



**eMPowerME Assessment
ELA/Literacy and
Mathematics
2018–19 Technical Report**

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CHAPTER 1 OVERVIEW OF MEA MATHEMATICS AND ENGLISH LANGUAGE ARTS/LITERACY

The Maine Educational Assessment (MEA) includes the eMPowerME assessments in mathematics and English language arts (ELA)/literacy, which are administered to all students in grades 3–8 via standard administration and/or administration with accommodations. The tests were administered to approximately 78,000 students in March and April 2019. The SAT was administered to third-year high school students in April 2019.

The eMPowerME assessments are designed to be the measure for Maine’s academic content standards in mathematics and ELA/literacy, per the *2011 Maine Learning Results (MLRs)*, and to identify the knowledge and skills essential to prepare Maine students for college- and career-readiness (CCR). These academic content standards express what students *should know* and *should be able to do* at various checkpoints during their education. The standards were developed in adherence with the Common Core State Standards (CCSS) for mathematics and ELA.

1.1 PURPOSE OF THE ASSESSMENT SYSTEM

The eMPowerME assessments are part of Maine’s Comprehensive Assessment System, designed to provide point-in-time information about the academic achievement and progress of Maine students. Student results are reported according to academic achievement descriptors utilizing cut scores established in standard-setting for each of four achievement levels: Well Below State Expectations, Below State Expectations, At State Expectations, and Above State Expectations. The results from these assessments provide educators and the public with information to guide the creation of future educational practices to meet the needs of students, while monitoring the continuous improvement efforts of schools, school administrative units (SAUs), and the state of Maine in achieving a world-class education system for all students.

1.2 ORGANIZATION OF THIS REPORT

This report includes data and analyses about the operational forms and content for the spring 2019 test administration. It begins with a description of the Maine content standards, which are described in sections 3.2.1 (reading), 3.3.1 (writing and language), and 3.5.1 (mathematics). (See Appendix A for the comprehensive set of content standards.) All operational and field-test items for eMPowerME spring 2019 were subjected to reviews by the Maine Department of Education (Maine DOE). A description of the item development process, along with a description of the alignment process and test development, is presented in complete detail in Chapter 3 – Test Design and Development. A discussion of the operational population, as well as the research samples utilized in the analysis, is found in Section 3.6 – Test Development Process. A

detailed description of the administration processes is found in Chapter 4 – Test Administration. Chapter 5 describes in detail the processes that were implemented to monitor the quality of the hand-scoring of student responses for short-answer and constructed-response items.

The spring 2019 eMPowerME scores for mathematics and ELA tests were based on a post-equating design. A complete description of the operational and field-test item analyses as well as the calibration/scaling and equating analyses is found in Chapter 6 – Classical Item Analysis and Chapter 7 – Item Response Theory Scaling and Equating. A summary of reliability and validity for different levels of analyses is found in Chapter 8 – Reliability and Chapter 9 – Validity.

CHAPTER 2 CURRENT YEAR UPDATES

In school year 2018–2019, the MEA was administered by Cognia for the fourth time for mathematics, reading, and writing and language using eMPower assessments. The forms contained operational items from the previous year’s administration and field-test items.

In spring 2019, the eMPower ME program continued to be enhanced by the inclusion of Maine-specific item-review committees, which complemented the existing annual national item review committee and bias review committees. From April to July 2019, twenty Maine educators convened with Maine DOE and Cognia content specialists to review items that will be field tested in spring 2020, operationally administered in 2021, and released with corresponding student performance data in fall 2021. These targeted reviews provided the opportunity for Maine educators to learn more about and become involved in the eMPower item development process. It also provided Cognia content developers with the insights of these experienced educators. Participant feedback after the meetings indicated that panelists thought the opportunity was valuable and worthwhile.

While the Essay component was administered operationally in 2018-19, the DOE later determined that student Essay scores would not count towards the student's overall ELA score nor figure into a school's accountability measure.

CHAPTER 3 TEST DESIGN AND DEVELOPMENT

3.1 TEST SPECIFICATIONS

3.1.1 Criterion-Referenced Test

Items on the eMPowerME tests are developed specifically to assess MLRs in mathematics and ELA/literacy (i.e., CCSS adopted in 2011). These standards are the basis for the reporting categories developed for each content area and are used to help guide the development of test items. Although each item is designed to measure a specific standard, an item may address several standards. Also, many mathematics items assess a mathematical practice standard in addition to a conceptual or procedural standard. Essay prompts developed specifically for eMPowerME assess several writing and language standards. For the full complement of content standards, see Appendix A.

3.1.2 Item Types

The item types used and the functions of each are described below.

Selected-response items are administered in grades 3–8 in mathematics, reading, and writing and language to provide breadth of coverage of the standards. Because each selected-response item requires approximately 45 to 90 seconds for most students to answer, these items make efficient use of limited testing time and allow coverage of a wide range of knowledge and skills.

Multi-select selected-response items are administered in grades 3–8 mathematics. They are similar to traditional selected-response items but ask students to select more than one correct answer. These items allow for further depth of coverage of the standards.

Evidence-based selected-response items are administered in grades 3–8 in reading to assess students' comprehension and analysis of literary and informational text. Students select evidence that supports their understanding or analysis. These items are administered in writing and language to assess students' application of writing skills and language conventions and require that students select evidence that supports the application of such skills. Each evidence-based selected-response item consists of two parts, and requires a total of approximately 1 ½ to 2 ½ minutes for most students to answer. The advantages of this item type are: (1) it requires students to read deeply into a text and think critically in order to support text-based ideas, inferences, and conclusions; and (2) it requires students to evaluate the content and context of the text in order to correctly apply the targeted writing skill or language convention.

Constructed-response items typically require students to use higher-order thinking skills, such as summary, evaluation, and analysis, in constructing a satisfactory response. Each constructed-response item requires approximately 5 minutes for most students to complete. These items are administered in grades 3–8 in mathematics and reading.

An **essay prompt** is administered in grades 3–8. Students are given 80 minutes for Grades 3, 4, and 5 and 70 minutes for Grades 6, 7, and 8 (plus additional time if approved) to respond to an essay prompt by crafting pieces of writing that state an opinion or are informative or argumentative. The essays are scored by independent readers on the quality of the stylistic and rhetorical aspects of the writing and on the use of standard English conventions.

3.1.3 Description of Test Design

The spring 2019 eMPowerME tests were structured using both common and matrix items. Common items were taken by all students in a given grade level. Student scores were based only on common items. Matrix items were new items included on the test for field-test purposes. Matrix items were divided among the multiple forms of the test for each grade and content area. The number of test forms varied by content area and ranged from 8–12 forms. Each student took only one form of the test and therefore encounters a fraction of the matrix items. Matrix items are not distinguishable by students and have a small impact on testing time.

3.2 READING TEST SPECIFICATIONS

3.2.1 Standards

The test framework for reading at grades 3–8 is based on a set of CCR reading standards. Items address literary and/or informational texts.

Each reading item is designed to measure either (1) students' comprehension of what they have read or (2) students' ability to analyze and/or interpret what they have read. The items for grades 3–8 are organized into three main clusters:

- **Key Ideas and Details** (comprehension or analysis/interpretation): In grades 3–8, students refer to texts solely to demonstrate understanding. At increasing levels of complexity as they advance through the grades, students also draw inferences from texts; show their ability to comprehend or analyze the central events, central ideas, and/or themes of texts; and analyze and interpret the relationships between aspects of a text (e.g., causes and effects in informational texts, or character traits and the plot of literary text).
- **Craft and Structure** (comprehension or analysis/interpretation): At increasing levels of complexity through the grades, students demonstrate the ability to comprehend and analyze the meanings of words and phrases in texts (including figurative language in grades 5–8), as well as analyze the impact of an author's words (in grades 6–8); identify and analyze the

structure of texts, including how certain portions of text affect meaning; and how point of view and purpose shape the content and style of a text.

- **Integration of Knowledge and Ideas** (analysis/interpretation): At increasing levels of complexity through the grades, students integrate knowledge and ideas in texts. Specifically, students integrate:
 - visual information (e.g., pictures) and textual information;
 - evidence provided in informational texts to support ideas and/or claims; and
 - important aspects (e.g., main ideas, characters, settings, themes, structures) of paired texts.

3.2.2 Item Types

The eMPowerME reading tests include selected-response, evidence-based selected-response, and constructed-response items.

Selected-response items require students to demonstrate a wide range of knowledge and skills and require approximately 1 minute of response time per item. Evidence-based selected-response items are selected-response items with two parts and require approximately 2 minutes of response time per item. The second part of an evidence-based selected-response item asks students to select evidence that supports the response in the first part. Constructed-response items are more complex and require approximately 5 minutes of response time per item.

Each type of item is worth a specific number of points in the student’s total reading score, as shown in Tables 3-1 and 3-2.

Table 3-1. 2018–19 eMPowerME: Reading Item Types Grades 3–5

<i>Item Type</i>	<i>Maximum Number of Points Available</i>
SR	1
EBSR	2
CR	2 or 3

SR = selected-response, EBSR = evidence-based selected-response, CR = constructed-response

Table 3-2. 2018–19 eMPowerME: Reading Item Types Grades 6–8

<i>Item Type</i>	<i>Maximum Number of Points Available</i>
SR	1
EBSR	2
CR	2 or 4

SR = selected-response, EBSR = evidence-based selected-response, CR = constructed-response

3.2.3 Test Design

Table 3-3 summarizes the numbers and types of items that are found on the 2019 eMPowerME reading tests for grades 3–8. All students receive the common items in their forms. Each selected-response item is worth 1 point, and evidence-based selected-response items are worth 2 points. In grades 3–5, constructed-response items are worth either 2 or 3 points. In grades 6–8, constructed-response items are worth either 2 or 4 points.

**Table 3-3. 2018–19 eMPowerME: Item Type and Number of Items—
Reading Grades 3–8**

<i>Common</i>			<i>Matrix</i>			<i>Total per Student</i>		
<i>SR</i>	<i>EBSR</i>	<i>CR</i>	<i>SR</i>	<i>EBSR</i>	<i>CR</i>	<i>SR</i>	<i>EBSR</i>	<i>CR</i>
19	3	4	50	10	10	24	4	5

3.2.4 Blueprints

The distribution of emphasis for eMPowerME standards clusters in reading is shown in Table 3-4.

**Table 3-4. 2018–19 eMPowerME: Distribution of Emphasis Across Clusters in Terms of Percentage of
Total Test Points by Grade—Reading Grades 3–8**

<i>Clusters</i>	<i>Grade Tested</i>					
	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
Key Ideas and Details (reading literature)	37	37	40	16	19	19
Craft and Structure (reading literature)	17	9	14	8	8	19
Integration of Knowledge and Ideas (reading literature)	12	17	9	14	11	0
Key Ideas and Details (reading informational text)	14	17	9	30	30	16
Craft and Structure (reading informational text)	6	6	9	16	16	22
Integration of Knowledge and Ideas (reading informational text)	14	14	20	16	16	24

Table 3-5 shows the reporting categories for reading in the eMPowerME test design and the maximum possible number of raw-score points that students could earn in each reporting category. Note: Because only common items are counted toward students’ scaled scores, only common items are reflected in this table.

Table 3-5. 2018–19 eMPowerME: Distribution of Raw Score Points Across Reporting Categories by Grade—Reading Grades 3–8

Reporting Category	Grade Tested					
	3	4	5	6	7	8
Comprehension of Literary Text	9	9	10	3	4	5
Analysis & Interpretation of Literary Text	14	13	12	11	10	9
Comprehension of Informational Text	5	8	4	9	11	5
Analysis & Interpretation of Informational Text	7	5	9	14	12	18

3.2.5 Depth of Knowledge

Each item on the eMPowerME test in reading is assigned a Depth of Knowledge (DOK) level according to the cognitive demand of the item. DOK is not synonymous with difficulty. The DOK level rates the complexity of the mental processing a student must use to respond to an item. Each of the three levels is described in Table 3-6.

Table 3-6. 2017-18 eMPowerME: Depth of Knowledge—Reading

Level 1 (Recall)	This level includes reading that does not involve analysis of text, but instead involves basic comprehension. Items require only a shallow understanding of text presented and often consist of verbatim recall from text or simple understanding of a single word or phrase.
Level 2 (Skill/Concept)	This level includes the engagement of mental processing beyond recalling or reproducing a response; it requires both comprehension and subsequent processing of text or portions of text. Inter-sentence analysis and inference are required.
Level 3 (Strategic Thinking)	This level requires students to go beyond the text; however, they are still required to show understanding of the ideas in the text. Students may be encouraged to explain, generalize, or connect ideas. Standards and items involve reasoning and a deep level of analysis. Items may involve analyzing how an author achieves his/her purpose, inference across an entire passage, or connections between texts.

Table 3-7 lists the target percentages of score points assigned to each DOK level in reading.

Table 3-7. 2018–19 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Test by Grade—Reading Grades 3–8

DOK	Grade					
	3	4	5	6	7	8
Level 1	0–20	0–20	0–20	0–20	0–20	0–20
Level 2	50–70	50–70	50–70	50–70	50–70	50–70
Level 3	20–40	20–40	20–40	20–40	20–40	20–40
Total	100	100	100	100	100	100

3.2.6 Passage Types

The reading passages for eMPowerME are selected from the following categories:

- Literary passages, representing a variety of forms including drama, poetry, excerpts from novels, short stories, and traditional narratives such as fables and folktales.
- Informational passages, often about science- and social studies–related topics. These passages are often from newspapers, magazines, and book excerpts. The passages are authentic texts selected from grade-level-appropriate reading sources that students would be likely to encounter in the classroom and when reading independently.

All passages are collected from published works.

3.3 WRITING AND LANGUAGE TEST SPECIFICATIONS

3.3.1 Standards

The test framework for writing and language at grades 3–8 is based on a set of CCR writing and language standards. Items address argument, informative/explanatory, and/or narrative texts.

Each writing and language item is designed to measure students’ ability to evaluate the content and context of text in order to correctly apply the targeted writing skill or language convention. The items for grades 3–8 are organized into two main categories. Each category contains a unique set of clusters:

Writing

- **Text Types and Purposes:** In grades 3–8, students interact with a variety of texts to demonstrate increasing sophistication with demanding content and sources. At increasing levels of complexity across the grades, students write informative/explanatory texts to examine a topic and convey ideas and information clearly, or write argumentative or opinion pieces on topics or texts, supporting a point of view with reasons and information.

Language

- **Conventions of Standard English:** In grades 3–8, students demonstrate command of the conventions of standard English grammar and usage. At increasing levels of complexity across the grades, students move from simple identification of conventions (e.g., identifying uppercase and lowercase letters or applying the rules of capitalization) to more complex applications of conventions (e.g., recognizing and correcting inappropriate shifts in pronoun number or recognizing and correcting misplaced and dangling modifiers).
- **Knowledge of Language:** In grades 3–8, students apply knowledge of language and conventions to convey ideas or to create a specific effect. At increasing levels of complexity across the grades, students move from conveying ideas or creating a desired effect to focusing on developing and maintaining style and tone by choosing language that expresses ideas precisely and concisely.

- **Vocabulary Acquisition and Use:** In grades 3–8, students apply knowledge of vocabulary structure (e.g., affixes and roots) to understanding the meaning of grade-level vocabulary. At increasing levels of complexity across the grades, students use the context of passage text to determine the concrete and inferred meaning of vocabulary. Additionally, students move from using basic reference materials (e.g., glossary and dictionary) to using more complex references (e.g., thesaurus).

3.3.2 Item Types

The eMPowerME writing and language tests include selected-response and evidence-based selected-response items. Grades 3–8 eMPowerME writing and language tests use an embedded error format, in which deliberate errors are identified or introduced into passage text. Items developed address the specific errors identified or introduced into the passage text.

Selected-response items require students to demonstrate a wide range of knowledge and skills and require approximately 45 seconds of response time per item. Evidence-based selected-response items are selected-response items with two parts requiring approximately 1 ½ minutes of response time per item. The second part of an evidence-based selected-response item asks students to select evidence that supports the response in the first part.

Each type of item is worth a specific number of points in the student’s total writing and language score, as shown in Table 3-8.

Table 3-8. 2018–19 eMPowerME: Writing and Language: Writing Item Types

<i>Item Type</i>	<i>Maximum Number of Points Available</i>
SR	1
EBSR	2

3.3.3 Test Design

Table 3-9 summarizes the numbers and types of items found on the 2018–19 eMPowerME writing and language tests for grades 3–8. All students receive the common items in their forms. Each selected-response item is worth 1 point, and evidence-based selected-responses are worth 2 points.

**Table 3-9. 2018–19 eMPowerME: Item Type and Number of Items—
Writing and Language Grades 3–8**

<i>Common</i>		<i>Matrix</i>		<i>Total per student</i>	
SR	EBSR	SR	EBSR	SR	EBSR
20	3	240	40	30	5

3.3.4 Blueprints

Writing and Language

The distribution of emphasis for eMPowerME standards clusters in writing and language is shown in Table 3-10.

Table 3-10. 2018–19 eMPowerME: Distribution of Emphasis Across Reporting Clusters in Terms of Percentage of Total Test Points by Grade—Writing and Language Grades 3–8

Clusters	Grade Tested					
	3	4	5	6	7	8
Revising Narrative Text (RN)	36	36	28			
Revising Expository/Informational Text (RE)	28	28	36	36	28	28
Revising Argument Text (RA)				28	36	36
English Language and Conventions (EC)	36	36	36	36	36	36
Total	100	100	100	100	100	100

Table 3-11 shows the reporting categories for writing and language in the eMPowerME test design and the maximum possible number of raw-score points that students could earn in each reporting category. Note: Because only common items are counted toward students' scaled scores, only common items are reflected in this table.

Table 3-11. 2018–19 eMPowerME: Reporting Categories and Targeted Possible Raw Score Points by Grade—Writing and Language Grades 3–8

Reporting Category	Grade Tested					
	3	4	5	6	7	8
Revising Narrative Text	10	10	8			
Revising Expository/Informational Text	8	8	10	10	8	8
Revising Argument Text				8	10	10
English Language and Conventions	8	8	8	8	8	8
Total	26	26	26	26	26	26

3.4 ESSAY PROMPTS

In 2019, essay prompts were again administered as part of the spring assessment (see Chapter 2: Current Year Updates). The essay prompts address informative/explanatory or argument/opinion commissioned pairs of texts. In addition, structures of language and writing conventions are assessed through the prompts. Essay passages and prompts are developed with the following criteria as guidelines:

- The passages and prompts should be interesting to students.
- The passages and prompts must be accessible to all students (i.e., all students would have some experience relevant to the topic).

- The prompts must generate sufficient text to be effectively scored.

The development of an essay requires students to explain and analyze information to compose focused, organized, coherent, and purposeful prose supported by evidence from multiple sources. Essay prompts are therefore developed to be classified as Depth of Knowledge Level 3. The category reporting structure for grades 3–8 essays is shown in Table 3-12. The table provides the maximum possible number of raw score points that students could earn.

Table 3-12. 2018–19 eMPowerME: Reporting Subcategory and Possible Maximum Raw Score Points Possible by Grade—Essay Grades 3–8

<i>Sub-category</i>	<i>Grade Tested</i>					
	3	4	5	6	7	8
Development & Elaboration of Ideas	4	4	4	4	4	4
Organization	4	4	4	4	4	4
Language Use & Vocabulary	4	4	4	4	4	4
Command of Conventions	4	4	4	4	4	4
Total	16	16	16	16	16	16

In 2019, student scores on the essay were reported but did not count toward students’ overall ELA raw scores, or scaled scores, or performance levels. Hence, the essay was not used in the equating, scaling, or scoring of the ELA assessment.

3.4.1 Depth of Knowledge

Each item on the eMPowerME test in writing and language is assigned a DOK level according to the cognitive demand of the item. DOK is not synonymous with difficulty. The DOK level rates the complexity of the mental processing a student must use to respond to an item. Each of the three levels is described in Tables 3-13 and 3-14, for writing and language, respectively.

Table 3-13. 2018–19 eMPowerME: Depth of Knowledge—Writing Skills

Level 1	This level requires the student to write or recite simple facts. This writing or recitation measures the student’s ability to communicate basic ideas and does not include complex synthesis or analysis.
Level 2	This level requires some mental processing. Students are beginning to connect ideas using a simple organizational structure. For example, students may be engaged in note-taking, outlining, or writing simple summaries.
Level 3	This level requires some higher-level mental processing. Students are engaged in developing compositions that include multiple paragraphs. These compositions may include complex sentence structure and may demonstrate some synthesis and analysis. Students show awareness of their audience and purpose through focus, organization, and the use of appropriate compositional elements. The use of appropriate compositional elements includes skills such as addressing chronological order in a narrative or including supporting facts and details in an informational report.

**Table 3-14. 2018–19 eMPowerME: Depth of Knowledge—
Language Conventions**

Level 1	This level requires the student to use simple spelling or vocabulary and/or to write simple sentences. The student applies basic language conventions correctly, including applying appropriate grammar, punctuation, and capitalization.
Level 2	This level requires the student to construct and edit simple and compound sentence structures. The student applies more complex language conventions correctly, including applying appropriate grammar, punctuation, and capitalization.
Level 3	This level requires the student to construct and edit a variety of complex sentence structures. The student applies more complex language conventions correctly, including applying appropriate grammar, punctuation, and capitalization.

Table 3-15 lists the target percentages of score points assigned to each DOK level in writing and language.

Table 3-15. 2018–19 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Total Test Points by Grade—Writing & Language Grades 3–8

DOK	Grade					
	3	4	5	6	7	8
Level 1	15–35	15–35	15–35	15–35	15–35	15–35
Level 2	40–60	40–60	40–60	40–60	40–60	40–60
Level 3	15–35	15–35	15–35	15–35	15–35	15–35
Total	100	100	100	100	100	100

3.4.2 Passage Types

Writing and Language

The writing and language passages for eMPowerME are selected from the following categories:

- Narrative passages, representing a variety of forms including drama, excerpts from novels, short stories, and traditional narratives such as fables and folktales. Narrative passages succinctly and lucidly describe a fictional event and feature many or all the hallmarks of the narrative form—plot/conflict, climax/epiphany, conclusion, dialogue, characters’ thoughts, action, and description.
- Informational/Explanatory passages, representing one of three subject areas: social studies/history; science/social science/technical subjects; and, to a lesser extent, the humanities. Although written with the general reader in mind, passages strive to present compelling information that responds to relevant issues in each field—a new interpretation of an event or phenomenon; an examination of an overlooked (or misunderstood) movement, moment, or figure; an introduction to foundational knowledge in any of the three disciplines, etc.

- Argument passages, representing cogent argumentation. Argument passages tend to be informed by issues in the social sciences or current events. Argument passages establish a position; provide claims, supported by evidence, that develop that position; introduce and rebut a counterclaim (in grades 7 and 8); and, throughout, use rhetorical techniques (persuasive transitions, rhetorical questions, appeals to reason or personal experience, etc.) to advance the position.

All embedded-error passages are commissioned texts, which are passages developed specifically for the purpose of the assessment.

Essay Prompts

The passages and prompts used for the operational essays were assigned to the following categories:

- Grade 3, Informational
- Grade 4, Informational
- Grade 5, Opinion
- Grade 6, Argument
- Grade 7, Informational
- Grade 8, Argument

In 2019, all passages were commissioned texts composed specifically for the associated writing prompts and grade levels.

3.5 MATHEMATICS TEST SPECIFICATIONS

3.5.1 Standards

The test framework for mathematics at grades 3–8 is based on a set of CCR mathematics standards, and each item on the grades 3–8 eMPowerME tests is designed to measure a specific mathematics concepts and procedures content standard or standards, and most items also measure a mathematical practices process standard.

The mathematics items at grades 3–5 are organized into three concepts and procedures reporting categories:

- Operations and Algebraic Thinking: Students represent and solve problems, understand and apply the properties of operations, and generate and analyze patterns and relationships.
- Numbers and Operations in Base Ten and Fractions: Students understand and demonstrate a sense of what whole numbers, fractions, and decimal numbers mean and how they are used. Students understand and demonstrate computation skills.

- **Measurement and Data and Geometry:** Students understand and demonstrate measurement skills, including geometric measurement, by accurately measuring and estimating, solving problems, and converting between units within a measurement system. Students represent and interpret data using picture graphs, bar graphs, and line plots. Students reason with shapes and their attributes, classify shapes based on their properties, and graph points on the coordinate plane to solve problems.

The mathematics items at grades 6 and 7 are organized into five concepts and procedures reporting categories:

- **Ratios and Proportional Relationships:** Students understand ratio concepts and proportional relationships and use them to solve real-world problems.
- **The Number System:** Students extend their previous number sense and computation of whole numbers, fractions, and decimal numbers to the entire system of rational numbers.
- **Expressions and Equations:** Students write and evaluate expressions, apply the properties of operations to generate equivalent expressions, and solve problems using algebraic expressions, equations, and inequalities.
- **Geometry:** Students solve problems involving area, surface area, volume, and angle measures. Students draw, construct, and describe geometric figures and describe the relationships between figures.
- **Statistics and Probability:** Students understand statistical variability, summarize and describe distributions, use random sampling to draw inferences about a population or comparative inferences between populations. Students develop an understanding of probability and use and evaluate probability models.

The mathematics items at grade 8 are organized into five concepts and procedures reporting categories:

- **Functions:** Students define, evaluate, and compare functions and use functions to model relationships between quantities.
- **The Number System:** Students extend their previous number sense to include the system of irrational numbers. Students work with radicals and integer exponents.
- **Expressions and Equations:** Students understand the connections between proportional relationships, lines, and linear equations, and analyze and solve linear equations and pairs of simultaneous linear equations.
- **Geometry:** Students understand congruence and similarity, understand and apply the Pythagorean Theorem, and solve problems involving volume of three-dimensional figures.
- **Statistics and Probability:** Students investigate the patterns of association in bivariate data.

Additionally, the mathematics items at each of the grades 3–8 have embedded in them the processes and proficiencies associated with the following mathematical practices process strands:

- **Problem Solving and Modeling:** Students apply grade-level appropriate mathematical concepts and procedures to solve standard and nonstandard real-world and mathematical problems. Students use grade-appropriate quantitative reasoning to interpret mathematical representations, represent real-world mathematical situations using mathematical models, and use mathematical models to solve real-world and mathematical problems.
- **Reasoning, Patterns, and Structure:** Students critique the mathematical reasoning of others. Students look for and make use of repeated reasoning in mathematics. Students look for and make use of mathematical structure.

3.5.2 Item Types

The eMPowerME mathematics tests include selected-response, multi-select selected-response, and constructed-response items. There are two varieties of constructed-response items: 2-point and 4-point items. The 2-point constructed-response items require students to perform a computation, write an expression, equation, or inequality, and/or solve a simple problem, and may include having the student provide written evidence of the understanding of the standard(s) being assessed. They require approximately 3 minutes of response time per item. These items are also scored as a 1-point mathematical process constructed-response item using a separate, distinctive rubric. The 4-point constructed-response items are more complex and require students to provide written evidence of the understanding of the standard(s) being assessed, and require approximately 7 minutes of response time per item. These items are also scored as a 2-point mathematical process constructed-response items using a separate, distinctive rubric. Selected-response items and multi-select selected-response items each require approximately 1½ minutes of response time. Each type of item is worth a specific number of points in the student’s total mathematics score, as shown in Table 3-16.

Table 3-16. 2018–19 eMPowerME: Mathematics Item Types

<i>Item Type</i>	<i>Maximum Number of Points Available</i>
SR/MS	1
CR	2 or 4

SR = selected-response; MS = multi-select selected-response; CR = constructed-response

3.5.3 Test Design

Table 3-17 summarizes the numbers and types of items found on the 2019 eMPowerME mathematics tests for each of the grades 3–8, respectively. All students receive the common items in their forms. The selected-response items and multi-select selected-response items are each worth 1 point, and each constructed-response item is worth either 2 or 4 points. Score points within a grade level are divided so that selected-response items and multi-select selected-response items represent approximately 75 percent of the possible score points, and constructed-response items together represent approximately 25 percent of the possible score points.

**Table 3-17. 2018–19 eMPowerME: Item Type and Number of Items—
Mathematics**

Grade	Common		Matrix		Total per Student	
	SR/MS	CR	SR/MS	CR	SR/MS	CR
3	33	4	60	12	38	5
4	32	4	60	12	37	5
5	33	4	60	12	38	5
6	36	4	60	12	41	5
7	36	4	60	12	41	5
8	37	4	60	12	42	5

3.5.4 Blueprints

The distribution of emphasis for eMPowerME content strands for mathematics is shown in Table 3-18.

Table 3-18. 2018–19 eMPowerME: Distribution of Emphasis for Content Strands in Terms of Percentage of Test Points by Grade—Mathematics Grades 3–8

Content Strand	Grade Tested					
	3	4	5	6	7	8
Operations and Algebraic Thinking	37	28	29			
Numbers & Operations in Base Ten and Numbers and Operations Fractions	33	36	27			
Measurement and Data and Geometry	29	36	40			
Ratios & Proportional Relationships				15	15	
Functions						20
The Number System				26	11	7
Expressions and Equations				26	26	27
Geometry				17	17	20
Statistics and Probability				19	31	25
Total*	100	100	100	100	100	100

*Totals may not equal 100 due to rounding.

Table 3-19 shows the concepts and procedures reporting categories for mathematics in the eMPowerME test design and the maximum possible number of raw-score points that students can earn. The goal for distribution of score points or balance of representation across the reporting categories varies from grade to grade. Note: Only common items are reflected in this table, as only they are counted toward students' scaled scores.

Table 3-19. 2018–19 eMPowerME: Concepts and Procedures Reporting Categories and Possible Raw Score Points by Grade—Mathematics Grades 3–8

<i>Reporting Category</i>	<i>Grade Tested</i>					
	3	4	5	6	7	8
Operations and Algebraic Thinking	16	12	12			
Numbers & Operations in Base Ten Fractions	15	16	14			
Measurement and Data and Geometry	14	16	17			
Ratios & Proportional Relationships				8	6	
Functions						10
Number System				12	6	4
Expressions and Equations				12	12	13
Geometry				8	8	10
Statistics and Probability				8	14	12

Table 3-20 shows mathematical processes reporting categories for mathematics and the maximum possible number of raw-score points that students can earn. Note: Only common items are reflected in this table, as only they are counted toward students’ scaled scores, and not every item in each grade assessed a process strand.

Table 3-20. 2018–19 eMPowerME: Mathematical Processes Reporting Categories and Possible Raw Score Points by Grade—Mathematics Grades 3–8

<i>Reporting Category</i>	3	4	5	6	7	8
Problem Solving & Modeling	15	16	14	21	20	21
Reasoning, Patterns & Structure	18	17	18	19	21	22

3.5.5 Depth of Knowledge

Each item on the eMPowerME test in mathematics is assigned a DOK level according to the cognitive demand of the item. DOK is not synonymous with difficulty. The DOK level rates the complexity of the mental processing a student must use to solve a problem. Each of the three levels is described in Table 3-21.

Table 3-21. 2018–19 eMPowerME: Depth of Knowledge—Mathematics

Level 1 (Recall)	This level is defined by the rote recall of information, or performance of a simple, routine procedure. It includes repeating a memorized fact, definition, or term, performing a simple algorithm, rounding a number, or applying a formula.
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continued

Level 2 (Skill/Concept)	This level is defined by engaging in some mental processing beyond a habitual response, as well as decision-making about how to approach the problem or activity. This level can require conceptual understanding and/or demonstrating conceptual knowledge by explaining thought process in terms of concepts. It includes distinguishing among mathematical ideas, processing information about the underlying structure, drawing relationships among ideas, deciding among and performing appropriate skills, applying properties or conventions within a relevant and necessary context, transforming among different representations, and interpreting and solving problems and/or graphs.
Level 3 (Strategic Thinking)	This level is defined by reasoning and analyzing using mathematical principles, ideas, structure, and practices. It includes solving involved problems; conjecturing; creating novel solutions and forms of representation; devising original proofs, mathematical arguments, and critiques of arguments; constructing mathematical models; and forming robust inferences and predictions.

Table 3-22 lists the target percentages of total score points assigned to each level of DOK in mathematics.

Table 3-22. 2018–19 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Test Points by Grade—Mathematics Grades 3–8

<i>DOK</i>	<i>Grade</i>					
	3	4	5	6	7	8
Level 1	5-25	5-25	5-25	5-25	0-20	0-30
Level 2	50-80	50-80	50-80	50-80	50-80	50-80
Level 3	5-30	5-30	5-30	5-30	5-30	5-30
Total	100	100	100	100	100	100

3.5.6 Use of Calculators and Reference Sheets

While the eMPowerME team of specialists who designed the mathematics test acknowledge the importance of mastering arithmetic algorithms, they understand that the use of calculators is a necessary and important skill. Calculators can save time and prevent error in the measurement of some higher-order thinking skills, allowing students to work on more sophisticated and intricate problems. For these reasons, it was decided that at grades 3–8 calculators should be prohibited in the first of the two sessions of the eMPowerME mathematics tests and permitted in the second session.

Reference sheets are not provided to students at grades 3–8. To properly assess against the set of CCR standards, some items are written so that students will need to know the formulas to answer the question, whereas other items are written so that knowledge of the formula is not being assessed, and thus the formulas may be provided within the item.

3.6 TEST DEVELOPMENT PROCESS

3.6.1 Item Development

Items used on eMPowerME tests are developed to assess against CCR standards and, as such, are closely aligned with Maine content standards. Cognia test developers ensure this alignment, and ongoing independent evaluations are held to verify alignment. In addition, independent reviews are scheduled to ensure that items and passages conform to bias and sensitivity guidelines.

3.6.2 Item Reviews at Cognia

The test developers at Cognia review newly developed items for:

- alignment to the intended content standard;
- item integrity, including content and structure, format, clarity, and possible ambiguity;
- desired correct responses;
- appropriateness and quality of graphics;
- appropriateness of scoring guide descriptions and distinctions;
- completeness of associated item documentation (e.g., scoring guide, content codes, key, grade level, DOK); and
- appropriateness for the designated grade level.

3.6.3 Independent Item Reviews

Newly developed eMPowerME items regularly undergo review by nationally representative panels of content and assessment experts. Maine educators are included in these panels. Additional Maine-only panels were convened in June 2018 to review newly developed items, and 60 Maine panelists participated in these reviews.

The purpose of these reviews is to evaluate items and determine their suitability for assessment by answering the following four questions:

- Does the item align with the assigned content standard(s)?
- Is the content accurate?
- Are the content and context grade-level appropriate?
- Does the item provide maximum accessibility for all students?

3.6.4 Bias and Sensitivity Review

Bias and sensitivity review is an essential component of the development process. During the eMPowerME bias and sensitivity review process, items are reviewed by a diverse, nationally representative

committee of people who represent a variety of student subgroups. Items are examined for content and context that might cause the test to be inaccessible for these subgroups of students, or that might generally offend or dismay students, teachers, parents, or community members. Awareness of these considerations in the development of assessment items and materials helps to avoid controversial issues, and concerns can be resolved before the test forms are produced.

