Impairment	≥130	689.03	23.15	≥3,040	693.79	23.17
		Specific Learning Disability	≥380	686.37	18.7	≥2,790	694.58	23.57
		Speech or Language Impairment	<50	NR	NR	≥3,160	693.62	23.19
		Traumatic Brain Injury	<50	NR	NR	≥3,170	693.58	23.2
		Visual Impairment	<50	NR	NR	≥3,170	693.59	23.18
		Other	<50	NR	NR	≥3,170	693.59	23.19

Table 10.26 Special Education Classification Scale Score Means and Standard Deviations: English II

Special Education Classification Scale Score Means and Standard Deviations: English II								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Fall 2022	E	Gifted	<50	NR	NR	≥400	704.99	44.89
		Talented	<50	NR	NR	≥400	705.80	45.77
		Autism	<50	NR	NR	≥400	706.01	45.93
		Deaf-Blindness	<50	NR	NR	≥400	705.80	45.77
		Developmental Delay	<50	NR	NR	≥400	705.80	45.77
		Emotional Disturbance	<50	NR	NR	≥400	705.88	45.8
		HI-Deaf	<50	NR	NR	≥400	705.90	45.81
		HI-Hard-of-Hearing	<50	NR	NR	≥400	705.80	45.77
		Mild Mental Disability	<50	NR	NR	≥390	706.39	45.83
		Moderate Mental Disability	<50	NR	NR	≥400	705.80	45.77
		Orthopedic Impairment	<50	NR	NR	≥400	705.68	45.76
		Other Health Impairment	<50	NR	NR	≥390	706.94	45.84
		Specific Learning Disability	<50	NR	NR	≥380	707.47	46.22
		Speech or Language Impairment	<50	NR	NR	≥390	706.24	45.96
		Traumatic Brain Injury	<50	NR	NR	≥400	705.88	45.8
		Visual Impairment	<50	NR	NR	≥400	705.80	45.77
		Other	<50	NR	NR	≥400	705.80	45.77
	F	Gifted	≥150	815.65	28.9	≥8,800	728.56	52.05
		Talented	≥260	776.51	45.53	≥8,690	728.62	52.52
		Autism	≥50	696.46	44.57	≥8,900	730.21	52.93
		Deaf-Blindness	<50	NR	NR	≥8,950	730.02	52.94
		Developmental Delay	<50	NR	NR	≥8,950	730.02	52.94
		Emotional Disturbance	<50	NR	NR	≥8,910	730.15	52.95
		HI-Deaf	<50	NR	NR	≥8,950	730.02	52.94
		HI-Hard-of-Hearing	<50	NR	NR	≥8,930	730.06	52.93
		Mild Mental Disability	≥50	666.13	14.89	≥8,900	730.39	52.86
		Moderate Mental Disability	<50	NR	NR	≥8,950	730.02	52.94
		Orthopedic Impairment	<50	NR	NR	≥8,940	730.04	52.93
		Other Health Impairment	≥200	688.02	38.19	≥8,740	731.00	52.84
		Specific Learning Disability	≥540	683.95	31.49	≥8,400	733.03	52.67
		Speech or Language Impairment	<50	NR	NR	≥8,920	730.07	52.93

Special Education Classification Scale Score Means and Standard Deviations: English II								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
		Traumatic Brain Injury	<50	NR	NR	≥8,950	730.02	52.95
		Visual Impairment	<50	NR	NR	≥8,940	730.01	52.95
		Other	<50	NR	NR	≥8,950	730.02	52.95
Spring 2023	H	Gifted	≥650	807.83	31.92	≥25,710	737.57	46.61
		Talented	≥810	775.89	39.63	≥25,560	738.15	47.35
		Autism	≥170	708.29	43.20	≥26,190	739.52	47.53
		Deaf-Blindness	<50	NR	NR	≥26,370	739.31	47.57
		Developmental Delay	<50	NR	NR	≥26,360	739.31	47.57
		Emotional Disturbance	≥90	696.42	38.46	≥26,270	739.46	47.54
		HI-Deaf	<50	NR	NR	≥26,350	739.34	47.56
		HI-Hard-of-Hearing	<50	NR	NR	≥26,320	739.34	47.57
		Mild Mental Disability	≥120	671.81	25.75	≥26,240	739.63	47.42
		Moderate Mental Disability	<50	NR	NR	≥26,360	739.33	47.56
		Orthopedic Impairment	<50	NR	NR	≥26,340	739.33	47.57
		Other Health Impairment	≥710	699.40	39.26	≥25,650	740.42	47.31
		Specific Learning Disability	≥2,010	692.25	32.13	≥24,350	743.20	46.55
		Speech or Language Impairment	≥70	712.47	44.94	≥26,300	739.38	47.56
		Traumatic Brain Injury	<50	NR	NR	≥26,360	739.33	47.56
		Visual Impairment	<50	NR	NR	≥26,340	739.32	47.58
		Other	<50	NR	NR	≥26,360	739.31	47.57
	J	Gifted	≥460	807.95	29.32	≥16,320	746.29	44.15
		Talented	≥560	779.04	38.90	≥16,230	746.92	44.77
		Autism	<50	NR	NR	≥16,750	748.02	44.93
		Deaf-Blindness	<50	NR	NR	≥16,790	747.99	44.96
		Developmental Delay	<50	NR	NR	≥16,790	747.99	44.96
		Emotional Disturbance	<50	NR	NR	≥16,750	748.07	44.92
		HI-Deaf	<50	NR	NR	≥16,780	748.00	44.95
		HI-Hard-of-Hearing	<50	NR	NR	≥16,770	748.00	44.96
		Mild Mental Disability	<50	NR	NR	≥16,780	748.03	44.93
		Moderate Mental Disability	<50	NR	NR	≥16,790	747.99	44.96
		Orthopedic Impairment	<50	NR	NR	≥16,780	747.98	44.95
		Other Health Impairment	≥150	707.78	42.97	≥16,630	748.37	44.8
		Specific Learning Disability	≥200	703.30	38.21	≥16,580	748.54	44.76

Special Education Classification Scale Score Means and Standard Deviations: English II								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
		Speech or Language Impairment	<50	NR	NR	≥16,750	748.01	44.95
		Traumatic Brain Injury	<50	NR	NR	≥16,780	747.99	44.96
		Visual Impairment	<50	NR	NR	≥16,780	747.99	44.96
		Other	<50	NR	NR	≥16,790	747.99	44.96
Summer 2023	D	Gifted	<50	NR	NR	≥1,360	679.49	26.66
		Talented	<50	NR	NR	≥1,360	679.43	26.58
		Autism	<50	NR	NR	≥1,350	679.61	26.62
		Deaf-Blindness	<50	NR	NR	≥1,360	679.49	26.66
		Developmental Delay	<50	NR	NR	≥1,360	679.49	26.66
		Emotional Disturbance	<50	NR	NR	≥1,360	679.56	26.66
		HI-Deaf	<50	NR	NR	≥1,360	679.51	26.67
		HI-Hard-of-Hearing	<50	NR	NR	≥1,360	679.54	26.67
		Mild Mental Disability	<50	NR	NR	≥1,350	679.47	26.71
		Moderate Mental Disability	<50	NR	NR	≥1,360	679.50	26.67
		Orthopedic Impairment	<50	NR	NR	≥1,360	679.44	26.61
		Other Health Impairment	<50	NR	NR	≥1,320	679.84	26.72
		Specific Learning Disability	≥150	670.78	20.82	≥1,200	680.63	27.14
		Speech or Language Impairment	<50	NR	NR	≥1,360	679.58	26.67
		Traumatic Brain Injury	<50	NR	NR	≥1,360	679.52	26.67
		Visual Impairment	<50	NR	NR	≥1,360	679.49	26.66
		Other	<50	NR	NR	≥1,360	679.49	26.66

Table 10.27 Special Education Classification Scale Score Means and Standard Deviations: Algebra I

Special Education Classification Scale Score Means and Standard Deviations: Algebra I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Fall 2022	D	Gifted	<50	NR	NR	≥6,580	725.33	33.74
		Talented	≥110	754.78	32.75	≥6,500	725.21	33.95
		Autism	<50	NR	NR	≥6,580	725.80	34.15
		Deaf-Blindness	<50	NR	NR	≥6,620	725.72	34.14
		Developmental Delay	<50	NR	NR	≥6,620	725.72	34.14
		Emotional Disturbance	<50	NR	NR	≥6,580	725.86	34.15
		HI-Deaf	<50	NR	NR	≥6,620	725.72	34.14
		HI-Hard-of-Hearing	<50	NR	NR	≥6,610	725.72	34.14
		Mild Mental Disability	<50	NR	NR	≥6,580	725.90	34.14
		Moderate Mental Disability	<50	NR	NR	≥6,620	725.72	34.14
		Orthopedic Impairment	<50	NR	NR	≥6,610	725.72	34.14
		Other Health Impairment	≥150	706.03	22.27	≥6,460	726.18	34.24
		Specific Learning Disability	≥440	703.31	21.48	≥6,170	727.34	34.32
		Speech or Language Impairment	<50	NR	NR	≥6,590	725.72	34.13
		Traumatic Brain Injury	<50	NR	NR	≥6,610	725.72	34.14
		Visual Impairment	<50	NR	NR	≥6,610	725.72	34.14
		Other	<50	NR	NR	≥6,610	725.74	34.14
	E	Gifted	<50	NR	NR	≥250	707.91	25.94
		Talented	<50	NR	NR	≥250	707.91	25.94
		Autism	<50	NR	NR	≥250	707.88	25.98
		Deaf-Blindness	<50	NR	NR	≥250	707.91	25.94
		Developmental Delay	<50	NR	NR	≥250	707.91	25.94
		Emotional Disturbance	<50	NR	NR	≥250	708.12	25.92
		HI-Deaf	<50	NR	NR	≥250	707.91	25.94
		HI-Hard-of-Hearing	<50	NR	NR	≥250	707.94	25.98
		Mild Mental Disability	<50	NR	NR	≥240	708.38	25.73
		Moderate Mental Disability	<50	NR	NR	≥250	707.91	25.94
		Orthopedic Impairment	<50	NR	NR	≥250	707.91	25.94
		Other Health Impairment	<50	NR	NR	≥240	708.2	26.04
		Specific Learning Disability	<50	NR	NR	≥230	708.62	26.40
		Speech or Language Impairment	<50	NR	NR	≥240	707.55	25.40
		Traumatic Brain Injury	<50	NR	NR	≥250	707.91	25.94
		Visual Impairment	<50	NR	NR	≥250	707.91	25.94
		Other	<50	NR	NR	≥250	707.91	25.94

Special Education Classification Scale Score Means and Standard Deviations: Algebra I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Spring 2023	H	Gifted	≥550	806.36	32.87	≥27,370	736.13	36.42
		Talented	≥830	767.61	37.85	≥27,090	736.58	37.25
		Autism	≥210	723.58	34.78	≥27,710	737.63	37.64
		Deaf-Blindness	<50	NR	NR	≥27,930	737.52	37.64
		Developmental Delay	<50	NR	NR	≥27,930	737.52	37.64
		Emotional Disturbance	≥140	705.03	26.12	≥27,780	737.69	37.62
		HI-Deaf	<50	NR	NR	≥27,910	737.53	37.65
		HI-Hard-of-Hearing	<50	NR	NR	≥27,890	737.54	37.65
		Mild Mental Disability	≥180	702.34	21.65	≥27,740	737.75	37.62
		Moderate Mental Disability	<50	NR	NR	≥27,920	737.52	37.64
		Orthopedic Impairment	<50	NR	NR	≥27,890	737.53	37.65
		Other Health Impairment	≥890	713.75	27.35	≥27,030	738.30	37.68
		Specific Learning Disability	≥2,530	712.54	24.41	≥25,400	740	37.82
		Speech or Language Impairment	≥120	738.41	41.36	≥27,800	737.51	37.63
		Traumatic Brain Injury	<50	NR	NR	≥27,920	737.52	37.64
		Visual Impairment	<50	NR	NR	≥27,910	737.52	37.65
		Other	<50	NR	NR	≥27,930	737.52	37.64
	J	Gifted	≥550	802.85	32.94	≥21,020	743.16	36.08
		Talented	≥780	766.43	36.15	≥20,790	743.87	37.01
		Autism	<50	NR	NR	≥21,520	744.66	37.19
		Deaf-Blindness	<50	NR	NR	≥21,570	744.69	37.22
		Developmental Delay	<50	NR	NR	≥21,570	744.69	37.22
		Emotional Disturbance	<50	NR	NR	≥21,540	744.71	37.20
		HI-Deaf	<50	NR	NR	≥21,560	744.68	37.21
		HI-Hard-of-Hearing	<50	NR	NR	≥21,560	744.68	37.21
		Mild Mental Disability	<50	NR	NR	≥21,570	744.69	37.21
		Moderate Mental Disability	<50	NR	NR	≥21,570	744.69	37.22
		Orthopedic Impairment	<50	NR	NR	≥21,550	744.68	37.22
		Other Health Impairment	≥150	729.75	31.34	≥21,410	744.79	37.23
		Specific Learning Disability	≥200	718.74	24.69	≥21,360	744.93	37.23
		Speech or Language Impairment	≥60	747.70	30.02	≥21,510	744.68	37.23
		Traumatic Brain Injury	<50	NR	NR	≥21,560	744.69	37.22
		Visual Impairment	<50	NR	NR	≥21,560	744.68	37.22
		Other	<50	NR	NR	≥21,570	744.69	37.22
	D	Gifted	<50	NR	NR	≥2,300	706.32	19.92

Special Education Classification Scale Score Means and Standard Deviations: Algebra I								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Summer 2023		Talented	<50	NR	NR	≥2,280	706.23	19.88
		Autism	<50	NR	NR	≥2,290	706.34	19.93
		Deaf-Blindness	<50	NR	NR	≥2,300	706.33	19.93
		Developmental Delay	<50	NR	NR	≥2,300	706.33	19.93
		Emotional Disturbance	<50	NR	NR	≥2,280	706.37	19.97
		HI-Deaf	<50	NR	NR	≥2,300	706.29	19.90
		HI-Hard-of-Hearing	<50	NR	NR	≥2,300	706.34	19.94
		Mild Mental Disability	<50	NR	NR	≥2,280	706.49	19.87
		Moderate Mental Disability	<50	NR	NR	≥2,300	706.33	19.93
		Orthopedic Impairment	<50	NR	NR	≥2,300	706.33	19.93
		Other Health Impairment	≥80	698.61	18.1	≥2,220	706.62	19.94
		Specific Learning Disability	≥230	700.10	19.38	≥2,070	707.04	19.88
		Speech or Language Impairment	<50	NR	NR	≥2,290	706.36	19.93
		Traumatic Brain Injury	<50	NR	NR	≥2,300	706.37	19.92
		Visual Impairment	<50	NR	NR	≥2,300	706.33	19.93
		Other	<50	NR	NR	≥2,300	706.33	19.94

Table 10.28 Special Education Classification Scale Score Means and Standard Deviations: Geometry

Special Education Classification Scale Score Means and Standard Deviations: Geometry								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Fall 2022	D	Gifted	≥150	786.27	28.73	≥4,810	735.09	26.75
		Talented	≥200	756.66	29.6	≥4,760	735.81	27.86
		Autism	<50	NR	NR	≥4,950	736.72	28.22
		Deaf-Blindness	<50	NR	NR	≥4,970	736.67	28.23
		Developmental Delay	<50	NR	NR	≥4,970	736.67	28.23
		Emotional Disturbance	<50	NR	NR	≥4,960	736.74	28.21
		HI-Deaf	<50	NR	NR	≥4,970	736.67	28.23
		HI-Hard-of-Hearing	<50	NR	NR	≥4,960	736.69	28.24
		Mild Mental Disability	<50	NR	NR	≥4,960	736.71	28.22
		Moderate Mental Disability	<50	NR	NR	≥4,970	736.67	28.23
		Orthopedic Impairment	<50	NR	NR	≥4,960	736.67	28.24
		Other Health Impairment	≥70	713.93	22.63	≥4,890	737.02	28.17
		Specific Learning Disability	≥130	710.20	20.38	≥4,830	737.43	28.06
		Speech or Language Impairment	<50	NR	NR	≥4,950	736.64	28.20
		Traumatic Brain Injury	<50	NR	NR	≥4,970	736.67	28.24
		Visual Impairment	<50	NR	NR	≥4,970	736.68	28.23
		Other	<50	NR	NR	≥4,960	736.7	28.22
	D	Gifted	<50	NR	NR	≥160	718.1	24.47
		Talented	<50	NR	NR	≥160	718.1	24.47
		Autism	<50	NR	NR	≥160	718.1	24.47
		Deaf-Blindness	<50	NR	NR	≥160	718.1	24.47
		Developmental Delay	<50	NR	NR	≥160	718.1	24.47
		Emotional Disturbance	<50	NR	NR	≥160	718.1	24.47
		HI-Deaf	<50	NR	NR	≥160	718.1	24.55
		HI-Hard-of-Hearing	<50	NR	NR	≥160	718.1	24.47
		Mild Mental Disability	<50	NR	NR	≥160	718.24	24.47
		Moderate Mental Disability	<50	NR	NR	≥160	718.1	24.47
		Orthopedic Impairment	<50	NR	NR	≥160	718.1	24.47
		Other Health Impairment	<50	NR	NR	≥160	718.24	24.47
		Specific Learning Disability	<50	NR	NR	≥150	719.51	24.59
		Speech or Language Impairment	<50	NR	NR	≥160	717.68	23.94
		Traumatic Brain Injury	<50	NR	NR	≥160	718.1	24.47
		Visual Impairment	<50	NR	NR	≥160	718.1	24.47
		Other	<50	NR	NR	≥160	718.1	24.47