Additionally, all Cognia test developers receive training in bias and sensitivity issues. Controversial and biased topics are avoided in the test development process. Internal reviews include review of not only content but context, with an awareness of bias and sensitivity issues. Since no one person is well versed in the full spectrum of possible concerns, the bias and sensitivity review committee helps to ensure that all potential issues are identified. All passages and items underwent bias and sensitivity prior to field-testing, except for the passages and prompts from the essay pilot, which underwent bias and sensitivity review after the pilot administration.

3.6.5 Reviewing and Refining

Recommendations from committee reviews and from Cognia’s own internal reviews help to refine eMPowerME items and passages being developed. Cognia test developers carefully evaluate these recommendations and apply edits as appropriate.

3.6.6 Item Editing

Cognia editors review and edit eMPowerME items and commissioned passages to ensure adherence to sound testing principles and to style guidelines in the Chicago Manual of Style, 16th edition. These principles include the stipulations that items and commissioned passages

- demonstrate correct grammar, punctuation, usage, and spelling;
- are written in a clear, concise style;
- contain unambiguous explanations that tell students what is required to attain a maximum score;
- are written at a reading level that allows students to demonstrate their knowledge of the subject matter being tested regardless of reading ability;
- exhibit high technical quality regarding psychometric characteristics;
- have appropriate answer options or score point descriptors; and
- are free of potentially insensitive content.

3.6.7 Field Testing, Item Selection, and Operational Test Assembly

All eMPowerME items are appropriately field tested prior to operational use. The eMPowerME assessments employ a matrix design that embeds field-test items within each form.

Cognia test developers carefully select the items that will appear in the eMPowerME operational tests. In consultation with Cognia psychometricians, test developers consider the following criteria in selecting sets of items for the operational test:

- **Content coverage/match to test design and blueprints.** The test designs and blueprints stipulate a specific number of items by item type.
- **Item difficulty and complexity.** Item statistics are evaluated to ensure quality psychometric characteristics, as well as similar levels of difficulty and complexity from year to year.
- **“Cueing” items.** Items are reviewed for any information that might “cue” or provide information that would help to answer another item.

Test developers sort and lay out passages and items into test forms. During assembly of the test forms, the following criteria are considered:

- **Key patterns.** The sequence of keys (correct answers) is reviewed to ensure that their order appears random.
- **Option balance.** Selected-response items are balanced across forms so that key options are not markedly disproportionate.
- **Page fit.** For paper forms, item placement is analyzed to ensure the best fit and arrangement of items on any given page. For computer-based test (CBT) forms, items always appear one per screen. ELA passages and, when applicable, common mathematics stimuli always appear to the left of the associated item.
- **Visual appeal.** For paper forms, the visual accessibility of each page is always taken into consideration, including aspects such as the amount of “white space,” the density of the test, and the number of graphics. For CBT forms, every effort is made to make each item as accessible as possible. However, each item’s presentation may differ a bit depending on the delivery method and size of the screen.

3.6.8 Operational Test Draft Review

Paper forms are laid out as they would appear in the final test booklets, and the forms are again thoroughly reviewed by Cognia editors to ensure that items and passages appear exactly as intended. Any changes made during test construction are reviewed and approved by the test developer. For CBT forms, editors also ensure that the items, graphics, and passages are in the order intended and are rendering correctly. Any content or sequence changes made to the items during paper forms production are also made during CBT production, and vice versa.

3.6.9 Alternative Presentations

The Form 1 test for each grade was translated into Braille by National Braille Press, a subcontractor that specializes in test materials for blind and visually impaired students. In addition, Form 1 for each grade was adapted into a large-print version.

CHAPTER 4 TEST ADMINISTRATION

4.1 RESPONSIBILITY FOR ADMINISTRATION

As indicated in the *School Test Coordinator Manual*, District Assessment Coordinators and/or their designated School Test Coordinators (STCs) are responsible for the proper administration of the eMPowerME assessments. Manuals are used to ensure the uniformity of administration procedures from school to school. These manuals—the *School Test Coordinator Manual* and the *Test Administration Manual*—stress the importance of test security and ethical administration while the tests are in the schools, and contain explicit directions and scripts for test administrators to read aloud to test-takers. These documents may be accessed on the eMPowerME Maine Help and Support Website at: <https://maine.onlinehelp.cognia.org/testing-materials/>

4.2 ADMINISTRATION PROCEDURES

In addition to distributing the *School Test Coordinator Manual* and the *Test Administration Manual*, the Maine DOE, along with Cognia, provided statewide training workshops and statewide test administration Webinars to train and inform school personnel about the spring 2019 eMPowerME testing procedures. Trainings were posted on the eMPowerME Maine Help and Support Website at: <https://maine.onlinehelp.cognia.org/training/>

4.3 PARTICIPATION REQUIREMENTS AND DOCUMENTATION

Ideally, all students in grades 3–8 participate in eMPowerME assessments, and all third-year high school students participate in the SAT, through standard administration and/or administration with accommodations. Any student who is absent during any session of the eMPowerME, SAT, or alternate assessment is expected to take a make-up test within the testing window.

On those occasions where it was deemed necessary to exclude a student from sections of the assessment or from the assessment as a whole because of special considerations (e.g., medical emergency), schools were asked to seek the approval of the Maine DOE’s Special Considerations Review Team. The names of the excluded students were forwarded to Cognia so that these students would not be included in any reports or as part of the denominator representing the total number of students. Appendix C presents student participation in eMPowerME for all students by demographic group.

4.3.1 Students With Disabilities

All students were expected to participate in the eMPowerME assessments or the SAT, unless they completed the alternate assessment during the 2018–19 school year.

Large-print versions of the tests for all grades were created using Form 1 of the tests enlarged to 16-point font for students with visual impairments. As requested by the DOE, Grades 4, 6 and 8, Form 1 of the tests was translated into Braille.

4.4 DOCUMENTATION OF SUPPORTS AND ACCOMMODATIONS

For the spring 2019 eMPowerME tests, the approved supports/accommodations for eligible students were listed in the *MEA Accessibility Guide* and on page 2 of the student answer booklet. This information was coded in by the appropriate staff before testing was completed. The *MEA Portal User Guide* and the *School Test Coordinator Manual* provided directions for coding the information related to supports/accommodations.

All students who were considered for supports/accommodations on the MEA should have had their individual situations reviewed by a team within the school prior to the time of testing. For every student with an identified exceptionality requiring an Individualized Education Program (IEP), schools were required to hold an IEP team meeting that addressed that student’s needs for accommodations. For other students needing test supports/accommodations who did not have an identified disability, a meeting was required that included one of the student’s teachers, the building principal, related-services personnel, and, whenever possible, the student’s parents/guardians. If it was not possible for the parents/guardians to attend the meeting, they were notified of the committee’s recommendations for supports/accommodations prior to the time of testing.

Recommended supports/accommodations were to be consistent with those supports/accommodations already being used in the student’s instructional program. Any such supports/accommodations were reflected either in the minutes of the IEP team meeting (for students requiring an IEP), or in a statement prepared for the cumulative folders of students not requiring IEPs. Schools were given the following statement as a model: *The student will participate in the [__]th grade Maine Educational Assessment as scheduled during March–April 2019 with the following supports/accommodations.*

Table 4-1 and Appendix D show the supports and accommodation frequencies observed for the 2019 eMPowerME administration. The *MEA Accessibility Guide*, which includes detailed descriptions of approved supports and accommodations and their proper application, is presented in Appendix E.

Table 4-1. 2018–19 eMPowerME: Numbers of Students Tested With and Without Supports and Accommodations by Subject and Grade

Subject	Grade	Number of Students Tested	
		Without Accommodations	With Accommodations
Mathematics	3	9,695	2,754
	4	9,683	3,298
	5	9,738	3,335
	6	10,377	2,943
	7	10,277	2,786
	8	10,641	2,600
ELA	3	9,664	2,731
	4	9,659	3,276
	5	9,715	3,323
	6	10,356	2,939
	7	10,259	2,785
	8	10,630	2,599

4.5 TEST SECURITY

Maintaining test security is critical to the success of eMPowerME. The *School Test Coordinator Manual* and the *Test Administration Manual* explain in detail all test security measures and test administration procedures. A training Webinar on test security was also posted on the eMPowerME Maine Help and Support Website at: <https://maine.onlinehelp.cognia.org/training/>. School personnel were informed that any concerns about breaches in test security were to be reported to the STC and/or principal immediately. The STC and/or principal were responsible for immediately reporting the concern to the District Assessment Coordinator and the Maine DOE Assessment Coordinator. Test security was also strongly emphasized at the test administration workshops. Principals or STCs were required to log on to a Website to complete the School Test Coordinator Test Security & Data Privacy Agreement or the Test Administrator/Proctor Test Security & Data Privacy Agreement (as applicable). Schools that administer paper-pencil tests also had to provide the number of secure tests received from Cognia, the number of tests administered to students, and the number of secure test materials that they were returning to Cognia. By signing and submitting the agreement, STCs, test administrators (TAs), or proctors certified that the tests were administered according to the test administration procedures outlined in the *School Test Coordinator Manual* and the *Test Administration Manual*; that the security of the tests was maintained; that no secure material was duplicated or in any way retained in the school; and that all test materials had been accounted for and returned to Cognia.

4.6 TEST AND ADMINISTRATION IRREGULARITIES

Test sessions invalidated by client request due to testing irregularities in the 2019 administration totaled 33, including 55 students total. Table 4-2 breaks down the reasons for invalidating a test session:

Table 4-2. 2018–19 eMPowerME: Test Irregularities/Invalidations by Reason

<i>Invalidation Reason</i>	<i>Number of Students</i>	<i>Number of Sessions</i>
Student Cheating	4	4
TA/Proctor Error	31	27
Wrong Grade	7	N/A
Wrong Student/SSID	13	2
Total	55 Students	33 Sessions

4.7 TEST ADMINISTRATION WINDOW

The operational test administration window was March 18–April 12, 2019.

4.8 SERVICE CENTER

To provide additional support to schools before, during, and after testing, Cognia established the Maine Service Center. The support of this service center is essential to the successful administration of any statewide test program. This service center provides a centralized location that individuals in the field can either call using a toll-free number or e-mail to ask specific questions or report any problems they may be experiencing. Representatives are responsible for receiving, responding to, and tracking calls and e-mails, and for routing issues to the appropriate person(s) for resolution. All calls and e-mails are logged into a database that includes notes regarding the issue and resolution of each call.

The Maine Service Center was open to receive calls from 6:30 a.m. to 6:00 p.m., Monday–Friday, beginning one week before the start of testing and ending one week after the conclusion of testing. The Maine Service Center was open to receive calls from 7:30 a.m. to 4:30 p.m., Monday–Friday, outside the testing window.

CHAPTER 5 SCORING

5.1 MACHINE-SCORED ITEMS

Selected-response item responses were compared to scoring keys using item analysis software. Correct answers were assigned a score of 1 point, and incorrect answers were assigned 0 points. Student responses with multiple marks or blank responses were also assigned 0 points.

The hardware elements of the scanners are continuously self-monitored for correct read, and the software that drives these scanners also monitors for correct data reads. Standard checks include recognition of a sheet that does not belong or is upside down or backward, identification of critical data that are missing (e.g., a student ID number), test forms that are out of range or missing, and page or document sequence errors. When a problem is detected, the scanner stops and displays an error message directing the operator to investigate and correct the situation.

5.2 PERSON-SCORED ITEMS

The images of student responses to constructed-response items in the 2018-19 eMPowerME assessments were hand-scored through the iScore system. The majority of students submitted their tests online, using a computer-based testing system. A small portion of students took a paper-based test, which was scanned to create a digital image. Regardless of the method of test administration, all scoring was done through the iScore system. Student confidentiality was easily maintained because all Maine scoring was conducted through a scoring engine that did not provide scorers with access to student, school, or school district information. The iScore system identified responses and students through unique booklet identifiers that were connected to the proper student during data analysis and reporting.

Through iScore, qualified scorers at computers accessed digital images of student responses. Scorers evaluated and scored each response via keypad or mouse entry through the iScore system. When a scorer finished one response, the next response appeared immediately on the computer screen.

Imaged responses from all students were sorted into item-specific groups for scoring purposes. Scorers reviewed responses from only one item at a time; however, imaged responses from student work were always available to leadership for viewing when necessary, and the physical booklet (for paper-based tests) was also available to the Scoring Content Specialist on-site. (Scoring Content Specialist and other scoring roles are described in Section 5.2.1.)

The use of iScore also helped to ensure that access to student response images was limited to only those who had legitimate need to access them.

5.2.1 Scoring Location and Staff

Scoring Location

The iScore database, its operation, and its administrative management are all based in Dover, NH. Table 5-1 presents the scoring locations of 2018–19 Maine test item responses by content area and grade.

Table 5-1. 2018–19 eMPowerME: Operational Scoring Locations by Content Area and Grade

<i>Content Area</i>	<i>Grade</i>	<i>Dover, NH</i>	<i>Menands, NY</i>	<i>Longmont, CO</i>
Mathematics	3			X
	4			X
	5			X
	6			X
	7			X
	8			X
Reading	3			X
	4			X
	5		X	
	6			X
	7			X
Essay	4		X	
	5		X	
	6		X	X
	7		X	
	8		X	

The iScore system monitored accuracy, reliability, and consistency across all scoring sites. Constant daily communication and coordination were maintained in person or through e-mail, telephone, and secure Websites to ensure that critical information was shared, and any modifications were implemented across all scoring sites.

Staff Positions

The following staff members were involved with scoring the spring 2019 eMPowerME responses:

- The Scoring Project Manager and the Asst. Director of Scoring Content oversaw communication and coordination of scoring, scheduling of activities, and general management of all Maine scoring-related tasks.
- The iScore Operations Manager guided the technical aspects of the scoring engine.
- A Scoring Content Specialist in each content area (mathematics, reading, and writing) ensured consistency and accuracy of scoring and managed the scoring leadership teams for all grades in their respective content areas. The Scoring Content Specialists were also

responsible for monitoring scorer accuracy and accepting or rejecting the work product of scorers.

- Multiple Scoring Supervisors trained and oversaw items at each grade level. They were selected from a pool of experienced Scoring Team Leaders for their proven ability to score accurately and to instruct and train scorers. Scoring Supervisors trained Scoring Team Leaders and scorers on the item, answered questions during the scoring process, and worked closely with the Scoring Content Specialists. Scoring Supervisors also performed read-behind quality control (defined in Section 5.2.5) for Scoring Team Leaders assigned to them.
- Numerous Scoring Team Leaders, selected from a pool of skilled and experienced scorers, performed read-behind activities (defined in Section 5.2.5) for the scorers assigned to them. Scoring Team Leaders worked closely with the Scoring Supervisors to ensure accurate and consistent scoring for their assigned grade level. The ratio of Scoring Team Leaders to scorers varied depending on content area; from 1:7 in writing to 1:10 in mathematics and reading.
- Scorers were trained on and scored operational student responses at scoring centers. Recruitment of scorers is described in Section 5.2.2.

5.2.2 Scorer Recruitment and Qualifications

For scoring the spring 2019 eMPowerME tests, Cognia actively sought a diverse pool of scorers with a broad range of backgrounds: teachers, scientists, business professionals, educators, graduate school students, retired educators, and the like. To verify this diversity, scorer demographic information such as gender, race, educational background – among other information – was collected. Although a four-year college degree or higher was preferred, scorers were required to have successfully completed at least a two-year college degree and to have demonstrated knowledge of the content area they scored. Potential scorers were required to submit documentation (e.g., résumé and/or transcripts) as evidence of meeting the education and experience requirements. All scorers were required to sign a nondisclosure/confidentiality agreement.

Table 5-2 summarizes the qualifications of the spring 2019 eMPowerME ELA and mathematics scoring leadership and scorers.

**Table 5-2. 2018–19 eMPowerME: Qualifications of Scoring Leadership and Scorers—
Spring Operational Administration**

<i>Scoring Responsibility</i>	<i>Educational Credentials</i>				<i>Total</i>
	<i>Doctorate</i>	<i>Master's</i>	<i>Bachelor's</i>	<i>Associate's</i>	
Scoring Leadership	6	14	44	2	66
Scorers	17	81	190	28	316

Scoring Leadership = Scoring Supervisors and Scoring Team Leaders

5.2.3 Methodology for Scoring Polytomous Items

Possible Score Points

The ranges of possible score points for the different polytomous items are shown in Table 5-3.

Table 5-3. 2018–19 eMPowerME: Possible Score Points for Polytomous Item Types

<i>Polytomous Item Type</i>	<i>Possible Score Point Range</i>
Essay Prompt	0-4 scale across 4 traits
Constructed-response	0–2, 0–3, or 0–4 points

The rubrics used in essay scoring can be found in Appendix F.

In addition, mathematics items were also scored on mathematical practices. The score point scale was 0–2 points for constructed-response items and 0–1 point for short-answer items.

Nonscorable Items

Scorers could designate a response as nonscorable for any of the following reasons:

- **Blank:** Student provided no response or there are no intentional marks in the answer space.
- **Unreadable:** The response cannot be read, either due to a scanning error, light or hard-to-read handwriting, or other reasons. Unreadable responses were extremely rare, since most students completed the test online. Any unreadable responses were sent to Edit Scoring Supervisors, who review the physical test book to assign a score to the student response.
- **Wrong Location:** A clearly legitimate response to another item on the test. This is primarily a code for print-based tests (PBTs).
- **Off Topic:** A response that is not related to the task/prompt administered or is not a valid attempt at answering any task/prompt on the test.
- **No Score:** Direct copy of the prompt without any additional text. Any other unscorable response. May also include artwork irrelevant to the prompt, or other writing that is unrelated to the task.

Scoring Procedures

Scoring procedures for polytomous items included both single scoring and double-blind scoring. Single-scored items were scored by one scorer. Double-blind scored items were scored independently by two scorers, whose scores were tracked for interrater agreement. A minimum of 20 percent of all responses in mathematics and reading were scored by two scorers. Essay responses were scored at a 25 percent double scored rate.

5.2.4 Training of Scorers and Scoring Leadership

Scorer training began with an introduction to scoring and an overview of eMPowerME. This included the purpose and goals of the testing program and any unique features of the test and/or testing population. There was also a general discussion about the security, confidentiality, and proprietary nature of testing, scoring materials, and procedures.

Training materials (in electronic or paper format) were available to scorers at all times during scoring and included examples of all score points whenever possible. Training materials consisted of the following items:

- Student prompt and scoring rubric
- Item sample response and training notes
- Anchor set
 - Clear examples of typical student responses at each score point
 - Presented in score point order
- Practice set
 - May include atypical responses or student work that helps demonstrate the cut-points between adjacent score points
 - Presented in random order

A Scoring Content Specialist or Scoring Supervisor led the training for each item. Training occurred in various formats: face-to-face in a training room, through a prerecorded training module, or through an online training system with audio capabilities which allowed for the possibility of remote training. Regardless of the method of training, the approach followed this sequence:

1. Review of the stimuli, student prompt, scoring rubric, associated sample responses, and training notes
2. Review of the anchor set
3. Analysis and discussion of each anchor response, its assigned score, and associated detailed scoring rationale
4. Scoring of a set of practice responses
5. Discussion of each practice response, revealing the actual score assigned to the student response and explaining the scoring rationale
6. Methodical review of all scoring criteria while paying particular attention to the fine lines that determine the cut-points between adjacent score points
7. Question and answer segment addressing any remaining scorer questions
8. Administration of a qualification set consisting of 10 pre-scored responses, scored independently and deployed randomly to each scorer
9. Review of qualification results (one-on-one with scorers, as needed)
10. Start scoring live student responses for the eMPowerME project (qualified scorers only)

Throughout scoring, responses in the anchor set continued to serve as a reference for scorers as they went on to calibration, scoring, and recalibration activities for that item. While the anchor set contained solid, mid-range exemplars for a particular score point, the practice set often included unusual responses that were less clear or solid (shorter than normal, employing atypical approaches, simultaneously containing very low

and very high attributes, and written in ways difficult to decipher). Unlike responses in the anchor set, responses in the practice set were presented in randomized score-point order. Throughout the training, trainers led a group discussion of responses, directing scorers' attention to difficult scoring issues and modeling how to evaluate student work by referring to the anchor set and scoring rubrics.

Following training, scorers entered the qualification process. Qualification sets were used to ensure that scorers successfully internalized the scoring standards before they began scoring each item. Guidelines for the qualification sets were as follows:

- Each qualification set contained 10 responses.
- Qualification sets were administered through the iScore system and distributed to the scorers unscored and in random order.
- In order to qualify, scorers were required to meet the passing threshold of 80 percent exact agreement and 90 percent exact plus adjacent agreement (80/90) for mathematics and reading, and a 70 percent exact/90 percent exact plus adjacent threshold for essays.
- Scorers who did not pass the first qualification set were retrained. After retraining, they took a second qualification set and had to achieve the passing threshold.
- Any scorer who did not pass was not allowed to score the item. They were either trained on a different item or dismissed from the scoring project.
- Scoring Team Leaders were required to qualify and pass at the same threshold as scorers.
- Scoring Content Specialists and Scoring Supervisors who prepared and conducted the training did not qualify on the item. Scoring Supervisors who were working in an edit scoring capacity for the project trained and qualified on all items.
- Responses included in the qualification set were approved for use by the Scoring Content Specialist or Assistant Scoring Content Specialist. In addition, they were either part of the approved benchmarking set or had matching scores that were agreed upon by multiple people, including scoring leadership.

Scoring Team Leaders (STLs) received the same training and underwent the same qualification process as scorers. However, STLs were trained on the items in advance during a separate leadership training. This separate training provided an additional opportunity to absorb the training materials and prepared them to fulfill their role during scorer qualification.

5.2.5 Monitoring of Scoring Quality

While all scorers must first be trained and qualified to begin scoring student work, they also must maintain acceptable levels of accuracy to continue scoring. iScore employed multiple quality control tools in order to monitor accuracy and consistency throughout scoring. The following methods and tools were used:

- Embedded Papers
- Read-behind Scoring
- Double-blind Scoring
- Recalibration Sets

Embedded Papers

Embedded Papers are previously scored responses that were loaded (“embedded”) by scoring leadership into iScore and distributed blindly to scorers during scoring. Embedded Papers were chosen either before or during scoring and were inserted into the scoring queue so that they appeared the same as all other live student responses.

Ten Embedded Papers were distributed at random points throughout the first full day of scoring to ensure that scorers were sufficiently calibrated at the beginning of the scoring period. Scorers typically received these 10 responses within the first 100 responses they scored.

Scorers were expected to maintain the established accuracy standard for embedded responses. Scorers who met this requirement continued to receive operational responses. Scorers who did not meet this requirement were stopped from scoring and retrained by their STL or Scoring Supervisor before they were allowed to resume scoring. Once the scorers could resume scoring, scoring leadership carefully monitored their performance and increased the number of read-behinds conducted on them.

Read-Behind Scoring

Read-behind scoring, in which scoring leadership reviews and, if necessary, corrects a scorer’s work, allowed the STLs and Scoring Supervisors to monitor the performance of each scorer. It provided an immediate real-time snapshot of a scorer’s accuracy and the opportunity for individualized counseling as needed.

Read-behinds in increments of 1, 2, or 3 were generated in iScore at the request of the STL. Scorers were not aware which responses were designated for read-behinds. Requests for read-behinds were submitted for one, several, or all scorers assigned to an STL, allowing for a customized approach. The STL conducted the read-behind without prior knowledge of the assigned score. After the STL submitted their score, they could reveal the score assigned by the scorer and provide counseling as needed.

If there was exact agreement between the scorer and the STL, no action was taken. If there was a difference in scores, either adjacent or discrepant, the STL score became the score of record. The STL may have also counseled the scorer on the reason for the disagreement.

The number of read-behinds conducted per scorer varied, as STLs focused their attention on scorers as needed. The general guideline for STLs was to conduct a minimum of 5 read-behinds per day, per scorer, per item. STLs conducted more read-behinds on scorers who required counseling or who were at the lower threshold of accuracy and fewer read-behinds on scorers who repeatedly demonstrated high scoring accuracy.

To ensure the accuracy of the STL, Scoring Supervisors and scoring management also conducted a review of their read-behind work. The Scoring Supervisor had access to all responses that were reviewed and could compare scores to verify the accuracy and consistency of scoring.

Table 5-4 illustrates how scores were resolved by read-behind.

Table 5-4. 2018–19 eMPowerME: Examples of Read-Behind Scoring Resolutions

<i>Scorer Score</i>	<i>Scoring Supervisor/SR Score</i>	<i>Score of Record</i>
4	4	4
4	3	3
1	3	3

Double-Blind Scoring

While read-behinds measured scorer accuracy in relationship to leadership, double-blind scoring provided statistics on scorer-to-scorer agreement. Double-blind scoring was a practice where the same response was routed to two scorers. The response was independently and anonymously reviewed by each scorer, and neither scorer knew which response was scored by another randomly selected scorer.

If scorers were adjacent in their scoring of a response, the first score became the score of record. If the scorers were discrepant in their scoring (a difference greater than one score point), the response was sent to an STL for arbitration. The STL reviewed the response, provided the final score of record, and counseled scorers as needed.

Table 5-5. 2018–19 eMPowerME: Frequency of Double-Blind Scoring by Grade and Content

<i>Grade</i>	<i>Content Area</i>	<i>Responses Double-Blind Scored</i>
3–8	Reading	20%
	Mathematics	20%
	Essay	25%

Scoring leadership consulted individually with any scorer whose scoring rate fell below the required accuracy rate, and the Scoring Supervisor determined whether or when the scorer could resume scoring that

item. Once the scorer could resume scoring, scoring leadership carefully monitored the scorer's accuracy by increasing the number of read-behinds.

Recalibration Sets

Beginning on the second day of scoring each item, scorers took a recalibration set prior to scoring to ensure they remained calibrated to the scoring standards. Recalibration sets consisted of 5 pre-scored responses. Recalibration responses did not include any condition codes. While recalibration sets included a variety of score points, they did not always include an example of each score point.

The recalibration sets were used to determine whether scorers were maintaining the acceptable standard for each item. Scorers who successfully completed the recalibration set were allowed to begin scoring for the day. Scorers who struggled during recalibration reviewed the recalibration responses with scoring leadership, comparing the responses to the anchor papers and the scoring rubric. Once the review was completed, scoring leadership determined whether the scorer could begin scoring the item.

Any scorer who did not perform well on the recalibration set was counseled prior to being allowed to start scoring. Scoring Team Leaders conducted additional early read-behinds on these scorers to ensure that they were scoring accurately.

Scorer Monitoring Reports

In order to better monitor the accuracy, consistency, and pace of scoring, iScore generated a variety of reports to allow scoring leadership to monitor all aspects of this complex testing program. These reports showed both the overall performance of the scoring project as well as immediate and real-time data at the scorer level. These reports provided the opportunity to monitor an individual, the group, and the overall project. They were used in conjunction with input of scoring leadership related to scorer performance. When scorers were inaccurate in their scoring despite counseling and increased monitoring, their work for the day was invalidated and rescored by other qualified scorers.

CHAPTER 6 CLASSICAL ITEM ANALYSIS

As noted in Brown (1983), “A test is only as good as the items it contains.” A complete evaluation of a test’s quality must include an evaluation of each item. Both *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 2014) and *Code of Fair Testing Practices in Education* (Joint Committee on Testing Practices, 2004) include standards for identifying quality items. Items should assess only knowledge or skills that are identified as part of the domain being tested and should avoid assessing irrelevant factors. Items should also be unambiguous and free of grammatical errors, potentially insensitive content or language, and other confounding characteristics. In addition, items must not unfairly disadvantage students, in particular racial, ethnic, or gender groups.

Both qualitative and quantitative analyses are conducted to ensure that eMPowerME items meet these standards. Qualitative analyses are described in earlier chapters of this report; this chapter focuses on quantitative evaluations. Statistical evaluations are presented in four parts: (1) difficulty indices, (2) item-test correlations, (3) differential item functioning (DIF) statistics, and (4) dimensionality analyses. The item analyses presented here are based on the statewide administration of eMPowerME in spring 2019. Note that the information presented in this chapter is based on the items common to all forms, since those are the items on which student scores are calculated. (Item analyses are also performed for field-test items, and the statistics are then used during the item review process and form assembly for future administrations.)

6.1 CLASSICAL DIFFICULTY AND DISCRIMINATION INDICES

All selected-response, evidence-based selected-response, and constructed-response items are evaluated in terms of item difficulty according to standard classical test theory practices. Difficulty is defined as the average proportion of points achieved on an item and is measured by obtaining the average score on an item and dividing it by the maximum possible score for the item. Selected-response items are scored dichotomously (correct versus incorrect). Thus, for these items, the difficulty index is simply the proportion of students who correctly answered the item. Polytomously scored items include evidence-based selected-response items, for which students can receive scores of 0, 1, or 2, and constructed-response items, which are worth 2, 3, or 4 points total. By computing the difficulty index as the average proportion of points achieved, the indices for the different item types are placed on a similar scale, ranging from 0.0 to 1.0, regardless of the item type. Although this index is traditionally described as a measure of difficulty, it is properly interpreted as an easiness index, because larger values indicate easier items. An index of 0.0 indicates that all students received no credit for the item, and an index of 1.0 indicates that all students received full credit for the item.

Items that are answered correctly by almost all students provide little information about differences in student abilities, but do indicate knowledge or skills that have been mastered by most students. Similarly,

items that are correctly answered by very few students provide little information about differences in student abilities, but may indicate knowledge or skills that have not yet been mastered by most students. In general, to provide the best measurement, difficulty indices should range from near-chance performance of 0.25 (for four-option selected-response items or essentially 0 for constructed-response items) to 0.90, with the majority of items generally falling between approximately 0.2 and 0.8 for ELA and mathematics items. However, on a standards-referenced assessment such as eMPowerME, it may be appropriate to include some items with very low or very high item difficulty values to ensure sufficient content coverage.

A desirable characteristic of an item is for higher-ability students to perform better on the item than lower-ability students do. The correlation between student performance on a single item and total test score is a commonly used measure of this characteristic of the item. Within classical test theory, the item-test correlation is referred to as the item's discrimination, because it indicates the extent to which successful performance on an item discriminates between high and low scores on the test. For constructed-response items, the item discrimination index used was the Pearson product-moment correlation; for selected-response items, the corresponding statistic is commonly referred to as a point-biserial correlation. The theoretical range of these statistics is -1.0 to 1.0 , with a typical observed range from 0.2 to 0.6 .

Discrimination indices can be thought of as measures of how closely an item assesses the same knowledge and skills assessed by other items contributing to the criterion total score. That is, the discrimination index can be thought of as a measure of construct consistency.

A summary of the item difficulty and item discrimination statistics for each content area and grade is presented in Table 6-1. Note that the statistics are presented for all items as well as by item type (selected-response and constructed-response). The mean difficulty and discrimination values shown in the table are within generally acceptable and expected ranges.

Table 6-1. 2018–19 eMPowerME: Summary of Item Difficulty and Discrimination Statistics by Grade

Content Area	Grade	Item Type	Number of Items	p-Value		Discrimination	
				Mean	Standard Deviation	Mean	Standard Deviation
Mathematics	3	ALL	41	0.49	0.18	0.39	0.11
		SR	32	0.55	0.15	0.35	0.09
		CR	9	0.28	0.11	0.51	0.09
	4	ALL	40	0.45	0.17	0.37	0.14
		SR	32	0.48	0.17	0.32	0.10
		CR	8	0.31	0.11	0.56	0.07
	5	ALL	41	0.45	0.19	0.37	0.14
		SR	31	0.50	0.17	0.32	0.11
		CR	10	0.28	0.14	0.53	0.10
	6	ALL	44	0.43	0.21	0.34	0.13
		SR	35	0.49	0.18	0.30	0.10
		CR	9	0.20	0.10	0.51	0.13
	7	ALL	44	0.42	0.17	0.37	0.16
		SR	33	0.47	0.15	0.32	0.12
		CR	11	0.28	0.13	0.52	0.15
8	ALL	45	0.41	0.19	0.31	0.13	
	SR	36	0.46	0.17	0.28	0.10	
	CR	9	0.22	0.13	0.47	0.13	
ELA	3	ALL	49	0.55	0.17	0.41	0.11
		SR	39	0.59	0.15	0.40	0.10
		CR	10	0.39	0.15	0.47	0.11
	4	ALL	49	0.56	0.17	0.39	0.11
		SR	39	0.59	0.16	0.37	0.10
		CR	10	0.43	0.17	0.46	0.12
	5	ALL	49	0.55	0.18	0.37	0.10
		SR	39	0.59	0.16	0.35	0.10
		CR	10	0.38	0.17	0.44	0.11
	6	ALL	49	0.58	0.17	0.37	0.09
		SR	39	0.61	0.16	0.35	0.09
		CR	10	0.45	0.16	0.44	0.08
	7	ALL	49	0.57	0.14	0.39	0.09
		SR	39	0.60	0.13	0.38	0.08
		CR	10	0.45	0.15	0.46	0.13
8	ALL	49	0.57	0.16	0.38	0.11	
	SR	39	0.61	0.15	0.36	0.09	
	CR	10	0.44	0.12	0.47	0.15	

A comparison of indices across grade levels is complicated because these indices are population-dependent. Direct comparisons would require that either the items or students were common across groups. Since that is not the case, it cannot be determined whether differences in performance across grade levels are

because of differences in student abilities, differences in item difficulties, or both. With this caveat in mind, it appears generally that, for mathematics, students in higher grade levels found their items more difficult than students in lower grades found their items, while, for ELA, difficulty indices were more consistent across grades.

Comparing the difficulty indices of selected-response items and constructed-response (evidence-based selected-response or constructed-response) items is inappropriate because selected-response items can be answered correctly by guessing. Thus, it is not surprising that the difficulty indices for selected-response items tend to be higher (indicating that students performed better on these items) than the difficulty indices for constructed-response items. Similarly, discrimination indices for the constructed-response items were larger than those for the dichotomous items because of the greater variability of the former (i.e., the partial credit these items allow) and the tendency for correlation coefficients to be higher, given greater variances of the correlates.

In addition to the item difficulty and discrimination summaries, item-level classical statistics and item-level score point distributions were also calculated. Item-level classical statistics are provided in Appendix G, where item difficulty and discrimination values are presented for each item. The item difficulty and discrimination indices are within generally acceptable and expected ranges. Very few items were answered correctly at near-chance or near-perfect rates. Similarly, the positive discrimination indices indicate that students who performed well on individual items tended to perform well overall. There were a small number of items with low or negative discrimination indices. While it is not inappropriate to include items with low discrimination values or with very high or very low item difficulty values to ensure that content is appropriately covered, there were very few such cases on the eMPowerME. Item-level score point distributions are provided for constructed-response items in Appendix H; for each item, the percentage of students who received each score point is presented.

6.2 DIFFERENTIAL ITEM FUNCTIONING

Code of Fair Testing Practices in Education (Joint Committee on Testing Practices, 2004) explicitly states that subgroup differences in performance should be examined when sample sizes permit, and that actions should be taken to ensure that differences in performance are because of construct-relevant, rather than construct-irrelevant, factors. The *Standards for Educational and Psychological Testing* (AERA et al., 2014) includes similar guidelines. As part of the effort to identify such problems, an evaluation of the eMPowerME items was conducted in terms of DIF statistics.

For eMPowerME, the standardization DIF procedure (Dorans & Kulick, 1986) was employed to evaluate subgroup differences. The standardization DIF procedure is designed to identify items for which subgroups of interest perform differently, beyond the impact of differences in overall achievement. The DIF procedure calculates the difference in item performance for two groups of students (at a time) matched for

achievement on the total test. Specifically, average item performance is calculated for students at every total score. Then an overall average is calculated, weighting the total score distribution so that it is the same for the two groups. In order to calculate DIF statistics, a minimum of 200 students must be in each comparison group.

When differential performance between two groups occurs on an item (i.e., a DIF index in the “low” or “high” categories, explained in the following paragraph), it may or may not be indicative of item bias. Course-taking patterns or differences in school curricula can lead to DIF, but for construct-relevant reasons. On the other hand, if subgroup differences in performance could be traced to differential experience (such as geographical living conditions or access to technology), the inclusion of such items should be reconsidered.

Computed DIF indices have a theoretical range from -1.0 to 1.0 for selected-response items, and the index is adjusted to the same scale for constructed-response items. Dorans and Holland (1993) suggested that index values between -0.05 and 0.05 should be considered negligible. The preponderance of eMPowerME items fell within this range. Dorans and Holland further stated that (1) items with values between -0.10 and -0.05 and between 0.05 and 0.10 (i.e., “low” DIF) should be inspected to ensure that no possible effect is overlooked, and (2) items with values outside the -0.10 to 0.10 range (i.e., “high” DIF) are more unusual and should be examined very carefully.

For the 2018–19 eMPowerME tests, seven subgroup comparisons were evaluated for DIF:

- Male versus female
- No disability versus disability
- Non-economically disadvantaged versus economically disadvantaged
- Non-LEP versus LEP
- White versus Asian
- White versus Black
- White versus Hispanic

The tables in Appendix I present the numbers of items classified, overall and by group favored, as either “low” or “high” DIF.

6.3 DIMENSIONALITY ANALYSIS

Because tests are constructed with multiple content area subcategories and their associated knowledge and skills, the potential exists for a large number of dimensions being invoked beyond the common primary dimension. Generally, the subcategories are highly correlated with each other; therefore, the primary dimension they share typically explains an overwhelming majority of variance in test scores. In fact, the presence of just such a dominant primary dimension is the psychometric assumption that provides the

foundation for the unidimensional IRT models that are used for calibrating, linking, scaling, and equating the 2018–19 eMPowerME forms.

The purpose of dimensionality analysis is to investigate whether violation of the assumption of test unidimensionality is statistically detectable and, if so, (1) the degree to which unidimensionality is violated and (2) the nature of the multidimensionality. Findings from dimensionality analyses performed on the 2018–19 eMPowerME common items for mathematics and ELA, (which includes reading and writing) in grades 3–8 are reported below. (Note: only common items were analyzed since they are used for score reporting.)

The dimensionality analyses were conducted using the nonparametric IRT-based methods DIMTEST (Stout, 1987; Stout, Froelich, & Gao, 2001) and DETECT (Zhang & Stout, 1999). Both methods use as their basic statistical building block the estimated average conditional covariances for item pairs. A conditional covariance is the covariance between two items conditioned on expected total score for the rest of the test, and the average conditional covariance is obtained by averaging over all possible conditioning scores. When a test is strictly unidimensional, all conditional covariances are expected to take on values within random noise of zero, indicating statistically independent item responses for examinees with equal expected total test scores. Non-zero conditional covariances are essentially violations of the principle of local independence, and local dependence implies multidimensionality. Thus, nonrandom patterns of positive and negative conditional covariances are indicative of multidimensionality.

DIMTEST is a hypothesis-testing procedure for detecting violations of local independence. The data are first divided into a training sample and a cross-validation sample. Then an exploratory analysis of the conditional covariances is conducted on the training sample data to find the cluster of items that displays the greatest evidence of local dependence. The cross-validation sample is then used to test whether the conditional covariances of the selected cluster of items display local dependence, conditioning on total score on the nonclustered items. The DIMTEST statistic follows a standard normal distribution under the null hypothesis of unidimensionality.

DETECT is an effect-size measure of multidimensionality. As with DIMTEST, the data are first divided into a training sample and a cross-validation sample (these samples are drawn independently of those used with DIMTEST). The training sample is used to find a set of mutually exclusive and collectively exhaustive clusters of items that best fit a systematic pattern of positive conditional covariances for pairs of items from the same cluster, and negative conditional covariances for pairs composed of items from different clusters. Next, the clusters from the training sample are used with the cross-validation sample data to average the conditional covariances: within-cluster conditional covariances are summed; from this sum the between-cluster conditional covariances are subtracted, this difference is divided by the total number of item pairs, and this average is multiplied by 100 to yield an index of the average violation of local independence for an item pair. DETECT values less than 0.2 indicate very weak multidimensionality (or near unidimensionality);

values of 0.2 to 0.4, weak to moderate multidimensionality; values of 0.4 to 1.0, moderate to strong multidimensionality; and values greater than 1.0 very strong multidimensionality (Roussos & Ozbek, 2006).

DIMTEST and DETECT were applied to the 2018–19 eMPowerME assessments. The data for each grade and content area were split into a training sample and a cross-validation sample. Every grade/content area test had at least 12,800 student examinees, and thus every training sample and cross-validation sample had at least 6,400 students. DIMTEST was then applied to every grade/content area. DETECT was applied to each dataset for which the DIMTEST null hypothesis was rejected in order to estimate the effect size of the multidimensionality.

Because of the large sample sizes for the eMPowerME tests, DIMTEST would be expected to be sensitive to even quite small violations of unidimensionality. Thus, it was not surprising to find that the DIMTEST null hypothesis of unidimensionality was strongly rejected for every dataset ($p \leq 0.00005$). Because of the large sample sizes employed in the datasets, it was important to use DETECT to estimate the effect size of the violations of local independence found by DIMTEST. (See Table 8-11 for the multidimensional effect size estimates from DETECT for the eMPowerME tests.)

All 12 DETECT values indicated either weak or very weak multidimensionality. We also investigated how DETECT divided the tests into clusters to see if there were any discernible patterns with respect to item type or subcategory content. There was no strong evidence of separation of selected-response and constructed-response (CR) items. In the ELA tests, for each grade there was only a small amount of evidence suggesting slight separation of reading and writing in each grade.

Table 6-2. 2018–19 eMPowerME: Multidimensional Effect Sizes by Content Area and Grade

Content Area	Grade	Multidimensionality Effect Size		
		2016–17	2017–18	2018–19
ELA	3	0.17	0.12	0.17
	4	0.20	0.19	0.20
	5	0.16	0.16	0.17
	6	0.15	0.17	0.18
	7	0.15	0.16	0.18
	8	0.18	0.19	0.21
	Average	0.17	0.17	0.19
Mathematics	3	0.27	0.22	0.23
	4	0.20	0.22	0.23
	5	0.28	0.23	0.21
	6	0.12	0.18	0.20
	7	0.30	0.14	0.20
	8	0.17	0.15	0.13
	Average	0.22	0.19	0.20

In summary, the dimensionality analyses indicated that all the tests rejected the null hypothesis of unidimensionality, but the resulting violations of local independence were all weak in magnitude. The violations of local independence did not show strong evidence in ELA or mathematics of being related to the differences between selected-response and constructed-response items. For the ELA tests, there was minor evidence of reading and writing being separate dimensions, but these violations of local independence were very weak in magnitude and were detectable only because of the large sample sizes.

CHAPTER 7 ITEM RESPONSE THEORY SCALING AND EQUATING

This chapter describes the procedures used to calibrate and scale the eMPowerME tests. During these psychometric analyses, a number of quality-control procedures and checks on the processes were implemented. These procedures included evaluations of the calibration processes (e.g., checking the number of Newton cycles required for convergence for reasonableness, checking item parameters and their standard errors for reasonableness, examination of Test Characteristic Curves [TCCs] and Test Information Functions [TIFs] for reasonableness); evaluation of model fit; and evaluation of the scaling results (e.g., parallel processing by the Psychometrics and Research Department and Data and Reporting Services Department; comparing look-up tables).

Table 7-1 lists items that required intervention either during item calibration or as a result of the evaluations of the equating items. For each flagged item, the table shows the reason it was flagged and what action was taken. The number of items identified for evaluation was very typical across the grades. Descriptions of the evaluations and results are included in Section 7.2 Item Response Theory Results and Section 7.4 Equating Results.

Table 7-1. 2018–19 eMPowerME: Items That Required Intervention During IRT Calibration and Equating

<i>Content Area</i>	<i>Grade</i>	<i>Item</i>	<i>Reason</i>	<i>Action</i>
Mathematics	3	123978A	delta analysis	removed from equating
		125246A	b/b analysis	removed from equating
		124769A	delta analysis	removed from equating
		126341A	c-parameter	set c = 0
		126362A	c-parameter	set c = 0
		400786	c-parameter	set c = 0
		400795	c-parameter	set c = 0
		405640	c-parameter	set c = 0
	4	407497	delta analysis	removed from equating
		411727	c-parameter	set c = 0
		411832	c-parameter	set c = 0
		465876	c-parameter	set c = 0.2
		532523	c-parameter	set c = 0
		540258	c-parameter	set c = 0
		540326	c-parameter	set c = 0
	5	125951A	delta analysis	removed from equating
		126058A	c-parameter	set c = 0.1
		539177	b/b analysis	removed from equating
	6	415140	b/b analysis	removed from equating
		532604A	a-parameter	a set to initial
7	124350A	delta analysis	removed from equating	
	400327	b/b analysis	removed from equating	

continued

<i>Content Area</i>	<i>Grade</i>	<i>Item</i>	<i>Reason</i>	<i>Action</i>	
Mathematics	7	467844	b/b analysis	removed from equating	
		539442	a-parameter	a set to initial	
	8	409018	b/b analysis	removed from equating	
		413063	delta analysis	removed from equating	
		413229	c-parameter	set c = 0	
		559851	delta analysis	removed from equating	
	ELA	3	569376	b/b analysis	removed from equating
			420785	c-parameter	set c = 0
4		420820	c-parameter	set c = 0	
		543950	c-parameter	set c = 0	
		544002	delta analysis	removed from equating	
		544006	delta analysis	removed from equating	
		544014	c-parameter	set c = 0	
		544457	c-parameter	set c = 0	
		544460	c-parameter	set c = 0	
		552910	c-parameter	set c = 0	
		552916	c-parameter	set c = 0	
		552916	b/b analysis	removed from equating	
		552924	a-parameter	a set to initial	
		552924	c-parameter	set c = 0	
		552933	c-parameter	set c = 0	
		5	459823	c-parameter	set c = 0
552537	b/b analysis		removed from equating		
552544	delta analysis		removed from equating		
130184A	rescore analysis		removed from equating		
6	409362	b/b analysis	removed from equating		
	536935	c-parameter	set c = 0		
	546223	c-parameter	set c = 0		
	553114	c-parameter	set c = 0		
	553120	c-parameter	set c = 0		
7	537742	delta analysis	removed from equating		
	546948	c-parameter	set c = 0		
	546948	b/b analysis	removed from equating		
8	402111	c-parameter	set c = 0		
	420872	c-parameter	set c = 0		
	420905	c-parameter	set c = 0		
	420952	c-parameter	set c = 0		
	420970	c-parameter	set c = 0		

7.1 ITEM RESPONSE THEORY

All eMPowerME items were calibrated using item response theory (IRT). IRT uses mathematical models to define a relationship between an unobserved measure of student proficiency, usually referred to as theta (θ), and the probability (p) of getting a dichotomous item correct or of getting a particular score on a polytomous item. In IRT, all items are assumed to be independent measures of the same construct (i.e., of the same θ). Another way to think of θ is as a mathematical representation of the latent trait of interest. Several common IRT models are used to specify the relationship between θ and p (Hambleton & van der Linden, 1997; Hambleton & Swaminathan, 1985). The process of determining the specific mathematical relationship

between θ and p is called item calibration. After items are calibrated, they are defined by a set of parameters that specify a nonlinear, monotonically increasing relationship between θ and p . Once the item parameters are known, an estimate of θ for each student can be calculated. This estimate, $\hat{\theta}$, is considered to be an estimate of the student's true score or a general representation of student performance. It has characteristics that may be preferable to those of raw scores for equating purposes.

For the 2018–19 eMPowerME tests, the three-parameter logistic (3PL) model was used for dichotomous (selected-response) items and the Graded-Response Model (GRM) was used for polytomous (constructed-response) items. The 3PL model for dichotomous items can be defined as:

$$P_i(\theta_j) = c_i + (1 - c_i) \frac{\exp[Da_i(-b_i)]}{1 + \exp[Da_i(\theta_j - b_i)]},$$

where
 i indexes the items,
 j indexes students,
 α represents item discrimination,
 b represents item difficulty,
 c is the pseudo-guessing parameter, and
 D is a normalizing constant equal to 1.701..

In the GRM for polytomous items, an item is scored in a $k + 1$ graded category that can be viewed as a set of k dichotomies. At each point of dichotomization (i.e., at each threshold), a two-parameter model can be used. This implies that a polytomous item with a $k + 1$ category can be characterized by k Item Category Threshold Curves (ICTCs) of the two-parameter logistic form:

$$P_{ik}^*(k|\theta_j) = \frac{\exp[Da_i(\theta_j - b_i + d_{ik})]}{1 + \exp[Da_i(\theta_j - b_i + d_{ik})]},$$

where
 i indexes the items,
 j indexes students,
 k indexes threshold,
 α represents item discrimination,
 b represents item difficulty,
 d represents threshold, and
 D is a normalizing constant equal to 1.701.

After computing k ICTCs in the GRM, $k + 1$ Item Category Characteristic Curves (ICCCs) are derived by subtracting adjacent ICTCs:

$$P_{ik}(\theta_j) = P_{i(k-1)}^*(\theta_j) - P_{ik}^*(\theta_j),$$

where
 P_{ik} represents the probability that the score on item i falls in category k , and
 P_{ik}^* represents the probability that the score on item i falls above the threshold k

$$(P_{i0}^* = 1 \text{ and } P_{i(m+1)}^* = 0).$$

The GRM is also commonly expressed as:

$$P_{ik}(k|\theta_j) = \frac{\exp[Da_i(\theta_j - b_i + d_k)]}{1 + \exp[Da_i(\theta_j - b_i + d_k)]} - \frac{\exp[Da_i(\theta_j - b_i + d_{k+1})]}{1 + \exp[Da_i(\theta_j - b_i + d_{k+1})]}$$

where

i indexes the items,

j indexes students,

k indexes threshold,

α represents item discrimination,

b represents item difficulty,

d represents threshold, and

D is a normalizing constant equal to 1.701..

Finally, the Item Characteristic Curve (ICC) for polytomous items is computed as a weighted sum of ICCCs, where each ICCC is weighted by a score assigned to a corresponding category:

$$P_i(\theta_j) = \sum_k^{m+1} w_{ik} P_{ik}(\theta_j)$$

For more information about item calibration and determination, the reader is referred to Lord and Novick (1968), Hambleton and Swaminathan (1985), or Baker and Kim (2004).

7.1.1 Essay Prompt

In 2019, the essay was administered but did not contribute to the equating, scaling, and scoring of the ELA assessment.

7.2 ITEM RESPONSE THEORY RESULTS

The tables in Appendix J give the IRT item parameters of all common items on the 2018–19 eMPowerME tests by grade and content area. In addition, Appendix K shows graphs of the TCCs and TIFs, which are defined below.

TCCs display the expected (average) raw score associated with each θ_j value between -4.0 and 4.0 . Mathematically, the TCC is computed by summing the ICCs of all items that contribute to the raw score. Using the notation introduced in Section 7.1, the expected raw score at a given value of θ_j is

$$E(X|\theta_j) = \sum_{i=1}^n P_i(\theta_j),$$

where

i indexes the items (and n is the number of items contributing to the raw score),

j indexes students (here, θ_j runs from -4 to 4), and

$E(X|\theta_j)$ is the expected raw score for a student of ability θ_j .

The expected raw score monotonically increases with θ_j , consistent with the notion that students of high ability tend to earn higher raw scores than do students of low ability. Most TCCs are “S-shaped”—flatter at the ends of the distribution and steeper in the middle.

The TIF displays the amount of statistical information the test provides at each value of θ_j . Information functions depict test precision across the entire latent trait continuum. There is an inverse relationship between the information of a test and its standard error of measurement (SEM). For long tests, the SEM at a given θ_j is approximately equal to the inverse of the square root of the statistical information at θ_j (Hambleton, Swaminathan, & Rogers, 1991), as follows:

$$SEM(\theta_j) = \frac{1}{\sqrt{I(\theta_j)}}$$

Compared to the tails, TIFs are often higher near the middle of the θ distribution, where most students are located and where most items are sensitive by design.

Table 7-1 lists items that were flagged based on the quality-control checks implemented during the calibration process. (Note that some items were flagged as a result of the evaluations of the equating items; those results are described in Section 7.3.) In all cases, items flagged during this step were identified because of the pseudo-guessing parameter (c parameter) being poorly estimated. Difficulty in estimating the c parameter is not at all unusual and is well documented in psychometric literature (see, e.g., Nering & Ostini, 2010), especially when the item’s discrimination is below 0.50. In all cases, fixing the c parameter resulted in reasonable and stable item parameter estimates and improved model fit.

The number of Newton cycles required for convergence for each grade and content area during the IRT analysis can be found in Table 7-2. The number of cycles required fell within acceptable ranges.

Table 7-2. 2018–19 eMPowerME: Number of Newton Cycles Required for Convergence

<i>Content Area</i>	<i>Grade</i>	<i>Cycles</i>	
Mathematics	Grade 3	55	
	Grade 4	48	
	Grade 5	64	
	Grade 6	60	
	Grade 7	67	
	Grade 8	60	
	ELA	Grade 3	49
		Grade 4	90
Grade 5		61	
Grade 6		71	
Grade 7		79	
Grade 8		37	

7.3 EQUATING

The purpose of equating is to ensure that scores obtained from different forms of a test are equivalent to each other. Equating may be used if multiple test forms are administered in the same year, and also to equate one year's forms to those given in the previous year. Equating ensures that students are not given an unfair advantage or disadvantage because the test form they took is easier or harder than those taken by other students.

The 2018–19 administration of the eMPowerME tests used a raw score-to-theta equating procedure in which test forms were equated to the theta scale established on the reference form (i.e., the form used in the most recent standard setting). This is accomplished through the chained linking design, in which every new form is equated to the theta scale of the previous year's test form. It can therefore be assumed that the theta scale of every new test form is the same as the theta scale of the reference form, since this is where the chain originated.

The groups of students who took the equating items on the 2018–19 eMPowerME tests are not equivalent to the groups who took them in the reference years. IRT is particularly useful for equating scenarios that involve nonequivalent groups (Allen & Yen, 1979). Equating for eMPowerME uses the anchor-test-*nonequivalent-groups* design described by Petersen, Kolen, and Hoover (1989). In this equating design, no assumption is made about the equivalence of the examinee groups taking different test forms (that is, naturally occurring groups are assumed). Comparability is instead evaluated by utilizing a set of anchor items (also called equating items). However, the equating items are designed to mirror the common test in terms of item types and distribution of emphasis. Subsets of the equating items are distributed across forms.

Item parameter estimates for the 2018–19 eMPowerME tests were placed on the 2017–18 scale by using the method of Stocking and Lord (1983), which is based on the IRT principle of item parameter invariance. According to this principle, the equating items for both the 2017–18 and 2018–19 eMPowerME tests should have the same item parameters. After the item parameters for each 2018–19 test were estimated using PARSCALE (Muraki & Bock, 2003), the Stocking and Lord method was employed to find the linear transformation (slope and intercept) that adjusted the equating items' parameter estimates so that the 2018–19 eMPowerME tests' TCC for the equating items was as close as possible to that of the 2017–18 eMPowerME tests.

7.4 EQUATING RESULTS

Prior to calculating the Stocking and Lord transformation constants, a variety of evaluations of the equating items were conducted. Equating items that were flagged for evaluation as a result of these procedures are listed in the Table 7-1. These items were scrutinized, and a decision was made as to whether to

include the item as an equating item or to discard it. The procedures used to evaluate the equating items are described below.

Appendix L presents the results from the delta analysis and the rescore analysis. The delta procedure was used to evaluate adequacy of equating items; the discard status presented in the appendix indicates whether the item was flagged as potentially inappropriate for use in equating. With the rescore analysis, 200 random papers from the previous year were interspersed with this year’s papers to evaluate scorer consistency from one year to the next. All effect sizes were well below 0.50 in absolute value, the criterion value for excluding an item as an equating item.

Finally, α -plots and b -plots, which show the IRT parameters for 2018–19 equating items plotted against their previous values, are presented in Appendix M. Any items that appeared as outliers in the plots were evaluated in terms of suitability for use as equating items.

Once all evaluations of the equating items were complete, the Stocking and Lord method of equating was used to place the item parameters onto the previous year’s scale, as described above. The Stocking and Lord transformation constants are presented in Table 7-3.

Table 7-3. 2018–19 eMPowerME: Stocking and Lord Transformation Constants

<i>Content Area</i>	<i>Grade</i>	<i>α-slope</i>	<i>b-intercept</i>
Mathematics	3	1.01	-0.10
	4	0.95	0.03
	5	0.97	-0.02
	6	1.02	-0.19
	7	0.99	-0.04
	8	0.94	0.07
ELA	3	0.99	0.08
	4	0.94	0.14
	5	0.95	0.01
	6	0.96	0.21
	7	1.03	0.22
	8	0.98	0.24

7.5 ACHIEVEMENT STANDARDS

The eMPowerME standards to establish achievement-level cut scores in ELA and mathematics for grades 3–8 were set in August 2016. Details of the standard-setting procedures can be found in the *eMPowerME ELA/Literacy and Mathematics Assessment Standard Setting Report* (Measured Progress, 2016).

The cuts on the theta scale that were established via standard setting are presented in Table 7-4. Also shown in the table are the cutpoints on the reporting score scale (described below). These cutpoints will remain fixed throughout the assessment program unless standards are reset for any reason.

Table 7-4. 2018–19 eMPowerME ELA & Mathematics: Cutpoints on the Theta Metric and Reporting Scale by Content Area and Grade

Content Area	Grade	Theta			Scaled Score				
		Cut 1	Cut 2	Cut 3	Minimum	Cut 1	Cut 2	Cut 3	Maximum
Mathematics	3	-0.76	0.10	1.33	300	347	360	378	380
	4	-0.78	0.25	1.28	400	445	460	475	480
	5	-0.78	0.42	1.35	500	544	560	573	580
	6	-0.58	0.42	1.23	600	646	660	671	680
	7	-0.63	0.33	1.35	700	747	760	774	780
	8	-0.41	0.41	1.22	800	849	860	871	880
ELA	3	-0.79	0.07	0.85	300	347	360	371	380
	4	-0.75	-0.02	0.91	400	449	460	474	480
	5	-0.78	-0.03	1.05	500	549	560	576	580
	6	-1.00	0.10	1.12	600	644	660	675	680
	7	-0.91	0.09	1.18	700	745	760	776	780
	8	-1.03	0.06	1.27	800	844	860	878	880

7.5.1 ELA Cut Score Verification and Review

In 2018, Cognia and the Maine DOE undertook a process to review the ELA cut scores. The cut score review, a common practice in state assessment programs, was necessary because the essay prompt was added to the 2017-18 eMPowerME ELA spring assessment, and the eMPowerME ELA scale was established in 2016 without any essay prompts. That original scale included items from only the reading and writing and language components of eMPowerME. Adding the essay portion to the scale enhances the information eMPowerME provides about student achievement in ELA. It also raises the question of whether the existing ELA cut scores are appropriate for the essay-prompt-enhanced ELA scale. The goal of the cut score review was to recommend a set of cut scores that would enable valid interpretations of the essay-prompt-enhanced ELA scale, using the eMPowerME achievement level descriptors that were also enhanced to address the inclusion of the essay portion of the assessment.

On June 13 and 15, 2018, the eMPowerME Cut Score Review Panel worked with Cognia psychometric, content, scoring, and program management staff to review the existing eMPowerME ELA cut scores and determine whether adjustments were necessary and warranted. The panel comprised four ELA and writing experts from the Maine DOE. Two panel members were ELA specialists, a third was an early learning team coordinator, and a fourth was a K–3 literacy specialist.

The job of the panelists was to (1) follow a set of systematic procedures and discussion rules for reviewing the locations of the essay prompt scores (i.e., scores of 0, 1, 2, 3, and 4, as defined by the multi-trait essay scoring rubric) in relation to the achievement level cut scores, (2) make a group recommendation to the DOE regarding the current cut scores and any necessary adjustments, and (c) provide content-based and other rationales for the recommendation to retain or adjust the current cut scores.

Cognia psychometric experts, with assistance from content experts, trained the panelists on the cut score review process. In round 1, the panelists reviewed the essay prompt locations on the enhanced ELA

scale and discussed their initial, independent judgments about the cut scores. They developed consensus recommendations in round 2. Cognia staff developed all materials for the review process and facilitated the review and recommendations process.

The Cut Score Review panel recognized that, in most cases, specific essay threshold locations, especially thresholds 2 and 3, did not align with the achievement level descriptors (ALDs) and the corresponding writing standards. The panel attempted to adjust cut scores in grades 3–8 in order to align the essay threshold locations with ALDs, but this often resulted in too much change to the overall performance data.

Accordingly, the panel recommended retaining the current ELA cut scores and conducting future studies that examine the appropriateness of the assessment methodology, especially at grades 3 and 4, for the effects of writing digitally, effects of online presentation of paired passages, and quality of the prompts.

The panel also recommended annual monitoring of student performance on the essay. Based on results of that monitoring, the panel recommended a follow-up cut score review in the future, once writing instruction and student proficiency have matured. The purpose of a future cut score review would be to determine if cut scores should be adjusted to retain the interpretability of the ELA achievement level descriptors, or if a new standard setting is appropriate.

7.6 REPORTED SCALED SCORES

Because the θ scale used in IRT calibrations is not readily understood by most stakeholders, reporting scales were developed for eMPowerME. The reporting scales are simple linear transformations of the underlying θ scale. The reporting scales are developed such that they range from $x00$ through $x90$ (where x is grade level). In other words, grade 3 scaled scores ranged from 300 to 390, grade 4 from 400 through 490, and so forth through grade 8, where scores ranged from 800 through 890. The lowest scaled score in the At State Expectations range is fixed at $x60$ for each grade level. For example, to be classified in the At State Expectations achievement level or above, a minimum scaled score of 360 was required at grade 3, 460 at grade 4, and so forth.

By providing information that is more specific about the position of a student's results, scaled scores supplement achievement-level scores. School- and district-level scaled scores are calculated by computing the average of student-level scaled scores. Students' raw scores (i.e., total number of points) on the 2018–19 eMPowerME tests were translated to scaled scores using a data analysis process called *scaling*. Scaling simply converts from one scale to another scale. In the same way that a given temperature can be expressed on either Fahrenheit or Celsius scales, or the same distance can be expressed in either miles or kilometers, student scores on the 2018–19 eMPowerME tests can be expressed in raw or scaled scores.

It is important to note that converting from raw scores to scaled scores does not change students' achievement-level classifications. Given the relative simplicity of raw scores, it is fair to question why scaled

scores for eMPowerME are reported instead of raw scores. Scaled scores make the reporting of results consistent. To illustrate, standard setting typically results in different raw cut scores across grades and content areas. The raw cut score between Below State Expectations and At State Expectations could be, say, 35 in mathematics and 33 in ELA, yet both raw scores would be transformed to scaled scores of $x60$. It is this uniformity across scaled scores that facilitates the understanding of student performance. The psychometric advantage of scaled scores over raw scores comes from their being linear transformations of θ . Since the θ scale is used for equating, scaled scores are comparable from one year to the next. Raw scores are not.

The scaled scores are obtained by a simple translation of ability estimates ($\hat{\theta}$) using the linear relationship between threshold values on the θ metric and their equivalent values on the scaled score metric. Students' ability estimates are based on their raw scores and are found by mapping through the TCC. Scaled scores are calculated using the linear equation:

$$SS = m\hat{\theta} + b,$$

where
 m is the slope, and
 b is the intercept.

A separate linear transformation is used for each grade and content area combination. For eMPowerME, the transformation function is determined by fixing the Below State Expectations / At State Expectations cut score and the bottom of the scale—that is, the $x60$ and the $x00$ values (e.g., 460 and 400 for grade 4). The $x00$ location on the θ scale is beyond (i.e., below) the scaling of all items. To determine this location, a chance score (approximately equal to a student's expected performance by guessing) is mapped to a value of -4.0 on the θ scale. A raw score of 0 is also assigned a scaled score of $x00$. The maximum possible raw score is assigned a scaled score of $x90$ (e.g., 490 in the case of grade 4). Because only two points within the θ scaled score space are fixed, the scaled score cutpoints between Well Below State Expectations and Below State Expectations and between At State Expectations and Above State Expectations can vary across the grade and content area combinations.

Table 7-5 shows the slope and intercept terms used to calculate the scaled scores for each content area and grade. Note that the values in Table 7-5 will not change unless the standards are reset.

Table 7-5. 2018–19 eMPowerME: Scaled Score Slope and Intercept by Content Area and Grade

<i>Content Area</i>	<i>Grade</i>	<i>Slope</i>	<i>Intercept</i>
Mathematics	3	14.623	358.494
	4	14.124	456.497
	5	13.587	554.348
	6	13.587	654.348
	7	13.850	755.402
	8	13.618	854.471
ELA	3	14.738	358.954
	4	15.056	460.226
	5	15.094	560.377
	6	14.634	658.537
	7	14.688	758.752
	8	14.789	859.157

Appendix N contains raw score to scaled score look-up tables for the 2018–19 eMPowerME tests. These are the actual tables used to determine student scaled scores, error bands, and achievement levels.

Appendix O contains scaled score distribution graphs for each grade and content area. These distributions were calculated using the sparse data matrix files that were used in the IRT calibrations.

CHAPTER 8 RELIABILITY

Although an individual item’s performance is an important focus for evaluation, a complete evaluation of an assessment must also address the way items function together and complement one another. Tests that function well provide a dependable assessment of the student’s level of ability. Unfortunately, no test can do this perfectly. A variety of factors can contribute to a given student’s score being either higher or lower than his or her true ability. For example, a student may misread an item, or mistakenly fill in the wrong bubble when he or she knew the answer. Collectively, extraneous factors that affect a student’s score are referred to as “measurement error.” Any assessment includes some amount of measurement error; that is, no measurement is perfect. This is true of all academic assessments—some students will receive scores that underestimate their true ability, and other students will receive scores that overestimate their true ability. When tests have a high amount of measurement error, student scores are very unstable. Students with high ability may get low scores, or vice versa. Consequently, one cannot reliably measure a student’s true level of ability with such a test. Assessments that have less measurement error (i.e., errors made are small on average and student scores on such a test will consistently represent their ability) are described as reliable.

There are a number of ways to estimate an assessment’s reliability. One possible approach is to give the same test to the same students at two different points in time. If students receive the same scores on each test, the extraneous factors affecting performance are small and the test is reliable. (This is referred to as “test-retest reliability.”) A potential problem with this approach is that students may remember items from the first administration or may have gained (or lost) knowledge or skills in the interim between the two administrations. A solution to the remembering items problem is to give a different but parallel test at the second administration. If student scores on each test correlate highly, the test is considered reliable. (This is known as “alternate forms reliability,” because an alternate form of the test is used in each administration.) This approach, however, does not address the problem that students may have gained (or lost) knowledge or skills in the interim between the two administrations. In addition, the practical challenges of developing and administering parallel forms generally preclude the use of parallel forms reliability indices. One way to address the latter two problems is to split the test in half and then correlate students’ scores on the two half-tests; this in effect treats each half-test as a complete test. By doing this, the problems associated with an intervening time interval and with creating and administering two parallel forms of the test are alleviated. This is known as a “split-half estimate of reliability.” If the two half-test scores correlate highly, items on the two half-tests must be measuring very similar knowledge or skills. This is evidence that the items complement one another and function well as a group. This also suggests that measurement error will be minimal.

The split-half method requires psychometricians to select items that contribute to each half-test score. This decision may have an impact on the resulting correlation, since each different possible split of the test

into halves will result in a different correlation. Another problem with the split-half method of calculating reliability is that it underestimates reliability, because test length is cut in half. All else being equal, a shorter test is less reliable than a longer test. Cronbach (1951) provided a statistic, α (alpha), that eliminates the problem of the split-half method by comparing individual item variances to total test variance. Cronbach's α was used to assess the reliability of the 2018–19 eMPowerME tests:

$$\alpha \equiv \frac{n}{n-1} \left[1 - \frac{\sum_{i=1}^n \sigma_{(Y_i)}^2}{\sigma_x^2} \right],$$

where
 i indexes the item,
 n is the total number of items,
 $\sigma_{(Y_i)}^2$ represents individual item variance, and
 σ_x^2 represents the total test variance.

8.1 RELIABILITY AND STANDARD ERRORS OF MEASUREMENT

Table 8-1 presents descriptive statistics, Cronbach's α coefficient, and the raw score standard errors of measurement (SEMs) for each grade and content area. (Statistics are based on common items only.) The reliability of a test can also be exhibited in terms of the SEMs. SEMs can facilitate the interpretation of individual scores. With any given observed raw score point, the reasonable limits of the true score for the examinees can be calculated by using the SEMs. For more detailed information about the use of SEMs, the reader is referred to Gulliksen (1950) or Anastasi and Urbina (1997). SEM was also used to assess the reliability of the 2018–19 eMPowerME tests:

$$SEM \equiv \sigma_x \sqrt{1 - \alpha},$$

where
 σ_x represents the total test standard deviation, and
 α represents the reliability coefficient, Cronbach's alpha.

**Table 8-1. 2018–19 eMPowerME: Raw Score Descriptive Statistics
Cronbach’s Alpha, and SEMs by Grade**

Content Area	Grade	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
Mathematics	3	24,898	51	22.40	9.77	0.89	3.22
	4	25,962	50	20.99	9.47	0.88	3.29
	5	26,146	51	21.25	9.41	0.88	3.24
	6	26,640	54	21.26	9.26	0.87	3.28
	7	26,126	54	21.56	10.28	0.89	3.36
	8	26,482	55	20.69	8.33	0.86	3.11
ELA	3	24,788	61	31.89	12.30	0.91	3.62
	4	25,866	61	32.56	11.87	0.90	3.70
	5	26,076	61	31.97	11.39	0.89	3.71
	6	26,590	63	35.11	11.85	0.89	3.85
	7	26,086	63	34.73	12.61	0.91	3.87
	8	26,456	63	34.92	12.64	0.90	3.97

Because different grades and content areas have different test designs (e.g., the number of items varies by test), it is inappropriate to make inferences about the quality of one test by comparing its reliability to that of another test from a different grade and/or content area.