Special Education Classification Scale Score Means and Standard Deviations: Geometry								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Spring 2023	H	Gifted	≥550	783.64	28.76	≥18,600	732.84	28.73
		Talented	≥650	751.71	27.93	≥18,490	733.69	29.85
		Autism	≥100	725.84	29.04	≥19,040	734.36	29.96
		Deaf-Blindness	<50	NR	NR	≥19,150	734.31	29.96
		Developmental Delay	<50	NR	NR	≥19,150	734.31	29.96
		Emotional Disturbance	≥60	712.85	26.4	≥19,090	734.38	29.95
		HI-Deaf	<50	NR	NR	≥19,140	734.32	29.97
		HI-Hard-of-Hearing	<50	NR	NR	≥19,120	734.33	29.96
		Mild Mental Disability	<50	NR	NR	≥19,100	734.4	29.94
		Moderate Mental Disability	<50	NR	NR	≥19,150	734.32	29.97
		Orthopedic Impairment	<50	NR	NR	≥19,140	734.32	29.96
		Other Health Impairment	≥360	712.62	22.45	≥18,780	734.74	29.94
		Specific Learning Disability	≥1,010	708.79	17.44	≥18,140	735.74	29.88
		Speech or Language Impairment	<50	NR	NR	≥19,100	734.33	29.96
		Traumatic Brain Injury	<50	NR	NR	≥19,140	734.32	29.96
		Visual Impairment	<50	NR	NR	≥19,130	734.32	29.96
		Other	<50	NR	NR	≥19,150	734.31	29.96
	J	Gifted	≥520	785.84	27.95	≥16,090	736.41	28.85
		Talented	≥630	754.14	27.96	≥15,980	737.32	29.99
		Autism	<50	NR	NR	≥16,590	737.95	30.09
		Deaf-Blindness	<50	NR	NR	≥16,610	737.97	30.09
		Developmental Delay	<50	NR	NR	≥16,610	737.97	30.09
		Emotional Disturbance	<50	NR	NR	≥16,600	737.98	30.09
		HI-Deaf	<50	NR	NR	≥16,610	737.97	30.09
		HI-Hard-of-Hearing	<50	NR	NR	≥16,600	737.96	30.09
		Mild Mental Disability	<50	NR	NR	≥16,610	737.98	30.09
		Moderate Mental Disability	<50	NR	NR	≥16,610	737.97	30.09
		Orthopedic Impairment	<50	NR	NR	≥16,610	737.97	30.09
		Other Health Impairment	≥100	727.21	29.71	≥16,510	738.04	30.08
		Specific Learning Disability	≥90	714.07	21.14	≥16,520	738.11	30.08
		Speech or Language Impairment	<50	NR	NR	≥16,580	737.96	30.08
		Traumatic Brain Injury	<50	NR	NR	≥16,610	737.97	30.09
		Visual Impairment	<50	NR	NR	≥16,610	737.97	30.09
		Other	<50	NR	NR	≥16,610	737.97	30.09

Special Education Classification Scale Score Means and Standard Deviations: Geometry								
			Yes			No		
Admin	Form	Group	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Summer 2023	D	Gifted	<50	NR	NR	≥490	710.14	16.90
		Talented	<50	NR	NR	≥490	710.17	17.15
		Autism	<50	NR	NR	≥490	710.28	17.17
		Deaf-Blindness	<50	NR	NR	≥490	710.27	17.12
		Developmental Delay	<50	NR	NR	≥490	710.27	17.12
		Emotional Disturbance	<50	NR	NR	≥490	710.20	17.17
		HI-Deaf	<50	NR	NR	≥490	710.23	17.11
		HI-Hard-of-Hearing	<50	NR	NR	≥490	710.18	17.03
		Mild Mental Disability	<50	NR	NR	≥490	710.28	17.15
		Moderate Mental Disability	<50	NR	NR	≥490	710.27	17.12
		Orthopedic Impairment	<50	NR	NR	≥490	710.27	17.12
		Other Health Impairment	<50	NR	NR	≥480	710.29	17.20
		Specific Learning Disability	<50	NR	NR	≥460	710.99	16.81
		Speech or Language Impairment	<50	NR	NR	≥490	710.33	17.14
		Traumatic Brain Injury	<50	NR	NR	≥490	710.29	17.13
		Visual Impairment	<50	NR	NR	≥490	710.27	17.12
		Other	<50	NR	NR	≥490	710.27	17.12

10.7 Summary

In summary, the overall purpose of this chapter is to address fairness concerns that are relevant to the administration of LEAP 2025 assessments. The information in this chapter addresses multiple best practices of the testing industry and is particularly related to the following standards:

Standard 3.1 Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid score interpretations for intended score uses for the widest possible range of individuals and relevant subgroups in the intended population (63).

Standard 3.2 Test developers are responsible for developing tests that measure the intended construct and for minimizing the potential for tests' being affected by construct-irrelevant characteristics, such as linguistic, communicative, cognitive, cultural, physical, or other characteristics (64).

Standard 3.3 Those responsible for test development should include relevant subgroups in validity, reliability/precision, and other preliminary studies used when constructing the test (64).

Standard 3.4 Test takers should receive comparable treatment during the test administration and scoring process (65).

Standard 3.5 Test developers should specify and document provisions that have been made to test administration and scoring procedures to remove construct-irrelevant barriers for all relevant subgroups in the test-taker population (65).

Standard 3.6 Where credible evidence indicates that test scores may differ in meaning for relevant subgroups in the intended examinee population, test developers and/or users are responsible for examining the evidence for validity of score interpretations for intended uses for individuals from those subgroups. What constitutes a significant difference in subgroup scores and what actions are taken in response to such differences may be defined by applicable laws (65).

Standard 3.16 When credible research indicates that test scores for some relevant subgroups are differentially affected by construct-irrelevant characteristics of the test or of the examinees, when legally permissible, test users should use the test only for those subgroups for which there is sufficient evidence of validity to support score interpretations for the intended uses (70).

Appendix A—Accommodated Print and Braille Creation

Guidelines for Accommodated Print and Braille

Louisiana believes that all students requiring test accommodations should be presented with the same rigor as students taking tests without accommodations. To ensure this, Louisiana creates accommodated versions of the operational test form for each test administration, allowing all students to take the same items regardless of the need for an accommodated presentation. Careful consideration is given to all items that are used for Louisiana assessments for their ability to be faithfully represented in accommodated print (AP) and braille formats. Fairness for all populations, item integrity, and student-item interaction for technology-enhanced (TE) items are all factors when selecting the items that will appear on a Louisiana form. TE items are modified so that students who interact with an item on an AP or braille form will have a similar and equivalent experience to students who interact with that same item in the online environment. This maintains both the rigor and the content being assessed. Some examples of the modification process are provided below.

- Drag-and-drop items in the online environment require a student to place the answer options in an interactive table. For the AP and braille forms, the student is presented with a table with the same information as the interactive table (column or row headers, any completed cells, and blank spaces) and the answer options are listed below the table (similar to the online form in which the options are listed either below or to the right of the table). The directions are modified to ask the student to write the letter or number of the correct answer in its corresponding box. Students are also able to circle the text and draw arrows to indicate where it should be placed or add labels to the answer choices and write only the label in the box, as long as the intended response is clear to the test administrator who will transcribe the answers into the online system.
- Match interaction items in the online environment require a student to select a checkbox in one or more columns for each of multiple rows. In the AP and braille forms, the student is provided with a table and asked to mark or select the correct answer in each row.
- Highlight-text items or item parts in the online environment require a student to click on the selected text, which highlights the selected word, phrase, or sentence. In the AP and braille forms, the text is presented in the same format and the student is asked to circle the answer. Where only certain words or phrases are selectable in the online system, those options are underlined in the AP and braille forms to indicate which words and/or phrases the student should select from.
- Drop-down menu items in the online environment have answer options in a drop-down menu format, oftentimes as part of a complete sentence. The AP and braille forms display the item with a blank line in place of the drop-down menu in the sentence, with all the answer options for the drop-down menu presented vertically below the sentence and lettered or numbered. The directions are then modified to ask the student to select the letter/number of the word/phrase that belongs in the blank.
- Short answer items in the online environment require a student to type the answer in a box. In the AP and braille forms, a box is provided for the student to write the response.
- Keypad input items in the online environment require a student to enter a numeric response including all rational and irrational numbers as well as expressions and equations. In the AP forms, a box is provided for the student to write the response. In the braille forms, students are asked to answer on the paper provided.
- Graphing items, including coordinate planes, number lines, line plots, and bar graphs, in the online environment require a student to complete a graph by plotting points, adding Xs to create a line plot, or

raising/lowering bars to create a bar graph or histogram. In the AP and braille forms, the student is provided with the same coordinate plane, number line, line plot, or bar graph as in the online item, including titles, axis labels, and keys, and is asked to complete the graph.

Displaying items similarly in accommodated print and braille forms and in the online environment (and allowing students to interact with the items in a similar manner) maintains item integrity by assessing a similar construct in a similar manner regardless of how a student encounters an item. This provides students who are unable to access the assessment online with an assessment at the same level of rigor as the online test.

AP forms are thoroughly reviewed by DRC and LDOE content experts alongside the online form, and braille forms are reviewed by an outside third-party braille expert against the AP form. Throughout the braille creation process, the braille vendor relies on the AP form and consults with the content experts at LDOE for additional clarification or modifications for specific items as needed. Students' responses to the accommodated print or braille test are captured in the same online test as used by the general population, either through use of a scribe or by themselves if able. This ensures a valid and reliable assessment for students who are unable to participate in the online assessment. Louisiana's sample sizes are too small for traditional studies of comparability for both AP and braille forms.

Appendix B—Transadaptation Process for Spanish Mathematics Forms

For English Learners, the LDOE offers the mathematics assessments in Spanish for computer-based tests (CBTs) in order to mirror the English language forms and the text-to-speech (TTS) forms. The Spanish-language versions of the test were developed through transadaptation. Transadaptation takes into consideration the grade-level appropriateness of the words and sentence structures used and the linguistic and cultural differences that exist between speakers of two different languages. Accounting for these differences allows experts to ensure that a Spanish-language version of an item will measure the same construct as the English-language version of the item at the same level of rigor. The item is, therefore, expected to measure the achievement of English Learners in the same way that the English version of the item does for native speakers of English.

Once the operational form was approved in English, DRC provided item IDs for acquired items to New Meridian, who then identified which of those items had previously appeared on a Spanish transadapted form. Once New Meridian identified the items that had previously been transadapted and provided the transadaptations of those items, DRC identified the English version of all items that had not been previously transadapted (either because they were Louisiana-owned items that would appear in field-test positions or because they were acquired items that had not been previously used on a New Meridian Spanish-language form). These items were then provided to the Spanish transadaptation subcontractor for initial transadaptation. DRC's Spanish Test Development team (who are all native Spanish speakers) reviewed the previously transadapted items to ensure consistency between those items transadapted as part of the New Meridian assessments and those transadapted specifically for Louisiana. The team provided guidance to the translator conducting the initial transadaptation in grade-level and culturally appropriate ways. Upon completion of the transadaptation by the subcontractor, DRC's Spanish Test Development team conducted reviews by native Spanish speakers for content and grade-level appropriateness of the transadaptation. The team also conducted an editorial review. At least two members of DRC's Spanish Test Development team compared each English item to the Spanish transadaptation to ensure that the transadaptation

- was accurate;
- contained grade-appropriate wording;
- contained answer choices that were reasonably parallel;
- did not introduce ambiguity into the Spanish version;
- contained graphics that were clearly transadapted;
- did not alter current teaching and learning practices in the content area; and
- remained free of gender, ethnic, cultural, socioeconomic, and regional bias.

The Spanish Test Development team then reconciled any discrepancies and submitted the transadaptations to a senior Spanish Test Development team member for resolution. After approval by the senior Spanish Test Development team member, the item moved forward to be imported into DRC's item banking system.

Both previously transadapted items and newly transadapted items were imported into DRC's item banking system and formatted for online use. Each Spanish item was paired with the corresponding English item in the item bank, and the Spanish item was formatted. Graphics for the item were then finalized for review. The

finalized transadaptation was then compared to the Spanish version of the item in the DRC assessment system and the English version of the item, and all changes were verified.

DRC's Spanish Test Development team then used the final, approved communication assistance scripts in English to transadapt descriptions of graphics as necessary. These descriptions were used when preparing the TTS forms for review. Scripting the TTS forms and reviewing the finalized Spanish forms were conducted by native Spanish speakers at DRC prior to submitting the forms to the LDOE for a translation review by a third-party translation vendor. The vendor reviewed the transadapted forms and provided feedback to the LDOE and DRC. Experienced DRC Spanish Test Development team members and the translation vendor resolved any issues, and DRC made modifications as necessary. The forms were then approved by both DRC and the LDOE translation vendor.

Appendix C—LEAP 2025 Spring 2023 Handscoring/AI Documentation

Appendix D—Classical Item Statistics

Table D.1 Operational Item Statistics—English I Fall 2022 Administration Form E

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥170	≥170	0.41	0.34	0	54	10	36			0
2	MS	≥170	≥170	0.26	0.57	0	62	25	13			0
3	TE	≥170	≥170	0.33	0.33	1	48	38	14			0
4	ESR	≥170	≥170	0.49	0.33	0	40	22	38			0
5	ESR	≥170	≥170	0.41	0.40	1	54	10	36			0
6	ESR	≥170	≥170	0.60	0.37	1	38	5	57			0
7	MS	≥170	≥170	0.25	0.54	1	64	22	14			0
8	TE	≥170	≥170	0.26	0.51	1	50	46	3			0
9	CR	≥170	≥160	0.24	0.85	4	38	26	25	4	1	3
10	CR	≥170	≥160	0.33	0.81	4	34	31	23	5		3
11	ESR	≥170	≥170	0.53	0.54	0	37	19	44			0
12	TE	≥170	≥170	0.41	0.59	1	41	36	22			0
13	MS	≥170	≥170	0.29	0.49	0	61	21	18			0
14	TE	≥170	≥170	0.28	0.51	1	58	28	14			0
15	CR	≥170	≥160	0.19	0.78	2	54	21	13	6	2	3
16	CR	≥170	≥160	0.25	0.81	2	52	22	15	6		3
17	ESR	≥170	≥170	0.51	0.43	1	39	18	42			0
18	ESR	≥170	≥170	0.31	0.42	1	63	11	25			0
19	TE	≥170	≥170	0.47	0.63	1	46	13	40			0
20	ESR	≥170	≥170	0.37	0.40	1	51	22	26			0
21	TE	≥170	≥170	0.30	0.55	1	53	32	14			0
22	MS	≥170	≥170	0.37	0.49	1	39	46	14			0
23	ESR	≥170	≥170	0.69	0.50	0	28	6	66			0
24	TE	≥170	≥170	0.40	0.25	0	53	14	33			0
25	ESR	≥170	≥170	0.31	0.50	0	60	19	21			0
26	ESR	≥170	≥170	0.51	0.46	0	39	20	41			0
27	MS	≥170	≥170	0.35	0.47	1	49	31	19			0
28	ESR	≥170	≥170	0.47	0.53	1	47	11	41			0
29	ESR	≥170	≥170	0.28	0.23	1	61	21	18			0
30	TE	≥170	≥170	0.37	0.41	1	57	12	31			0
31	ESR	≥170	≥170	0.27	0.45	1	63	20	17			0
32	TE	≥170	≥170	0.29	0.59	1	55	29	14			0

Table D.2 Operational Item Statistics—English I Fall 2022 Administration Form F

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	MS	≥5,120	≥5,110	0.56	0.35	0	37	16	48			0
2	TE	≥5,120	≥5,100	0.44	0.48	0	37	38	25			0
3	MS	≥5,120	≥5,110	0.54	0.39	0	38	16	45			0
4	ESR	≥5,120	≥5,110	0.68	0.48	0	28	8	64			0
5	ESR	≥5,120	≥5,110	0.58	0.55	0	33	17	50			0
6	TE	≥5,120	≥5,110	0.41	0.51	0	33	51	16			0
7	CR	≥5,120	≥4,930	0.32	0.84	2	27	28	28	12	1	2
8	CR	≥5,120	≥4,930	0.43	0.81	2	25	27	34	10		2
9	ESR	≥5,120	≥5,090	0.54	0.49	1	39	12	48			0
10	ESR	≥5,120	≥5,070	0.29	0.33	1	59	23	17			0
11	ESR	≥5,120	≥5,070	0.58	0.52	1	37	9	53			0
12	TE	≥5,120	≥5,040	0.59	0.53	1	23	34	41			0
13	ESR	≥5,120	≥5,110	0.48	0.28	0	42	20	38			0
14	MS	≥5,120	≥5,110	0.53	0.47	0	32	31	37			0
15	ESR	≥5,120	≥5,110	0.76	0.48	0	20	8	72			0
16	ESR	≥5,120	≥5,110	0.76	0.46	0	18	11	71			0
17	ESR	≥5,120	≥5,110	0.74	0.52	0	23	7	70			0
18	TE	≥5,120	≥5,110	0.40	0.52	0	37	46	16			0
19	ESR	≥5,120	≥5,110	0.53	0.39	0	35	22	42			0
20	ESR	≥5,120	≥5,110	0.44	0.37	0	42	27	30			0
21	CR	≥5,120	≥4,970	0.44	0.84	2	16	21	39	15	7	1
22	CR	≥5,120	≥4,970	0.56	0.83	2	17	20	38	22		1
23	ESR	≥5,120	≥5,110	0.41	0.34	0	42	32	25			0
24	ESR	≥5,120	≥5,110	0.30	0.20	0	57	26	17			0
25	ESR	≥5,120	≥5,110	0.54	0.44	0	34	23	42			0
26	TE	≥5,120	≥5,110	0.56	0.45	0	25	37	38			0
27	ESR	≥5,120	≥5,110	0.44	0.44	0	52	8	40			0
28	ESR	≥5,120	≥5,110	0.40	0.41	0	41	37	22			0
29	ESR	≥5,120	≥5,100	0.37	0.44	0	56	13	30			0
30	ESR	≥5,120	≥5,100	0.34	0.32	0	54	23	23			0
31	ESR	≥5,120	≥5,100	0.37	0.41	0	52	20	27			0
32	TE	≥5,120	≥5,080	0.39	0.57	1	45	31	23			0

Table D.3 Operational Item Statistics—English II Fall 2022 Administration Form E

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥190	≥190	0.39	0.26	0	56	12	33			0
2	TE	≥190	≥190	0.50	0.38	0	48	4	48			0
3	MS	≥190	≥190	0.41	0.42	0	45	28	28			0
4	ESR	≥190	≥190	0.31	0.28	0	49	40	11			0
5	ESR	≥190	≥190	0.26	0.30	0	59	31	11			0
6	ESR	≥190	≥190	0.65	0.34	0	21	27	52			0
7	MS	≥190	≥190	0.25	0.28	0	58	34	8			0
8	TE	≥190	≥190	0.55	0.54	0	37	15	48			0
9	CR	≥190	≥180	0.35	0.85	3	26	24	31	12	3	2
10	CR	≥190	≥180	0.46	0.83	3	23	26	34	13		2
11	ESR	≥190	≥190	0.46	0.53	0	46	15	38			0
12	ESR	≥190	≥190	0.57	0.35	1	33	20	47			0
13	MS	≥190	≥190	0.31	0.48	0	59	21	20			0
14	ESR	≥190	≥190	0.44	0.34	0	50	13	37			0
15	CR	≥190	≥180	0.34	0.87	3	29	27	21	14	5	2
16	CR	≥190	≥180	0.42	0.87	3	28	30	22	15		2
17	ESR	≥190	≥190	0.48	0.33	0	47	9	44			0
18	ESR	≥190	≥190	0.29	0.24	0	67	8	25			0
19	ESR	≥190	≥190	0.35	0.26	0	49	32	19			0
20	TE	≥190	≥190	0.26	0.38	0	53	42	5			0
21	TE	≥190	≥190	0.51	0.69	0	40	18	42			0
22	ESR	≥190	≥190	0.40	0.52	0	49	23	28			0
23	MS	≥190	≥190	0.48	0.67	0	38	29	34			0
24	ESR	≥190	≥190	0.56	0.48	0	40	9	52			0
25	ESR	≥190	≥190	0.42	0.42	0	54	8	38			0
26	TE	≥190	≥190	0.38	0.43	0	45	34	20			0
27	MS	≥190	≥190	0.44	0.54	0	42	28	31			0
28	MS	≥190	≥190	0.36	0.55	0	52	24	24			0
29	MS	≥190	≥190	0.39	0.34	0	25	72	3			0
30	TE	≥190	≥190	0.38	0.38	0	42	40	18			0
31	MS	≥190	≥190	0.23	0.33	0	62	30	9			0
32	TE	≥190	≥190	0.26	0.50	0	60	30	11			0

Table D.4 Operational Item Statistics—English II Fall 2022 Administration Form F

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥6,640	≥6,640	0.44	0.39	0	53	7	40			0
2	ESR	≥6,640	≥6,630	0.70	0.48	0	22	15	62			0
3	ESR	≥6,640	≥6,630	0.44	0.38	0	51	8	40			0
4	ESR	≥6,640	≥6,630	0.65	0.39	0	32	5	63			0
5	TE	≥6,640	≥6,620	0.30	0.52	0	58	22	19			0
6	TE	≥6,640	≥6,620	0.48	0.52	0	36	31	32			0
7	CR	≥6,640	≥6,420	0.33	0.82	2	21	36	27	11	2	2
8	CR	≥6,640	≥6,420	0.45	0.81	2	20	34	30	12		2
9	ESR	≥6,640	≥6,600	0.42	0.41	1	52	12	36			0
10	ESR	≥6,640	≥6,600	0.59	0.56	1	32	17	50			0
11	ESR	≥6,640	≥6,590	0.32	0.29	1	56	21	22			0
12	ESR	≥6,640	≥6,580	0.39	0.33	1	56	8	35			0
13	ESR	≥6,640	≥6,640	0.59	0.47	0	34	15	51			0
14	MS	≥6,640	≥6,630	0.59	0.53	0	17	47	36			0
15	ESR	≥6,640	≥6,630	0.63	0.55	0	29	17	54			0
16	ESR	≥6,640	≥6,630	0.64	0.56	0	30	11	59			0
17	TE	≥6,640	≥6,630	0.38	0.47	0	39	48	14			0
18	ESR	≥6,640	≥6,630	0.30	0.26	0	49	42	9			0
19	ESR	≥6,640	≥6,630	0.47	0.34	0	34	36	29			0
20	ESR	≥6,640	≥6,630	0.35	0.43	0	43	44	13			0
21	CR	≥6,640	≥6,420	0.44	0.86	2	16	25	30	19	7	1
22	CR	≥6,640	≥6,420	0.56	0.84	2	15	25	31	25		1
23	ESR	≥6,640	≥6,640	0.36	0.34	0	54	19	27			0
24	ESR	≥6,640	≥6,640	0.65	0.42	0	32	6	62			0
25	ESR	≥6,640	≥6,630	0.58	0.36	0	36	12	52			0
26	ESR	≥6,640	≥6,630	0.38	0.32	0	49	27	24			0
27	TE	≥6,640	≥6,630	0.33	0.46	0	45	43	11			0
28	ESR	≥6,640	≥6,630	0.27	0.37	0	59	27	14			0
29	ESR	≥6,640	≥6,630	0.40	0.47	0	51	19	31			0
30	ESR	≥6,640	≥6,630	0.60	0.60	0	33	14	53			0
31	TE	≥6,640	≥6,610	0.58	0.57	1	34	17	49			0
32	ESR	≥6,640	≥6,630	0.38	0.44	0	35	54	10			0

Table D.5 Operational Item Statistics—Algebra I Fall 2022 Administration Form D

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥3,450	≥3,440	0.58	0.47	0		15	17	58	9			0
2	MS	≥3,450	≥3,440	0.41	0.49	0	58	41						0
3	SA	≥3,450	≥3,400	0.25	0.53	1	74	24						0
4	MPSR	≥3,450	≥3,440	0.27	0.42	0	64	17	19					0
5	MPSR	≥3,450	≥3,440	0.30	0.35	0	46	48	6					0
6	MC	≥3,450	≥3,440	0.44	0.16	0		16	13	44	27			0
7	MC	≥3,450	≥3,430	0.52	0.30	0		21	52	18	9			0
8	MC	≥3,450	≥3,440	0.46	0.31	0		46	24	19	12			0
9	MC	≥3,450	≥3,440	0.35	0.29	0		32	35	15	18			0
10	SA	≥3,450	≥3,440	0.61	0.59	0	8	18	22	28	24			0
11	MC	≥3,450	≥3,440	0.39	0.36	0		12	39	38	11			0
12	CR	≥3,450	≥3,440	0.58	0.60	0	12	24	42	22				0
13	CR	≥3,450	≥3,270	0.36	0.61	3	44	16	20	15				2
14	MC	≥3,450	≥3,440	0.82	0.32	0		4	82	8	5			0
15	MC	≥3,450	≥3,440	0.33	0.17	0		20	9	38	33			0
16	TE	≥3,450	≥3,450	0.30	0.56	0	70	30						0
17	TE	≥3,450	≥3,440	0.47	0.54	0	52	47						0
18	MC	≥3,450	≥3,440	0.46	0.37	0		13	15	26	45			0
19	MC	≥3,450	≥3,440	0.34	0.29	0		34	31	26	9			0
20	MC	≥3,450	≥3,440	0.37	0.24	0		37	29	20	14			0
21	MPSR	≥3,450	≥3,440	0.43	0.44	0	34	46	20					0
22	MS	≥3,450	≥3,450	0.44	0.43	0	56	44						0
23	SA	≥3,450	≥3,350	0.24	0.59	3	57	33	7					0
24	MC	≥3,450	≥3,440	0.28	0.22	0		13	29	30	28			0
25	CR	≥3,450	≥3,220	0.12	0.65	4	62	12	8	5	3	2	0	2
26	CR	≥3,450	≥3,430	0.18	0.57	0	59	22	9	5	4			0
27	MC	≥3,450	≥3,440	0.45	0.30	0		25	18	45	12			0
28	MC	≥3,450	≥3,440	0.29	0.29	0		29	29	34	8			0
29	MPSR	≥3,450	≥3,440	0.38	0.56	0	43	38	19					0
30	MC	≥3,450	≥3,440	0.64	0.38	0		8	64	22	7			0
31	SA	≥3,450	≥3,440	0.27	0.53	0	58	30	11					0
32	MC	≥3,450	≥3,440	0.34	0.21	0		33	13	21	34			0
33	MPSR	≥3,450	≥3,440	0.42	0.27	0	32	52	16					0
34	TE	≥3,450	≥3,440	0.45	0.25	0	55	45						0
35	MS	≥3,450	≥3,440	0.42	0.59	0	58	42						0
36	MC	≥3,450	≥3,440	0.50	0.19	0		11	22	17	50			0
37	CR	≥3,450	≥3,160	0.15	0.52	5	65	18	2	6				3
38	CR	≥3,450	≥2,960	0.15	0.60	8	63	9	6	3	5			6
39	CR	≥3,450	≥3,020	0.17	0.52	7	61	12	11	3				5

Table D.6 Operational Item Statistics—Algebra I Fall 2022 Administration Form E

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥110	≥110	0.39	0.36	0		21	30	39	11			0
2	MS	≥110	≥110	0.18	0.38	0	82	18						0
3	MC	≥110	≥110	0.31	-0.04	0		14	31	32	23			0
4	MC	≥110	≥110	0.22	0.03	0		22	15	39	25			0
5	MPSR	≥110	≥110	0.24	0.44	0	57	39	4					0
6	MPSR	≥110	≥110	0.23	0.17	0	57	40	3					0
7	MC	≥110	≥110	0.37	0.19	0		25	37	22	16			0
8	MC	≥110	≥110	0.35	0.14	0		35	24	25	16			0
9	MC	≥110	≥110	0.25	0.12	0		24	16	36	25			0
10	MPSR	≥110	≥110	0.43	0.61	0	11	35	31	16	7			0
11	MC	≥110	≥110	0.43	0.06	0		25	27	43	5			0
12	CR	≥110	≥100	0.21	0.58	3	58	18	17	4				2
13	CR	≥110	≥90	0.03	0.32	4	80	7						9
14	MC	≥110	≥110	0.79	0.31	0		7	79	9	5			0
15	SA	≥110	≥110	0.08	0.48	3	89	8						0
16	TE	≥110	≥110	0.12	0.54	0	88	12						0
17	SA	≥110	≥110	0.24	0.68	0	64	25	11					0
18	MC	≥110	≥110	0.35	0.42	0		12	18	34	35			0
19	MS	≥110	≥110	0.04	0.34	1	96	4						0
20	MC	≥110	≥110	0.34	0.15	1		33	30	21	15			0
21	MPSR	≥110	≥110	0.35	0.35	0	39	53	9					0
22	MS	≥110	≥110	0.19	0.33	0	81	19						0
23	SA	≥110	≥110	0.18	0.56	3	80	18						0
24	MC	≥110	≥110	0.18	-0.04	1		14	32	36	18			0
25	CR	≥110	≥100	0.04	0.65	4	80	9	2	2	2			3
26	CR	≥110	≥100	0.16	0.60	4	42	43	7	1				4
27	MC	≥110	≥110	0.29	0.38	0		29	26	29	16			0
28	MC	≥110	≥110	0.14	0.09	2		14	27	31	26			0
29	MC	≥110	≥110	0.28	-0.09	0		28	37	27	8			0
30	MC	≥110	≥110	0.46	0.28	2		19	46	25	8			0
31	SA	≥110	≥110	0.16	0.41	0	71	25	4					0
32	MC	≥110	≥110	0.34	0.25	0		10	25	31	34			0
33	MPSR	≥110	≥110	0.35	0.23	1	38	53	9					0
34	TE	≥110	≥110	0.24	0.29	0	58	36	6					0
35	MC	≥110	≥110	0.39	0.14	1		14	39	18	29			0
36	MC	≥110	≥110	0.27	0.20	1		20	16	37	26			0
37	CR	≥110	≥100	0.16	0.72	6	60	17	8	4				6
38	CR	≥110	≥90	0.03	0.48	5	82	2	2	2				8
39	CR	≥110	≥100	0.06	0.64	5	79	7		3				6

Table D.7 Operational Item Statistics—Geometry Fall 2022 Administration Form D

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MPSR	≥4,480	≥4,480	0.34	0.23	0	44	45	11					0
2	MC	≥4,480	≥4,470	0.49	0.28	0		19	49	14	17			0
3	MC	≥4,480	≥4,470	0.70	0.40	0		12	7	70	12			0
4	TE	≥4,480	≥4,470	0.49	0.61	0	51	49						0
5	SA	≥4,480	≥4,410	0.38	0.52	2	61	37						0
6	SA	≥4,480	≥4,400	0.30	0.53	2	68	30						0
7	MPSR	≥4,480	≥4,450	0.44	0.22	1	30	51	18					0
8	TE	≥4,480	≥4,470	0.39	0.60	0	61	39						0
9	MC	≥4,480	≥4,470	0.65	0.36	0		65	10	15	10			0
10	SA	≥4,480	≥4,480	0.39	0.67	0	21	28	30	16	6			0
11	SA	≥4,480	≥4,460	0.22	0.60	0	77	22						0
12	CR	≥4,480	≥4,230	0.34	0.60	3	44	15	27	9				2
13	CR	≥4,480	≥4,150	0.07	0.54	4	79	9	3	2				3
14	MC	≥4,480	≥4,480	0.50	0.32	0		4	8	38	50			0
15	MC	≥4,480	≥4,470	0.44	0.42	0		11	44	35	10			0
16	SA	≥4,480	≥4,450	0.45	0.58	1	54	45						0
17	MC	≥4,480	≥4,470	0.38	0.36	0		38	13	35	13			0
18	MS	≥4,480	≥4,470	0.36	0.57	0	64	36						0
19	TE	≥4,480	≥4,470	0.38	0.31	0	35	53	12					0
20	MC	≥4,480	≥4,470	0.44	0.31	0		8	24	24	44			0
21	MPSR	≥4,480	≥4,470	0.54	0.33	0	23	47	30					0
22	CR	≥4,480	≥4,140	0.23	0.72	4	62	6	7	6	12			3
23	MPSR	≥4,480	≥4,470	0.49	0.34	0	25	50	24					0
24	MC	≥4,480	≥4,470	0.37	0.49	0		19	27	16	37			0
25	CR	≥4,480	≥4,250	0.17	0.73	3	54	17	9	5	6	2	1	2
26	MC	≥4,480	≥4,480	0.46	0.42	0		22	24	46	8			0
27	SA	≥4,480	≥4,430	0.35	0.43	1	64	35						0
28	MC	≥4,480	≥4,460	0.42	0.20	0		39	42	13	6			0
29	MC	≥4,480	≥4,470	0.31	0.28	0		28	25	31	17			0
30	MS	≥4,480	≥4,470	0.25	0.46	0	74	25						0
31	TE	≥4,480	≥4,470	0.27	0.27	0	53	39	8					0
32	SA	≥4,480	≥4,440	0.49	0.58	1	50	49						0
33	SA	≥4,480	≥4,430	0.40	0.61	1	59	40						0
34	TE	≥4,480	≥4,470	0.51	0.50	0	49	51						0
35	MPSR	≥4,480	≥4,470	0.56	0.59	0	31	27	42					0
36	TE	≥4,480	≥4,460	0.22	0.48	0	78	22						0
37	CR	≥4,480	≥4,090	0.07	0.54	5	75	9	4	2	1			4
38	CR	≥4,480	≥4,030	0.13	0.64	5	73	5	5	7				5
39	CR	≥4,480	≥4,110	0.11	0.61	5	74	6	9	2				4

Table D.8 Operational Item Statistics—Geometry Fall 2022 Administration Form E

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	TE	≥120	≥120	0.19	0.41	0	63	35	2					0
2	MC	≥120	≥120	0.35	0.40	0		27	35	18	20			0
3	MS	≥120	≥120	0.15	0.69	1	84	15						0
4	TE	≥120	≥120	0.24	0.66	0	76	24						0
5	TE	≥120	≥120	0.16	0.39	0	84	16						0
6	SA	≥120	≥120	0.22	0.63	1	78	21						0
7	MPSR	≥120	≥120	0.25	0.23	0	59	33	8					0
8	MC	≥120	≥120	0.38	0.24	0		22	38	28	12			0
9	MC	≥120	≥120	0.45	0.55	0		45	17	30	8			0
10	MPSR	≥120	≥120	0.30	0.49	0	23	42	26	8	1			0
11	SA	≥120	≥120	0.12	0.62	0	88	12						0
12	CR	≥120	≥110	0.23	0.67	5	56	9	20	4				6
13	CR	≥120	≥110	0.03	0.60	3	85	2	2	1				7
14	MC	≥120	≥120	0.37	0.28	0		10	6	46	37			0
15	MC	≥120	≥120	0.48	0.36	0		13	48	32	7			0
16	SA	≥120	≥120	0.36	0.52	1	63	36						0
17	MS	≥120	≥120	0.31	0.76	0	69	31						0
18	MS	≥120	≥120	0.17	0.59	0	83	17						0
19	TE	≥120	≥120	0.35	0.25	1	42	44	13					0
20	MC	≥120	≥120	0.37	0.37	1		10	21	31	37			0
21	MPSR	≥120	≥120	0.41	0.14	0	28	63	10					0
22	CR	≥120	≥110	0.06	0.55	4	78	4	2	3	1			9
23	MPSR	≥120	≥120	0.39	0.12	0	33	56	11					0
24	MC	≥120	≥120	0.21	0.23	0		21	37	21	21			0
25	CR	≥120	≥110	0.12	0.81	2	63	10	8	3	1	4	1	7
26	MC	≥120	≥120	0.37	0.43	0		25	34	37	4			0
27	MC	≥120	≥120	0.37	0.44	2		13	30	19	37			0
28	MC	≥120	≥120	0.38	0.09	0		25	38	25	12			0
29	MC	≥120	≥120	0.21	0.15	0		21	39	24	17			0
30	MC	≥120	≥120	0.23	0.28	1		21	33	22	23			0
31	TE	≥120	≥120	0.23	0.16	1	59	35	6					0
32	MC	≥120	≥120	0.35	0.50	1		22	35	15	27			0
33	TE	≥120	≥120	0.18	0.47	1	82	17						0
34	MC	≥120	≥120	0.48	0.32	1		13	48	25	13			0
35	MPSR	≥120	≥120	0.37	0.66	1	51	23	25					0
36	SA	≥120	≥120	0.05	0.53	1	94	5						0
37	CR	≥120	≥120	0.11	0.72	1	76	12	3	6	2			0
38	CR	≥120	≥110	0.04	0.59	6	83	2		3				5
39	CR	≥120	≥110	0.05	0.56	6	79	4	4					7