8.2 SUBGROUP RELIABILITY

The reliability coefficients discussed in the previous section were based on the overall population of students who took the 2018–19 eMPowerME test. Appendix Q presents reliabilities for various subgroups of interest. Subgroup Cronbach’s α ’s were calculated using the formula defined earlier in this chapter only on the members of the subgroup in question in the computations; values are calculated only for subgroups with 10 or more students.

For several reasons, the results of this section should be interpreted with caution. First, inherent differences between grades and content areas preclude making valid inferences about the quality of a test based on statistical comparisons with other tests. Second, reliabilities are dependent not only on the measurement properties of a test, but also on the statistical distribution of the studied subgroup. For example, it can be readily seen in Appendix Q that subgroup sample sizes may vary considerably, which results in natural variation in reliability coefficients. Or α , which is a type of correlation coefficient, may be artificially depressed for subgroups with little variability (Draper & Smith, 1998). Third, there is no industry standard to interpret the strength of a reliability coefficient, and this is particularly true when the population of interest is a single subgroup.

8.3 SUBCATEGORY RELIABILITY

Of even more interest are reliabilities for the reporting subcategories within eMPowerME content areas, as described in Chapter 3. Cronbach’s α coefficients for subcategories were calculated via the same formula defined previously using just the items of a given subcategory in the computations. Results are presented in Appendix Q. Because results are based on a subset of items rather than the full test, once again, as expected, computed subcategory reliabilities were lower (sometimes substantially so) than overall test reliabilities, and interpretations should take this into account. The subcategory reliabilities were lower than those based on the total test, approximately to the degree one would expect based on classical test theory. Qualitative differences between grades and content areas once again preclude valid inferences about the quality of the full test based on statistical comparisons among subcategories.

8.4 INTERRATER CONSISTENCY

Chapter 5 of this report describes in detail the processes that were implemented to monitor the quality of the hand-scoring of student responses for constructed-response items. One of these processes was double-blind scoring: 20 percent of student short constructed-responses and 25 percent of student extended-responses were randomly selected and scored independently by two different scorers. Results of the double-blind scoring were used during the scoring process to identify scorers who required retraining or other intervention and are presented here as evidence of the reliability of the eMPowerME tests. A summary of the interrater consistency results is presented in Table 8-2. Results in the table are collapsed across the hand-scored items by grade and content area. The table shows the number of score categories, number of included scores, percent exact agreement, percent adjacent agreement, correlation between the first two sets of scores, and percentage of responses that required a third score. The same information is provided at the item level in Appendix Q.

Table 8-2. 2018–19 eMPowerME: Summary of Interrater Consistency Statistics Collapsed Across Items by Grade

Content Area	Grade	Number of			Percent		Correlation	Percent of Third Scores
		Items	Score Categories	Included Scores	Exact	Adjacent		
Mathematics	3	2	2	4,919	88.84	11.16	0.73	0.14
		4	3	9,950	89.61	10.01	0.89	1.91
		2	5	5,031	80.08	17.11	0.90	3.64
	4	2	2	5,197	91.42	8.58	0.80	0.31
		4	3	10,408	90.21	9.51	0.90	0.70
		2	5	5,211	88.98	10.17	0.96	1.09
	5	2	2	5,159	94.34	5.66	0.77	0.04
		4	3	10,340	92.26	7.04	0.91	1.15
		2	5	5,181	89.35	9.71	0.96	2.26
	6	2	2	5,198	94.73	5.27	0.71	0.13
		4	3	10,475	92.39	7.25	0.90	1.48
		2	5	5,277	81.85	15.86	0.91	2.80

continued

Content Area	Grade	Number of			Percent		Correlation	Percent of Third Scores
		Items	Score Categories	Included Scores	Exact	Adjacent		
Mathematics	7	2	2	5,084	91.88	8.12	0.82	0.53
		4	3	10,325	90.65	8.79	0.92	1.31
		2	5	5,241	81.34	17.15	0.92	2.06
	8	2	2	5,188	92.68	7.32	0.72	0.15
		4	3	10,259	91.51	8.39	0.89	0.51
		2	5	5,071	85.88	13.27	0.89	0.87
ELA	3	2	3	4,609	77.11	22.74	0.67	0.15
		2	4	4,551	73.79	25.05	0.70	1.10
		4	5	7,480	63.13	35.86	0.50	12.94
	4	2	3	4,922	75.92	23.30	0.73	0.77
		2	4	4,928	71.31	27.46	0.68	1.18
		4	5	5,816	56.48	42.45	0.55	11.97
	5	2	3	4,958	74.87	24.02	0.66	1.11
		2	4	5,003	66.02	32.14	0.62	1.86
		4	5	7,680	62.67	36.21	0.64	11.77
	6	2	3	5,158	78.29	21.27	0.71	0.45
		6	5	14,545	63.36	35.11	0.74	10.01
		2	3	4,918	74.50	25.03	0.66	0.47
7	6	5	18,479	61.05	36.66	0.74	9.88	
	2	3	4,899	70.14	27.99	0.66	1.88	
8	6	5	14,548	57.62	39.13	0.70	14.55	

8.5 RELIABILITY OF ACHIEVEMENT-LEVEL CATEGORIZATION

While related to reliability, the accuracy and consistency of classifying students into achievement categories are even more important statistics in a standards-based reporting framework (Livingston & Lewis, 1995). After the achievement levels were specified and students were classified into those levels, empirical analyses were conducted to determine the statistical accuracy and consistency of the classifications. For eMPowerME, students are classified into one of four achievement levels: Well Below State Expectations, Below State Expectations, At State Expectations, or Above State Expectations. (See Appendix R for the achievement level score distributions.) This section of the report explains the methodologies used to assess classification decisions, and provides results of the assessments.

Accuracy refers to the extent to which decisions based on test scores match decisions that would have been made if the scores did not contain any measurement error. Accuracy must be estimated, because errorless test scores do not exist. Consistency measures the extent to which classification decisions based on test scores match the decisions based on scores from a second, parallel form of the same test. Consistency can be evaluated directly from actual responses to test items if two complete and parallel forms of the test are given to the same group of students. In operational test programs, however, such a design is usually impractical. Instead, techniques have been developed to estimate both the accuracy and consistency of classification decisions based on a single administration of a test. The Livingston and Lewis (1995) technique

was used for the 2016-17 eMPowerME tests because it is easily adaptable to all types of testing formats, including mixed-format tests.

The accuracy and consistency estimates reported in Appendix S use “true scores” as the term is defined in classical test theory. A true score is the score that would be obtained if a test had no measurement error. Of course, true scores cannot be observed and so must be estimated. In the Livingston and Lewis (1995) method, estimated true scores are used to categorize students into their “true” classifications.

For the 2018–19 eMPowerME tests, after various technical adjustments (described in Livingston & Lewis, 1995), a four-by-four contingency table of accuracy was created for each grade and content area, where cell $[i, j]$ represented the estimated proportion of students whose true score fell into classification i (where $i = 1$ to 4) and observed score into classification j (where $j = 1$ to 4). The sum of the diagonal entries (i.e., the proportion of students whose true and observed classifications matched) signified overall accuracy.

To calculate consistency, true scores were used to estimate the joint distribution of classifications on two independent, parallel test forms. Following statistical adjustments per Livingston and Lewis (1995), a new four-by-four contingency table was created for each grade and content area to show the proportion of students who would be categorized into each combination of classifications according to the two (hypothetical) parallel test forms. Cell $[i, j]$ of this table represented the estimated proportion of students whose observed score on the first form would fall into classification i (where $i = 1$ to 4) and whose observed score on the second form would fall into classification j (where $j = 1$ to 4). The sum of the diagonal entries (i.e., the proportion of students categorized by the two forms into exactly the same classification) signified overall consistency.

Another way to measure consistency is to use Cohen’s (1960) coefficient κ (kappa), which assesses the proportion of consistent classifications after removing the proportion of consistent classifications that would be expected by chance. It is calculated using the following formula:

$$\kappa = \frac{(\text{Observed agreement}) - (\text{Chance agreement})}{1 - (\text{Chance agreement})} = \frac{\sum_i C_{ii} - \sum_i C_i \cdot C_i}{1 - \sum_i C_i \cdot C_i},$$

where

C_i is the proportion of students whose observed achievement level would be Level i (where $i = 1-4$) on the first hypothetical parallel form of the test;

C_i is the proportion of students whose observed achievement level would be Level i (where $i = 1-4$) on the second hypothetical parallel form of the test; and

C_{ii} is the proportion of students whose observed achievement level would be Level i (where $i = 1-4$) on both hypothetical parallel forms of the test.

Because κ is corrected for chance, its values are lower than are other consistency estimates.

8.5.1 Accuracy and Consistency

The accuracy and consistency analyses described above are provided in Table S-1 of Appendix S. The table includes overall accuracy and consistency indices, including kappa. Accuracy and consistency values conditional on achievement level are also given. For these calculations, the denominator is the proportion of students associated with a given achievement level. For example, if the conditional accuracy value is 0.85 for any achievement level, this figure indicates that among the students whose true scores placed them in this classification, 85 percent would be expected to be in this classification when categorized according to their observed scores. Similarly, a consistency value of 0.80 indicates that 80 percent of students with observed scores in any achievement level would be expected to score in this classification again if a second, parallel test form were used.

For some testing situations, the greatest concern may be decisions around level thresholds. For example, in testing done for Elementary and Secondary Education Act (ESEA) accountability purposes, the primary concern is distinguishing between students who are proficient and those who are not yet proficient. In this case, the accuracy of the Below State Expectations–At State Expectations threshold is of greatest interest. For the 2018–19 eMPowerME tests, Table S-2 in Appendix S provides accuracy and consistency estimates at each cutpoint as well as false positive and false negative decision rates. (A false positive is the proportion of students whose observed scores were above the cutpoint and whose true scores were below the cutpoint. A false negative is the proportion of students whose observed scores were below the cutpoint and whose true scores were above the cutpoint.)

Note that, as with other methods of evaluating reliability, accuracy, and consistency, statistics calculated based on small groups can be expected to be lower than those calculated based on larger groups. For this reason, the values presented in Appendix S should be interpreted with caution. In addition, it is important to remember that it is inappropriate to compare accuracy and consistency statistics between grades and content areas.

CHAPTER 9 VALIDITY

Because interpretations of test scores, and not a test itself, are evaluated for validity, the purpose of the *2018–19 eMPowerME Technical Report* is to describe several technical aspects of the eMPowerME tests in support of score interpretations. Each chapter is an important component in the investigation of score validation: test development and design; test administration; scoring, scaling, and equating; item analyses; reliability; and score reporting.

The *Standards for Educational and Psychological Testing* (AERA et al., 2014) provides a framework for describing sources of evidence that should be considered when constructing a validity argument. The evidence related to test content, response processes, internal structure, relationship to other variables, and consequences of testing speaks to different aspects of validity, but those aspects are not distinct *types* of validity. Instead, each aspect of validity contributes to a body of evidence about the comprehensive validity of score interpretations.

Evidence on test content validity is meant to determine how well the assessment tasks represent the curriculum and standards for each grade level and content area. Content validation is informed by the item development process, including how the test blueprints and test items align to the curriculum and standards. (See Appendix B for the comprehensive set of test blueprints.) Viewed through the lens provided by the standards, evidence based on test content was extensively described in Chapters 3 and 4. Validity evidence based on test content includes the following components:

- Item alignment with Maine’s academic content standards;
- item bias, sensitivity, and content appropriateness review processes;
- adherence to the test blueprint;
- use of multiple item types;
- use of standardized administration procedures with accommodated options for participation; and
- appropriate test administration training.

As discussed earlier, all eMPowerME questions were reviewed for alignment to Maine’s specific academic content standards by educators from Maine who participated in the Item Review Committees. The items also underwent several rounds of review for content fidelity and appropriateness. Items are presented to students in multiple formats (constructed-response, short-answer, multiple-choice, and evidence-based selected-response). Finally, tests are administered according to state-mandated standardized procedures, with allowable accommodations, and all test coordinators and administrators are required to familiarize themselves with and adhere to all the procedures outlined in the *School Test Coordinator Manual* and the *Test*

Administration Manual. These documents may be accessed on the eMPowerME Maine Help and Support Website at: <https://maine.onlinehelp.cognia.org/testing-materials/>

The scoring information in Chapter 5 describes the steps taken to train and monitor hand-scorers, as well as quality-control procedures related to scanning and machine scoring.

Evidence based on internal structure is presented in great detail in the discussions of item analyses, scaling and equating, and reliability in Chapters 6 through 8. Technical characteristics of the internal structure of the assessments are presented in terms of classical item statistics (e.g., item difficulty, item-test correlation), differential item functioning (DIF) analyses, dimensionality analyses, reliability, standard error of measurement (SEM), and item response theory (IRT) parameters and procedures. Each test is equated to the same grade and content area test from the prior year in order to preserve the meaning of scores over time. In general, item difficulty and discrimination indices were in acceptable and expected ranges. Very few items were answered correctly at near-chance or near-perfect rates. Similarly, the positive discrimination indices indicate that most items were assessing consistent constructs, and students who performed well on individual items tended to perform well overall.

Evidence based on the results of testing is addressed in the scaled score information in Chapter 7. Scaled scores offer the advantage of simplifying the reporting of results across content areas, grade levels, and subsequent years. Achievement levels provide users with reference points for mastery at each grade and content area, which is another useful and simple way to interpret scores. Several different standard reports are provided to stakeholders. Additional evidence of the results of testing could be supplemented with broader investigation of the effect of testing on student learning.

To further support the validation of the assessment program, additional studies might be considered to provide evidence regarding the relationship of eMPowerME results to other variables, including the extent to which scores from eMPowerME converge with or diverge from other measures of similar constructs. Relationships among measures of the same or similar constructs can sharpen the meaning of scores and contribute to appropriate interpretations by refining the definition of the construct.

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APPENDICES

APPENDIX A—CONTENT STANDARDS

Table A-1. 2018–19 eMPowerME: Reading Standards- Grade 3

Grade 3			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
		RL.3.2	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text.
		RL.3.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.
	Craft and Structure	RL.3.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language.
		RL.3.5	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections.
		RL.3.6	Distinguish their own point of view from that of the narrator or those of the characters.
	Integration of Knowledge and Ideas	RL.3.7	Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).
		RL.3.9	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series).
	RI	Key Ideas and Details	RI.3.1
RI.3.2			Determine the main idea of a text; recount the key details and explain how they support the main idea.
RI.3.3			Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
RI	Craft and Structure	RI.3.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.

continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text
		RI.3.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
		RI.3.6	Distinguish their own point of view from that of the author of a text.
	Integration of Knowledge and Ideas	RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
		RI.3.8	Describe the logical connection between particular sentences and paragraphs in a text(e.g., comparison, cause/effect, first/second/third in a sequence).
		RI.3.9	Compare and contrast the most important points and key details presented in two texts on the same topic.

Table A-2. 2018–19 eMPowerME: Reading Standards- Grade 4

Grade 4			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
		RL.4.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text.
		RL.4.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character’s thoughts, words, or actions).
	Craft and Structure	RL.4.4	Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean).
		RL.4.5	Explain major differences between poems, drama, and prose, and refer to the structural elements of poems (e.g., verse, rhythm, meter) and drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions) when writing or speaking about a text.
		RL.4.6	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations.
	Integration of Knowledge and Ideas	RL.4.7	Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.
		RL.4.9	Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures.
	RI	Key Ideas and Details	RI.4.1
RI.4.2			Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.3			Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
RI	Craft and Structure	RI.4.4	Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

continued

Grade 4

Domain	Anchor Standard	Standard	Standard Text
		RI.4.5	Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
		RI.4.6	Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
	Integration of Knowledge and Ideas	RI.4.7	Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
		RI.4.8	Explain how an author uses reasons and evidence to support particular points in a text.
		RI.4.9	Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

Table A-3. 2018–19 eMPowerME: Reading Standards- Grade 5

Grade 5			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
		RL.5.2	Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.
		RL.5.3	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).
	Craft and Structure	RL.5.4	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes.
		RL.5.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.
		RL.5.6	Describe how a narrator’s or speaker’s point of view influences how events are described.
	Integration of Knowledge and Ideas	RL.5.7	Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).
		RL.5.9	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics.
	RI	Key Ideas and Details	RI.5.1
RI.5.2			Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
RI.5.3			Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
RI	Craft and Structure	RI.5.4	Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text
		RI.5.5	Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
		RI.5.6	Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
	Integration of Knowledge and Ideas	RI.5.7	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
		RI.5.8	Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s).
		RI.5.9	Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably.

Table A-4. 2018–19 eMPowerME: Reading Standards- Grade 6

Grade 6			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.6.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
		RL.6.2	Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
		RL.6.3	Describe how a particular story’s or drama’s plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution.
	Craft and Structure	RL.6.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone.
		RL.6.5	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot.
		RL.6.6	Explain how an author develops the point of view of the narrator or speaker in a text.
	Integration of Knowledge and Ideas	RL.6.7	Compare and contrast the experience of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what they “see” and “hear” when reading the text to what they perceive when they listen or watch.
		RL.6.9	Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics.
	RI	Key Ideas and Details	RI.6.1
RI.6.2			Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
RI.6.3			Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).
RI	Craft and Structure	RI.6.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.

continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text
		RI.6.5	Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.
		RI.6.6	Determine an author’s point of view or purpose in a text and explain how it is conveyed in the text.
	Integration of Knowledge and Ideas	RI.6.7	Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.
		RI.6.8	Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.
		RI.6.9	Compare and contrast one author’s presentation of events with that of another (e.g., a memoir written by and a biography on the same person).

Table A-5. 2018–19 eMPowerME: Reading Standards- Grade 7

Grade 7			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.7.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
		RL.7.2	Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.
		RL.7.3	Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot).
	Craft and Structure	RL.7.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama.
		RL.7.5	Analyze how a drama’s or poem’s form or structure (e.g., soliloquy, sonnet) contributes to its meaning.
		RL.7.6	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.
	Integration of Knowledge and Ideas	RL.7.7	Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).
		RL.7.9	Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history.
	RI	Key Ideas and Details	RI.7.1
RI.7.2			Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.
RI.7.3			Analyze the interactions between individuals, events, and ideas in a text (e.g., how ideas influence individuals or events, or how individuals influence ideas or events).
RI	Craft and Structure	RI.7.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of a specific word choice on meaning and tone.

continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text
		RI.7.5	Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to the development of the ideas.
		RI.7.6	Determine an author’s point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others.
	Integration of Knowledge and Ideas	RI.7.7	Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium’s portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).
		RI.7.8	Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims.
		RI.7.9	Analyze how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.

Table A-6. 2018–19 eMPowerME: Reading Standards- Grade 8

Grade 8			
Domain	Anchor Standard	Standard	Standard Text
RL	Key Ideas and Details	RL.8.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
		RL.8.2	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.
		RL.8.3	Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.
	Craft and Structure	RL.8.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.
		RL.8.5	Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.
		RL.8.6	Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.
	Integration of Knowledge and Ideas	RL.8.7	Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.
		RL.8.9	Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.
	RI	Key Ideas and Details	RI.8.1
RI.8.2			Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; provide an objective summary of the text.
RI.8.3			Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).
RI	Craft and Structure	RI.8.4	Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

continued

Grade 8

Domain	Anchor Standard	Standard	Standard Text
		RI.8.5	Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.
		RI.8.6	Determine an author’s point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.
	Integration of Knowledge and Ideas	RI.8.7	Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.
		RI.8.8	Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.
		RI.8.9	Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.

Table A-7. 2018–19 eMPowerME: Writing Standards- Grade 3

Grade 3				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.3.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.	<p>a. Introduce the topic or text they are writing about, state an opinion, and create an organizational structure that lists reasons.</p> <p>b. Provide reasons that support the opinion.</p> <p>c. Use linking words and phrases (e.g., because, therefore, since, for example) to connect opinion and reasons.</p> <p>d. Provide a concluding statement or section.</p>
		WR.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	<p>a. Introduce a topic and group related information together; include illustrations when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, and details.</p> <p>c. Use linking words and phrases (e.g., also, another, and, more, but) to connect ideas within categories of information.</p> <p>d. Provide a concluding statement or section.</p>

continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.3.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.	<p>a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally.</p> <p>b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations.</p> <p>c. Use temporal words and phrases to signal event order.</p> <p>d. Provide a sense of closure.</p>
	Production and Distribution of Writing	WR.3.4	With guidance and support from adults, produce writing in which the development and organization are appropriate to task and purpose. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	
		WR.3.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 3 on page 29.)	
		WR.3.6	With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.	

continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Research to Build and Present Knowledge	WR.3.7	Conduct short research projects that build knowledge about a topic.	
		WR.3.8	Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.	
		WR.3.9	(Begins in grade 4)	
	Range of Writing	WR.3.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.3.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.</p> <p>b. Form and use regular and irregular plural nouns.</p> <p>c. Use abstract nouns (e.g., childhood).</p> <p>d. Form and use regular and irregular verbs.</p> <p>e. Form and use the simple (e.g., I walked; I walk; I will walk) verb tenses.</p> <p>f. Ensure subject-verb and pronoun-antecedent agreement.*</p> <p>g. Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.</p> <p>h. Use coordinating and subordinating conjunctions.</p> <p>i. Produce simple, compound, and complex sentences.</p>
		LG.3.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Capitalize appropriate words in titles.</p> <p>b. Use commas in addresses.</p> <p>c. Use commas and quotation marks in dialogue.</p> <p>d. Form and use possessives.</p> <p>e. Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., sitting, smiled, cries, happiness).</p>

continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.3.2		<p>f. Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.</p> <p>g. Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.</p>
	Knowledge of Language	LG.3.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	<p>a. Choose words and phrases for effect.*</p> <p>b. Recognize and observe differences between the conventions of spoken and written standard English.</p>
	Vocabulary Acquisition and Use	LG.3.4	Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.	<p>a. Use sentence-level context as a clue to the meaning of a word or phrase.</p> <p>b. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat).</p> <p>c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion).</p>

continued

Grade 3

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.3.4		d. Use glossaries or beginning dictionaries, both print and digital, to determine or clarify the precise meaning of key words and phrases.
		LG.3.5	Demonstrate understanding of word relationships and nuances in word meanings.	Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps). b. Identify real-life connections between words and their use (e.g., describe people who are friendly or helpful). c. Distinguish shades of meaning among related words that describe states of mind or degrees of certainty (e.g., knew, believed, suspected, heard, wondered).
		LG.3.6	Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).	

Table A-8. 2018–19 eMPowerME: Writing Standards- Grade 4

Grade 4				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.4.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.	<p>a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.</p> <p>b. Provide reasons that are supported by facts and details.</p> <p>c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition).</p> <p>d. Provide a concluding statement or section related to the opinion presented.</p>
		WR.4.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	<p>a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p>

continued

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.4.2		<p>b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Provide a concluding statement or section related to the information or explanation presented.</p> <p style="text-align: right;">continued</p>

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.4.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.	<p>a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.</p> <p>b. Use dialogue and description to develop experiences and events or show the responses of characters to situations.</p> <p>c. Use a variety of transitional words and phrases to manage the sequence of events.</p> <p>d. Use concrete words and phrases and sensory details to convey experiences and events precisely.</p> <p>e. Provide a conclusion that follows from the narrated experiences or events.</p>
	Production and Distribution of Writing	WR.4.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	continued

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Production and Distribution of Writing	WR.4.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 3 on page 29.)	
		WR.4.6	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.	
	Research to Build and Present Knowledge	WR.4.7	Conduct short research projects that build knowledge through investigation of different aspects of a topic.	
		WR.4.8	Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.	
		WR.4.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	a. Apply grade 4 Reading standards to literature (e.g., “Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text [e.g., a character’s thoughts, words, or actions].”).

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Research to Build and Present Knowledge	WR.4.9		b. Apply grade 4 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text”).
	Range of Writing	WR.4.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
LG	Conventions of Standard English	LG.4.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Use relative pronouns (who, whose, whom, which, that) and relative adverbs (where, when, why).</p> <p>b. Form and use the progressive (e.g., I was walking; I am walking; I will be walking) verb tenses.</p> <p>c. Use modal auxiliaries (e.g., can, may, must) to convey various conditions.</p> <p style="text-align: right;">continued</p>

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.4.1		<p>d. Order adjectives within sentences according to conventional patterns (e.g., a small red bag rather than a red small bag).</p> <p>e. Form and use prepositional phrases.</p> <p>f. Produce complete sentences, recognizing and correcting inappropriate fragments and run-ons.*</p> <p>g. Correctly use frequently confused words (e.g., to, too, two; there, their).*</p>
		LG.4.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Use correct capitalization.</p> <p>b. Use commas and quotation marks to mark direct speech and quotations from a text.</p> <p>c. Use a comma before a coordinating conjunction in a compound sentence.</p> <p>d. Spell grade-appropriate words correctly, consulting references as needed.</p> <p style="text-align: right;">continued</p>

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
	Knowledge of Language	LG.4.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	Choose words and phrases to convey ideas precisely.* b. Choose punctuation for effect.* c. Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion).
LG	Vocabulary Acquisition and Use	LG.4.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 4 reading and content, choosing flexibly from a range of strategies.	a. Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase. b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., telegraph, photograph, autograph).

continued

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
	Vocabulary Acquisition and Use	LG.4.4		c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.
LG	Vocabulary Acquisition and Use	LG.4.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	<p>a. Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context.</p> <p>b. Recognize and explain the meaning of common idioms, adages, and proverbs.</p> <p>c. Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).</p> <p style="text-align: right;">continued</p>

Grade 4

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.4.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).	

Table A-9. 2018–19 eMPowerME: Writing Standards- Grade 5

Grade 5				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.5.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.	<p>a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which ideas are logically grouped to support the writer’s purpose.</p> <p>b. Provide logically ordered reasons that are supported by facts and details.</p> <p>c. Link opinion and reasons using words, phrases, and clauses (e.g., consequently, specifically).</p> <p>d. Provide a concluding statement or section related to the opinion presented.</p>

continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.5.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.	<p>a. Introduce a topic clearly, provide a general observation and focus, and group related information logically; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. Link ideas within and across categories of information using words, phrases, and clauses (e.g., in contrast, especially).</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Provide a concluding statement or section related to the information or explanation presented.</p> <p style="text-align: right;">continued</p>

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.5.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.	<p>a. Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.</p> <p>b. Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations.</p> <p>c. Use a variety of transitional words, phrases, and clauses to manage the sequence of events.</p> <p>d. Use concrete words and phrases and sensory details to convey experiences and events precisely.</p> <p>e. Provide a conclusion that follows from the narrated experiences or events.</p>
WR	Production and Distribution of Writing	WR.5.4	Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
		WR.5.5	With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 5 on page 29.)	
		WR.5.6	With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.	
	Research to Build and Present Knowledge	WR.5.7	Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.	
		WR.5.8	Recall relevant information from experiences or gather relevant information from print and digital sources; summarize or paraphrase information in notes and finished work, and provide a list of sources.	
WR	Research to Build and Present Knowledge	WR.5.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	a. Apply grade 5 Reading standards to literature (e.g., “Compare and contrast two or more characters, settings, or events in a story or a drama, drawing on specific details in the text [e.g., how characters interact]”).

continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
				b. Apply grade 5 Reading standards to informational texts (e.g., “Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point[s]”).
	Range of Writing	WR.5.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	
LG	Conventions of Standard English	LG.5.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.</p> <p>b. Form and use the perfect (e.g., I had walked; I have walked; I will have walked) verb tenses.</p> <p>c. Use verb tense to convey various times, sequences, states, and conditions.</p> <p>d. Recognize and correct inappropriate shifts in verb tense.*</p> <p>e. Use correlative conjunctions (e.g., either/or, neither/nor).</p> <p style="text-align: right;">continued</p>

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
		LG.5.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Use punctuation to separate items in a series.*</p> <p>b. Use a comma to separate an introductory element from the rest of the sentence.</p>
LG	Conventions of Standard English	LG.5.2		<p>c. Use a comma to set off the words yes and no (e.g., Yes, thank you), to set off a tag question from the rest of the sentence (e.g., It's true, isn't it?), and to indicate direct address (e.g., Is that you, Steve?).</p> <p>d. Use underlining, quotation marks, or italics to indicate titles of works.</p> <p>e. Spell grade-appropriate words correctly, consulting references as needed.</p>
	Knowledge of Language	LG.5.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	<p>a. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.</p> <p>b. Compare and contrast the varieties of English (e.g., dialects, registers) used in stories, dramas, or poems.</p>

continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.5.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.	<p>a. Use context (e.g., cause/effect relationships and comparisons in text) as a clue to the meaning of a word or phrase.</p> <p>b. Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).</p> <p>c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.</p>
		LG.5.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	<p>a. Interpret figurative language, including similes and metaphors, in context.</p> <p>b. Recognize and explain the meaning of common idioms, adages, and proverbs.</p>

continued

Grade 5

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.5.5		c. Use the relationship between particular words (e.g., synonyms, antonyms, homographs) to better understand each of the words.
		LG.5.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).	

Table A-10. 2018–19 eMPowerME: Writing Standards- Grade 6

Grade 6				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.6.1	Write arguments to support claims with clear reasons and relevant evidence.	<p>a. Introduce claim(s) and organize the reasons and evidence clearly.</p> <p>b. Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.</p> <p>c. Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.</p> <p>d. Establish and maintain a formal style.</p> <p>e. Provide a concluding statement or section that follows from the argument presented.</p>
		WR.6.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	<p>a. Introduce a topic; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. Use appropriate transitions to clarify the relationships among ideas and concepts.</p>

continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.6.2		<p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Establish and maintain a formal style.</p> <p>f. Provide a concluding statement or section that follows from the information or explanation presented.</p>
		WR.6.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.	<p>a. Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.</p> <p>b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.</p> <p>c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.</p> <p style="text-align: right;">continued</p>

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.6.3		<p>d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events.</p> <p>e. Provide a conclusion that follows from the narrated experiences or events.</p>
	Production and Distribution of Writing	WR.6.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	
		WR.6.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 6 on page 53.)	
		WR.6.6	Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.	

continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Research to Build and Present Knowledge	WR.6.7	Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.	
		WR.6.8	Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.	
		WR.6.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	<p>a. Apply grade 6 Reading standards to literature (e.g., “Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics”).</p> <p>b. Apply grade 6 Reading standards to literary nonfiction (e.g., “Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not”).</p>
	WR.6.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.		
	Range of Writing			continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.6.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Ensure that pronouns are in the proper case (subjective, objective, possessive).</p> <p>b. Use intensive pronouns (e.g., myself, ourselves).</p> <p>c. Recognize and correct inappropriate shifts in pronoun number and person.*</p> <p>d. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*</p> <p>e. Recognize variations from standard English in their own and others' writing and speaking, and identify and use strategies to improve expression in conventional language.*</p>
		LG.6.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.*</p> <p>b. Spell correctly.</p>

continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Knowledge of Language	LG.6.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	<p>a. Vary sentence patterns for meaning, reader/listener interest, and style.*</p> <p>b. Maintain consistency in style and tone.*</p>
	Vocabulary Acquisition and Use	LG.6.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.	<p>a. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).</p> <p>c. Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.</p> <p>d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).</p>
LG	Knowledge of Language	LG.6.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	<p>a. Interpret figures of speech (e.g., personification) in context.</p> <p>b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.</p>

continued

Grade 6

Domain	Anchor Standard	Standard	Standard Text	Objective Text
				c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty).
		LG.6.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	

Table A-11. 2018–19 eMPowerME: Writing Standards- Grade 7

Grade 7				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.7.1	Write arguments to support claims with clear reasons and relevant evidence.	<p>a. Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.</p> <p>b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p> <p>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.</p> <p>d. Establish and maintain a formal style.</p> <p>e. Provide a concluding statement or section that follows from and supports the argument presented.</p>
WR	Text Types and Purposes	WR.7.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	<p>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information, using strategies such as definition, classification, comparison/contrast, and cause/effect; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with relevant facts, definitions, concrete details, quotations, or other information and examples.</p>

continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
				<p>c. Use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Establish and maintain a formal style.</p> <p>f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p>

continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
		WR.7.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.	<p>a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.</p> <p>b. Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters.</p> <p>c. Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another.</p> <p>d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.</p> <p>e. Provide a conclusion that follows from and reflects on the narrated experiences or events.</p>
WR	Production and Distribution of Writing	WR.7.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	
		WR.7.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 7 on page 53.)	continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
		WR.7.6	Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.	
	Research to Build and Present Knowledge	WR.7.7	Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.	
		WR.7.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	
WR	Research to Build and Present Knowledge	WR.7.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	<p>a. Apply grade 7 Reading standards to literature (e.g., “Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history”).</p> <p>b. Apply grade 7 Reading standards to literary nonfiction (e.g. “Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims”).</p>
	Range of Writing	WR.7.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.7.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Explain the function of phrases and clauses in general and their function in specific sentences.</p> <p>b. Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</p> <p>c. Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.*</p>
		LG.7.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Use a comma to separate coordinate adjectives (e.g., It was a fascinating, enjoyable movie but not He wore an old[,] green shirt).</p> <p>b. Spell correctly.</p>
	Knowledge of Language	LG.7.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	<p>a. Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.*</p>

continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG 7.4	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.	<p>a. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel).</p> <p>c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.</p> <p>d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).</p>
		LG.7.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	<p>a. Interpret figures of speech (e.g., literary, biblical, and mythological allusions) in context.</p> <p>b. Use the relationship between particular words (e.g., synonym/antonym, analogy) to better understand each of the words.</p>

continued

Grade 7

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.7.5		c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).
		LG.7.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	

Table A-12. 2018–19 eMPowerME: Writing Standards - Grade 8

Grade 8				
Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.8.1	Write arguments to support claims with clear reasons and relevant evidence.	<p>a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.</p> <p>b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p> <p>c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</p> <p>d. Establish and maintain a formal style.</p> <p>e. Provide a concluding statement or section that follows</p>

continued

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Text Types and Purposes	WR.8.2	Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.	<p>a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</p> <p>b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.</p> <p>c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Establish and maintain a formal style.</p> <p>f. Provide a concluding statement or section that follows from and supports the information or explanation presented.</p> <p style="text-align: right;">continued</p>

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
	Text Types and Purposes	WR.8.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.	<p>Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.</p> <p>b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.</p> <p>c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.</p> <p>d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.</p> <p>e. Provide a conclusion that follows from and reflects on the narrated experiences or events.</p> <p style="text-align: right;">continued</p>

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Production and Distribution of Writing	WR.8.4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)	
		WR.8.5	With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grade 8 on page 53.)	
		WR.8.6	Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.	
	Research to Build and Present Knowledge	WR.8.7	Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.	continued

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
WR	Research to Build and Present Knowledge	WR.8.8	Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.	
		WR.8.9	Draw evidence from literary or informational texts to support analysis, reflection, and research.	<p>a. Apply grade 8 Reading standards to literature (e.g., “Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new”).</p> <p>b. Apply grade 8 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced”).</p>
WR	Range of Writing	WR.8.10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.	continued

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Conventions of Standard English	LG.8.1	Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	<p>a. Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.</p> <p>b. Form and use verbs in the active and passive voice.</p> <p>c. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.</p> <p>d. Recognize and correct inappropriate shifts in verb voice and mood.*</p>
LG	Conventions of Standard English	LG.8.2	Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	<p>a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break.</p> <p>b. Use an ellipsis to indicate an omission.</p> <p>c. Spell correctly.</p>
	Knowledge of Language	LG.8.3	Use knowledge of language and its conventions when writing, speaking, reading, or listening.	<p>a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action;</p> <p style="text-align: right;">continued</p>

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
				expressing uncertainty or describing a state contrary to fact).
LG	Vocabulary Acquisition and Use	LG 8.4	Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.	<p>a. Use context (e.g., the overall meaning of a sentence or paragraph; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase.</p> <p>b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).</p> <p>c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.</p> <p>d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).</p> <p style="text-align: right;">continued</p>

Grade 8

Domain	Anchor Standard	Standard	Standard Text	Objective Text
LG	Vocabulary Acquisition and Use	LG.8.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	<p>a. Interpret figures of speech (e.g. verbal irony, puns) in context.</p> <p>b. Use the relationship between particular words to better understand each of the words.</p> <p>c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).</p>
		LG.8.6	Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.	