Table D.9 Operational Item Statistics—English I Spring 2023 Administration Form H

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	MS	≥22,970	≥22,960	0.55	0.35	0	37	15	47			0
2	TE	≥22,970	≥22,910	0.45	0.46	0	37	37	26			0
3	MS	≥22,970	≥22,930	0.54	0.37	0	38	16	46			0
4	ESR	≥22,970	≥22,940	0.69	0.46	0	27	7	66			0
5	ESR	≥22,970	≥22,940	0.60	0.54	0	32	17	51			0
6	TE	≥22,970	≥22,930	0.42	0.50	0	33	50	16			0
7	CR	≥22,970	≥22,180	0.31	0.81	2	27	32	27	10	1	2
8	CR	≥22,970	≥22,180	0.41	0.78	2	26	30	33	8		2
9	ESR	≥22,970	≥22,850	0.57	0.48	1	37	11	51			0
10	ESR	≥22,970	≥22,820	0.48	0.39	1	39	25	35			0
11	ESR	≥22,970	≥22,780	0.38	0.34	1	56	11	32			0
12	TE	≥22,970	≥22,750	0.41	0.50	1	39	40	20			0
13	MS	≥22,970	≥22,940	0.30	0.14	0	55	29	15			0
14	MS	≥22,970	≥22,920	0.48	0.41	0	43	17	39			0
15	TE	≥22,970	≥22,920	0.35	0.31	0	41	47	12			0
16	ESR	≥22,970	≥22,930	0.29	0.29	0	65	12	23			0
17	TE	≥22,970	≥22,920	0.25	0.21	0	62	26	12			0
18	MS	≥22,970	≥22,900	0.42	0.35	0	43	28	28			0
19	ESR	≥22,970	≥22,890	0.20	0.45	0	75	8	16			0
20	ESR	≥22,970	≥22,890	0.34	0.31	0	62	8	30			0
21	CR	≥22,970	≥22,010	0.29	0.79	2	26	36	27	6	0	2
22	CR	≥22,970	≥22,010	0.37	0.79	2	27	36	26	6		2
23	MS	≥22,970	≥22,950	0.56	0.38	0	18	51	31			0
24	ESR	≥22,970	≥22,940	0.55	0.38	0	43	4	53			0
25	ESR	≥22,970	≥22,920	0.52	0.32	0	39	18	43			0
26	ESR	≥22,970	≥22,930	0.26	0.34	0	70	8	22			0
27	ESR	≥22,970	≥22,910	0.44	0.46	0	46	20	35			0
28	TE	≥22,970	≥22,860	0.37	0.53	0	43	40	17			0
29	ESR	≥22,970	≥22,890	0.43	0.33	0	44	26	29			0
30	ESR	≥22,970	≥22,880	0.39	0.47	0	56	9	34			0
31	ESR	≥22,970	≥22,870	0.48	0.47	0	43	18	38			0
32	TE	≥22,970	≥22,870	0.25	0.44	0	65	20	15			0

Table D.10 Operational Item Statistics—English I Spring 2023 Administration Form J

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	MS	≥19,380	≥19,360	0.30	0.13	0	56	29	16			0
2	MS	≥19,380	≥19,350	0.54	0.39	0	38	17	45			0
3	TE	≥19,380	≥19,330	0.38	0.29	0	37	49	14			0
4	ESR	≥19,380	≥19,360	0.32	0.31	0	62	12	26			0
5	TE	≥19,380	≥19,330	0.26	0.23	0	62	24	14			0
6	MS	≥19,380	≥19,300	0.47	0.35	0	38	30	32			0
7	ESR	≥19,380	≥19,300	0.23	0.45	0	72	9	19			0
8	ESR	≥19,380	≥19,280	0.38	0.29	1	58	7	35			0
9	CR	≥19,380	≥18,950	0.33	0.74	1	18	38	33	7	1	1
10	CR	≥19,380	≥18,950	0.43	0.74	1	19	39	32	8		1
11	ESR	≥19,380	≥19,370	0.51	0.32	0	45	8	47			0
12	MS	≥19,380	≥19,360	0.26	0.33	0	65	19	16			0
13	ESR	≥19,380	≥19,370	0.53	0.51	0	29	35	35			0
14	TE	≥19,380	≥19,370	0.56	0.55	0	24	40	36			0
15	CR	≥19,380	≥18,630	0.39	0.79	2	21	24	33	13	5	2
16	CR	≥19,380	≥18,630	0.54	0.77	2	16	25	34	21		2
17	ESR	≥19,380	≥19,360	0.35	0.36	0	53	23	24			0
18	ESR	≥19,380	≥19,360	0.44	0.29	0	51	10	39			0
19	TE	≥19,380	≥19,350	0.52	0.32	0	29	39	32			0
20	ESR	≥19,380	≥19,350	0.56	0.41	0	40	7	52			0
21	MS	≥19,380	≥19,340	0.39	0.54	0	52	18	30			0
22	MS	≥19,380	≥19,330	0.49	0.46	0	27	48	25			0
23	MS	≥19,380	≥19,370	0.58	0.33	0	16	52	31			0
24	ESR	≥19,380	≥19,350	0.57	0.35	0	41	3	56			0
25	ESR	≥19,380	≥19,360	0.56	0.28	0	35	18	47			0
26	ESR	≥19,380	≥19,350	0.27	0.33	0	69	7	23			0
27	TE	≥19,380	≥19,360	0.45	0.41	0	39	32	29			0
28	ESR	≥19,380	≥19,360	0.46	0.40	0	39	30	31			0
29	TE	≥19,380	≥19,350	0.51	0.44	0	29	41	30			0
30	ESR	≥19,380	≥19,340	0.70	0.49	0	26	9	65			0
31	MS	≥19,380	≥19,330	0.39	0.35	0	40	41	19			0
32	ESR	≥19,380	≥19,330	0.26	0.33	0	71	5	24			0

Table D.11 Operational Item Statistics—English II Spring 2023 Administration Form H

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥25,370	≥25,360	0.43	0.40	0	53	8	38			0
2	ESR	≥25,370	≥25,350	0.67	0.49	0	25	16	60			0
3	ESR	≥25,370	≥25,340	0.43	0.36	0	53	9	38			0
4	ESR	≥25,370	≥25,350	0.63	0.38	0	35	5	60			0
5	TE	≥25,370	≥25,320	0.28	0.52	0	61	22	17			0
6	TE	≥25,370	≥25,300	0.46	0.53	0	39	31	30			0
7	CR	≥25,370	≥24,540	0.29	0.81	2	25	39	24	7	1	2
8	CR	≥25,370	≥24,540	0.40	0.80	2	24	37	28	8		2
9	MS	≥25,370	≥25,320	0.40	0.37	0	40	40	20			0
10	ESR	≥25,370	≥25,290	0.25	0.32	0	70	9	21			0
11	ESR	≥25,370	≥25,290	0.71	0.54	0	24	9	66			0
12	ESR	≥25,370	≥25,290	0.31	0.40	0	60	18	22			0
13	ESR	≥25,370	≥25,350	0.60	0.47	0	38	4	58			0
14	TE	≥25,370	≥25,290	0.12	0.32	0	79	17	3			0
15	ESR	≥25,370	≥25,310	0.52	0.26	0	28	38	33			0
16	ESR	≥25,370	≥25,330	0.51	0.41	0	46	6	48			0
17	ESR	≥25,370	≥25,320	0.33	0.18	0	57	20	23			0
18	ESR	≥25,370	≥25,320	0.52	0.42	0	42	12	46			0
19	MS	≥25,370	≥25,310	0.45	0.33	0	44	23	33			0
20	TE	≥25,370	≥25,330	0.34	0.48	0	52	29	19			0
21	CR	≥25,370	≥24,010	0.34	0.81	3	23	30	27	13	2	2
22	CR	≥25,370	≥24,010	0.49	0.79	3	20	26	32	16		2
23	ESR	≥25,370	≥25,350	0.58	0.32	0	37	9	54			0
24	ESR	≥25,370	≥25,340	0.43	0.42	0	47	18	34			0
25	TE	≥25,370	≥25,340	0.65	0.49	0	28	13	58			0
26	ESR	≥25,370	≥25,340	0.54	0.35	0	42	8	50			0
27	ESR	≥25,370	≥25,320	0.32	0.32	0	49	37	13			0
28	ESR	≥25,370	≥25,330	0.28	0.34	0	65	13	22			0
29	ESR	≥25,370	≥25,320	0.37	0.32	0	52	23	25			0
30	ESR	≥25,370	≥25,320	0.30	0.33	0	55	29	15			0
31	MS	≥25,370	≥25,320	0.55	0.61	0	30	30	40			0
32	TE	≥25,370	≥25,290	0.30	0.33	0	45	50	5			0

Table D.12 Operational Item Statistics—English II Spring 2023 Administration Form J

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥16,260	≥16,250	0.63	0.42	0	35	4	61			0
2	TE	≥16,260	≥16,210	0.13	0.28	0	77	20	3			0
3	ESR	≥16,260	≥16,220	0.55	0.22	0	25	40	35			0
4	ESR	≥16,260	≥16,230	0.57	0.36	0	41	5	54			0
5	ESR	≥16,260	≥16,230	0.33	0.15	0	57	19	24			0
6	ESR	≥16,260	≥16,230	0.57	0.39	0	38	10	52			0
7	MS	≥16,260	≥16,220	0.47	0.30	0	42	21	37			0
8	TE	≥16,260	≥16,220	0.37	0.45	0	48	30	22			0
9	CR	≥16,260	≥15,710	0.39	0.78	2	16	31	32	16	2	1
10	CR	≥16,260	≥15,710	0.56	0.76	2	13	25	38	20		1
11	ESR	≥16,260	≥16,250	0.43	0.33	0	49	15	36			0
12	MS	≥16,260	≥16,240	0.55	0.47	0	38	14	48			0
13	ESR	≥16,260	≥16,240	0.41	0.31	0	54	10	35			0
14	TE	≥16,260	≥16,240	0.55	0.32	0	40	10	50			0
15	CR	≥16,260	≥15,750	0.33	0.75	2	21	39	23	11	3	1
16	CR	≥16,260	≥15,750	0.45	0.74	2	19	38	27	13		1
17	ESR	≥16,260	≥16,230	0.44	0.43	0	51	9	40			0
18	ESR	≥16,260	≥16,240	0.49	0.34	0	47	8	45			0
19	MS	≥16,260	≥16,240	0.45	0.44	0	31	48	22			0
20	TE	≥16,260	≥16,220	0.41	0.17	0	26	65	9			0
21	TE	≥16,260	≥16,220	0.44	0.34	0	34	44	22			0
22	ESR	≥16,260	≥16,220	0.72	0.47	0	27	3	70			0
23	ESR	≥16,260	≥16,240	0.59	0.29	0	37	7	55			0
24	ESR	≥16,260	≥16,230	0.45	0.41	0	45	19	36			0
25	TE	≥16,260	≥16,240	0.70	0.47	0	24	12	64			0
26	ESR	≥16,260	≥16,230	0.57	0.32	0	40	7	53			0
27	ESR	≥16,260	≥16,230	0.55	0.43	0	39	12	48			0
28	TE	≥16,260	≥16,230	0.63	0.48	0	31	13	56			0
29	MS	≥16,260	≥16,210	0.46	0.36	0	19	69	11			0
30	MS	≥16,260	≥16,210	0.37	0.41	0	33	59	7			0
31	ESR	≥16,260	≥16,220	0.45	0.35	0	48	15	37			0
32	TE	≥16,260	≥16,180	0.41	0.55	0	49	19	31			0

Table D.13 Operational Item Statistics—Algebra I Spring 2023 Administration Form H

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥24,110	≥24,080	0.59	0.35	0		10	21	59	10			0
2	MPSR	≥24,110	≥24,080	0.41	0.52	0	41	35	24					0
3	MC	≥24,110	≥24,080	0.52	0.29	0		18	15	52	15			0
4	TE	≥24,110	≥24,080	0.31	0.40	0	48	43	10					0
5	MC	≥24,110	≥24,050	0.43	0.24	0		22	14	43	21			0
6	MC	≥24,110	≥24,050	0.33	0.19	0		35	33	17	15			0
7	MC	≥24,110	≥24,040	0.36	0.21	0		30	19	36	14			0
8	MC	≥24,110	≥24,040	0.50	0.29	0		18	24	50	7			0
9	MC	≥24,110	≥24,060	0.39	0.36	0		13	43	39	4			0
10	TE	≥24,110	≥24,090	0.37	0.65	0	24	33	22	16	5			0
11	MC	≥24,110	≥24,010	0.36	0.31	0		36	22	29	12			0
12	CR	≥24,110	≥24,080	0.52	0.61	0	16	27	41	16				0
13	CR	≥24,110	≥23,920	0.27	0.64	1	46	33	15	5				0
14	MC	≥24,110	≥24,090	0.36	0.21	0		7	31	26	36			0
15	MC	≥24,110	≥24,050	0.30	0.43	0		30	28	20	21			0
16	MS	≥24,110	≥24,060	0.41	0.32	0	59	41						0
17	TE	≥24,110	≥24,080	0.35	0.36	0	65	35						0
18	MS	≥24,110	≥24,070	0.39	0.44	0	61	39						0
19	SA	≥24,110	≥24,060	0.22	0.48	0	63	29	7					0
20	MC	≥24,110	≥24,050	0.38	0.20	0		27	38	23	12			0
21	MS	≥24,110	≥24,070	0.37	0.51	0	63	37						0
22	SA	≥24,110	≥24,070	0.31	0.49	0	46	46	7					0
23	MC	≥24,110	≥24,060	0.23	0.29	0		38	23	15	23			0
24	TE	≥24,110	≥24,050	0.18	0.48	0	82	18						0
25	CR	≥24,110	≥23,360	0.09	0.71	3	68	15	7	4	2	1	0	0
26	CR	≥24,110	≥21,760	0.21	0.72	6	48	19	15	6	2			4
27	MC	≥24,110	≥24,080	0.49	0.38	0		14	49	16	21			0
28	MC	≥24,110	≥24,060	0.24	0.37	0		6	24	15	55			0
29	MPSR	≥24,110	≥24,090	0.44	0.65	0	42	28	30					0
30	MS	≥24,110	≥24,080	0.27	0.41	0	73	27						0
31	TE	≥24,110	≥24,070	0.37	0.49	0	63	37						0
32	TE	≥24,110	≥24,080	0.16	0.40	0	72	22	5					0
33	MC	≥24,110	≥24,060	0.39	0.28	0		46	39	8	6			0
34	TE	≥24,110	≥23,870	0.34	0.57	1	65	34						0
35	TE	≥24,110	≥24,060	0.40	0.62	0	47	26	27					0
36	MC	≥24,110	≥24,060	0.45	0.56	0		16	21	18	45			0
37	CR	≥24,110	≥22,310	0.27	0.62	4	48	19	18	7				3
38	CR	≥24,110	≥22,030	0.26	0.55	5	27	43	17	3	3			4
39	CR	≥24,110	≥21,790	0.22	0.63	6	56	14	13	7				4

Table D.14 Operational Item Statistics—Algebra I Spring 2023 Administration Form J