Table A-13. 2018-19 eMPowerME: Mathematics Standards – Grade 3

Domain	Cluster	Standard	Standard Code
Operations & Algebraic Thinking	Represent and solve problems involving multiplication and division.	Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each.	03.OA.01.01
		Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.	03.OA.01.02
		Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	03.OA.01.03
	Understand properties of multiplication and the relationship between multiplication and division.	Apply properties of operations as strategies to multiply and divide.	03.OA.02.05
		Understand division as an unknown-factor problem.	03.OA.02.06
	Multiply and divide within 100.	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	03.OA.03.07
	Solve problems involving the four operations, and identify and explain patterns in arithmetic.	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	03.OA.04.08
Number & Operations: Base Ten	Use place value understanding and properties of operations to perform multi-digit arithmetic.	Use place value understanding to round whole numbers to the nearest 10 or 100.	03.NBT.01.01
		Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	03.NBT.01.02
		Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	03.NBT.01.03
Number & Operations: Fractions	Develop understanding of fractions as numbers.	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.	03.NF.01.01 continued

Domain	Cluster	Standard	Standard Code
		Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.	03.NF.01.02.a
		Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	03.NF.01.03.a
		Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.	03.NF.01.03.c
		Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.	03.NF.01.03.d
Measurement & Data	Solve problems involving measurement and estimation.	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	03.MD.01.01
		Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.	03.MD.01.02
	Represent and interpret data.	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs.	03.MD.02.03
		Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.	03.MD.02.04
	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	Recognize area as an attribute of plane figures and understand concepts of area measurement.	03.MD.03.05
		Relate area to the operations of multiplication and addition. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.	03.MD.03.07.c continued

Domain	Cluster	Standard	Standard Code
		Relate area to the operations of multiplication and addition. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	03.MD.03.07.d
	Geometric measurement: recognize perimeter.	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	03.MD.04.08
Geometry	Reason with shapes and their attributes.		03.G.01
		Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	03.G.01.01
		Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	03.G.01.02

Table A-14. 2018-19 eMPowerME: Mathematics Standards – Grade 4

Domain	Cluster	Standard	Standard Code
Operations & Algebraic Thinking	Use the four operations with whole numbers to solve problems.	Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	04.OA.01.01
		Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	04.OA.01.02
		Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	04.OA.01.03
	Gain familiarity with factors and multiples.	Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	04.OA.02.04
	Generate and analyze patterns.	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	04.OA.03.05
Number & Operations: Base Ten	Generalize place value understanding for multi-digit whole numbers.	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	04.NBT.01.01
		Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	04.NBT.01.02
		Use place value understanding to round multi-digit whole numbers to any place.	04.NBT.01.03
	Use place value understanding and properties of operations to perform multi-digit arithmetic.	Fluently add and subtract multi-digit whole numbers using the standard algorithm.	04.NBT.02.04
		Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	04.NBT.02.05 continued

Domain	Cluster	Standard	Standard Code	
		Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	04.NBT.02.06	
Number & Operations: Fractions	Extend understanding of fraction equivalence and ordering.	Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.	04.NF.01.01	
		Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.	04.NF.01.02	
	Build fractions from unit fractions.	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.	04.NF.02.03	
		Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	04.NF.02.03.d	
		Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.	04.NF.02.04.c	
	Understand decimal notation for fractions, and compare decimal fractions.	Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100	04.NF.03.05	
		Use decimal notation for fractions with denominators 10 or 100.	04.NF.03.06	
		Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.	04.NF.03.07	
	Measurement & Data	Solve problems involving measurement and conversion of measurements.	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table.	04.MD.01.01 continued

Domain	Cluster	Standard	Standard Code
		Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	04.MD.01.02
		Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	04.MD.01.03
	Represent and interpret data.	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	04.MD.02.04
	Geometric measurement: understand concepts of angle and measure angles.	An angle that turns through n one-degree angles is said to have an angle measure of n degrees.	04.MD.03.05.b
		Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	04.MD.03.06
		Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	04.MD.03.07
	Geometry	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.			04.G.01.02
Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.			04.G.01.03

Table A-15. 2018-19 eMPowerME: Mathematics Standards – Grade 5

Domain	Cluster	Standard	Standard Code
Operations & Algebraic Thinking	Write and interpret numerical expressions.	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	05.OA.01.01
		Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	05.OA.01.02
	Analyze patterns and relationships.	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	05.OA.02.03
Number & Operations: Base Ten	Understand the place value system.	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	05.NBT.01.01
		Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	05.NBT.01.02
		Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.	05.NBT.01.03.a
	Perform operations with multi-digit whole numbers and with decimals to hundredths.	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	05.NBT.02.06
		Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	05.NBT.02.07
Number & Operations: Fractions	Use equivalent fractions as a strategy to add and subtract fractions.	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	05.NF.01.01 continued

Domain	Cluster	Standard	Standard Code
		Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	05.NF.01.02
	Apply and extend previous understandings of multiplication and division.	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	05.NF.02.03
		Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.	05.NF.02.04.b
		Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.	05.NF.02.05.b
		Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	05.NF.02.06
Measurement & Data	Convert like measurement units within a given measurement system.	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	05.MD.01.01
	Represent and interpret data.	Make a line plot to display a data set of measurements in fractions of a unit ($1/2, 1/4, 1/8$). Use operations on fractions for this grade to solve problems involving information presented in line plots.	05.MD.02.02
	Geometric measurement: understand concepts of volume.	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	05.MD.03.03
		A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.	05.MD.03.03.b continued

Domain	Cluster	Standard	Standard Code
		Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.	05.MD.03.05.b
Geometry	Graph points on the coordinate plane to solve real-world and mathematical problems.	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x -axis and x -coordinate, y -axis and y -coordinate).	05.G.01.01
		Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	05.G.01.02
	Classify two-dimensional figures into categories based on their properties.	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	05.G.02.03
		Classify two-dimensional figures in a hierarchy based on properties.	05.G.02.04

Table A-16. 2018-19 eMPowerME: Mathematics Standards – Grade 6

Domain	Cluster	Standard	Standard Code
Ratios & Proportional Relationships	Understand ratio concepts and use ratio reasoning to solve problems.	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	06.RP.01.01
		Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.	06.RP.01.02
		Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	06.RP.01.03
		Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.	06.RP.01.03.c
		Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	06.RP.01.03.d
The Number System	Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	06.NS.01.01
	Compute fluently with multi-digit numbers and find common factors and multiples.	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	06.NS.02.03
		Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.	06.NS.02.04 continued

Domain	Cluster	Standard	Standard Code
	Apply and extend previous understandings of numbers to the system of rational numbers.	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	06.NS.03.05
		Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.	06.NS.03.06.c
		Write, interpret, and explain statements of order for rational numbers in real-world contexts.	06.NS.03.07.b
		Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	06.NS.03.08
Expressions & Equations	Apply and extend previous understandings of arithmetic to algebraic expressions.	Write and evaluate numerical expressions involving whole-number exponents.	06.EE.01.01
		Write expressions that record operations with numbers and with letters standing for numbers.	06.EE.01.02.a
		Apply the properties of operations to generate equivalent expressions.	06.EE.01.03
	Reason about and solve one-variable equations and inequalities.	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	06.EE.02.05
		Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	06.EE.02.06
		Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.	06.EE.02.07 continued

Domain	Cluster	Standard	Standard Code
		Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	06.EE.02.08
	Represent and analyze quantitative relationships between dependent and independent variables.	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.	06.EE.03.09
Geometry	Solve real-world and mathematical problems involving area, surface area, and volume.	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	06.G.01.01
		Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	06.G.01.02
		Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	06.G.01.03
		Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	06.G.01.04
Statistics & Probability	Develop understanding of statistical variability.	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	06.SP.01.01 continued

Domain	Cluster	Standard	Standard Code
		Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.	06.SP.01.02
		Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	06.SP.01.03
	Summarize and describe distributions.	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	06.SP.02.04
		Summarize numerical data sets in relation to their context.	06.SP.02.05
		Summarize numerical data sets in relation to their context by giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.	06.SP.02.05.c

Table A-17. 2018-19 eMPowerME: Mathematics Standards – Grade 7

Domain	Cluster	Standard	Standard Code
Ratios & Proportional Relationships	Analyze proportional relationships and use them to solve real-world and mathematical problems.	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.	07.RP.01.01
		Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.	07.RP.01.02.a
		Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.	07.RP.01.02.b
		Represent proportional relationships by equations.	07.RP.01.02.c
		Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	07.RP.01.03
The Number System	Apply and extend previous understandings of operations with fractions.	Describe situations in which opposite quantities combine to make 0	07.NS.01.01.a
		Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.	07.NS.01.02
		Solve real-world and mathematical problems involving the four operations with rational numbers.	07.NS.01.03
Expressions & Equations	Use properties of operations to generate equivalent expressions.	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	07.EE.01.01
		Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	07.EE.01.02
	Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.	07.EE.02.03
		Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	07.EE.02.04 continued

Domain	Cluster	Standard	Standard Code
		Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p , q , and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.	07.EE.02.04.a
		Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p , q , and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.	07.EE.02.04.b
Geometry	Draw, construct, and describe geometrical figures and describe the relationships between them.	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.	07.G.01.01
		Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	07.G.01.02
	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	07.G.02.04
		Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.	07.G.02.05
		Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	07.G.02.06
Statistics & Probability	Use random sampling to draw inferences about a population.	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.	07.SP.01.01
		Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.	07.SP.01.02 continued

Domain	Cluster	Standard	Standard Code
	Draw informal comparative inferences about two populations.	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.	07.SP.02.03
		Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	07.SP.02.04
	Investigate chance processes and develop, use, and evaluate probability models.	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.	07.SP.03.05
		Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	07.SP.03.07
		Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.	07.SP.03.07.a
		Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.	07.SP.03.08.a
		Design and use a simulation to generate frequencies for compound events.	07.SP.03.08.c

Table A-18. 2018-19 eMPowerME: Mathematics Standards – Grade 8

Domain	Cluster	Standard	Standard Code
The Number System	Know that there are numbers that are not rational, and approximate them by rational numbers.	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).	08.NS.01.02
		Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.	08.EE.01.03
Expressions & Equations	Work with radicals and integer exponents.	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	08.EE.01.04
		Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	08.EE.02.05
	Understand the connections between proportional relationships, lines, and linear equations.	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .	08.EE.02.06
		Analyze and solve linear equations and pairs of simultaneous linear equations.	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).
	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.		08.EE.03.07.b
	Analyze and solve pairs of simultaneous linear equations.		08.EE.03.08
	Solve real-world and mathematical problems leading to two linear equations in two variables.		08.EE.03.08.c continued

Domain	Cluster	Standard	Standard Code
Functions	Define, evaluate, and compare functions.	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	08.F.01.01
		Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	08.F.01.02
	Use functions to model relationships between quantities.	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	08.F.02.04
		Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	08.F.02.05
	Geometry	Understand congruence and similarity using physical models, transparencies, or geometry software.	Verify experimentally the properties of rotations, reflections, and translations: Angles are taken to angles of the same measure.
Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.			08.G.01.02
Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.			08.G.01.03
Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.			08.G.01.05
Understand and apply the Pythagorean Theorem.		Explain a proof of the Pythagorean Theorem and its converse.	08.G.02.06
		Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	08.G.02.07 continued

Domain	Cluster	Standard	Standard Code
	Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	08.G.03.09
Statistics & Probability	Investigate patterns of association in bivariate data.	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	08.SP.01.01
		Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	08.SP.01.02
		Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	08.SP.01.03
		Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.	08.SP.01.04

APPENDIX B—TEST BLUEPRINTS

Table B-1. 2018–19 eMPowerME: Spring 2019 Blueprints—Mathematics Grades 3 and 5

Spring 2019 Operational		Mathematics Grades 3, 5 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
1	1	1	SR												
1	2	2	SR												
1	3	3	SR												
1	4	4	SR												
1	5	5	SR												
1	6	6	SR												
1	7	7	CR												
1	8	8	SR												
1	9	9	SR												
1	10	10	SR												
1	11	11	SR												
1	12	12	SR												
1	13	13	SR												
1	14	14	CR												
1	15	15	SR												
1	16	16	SR												
1	17	17	SR												
1	18	18	SR												
2	19	1	SR												
2	20	2	SR												
2	21	3	SR												
2	22	4	SR												
2	23	5	SR												
2	24	6	SR												
2	25	7	CR												

continued

Spring 2019 Operational		Mathematics Grades 3, 5 eMPowerME													
Session	Position	Position in Session	Item Type	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
2	26	8	SR												
2	27	9	SR												
2	28	10	SR												
2	29	11	SR												
2	30	12	SR												
2	31	13	SR												
2	32	14	CR												
2	33	15	SR												
2	34	16	SR												
2	35	17	SR												
2	36	18	SR												
2	37	19	SR												

Table B-2. 2018–19 eMPowerME: Spring 2019 Blueprints—Mathematics Grade 4

Spring 2019 Operational		Mathematics Grade 4 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
1	1	1	SR												
1	2	2	SR												
1	3	3	SR												
1	4	4	SR												
1	5	5	SR												
1	6	6	SR												
1	7	7	CR												
1	8	8	SR												
1	9	9	SR												
1	10	10	SR												
1	11	11	SR												
1	12	12	SR												
1	13	13	SR												
1	14	14	CR												
1	15	15	SR												
1	16	16	SR												
1	17	17	SR												
1	18	18	SR												
2	19	1	SR												
2	20	2	SR												
2	21	3	SR												
2	22	4	SR												
2	23	5	SR												
2	24	6	SR												

continued

Spring 2019 Operational		Mathematics Grade 4 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
2	25	7	CR												
2	26	8	SR												
2	27	9	SR												
2	28	10	SR												
2	29	11	SR												
2	30	12	SR												
2	31	13	SR												
2	32	14	CR												
2	33	15	SR												
2	34	16	SR												
2	35	17	SR												
2	36	18	SR												

Table B-3. 2018–19 eMPowerME: Spring 2019 Blueprints—Mathematics Grades 6 and 7

Spring 2019 Operational		Mathematics Grades 6, 7 eMPowerME				Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type														
1	1	1	SR														
1	2	2	SR														
1	3	3	SR														
1	4	4	SR														
1	5	5	SR														
1	6	6	SR														
1	7	7	SR														
1	8	8	CR														
1	9	9	SR														
1	10	10	SR														
1	11	11	SR														
1	12	12	SR														
1	13	13	SR														
1	14	14	SR														
1	15	15	CR														
1	16	16	SR														
1	17	17	SR														
1	18	18	SR														
1	19	19	SR														
1	20	20	SR														
2	21	1	SR														
2	22	2	SR														
2	23	3	SR														
2	24	4	SR														
2	25	5	SR														

continued

Spring 2019 Operational		Mathematics Grades 6, 7 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
2	26	6	SR												
2	27	7	SR												
2	28	8	CR												
2	29	9	SR												
2	30	10	SR												
2	31	11	SR												
2	32	12	SR												
2	33	13	SR												
2	34	14	SR												
2	35	15	CR												
2	36	16	SR												
2	37	17	SR												
2	38	18	SR												
2	39	19	SR												
2	40	20	SR												

Table B-4. 2018–19 eMPowerME: Spring 2019 Blueprints—Mathematics Grade 8

Spring 2019 Operational		Mathematics Grade 8 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
1	1	1	SR												
1	2	2	SR												
1	3	3	SR												
1	4	4	SR												
1	5	5	SR												
1	6	6	SR												
1	7	7	SR												
1	8	8	CR												
1	9	9	SR												
1	10	10	SR												
1	11	11	SR												
1	12	12	SR												
1	13	13	SR												
1	14	14	SR												
1	15	15	CR												
1	16	16	SR												
1	17	17	SR												
1	18	18	SR												
1	19	19	SR												
1	20	20	SR												
2	21	1	SR												
2	22	2	SR												
2	23	3	SR												
2	24	4	SR												
2	25	5	SR												

continued

Spring 2019 Operational		Mathematics Grade 8 eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10	Form 11	Form 12
Session	Position	Position in Session	Item Type												
2	26	6	SR												
2	27	7	SR												
2	28	8	CR												
2	29	9	SR												
2	30	10	SR												
2	31	11	SR												
2	32	12	SR												
2	33	13	SR												
2	34	14	SR												
2	35	15	CR												
2	36	16	SR												
2	37	17	SR												
2	38	18	SR												
2	39	19	SR												
2	40	20	SR												
2	41	21	SR												

Table B-5. 2018–19 eMPowerME: Spring 2019 Blueprints—Reading

<i>Spring 2019 Operational</i>		<i>Reading eMPowerME</i>		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8	Form 9	Form 10
Session	Position	Position in Session	Item Type										
1	1	1	Passage Pair 6 SR 1 EBSR 2 CR										
1	2	2											
1	3	3											
1	4	4											
1	5	5											
1	6	6											
1	7	7											
1	8	8											
1	9	9											
2	10	1	Passage Pair 8 SR 1 EBSR 1 CR										
2	11	2											
2	12	3											
2	13	4											
2	14	5											
2	15	6											
2	16	7											
2	17	8											
2	18	9											
2	19	10											
2	20	11	Single Passage 5 SR 1 EBSR 1 CR										
2	21	12											
2	22	13											
2	23	14											
2	24	15											
2	25	16											
2	26	17											

Table B-6. 2018–19 eMPowerME: Spring 2019 Blueprints—Writing and Language

Spring 2019 Operational		Writing & Language eMPowerME		Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8
Session	Position	Position in Session	Item Type								
1	1	1	Passage 5 SR 1 EBSR								
1	2	2									
1	3	3									
1	4	4									
1	5	5									
1	6	6									
1	7	7	Passage 5 SR								
1	8	8									
1	9	9									
1	10	10									
1	11	11									
2	12	1	Passage 5 SR 1 EBSR								
2	13	2									
2	14	3									
2	15	4									
2	16	5									
2	17	6									
2	18	7	Passage 5 SR 1 EBSR								
2	19	8									
2	20	9									
2	21	10									
2	22	11									
2	23	12									

APPENDIX C—PARTICIPATION RATES

**Table C-1. 2018–19 eMPowerME: Summary of Participation
by Demographic Category—Mathematics**

<i>Description</i>	<i>Tested</i>	
	<i>Number</i>	<i>Percent</i>
All Students	78,127	100.00
Male	40,105	51.33
Female	38,007	48.65
Gender Not Reported	15	0.02
Hispanic or Latino	1,871	2.39
American Indian or Alaskan Native	659	0.84
Asian	1,113	1.42
Black or African American	2,940	3.76
Native Hawaiian or Pacific Islander	85	0.11
White (non-Hispanic)	69,242	88.63
Two or More Races (non-Hispanic)	2,202	2.82
Race not reported	15	0.02
Migrant Students	57	0.07
Migrant: All Other Students	78,070	99.93
Currently receiving EL services	2,417	3.09
Former EL student - monitoring year 1	443	0.57
Former EL student - monitoring year 2	306	0.39
Former EL student - monitoring year 3	164	0.21
Former EL student - monitoring year 4	112	0.14
LEP: All Other Students	74,685	95.59
Students with an IEP	14,842	19.00
IEP: All Other Students	63,285	81.00
Economically Disadvantaged Students	35,983	46.06
SES: All Other Students	42,144	53.94
Students receiving Title 1 ELA Services	6,610	8.46
Title 1: All Other Students	71,517	91.54
Students receiving Title 1 Math Services	2,683	3.43
Title 1: All Other Students	75,444	96.57
Plan 504	3,895	4.99
Plan 504: All Other Students	74,232	95.01

**Table C-2. 2018–19 eMPowerME: Summary of Participation
by Demographic Category—ELA**

<i>Description</i>	<i>Tested</i>	
	<i>Number</i>	<i>Percent</i>
All Students	77,947	100.00
Male	40,017	51.34
Female	37,918	48.65
Gender Not Reported	12	0.02
Hispanic or Latino	1,848	2.37
American Indian or Alaskan Native	658	0.84
Asian	1,092	1.40
Black or African American	2,760	3.54
Native Hawaiian or Pacific Islander	85	0.11
White (non-Hispanic)	69,285	88.89
Two or More Races (non-Hispanic)	2,207	2.83
Race not reported	12	0.02
Migrant Students	55	0.07
Migrant: All Other Students	77,892	99.93
Currently receiving EL services	2,192	2.81
Former EL student - monitoring year 1	442	0.57
Former EL student - monitoring year 2	305	0.39
Former EL student - monitoring year 3	164	0.21
Former EL student - monitoring year 4	112	0.14
LEP: All Other Students	74,732	95.88
Students with an IEP	14,859	19.06
IEP: All Other Students	63,088	80.94
Economically Disadvantaged Students	35,834	45.97
SES: All Other Students	42,113	54.03
Students receiving Title 1 ELA Services	6,621	8.49
Title 1: All Other Students	71,326	91.51
Students receiving Title 1 Math Services	2,684	3.44
Title 1: All Other Students	75,263	96.56
Plan 504	3,900	5.00
Plan 504: All Other Students	74,047	95.00

APPENDIX D—ACCOMMODATION FREQUENCIES BY CONTENT AREA

Table D-1. 2018–19 eMPowerME: Numbers of Students Tested with Accommodations by Accommodation Type and Subject—Mathematics

<i>Accommodation Code</i>	<i>Grade 3</i>	<i>Grade 4</i>	<i>Grade 5</i>	<i>Grade 6</i>	<i>Grade 7</i>	<i>Grade 8</i>
AccomTexttoSpeechELA	849	1,057	1,012	1,002	899	774
AccomTexttoSpeechMAT	944	1,143	1,096	1,044	912	805
AccomColorContrast	15	20	25	21	27	13
AccomCalculator	0	0	0	0	0	0
AccomNoTools	110	110	66	95	83	61
AccomNE01	637	703	690	575	443	348
AccomNE02	728	857	771	720	496	428
AccomNE03	0	6	5	2	1	3
AccomNE04	0	1	3	1	0	0
AccomNE05	246	237	251	198	155	145
AccomNE06	39	70	41	51	56	54
AccomNE07	7	16	5	17	25	26
AccomNE08	391	436	352	317	227	202
AccomNE09	2,003	2,359	2,461	2,275	2,198	1,986
AccomNE10	2,016	2,526	2,568	2,189	2,069	1,956
AccomNE11	1,406	1,690	1,645	1,430	1,301	1,129
AccomNE12	0	0	0	1	0	0
AccomNE13	0	0	0	0	0	0
AccomNE14	0	2	0	1	0	0
AccomNE15	8	16	14	9	8	12

Table D-2. 2018–19 eMPowerME: Numbers of Students Tested with Accommodations by Accommodation Type and Subject—ELA

<i>Accommodation Code</i>	<i>Grade 3</i>	<i>Grade 4</i>	<i>Grade 5</i>	<i>Grade 6</i>	<i>Grade 7</i>	<i>Grade 8</i>
AccomTexttoSpeechELA	848	1,056	1,011	1,008	895	772
AccomTexttoSpeechMAT	940	1,138	1,094	1,047	908	803
AccomColorContrast	15	20	25	21	27	13
AccomCalculator	0	0	0	0	0	0
AccomNoTools	110	111	66	94	83	61
AccomNE01	637	703	690	577	445	351
AccomNE02	724	853	767	724	495	428
AccomNE03	0	6	4	2	1	3
AccomNE04	0	1	3	0	0	0
AccomNE05	246	237	252	200	155	147
AccomNE06	39	70	40	50	56	54
AccomNE07	4	8	3	11	19	15
AccomNE08	393	434	353	321	226	202
AccomNE09	1,978	2,339	2,451	2,271	2,197	1,984
AccomNE10	2,002	2,512	2,559	2,192	2,073	1,961
AccomNE11	1,406	1,690	1,642	1,438	1,305	1,131
AccomNE12	0	1	1	1	0	0
AccomNE13	0	0	0	0	0	0
AccomNE14	0	1	0	1	0	0
AccomNE15	8	17	14	9	8	12

**Table D-3. 2018–19 eMPowerME: Numbers of Students Tested with Accommodation 01
(Mathematics and/or ELA)**

<i>Accommodation Code</i>	<i>Grade 3</i>	<i>Grade 4</i>	<i>Grade 5</i>	<i>Grade 6</i>	<i>Grade 7</i>	<i>Grade 8</i>
Accom01**	32	62	34	46	38	26

eMPowerME Accommodation Codes

NE-01 Scribe

NE-02 Read Aloud

NE-03 ASL

NE-04 Large Print

NE-05 Distraction Reducing

NE-06 Alternative Aids & Devices

NE-07 Bilingual Word Translation MATH ONLY

NE-08 Individual Separate Setting

NE-09 Small Group Separate Setting

NE-10 Extended Time

NE-11 Breaks

NE-12 Preferential Seating

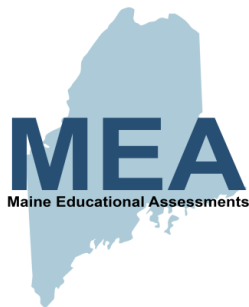
NE-13 Out of School Setting

NE-14 Braille

NE-15 Color Overlay

**Accom01: An educational team may request that a student be provided an accommodation not included on this standard list of accommodations. Like all other accommodations, these should be consistent with the student’s normal routine during instruction and assessment. Requests should be made to the DOE when accommodation plans are being made for a student prior to testing. DOE approval must be received for the requested accommodation to be coded as an 01 accommodation. Without pre-approval, use of an 01 accommodation will result in no credit being given.

APPENDIX E—MEA ACCESSIBILITY GUIDE



Maine Educational Assessments (MEA) Mathematics and English Language Arts/Literacy

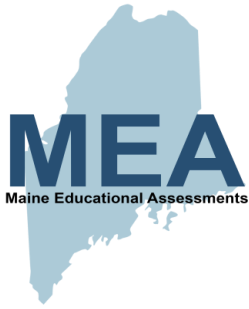
eMPowerME (Grades 3-8)

2019 Accessibility Guide

Universal Tools/Supports/Accommodations Embedded & Non-embedded

February 2019

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Maine Educational Assessment for Mathematics and English Language Arts/Literacy Grades 3-8 eMPowerME Tools, Accommodations & Supports

Introduction

Universal tools are available to all students for all items, unless designated as item specific. All support(s) and accommodation(s) used for the assessment of an individual student will be the result of a team decision made at the local level, with teams having variances in decision-making capacities. Supports and accommodations must be consistent with the student's normal routine during instruction and assessment.

Accommodations do not alter what the test measures or the comparability of results. When used properly, accommodations remove the barriers to participation in the assessment and provide students with diverse learning needs an equitable opportunity to demonstrate their knowledge and skills.

Scrap/scratch paper may be made available to all students during testing sessions. NO pre-authored aids such as templates, graphic organizers, reference sheets, multiplication tables, etc. are allowed.

Terminology & Definitions

Accommodations = Changes in procedures or materials that do not alter what the test measures, and are used to increase equitable access during assessment for students for whom there is a documentation of the need on an Individualized Education Program/Plan (IEP) or 504 Plan.

Embedded = Computer-delivered features that are a constructed part of the test delivery platform system.

Non-Embedded = Provisions outside of the computer-based test administration system. This may include the provision of an outside person item, or change in setting or time.

Read-Aloud = For students with documented (IEP/504 only) reading-related disabilities, or students who are blind/visually impaired and do not have adequate braille skills, text is read aloud to the student via a (non-embedded) human reader. Read-Aloud should be consistent with the student's normal routine during instruction and assessments. Read-Aloud content should be provided for specific text as outlined in Table 1 on page 9.

Scribe = Students with documented (IEP/504) dysgraphia difficulties may dictate answers to a scribe in an individual setting. A human scribe records verbatim what a student dictates and must give the student an opportunity to review scribed text. If a scribe is an approved

accommodation in a student’s IEP/504 plan, a scribe is allowed for **all test sessions including** the essay. Scribed text must be entered into the online testing platform—no paper submissions accepted.

Supports = Support(s) may provide more accessibility to the test for and are determined on an individual basis by an educational team such as Response to Intervention (RtI) and/or Student Assistance Team. Supports must be consistent with the student’s normal routine during instruction. Provision of supports does not alter the construct of any test item.

”Team” = Local educational teams such as Response to Intervention (RtI), Student Assistance Teams and/or Language Acquisition Committee.

Text-To-Speech (TTS) = For students with documented (IEP/504 only) reading-related disabilities, or students who are blind/visually impaired and do not have adequate braille skills, text is read aloud to the student via (embedded) TTS technology. TTS should be consistent with the student’s normal routine during instruction and assessment. Headphones/earbuds are necessary unless tested individually in a separate setting. TTS is available only for specific text outlined in Table 1 on page 9.

Universal Tool = Functions that are available to all students for all items, including some that are designated as item-specific tools.

For more information, see the *MEA Portal User Guide*, which is available on the MEA Help & Support page: <https://maine.onlinehelp.cognia.org/guides/>

If you have any questions or concerns, contact the Cognia Service Center at maineservicedesk@cognia.org or (855) 652-8929

OR







Nancy Godfrey, Assessment Coordinator at nancy.godfrey@maine.gov (207) 624-6775

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UNIVERSAL TOOLS – Available to All

These tools are available on all supported testing devices and are available to all students for all items, unless designated as item specific tools.

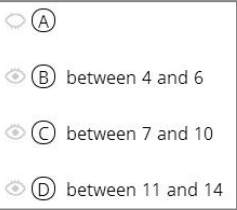



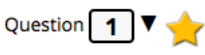



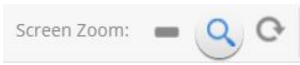

Embedded Universal Tools

Tool	Tool Icon	Description	All Items?
Ruler		The vector-based, partially translucent ruler is rotatable, draggable and resizable by the student.	item specific Math only
Protractor		The vector-based, partially translucent protractor is rotatable, draggable and resizable by the student.	item specific Math only
Calculators		Two calculator modes are available: 1) Basic, and 2) Scientific. <ul style="list-style-type: none"> The Basic calculator will be available for students Grades 3-6 taking the Mathematics test. The Scientific calculator will be available for students Grades 7-8 taking the Mathematics tests. 	item specific Math only
Sketch		The sketch pad provides the following functionalities: <ul style="list-style-type: none"> Sketch or draw using black, red or blue brushes Highlight using a semi-transparent yellow highlighter brush Erase drawings and highlighting using the eraser brush. 	Yes
Highlighter		Students are able to select text and highlight the selection. They can erase the highlighted text by using the eraser and selecting the text to erase. To clear all highlighting on the screen, click Clear.	Yes
Notepad		Notes persist and are retained uniquely per item. The notepad is resizable, draggable, and displays a timestamp for when its contents were last modified. Notes on items with passages are viewable for all items pertaining to the passage.	Yes

Notepad Details:

- **NEW 2019:** Notes on passages **are** viewable for all items pertaining to the passage. They will appear for all items that are aligned to the same passage.
- Notes **will be** retained if a test is paused for less than 30 minutes.
- Notes **will NOT be** retained if a student exits a test session.
- Notes **will NOT be** retained if a student submits a test session and then has state-approved reactivation.
- Students should **NOT** use the notepad to construct rough drafts.

The following tools must be individually activated by the student—e.g., Reverse Contrast enabled does not automatically set the screen as black with white letters; it simply gives the student the ability to switch back and forth.

<p>*Answer Masking*</p>	 <p>○ (A) ○ (B) between 4 and 6 ○ (C) between 7 and 10 ○ (D) between 11 and 14</p>	<p>The student “hides” possible answer choices (for multiple-choice items only).</p>	<p>Yes</p>
<p>*Guideline Tool*</p>		<p>The student uses an onscreen tool to assist in reading by raising and lowering the tool for each line of text onscreen. This can be moved anywhere within the item.</p>	<p>Yes</p>
<p>Jump To Item</p>		<p>Student can access list of item numbers in a session and jump to a specific item number by clicking the down arrow next to the question number.</p>	<p>Yes</p>
<p>Formatting Tools</p>		<p>Students are able to bold, italicize or underline text. They are also able to undo or redo actions. Specific Math items will give students access to an Equation Editor via the $f(x)$ tool.</p>	<p>Yes</p>
<p>Bookmark/Star Item</p>		<p>Student can bookmark or star  an item as a reminder to return.</p>	<p>Yes</p>
<p>Expandable Passages</p>		<p>NEW 2019: Clicking the arrow will expand the passage to full screen in the kiosk. Clicking the arrow again will collapse the passage back to its original state.</p>	<p>Yes</p>
<p>*Custom Masking*</p>		<p>Provides the ability to mask certain parts of the test interface or question.</p>	<p>Yes</p>
<p>*Screen Zoom*</p>		<p>NEW 2018: Students can magnify the entire screen up to 300 percent. This is a full-vector zoom of the entire screen. Text can be enlarged in 4 increments: 100%, 150%, 200%, 300%.</p>	<p>Yes</p>
<p>*Reverse Contrast*</p>		<p>Inverts all color values in the user interface.</p>	<p>Yes</p>

* Denotes a feature that will be automatically enabled for all students. If Universal Tools are disabled (“Turn Off All Universal Tools”), these seven tools are turned off.

Non-Embedded Universal Tool

Tool	Description
Scrap/Scratch Paper	Scrap/scratch paper is available to students during testing sessions and must be collected/shredded at the end of each test session. NO pre-authored aids such as templates, graphic organizers, reference sheets, multiplication tables, etc.

SUPPORTS

Requiring "Team" Documentation

(e.g., Response to Intervention (RtI), Student Assistance, Language Acquisition Committee)

Users will assign supports to students within the Administration component; however, these accommodations require persons/item

s outside of the testing platform. The following supports are determined by the appropriate educational team, documented in an RtI, SAT Plan and/or Language Acquisition Plan, and must be provided in the testing environment/session by a School Test Coordinator and/or Test Administrator.

Embedded Support

Support	Description
Turn off universal tools (team-documented)	Selecting this accommodation will turn off the sketch and highlight tools, the guideline tool, screen zoom, the reverse contrast tool, custom masking, and the answer masking tool.