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥19,510	≥19,490	0.57	0.44	0		8	57	26	9			0
2	TE	≥19,510	≥19,380	0.19	0.51	1	81	19						0
3	MC	≥19,510	≥19,490	0.56	0.36	0		11	18	55	16			0
4	TE	≥19,510	≥19,480	0.32	0.44	0	46	44	10					0
5	MC	≥19,510	≥19,460	0.41	0.40	0		41	19	22	18			0
6	MC	≥19,510	≥19,470	0.33	0.19	0		6	52	33	9			0
7	MPSR	≥19,510	≥19,450	0.42	0.51	0	38	40	22					0
8	MC	≥19,510	≥19,470	0.29	0.41	0		29	36	19	15			0
9	MC	≥19,510	≥19,450	0.34	0.29	0		16	29	21	34			0
10	SA	≥19,510	≥19,490	0.42	0.67	0	15	35	24	16	9			0
11	MC	≥19,510	≥19,460	0.39	0.32	0		39	22	28	11			0
12	CR	≥19,510	≥19,490	0.58	0.58	0	11	23	46	20				0
13	CR	≥19,510	≥18,330	0.29	0.59	4	50	18	17	10				2
14	MC	≥19,510	≥19,460	0.50	0.36	0		50	16	27	7			0
15	MC	≥19,510	≥19,470	0.32	0.44	0		32	29	17	21			0
16	MS	≥19,510	≥19,460	0.46	0.30	0	54	46						0
17	MC	≥19,510	≥19,440	0.38	0.22	0		24	28	38	9			0
18	MC	≥19,510	≥19,470	0.41	0.15	0		5	46	41	7			0
19	SA	≥19,510	≥19,440	0.25	0.47	0	59	32	9					0
20	MC	≥19,510	≥19,450	0.34	0.22	0		31	34	23	12			0
21	MC	≥19,510	≥19,470	0.70	0.31	0		8	12	11	70			0
22	MPSR	≥19,510	≥19,470	0.33	0.56	0	50	35	15					0
23	MC	≥19,510	≥19,470	0.26	0.34	0		40	21	13	26			0
24	TE	≥19,510	≥19,460	0.24	0.36	0	76	24						0
25	CR	≥19,510	≥19,230	0.14	0.68	1	44	40	9	2	2	1	1	0
26	CR	≥19,510	≥18,650	0.31	0.70	3	41	20	13	13	9			2
27	MC	≥19,510	≥19,490	0.50	0.36	0		16	50	14	20			0
28	MC	≥19,510	≥19,480	0.26	0.40	0		5	26	13	55			0
29	MPSR	≥19,510	≥19,490	0.47	0.62	0	38	29	32					0
30	SA	≥19,510	≥19,480	0.41	0.60	0	36	46	18					0
31	TE	≥19,510	≥19,480	0.39	0.48	0	60	39						0
32	MC	≥19,510	≥19,470	0.41	0.21	0		20	40	30	9			0
33	MC	≥19,510	≥19,480	0.38	0.27	0		52	38	7	3			0
34	TE	≥19,510	≥19,360	0.40	0.52	1	60	40						0
35	TE	≥19,510	≥19,390	0.46	0.52	1	36	36	27					0
36	MC	≥19,510	≥19,460	0.45	0.36	0		10	45	25	20			0
37	CR	≥19,510	≥18,240	0.36	0.69	4	42	15	23	13				3
38	CR	≥19,510	≥18,080	0.29	0.53	5	23	45	17	4	4			3
39	CR	≥19,510	≥17,930	0.26	0.62	5	52	16	15	9				3

Table D.15 Operational Item Statistics—Geometry Spring 2023 Administration Form H

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥18,820	≥18,800	0.56	0.22	0		16	56	23	5			0
2	TE	≥18,820	≥18,810	0.42	0.47	0	58	42						0
3	MC	≥18,820	≥18,810	0.46	0.47	0		46	28	14	12			0
4	MS	≥18,820	≥18,810	0.22	0.48	0	78	22						0
5	MPSR	≥18,820	≥18,810	0.53	0.30	0	23	49	28					0
6	TE	≥18,820	≥18,800	0.33	0.56	0	48	37	15					0
7	MC	≥18,820	≥18,770	0.46	0.39	0		12	46	21	20			0
8	MC	≥18,820	≥18,810	0.66	0.40	0		66	18	11	4			0
9	TE	≥18,820	≥18,780	0.36	0.64	0	24	35	22	11	8			0
10	MC	≥18,820	≥18,810	0.46	0.27	0		23	46	20	11			0
11	CR	≥18,820	≥17,380	0.27	0.64	4	53	12	19	8				3
12	MC	≥18,820	≥18,780	0.34	0.33	0		34	37	20	9			0
13	CR	≥18,820	≥17,400	0.15	0.64	5	68	10	13	2				3
14	MC	≥18,820	≥18,810	0.51	0.33	0		16	26	51	7			0
15	MC	≥18,820	≥18,780	0.30	0.28	0		30	21	36	12			0
16	MC	≥18,820	≥18,800	0.45	0.46	0		13	31	45	11			0
17	MC	≥18,820	≥18,790	0.35	0.46	0		20	29	16	35			0
18	MPSR	≥18,820	≥18,810	0.45	0.58	0	36	39	25					0
19	MS	≥18,820	≥18,800	0.28	0.55	0	72	28						0
20	MS	≥18,820	≥18,800	0.33	0.67	0	67	33						0
21	MPSR	≥18,820	≥18,800	0.35	0.38	0	44	41	15					0
22	MC	≥18,820	≥18,810	0.54	0.44	0		54	11	12	23			0
23	MPSR	≥18,820	≥18,810	0.35	0.44	0	43	43	14					0
24	CR	≥18,820	≥17,150	0.19	0.73	5	62	8	9	4	8			4
25	CR	≥18,820	≥18,800	0.25	0.71	0	29	29	17	15	6	2	1	0
26	MC	≥18,820	≥18,810	0.49	0.31	0		15	48	18	19			0
27	TE	≥18,820	≥18,810	0.37	0.38	0	63	37						0
28	MC	≥18,820	≥18,810	0.49	0.45	0		21	16	49	13			0
29	MC	≥18,820	≥18,800	0.44	0.34	0		12	30	44	13			0
30	MC	≥18,820	≥18,790	0.48	0.35	0		5	10	37	48			0
31	TE	≥18,820	≥18,810	0.34	0.46	0	66	34						0
32	MC	≥18,820	≥18,810	0.49	0.43	0		49	19	24	9			0
33	CR	≥18,820	≥18,690	0.21	0.75	1	55	17	17	9	2			0
34	MC	≥18,820	≥18,800	0.41	0.34	0		20	41	26	13			0
35	SA	≥18,820	≥18,630	0.40	0.63	1	59	40						0
36	CR	≥18,820	≥18,800	0.36	0.76	0	13	39	15	12	4	8	8	0
37	MPSR	≥18,820	≥18,780	0.32	0.23	0	44	47	8					0
38	MPSR	≥18,820	≥18,790	0.46	0.56	0	32	43	25					0

Table D.16 Operational Item Statistics—Geometry Spring 2023 Administration Form J

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥16,410	≥16,400	0.68	0.32	0		68	13	9	10			0
2	MS	≥16,410	≥16,390	0.31	0.35	0	69	31						0
3	TE	≥16,410	≥16,400	0.49	0.59	0	24	56	21					0
4	MS	≥16,410	≥16,390	0.24	0.47	0	76	24						0
5	TE	≥16,410	≥16,360	0.58	0.39	0	42	58						0
6	TE	≥16,410	≥16,390	0.35	0.56	0	46	37	17					0
7	SA	≥16,410	≥16,200	0.37	0.49	1	62	36						0
8	MC	≥16,410	≥16,400	0.56	0.29	0		16	56	20	9			0
9	TE	≥16,410	≥16,380	0.39	0.63	0	22	33	24	12	9			0
10	MS	≥16,410	≥16,400	0.45	0.49	0	55	45						0
11	CR	≥16,410	≥15,380	0.30	0.65	4	50	13	21	10				3
12	MC	≥16,410	≥16,390	0.45	0.48	0		23	45	25	6			0
13	CR	≥16,410	≥15,180	0.20	0.54	5	49	32	10	1				3
14	MC	≥16,410	≥16,390	0.65	0.37	0		19	65	9	7			0
15	MC	≥16,410	≥16,360	0.31	0.30	0		31	19	38	12			0
16	SA	≥16,410	≥16,160	0.37	0.72	2	50	24	25					0
17	MS	≥16,410	≥16,380	0.40	0.46	0	60	40						0
18	MPSR	≥16,410	≥16,390	0.47	0.58	0	33	40	27					0
19	MS	≥16,410	≥16,390	0.30	0.55	0	70	30						0
20	MC	≥16,410	≥16,380	0.52	0.32	0		19	16	52	13			0
21	MPSR	≥16,410	≥16,380	0.38	0.40	0	40	43	16					0
22	MC	≥16,410	≥16,390	0.44	0.31	0		26	18	11	44			0
23	TE	≥16,410	≥16,280	0.40	0.57	1	59	40						0
24	CR	≥16,410	≥14,970	0.24	0.74	5	61	6	6	6	13			3
25	CR	≥16,410	≥16,380	0.26	0.69	0	27	29	18	15	7	3	1	0
26	MC	≥16,410	≥16,390	0.67	0.44	0		11	67	18	4			0
27	MC	≥16,410	≥16,380	0.35	0.55	0		6	29	30	35			0
28	MC	≥16,410	≥16,380	0.49	0.49	0		23	16	49	12			0
29	MC	≥16,410	≥16,390	0.45	0.36	0		13	29	45	13			0
30	MC	≥16,410	≥16,390	0.50	0.36	0		5	8	37	50			0
31	MS	≥16,410	≥16,390	0.42	0.53	0	58	42						0
32	TE	≥16,410	≥16,390	0.34	0.41	0	47	39	14					0
33	CR	≥16,410	≥16,290	0.24	0.75	1	49	20	18	10	2			0
34	SA	≥16,410	≥16,250	0.42	0.65	1	57	42						0
35	SA	≥16,410	≥16,230	0.40	0.63	1	59	40						0
36	CR	≥16,410	≥16,390	0.40	0.77	0	11	35	15	13	6	11	10	0
37	MPSR	≥16,410	≥16,380	0.33	0.24	0	44	47	9					0
38	TE	≥16,410	≥16,320	0.35	0.59	1	65	34						0

Table D.17 Operational Item Statistics—English I Summer 2023 Administration

Item	Item Type	Total N	Adj. N	p-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥160	≥160	0.29	0.40	0	61	20	19			0
2	TE	≥160	≥160	0.20	0.59	1	70	18	11			0
3	ESR	≥160	≥160	0.46	0.29	0	38	31	30			0
4	ESR	≥160	≥160	0.20	0.26	0	72	15	13			0
5	ESR	≥160	≥160	0.61	0.44	0	31	16	53			0
6	ESR	≥160	≥160	0.43	0.41	0	49	15	36			0
7	CR	≥160	≥140	0.10	0.71	6	58	26	4	1		5
8	CR	≥160	≥140	0.16	0.69	6	54	28	6	1		5
9	ESR	≥160	≥160	0.55	0.51	1	32	25	43			0
10	ESR	≥160	≥160	0.32	0.33	1	57	21	22			0
11	ESR	≥160	≥160	0.26	0.30	1	57	33	9			0
12	MS	≥160	≥160	0.22	0.40	1	63	28	8			0
13	ESR	≥160	≥160	0.32	0.32	0	62	12	27			0
14	MS	≥160	≥160	0.19	0.54	0	71	21	8			0
15	TE	≥160	≥160	0.32	0.27	1	49	36	14			0
16	ESR	≥160	≥160	0.38	0.38	0	50	24	26			0
17	ESR	≥160	≥160	0.28	0.50	1	66	12	22			0
18	ESR	≥160	≥160	0.43	0.38	0	55	4	41			0
19	MS	≥160	≥160	0.21	0.48	0	68	23	9			0
20	TE	≥160	≥160	0.18	0.44	1	64	35	1			0
21	CR	≥160	≥130	0.12	0.77	10	53	23	8	1		5
22	CR	≥160	≥130	0.17	0.67	10	52	25	8	1		5
23	ESR	≥160	≥160	0.61	0.42	1	35	7	57			0
24	TE	≥160	≥160	0.31	0.30	0	63	12	25			0
25	ESR	≥160	≥160	0.24	0.32	0	66	19	15			0
26	ESR	≥160	≥160	0.41	0.31	0	48	21	31			0
27	ESR	≥160	≥160	0.28	0.41	1	65	12	22			0
28	ESR	≥160	≥160	0.24	0.45	1	65	20	14			0
29	ESR	≥160	≥160	0.24	0.18	1	70	12	18			0
30	ESR	≥160	≥160	0.26	0.28	1	61	25	13			0
31	ESR	≥160	≥160	0.24	0.38	1	67	17	15			0
32	TE	≥160	≥160	0.23	0.60	1	64	23	12			0

Table D.18 Operational Item Statistics—English II Summer 2023 Administration

Item	Item Type	Total N	Adj. N	p-Value	Pbis	% Omit	% At 0	% At 1	% At 2	% At 3	% At 4	% Nonscore Codes
1	ESR	≥70	≥70	0.39	0.42	0	54	15	31			0
2	TE	≥70	≥70	0.29	0.40	1	59	22	18			0
3	ESR	≥70	≥70	0.20	0.12	0	70	19	11			0
4	MS	≥70	≥70	0.28	0.33	0	65	14	22			0
5	MS	≥70	≥70	0.16	0.24	0	73	23	4			0
6	TE	≥70	≥70	0.30	0.41	0	42	57	1			0
7	CR	≥70	≥60	0.15	0.80	5	50	28	9	3		4
8	CR	≥70	≥60	0.20	0.79	5	50	28	9	3		4
9	ESR	≥70	≥70	0.41	0.35	0	49	20	31			0
10	ESR	≥70	≥70	0.42	0.39	0	47	22	31			0
11	MS	≥70	≥70	0.37	0.51	0	49	28	23			0
12	TE	≥70	≥70	0.24	0.50	0	62	28	9			0
13	ESR	≥70	≥70	0.43	0.17	0	49	18	34			0
14	TE	≥70	≥70	0.40	0.60	1	57	4	38			0
15	MS	≥70	≥70	0.43	0.62	0	43	28	28			0
16	ESR	≥70	≥70	0.28	0.70	0	50	45	5			0
17	ESR	≥70	≥70	0.25	0.23	0	64	23	14			0
18	ESR	≥70	≥70	0.57	0.44	0	31	23	46			0
19	MS	≥70	≥70	0.25	0.56	0	62	26	12			0
20	TE	≥70	≥70	0.38	0.50	0	58	8	34			0
21	CR	≥70	≥60	0.19	0.79	5	45	26	16	3		5
22	CR	≥70	≥60	0.25	0.79	5	43	27	16	3		5
23	MS	≥70	≥70	0.44	0.47	0	42	28	30			0
24	ESR	≥70	≥70	0.47	0.48	0	49	8	43			0
25	ESR	≥70	≥70	0.38	0.27	0	54	16	30			0
26	TE	≥70	≥70	0.40	0.44	0	39	42	19			0
27	TE	≥70	≥70	0.29	0.43	0	53	36	11			0
28	ESR	≥70	≥70	0.18	0.23	0	72	20	8			0
29	ESR	≥70	≥70	0.24	0.33	0	66	20	14			0
30	ESR	≥70	≥70	0.36	0.57	0	55	16	28			0
31	TE	≥70	≥70	0.30	0.46	0	64	14	23			0
32	ESR	≥70	≥70	0.26	0.44	0	53	43	4			0

Table D.19 Operational Item Statistics—Algebra I Summer 2023 Administration

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MC	≥170	≥170	0.29	0.29	0		24	40	29	7			0
2	MS	≥170	≥170	0.18	0.31	1	81	18						0
3	SA	≥170	≥170	0.06	0.47	2	92	6						0
4	MPSR	≥170	≥170	0.17	0.20	1	71	24	5					0
5	MPSR	≥170	≥170	0.26	0.22	1	55	37	7					0
6	MC	≥170	≥170	0.33	0.06	2		16	20	33	30			0
7	MC	≥170	≥170	0.34	0.29	1		29	33	26	11			0
8	MC	≥170	≥170	0.29	0.27	1		29	28	23	19			0
9	MC	≥170	≥170	0.28	0.09	1		32	28	19	20			0
10	SA	≥170	≥170	0.41	0.53	1	23	28	20	20	8			0
11	MC	≥170	≥170	0.23	0.01	1		17	23	47	12			0
12	CR	≥170	≥170	0.40	0.43	1	32	29	27	12				0
13	CR	≥170	≥140	0.12	0.55	10	61	15	5	2				8
14	MC	≥170	≥170	0.68	0.25	0		9	68	14	10			0
15	MC	≥170	≥170	0.28	0.07	0		17	19	36	28			0
16	TE	≥170	≥170	0.10	0.52	0	90	10						0
17	TE	≥170	≥170	0.20	0.55	1	79	20						0
18	MC	≥170	≥170	0.28	0.37	1		19	20	33	28			0
19	MC	≥170	≥170	0.26	0.19	1		25	33	29	11			0
20	MC	≥170	≥170	0.24	0.28	1		24	32	30	14			0
21	MPSR	≥170	≥170	0.33	0.23	1	46	42	12					0
22	MS	≥170	≥170	0.22	0.28	1	78	21						0
23	SA	≥170	≥160	0.08	0.60	10	79	10	2					0
24	MC	≥170	≥170	0.18	0.13	2		12	38	31	18			0
25	CR	≥170	≥140	0.03	0.53	14	73	3	1	1	1		1	7
26	CR	≥170	≥170	0.06	0.56	2	80	15	2	1	1			0
27	MC	≥170	≥170	0.36	0.16	0		24	29	36	12			0
28	MC	≥170	≥170	0.21	0.25	1		21	35	38	5			0
29	MPSR	≥170	≥170	0.28	0.31	0	55	34	11					0
30	MC	≥170	≥170	0.41	0.23	0		15	41	32	12			0
31	SA	≥170	≥170	0.10	0.51	0	82	16	2					0
32	MC	≥170	≥170	0.34	0.17	0		31	16	19	34			0
33	MPSR	≥170	≥170	0.35	0.09	1	40	49	10					0
34	TE	≥170	≥170	0.31	0.09	1	69	31						0
35	MS	≥170	≥170	0.14	0.53	1	85	14						0
36	MC	≥170	≥170	0.35	0.11	2		16	27	21	34			0
37	CR	≥170	≥130	0.07	0.58	14	67	7	2	2				9
38	CR	≥170	≥110	0.05	0.69	18	59	2	1	1	1			17
39	CR	≥170	≥120	0.08	0.49	19	59	7	3	1				11

Table D.20 Operational Item Statistics—Geometry Summer 2023 Administration

Item	Item Type	Total N	Adj. N	*p*-Value	Pbis	% Omit	% At 0	% At 1/A	% At 2/B	% At 3/C	% At 4/D	% At 5	% At 6	% Nonscore Codes
1	MPSR	≥80	≥80	0.28	0.17	0	49	45	6					0
2	MC	≥80	≥80	0.30	0.11	0		42	30	20	8			0
3	MC	≥80	≥80	0.48	0.36	0		17	9	48	26			0
4	TE	≥80	≥80	0.19	0.57	0	81	19						0
5	SA	≥80	≥80	0.12	0.45	1	87	12						0
6	SA	≥80	≥80	0.08	0.56	3	88	8						0
7	MPSR	≥80	≥80	0.35	0.10	0	41	49	10					0
8	TE	≥80	≥80	0.09	0.62	0	91	9						0
9	MC	≥80	≥80	0.45	0.33	0		45	17	14	23			0
10	SA	≥80	≥80	0.19	0.48	0	44	38	13	5				0
11	SA	≥80	≥80	0.07	0.77	0	93	7						0
12	CR	≥80	≥60	0.19	0.61	13	55	6	14	3				9
13	CR	≥80	≥70	0.01	0.59	10	79	2						8
14	MC	≥80	≥80	0.35	0.29	0		7	14	44	35			0
15	MC	≥80	≥80	0.22	0.35	0		28	22	37	13			0
16	SA	≥80	≥80	0.14	0.54	1	85	14						0
17	MC	≥80	≥80	0.16	0.31	1		16	20	37	26			0
18	MS	≥80	≥80	0.08	0.45	0	92	8						0
19	TE	≥80	≥80	0.35	0.20	0	37	55	8					0
20	MC	≥80	≥80	0.31	0.03	0		13	22	34	31			0
21	MPSR	≥80	≥80	0.40	0.16	0	34	52	14					0
22	CR	≥80	≥60	0.04	0.75	12	72	2	1		2			10
23	MPSR	≥80	≥80	0.38	0.37	0	35	53	12					0
24	MC	≥80	≥80	0.17	0.51	0		28	33	22	17			0
25	CR	≥80	≥70	0.04	0.80	7	70	6	3	2				12
26	MC	≥80	≥80	0.33	0.30	0		26	33	33	9			0
27	SA	≥80	≥80	0.20	0.40	0	80	20						0
28	MC	≥80	≥80	0.37	0.25	0		23	37	29	10			0
29	MC	≥80	≥80	0.26	0.03	0		30	27	26	17			0
30	MS	≥80	≥80	0.13	0.08	0	87	13						0
31	TE	≥80	≥80	0.27	0.21	0	53	40	7					0
32	SA	≥80	≥80	0.16	0.47	1	83	16						0
33	SA	≥80	≥80	0.10	0.78	5	86	9						0
34	TE	≥80	≥80	0.22	0.34	0	78	22						0
35	MPSR	≥80	≥80	0.26	0.56	0	60	28	12					0
36	TE	≥80	≥80	0.12	0.37	1	87	12						0
37	CR	≥80	≥60	0.00	0.43	14	77	1						8
38	CR	≥80	≥60	0.03	0.56	13	74		1	1				10
39	CR	≥80	≥60	0.03	0.71	16	70	2	2					9

Appendix E—Student Participation Counts

Table E.1 Count of Students Administered the Fall 2022 Administration: English I Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥140	≥130	≥70	≥80	≥440
Gender								
Female	<10	<10	<10	≥60	≥50	≥20	≥30	≥180
Male	<10	<10	<10	≥80	≥80	≥50	≥40	≥260
Ethnicity								
Hispanic/Latino	<10	<10	<10	<10	≥10	≥20	≥20	≥60
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	<10	≥80	≥100	≥50	≥50	≥290
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	≥50	≥10	<10	<10	≥70
Two or More Races	<10	<10	<10	<10	<10	<10	<10	<10
Education Classification								
Regular Education	<10	<10	<10	≥130	≥100	≥60	≥60	≥370
Special Education	<10	<10	<10	≥10	≥20	≥10	≥10	≥70
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥110	≥120	≥70	≥70	≥370
Not Economically Disadvantaged	<10	<10	<10	≥30	≥10	<10	≥10	≥60
English Learner Status								
Not English Learner	<10	<10	<10	≥140	≥110	≥60	≥60	≥380
English Learner	<10	<10	<10	<10	≥10	≥10	≥20	≥60
Migrant Status								
Nonmigrant	<10	<10	<10	≥140	≥130	≥70	≥80	≥440
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥130	≥120	≥70	≥70	≥390
Section 504	<10	<10	<10	≥10	≥10	<10	≥10	≥50
Homeless Status								
Not Homeless	<10	<10	<10	≥140	≥130	≥70	≥80	≥440
Homeless	<10	<10	<10	<10	<10	<10	<10	<10
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥140	≥130	≥70	≥80	≥440
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	<10
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥140	≥130	≥70	≥80	≥440
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

*Economic Status was not available for all students.

Table E.2 Count of Students Administered the Fall 2022 Administration: English I Form F

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥4,860	≥2,410	≥1,020	≥1,010	≥9,320
Gender								
Female	<10	<10	<10	≥2,370	≥810	≥370	≥360	≥3,910
Male	<10	<10	<10	≥2,490	≥1,600	≥650	≥650	≥5,400
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥580	≥450	≥240	≥240	≥1,520
American Indian or Alaska Native	<10	<10	<10	≥20	≥10	<10	<10	≥40
Asian	<10	<10	<10	≥60	≥10	≥10	≥10	≥100
Black or African American	<10	<10	<10	≥1,800	≥1,350	≥610	≥620	≥4,400
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	≥10
White	<10	<10	<10	≥2,180	≥520	≥130	≥120	≥2,970
Two or More Races	<10	<10	<10	≥180	≥40	≥10	≥10	≥250
Education Classification								
Regular Education	<10	<10	<10	≥4,150	≥1,770	≥790	≥840	≥7,580
Special Education	<10	<10	<10	≥450	≥620	≥220	≥160	≥1,450
Gifted or Talented	<10	<10	<10	≥250	<10	<10	<10	≥280
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥3,240	≥2,020	≥870	≥850	≥7,000
Not Economically Disadvantaged	<10	<10	<10	≥1,610	≥370	≥140	≥150	≥2,290
English Learner Status								
Not English Learner	<10	<10	<10	≥4,690	≥2,010	≥790	≥760	≥8,260
English Learner	<10	<10	<10	≥170	≥400	≥230	≥250	≥1,050
Migrant Status								
Nonmigrant	<10	<10	<10	≥4,850	≥2,400	≥1,010	≥1,010	≥9,300
Migrant	<10	<10	<10	<10	<10	<10	<10	≥20
Section 504 Status								
Non-Section 504	<10	<10	<10	≥4,430	≥2,050	≥880	≥860	≥8,230
Section 504	<10	<10	<10	≥420	≥350	≥140	≥150	≥1,080
Homeless Status								
Not Homeless	<10	<10	<10	≥4,810	≥2,350	≥990	≥980	≥9,150
Homeless	<10	<10	<10	≥40	≥50	≥30	≥30	≥160
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥4,670	≥2,390	≥1,020	≥1,010	≥9,110
Military Affiliated	<10	<10	<10	≥180	≥10	<10	<10	≥200
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥4,850	≥2,400	≥1,020	≥1,010	≥9,300
Foster Care	<10	<10	<10	<10	<10	<10	<10	≥10

*Economic Status was not available for all students.

Table E.3 Percentage of Students Administered the Fall 2022 Administration: English I Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	33.33	30.20	17.67	18.79	100
Gender								
Female	0.00	0.00	0.00	37.91	27.47	15.38	19.23	100
Male	0.00	0.00	0.00	30.19	32.08	19.25	18.49	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	5.97	26.87	29.85	37.31	100
American Indian or Alaska Native	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100
Asian	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black or African American	0.00	0.00	0.00	29.15	35.25	18.31	17.29	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White	0.00	0.00	0.00	72.37	14.47	3.95	9.21	100
Two or More Races	0.00	0.00	0.00	37.50	25.00	25.00	12.50	100
Education Classification								
Regular Education	0.00	0.00	0.00	36.46	28.15	17.96	17.43	100
Special Education	0.00	0.00	0.00	18.06	38.89	16.67	26.39	100
Gifted or Talented	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	29.37	32.54	19.05	19.05	100
Not Economically Disadvantaged	0.00	0.00	0.00	55.07	17.39	10.14	17.39	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	37.98	30.49	16.02	15.50	100
English Learner	0.00	0.00	0.00	3.33	28.33	28.33	40.00	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	33.41	30.27	17.49	18.83	100
Migrant	0.00	0.00	0.00	0.00	0.00	100.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	33.33	30.30	17.68	18.69	100
Section 504	0.00	0.00	0.00	33.33	29.41	17.65	19.61	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	33.41	30.45	17.50	18.64	100
Homeless	0.00	0.00	0.00	28.57	14.29	28.57	28.57	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	33.41	30.27	17.71	18.61	100
Military Affiliated	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	33.18	30.27	17.71	18.83	100
Foster Care	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100

* Economic status information is not available for the fall and summer administrations.

Table E.4 Percentage of Students Administered the Fall 2022 Administration: English I Form F

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.03	52.16	25.88	11.00	10.93	100
Gender								
Female	0.00	0.00	0.05	60.57	20.70	9.48	9.20	100
Male	0.00	0.00	0.02	46.07	29.63	12.10	12.19	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	38.65	29.66	15.88	15.81	100
American Indian or Alaska Native	0.00	0.00	0.00	54.55	31.82	4.55	9.09	100
Asian	0.00	0.00	0.00	60.75	16.82	10.28	12.15	100
Black or African American	0.00	0.00	0.07	40.99	30.64	14.03	14.28	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	70.00	10.00	20.00	0.00	100
White	0.00	0.00	0.00	73.53	17.79	4.61	4.07	100
Two or More Races	0.00	0.00	0.00	71.88	18.75	5.08	4.30	100
Education Classification								
Regular Education	0.00	0.00	0.03	54.81	23.45	10.51	11.20	100
Special Education	0.00	0.00	0.07	30.98	42.84	15.08	11.03	100
Gifted or Talented	0.00	0.00	0.00	90.71	3.21	2.86	3.21	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.04	46.25	28.94	12.52	12.24	100
Not Economically Disadvantaged	0.00	0.00	0.00	70.32	16.45	6.40	6.83	100
English Learner Status								
Not English Learner	0.00	0.00	0.04	56.76	24.33	9.56	9.31	100
English Learner	0.00	0.00	0.00	16.10	37.97	22.25	23.67	100
Migrant Status								
Nonmigrant	0.00	0.00	0.03	52.24	25.86	10.94	10.94	100
Migrant	0.00	0.00	0.00	15.00	35.00	40.00	10.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.02	53.84	24.95	10.71	10.47	100
Section 504	0.00	0.00	0.09	39.35	32.90	13.18	14.47	100
Homeless Status								
Not Homeless	0.00	0.00	0.03	52.63	25.73	10.82	10.78	100
Homeless	0.00	0.00	0.00	26.19	33.93	20.83	19.05	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.03	51.33	26.27	11.22	11.15	100
Military Affiliated	0.00	0.00	0.00	88.83	8.74	0.97	1.46	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.03	52.16	25.85	11.01	10.94	100
Foster Care	0.00	0.00	0.00	50.00	38.89	5.56	5.56	100

*Economic Status was not available for all students.

Table E.5 Count of Students Administered the Fall 2022 Administration: English II Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	<10	≥180	≥90	≥120	≥400
Gender								
Female	<10	<10	<10	<10	≥80	≥20	≥40	≥150
Male	<10	<10	<10	<10	≥90	≥60	≥80	≥240
Ethnicity								
Hispanic/Latino	<10	<10	<10	<10	≥10	≥10	≥40	≥60
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	<10	<10	≥80	≥60	≥80	≥232
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	<10	≥80	<10	<10	≥90
Two or More Races	<10	<10	<10	<10	<10	<10	<10	<10
Education Classification								
Regular Education	<10	<10	<10	<10	≥160	≥70	≥110	≥340
Special Education	<10	<10	<10	<10	≥20	≥10	≥10	≥50
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
Economic Status*								
Economically Disadvantaged	<10	<10	<10	<10	≥130	≥80	≥110	≥330
Not Economically Disadvantaged	<10	<10	<10	<10	≥40	<10	≥10	≥60
English Learner Status								
Not English Learner	<10	<10	<10	<10	≥180	≥70	≥90	≥350
English Learner	<10	<10	<10	<10	<10	≥10	≥30	≥50
Migrant Status								
Nonmigrant	<10	<10	<10	<10	≥180	≥90	≥120	≥400
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	<10	≥160	≥70	≥100	≥350
Section 504	<10	<10	<10	<10	≥10	≥10	≥10	≥50
Homeless Status								
Not Homeless	<10	<10	<10	<10	≥180	≥80	≥120	≥390
Homeless	<10	<10	<10	<10	<10	<10	<10	<10
Military Affiliation								
Not Military Affiliated	<10	<10	<10	<10	≥180	≥90	≥120	≥400
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	<10
Foster Care Status								
Not in Foster Care	<10	<10	<10	<10	≥180	≥90	≥120	≥400
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

*Economic Status was not available for all students.

Table E.6 Count of Students Administered the Fall 2022 Administration: English II Form F

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥1,070	≥5,300	≥1,290	≥1,270	≥8,950
Gender								
Female	<10	<10	<10	≥540	≥2,650	≥480	≥440	≥4,140
Male	<10	<10	<10	≥530	≥2,640	≥800	≥820	≥4,810
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥170	≥640	≥230	≥270	≥1,320
American Indian or Alaska Native	<10	<10	<10	<10	≥40	<10	<10	≥60
Asian	<10	<10	<10	≥70	≥80	≥20	≥10	≥200
Black or African American	<10	<10	<10	≥290	≥2,160	≥780	≥780	≥4,020
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	≥10
White	<10	<10	<10	≥490	≥2,190	≥220	≥190	≥3,100
Two or More Races	<10	<10	<10	≥20	≥160	≥20	<10	≥220
Education Classification								
Regular Education	<10	<10	<10	≥890	≥4,610	≥1,020	≥1,050	≥7,580
Special Education	<10	<10	<10	≥40	≥430	≥260	≥210	≥950
Gifted or Talented	<10	<10	<10	≥130	≥250	≥10	<10	≥410
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥530	≥3,320	≥1,090	≥1,080	≥6,020
Not Economically Disadvantaged	<10	<10	<10	≥540	≥1,970	≥200	≥180	≥2,910
English Learner Status								
Not English Learner	<10	<10	<10	≥1,030	≥5,070	≥1,080	≥990	≥8,180
English Learner	<10	<10	<10	≥40	≥220	≥210	≥280	≥770
Migrant Status								
Nonmigrant	<10	<10	<10	≥1,070	≥5,300	≥1,290	≥1,270	≥8,940
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥990	≥4,860	≥1,100	≥1,080	≥8,050
Section 504	<10	<10	<10	≥80	≥430	≥180	≥190	≥900
Homeless Status								
Not Homeless	<10	<10	<10	≥1,070	≥5,240	≥1,250	≥1,240	≥8,810
Homeless	<10	<10	<10	<10	≥60	≥30	≥30	≥140
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥1,020	≥5,090	≥1,280	≥1,270	≥8,670
Military Affiliated	<10	<10	<10	≥50	≥210	<10	<10	≥270
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥1,070	≥5,290	≥1,290	≥1,270	≥8,930
Foster Care	<10	<10	<10	<10	≥10	<10	<10	≥10

*Economic Status was not available for all students.

Table E.7 Percentage of Students Administered the Fall 2022 Administration: English II Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	0.50	45.30	22.77	31.44	100
Gender								
Female	0.00	0.00	0.00	1.26	53.46	16.35	28.93	100
Male	0.00	0.00	0.00	0.00	40.00	26.94	33.06	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	0.00	18.84	23.19	57.97	100
American Indian or Alaska Native								
Asian	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
Black or African American	0.00	0.00	0.00	0.43	36.21	28.45	34.91	100
Native Hawaiian or Other Pacific								
White	0.00	0.00	0.00	1.02	83.67	9.18	6.12	100
Two or More Races	0.00	0.00	0.00	0.00	66.67	33.33	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.00	0.29	45.98	21.84	31.90	100
Special Education	0.00	0.00	0.00	1.89	39.62	28.30	30.19	100
Gifted or Talented	0.00	0.00	0.00	0.00	66.67	33.33	0.00	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	0.60	41.49	25.07	32.84	100
Not Economically Disadvantaged	0.00	0.00	0.00	0.00	63.77	11.59	24.64	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	0.57	51.70	22.16	25.57	100
English Learner	0.00	0.00	0.00	0.00	1.92	26.92	71.15	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	0.50	45.41	22.83	31.27	100
Migrant	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	0.28	47.31	21.53	30.88	100
Section 504	0.00	0.00	0.00	1.96	31.37	31.37	35.29	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	0.51	45.96	22.47	31.06	100
Homeless	0.00	0.00	0.00	0.00	12.50	37.50	50.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	0.50	45.27	22.89	31.34	100
Military Affiliated	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	0.50	45.16	22.83	31.51	100
Foster Care	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100

*Economic Status was not available for all students.