Non-Embedded Supports

Support	Description
Distraction Reduction (team-documented)	As documented in the support plan (e.g., study carrel, noise buffer, etc.)
Alternative/Assistive Aids & Devices (team-documented)	Visual, auditory and communication supports or aids used regularly for instruction as documented in the support plan.
External Calculator (for calculator-allowable items/sections ONLY) (team-documented)	Non-embedded calculator for students needing a special calculator such as large display or talking calculator unavailable within the assessment platform. USE IN CALCULATOR ALLOWABLE ITEMS/SECTIONS ONLY.
Color Overlays (team-documented)	Students may use personal color overlays to place on the computer screen if the 12 embedded Color Contrasts do not meet the student's needs.
Individual Separate Setting (team-documented)	Individual test setting to minimize distractions for students whose test is administered out of the classroom as documented in the support plan.
Small Group Separate Setting (team-documented)	Small group testing to minimize distractions for students whose test is administered out of the classroom as documented in the support plan. It is recommended that no more than 5 students comprise a small group setting.

Support	Description
Extended Time (team-documented)	Extended time beyond standard administration testing schedule. Individual scheduling may be used for a student whose school performance is noticeably affected by the time of day or day of the week on which it is administered.
Breaks (team-documented)	Multiple or frequent breaks for attention, distractibility, physical and/or medical conditions as documented in the support plan.
Bilingual Word Translation (Language Acquisition Committee)	MATHEMATICS ONLY: Word-to-word translation glossary with NO definitions as determined by <u>Language Acquisition Committee</u> for English Learners (ELs).

ACCOMMODATIONS

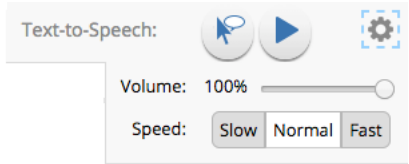

Requiring IEP/504 Documentation

Enabled in System by DAC/ITC/STC

Approved users will assign accommodations to students within the Administration component. Accommodations are entered and edited via the Student Profile by the District Assessment Coordinator (DAC) or the School Test Coordinator (STC) users.

The following Accommodations are determined by an appropriate team, documented in an IEP and/or 504 Plan, and enabled in the testing system by a School Test Coordinator or District Assessment Coordinator. Embedded accommodations will be available to students testing using the MEA kiosk.

Embedded Accommodations

Accommodation	Tool Icon	Description
**Text-to-Speech (TTS) (IEP/504 documented) MATHEMATICS & ESSAY		Students can play, pause, or stop audio. Students can adjust the rate and volume, as well as select specific text to be read aloud on demand. Items support default and on-demand load playback orders. Text-to-Speech is assigned by content area and designated allowable text (directions vs. test questions, vs. answer choices vs. passages). **See Table 1 page 9, which outlines allowable text. <ul style="list-style-type: none"> • Text-to-Speech Math • Text-to-Speech Essay
Color Contrast (IEP/504 documented)		Students have the ability to choose a text and background color from a set of 12 predefined color combinations.

Non-Embedded Accommodations

Users will assign accommodations to students within the Administration component; however, these accommodations require persons/items outside of the testing platform. The following Accommodations are determined by the appropriate educational team, documented in an IEP and/or 504 Plan, and must be provided in the testing environment/session by a School Test Coordinator and/or Test Administrator.

Accommodation	Description
Scribe (IEP/504 documented)	The student may dictate answers to scribe in an individual setting. Human scribe records verbatim what a student dictates, and must give the student an opportunity to review scribed text. If scribe is an approved accommodation in a student's IEP/504 plan, a scribe is allowed for the essay. Scribed text must be entered into the online testing platform—no paper submissions accepted.

Accommodation	Description
**Read-Aloud (IEP/504 documented) MATH & ESSAY	Text is read aloud to student by Test Administrator human reader as documented in the IEP/504 plan. Read-Aloud is restricted to designated content areas and text within item. **See Table 1 page 9, which outlines allowable text.
**American Sign Language (IEP/504 documented) MATH & ESSAY	Trained personnel may use sign language to administer the test for deaf or hearing-impaired students as documented in the IEP/504 plan. **Sign language may be used only for content selected to match availability for Text-To-Speech. See Table 1 page 9, which outlines allowable text.
Accommodation 01	<p>An educational team may request that a student be provided an accommodation not included on this standard list of accommodations. Like all other accommodations, these should be consistent with the student’s normal routine during instruction and assessment. Requests should be made to the DOE when accommodation plans are being made for a student prior to testing. DOE approval must be received for the requested accommodation to be coded as an 01 accommodation. Without pre-approval, use of an 01 accommodation will result in no credit being given.</p> <p>NEW 2018: Accommodation 01 includes clarified/simplified directions.</p>

Text-To-Speech / Read-Aloud / American Sign Language Specifications (Requiring IEP/504 Documentation)

The following chart outlines the components of grade-level, content-level, and specific text that will be accessed within the test platform system by students who have IEP/504 documented approval for Text-To-Speech (TTS). The same chart guidelines should follow for non-embedded accommodations documented by IEP/504 with approval for a human reader (Read-Aloud) and an interpreter (Sign Language). TTS and/or Read-Aloud must be made available to all students who are blind/visually impaired who do not have braille reading skills.

Table 1

TTS/Read-Aloud/ASL		
Content Area/Sessions	Item	Gr. 3 - 8
Reading 1&2	Test Directions	No
Reading 1&2	Test Questions	No
Reading 1&2	Answer Choices	No
Reading 1&2	Reading Passages	No
Mathematics 1&2	Test Directions	Yes
Mathematics 1&2	Test Questions	Yes
Mathematics 1&2	Answer Choices	Yes
Mathematics 1&2	Passages	Yes
Writing & Language 1&2	Test Directions	No
Writing & Language 1&2	Test Questions	No
Writing & Language 1&2	Answer Choices	No
Essay	Directions/Passages/ Prompt	Yes

Text-To-Speech / Read-Aloud / American Sign Language Specifications
Requiring IEP/504 Documentation
Text that CAN and CANNOT be read

Reading Example – NO TTS/Read Aloud/ASL

Practice Test

Directions

You will now read two related passages and answer the questions that follow. Some of these questions will ask you to compare the two passages.



Selection 1

Pioneering in the Ozarks

by William Anderson

- 1 Early on the morning of July 17, 1894, Laura and Manly and Rose said good-bye to Pa and Ma and Mary and Carrie and Grace. They left De Smet in a covered wagon and headed south.
- 2 For a month the Wilders drove through South Dakota, Nebraska, and Kansas. Each night they camped in a new spot, and Laura cooked over a campfire. She told Rose they were on one long



Read Passage 2. Then answer the questions that follow.



Laura Ingalls Wilder, her husband, Almanzo, and their daughter, Rose, journeyed West during the summer of 1894. They were to begin a new life growing apples. They decided to settle in a place called Mansfield, Missouri. Mansfield was called "The Gem City of the Ozarks," and "The Land of the Big Red Apple."



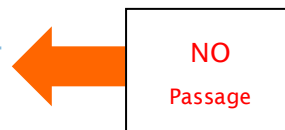
Selection 2

On the Way Home

by Laura Ingalls Wilder

August 22

- 1 A good start at 7:15 and this morning we are driving through pretty country. Crops look good. Oats are running 30 to 60 bushels to the acre, wheat from 10 to 30. All the wood you want can be had for the hauling and coal is delivered at the house for \$1.25 a ton. Land is worth from



1. In **Selection 1**, how does Rose feel about leaving Rocky Ridge Farm?
- A She thinks life will be easier in the city.
 - B She is excited to live in a place with more people and jobs.
 - C She is worried about moving far away from the farm.
 - D She hopes her parents will take care of the farm while she is away.

NO
Question

NO
Answer
Choices

Writing & Language Example

NO TTS/Read Aloud/ASL

Sample Items

Directions

Read the passage. Then answer the questions that follow.

Gray Wolves

1. Gray wolves are large, dog-like animals. 2. They have long, bushy tails, and their bodies are covered in thick fur. 3. Their fur is usually a mix of gray and brown colors. 4. Just because they are all called gray wolves, some have coats that are all black, brown, or white.

5. Most gray wolves live in North America and Asia. 6. They usually travels together in packs of six to ten wolves. 7. A wolf pack is usually made up of a mother and a father, their young pups, and the pups' older brothers and sisters. 8. Gray wolves are also called timber wolves.

NO
Passage

1. How should the underlined word in sentence 2 be changed?
- A NO CHANGE
 - B bodes
 - C bodys
 - D bodees

Mathematics Example

Use the information below to answer questions 5 and 6.

YES
Directions

Look at this problem.

Samira went jogging on Saturday. She ran a total of 8.5 miles in 1.75 hours. Samira burned a total of 1,050 calories while jogging. Assume that she burned the same number of calories each hour while jogging.

Lucas also went jogging. He ran a total of 10 miles in 2.25 hours.

At what rate, in calories per hour, did Samira burn calories while jogging?

YES
Passage

5. Which values from the given information are needed to answer the problem?

- A 10 and 2.25
- B 1.75 and 8.5
- C 1.75 and 1,050
- D 2.25 and 1,050

YES
Question

YES
Answer
Choices

NEW 2017: Essay Example

Directions Read the passage summaries. Then answer the question that follows.

YES
Directions

From the Mixed-Up Files of Mrs. Basil E. Frankweiler*

Jamie and Claudia are given one hour to find a mysterious secret file about Michelangelo's Angel without making a mess of the many files. Claudia and Jamie devise a plan and make a list of 11 related categories to search. They divide the list but do not find the secret file. When Jamie exclaims, "Boloney," Claudia remembers that the statue was bought in Bologna, Italy, which leads them to the secret file.

YES
Passage

The Missing Mystery Writer*

Someone has disappeared while backpacking in the wilderness. A group of amateur detectives are surprised when they learn the identity of the missing person: a popular crime writer. They are familiar with his books, some of which have been made into a series for television. They are excited when the writer's agent reveals that the author's most recent book is based on members of their organization.

YES
Passage

Write your answer to question 1 in the space provided in your Student Answer Booklet.

YES
Directions

1. You have read two passages with characters following a process to solve a mystery. Write an essay explaining ways that people solve mysteries. Your essay should explain two or three main ideas you want readers to learn about solving mysteries. Be sure to
- introduce the topic of your essay and the main ideas in the first paragraph.
 - use facts, definitions, and details from the passages to develop each idea.
 - use quotations from each passage to give examples of your main ideas.
 - use linking words and phrases to help ideas flow across sentences and paragraphs.
 - write a concluding statement or paragraph that restates the ideas you want the readers to learn from your essay.



YES
Prompt

APPENDIX F—RUBRIC DATA

Scoring Rubrics

All writing items were scored against a four-trait analytic rubric (see tables below). The scoring scale options of 0, 1, 2, 3, and 4 were applied to each trait. When a response did not conform to score point parameters, scorers could designate the response as one of the following:

- **Blank:** There is no attempt to respond to the item; no uploaded material is provided and no response has been typed.
- **Unreadable:** The text on the scorer's computer screen is indecipherable or too faint to read accurately.
- **Escalate:** The response requires clarification or adjudication by Scoring Leadership. A score is assigned by leadership after reviewing
- **Off Topic:** The response is totally irrelevant or does not address the prompt
- **No Score:** The response is otherwise unscorable (off-task, random marks, etc.)

Table F-1. 2018–19 eMPowerME: Scoring Resolution Process

Designation	Resolution Process
Blank	Responses scored Blank were sent to another scorer for a second read. Responses scored Blank twice were converted to zeros ('0's) for reporting purposes. Any discrepancies were resolved by the Scoring Leadership.
Unreadable	Those responses judged unreadable were forwarded to special queue within <i>iScore</i> to be reviewed by a Scoring Supervisor who resolved the student score. (If the response remained unreadable after review, the Scoring Supervisor assigned a score of "0"). Unreadable responses are limited to paper-based tests
Off Topic	Responses that were irrelevant or unrelated to the prompt or otherwise was not an attempt to respond to the prompt.
Escalation	Responses that were unusual and were not able to be scored based on the training material without further consultation with Scoring Leadership and/or the DOE. Scoring leadership reviewed and provided final scores for responses in the escalation queue and provided feedback to the scorers as needed.
No Score	Responses that were unable to be scored for any other reason, which could include drawings, stray marks, or other non-blank responses that could not receive a numeric score.

Scorers also had the option of flagging a response as a “Crisis” (sometimes referred to as Alert paper) requiring immediate review and possible immediate action by scoring leadership. Crisis papers were reviewed by the Scoring Project Manager. When papers were confirmed as being Crisis papers, the response and student demographic information was provided to the Maine DOE for further action.

Crisis responses could include but were not limited to one or more of the following:

- Thoughts of suicide
- Criminal activity
- Alcohol or drug use
- Extreme depression
- Violence
- Rape, sexual or physical abuse
- Self-harm or intent to harm others
- Neglect
- Any indication that the author or another child was in danger or under threat of danger

Cognia Informational Writing Rubric (Grades 6–8)

Traits	Score 4	Score 3	Score 2	Score 1	Score 0
The student response:					
Development & Elaboration of Idea	<ul style="list-style-type: none"> provides thorough development of ideas in support of the task demonstrates consistently maintained focus provides relevant and specific evidence to thoroughly support the main idea includes effective use of sources, well-chosen facts, and concrete details; evidence achieves substantial depth and specificity 	<ul style="list-style-type: none"> provides general development of ideas in support of the task demonstrates generally maintained focus provides relevant but general evidence to support the main idea, or evidence generally supports the main idea includes use of sources, facts, and details; evidence achieves depth and specificity 	<ul style="list-style-type: none"> provides limited development of ideas in support of the task demonstrates partially consistent focus provides some relevant evidence to support a main idea, or evidence only partially supports the main idea includes uneven use of sources, facts, and details; evidence achieves little depth 	<ul style="list-style-type: none"> provides minimal development of ideas in support of the task demonstrates unclear focus provides minimally relevant evidence to support the main idea, or evidence minimally supports the main idea includes little use of sources, facts, and/or details; evidence lacks depth 	<ul style="list-style-type: none"> fails to develop ideas in support of the task does not maintain focus does not provide evidence to support the main idea
Organization	<ul style="list-style-type: none"> demonstrates strong coherence and clarity includes a strong and engaging introduction and provides an effective concluding statement presents a logical, well-executed progression of ideas integrates supporting evidence smoothly and skillfully uses a variety of precise and effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates general coherence and clarity includes a clear introduction and provides a concluding statement presents a logical progression of ideas integrates supporting evidence logically uses effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates limited coherence and clarity includes an introduction and may provide a concluding statement presents an uneven progression of ideas integrates supporting evidence unevenly uses partially effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates minimal coherence and clarity may include an introduction that is not clearly identifiable and may provide an unclear concluding statement presents an unclear progression of ideas integrates supporting evidence minimally may attempt transitions between ideas 	<ul style="list-style-type: none"> does not demonstrate intentional coherence presents no progression of ideas
Language Use & Vocabulary	<ul style="list-style-type: none"> establishes and consistently maintains a formal style uses precise and effective language, including a wide variety of words and phrases, linking and transition words, and effective domain-specific vocabulary 	<ul style="list-style-type: none"> establishes and mostly maintains a formal style uses generally appropriate language, including a variety of words and phrases, linking and transition words, and/or generally appropriate domain-specific vocabulary 	<ul style="list-style-type: none"> establishes a partially formal style uses some appropriate language, including limited variety of words and phrases, linking and transition words; includes limited domain-specific vocabulary 	<ul style="list-style-type: none"> establishes minimal formality in style uses imprecise language, including minimal variety of words and phrases; includes little to no domain-specific vocabulary 	<ul style="list-style-type: none"> does not establish a formal style uses confusing or inappropriate language
Command of Conventions	<ul style="list-style-type: none"> demonstrates consistent command of the conventions of standard English may contain few minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates general command of the conventions of standard English contains minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates partial command of the conventions of standard English contains errors or patterns of errors in grammar, usage, and/or mechanics that may partially interfere with comprehension 	<ul style="list-style-type: none"> demonstrates minimal command of the conventions of standard English contains frequent distracting errors in grammar, usage, and mechanics that interfere with comprehension 	<ul style="list-style-type: none"> does not demonstrate command of the conventions of standard English contains numerous distracting errors in grammar, usage, and mechanics that impede comprehension

¹ The type of textual evidence required is grade- and task-specific.

Traits	Score 4	Score 3	Score 2	Score 1	Score 0
Development & Elaboration of Ideas¹	The student response:				
	<ul style="list-style-type: none"> establishes precise and credible claim(s) in support of the task provides a thoroughly developed argument that is consistently maintained and effectively addresses counterclaim(s) <i>(counterclaim not required for grade 6)</i> achieves substantial depth, specificity, and relevance provides clear and convincing text-based evidence¹ to support the claim(s); provides evidence to elaborate on counterclaim(s) <i>(counterclaim not required for grade 6)</i> effectively uses a variety of sources, facts, and details 	<ul style="list-style-type: none"> establishes reasonable claim(s) in support of the task provides a generally developed argument that is mostly maintained and acknowledges counterclaim(s) <i>(counterclaim not required for grade 6)</i> achieves depth, specificity, and relevance provides clear text-based evidence to support the claim(s); may provide evidence to explain counterclaim(s) <i>(counterclaim not required for grade 6)</i> uses sources, facts, and details 	<ul style="list-style-type: none"> establishes superficial claim(s) in support of the task provides a partially developed argument that is inconsistently maintained achieves some depth provides text-based evidence to support the claim(s) includes uneven use of sources, facts, and details 	<ul style="list-style-type: none"> attempts to establish claim(s) in support of the task; claim(s) may be ambiguous or flawed provides a minimally developed argument lacks depth provides minimal text-based evidence to support the claim includes minimal use of sources, facts, and details 	<ul style="list-style-type: none"> fails to establish claim(s) in support of the task does not provide an argument or evidence
Organization	<ul style="list-style-type: none"> demonstrates strong coherence and clarity includes an introduction effectively stating the claim(s) provides a logical and effective concluding statement that strengthens the claim(s) and counterclaim(s) <i>(counterclaim not required for grade 6)</i> presents a logical, well-executed progression of arguments, and smoothly and skillfully integrates supporting evidence, reasoning, and counterclaim(s) <i>(counterclaim not required for grade 6)</i> uses a variety of precise and effective transitions 	<ul style="list-style-type: none"> demonstrates general coherence and clarity includes an introduction clearly stating the claim(s) provides a logical concluding statement that restates the claim; may include counterclaim(s) <i>(counterclaim not required for grade 6)</i> presents a logical progression of arguments and logically integrates supporting evidence, reasoning, and counterclaim(s) <i>(counterclaim not required for grade 6)</i> uses effective transitions 	<ul style="list-style-type: none"> demonstrates limited coherence and clarity includes an introduction stating the claim(s) provides a concluding statement that may restate the claim(s) presents a progression of arguments and may unevenly integrate supporting evidence uses partially effective transitions 	<ul style="list-style-type: none"> demonstrates minimal coherence and clarity may include an introduction that is not clearly identifiable may attempt to provide a concluding statement; may be unclear or inferred presents an unclear progression of arguments and may lack supporting evidence may attempt transitions 	<ul style="list-style-type: none"> does not demonstrate intentional coherence or clarity
Language Use & Vocabulary	<ul style="list-style-type: none"> establishes and consistently maintains a formal style uses precise and effective language, including a wide variety of words and phrases, linking and transition words, words to indicate point of view, and effective domain-specific vocabulary 	<ul style="list-style-type: none"> establishes and mostly maintains a formal style uses generally appropriate language, including a variety of words and phrases, linking and transition words, words to indicate point of view, and/or generally appropriate domain-specific vocabulary 	<ul style="list-style-type: none"> establishes a partially formal style uses some appropriate language, including a limited variety of words and phrases, linking and transition words, and/or words to indicate point of view; includes limited domain-specific vocabulary 	<ul style="list-style-type: none"> establishes minimal formality in style uses imprecise language, including a minimal variety of words and phrases and few words to indicate point of view; includes little to no domain-specific vocabulary 	<ul style="list-style-type: none"> does not establish a formal style uses confusing or inappropriate language
Command of Conventions	<ul style="list-style-type: none"> demonstrates consistent command of the conventions of standard English may contain few minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates general command of the conventions of standard English contains minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates partial command of the conventions of standard English contains errors or patterns of errors in grammar, usage, and/or mechanics that may partially interfere with comprehension 	<ul style="list-style-type: none"> demonstrates minimal command of the conventions of standard English contains frequent distracting errors in grammar, usage, and mechanics that interfere with comprehension 	<ul style="list-style-type: none"> does not demonstrate command of the conventions of standard English contains numerous distracting errors in grammar, usage, and mechanics that impede comprehension

¹ The type of textual evidence required is grade- and task-specific.

Cognia Opinion Writing Rubric (Grades 3–5)

Traits	Score 4	Score 3	Score 2	Score 1	Score 0
The student response:					
Development & Elaboration of Ideas¹	<ul style="list-style-type: none"> provides an opinion in support of the task and thoroughly explains the reasons for the opinion demonstrates a strongly maintained focus provides specific and convincing evidence that thoroughly supports the opinion effectively uses a variety of sources, facts, and details achieves substantial depth, specificity, and relevance 	<ul style="list-style-type: none"> provides an opinion in support of the task and generally explains the reasons for the opinion demonstrates a consistently maintained focus provides relevant evidence that supports the opinion uses sources, facts, and details achieves depth, specificity, and relevance 	<ul style="list-style-type: none"> provides an opinion in support of the task and partially explains the reasons for the opinion demonstrates an inconsistently maintained focus provides some relevant evidence or evidence only partially supports the opinion includes uneven use of sources, facts, and details achieves some depth 	<ul style="list-style-type: none"> provides a confusing or ambiguous opinion in support of the task and may minimally explain the reasons for the opinion does not demonstrate an ability to maintain focus provides little to no evidence in support of the opinion includes minimal use of sources, facts, and/or details lacks depth 	<ul style="list-style-type: none"> fails to provide an opinion and reasons in support of the task
Organization	<ul style="list-style-type: none"> demonstrates strong coherence and clarity includes a strong and engaging introduction and a logical and effective concluding statement presents a well-executed and logical progression of ideas uses smooth and effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates coherence and clarity includes a clear introduction and provides a logical concluding statement presents a clear and logical progression of ideas uses effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates uneven coherence or clarity includes an introduction and may provide a concluding statement presents an uneven progression of ideas uses partially effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates minimal coherence or clarity may include an introduction that is not clearly identifiable and may lack a concluding statement presents an unclear progression of ideas may attempt transitions between ideas 	<ul style="list-style-type: none"> does not demonstrate intentional coherence and clarity
Language Use & Vocabulary	<ul style="list-style-type: none"> uses precise and effective language, including a wide variety of words and phrases, linking and transition words, and domain-specific vocabulary 	<ul style="list-style-type: none"> uses generally appropriate language, including a variety of words and phrases, linking and transition words, and domain-specific vocabulary 	<ul style="list-style-type: none"> uses some appropriate language, including a limited variety of words and phrases, and linking and transition words; may include domain-specific vocabulary 	<ul style="list-style-type: none"> uses imprecise language, including a minimal variety of words and phrases, and linking and transition words; includes little to no domain-specific vocabulary 	<ul style="list-style-type: none"> uses confusing or inappropriate language
Command of Conventions	<ul style="list-style-type: none"> demonstrates consistent command of the basic conventions of standard English may contain few minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates general command of the basic conventions of standard English contains minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates partial command of the basic conventions of standard English contains errors or patterns of errors in grammar, usage, and/or mechanics that may partially interfere with comprehension 	<ul style="list-style-type: none"> demonstrates minimal command of the basic conventions of standard English contains frequent distracting errors in grammar, usage, and mechanics that interfere with comprehension 	<ul style="list-style-type: none"> does not demonstrate command of the basic conventions of standard English contains numerous distracting errors in grammar, usage, and mechanics that impede comprehension

¹ The type of textual evidence required is grade- and task-specific.

Traits	Score 4	Score 3	Score 2	Score 1	Score 0
	The student response:				
Development & Elaboration of Ideas¹	<ul style="list-style-type: none"> provides thorough development of ideas in support of the task demonstrates consistently maintained focus achieves substantial depth and specificity provides relevant and specific evidence to thoroughly support the main idea includes effective use of sources, facts, details, and quotations 	<ul style="list-style-type: none"> provides general development of ideas in support of the task demonstrates generally maintained focus achieves depth and specificity provides relevant but general evidence to support the main idea includes use of sources, facts, details, and quotations 	<ul style="list-style-type: none"> provides limited development of ideas in support of the task demonstrates partially consistent focus achieves little depth provides some relevant evidence to support the main idea, or evidence only partially supports the main idea includes uneven use of sources, facts, details, and quotations 	<ul style="list-style-type: none"> provides minimal development of ideas in support of the task demonstrates unclear focus lacks depth provides minimally relevant evidence to support the main idea, or evidence minimally supports the main idea includes little use of sources, facts, details, and quotations 	<ul style="list-style-type: none"> fails to develop ideas in support of the task does not maintain focus does not provide evidence to support the main idea
Organization	<ul style="list-style-type: none"> demonstrates strong coherence and clarity includes a strong and engaging introduction and provides an effective concluding statement presents a well-executed and logical progression of ideas integrates evidence smoothly uses smooth and effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates coherence and clarity includes a clear introduction and provides a concluding statement presents a clear and logical progression of ideas integrates evidence uses effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates uneven coherence or clarity includes an introduction and may provide an unclear concluding statement presents a clear progression of ideas integrates evidence unevenly uses partially effective transitions between ideas 	<ul style="list-style-type: none"> demonstrates minimal coherence or clarity may include an introduction that is not clearly identifiable and may lack a concluding statement presents ideas that are disjointed minimally integrates evidence may attempt transitions between ideas 	<ul style="list-style-type: none"> does not demonstrate intentional coherence does not present a progression of ideas
Language Use & Vocabulary	<ul style="list-style-type: none"> uses precise and effective language, including a wide variety of words and phrases, linking and transition words, and domain-specific vocabulary 	<ul style="list-style-type: none"> uses generally appropriate language, including a variety of words and phrases, linking and transition words, and domain-specific vocabulary 	<ul style="list-style-type: none"> uses some appropriate language, including a limited variety of words and phrases, linking and transition words; may include domain-specific vocabulary 	<ul style="list-style-type: none"> uses imprecise language, including a minimal variety of words and phrases, linking and transition words; includes little to no domain-specific vocabulary 	<ul style="list-style-type: none"> uses confusing or inappropriate language
Command of Conventions	<ul style="list-style-type: none"> demonstrates consistent command of the basic conventions of standard English may contain few minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates general command of the basic conventions of standard English contains minor errors in grammar, usage, or mechanics that do not interfere with comprehension 	<ul style="list-style-type: none"> demonstrates partial command of the basic conventions of standard English contains errors or patterns of errors in grammar, usage, and/or mechanics that may partially interfere with comprehension 	<ul style="list-style-type: none"> demonstrates minimal command of the basic conventions of standard English contains frequent distracting errors in grammar, usage, and mechanics that interfere with comprehension 	<ul style="list-style-type: none"> does not demonstrate command of the basic conventions of standard English contains numerous distracting errors in grammar, usage, and mechanics that impede comprehension

¹The type of textual evidence required is grade- and task-specific.

APPENDIX G—ITEM-LEVEL CLASSICAL STATISTICS

**Table G-1. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 3**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
123876A	OR	0.31	0.49	0	414599	MC	0.42	0.14	0
123978A	MC	0.65	0.46	0	417021	MC	0.83	0.38	0
124366A	MC	0.56	0.40	0	462345	MC	0.69	0.49	0
125118A	MC	0.55	0.38	0	462586	MC	0.67	0.44	0
125137A	MC	0.50	0.31	0	462666	MC	0.76	0.39	0
125223A	MC	0.56	0.37	0	462672	MC	0.65	0.49	0
125246A	MC	0.47	0.41	0	464204	MC	0.60	0.49	0
125260A	MC	0.54	0.33	0	464322	MC	0.28	0.35	0
125291A	MC	0.52	0.25	1	464499A	OR	0.14	0.58	2
400041	MC	0.44	0.24	0	464499B	OR	0.16	0.53	2
401070	MC	0.55	0.40	0	532101A	OR	0.30	0.57	3
411009	MC	0.69	0.32	0	532101B	OR	0.29	0.58	3
411111A	OR	0.41	0.58	2	532118	MC	0.48	0.27	1
411111B	OR	0.43	0.32	2	532135	MC	0.49	0.39	0
411119	MC	0.63	0.43	0	539890	MC	0.40	0.28	1
411577	MC	0.64	0.26	0	539899	MC	0.90	0.27	0
411588	MC	0.54	0.20	1	557244	MC	0.24	0.18	0
411642	MC	0.44	0.43	0	557246	MC	0.41	0.37	2
411764	MC	0.38	0.33	0	557268A	OR	0.35	0.54	1
413036	MC	0.40	0.37	0	557268B	OR	0.15	0.44	1
413163	MC	0.57	0.45	0					

**Table G-2. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 4**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
124769A	MC	0.69	0.46	0	408054	MC	0.49	0.51	0
124781A	MC	0.31	0.34	0	411556	MC	0.64	0.43	1
124856A	MC	0.42	0.37	0	411727	MC	0.49	0.30	0
124951A	MC	0.43	0.25	0	411832	MC	0.59	0.36	0
126341A	MC	0.36	0.17	0	411997A	OR	0.35	0.52	1
126345A	OR	0.51	0.54	1	411997B	OR	0.32	0.51	1
126345B	OR	0.30	0.51	1	413818	MC	0.32	0.27	0
126362A	MC	0.46	0.31	0	414743	MC	0.37	0.37	0
126501A	MC	0.61	0.48	0	447971A	OR	0.32	0.62	2
127388A	MC	0.31	0.31	0	447971B	OR	0.13	0.48	1
127466A	MC	0.23	0.25	0	448543A	OR	0.32	0.68	1
127590A	MC	0.31	0.40	0	448543B	OR	0.24	0.60	1
127597A	MC	0.31	0.25	0	465876	MC	0.34	0.07	0
400786	MC	0.70	0.14	0	476868	MC	0.37	0.25	0
400795	MC	0.70	0.32	0	532523	MC	0.29	0.09	0
400798	MC	0.32	0.31	0	540258	MC	0.82	0.32	0
400903	MC	0.52	0.32	0	540265	MC	0.45	0.41	0
405640	MC	0.71	0.41	0	540312	MC	0.31	0.29	0
407497	MC	0.55	0.31	0	540326	MC	0.81	0.30	0
408032	MC	0.66	0.44	0	560922	MC	0.54	0.36	0

**Table G-3. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 5**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
124675A	MC	0.42	0.38	0	415320B	OR	0.09	0.55	2
124737A	MC	0.59	0.40	0	464057	MC	0.80	0.35	0
124738A	MC	0.33	0.30	0	464086	MC	0.44	0.28	0
125071A	MC	0.58	0.35	1	466529	OR	0.43	0.31	0
125951A	MC	0.62	0.37	0	466686	OR	0.20	0.44	0
126058A	MC	0.13	0.14	0	532475A	OR	0.44	0.54	1
400076	MC	0.38	0.18	0	532475B	OR	0.12	0.52	1
400224	MC	0.46	0.17	0	532484A	OR	0.41	0.56	1
400639	MC	0.41	0.20	0	532484B	OR	0.35	0.54	1
400711	MC	0.79	0.39	0	532486	MC	0.38	0.42	0
408459	MC	0.26	0.12	0	532490	MC	0.52	0.44	0
408463	MC	0.23	0.20	0	532496	MC	0.65	0.37	0
410151	MC	0.44	0.27	0	532498	MC	0.61	0.46	0
411149	MC	0.50	0.45	0	539177	MC	0.67	0.37	0
411240	MC	0.42	0.47	0	539188	MC	0.49	0.13	0
411295	MC	0.74	0.42	0	539225	MC	0.27	0.25	0
413923	MC	0.43	0.50	0	540637	MC	0.80	0.32	0
415228A	OR	0.38	0.58	1	558689	MC	0.69	0.25	0
415228B	OR	0.18	0.53	1	558693	MC	0.60	0.43	0
415312	MC	0.55	0.31	0	558705	MC	0.34	0.26	0
415320A	OR	0.18	0.70	2					

**Table G-4. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 6**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
124799A	MC	0.67	0.50	0	419551	MC	0.66	0.41	0
125464A	MC	0.80	0.36	0	464562	MC	0.50	0.33	0
125837A	MC	0.91	0.30	0	464839	MC	0.42	0.22	0
125839A	MC	0.65	0.34	0	464910	MC	0.33	0.13	0
400114	MC	0.48	0.29	0	474350	MC	0.50	0.39	0
400238	MC	0.46	0.14	0	532604A	OR	0.12	0.32	3
400411	MC	0.42	0.24	0	532604B	OR	0.04	0.31	3
400688	MC	0.45	0.40	0	532622	MC	0.64	0.40	0
406039	MC	0.38	0.31	1	539595	MC	0.34	0.27	0
410187	MC	0.19	0.07	0	539597	MC	0.45	0.40	0
412050	MC	0.68	0.41	0	539618	MC	0.35	0.34	0
412181	MC	0.42	0.07	0	539622	MC	0.40	0.32	0
412273	MC	0.35	0.31	0	539624A	OR	0.32	0.64	1
412393	MC	0.25	0.30	0	539624B	OR	0.35	0.54	1
412411	MC	0.68	0.39	0	539643	MC	0.21	0.35	0
412462	MC	0.62	0.31	0	539781	MC	0.37	0.26	0
412531A	OR	0.24	0.67	2	539791	MC	0.75	0.31	0
412531B	OR	0.13	0.59	2	539793	MC	0.82	0.30	0
414069	MC	0.33	0.14	0	540727	MC	0.35	0.23	0
415140	MC	0.45	0.26	0	558385	OR	0.28	0.49	0
415153	MC	0.60	0.33	0	558418A	OR	0.17	0.55	2
415230	MC	0.24	0.32	0	558418B	OR	0.16	0.49	2

**Table G-5. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 7**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
124350A	MC	0.50	0.44	0	446620B	OR	0.13	0.46	1
124359A	MC	0.58	0.38	0	467173	MC	0.20	0.14	0
124361A	MC	0.38	0.48	0	467221	MC	0.51	0.36	0
124504A	MC	0.45	0.29	0	467737	MC	0.43	0.32	0
124508A	MC	0.73	0.36	0	467772	MC	0.31	0.10	0
124648A	MC	0.43	0.46	0	467828	MC	0.63	0.36	0
124652A	MC	0.40	0.19	0	467844	MC	0.40	0.23	0
400327	MC	0.29	0.13	0	467858	MC	0.20	0.13	0
400877	MC	0.65	0.43	0	467883	OR	0.19	0.33	0
400884	MC	0.37	0.18	0	532211A	OR	0.31	0.69	3
406243A	OR	0.54	0.63	1	532211B	OR	0.18	0.53	2
406243B	OR	0.37	0.61	1	532217	OR	0.16	0.26	0
408770	MC	0.64	0.38	0	539407	MC	0.46	0.38	0
408783	MC	0.39	0.15	0	539434	MC	0.43	0.33	0
410251	MC	0.58	0.31	0	539440	MC	0.46	0.27	0
412048	MC	0.54	0.43	0	539442	MC	0.20	0.06	0
412197	MC	0.48	0.48	0	557940	MC	0.43	0.49	0
412200	MC	0.59	0.33	0	557950	OR	0.12	0.34	0
412224	MC	0.53	0.36	0	557952	MC	0.40	0.31	0
412251	MC	0.71	0.44	0					
412263	MC	0.78	0.37	0					
412395	MC	0.27	0.46	0					
412636A	OR	0.39	0.62	3					
412636B	OR	0.30	0.61	3					
446620A	OR	0.35	0.65	1					