Table E.8 Percentage of Students Administered the Fall 2022 Administration: English II Form F

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	12.03	59.22	14.48	14.28	100
Gender								
Female	0.00	0.00	0.00	13.14	64.20	11.81	10.85	100
Male	0.00	0.00	0.00	11.08	54.93	16.77	17.23	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	13.25	48.57	17.62	20.56	100
American Indian or Alaska Native	0.00	0.00	0.00	6.56	80.33	11.48	1.64	100
Asian	0.00	0.00	0.00	37.93	41.38	11.82	8.87	100
Black or African American	0.00	0.00	0.00	7.30	53.64	19.49	19.57	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	9.09	81.82	9.09	0.00	100
White	0.00	0.00	0.00	16.03	70.65	7.16	6.16	100
Two or More Races	0.00	0.00	0.00	12.67	73.76	10.41	3.17	100
Education Classification								
Regular Education	0.00	0.00	0.00	11.75	60.90	13.45	13.90	100
Special Education	0.00	0.00	0.00	4.91	45.14	27.38	22.57	100
Gifted or Talented	0.00	0.00	0.00	33.82	60.83	3.41	1.95	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	8.80	55.11	18.11	17.98	100
Not Economically Disadvantaged	0.00	0.00	0.00	18.75	67.86	6.97	6.42	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	12.61	62.03	13.21	12.14	100
English Learner	0.00	0.00	0.00	5.84	29.31	27.89	36.96	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	12.04	59.24	14.44	14.27	100
Migrant	0.00	0.00	0.00	0.00	16.67	66.67	16.67	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	12.32	60.44	13.77	13.46	100
Section 504	0.00	0.00	0.00	9.44	48.22	20.78	21.56	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	12.18	59.48	14.27	14.07	100
Homeless	0.00	0.00	0.00	2.82	42.96	27.46	26.76	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	11.77	58.69	14.86	14.69	100
Military Affiliated	0.00	0.00	0.00	20.22	75.81	2.53	1.44	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	12.04	59.20	14.48	14.28	100
Foster Care	0.00	0.00	0.00	6.25	68.75	12.50	12.50	100

*Economic Status was not available for all students.

Table E.9 Count of Students Administered the Fall 2022 Administration: Algebra I Form D

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥3,140	≥2,270	≥700	≥480	≥6,620
Gender								
Female	<10	<10	<10	≥1,590	≥1,030	≥340	≥220	≥3,200
Male	<10	<10	<10	≥1,550	≥1,240	≥360	≥250	≥3,410
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥410	≥290	≥90	≥50	≥860
American Indian or Alaska Native	<10	<10	<10	≥10	≥10	<10	<10	≥30
Asian	<10	<10	<10	≥40	≥10	<10	<10	≥70
Black or African American	<10	<10	<10	≥1,190	≥1,320	≥460	≥330	≥3,320
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	≥1,380	≥560	≥120	≥70	≥2,150
Two or More Races	<10	<10	<10	≥90	≥50	≥10	<10	≥170
Education Classification								
Regular Education	<10	<10	<10	≥2,800	≥1,900	≥570	≥400	≥5,700
Special Education	<10	<10	<10	≥220	≥350	≥120	≥70	≥770
Gifted or Talented	<10	<10	<10	≥120	≥10	<10	<10	≥150
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥2,060	≥1,830	≥600	≥370	≥4,880
Not Economically Disadvantaged	<10	<10	<10	≥1,070	≥440	≥100	≥90	≥1,720
English Learner Status								
Not English Learner	<10	<10	<10	≥3,020	≥2,050	≥620	≥420	≥6,130
English Learner	<10	<10	<10	≥120	≥220	≥80	≥50	≥480
Migrant Status								
Nonmigrant	<10	<10	<10	≥3,140	≥2,270	≥700	≥480	≥6,610
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥2,880	≥1,960	≥610	≥420	≥5,880
Section 504	<10	<10	<10	≥260	≥310	≥90	≥50	≥740
Homeless Status								
Not Homeless	<10	<10	<10	≥3,120	≥2,230	≥690	≥460	≥6,520
Homeless	<10	<10	<10	≥20	≥40	≥10	≥10	≥100
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥3,020	≥2,250	≥700	≥480	≥6,460
Military Affiliated	<10	<10	<10	≥120	≥20	<10	<10	≥150
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥3,140	≥2,270	≥700	≥480	≥6,600
Foster Care	<10	<10	<10	<10	<10	<10	<10	≥10

*Economic Status was not available for all students.

Table E.10 Count of Students Administered the Fall 2022 Administration: Algebra I Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥90	≥100	≥30	≥20	≥250
Gender								
Female	<10	<10	<10	≥40	≥40	<10	≥10	≥110
Male	<10	<10	<10	≥40	≥50	≥20	≥10	≥130
Ethnicity								
Hispanic/Latino	<10	<10	<10	<10	≥10	<10	<10	≥20
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	<10	≥30	≥70	≥20	≥10	≥150
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	≥40	≥10	<10	<10	≥70
Two or More Races	<10	<10	<10	<10	<10	<10	<10	<10
Education Classification								
Regular Education	<10	<10	<10	≥80	≥80	≥20	≥20	≥210
Special Education	<10	<10	<10	<10	≥10	<10	<10	≥30
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥70	≥80	≥30	≥20	≥210
Not Economically Disadvantaged	<10	<10	<10	≥10	≥10	<10	<10	≥30
English Learner Status								
Not English Learner	<10	<10	<10	≥90	≥90	≥30	≥10	≥240
English Learner	<10	<10	<10	<10	<10	<10	<10	≥10
Migrant Status								
Nonmigrant	<10	<10	<10	≥90	≥100	≥30	≥20	≥250
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥70	≥80	≥30	≥20	≥210
Section 504	<10	<10	<10	≥10	≥10	<10	<10	≥30
Homeless Status								
Not Homeless	<10	<10	<10	≥90	≥100	≥30	≥20	≥240
Homeless	<10	<10	<10	<10	<10	<10	<10	<10
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥90	≥100	≥30	≥20	≥250
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	<10
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥80	≥100	≥30	≥20	≥250
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

*Economic Status was not available for all students.

Table E.11 Percentage of Students Administered the Fall 2022 Administration: Algebra I Form D

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.06	47.56	34.42	10.68	7.28	100
Gender								
Female	0.00	0.00	0.03	49.81	32.41	10.64	7.11	100
Male	0.00	0.00	0.09	45.45	36.31	10.72	7.44	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	47.86	34.53	11.01	6.60	100
American Indian or Alaska Native	0.00	0.00	0.00	52.94	32.35	11.76	2.94	100
Asian	0.00	0.00	0.00	61.64	26.03	6.85	5.48	100
Black or African American	0.00	0.00	0.12	35.88	39.92	14.00	10.08	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	50.00	25.00	0.00	25.00	100
White	0.00	0.00	0.00	64.11	26.28	5.94	3.67	100
Two or More Races	0.00	0.00	0.00	57.31	33.92	5.85	2.92	100
Education Classification								
Regular Education	0.00	0.00	0.04	49.21	33.46	10.14	7.16	100
Special Education	0.00	0.00	0.26	28.53	45.91	16.08	9.21	100
Gifted or Talented	0.00	0.00	0.00	82.67	12.00	3.33	2.00	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.04	42.30	37.56	12.34	7.77	100
Not Economically Disadvantaged	0.00	0.00	0.12	62.51	25.61	6.03	5.74	100
English Learner Status								
Not English Learner	0.00	0.00	0.07	49.25	33.56	10.16	6.96	100
English Learner	0.00	0.00	0.00	26.38	45.19	17.18	11.25	100
Migrant Status								
Nonmigrant	0.00	0.00	0.06	47.60	34.43	10.66	7.26	100
Migrant	0.00	0.00	0.00	14.29	28.57	28.57	28.57	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.05	49.01	33.34	10.39	7.21	100
Section 504	0.00	0.00	0.14	36.08	42.97	12.97	7.84	100
Homeless Status								
Not Homeless	0.00	0.00	0.06	47.92	34.24	10.58	7.19	100
Homeless	0.00	0.00	0.00	24.00	46.00	17.00	13.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.06	46.82	34.80	10.88	7.44	100
Military Affiliated	0.00	0.00	0.00	79.08	18.30	1.96	0.65	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.06	47.61	34.44	10.60	7.28	100
Foster Care	0.00	0.00	0.00	27.78	27.78	38.89	5.56	100

*Economic Status was not available for all students.

Table E.12 Percentage of Students Administered the Fall 2022 Administration: Algebra I Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	36.11	40.48	13.89	9.52	100
Gender								
Female	0.00	0.00	0.00	39.82	43.36	7.96	8.85	100
Male	0.00	0.00	0.00	33.09	38.13	18.71	10.07	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	21.74	43.48	13.04	21.74	100
American Indian or Alaska Native	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asian	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Black or African American	0.00	0.00	0.00	22.88	49.67	16.99	10.46	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
White	0.00	0.00	0.00	67.61	21.13	7.04	4.23	100
Two or More Races	0.00	0.00	0.00	60.00	20.00	20.00	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.00	38.60	38.60	12.56	10.23	100
Special Education	0.00	0.00	0.00	21.62	51.35	21.62	5.41	100
Gifted or Talented	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	33.64	41.59	14.02	10.75	100
Not Economically Disadvantaged	0.00	0.00	0.00	50.00	34.21	13.16	2.63	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	37.50	40.83	13.75	7.92	100
English Learner	0.00	0.00	0.00	8.33	33.33	16.67	41.67	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	36.11	40.48	13.89	9.52	100
Migrant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	34.10	41.01	14.29	10.60	100
Section 504	0.00	0.00	0.00	48.57	37.14	11.43	2.86	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	36.14	40.96	13.65	9.24	100
Homeless	0.00	0.00	0.00	33.33	0.00	33.33	33.33	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	36.11	40.48	13.89	9.52	100
Military Affiliated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	35.60	40.80	14.00	9.60	100
Foster Care	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100

*Economic Status was not available for all students.

Table E.13 Count of Students Administered the Fall 2022 Administration: Geometry Form D

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥840	≥2,640	≥1,040	≥430	≥4,970
Gender								
Female	<10	<10	<10	≥440	≥1,380	≥490	≥220	≥2,540
Male	<10	<10	<10	≥400	≥1,250	≥540	≥210	≥2,420
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥90	≥250	≥190	≥70	≥620
American Indian or Alaska Native	<10	<10	<10	<10	≥20	≥10	<10	≥40
Asian	<10	<10	<10	≥50	≥30	≥10	<10	≥100
Black or African American	<10	<10	<10	≥210	≥1,000	≥560	≥280	≥2,060
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	≥440	≥1,230	≥220	≥60	≥1,960
Two or More Races	<10	<10	<10	≥30	≥80	≥30	<10	≥150
Education Classification								
Regular Education	<10	<10	<10	≥630	≥2,400	≥920	≥370	≥4,330
Special Education	<10	<10	<10	≥10	≥110	≥90	≥50	≥280
Gifted or Talented	<10	<10	<10	≥190	≥120	≥20	≥10	≥350
Economic Status*								
Economically Disadvantaged	<10	<10	<10	≥380	≥1,580	≥790	≥340	≥3,100
Not Economically Disadvantaged	<10	<10	<10	≥460	≥1,060	≥240	≥80	≥1,850
English Learner Status								
Not English Learner	<10	<10	<10	≥830	≥2,570	≥950	≥360	≥4,730
English Learner	<10	<10	<10	≥10	≥60	≥90	≥60	≥230
Migrant Status								
Nonmigrant	<10	<10	<10	≥840	≥2,640	≥1,040	≥430	≥4,960
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥810	≥2,460	≥950	≥390	≥4,620
Section 504	<10	<10	<10	≥30	≥180	≥80	≥40	≥350
Homeless Status								
Not Homeless	<10	<10	<10	≥840	≥2,620	≥1,010	≥420	≥4,900
Homeless	<10	<10	<10	<10	≥20	≥30	<10	≥60
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥800	≥2,530	≥1,020	≥430	≥4,800
Military Affiliated	<10	<10	<10	≥40	≥110	≥10	<10	≥170
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥840	≥2,640	≥1,040	≥430	≥4,960
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

*Economic Status was not available for all students.

Table E.14 Count of Students Administered the Fall 2022 Administration: Geometry Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	<10	≥90	≥30	≥40	≥160
Gender								
Female	<10	<10	<10	<10	≥30	≥10	≥20	≥70
Male	<10	<10	<10	<10	≥50	≥20	≥20	≥90
Ethnicity								
Hispanic/Latino	<10	<10	<10	<10	<10	<10	<10	≥10
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	<10	<10	≥40	≥30	≥30	≥110
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	<10	≥30	<10	<10	≥40
Two or More Races	<10	<10	<10	<10	<10	<10	<10	<10
Education Classification								
Regular Education	<10	<10	<10	<10	≥80	≥30	≥30	≥150
Special Education	<10	<10	<10	<10	<10	<10	<10	≥10
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
Economic Status*								
Economically Disadvantaged	<10	<10	<10	<10	≥70	≥30	≥40	≥140
Not Economically Disadvantaged	<10	<10	<10	<10	≥10	<10	<10	≥20
English Learner Status								
Not English Learner	<10	<10	<10	<10	≥80	≥30	≥30	≥150
English Learner	<10	<10	<10	<10	<10	<10	<10	≥10
Migrant Status								
Nonmigrant	<10	<10	<10	<10	≥90	≥30	≥40	≥160
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	<10	≥80	≥30	≥30	≥150
Section 504	<10	<10	<10	<10	<10	<10	<10	≥10
Homeless Status								
Not Homeless	<10	<10	<10	<10	≥90	≥30	≥40	≥160
Homeless	<10	<10	<10	<10	<10	<10	<10	<10
Military Affiliation								
Not Military Affiliated	<10	<10	<10	<10	≥90	≥30	≥40	≥160
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	<10
Foster Care Status								
Not in Foster Care	<10	<10	<10	<10	≥90	≥30	≥40	≥160
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

*Economic Status was not available for all students.

Table E.15 Percentage of Students Administered the Fall 2022 Administration: Geometry Form D

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	17.08	53.23	20.98	8.71	100
Gender								
Female	0.00	0.00	0.00	17.28	54.48	19.48	8.76	100
Male	0.00	0.00	0.00	16.87	51.92	22.56	8.66	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	15.26	41.18	31.00	12.56	100
American Indian or Alaska Native	0.00	0.00	0.00	2.17	58.70	32.61	6.52	100
Asian	0.00	0.00	0.00	49.52	36.19	10.48	3.81	100
Black or African American	0.00	0.00	0.00	10.52	48.52	27.39	13.57	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	25.00	50.00	12.50	12.50	100
White	0.00	0.00	0.00	22.79	62.61	11.44	3.15	100
Two or More Races	0.00	0.00	0.00	21.43	55.84	20.13	2.60	100
Education Classification								
Regular Education	0.00	0.00	0.00	14.63	55.60	21.23	8.54	100
Special Education	0.00	0.00	0.00	6.79	39.29	35.36	18.57	100
Gifted or Talented	0.00	0.00	0.00	54.75	35.47	6.70	3.07	100
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	12.42	50.95	25.62	11.01	100
Not Economically Disadvantaged	0.00	0.00	0.00	24.89	57.17	13.31	4.63	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	17.66	54.46	20.09	7.79	100
English Learner	0.00	0.00	0.00	5.49	28.69	38.82	27.00	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	17.10	53.27	20.97	8.66	100
Migrant	0.00	0.00	0.00	0.00	16.67	33.33	50.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	17.64	53.24	20.69	8.44	100
Section 504	0.00	0.00	0.00	9.71	53.14	24.86	12.29	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	17.25	53.45	20.66	8.65	100
Homeless	0.00	0.00	0.00	4.48	37.31	44.78	13.43	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	16.79	52.83	21.40	8.98	100
Military Affiliated	0.00	0.00	0.00	25.15	64.33	9.36	1.17	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	17.09	53.22	20.99	8.70	100
Foster Care	0.00	0.00	0.00	0.00	66.67	0.00	33.33	100

*Economic Status was not available for all students.

Table E.16 Percentage of Students Administered the Fall 2022 Administration: Geometry Form E

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	0.59	53.25	20.71	25.44	100
Gender								
Female	0.00	0.00	0.00	0.00	54.17	16.67	29.17	100
Male	0.00	0.00	0.00	1.03	52.58	23.71	22.68	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	0.00	26.67	33.33	40.00	100
American Indian or Alaska Native								
Asian	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
Black or African American	0.00	0.00	0.00	0.91	40.00	27.27	31.82	100
Native Hawaiian or Other Pacific								
White	0.00	0.00	0.00	0.00	97.50	0.00	2.50	100
Two or More Races	0.00	0.00	0.00	0.00	50.00	0.00	50.00	100
Education Classification								
Regular Education	0.00	0.00	0.00	0.00	57.89	19.74	22.37	100
Special Education	0.00	0.00	0.00	5.88	11.76	29.41	52.94	100
Gifted or Talented	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Economic Status*								
Economically Disadvantaged	0.00	0.00	0.00	0.00	50.70	21.13	28.17	100
Not Economically Disadvantaged	0.00	0.00	0.00	3.70	66.67	18.52	11.11	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	0.63	55.97	20.13	23.27	100
English Learner	0.00	0.00	0.00	0.00	10.00	30.00	60.00	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	0.59	53.25	20.71	25.44	100
Migrant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	0.64	52.56	21.79	25.00	100
Section 504	0.00	0.00	0.00	0.00	61.54	7.69	30.77	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	0.61	54.88	20.12	24.39	100
Homeless	0.00	0.00	0.00	0.00	0.00	40.00	60.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	0.59	53.25	20.71	25.44	100
Military Affiliated	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	0.59	53.25	20.71	25.44	100
Foster Care	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*Economic Status was not available for all students.