**Table G-6. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 8**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
126278A	MC	0.48	0.42	0	414849	MC	0.36	0.04	0
126281A	MC	0.44	0.38	0	414896	MC	0.38	0.26	0
126883A	MC	0.55	0.38	0	447438A	OR	0.10	0.61	6
127152A	MC	0.43	0.40	0	447438B	OR	0.05	0.51	6
127742A	MC	0.44	0.24	0	468276	MC	0.78	0.36	0
127837A	MC	0.74	0.42	0	468379	MC	0.43	0.46	0
400370	MC	0.38	0.28	0	468386	OR	0.20	0.46	0
400985	MC	0.37	0.14	0	468707	MC	0.27	0.26	0
406526A	OR	0.38	0.49	3	468754	MC	0.59	0.39	0
406526B	OR	0.15	0.18	2	482018A	OR	0.42	0.52	2
408524	MC	0.46	0.37	0	482018B	OR	0.15	0.41	2
408651	MC	0.31	0.15	0	483010	MC	0.61	0.24	0
409018	MC	0.26	0.02	0	483259	MC	0.55	0.31	0
409020	MC	0.44	0.30	0	532395	MC	0.38	0.28	0
410287A	OR	0.20	0.59	2	540824	MC	0.39	0.20	0
410287B	OR	0.33	0.45	2	540838	MC	0.47	0.27	0
412467	MC	0.55	0.35	0	540848	MC	0.17	0.19	0
412575	MC	0.38	0.31	0	540850	MC	0.38	0.29	0
412833	MC	0.40	0.24	0	540876	MC	0.37	0.24	0
413063	MC	0.87	0.25	0	540892	MC	0.83	0.33	0
413137	MC	0.26	0.14	0	540915	MC	0.61	0.27	0
413229	MC	0.76	0.33	0	540951	MC	0.29	0.13	0
414834	MC	0.28	0.30	0					

**Table G-7. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 3**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
130312A	MC	0.76	0.52	0	543555	OR	0.60	0.51	0
130319A	MC	0.66	0.45	0	543557	MC	0.37	0.23	0
130325A	MC	0.41	0.35	0	543565	MC	0.75	0.42	0
130326A	OR	0.54	0.57	0	543571	MC	0.85	0.38	0
130328A	MC	0.69	0.37	0	543575	MC	0.71	0.49	0
410572	OR	0.30	0.58	2	543577	MC	0.77	0.48	0
410580	OR	0.16	0.48	4	552223	OR	0.54	0.60	0
422166	MC	0.43	0.39	0	552233	MC	0.71	0.52	0
474429	MC	0.40	0.31	0	552235	MC	0.72	0.44	0
474695	MC	0.52	0.36	0	552247	MC	0.63	0.58	0
474704	MC	0.48	0.31	0	552251	MC	0.75	0.44	0
474706	MC	0.45	0.38	0	552255	MC	0.67	0.57	0
474708	MC	0.30	0.20	0	552261	OR	0.29	0.51	2
543241	MC	0.69	0.41	0	559821	OR	0.48	0.41	0
543243	MC	0.35	0.31	0	559830	MC	0.75	0.54	0
543247	MC	0.68	0.45	0	559835	MC	0.47	0.25	0
543249	OR	0.40	0.30	0	559838	MC	0.32	0.30	0
543253	MC	0.69	0.37	0	559841	MC	0.73	0.46	0
543259	MC	0.55	0.35	0	559845	MC	0.49	0.27	0
543524	OR	0.27	0.28	0	559847	MC	0.56	0.43	0
543530	MC	0.60	0.27	0	559849	MC	0.47	0.28	0
543532	MC	0.72	0.41	0	559851	OR	0.30	0.43	1
543534	MC	0.64	0.56	0	568986	MC	0.68	0.50	0
543542	MC	0.32	0.32	0	569376	MC	0.64	0.28	0
543546	MC	0.73	0.53	0					

**Table G-8. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 4**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
420698	MC	0.42	0.29	0	544455	MC	0.62	0.41	0
420714	MC	0.58	0.34	0	544457	MC	0.64	0.33	0
420723	OR	0.51	0.34	0	544460	MC	0.65	0.25	0
420785	MC	0.81	0.31	0	544476	MC	0.89	0.46	1
420820	MC	0.50	0.25	0	544483	MC	0.40	0.37	0
422664	MC	0.70	0.38	0	552900	OR	0.73	0.51	0
476097	MC	0.59	0.51	0	552906	MC	0.54	0.34	0
476102	OR	0.31	0.23	0	552908	MC	0.79	0.46	0
476121	MC	0.71	0.54	0	552910	MC	0.83	0.26	0
476151	MC	0.46	0.21	0	552912	MC	0.80	0.45	0
476172	OR	0.36	0.63	1	552916	MC	0.49	0.23	0
476177	MC	0.75	0.49	0	552918	MC	0.51	0.39	0
486800	MC	0.58	0.44	0	552922	OR	0.43	0.52	1
543932	MC	0.38	0.33	0	552924	OR	0.23	0.47	2
543940	MC	0.25	0.26	0	552927	OR	0.53	0.58	0
543942	OR	0.40	0.39	0	552931	MC	0.61	0.49	0
543944	MC	0.87	0.48	0	552933	MC	0.71	0.35	0
543946	MC	0.30	0.20	0	552938	MC	0.42	0.23	0
543950	MC	0.46	0.28	0	552940	MC	0.76	0.53	0
544002	MC	0.53	0.42	0	552944	MC	0.64	0.48	0
544006	MC	0.55	0.33	0	552946	MC	0.66	0.50	0
544014	MC	0.62	0.33	0	552948	MC	0.62	0.49	0
544034	MC	0.45	0.26	0	552950	MC	0.30	0.30	0
544036	MC	0.69	0.41	0	552956	OR	0.19	0.53	1
544453	OR	0.60	0.39	0					

**Table G-9. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 5**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
131427A	MC	0.41	0.29	0	536076	MC	0.79	0.48	0
131429A	MC	0.36	0.13	0	536078	MC	0.40	0.39	0
131430A	MC	0.43	0.39	0	545263	MC	0.69	0.32	0
131431A	MC	0.62	0.42	0	545265	MC	0.34	0.47	0
131437A	MC	0.45	0.26	0	545273	OR	0.35	0.31	0
131440A	MC	0.43	0.26	0	545279	MC	0.75	0.44	0
131444A	MC	0.69	0.41	0	545281	MC	0.51	0.30	0
131445A	MC	0.60	0.42	0	545283	MC	0.44	0.30	0
131452A	OR	0.69	0.55	0	552537	OR	0.49	0.38	0
131484A	OR	0.20	0.47	1	552544	MC	0.89	0.41	0
459808	MC	0.59	0.23	0	552552	MC	0.81	0.43	0
459811	MC	0.62	0.41	0	552554	MC	0.77	0.41	0
459819	MC	0.79	0.41	0	552556	MC	0.51	0.27	0
459823	MC	0.63	0.27	0	552561	MC	0.33	0.28	0
459830	MC	0.36	0.19	0	552563	MC	0.50	0.20	0
536024	MC	0.54	0.37	0	552565	OR	0.41	0.46	1
536026	MC	0.69	0.41	0	552567	OR	0.26	0.53	1
536034	OR	0.53	0.46	0	560295	OR	0.44	0.46	0
536040	MC	0.71	0.47	0	560301	MC	0.75	0.46	0
536046	MC	0.71	0.51	0	560306	MC	0.70	0.36	0
536048	MC	0.47	0.14	0	560314	MC	0.56	0.35	0
536061	MC	0.83	0.43	0	560316	MC	0.81	0.47	0
536068	MC	0.40	0.25	0	560318	MC	0.64	0.38	0
536070	OR	0.20	0.21	0	560333	OR	0.20	0.54	1
536072	MC	0.64	0.35	0					

**Table G-10. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 6**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
130154A	MC	0.38	0.19	0	546211	MC	0.65	0.33	0
130167A	MC	0.50	0.38	0	546213	MC	0.68	0.41	0
130168A	MC	0.43	0.41	0	546215	OR	0.47	0.27	0
130171A	MC	0.80	0.43	0	546223	MC	0.91	0.29	0
130173A	OR	0.59	0.52	0	546225	MC	0.63	0.35	0
130184A	OR	0.20	0.41	1	553108	OR	0.51	0.40	0
409362	MC	0.68	0.36	0	553110	MC	0.45	0.27	0
409385	MC	0.41	0.37	0	553112	MC	0.45	0.20	0
409396	MC	0.58	0.41	0	553114	MC	0.68	0.41	0
409447	MC	0.34	0.30	0	553116	MC	0.75	0.50	0
409458	OR	0.47	0.39	0	553120	MC	0.54	0.23	0
409472	MC	0.60	0.38	0	553122	MC	0.48	0.39	0
471626	MC	0.38	0.17	0	553128	MC	0.49	0.27	0
536840	MC	0.75	0.33	0	553130	MC	0.51	0.32	0
536842	MC	0.60	0.40	0	553134	OR	0.26	0.55	1
536846	MC	0.68	0.33	0	559980	MC	0.76	0.49	
536856	MC	0.38	0.21	0	559984	MC	0.70	0.35	0
536858	MC	0.29	0.36	0	559986	OR	0.60	0.42	0
536931	OR	0.61	0.46	0	559988	MC	0.77	0.45	0
536933	MC	0.79	0.42	0	559992	MC	0.78	0.19	
536935	MC	0.82	0.27	0	559994	MC	0.72	0.42	0
536939	MC	0.74	0.31	0	560000	MC	0.70	0.38	0
536941	MC	0.72	0.42	0	560002	OR	0.52	0.45	0
536953	MC	0.80	0.50	0	560004	OR	0.24	0.51	1
546209	MC	0.58	0.47						

**Table G-11. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 7**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>	<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>				<i>Number</i>	<i>Type</i>			
409401	MC	0.53	0.31	0	537778	MC	0.63	0.42	0
409409	MC	0.43	0.41	0	537781	MC	0.70	0.44	0
409464	MC	0.42	0.33	0	537794	MC	0.56	0.42	0
409493	MC	0.52	0.34	0	546829	MC	0.67	0.43	1
409501	MC	0.53	0.42	0	546837	MC	0.60	0.35	0
409517	OR	0.36	0.40	0	546839	MC	0.64	0.51	0
477633	MC	0.59	0.32	0	546843	OR	0.44	0.34	0
477635	MC	0.57	0.30	0	546849	MC	0.38	0.26	0
477645	OR	0.55	0.46	0	546854	MC	0.48	0.35	0
477647	MC	0.66	0.40	0	546940	MC	0.40	0.42	0
477651	MC	0.67	0.36	0	546945	OR	0.61	0.43	0
477655	MC	0.62	0.36	0	546948	MC	0.74	0.23	0
477778	OR	0.48	0.57	1	546952	MC	0.50	0.51	0
478253	MC	0.68	0.45	0	546957	MC	0.78	0.48	0
478255	OR	0.73	0.47	0	546959	MC	0.78	0.31	0
478259	OR	0.35	0.62	2	552819	OR	0.40	0.19	0
478261	MC	0.69	0.46	0	552823	MC	0.35	0.36	0
478263	MC	0.93	0.34	0	552825	MC	0.38	0.21	0
478265	MC	0.53	0.40	0	552827	MC	0.71	0.28	0
478267	MC	0.79	0.48	0	552831	MC	0.54	0.24	0
478269	MC	0.51	0.30	0	552839	MC	0.62	0.32	0
478271	MC	0.62	0.39	0	552841	MC	0.63	0.42	0
478277	MC	0.67	0.47	0	552843	OR	0.33	0.52	1
537742	MC	0.61	0.35	0	552846	OR	0.20	0.56	2
537760	MC	0.60	0.48	0					

**Table G-12. 2018–19 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 8**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
402075	MC	0.61	0.21	1
402077	MC	0.37	0.30	0
402079	OR	0.53	0.46	0
402111	MC	0.84	0.28	0
402116	MC	0.80	0.41	0
402118	MC	0.68	0.43	0
420872	MC	0.67	0.37	0
420905	MC	0.38	0.26	0
420913	MC	0.42	0.36	0
420925	MC	0.54	0.37	1
420929	MC	0.51	0.22	0
420946	MC	0.65	0.42	0
420952	MC	0.73	0.34	0
420970	MC	0.67	0.40	0
420986	OR	0.55	0.41	0
420990	OR	0.31	0.65	3
538612	MC	0.59	0.40	1
538616	MC	0.84	0.39	0
538618	MC	0.88	0.36	0
538623	OR	0.39	0.17	0
538625	MC	0.52	0.33	0
538635	MC	0.43	0.35	0
546057	OR	0.42	0.40	0
546059	MC	0.65	0.47	
546067	MC	0.84	0.51	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
546080	MC	0.68	0.40	0
546082	MC	0.67	0.54	0
546084	MC	0.85	0.41	0
548440	MC	0.39	0.17	0
548448	MC	0.35	0.36	0
548458	MC	0.64	0.24	0
548462	MC	0.45	0.34	0
548467	MC	0.58	0.32	0
553142	OR	0.60	0.58	0
553144	MC	0.64	0.35	0
553146	MC	0.65	0.50	0
553152	MC	0.72	0.42	0
553154	MC	0.42	0.29	0
553160	MC	0.61	0.45	0
553166	OR	0.33	0.52	2
560466	OR	0.56	0.31	0
560476	MC	0.69	0.39	0
560483	MC	0.45	0.35	0
560487	MC	0.69	0.36	0
560494	MC	0.48	0.25	0
560500	MC	0.72	0.48	0
560504	MC	0.39	0.20	0
560508	OR	0.39	0.53	1
560510	OR	0.28	0.62	2

APPENDIX H—ITEM-LEVEL SCORE POINT DISTRIBUTIONS

Table H-1. 2018–19 eMPowerME: Item-Level Score Distributions for Constructed-Response Items—Mathematics

Grade	Item Number	Total Possible Points	Percent of Students at Score Point					
			0	1	2	3	4	
3	123876A	1	69.20	30.67				
	411111A	2	36.40	41.07	20.64			
	411111B	1	55.15	43.02				
	464499A	4	64.58	18.37	9.94	3.78	1.41	
	464499B	2	66.76	30.05	1.37			
	532101A	4	42.15	20.06	14.10	11.20	9.41	
	532101B	2	53.07	29.93	14.25			
	557268A	2	45.87	36.32	17.20			
	557268B	1	84.73	14.66				
	126345A	2	26.94	42.67	29.76			
4	126345B	1	69.74	29.64				
	411997A	2	42.25	43.63	12.89			
	411997B	1	66.93	31.86				
	447971A	4	32.95	28.48	21.42	6.60	9.03	
	447971B	2	76.27	18.89	3.39			
	448543A	4	40.49	20.28	15.91	13.32	9.28	
	448543B	2	65.43	19.43	14.43			
	415228A	2	38.87	42.99	16.66			
	415228B	1	80.33	18.21				
	415320A	4	53.80	28.20	6.63	6.05	3.43	
5	415320B	2	84.93	9.41	3.92			
	466529	1	56.71	43.19				
	466686	1	79.90	19.77				
	532475A	2	22.82	64.87	11.09			
	532475B	1	86.74	12.06				
	532484A	4	28.46	20.99	14.70	24.85	9.50	
	532484B	2	59.06	9.74	29.73			
	412531A	4	51.42	18.65	13.11	9.21	5.64	
	412531B	2	78.47	13.19	6.41			
	6	532604A	2	78.15	14.71	4.45		
532604B		1	93.03	4.30				
539624A		4	30.65	26.00	30.29	5.89	5.75	
539624B		2	51.86	23.27	23.45			
558385		1	71.63	28.08				
558418A		2	71.16	20.39	6.60			
558418B		1	81.96	16.22				
406243A		2	35.51	18.64	44.63			
406243B		1	61.44	37.35				
7		412636A	2	54.90	6.77	35.35		
	412636B	1	66.77	30.32				
	446620A	4	33.55	14.16	29.82	18.81	2.17	
	446620B	2	75.97	20.01	2.57			
	467883	1	80.77	19.11				
	532211A	4	32.92	23.80	22.19	16.62	1.95	
	532211B	2	68.76	21.67	7.07			
	532217	1	84.16	15.65				

continued

Grade	Item Number	Total Possible Points	Percent of Students at Score Point				
			0	1	2	3	4
7	557950	1	87.59	12.12			
	406526A	2	30.49	57.84	9.15		
	406526B	1	82.96	14.55			
	410287A	4	35.60	46.97	11.82	2.63	0.79
	410287B	2	33.90	62.36	1.55		
8	447438A	4	70.07	14.17	4.79	3.13	2.21
	447438B	2	87.11	4.79	2.51		
	468386	1	79.56	20.27			
	482018A	2	31.33	50.56	16.23		
	482018B	1	82.78	15.36			

Table H-2. 2018–19 eMPowerME: Item-Level Score Distributions for Constructed-Response Items—ELA

Grade	Item Number	Total Possible Points	Percent of Students at Score Point				
			0	1	2	3	4
	130326A	2	36.31	18.29	45.22		
	410572	3	25.70	57.41	12.22	2.48	
	410580	3	56.21	32.70	6.64	0.85	
	543249	2	56.27	8.11	35.46		
3	543524	2	65.68	14.57	19.28		
	543555	2	32.56	15.12	52.25		
	552223	2	40.25	11.74	47.91		
	552261	2	45.03	48.37	4.87		
	559821	2	39.77	23.59	36.53		
	559851	2	44.50	47.36	6.69		
	420723	2	38.01	21.93	40.05		
	476102	2	64.14	10.14	25.62		
	476172	2	39.71	45.18	13.90		
	543942	2	54.76	9.60	35.53		
4	544453	2	33.99	11.42	54.54		
	552900	2	23.38	6.63	69.91		
	552922	2	31.27	48.61	18.92		
	552924	3	41.51	46.22	9.02	1.50	
	552927	2	40.93	12.03	46.98		
	552956	3	54.65	33.43	9.15	1.57	
	131452A	2	28.28	4.52	66.97		
	131484A	2	63.26	29.74	5.59		
	536034	2	41.44	10.13	48.14		
	536070	2	68.93	21.23	9.77		
5	545273	2	57.02	15.76	27.15		
	552537	2	46.92	8.05	45.00		
	552565	2	28.93	58.86	11.35		
	552567	3	36.91	49.00	11.78	1.47	
	560295	2	50.23	12.28	37.47		
	560333	3	50.53	36.44	10.40	1.40	

continued

Grade	Item Number	Total Possible Points	Percent of Students at Score Point				
			0	1	2	3	4
6	130173A	2	38.17	6.46	55.27		
	130184A	2	62.94	31.65	4.30		
	409458	2	43.50	18.98	37.43		
	536931	2	31.26	15.72	52.98		
	546215	2	48.43	9.92	41.61		
	553108	2	46.26	4.09	49.34		
	553134	4	24.03	51.28	19.19	3.71	0.81
	559986	2	35.92	8.65	55.39		
	560002	2	10.80	73.55	15.30		
	560004	4	29.99	47.57	17.18	3.40	0.93
7	409517	2	57.60	11.93	30.38		
	477645	2	38.04	14.32	47.61		
	477778	2	17.22	67.57	13.95		
	478255	2	17.32	19.35	63.32		
	478259	4	22.80	32.99	24.96	11.88	5.83
	546843	2	49.27	14.16	36.52		
	546945	2	24.05	28.87	47.04		
	552819	2	50.59	19.17	30.23		
	552843	2	43.93	43.85	10.94		
	552846	4	46.66	32.25	13.87	4.24	1.37
8	402079	2	36.25	20.50	43.23		
	420986	2	40.04	9.41	50.51		
	420990	4	23.88	36.91	25.67	7.90	2.71
	538623	2	56.75	7.70	35.52		
	546057	2	50.39	14.49	35.04		
	553142	2	29.90	19.30	50.72		
	553166	2	45.45	38.82	13.49		
	560466	2	39.77	7.94	52.22		
	560508	2	38.25	42.68	17.62		
	560510	4	30.15	35.96	20.30	8.06	3.30

APPENDIX I—DIFFERENTIAL ITEM FUNCTIONING RESULTS

**Table I-1. 2018–19 eMPowerME: Number of Items Classified as “Low” or “High” DIF
Overall and by Grade and Group Favored—Mathematics**

Grade	Group		Item Type	Number of Items	Number “Low”			Number “High”		
	Reference	Focal			Total	Favoring		Total	Favoring	
						Reference	Focal		Reference	Focal
3	Male	Female	MC	32	2	2	0	0	0	0
			OR	9	1	0	1	0	0	0
	No Disability	Disability	MC	32	6	6	0	0	0	0
			OR	9	1	1	0	0	0	0
	Non-EconDis	EconDis	MC	32	0	0	0	0	0	0
			OR	9	0	0	0	0	0	0
	Non-LEP	LEP	MC	32	7	3	4	0	0	0
			OR	9	2	1	1	0	0	0
	White	Black	MC	32	1	0	1	0	0	0
			OR	9	1	1	0	0	0	0
		Hispanic	MC	32	4	3	1	0	0	0
			OR	9	2	1	1	0	0	0
4	Male	Female	MC	32	4	3	1	1	1	0
			OR	8	1	0	1	0	0	0
	No Disability	Disability	MC	32	4	4	0	0	0	0
			OR	8	2	2	0	0	0	0
	Non-EconDis	EconDis	MC	32	0	0	0	0	0	0
			OR	8	0	0	0	0	0	0
	Non-LEP	LEP	MC	32	5	0	5	0	0	0
			OR	8	1	1	0	0	0	0
	White	Black	MC	32	2	1	1	0	0	0
			OR	8	0	0	0	0	0	0
		Hispanic	MC	32	2	2	0	1	1	0
			OR	8	1	0	1	0	0	0
5	Male	Female	MC	31	3	3	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	31	7	6	1	1	1	0
			OR	10	0	0	0	0	0	0

continued

Grade	Group		Item Type	Number of Items	Number "Low"			Number "High"			
	Reference	Focal			Total	Favoring		Total	Favoring		
						Reference	Focal		Reference	Focal	
5	Non-EconDis	EconDis	MC	31	0	0	0	0	0	0	
			OR	10	0	0	0	0	0	0	
	Non-LEP	LEP	MC	31	3	1	2	1	0	1	
			OR	10	0	0	0	0	0	0	
	White	Black	MC	31	4	3	1	0	0	0	
			OR	10	0	0	0	0	0	0	
		Hispanic	MC	31	4	2	2	0	0	0	
			OR	10	1	1	0	0	0	0	
	6	Male	Female	MC	35	3	3	0	0	0	0
				OR	9	1	0	1	0	0	0
No Disability		Disability	MC	35	4	4	0	0	0	0	
			OR	9	2	2	0	0	0	0	
Non-EconDis		EconDis	MC	35	0	0	0	0	0	0	
			OR	9	0	0	0	0	0	0	
		LEP	MC	35	5	0	5	1	0	1	
			OR	9	2	1	1	0	0	0	
Non-LEP		Black	MC	35	3	2	1	0	0	0	
			OR	9	0	0	0	0	0	0	
	Hispanic	MC	35	5	4	1	1	1	0		
		OR	9	0	0	0	0	0	0		
7	Male	Female	MC	33	7	6	1	1	1	0	
			OR	11	2	1	1	0	0	0	
	No Disability	Disability	MC	33	2	2	0	0	0	0	
			OR	11	1	1	0	0	0	0	
	Non-EconDis	EconDis	MC	33	0	0	0	0	0	0	
			OR	11	0	0	0	0	0	0	
	Non-LEP	LEP	MC	33	3	2	1	1	0	1	
			OR	11	4	0	4	0	0	0	
		Asian	MC	33	4	2	2	0	0	0	
			OR	11	0	0	0	0	0	0	
			Black	MC	33	8	0	8	0	0	0
				OR	11	0	0	0	0	0	0
	Hispanic	MC	33	9	7	2	0	0	0		
		OR	11	4	2	2	1	1	0		

continued

Grade	Group		Item Type	Number of Items	Number "Low"			Number "High"		
	Reference	Focal			Total	Favoring		Total	Favoring	
						Reference	Focal		Reference	Focal
8	Male	Female	MC	36	1	1	0	0	0	0
			OR	9	0	0	0	0	0	0
	No Disability	Disability	MC	36	8	8	0	0	0	0
			OR	9	2	2	0	0	0	0
	Non-EconDis	EconDis	MC	36	0	0	0	0	0	0
			OR	9	0	0	0	0	0	0
	LEP		MC	36	8	2	6	1	0	1
			OR	9	2	0	2	0	0	0
	Non-LEP	Black	MC	36	4	2	2	0	0	0
			OR	9	0	0	0	0	0	0
		Hispanic	MC	36	7	4	3	2	1	1
			OR	9	1	1	0	0	0	0

Table I-2. 2018–19 eMPowerME: Number of Items Classified as “Low” or “High” DIF Overall and by Grade and Group Favored—ELA

Grade	Group		Item Type	Number of Items	Number “Low”			Number “High”		
	Reference	Focal			Total	Favoring		Total	Favoring	
						Reference	Focal		Reference	Focal
3	Male	Female	MC	39	1	0	1	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	39	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-EconDis	EconDis	MC	39	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	39	6	1	5	1	0	1
			OR	10	2	1	1	0	0	0
	White	Black	MC	39	2	2	0	0	0	0
			OR	10	0	0	0	0	0	0
		Hispanic	MC	39	6	6	0	1	1	0
			OR	10	0	0	0	0	0	0
4	Male	Female	MC	39	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	39	0	0	0	0	0	0
			OR	10	2	2	0	0	0	0
	Non-EconDis	EconDis	MC	39	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	39	6	1	5	0	0	0
			OR	10	1	0	1	0	0	0
	White	Black	MC	39	2	2	0	0	0	0
			OR	10	1	1	0	0	0	0
		Hispanic	MC	39	6	5	1	0	0	0
			OR	10	0	0	0	0	0	0
5	Male	Female	MC	39	3	2	1	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	39	7	7	0	0	0	0
			OR	10	1	1	0	0	0	0

continued

Grade	Group		Item Type	Number of Items	Number "Low"			Number "High"			
	Reference	Focal			Total	Favoring		Total	Favoring		
						Reference	Focal		Reference	Focal	
5	Non-EconDis	EconDis	MC	39	0	0	0	0	0	0	
			OR	10	0	0	0	0	0	0	
	Non-LEP	LEP	MC	39	9	2	7	3	0	3	
			OR	10	0	0	0	0	0	0	
	White	Black	MC	39	6	3	3	2	2	0	
			OR	10	0	0	0	0	0	0	
		Hispanic	MC	39	7	6	1	2	2	0	
			OR	10	0	0	0	0	0	0	
	6	Male	Female	MC	39	2	2	0	1	1	0
				OR	10	5	1	4	0	0	0
No Disability		Disability	MC	39	1	1	0	0	0	0	
			OR	10	2	2	0	0	0	0	
Non-EconDis		EconDis	MC	39	0	0	0	0	0	0	
			OR	10	0	0	0	0	0	0	
		LEP	MC	39	8	0	8	1	0	1	
			OR	10	0	0	0	0	0	0	
Non-LEP		Black	MC	39	3	3	0	0	0	0	
			OR	10	0	0	0	0	0	0	
	Hispanic	MC	39	7	7	0	1	1	0		
		OR	10	1	1	0	0	0	0		
7	Male	Female	MC	39	2	2	0	1	1	0	
			OR	10	3	0	3	0	0	0	
	No Disability	Disability	MC	39	2	2	0	0	0	0	
			OR	10	3	3	0	0	0	0	
	Non-EconDis	EconDis	MC	39	0	0	0	0	0	0	
			OR	10	0	0	0	0	0	0	
	Non-LEP	LEP	MC	39	8	0	8	1	0	1	
			OR	10	1	0	1	0	0	0	
		Asian	MC	39	5	5	0	0	0	0	
			OR	10	0	0	0	0	0	0	
White	Black	MC	39	10	6	4	0	0	0		
		OR	10	4	2	2	0	0	0		
	Hispanic	MC	39	7	6	1	0	0	0		
		OR	10	2	2	0	0	0	0		

continued

Grade	Group		Item Type	Number of Items	Number "Low"			Number "High"		
	Reference	Focal			Total	Favoring		Total	Favoring	
						Reference	Focal		Reference	Focal
8	Male	Female	MC	39	6	6	0	0	0	0
			OR	10	4	0	4	0	0	0
	No Disability	Disability	MC	39	6	5	1	0	0	0
			OR	10	3	3	0	0	0	0
	Non-EconDis	EconDis	MC	39	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	39	10	1	9	1	0	1
			OR	10	0	0	0	0	0	0
	White	Black	MC	39	6	5	1	0	0	0
			OR	10	0	0	0	0	0	0
		Hispanic	MC	39	4	3	1	1	1	0
			OR	10	0	0	0	0	0	0

APPENDIX J—ITEM RESPONSE THEORY CALIBRATION RESULTS

**Table J-1. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 3**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
539899	0.78410	0.03852	-1.70505	0.04706	0.35938	0.05891	413163	1.01977	0.03673	0.04216	-0.06430	0.19364	0.01333
417021	0.95650	0.03392	-1.25410	-0.03266	0.18485	0.03326	125137A	0.48859	0.02405	0.16981	-0.01889	0.08025	0.02407
411119	0.80831	0.02637	-0.46046	-0.05282	0.08694	0.01872	414599	1.41323	0.11227	1.62096	-0.05795	0.36461	0.00617
125118A	0.69579	0.03057	0.02548	-0.04066	0.15309	0.02033	411764	0.84376	0.04160	0.95669	-0.06349	0.17507	0.01046
123978A	0.89696	0.02794	-0.53195	-0.05716	0.09359	0.01789	411009	0.57156	0.02823	-0.71979	0.01927	0.17917	0.03914
462666	0.90767	0.03488	-0.82815	-0.03473	0.24034	0.02725	400041	1.04163	0.06218	1.17008	-0.06221	0.31465	0.00873
125291A	0.93571	0.05770	0.95542	-0.05645	0.37334	0.01079	125223A	0.77238	0.03428	0.14604	-0.04774	0.20220	0.01767
124366A	0.96432	0.03852	0.17749	-0.06094	0.23029	0.01368	125260A	0.78384	0.03965	0.42090	-0.04851	0.26569	0.01591
411588	0.32836	0.02714	0.24720	0.11373	0.14405	0.04599	411642	1.15454	0.04340	0.56364	-0.07288	0.18203	0.00884
462672	1.03955	0.03077	-0.47844	-0.06475	0.10207	0.01518	125246A	1.22290	0.04843	0.58405	-0.07245	0.22940	0.00884
462586	1.05895	0.03758	-0.30389	-0.05923	0.22813	0.01633	532135	1.15279	0.04810	0.58382	-0.06991	0.25204	0.00954
532118	0.62226	0.04084	0.83911	-0.03681	0.24276	0.01802	401070	0.81445	0.03262	0.08311	-0.05403	0.16569	0.01635
557246	0.91650	0.04010	0.76682	-0.06690	0.16902	0.01014	411577	0.44307	0.02821	-0.44253	0.07070	0.17866	0.04547
539890	1.24785	0.06504	1.14369	-0.06932	0.26562	0.00723	413036	1.33719	0.05685	0.87708	-0.07428	0.22145	0.00719
464322	0.85284	0.03941	1.20359	-0.06622	0.09590	0.00785	411111B	0.48781	0.01302	0.29644	-0.07061	0.00000	0.00000
557244	1.31851	0.08429	1.71800	-0.06053	0.17447	0.00515	557268B	1.03887	0.02508	1.37407	-0.07161	0.00000	0.00000
462345	1.08516	0.03132	-0.64901	-0.06444	0.09931	0.01614	123876A	0.87763	0.01840	0.67758	-0.07794	0.00000	0.00000
464204	1.15216	0.03672	-0.15448	-0.06876	0.16485	0.01268							

**Table J-2. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 3**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	d3	SE(d3)	d4	SE(d4)
411111A	0.94140	0.01134	0.29927	-0.08364	0.81508	0.01382	-0.81508	0.01594	0.00000	0.00000	n/a	n/a	n/a	n/a
464499A	1.15949	0.01464	1.66961	-0.08356	1.20656	0.01192	0.41771	0.01464	-0.40463	0.02252	-1.21964	0.04111	0.00000	0.00000
464499B	1.02180	0.01605	1.84767	-0.08077	1.25535	0.01348	-1.25535	0.04616	0.00000	0.00000	n/a	n/a	n/a	n/a
532101A	0.94395	0.01037	0.81004	-0.08384	1.04052	0.01337	0.29028	0.01371	-0.31012	0.01569	-1.02069	0.02084	0.00000	0.00000
532101B	0.97658	0.01296	0.80465	-0.08276	0.65622	0.01314	-0.65622	0.01759	0.00000	0.00000	n/a	n/a	n/a	n/a
557268A	0.85148	0.01064	0.55941	-0.08219	0.79596	0.01457	-0.79596	0.01820	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-3. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 4**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
540258	0.70472	0.01830	-1.56948	0.05963	0.00000	0.00000	560922	0.77249	0.03606	0.32481	0.07384	0.20648	0.01846
400795	0.55460	0.01448	-1.00876	0.05473	0.00000	0.00000	411832	0.58296	0.01404	-0.39769	0.04608	0.00000	0.00000
411727	0.43725	0.01268	0.08911	0.05011	0.00000	0.00000	124769A	1.11282	0.03478	-0.41631	0.05825	0.14537	0.01788
124951A	0.87934	0.05566	1.28041	0.06276	0.28525	0.01052	126362A	0.44633	0.01280	0.28928	0.05043	0.00000	0.00000
400798	0.77357	0.04179	1.28108	0.05928	0.13641	0.01054	127590A	1.02336	0.04070	1.02526	0.04746	0.10658	0.00751
124856A	0.89753	0.03937	0.78451	0.05464	0.16573	0.01128	126341A	0.22916	0.01175	1.49958	0.11075	0.00000	0.00000
408054	1.20686	0.03685	0.27190	0.04521	0.11540	0.00955	407497	0.79124	0.04343	0.60701	0.07374	0.29616	0.01633
405640	0.79641	0.01720	-0.86002	0.04504	0.00000	0.00000	408032	0.94651	0.03135	-0.36842	0.06530	0.12855	0.01993
540326	0.61981	0.01709	-1.64281	0.06512	0.00000	0.00000	540312	0.84926	0.04660	1.38737	0.05844	0.15211	0.00909
414743	0.86980	0.03859	0.93889	0.05336	0.13301	0.01031	400786	0.23152	0.01220	-2.18977	0.14518	0.00000	0.00000
124781A	0.69129	0.03379	1.17782	0.05871	0.07386	0.01106	465876	0.28676	0.02414	3.46525	0.28756	0.20000	0.00000
540265	1.00062	0.03899	0.59764	0.05148	0.16501	0.01082	476868	0.86746	0.05518	1.43959	0.06305	0.23556	0.00969
411556	1.08164	0.03967	-0.05060	0.05976	0.24023	0.01586	413818	1.30854	0.06845	1.39574	0.05038	0.21059	0.00621
127388A	0.85444	0.04499	1.34870	0.05700	0.14000	0.00894	127466A	1.38525	0.07451	1.62226	0.05230	0.14704	0.00490
532523	0.14504	0.01180	3.72655	0.32983	0.00000	0.00000	400903	0.92131	0.04745	0.73080	0.06206	0.30286	0.01271
127597A	0.62319	0.04397	1.60449	0.07417	0.13921	0.01316	126345B	1.02872	0.02040	0.75432	0.03996	0.00000	0.00000
126501A	1.15967	0.03668	-0.10697	0.05245	0.15758	0.01394	411997B	0.99163	0.01960	0.68151	0.03986	0.00000	0.00000