Table E.17 Count of Students Administered the Summer 2023 Administration: English I

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥30	≥2,070	≥600	≥230	≥230	≥3,170
Gender								
Female	<10	<10	≥10	≥680	≥190	≥60	≥60	≥1,020
Male	<10	<10	≥10	≥1,390	≥410	≥160	≥160	≥2,140
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥190	≥120	≥40	≥80	≥440
American Indian or Alaska Native	<10	<10	<10	≥10	<10	<10	<10	≥10
Asian	<10	<10	<10	<10	<10	<10	<10	≥10
Black or African American	<10	<10	≥10	≥1,360	≥370	≥160	≥130	≥2,050
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	≥10	≥450	≥80	≥10	≥10	≥570
Two or More Races	<10	<10	<10	≥40	≥10	<10	<10	≥60
Education Classification								
Regular Education	<10	<10	≥30	≥1,590	≥460	≥180	≥220	≥2,500
Special Education	<10	<10	<10	≥460	≥130	≥40	<10	≥640
Gifted or Talented	<10	<10	<10	≥20	<10	<10	<10	≥20
English Learner Status								
Not English Learner	<10	<10	≥30	≥1,920	≥480	≥180	≥130	≥2,770
English Learner	<10	<10	<10	≥150	≥110	≥40	≥90	≥400
Migrant Status								
Nonmigrant	<10	<10	≥30	≥2,070	≥600	≥220	≥230	≥3,160
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	≥30	≥1,710	≥485	≥170	≥180	≥2,590
Section 504	<10	<10	<10	≥360	≥110	≥50	≥40	≥580
Homeless Status								
Not Homeless	<10	<10	≥30	≥2,020	≥590	≥220	≥220	≥3,090
Homeless	<10	<10	<10	≥50	≥10	<10	<10	≥70
Military Affiliation								
Not Military Affiliated	<10	<10	≥30	≥2,070	≥600	≥230	≥220	≥3,160
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	≥10
Foster Care Status								
Not in Foster Care	<10	<10	≥30	≥2,070	≥600	≥230	≥220	≥3,170
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

* Economic status information is not available for the summer administration.

Table E.18 Percentage of Students Administered the Summer 2023 Administration: English I

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	1.10	65.44	18.98	7.24	7.24	100
Gender								
Female	0.00	0.00	1.85	66.47	18.46	6.51	6.71	100
Male	0.00	0.00	0.74	64.94	19.23	7.59	7.50	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.67	43.43	26.95	10.47	18.49	100
American Indian or Alaska Native	0.00	0.00	0.00	71.43	28.57	0.00	0.00	100
Asian	0.00	0.00	0.00	47.37	26.32	5.26	21.05	100
Black or African American	0.00	0.00	0.78	66.42	18.44	7.98	6.37	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	50.00	50.00	0.00	0.00	100
White	0.00	0.00	2.61	78.43	14.26	2.78	1.91	100
Two or More Races	0.00	0.00	1.59	76.19	17.46	3.17	1.59	100
Education Classification								
Regular Education	0.00	0.00	1.20	63.60	18.74	7.55	8.91	100
Special Education	0.00	0.00	0.46	71.96	20.49	6.16	0.92	100
Gifted or Talented	0.00	0.00	8.00	80.00	4.00	4.00	4.00	100
English Learner Status								
Not English Learner	0.00	0.00	1.26	69.54	17.57	6.64	4.98	100
English Learner	0.00	0.00	0.00	37.44	28.57	11.33	22.66	100
Migrant Status								
Nonmigrant	0.00	0.00	1.10	65.45	18.96	7.23	7.26	100
Migrant	0.00	0.00	0.00	62.50	25.00	12.50	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	1.23	65.97	18.71	6.91	7.18	100
Section 504	0.00	0.00	0.51	63.08	20.17	8.72	7.52	100
Homeless Status								
Not Homeless	0.00	0.00	1.13	65.36	19.04	7.30	7.17	100
Homeless	0.00	0.00	0.00	68.35	16.46	5.06	10.13	100
Military Affilitation								
Not Military Affiliated	0.00	0.00	1.11	65.44	18.97	7.27	7.21	100
Military Affiliated	0.00	0.00	0.00	64.29	21.43	0.00	14.29	100
Foster Care Status								
Not in Foster Care	0.00	0.00	1.10	65.44	18.98	7.25	7.22	100
Foster Care	0.00	0.00	0.00	66.67	16.67	0.00	16.67	100

* Economic status information is not available for the summer administration.

Table E.19 Count of Students Administered the Summer 2023 Administration: English II

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥70	≥820	≥250	≥210	≥1,360
Gender								
Female	<10	<10	<10	≥20	≥260	≥70	≥70	≥430
Male	<10	<10	<10	≥50	≥550	≥180	≥140	≥920
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥10	≥110	≥50	≥80	≥260
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	≥10
Black or African American	<10	<10	<10	≥40	≥570	≥160	≥110	≥900
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	≥10	≥110	≥30	<10	≥160
Two or More Races	<10	<10	<10	<10	<10	<10	<10	≥10
Education Classification								
Regular Education	<10	<10	<10	≥60	≥630	≥200	≥210	≥1,110
Special Education	<10	<10	<10	≥10	≥180	≥50	<10	≥250
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
English Learner Status								
Not English Learner	<10	<10	<10	≥70	≥710	≥200	≥120	≥1,110
English Learner	<10	<10	<10	<10	≥100	≥50	≥80	≥250
Migrant Status								
Nonmigrant	<10	<10	<10	≥70	≥820	≥250	≥210	≥1,360
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥60	≥680	≥200	≥160	≥1,110
Section 504	<10	<10	<10	≥10	≥140	≥50	≥40	≥250
Homeless Status								
Not Homeless	<10	<10	<10	≥70	≥800	≥250	≥200	≥1,330
Homeless	<10	<10	<10	<10	≥10	<10	<10	≥20
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥70	≥810	≥250	≥210	≥1,350
Military Affiliated	<10	<10	<10	<10	≥10	<10	<10	≥10
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥70	≥810	≥250	≥210	≥1,360
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

* Economic status information is not available for the summer administration.

Table E.20 Percentage of Students Administered the Summer 2023 Administration: English II

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.00	5.71	59.99	18.65	15.65	100
Gender								
Female	0.00	0.00	0.00	6.39	60.96	15.98	16.67	100
Male	0.00	0.00	0.00	5.38	59.53	19.91	15.18	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	4.92	43.94	20.45	30.68	100
American Indian or Alaska Native	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
Asian	0.00	0.00	0.00	0.00	50.00	10.00	40.00	100
Black or African American	0.00	0.00	0.00	5.30	63.36	18.21	13.13	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
White	0.00	0.00	0.00	8.98	66.47	19.16	5.39	100
Two or More Races	0.00	0.00	0.00	13.33	60.00	20.00	6.67	100
Education Classification								
Regular Education	0.00	0.00	0.00	6.03	57.10	17.99	18.88	100
Special Education	0.00	0.00	0.00	4.40	73.20	21.20	1.20	100
Gifted or Talented	0.00	0.00	0.00	0.00	40.00	40.00	20.00	100
English Learner Status								
Not English Learner	0.00	0.00	0.00	6.30	64.00	18.09	11.61	100
English Learner	0.00	0.00	0.00	3.13	42.58	21.09	33.20	100
Migrant Status								
Nonmigrant	0.00	0.00	0.00	5.71	60.03	18.59	15.67	100
Migrant	0.00	0.00	0.00	0.00	0.00	100.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	0.00	5.50	61.26	18.11	15.14	100
Section 504	0.00	0.00	0.00	6.61	54.47	21.01	17.90	100
Homeless Status								
Not Homeless	0.00	0.00	0.00	5.68	60.16	18.68	15.47	100
Homeless	0.00	0.00	0.00	6.90	51.72	17.24	24.14	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.00	5.63	59.96	18.73	15.69	100
Military Affiliated	0.00	0.00	0.00	12.50	62.50	12.50	12.50	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.00	5.58	60.13	18.72	15.57	100
Foster Care	0.00	0.00	0.00	40.00	20.00	0.00	40.00	100

* Economic status information is not available for the summer administration.

Table E.21 Count of Students Administered the Summer 2023 Administration: Algebra I

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	≥20	≥1,720	≥430	≥100	≥20	≥2,300
Gender								
Female	<10	<10	≥10	≥710	≥170	≥40	≥10	≥950
Male	<10	<10	≥10	≥1,010	≥250	≥50	≥10	≥1,340
Ethnicity								
Hispanic/Latino	<10	<10	<10	≥130	≥40	≥10	<10	≥200
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	≥10	≥1,140	≥290	≥60	≥10	≥1,520
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	≥10	≥390	≥80	≥10	<10	≥500
Two or More Races	<10	<10	<10	≥40	≥10	<10	<10	≥50
Education Classification								
Regular Education	<10	<10	≥10	≥1,400	≥350	≥90	≥20	≥1,880
Special Education	<10	<10	<10	≥300	≥80	≥10	<10	≥400
Gifted or Talented	<10	<10	<10	≥10	<10	<10	<10	≥20
English Learner Status								
Not English Learner	<10	<10	≥20	≥1,630	≥390	≥90	≥10	≥2,150
English Learner	<10	<10	<10	≥90	≥40	≥10	<10	≥140
Migrant Status								
Nonmigrant	<10	<10	≥20	≥1,720	≥430	≥100	≥20	≥2,300
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	≥20	≥1,470	≥350	≥80	≥10	≥1,940
Section 504	<10	<10	<10	≥250	≥80	≥10	<10	≥350
Homeless Status								
Not Homeless	<10	<10	≥20	≥1,670	≥420	≥100	≥10	≥2,240
Homeless	<10	<10	<10	≥40	≥10	<10	<10	≥60
Military Affiliation								
Not Military Affiliated	<10	<10	≥20	≥1,710	≥430	≥90	≥20	≥2,280
Military Affiliated	<10	<10	<10	≥10	<10	<10	<10	≥10
Foster Care Status								
Not in Foster Care	<10	<10	≥20	≥1,710	≥430	≥100	≥20	≥2,290
Foster Care	<10	<10	<10	<10	<10	<10	<10	≥10

* Economic status information is not available for the summer administration.

Table E.22 Percentage of Students Administered the Summer 2023 Administration: Algebra I

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	1.00	74.80	18.95	4.38	0.87	100
Gender								
Female	0.00	0.00	1.15	74.63	18.58	4.59	1.04	100
Male	0.00	0.00	0.89	74.93	19.21	4.23	0.74	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	67.82	22.28	6.93	2.97	100
American Indian or Alaska Native	0.00	0.00	0.00	83.33	16.67	0.00	0.00	100
Asian	0.00	0.00	0.00	50.00	33.33	0.00	16.67	100
Black or African American	0.00	0.00	0.78	75.08	18.97	4.45	0.72	100
Native Hawaiian or Other Pacific	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100
White	0.00	0.00	1.98	77.38	16.67	3.57	0.40	100
Two or More Races	0.00	0.00	1.75	70.18	26.32	1.75	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.90	74.35	18.85	4.83	1.06	100
Special Education	0.00	0.00	0.99	76.18	20.35	2.48	0.00	100
Gifted or Talented	0.00	0.00	10.00	90.00	0.00	0.00	0.00	100
English Learner Status								
Not English Learner	0.00	0.00	1.07	75.72	18.30	4.22	0.70	100
English Learner	0.00	0.00	0.00	61.49	28.38	6.76	3.38	100
Migrant Status								
Nonmigrant	0.00	0.00	1.00	74.79	18.96	4.38	0.87	100
Migrant	0.00	0.00	0.00	100.00	0.00	0.00	0.00	100
Section 504 Status								
Non-Section 504	0.00	0.00	1.18	75.47	18.11	4.46	0.77	100
Section 504	0.00	0.00	0.00	71.15	23.53	3.92	1.40	100
Homeless Status								
Not Homeless	0.00	0.00	1.02	74.67	18.97	4.50	0.85	100
Homeless	0.00	0.00	0.00	80.00	18.33	0.00	1.67	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	1.01	74.77	19.02	4.33	0.87	100
Military Affiliated	0.00	0.00	0.00	78.95	10.53	10.53	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.96	74.84	18.93	4.40	0.87	100
Foster Care	0.00	0.00	7.69	69.23	23.08	0.00	0.00	100

* Economic status information is not available for the summer administration.

Table E.23 Count of Students Administered the Summer 2023 Administration: Geometry

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	<10	<10	<10	≥30	≥370	≥70	≥10	≥490
Gender								
Female	<10	<10	<10	≥10	≥180	≥40	<10	≥240
Male	<10	<10	<10	≥20	≥180	≥30	<10	≥240
Ethnicity								
Hispanic/Latino	<10	<10	<10	<10	≥40	≥10	<10	≥70
American Indian or Alaska Native	<10	<10	<10	<10	<10	<10	<10	<10
Asian	<10	<10	<10	<10	<10	<10	<10	<10
Black or African American	<10	<10	<10	≥10	≥280	≥50	<10	≥360
Native Hawaiian or Other Pacific	<10	<10	<10	<10	<10	<10	<10	<10
White	<10	<10	<10	<10	≥40	<10	<10	≥60
Two or More Races	<10	<10	<10	<10	<10	<10	<10	<10
Education Classification								
Regular Education	<10	<10	<10	≥30	≥310	≥60	<10	≥420
Special Education	<10	<10	<10	<10	≥50	<10	<10	≥60
Gifted or Talented	<10	<10	<10	<10	<10	<10	<10	<10
English Learner Status								
Not English Learner	<10	<10	<10	≥30	≥330	≥60	<10	≥440
English Learner	<10	<10	<10	<10	≥40	<10	<10	≥50
Migrant Status								
Nonmigrant	<10	<10	<10	≥30	≥370	≥70	≥10	≥490
Migrant	<10	<10	<10	<10	<10	<10	<10	<10
Section 504 Status								
Non-Section 504	<10	<10	<10	≥30	≥330	≥60	<10	≥440
Section 504	<10	<10	<10	<10	≥30	<10	<10	≥50
Homeless Status								
Not Homeless	<10	<10	<10	≥30	≥360	≥70	≥10	≥480
Homeless	<10	<10	<10	<10	<10	<10	<10	≥10
Military Affiliation								
Not Military Affiliated	<10	<10	<10	≥30	≥370	≥70	≥10	≥490
Military Affiliated	<10	<10	<10	<10	<10	<10	<10	<10
Foster Care Status								
Not in Foster Care	<10	<10	<10	≥30	≥370	≥70	≥10	≥490
Foster Care	<10	<10	<10	<10	<10	<10	<10	<10

* Economic status information is not available for the summer administration.

Table E.24 Percentage of Students Administered the Summer 2023 Administration: Geometry

Group	Grade							
	6	7	8	9	10	11	12	Total
All Students	0.00	0.00	0.20	7.65	75.05	15.09	2.01	100
Gender								
Female	0.00	0.00	0.00	4.84	75.81	17.34	2.02	100
Male	0.00	0.00	0.40	10.44	74.30	12.85	2.01	100
Ethnicity								
Hispanic/Latino	0.00	0.00	0.00	12.86	70.00	14.29	2.86	100
American Indian or Alaska Native								
Asian	0.00	0.00	0.00	50.00	50.00	0.00	0.00	100
Black or African American	0.00	0.00	0.00	5.23	77.13	16.25	1.38	100
Native Hawaiian or Other Pacific								
White	0.00	0.00	1.67	15.00	68.33	10.00	5.00	100
Two or More Races	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100
Education Classification								
Regular Education	0.00	0.00	0.00	8.39	73.89	15.62	2.10	100
Special Education	0.00	0.00	0.00	3.17	85.71	11.11	0.00	100
Gifted or Talented	0.00	0.00	20.00	0.00	40.00	20.00	20.00	100
English Learner Status								
Not English Learner	0.00	0.00	0.23	7.26	75.28	15.19	2.04	100
English Learner	0.00	0.00	0.00	10.71	73.21	14.29	1.79	100
Migrant Status								
Nonmigrant	0.00	0.00	0.20	7.65	75.05	15.09	2.01	100
Migrant								
Section 504 Status								
Non-Section 504	0.00	0.00	0.23	7.66	75.45	14.86	1.80	100
Section 504	0.00	0.00	0.00	7.55	71.70	16.98	3.77	100
Homeless Status								
Not Homeless	0.00	0.00	0.21	7.80	74.74	15.20	2.05	100
Homeless	0.00	0.00	0.00	0.00	90.00	10.00	0.00	100
Military Affiliation								
Not Military Affiliated	0.00	0.00	0.20	7.47	75.15	15.15	2.02	100
Military Affiliated	0.00	0.00	0.00	50.00	50.00	0.00	0.00	100
Foster Care Status								
Not in Foster Care	0.00	0.00	0.20	7.66	75.00	15.12	2.02	100
Foster Care	0.00	0.00	0.00	0.00	100.00	0.00	0.00	100

* Economic status information is not available for the summer administration.

Appendix F—Quality Control References

Related Information		Related Chapter/Source
Test Materials		
Item development quality procedures	Content alignment Cognitive complexity Difficult Bias, fairness, and sensitivity Technical design	Chapter 3
Form development quality procedures	Test specifications Review of statistical quality of items	Chapter 3
Test Administration		
Test administration training and procedures	Training and monitoring of test administrators Security Checklists Test Security Measurements	Chapter 4
Monitoring test administrations	LDOE site audits Data Forensics Analysis Response-Change Analysis Web Monitoring Plagiarism Detection	Chapter 4
Scoring		
Scorer recruitment, training and security procedures	Recruitment and interview process Security Training process, including material development and qualifying procedures.	Chapter 5 Appendix C
Monitoring scoring quality	Inter-rater reliability studies Validity Reader monitoring	Chapter 5 Appendix C
Psychometric Processes		
Psychometric quality procedures	Specifications document for operational analysis	Internal document between DRC and the LDOE.
Monitoring psychometric quality	Key verification Calibration Scoring table generation Psychometric quality checks on the data	Chapter 6
Performance-Level Setting	Quality-controlled procedures for performance-level setting Derivation of the cut scores	Chapter 8

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