**Table J-4. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 4**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	d3	SE(d3)	d4	SE(d4)
126345A	0.97960	0.01144	-0.03807	0.03584	0.78639	0.01394	-0.78639	0.01348	0.00000	0.00000	n/a	n/a	n/a	n/a
411997A	0.85050	0.01006	0.75468	0.03791	0.98447	0.01422	-0.98447	0.01977	0.00000	0.00000	n/a	n/a	n/a	n/a
447971A	1.09099	0.01086	0.78256	0.03438	1.28173	0.01209	0.31955	0.01173	-0.57744	0.01485	-1.02384	0.01838	0.00000	0.00000
447971B	0.99092	0.01603	1.84861	0.04251	0.76928	0.01455	-0.76928	0.03027	0.00000	0.00000	n/a	n/a	n/a	n/a
448543A	1.33098	0.01365	0.67978	0.03303	0.92924	0.01018	0.29829	0.01006	-0.26609	0.01135	-0.96145	0.01562	0.00000	0.00000
448543B	1.26229	0.01789	0.93389	0.03589	0.39657	0.01088	-0.39657	0.01376	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-5. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 5**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
464057	0.83874	0.02861	-1.16567	0.04951	0.12760	0.03507	558693	1.29237	0.04695	0.17457	0.00877	0.28249	0.01148
400076	0.30417	0.03084	1.68014	0.12985	0.10634	0.03430	532496	0.76211	0.03063	-0.33970	0.04395	0.17329	0.02545
124738A	0.80089	0.04455	1.32143	0.01836	0.16991	0.01013	532498	1.21323	0.03908	-0.08299	0.00917	0.19238	0.01318
408459	1.34265	0.12689	2.16161	0.03848	0.23012	0.00495	558689	0.50023	0.03358	-0.39787	0.15425	0.27512	0.04702
411149	1.29981	0.04575	0.41710	0.00483	0.22185	0.00944	124675A	0.98564	0.04191	0.81461	0.01054	0.19190	0.00993
125951A	0.68602	0.02566	-0.35208	0.04242	0.09986	0.02455	410151	1.25191	0.06788	1.18636	0.01031	0.31810	0.00747
408463	1.36853	0.08717	1.80166	0.01572	0.17193	0.00483	539177	0.66394	0.02063	-0.69500	0.03553	0.06037	0.02199
413923	1.04740	0.03091	0.37038	0.00330	0.06776	0.00867	415312	0.69477	0.03730	0.43286	0.04312	0.25291	0.01998
539188	1.30813	0.11207	1.66606	0.02357	0.43712	0.00647	532490	1.16540	0.04183	0.35123	0.00813	0.21691	0.01081
540637	0.72155	0.02705	-1.21573	0.07134	0.14256	0.04167	400639	1.42054	0.09496	1.51242	0.01290	0.34199	0.00617
124737A	1.09077	0.04193	0.18509	0.01481	0.27062	0.01332	411295	1.20413	0.03963	-0.59537	0.01817	0.21211	0.01961
125071A	0.79068	0.03609	0.20382	0.03397	0.24287	0.01880	539225	1.63991	0.08911	1.52875	0.00571	0.19441	0.00482
400224	0.41980	0.04835	1.56769	0.09563	0.26426	0.02885	532486	1.29394	0.04885	0.85720	0.00291	0.17538	0.00713
126058A	1.48268	0.10811	2.26251	0.03411	0.10000	0.00000	415228B	1.26717	0.02617	1.12758	-0.00103	0.00000	0.00000
558705	1.25967	0.06771	1.38703	0.00945	0.23419	0.00643	532475B	1.54226	0.03542	1.37228	-0.00066	0.00000	0.00000
464086	0.49309	0.02998	0.72295	0.05982	0.11125	0.02436	466686	0.82409	0.01895	1.30149	0.00801	0.00000	0.00000
400711	0.95677	0.02971	-1.03244	0.03125	0.10624	0.02729	466529	0.45782	0.01271	0.38641	0.00875	0.00000	0.00000
411240	1.10001	0.03584	0.50075	0.00420	0.11425	0.00890							

**Table J-6. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 5**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
415228A	1.00960	0.01191	0.46678	-0.00625	0.84922	0.01255	-0.84922	0.01575	0.00000	0.00000	n/a	n/a	n/a	n/a
415320A	1.63067	0.01884	1.22204	-0.00942	1.09001	0.00890	0.09183	0.01119	-0.29707	0.01344	-0.88477	0.02022	0.00000	0.00000
415320B	1.72016	0.03244	1.63244	-0.00390	0.36812	0.01177	-0.36812	0.01843	0.00000	0.00000	n/a	n/a	n/a	n/a
532475A	1.00489	0.01132	0.34160	-0.00543	1.35068	0.01420	-1.35068	0.01842	0.00000	0.00000	n/a	n/a	n/a	n/a
532484A	0.87183	0.00847	0.42837	-0.00591	1.23269	0.01470	0.41941	0.01354	-0.13049	0.01415	-1.52162	0.02154	0.00000	0.00000
532484B	0.89905	0.01453	0.56109	-0.00310	0.19601	0.01374	-0.19601	0.01454	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-7. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 6**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
539793	0.67549	0.03004	-1.46587	-0.06853	0.24007	0.04887	400688	0.65122	0.01928	0.11759	-0.16234	0.02743	0.00966
414069	1.12104	0.09245	1.80524	-0.14049	0.27809	0.00625	412411	0.95103	0.03595	-0.38714	-0.14798	0.26090	0.01780
464910	0.88017	0.09103	2.10947	-0.10678	0.28044	0.00736	412181	1.73741	0.20531	1.95003	-0.13991	0.39754	0.00504
532622	0.73187	0.02467	-0.62322	-0.14057	0.09129	0.02120	540727	1.26673	0.07460	1.35622	-0.16169	0.26300	0.00630
539595	1.10855	0.05920	1.23480	-0.16243	0.22615	0.00702	412462	0.56308	0.02969	-0.28960	-0.09569	0.19175	0.03034
539597	1.07296	0.04139	0.51186	-0.16711	0.19837	0.00922	415153	0.82091	0.03862	0.11739	-0.14342	0.30182	0.01626
539622	1.01929	0.04773	0.89872	-0.16423	0.22317	0.00854	412050	0.93610	0.03263	-0.52303	-0.14906	0.19638	0.01867
400411	0.37955	0.02232	0.67054	-0.10369	0.06663	0.02335	539618	1.23135	0.05527	1.01758	-0.16848	0.20155	0.00667
464562	0.77827	0.03867	0.49600	-0.14957	0.24822	0.01411	412393	1.24813	0.05989	1.31766	-0.16609	0.14814	0.00540
415230	1.02214	0.04903	1.34367	-0.16242	0.11890	0.00601	125464A	0.82559	0.02908	-1.26002	-0.12250	0.16148	0.03290
412273	0.58013	0.03095	0.93830	-0.14830	0.09012	0.01415	400114	0.47060	0.02272	0.18785	-0.11878	0.07188	0.02231
400238	0.56924	0.06322	1.78107	-0.10621	0.34966	0.01480	539781	1.42951	0.07588	1.19688	-0.16696	0.26797	0.00609
464839	0.37479	0.03040	0.92662	-0.07853	0.11789	0.03006	410187	0.98332	0.12952	2.68040	-0.04809	0.16399	0.00498
406039	0.84423	0.04289	0.96908	-0.15903	0.19778	0.00997	539643	2.20986	0.09285	1.19269	-0.17665	0.11250	0.00362
415140	0.39317	0.01895	0.41040	-0.11701	0.05185	0.01987	124799A	1.14516	0.02745	-0.68946	-0.16977	0.04400	0.01050
474350	0.97035	0.03934	0.40074	-0.16207	0.22047	0.01106	532604B	1.05394	0.03713	2.22743	-0.14019	0.00000	0.00000
419551	0.94199	0.03520	-0.30804	-0.15028	0.24089	0.01691	558418B	1.15484	0.02561	1.14210	-0.17234	0.00000	0.00000
125839A	0.57088	0.01983	-0.81871	-0.12304	0.07068	0.02483	558385	0.91130	0.01871	0.70371	-0.17406	0.00000	0.00000
539791	0.58598	0.02064	-1.31981	-0.10459	0.09471	0.03375							
125837A	1.04742	0.03158	-2.00932	-0.13981	0.08863	0.03208							

**Table J-8. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 6**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
412531A	1.29727	0.01415	0.86804	-0.18247	0.92807	0.01027	0.30992	0.01086	-0.26832	0.01310	-0.96967	0.01933	0.00000	0.00000
412531B	1.50942	0.02489	1.25546	-0.17924	0.39149	0.01105	-0.39149	0.01642	0.00000	0.00000	n/a	n/a	n/a	n/a
532604A	0.59696	0.00000	2.44813	-0.15659	0.87122	0.02360	-0.87122	0.04340	0.00000	0.00000	n/a	n/a	n/a	n/a
539624A	1.16235	0.01123	0.65110	-0.18252	1.44101	0.01190	0.53879	0.01108	-0.73568	0.01558	-1.24413	0.02058	0.00000	0.00000
539624B	0.97344	0.01298	0.42306	-0.17948	0.45449	0.01268	-0.45449	0.01442	0.00000	0.00000	n/a	n/a	n/a	n/a
558418A	1.11843	0.01657	1.26494	-0.17766	0.60639	0.01254	-0.60639	0.02055	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-9. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 7**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
124508A	0.77237	0.03211	-0.71769	0.03871	0.22132	0.03045	412200	0.69414	0.03551	0.12882	0.02754	0.24187	0.02153
124652A	1.00960	0.07392	1.54652	0.00684	0.32051	0.00795	539440	0.67889	0.04343	0.94575	0.01311	0.25158	0.01536
467772	1.80057	0.15372	1.84966	0.00074	0.27623	0.00480	539442	0.15421	0.00000	4.42624	0.70988	0.37128	0.05391
408783	1.75348	0.12412	1.53087	-0.00722	0.33630	0.00547	124350A	1.59788	0.05844	0.47405	-0.01803	0.25725	0.00775
408770	0.92026	0.03913	-0.05751	0.00939	0.29104	0.01725	410251	0.73294	0.03957	0.34419	0.02034	0.28674	0.01838
124504A	0.80109	0.04541	0.92488	0.00259	0.25529	0.01236	400877	1.25725	0.04672	-0.01946	-0.00703	0.30803	0.01248
467844	0.49717	0.04125	1.28791	0.03392	0.18608	0.02103	412251	1.24080	0.04402	-0.32214	-0.00329	0.29490	0.01509
557952	1.04371	0.05162	1.01444	-0.00841	0.23611	0.00861	400327	0.99506	0.09060	2.07591	0.03249	0.24322	0.00657
412048	1.04292	0.03968	0.25257	-0.00690	0.21810	0.01199	467737	0.75500	0.03923	0.80999	0.00218	0.19196	0.01323
400884	0.70287	0.06073	1.76718	0.02661	0.26153	0.01105	412197	1.77441	0.06169	0.47348	-0.02037	0.23001	0.00705
412263	0.81383	0.02406	-1.19526	0.01694	0.07849	0.02621	539407	1.03167	0.04341	0.63599	-0.00946	0.21435	0.00999
467173	1.55380	0.10844	1.86605	0.00056	0.16110	0.00430	124648A	1.76239	0.06241	0.62576	-0.02086	0.20454	0.00640
557940	1.53480	0.05058	0.51572	-0.02003	0.16564	0.00688	412224	1.05991	0.04702	0.53346	-0.00643	0.28665	0.01085
539434	0.54253	0.02370	0.47207	0.01316	0.05479	0.01653	467828	0.78035	0.03602	-0.04744	0.02107	0.25978	0.02053
124359A	1.13289	0.04945	0.38021	-0.00567	0.33276	0.01121	412636B	1.42716	0.02687	0.57074	-0.02477	0.00000	0.00000
467858	1.71190	0.12724	1.90486	0.00002	0.16594	0.00410	406243B	1.44001	0.02601	0.33896	-0.02562	0.00000	0.00000
412395	1.76031	0.06226	0.95898	-0.02156	0.11343	0.00458	557950	0.74395	0.02175	1.87976	0.00783	0.00000	0.00000
467221	0.89681	0.04147	0.53488	-0.00114	0.24641	0.01266	532217	0.47907	0.01695	2.23713	0.03680	0.00000	0.00000
124361A	1.07670	0.03519	0.55231	-0.01643	0.08801	0.00767	467883	0.61072	0.01721	1.58624	0.00464	0.00000	0.00000

**Table J-10. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 7**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
406243A	1.38149	0.01841	-0.18515	-0.02708	0.29503	0.01032	-0.29503	0.00991	0.00000	0.00000	n/a	n/a	n/a	n/a
412636A	1.36055	0.02152	0.30668	-0.02601	0.10798	0.01012	-0.10798	0.01033	0.00000	0.00000	n/a	n/a	n/a	n/a
446620A	1.17166	0.01161	0.72937	-0.02693	1.29550	0.01160	0.80680	0.01097	-0.25148	0.01286	-1.85081	0.03192	0.00000	0.00000
446620B	0.88179	0.01450	1.98534	-0.01637	0.93998	0.01589	-0.93998	0.03782	0.00000	0.00000	n/a	n/a	n/a	n/a
532211A	1.26425	0.01244	0.82631	-0.02755	1.36596	0.01101	0.59578	0.01044	-0.23112	0.01259	-1.73061	0.03179	0.00000	0.00000
532211B	1.04220	0.01538	1.33312	-0.02154	0.62210	0.01306	-0.62210	0.02115	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-11. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 8**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
468379	0.98256	0.03109	0.48350	0.09085	0.06987	0.00938	540876	1.09210	0.06617	1.49247	0.10201	0.26085	0.00766
540824	0.71490	0.05866	1.73107	0.12467	0.26643	0.01192	414896	0.79724	0.04797	1.31659	0.10724	0.21736	0.01137
483010	0.50784	0.03839	0.31069	0.20120	0.28332	0.03526	408524	1.05436	0.04350	0.71358	0.09539	0.21198	0.01046
413229	0.74671	0.01719	-1.07382	0.09393	0.00000	0.00000	127742A	1.05453	0.06405	1.31111	0.10240	0.32098	0.00885
540848	1.52511	0.10127	1.98265	0.10492	0.12737	0.00398	483259	0.91548	0.04513	0.63530	0.10735	0.30066	0.01366
540850	1.36979	0.06939	1.26286	0.09296	0.26150	0.00680	540951	0.73942	0.08112	2.43606	0.17353	0.23241	0.00896
414834	1.20803	0.06212	1.49891	0.09630	0.16951	0.00614	540915	0.48826	0.02198	-0.31772	0.16600	0.08953	0.03156
126281A	1.37634	0.05586	0.83142	0.08962	0.24598	0.00797	408651	1.18728	0.09761	1.99162	0.11870	0.25852	0.00607
468707	1.00259	0.05798	1.63833	0.10409	0.16631	0.00705	127837A	1.44314	0.04684	-0.37955	0.09666	0.25199	0.01571
468276	0.92171	0.02579	-0.96289	0.11069	0.06657	0.02216	409018	1.62628	0.39163	3.02671	0.23985	0.25837	0.00416
127152A	0.76997	0.02575	0.46321	0.09713	0.04615	0.01119	409020	0.99292	0.04985	1.01896	0.09916	0.25608	0.01014
468754	0.93405	0.03519	0.10476	0.10614	0.18790	0.01631	532395	1.13576	0.06175	1.33518	0.09771	0.25177	0.00773
400370	0.90701	0.05160	1.31261	0.10287	0.22856	0.00975	540838	0.72988	0.04434	1.01304	0.11496	0.25479	0.01501
412575	1.66934	0.07864	1.17787	0.08870	0.26159	0.00611	414849	0.83680	0.17852	3.20628	0.35403	0.34539	0.00685
126278A	1.46770	0.05351	0.63340	0.08779	0.23022	0.00817	413137	1.47901	0.11827	2.00441	0.11084	0.22304	0.00492
412833	0.75076	0.05054	1.39535	0.11281	0.24690	0.01232	540892	1.29097	0.05343	-0.52846	0.11483	0.43311	0.02032
400985	0.97291	0.08894	2.01094	0.13042	0.31021	0.00764	412467	1.03243	0.04433	0.50175	0.10102	0.27656	0.01260
126883A	1.07826	0.04283	0.43368	0.09818	0.24697	0.01221	482018B	0.94143	0.02289	1.52227	0.09523	0.00000	0.00000
413063	0.71951	0.02668	-1.65080	0.17323	0.14697	0.05214	406526B	0.39524	0.01703	2.90499	0.18187	0.00000	0.00000
							468386	1.00041	0.02207	1.21640	0.08901	0.00000	0.00000

**Table J-12. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 8**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
406526A	0.91171	0.01023	0.72434	0.08146	1.27892	0.01399	-1.27892	0.02119	0.00000	0.00000	n/a	n/a	n/a	n/a
410287A	1.12994	0.01166	1.70797	0.07890	2.02856	0.01156	0.33416	0.01445	-0.73457	0.02628	-1.62815	0.05287	0.00000	0.00000
410287B	0.94242	0.01262	1.42049	0.08230	1.84791	0.01344	-1.84791	0.04521	0.00000	0.00000	n/a	n/a	n/a	n/a
447438A	1.65229	0.02296	1.62613	0.07879	0.79234	0.00955	0.16401	0.01245	-0.23819	0.01624	-0.71816	0.02441	0.00000	0.00000
447438B	2.25232	0.05414	1.82846	0.08305	0.25658	0.01201	-0.25658	0.01846	0.00000	0.00000	n/a	n/a	n/a	n/a
482018A	0.95711	0.01077	0.46504	0.08043	0.98991	0.01341	-0.98991	0.01640	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-13. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 3**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
130328A	0.59312	0.01901	-0.76012	0.13963	0.06028	0.02393	543247	1.22369	0.04537	-0.05029	0.10990	0.29543	0.01464
130312A	1.33224	0.04231	-0.59275	0.10903	0.18872	0.01863	543241	0.69329	0.02191	-0.67952	0.13286	0.06734	0.02390
422166	0.69306	0.02926	0.60085	0.11683	0.08341	0.01493	543259	0.81315	0.04013	0.50507	0.12411	0.26519	0.01635
130325A	1.07262	0.04729	0.97163	0.10299	0.20911	0.00894	543243	0.92838	0.04611	1.25230	0.10675	0.17396	0.00891
130319A	0.85446	0.03149	-0.32521	0.12838	0.15360	0.02294	474704	0.70490	0.03876	0.81318	0.12566	0.21022	0.01644
559835	0.43911	0.03367	0.80150	0.19147	0.15278	0.03211	474706	0.96564	0.04059	0.75777	0.10591	0.18637	0.01079
559830	1.35290	0.03861	-0.65596	0.10443	0.11069	0.01677	474708	0.57987	0.04872	1.98790	0.14230	0.15406	0.01328
559838	0.59070	0.03346	1.33748	0.12016	0.07975	0.01364	474429	1.27348	0.05840	1.12923	0.10039	0.23468	0.00736
559841	0.98884	0.03403	-0.59028	0.12472	0.16755	0.02415	474695	1.13754	0.04987	0.72551	0.10497	0.28378	0.01010
559845	0.40829	0.02348	0.45531	0.18268	0.08355	0.02920	543557	0.52661	0.04174	1.52598	0.13913	0.16422	0.01867
559847	1.04059	0.03962	0.29988	0.10874	0.21916	0.01313	543571	0.90254	0.02751	-1.41253	0.13429	0.09022	0.03301
559849	0.80562	0.04653	1.03394	0.11828	0.27245	0.01295	543575	0.94052	0.02638	-0.63158	0.11345	0.06316	0.01846
569376	0.42874	0.01633	-0.65676	0.16505	0.06129	0.02582	543565	0.77279	0.02085	-0.96688	0.11956	0.04826	0.01924
552233	1.41813	0.04585	-0.32446	0.10433	0.22621	0.01481	543577	1.01434	0.02559	-0.91508	0.10812	0.04486	0.01628
552235	0.84310	0.02657	-0.71083	0.12713	0.08758	0.02460	543542	0.86794	0.04217	1.28987	0.10708	0.13283	0.00887
552255	1.63805	0.04879	-0.19938	0.09699	0.18059	0.01134	543530	0.58160	0.03813	0.35602	0.17506	0.27651	0.02838
552247	1.83997	0.05492	-0.05274	0.09389	0.18753	0.00952	543532	0.74847	0.02607	-0.68431	0.14027	0.10200	0.02864
552251	0.88685	0.02615	-0.80997	0.12209	0.07513	0.02310	543534	1.32986	0.03900	-0.15516	0.10019	0.13686	0.01220
568986	0.98347	0.02986	-0.44496	0.11363	0.09311	0.01849	543546	1.48025	0.04709	-0.39629	0.10345	0.21836	0.01498
543253	0.62421	0.02492	-0.65641	0.16351	0.11312	0.03420							

**Table J-14. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 3**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE(D4)
130326A	0.87121	0.01261	-0.12722	0.09037	0.35592	0.01477	-0.35592	0.01426	0.00000	0.00000	n/a	n/a	n/a	n/a
410572	1.00824	0.01070	1.23184	0.08873	1.98980	0.01412	-0.32269	0.01692	-1.66711	0.03530	0.00000	0.00000	n/a	n/a
410580	0.81411	0.01038	2.31270	0.09291	1.85371	0.01530	-0.05349	0.02604	-1.80022	0.07113	0.00000	0.00000	n/a	n/a
543249	0.37910	0.00858	0.76837	0.10841	0.28735	0.02933	-0.28735	0.03028	0.00000	0.00000	n/a	n/a	n/a	n/a

continued

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE(D4)
543524	0.38336	0.00733	1.79032	0.11466	0.63006	0.03023	-0.63006	0.03579	0.00000	0.00000	n/a	n/a	n/a	n/a
543555	0.79402	0.01231	-0.36148	0.09211	0.31435	0.01627	-0.31435	0.01535	0.00000	0.00000	n/a	n/a	n/a	n/a
552223	0.99411	0.01523	-0.10920	0.08948	0.21364	0.01320	-0.21364	0.01291	0.00000	0.00000	n/a	n/a	n/a	n/a
552261	0.81679	0.01032	1.35442	0.09187	1.39846	0.01514	-1.39846	0.03170	0.00000	0.00000	n/a	n/a	n/a	n/a
559821	0.53190	0.00789	0.13939	0.09681	0.62357	0.02185	-0.62357	0.02206	0.00000	0.00000	n/a	n/a	n/a	n/a
559851	0.63415	0.00781	1.40253	0.09512	1.51913	0.01857	-1.51913	0.03450	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-15. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 4**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
552908	1.24173	0.04316	-0.54278	0.18239	0.26121	0.02199	420698	0.50969	0.02859	0.86910	0.20594	0.08092	0.02135
552906	0.63520	0.03222	0.37950	0.20778	0.15279	0.02364	420714	0.64893	0.03227	0.19166	0.21384	0.17076	0.02594
552910	0.50082	0.01617	-1.89909	0.20202	0.00000	0.00000	422664	0.74777	0.03083	-0.38182	0.21385	0.17031	0.03028
552912	1.12592	0.03874	-0.72579	0.18982	0.21192	0.02689	420785	0.58587	0.01642	-1.52394	0.18436	0.00000	0.00000
552916	0.32099	0.01194	0.23862	0.17572	0.00000	0.00000	420820	0.36600	0.01223	0.14417	0.17176	0.00000	0.00000
552918	0.80065	0.03375	0.45905	0.18252	0.15107	0.01632	544006	0.71230	0.03722	0.52092	0.19868	0.22172	0.02010
552931	1.23378	0.03986	0.09629	0.16796	0.18836	0.01290	544034	0.51862	0.03691	1.02924	0.21749	0.15942	0.02430
552938	0.53596	0.04255	1.33474	0.20920	0.19477	0.02131	544036	0.81403	0.03160	-0.33189	0.20220	0.16911	0.02661
552933	0.58004	0.01475	-0.88966	0.17111	0.00000	0.00000	544014	0.51526	0.01357	-0.48395	0.16807	0.00000	0.00000
552940	1.47121	0.04285	-0.52494	0.16806	0.15187	0.01654	544002	1.03560	0.03945	0.46890	0.17135	0.20022	0.01253
552944	1.25710	0.04102	0.04653	0.16871	0.20582	0.01337	544476	1.62772	0.04585	-1.21899	0.16760	0.05935	0.01868
552946	1.32044	0.04204	-0.04411	0.16806	0.20669	0.01360	544455	0.73658	0.02668	-0.14271	0.19394	0.09195	0.02214
552948	0.95154	0.02834	-0.14121	0.17407	0.07554	0.01555	544457	0.50547	0.01357	-0.58942	0.16993	0.00000	0.00000
552950	0.88104	0.04386	1.39049	0.17157	0.12701	0.00869	544460	0.38886	0.01274	-0.84036	0.18250	0.00000	0.00000
476097	1.01026	0.02650	-0.06065	0.16587	0.04387	0.01119	544483	0.88523	0.03742	0.91094	0.17004	0.13129	0.01083
476121	1.43231	0.04108	-0.30530	0.16573	0.14771	0.01406	543932	0.79214	0.03801	1.06955	0.17420	0.13317	0.01177
486800	1.01211	0.03590	0.21364	0.17398	0.17196	0.01446	543944	1.46919	0.04132	-1.07629	0.17107	0.07832	0.02086
476151	1.36003	0.08130	1.38025	0.16960	0.35425	0.00724	543946	0.47994	0.04554	2.06879	0.21671	0.12768	0.01823
476177	1.05929	0.02487	-0.70945	0.16726	0.03370	0.01251	543940	1.65844	0.07510	1.47186	0.16123	0.14377	0.00474
							543950	0.41257	0.01263	0.41924	0.16956	0.00000	0.00000

**Table J-16. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 4**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE(D4)
420723	0.47136	0.00724	0.10663	0.16355	0.62375	0.02385	-0.62375	0.02364	0.00000	0.00000	n/a	n/a	n/a	n/a
476102	0.29533	0.00672	1.82700	0.18986	0.50017	0.03733	-0.50017	0.04073	0.00000	0.00000	n/a	n/a	n/a	n/a
476172	1.24124	0.01480	0.70259	0.15159	0.80974	0.01086	-0.80974	0.01425	0.00000	0.00000	n/a	n/a	n/a	n/a
543942	0.55812	0.01054	0.60604	0.16238	0.24593	0.02008	-0.24593	0.02071	0.00000	0.00000	n/a	n/a	n/a	n/a
544453	0.56490	0.01017	-0.34227	0.16222	0.29228	0.02077	-0.29228	0.01987	0.00000	0.00000	n/a	n/a	n/a	n/a
552900	0.92935	0.01629	-0.73828	0.15827	0.14881	0.01525	-0.14881	0.01424	0.00000	0.00000	n/a	n/a	n/a	n/a
552922	0.83343	0.00945	0.46987	0.15493	1.01399	0.01524	-1.01399	0.01744	0.00000	0.00000	n/a	n/a	n/a	n/a
552924	0.76043	0.00000	1.98531	0.15659	2.10261	0.01559	-0.19243	0.02335	-1.91018	0.05677	0.00000	0.00000	n/a	n/a
552927	1.02753	0.01543	0.02368	0.15363	0.20947	0.01242	-0.20947	0.01215	0.00000	0.00000	n/a	n/a	n/a	n/a
552956	0.99780	0.01182	1.81952	0.15430	1.45217	0.01250	-0.04764	0.01840	-1.40454	0.04278	0.00000	0.00000	n/a	n/a

**Table J-17. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 5**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
552544	1.28093	0.03849	-1.46005	0.05246	0.09360	0.02937	560314	0.97409	0.04434	0.47152	0.04759	0.28772	0.01326
552554	0.85510	0.02994	-0.93894	0.07652	0.14097	0.03288	560301	1.03679	0.03345	-0.70012	0.05518	0.14813	0.02344
552561	0.61399	0.03686	1.26726	0.05467	0.10345	0.01410	560316	1.24491	0.03744	-0.98172	0.04891	0.12806	0.02387
552556	0.65619	0.04239	0.78190	0.07158	0.26079	0.01906	560318	0.63450	0.01924	-0.51580	0.05979	0.04798	0.01861
552552	0.99057	0.03149	-1.08700	0.06448	0.12229	0.03061	536048	0.42230	0.05630	1.80194	0.12396	0.29905	0.02764
552563	0.63384	0.05350	1.25930	0.07369	0.32899	0.01701	536040	1.04070	0.03430	-0.50312	0.05206	0.16560	0.02063
131427A	0.73774	0.04177	1.01269	0.05155	0.19063	0.01363	536026	0.79119	0.02885	-0.56253	0.07152	0.12956	0.02710
131430A	1.05041	0.04136	0.69093	0.03634	0.16880	0.00966	536046	1.39841	0.04413	-0.37821	0.03904	0.22362	0.01503
131429A	0.56359	0.06817	2.24095	0.11767	0.26271	0.01450	536024	0.88329	0.03884	0.37719	0.05088	0.22877	0.01507
131431A	0.73214	0.02233	-0.39702	0.05469	0.05484	0.01826	459808	0.38402	0.02491	-0.14924	0.18551	0.12964	0.04462
131440A	0.61227	0.04161	1.06282	0.06665	0.20057	0.01801	459819	0.98129	0.03679	-0.79518	0.07128	0.23800	0.02953
131445A	0.73967	0.02357	-0.28258	0.05472	0.06020	0.01825	459823	0.41157	0.01266	-0.79145	0.04634	0.00000	0.00000
131444A	0.73768	0.02152	-0.70661	0.05804	0.05639	0.02047	459830	0.51435	0.04764	1.71228	0.07976	0.18035	0.01863
131437A	0.86013	0.05005	1.06013	0.04842	0.26935	0.01160	459811	0.81653	0.03154	-0.17910	0.06216	0.15638	0.02150
560306	0.65033	0.02416	-0.76118	0.08932	0.10135	0.03223							

continued

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
536061	1.06724	0.03371	-1.14213	0.06166	0.12805	0.03064
536076	1.34022	0.04409	-0.71340	0.04705	0.23387	0.02062
536078	1.24811	0.04734	0.78580	0.03199	0.17260	0.00775
536068	1.32043	0.06836	1.18731	0.03635	0.27364	0.00709
536072	0.56835	0.01938	-0.53741	0.07487	0.05984	0.02311

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
545263	0.53732	0.01938	-0.82096	0.09326	0.07503	0.02945
545279	1.00320	0.03455	-0.64873	0.05970	0.18338	0.02451
545265	1.40358	0.04370	0.74459	0.02713	0.08862	0.00570
545281	0.79262	0.04281	0.70467	0.05553	0.26017	0.01504
545283	0.66115	0.03825	0.86306	0.06023	0.17596	0.01692

**Table J-18. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 5**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE(D4)
131452A	1.11828	0.01912	-0.66486	0.02512	0.08702	0.01262	-0.08702	0.01217	0.00000	0.00000	n/a	n/a	n/a	n/a
131484A	0.88311	0.01218	1.48578	0.02718	0.91488	0.01415	-0.91488	0.02674	0.00000	0.00000	n/a	n/a	n/a	n/a
536034	0.69211	0.01182	-0.16493	0.02808	0.21972	0.01689	-0.21972	0.01660	0.00000	0.00000	n/a	n/a	n/a	n/a
536070	0.30291	0.00519	3.07851	0.06094	1.43066	0.03769	-1.43066	0.05797	0.00000	0.00000	n/a	n/a	n/a	n/a
545273	0.40459	0.00721	0.96963	0.04040	0.55452	0.02682	-0.55452	0.02947	0.00000	0.00000	n/a	n/a	n/a	n/a
552537	0.52853	0.01039	0.01197	0.03230	0.20923	0.02103	-0.20923	0.02100	0.00000	0.00000	n/a	n/a	n/a	n/a
552565	0.72884	0.00791	0.59018	0.02707	1.45344	0.01730	-1.45344	0.02372	0.00000	0.00000	n/a	n/a	n/a	n/a
552567	0.89615	0.00948	1.52470	0.02430	1.96133	0.01393	-0.12447	0.01858	-1.83686	0.04864	0.00000	0.00000	n/a	n/a
560295	0.68896	0.01137	0.27347	0.02803	0.26949	0.01666	-0.26949	0.01706	0.00000	0.00000	n/a	n/a	n/a	n/a
560333	0.99944	0.01146	1.63406	0.02380	1.54834	0.01244	-0.01709	0.01767	-1.53125	0.04497	0.00000	0.00000	n/a	n/a

**Table J-19. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 6**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
559984	0.60433	0.02239	-0.61262	0.29021	0.09424	0.03128	536935	0.50851	0.01546	-1.75927	0.26468	0.00000	0.00000
559980	1.29100	0.04071	-0.40789	0.24227	0.21408	0.01797	536939	0.54581	0.02090	-0.87320	0.30947	0.10001	0.03673
559988	0.97691	0.03197	-0.63828	0.25879	0.15321	0.02544	536941	0.99858	0.03700	-0.17893	0.25521	0.25789	0.02017
559994	0.87455	0.03215	-0.33586	0.26410	0.19170	0.02437	536953	1.25800	0.03713	-0.67698	0.24359	0.13944	0.02028
559992	0.33784	0.01623	-1.83878	0.40912	0.11641	0.04947	536840	0.59272	0.02025	-0.94514	0.29066	0.08401	0.03194
560000	0.80524	0.03337	-0.18142	0.27242	0.23276	0.02510	536858	1.00653	0.03913	1.26733	0.23224	0.08835	0.00692
553110	0.61722	0.03764	1.08422	0.26408	0.18748	0.01813	536842	0.98762	0.03818	0.32412	0.24575	0.24261	0.01486
553114	0.67610	0.01512	-0.57482	0.23202	0.00000	0.00000	536856	0.90406	0.05717	1.62370	0.24726	0.24894	0.00924
553112	0.45827	0.04126	1.39147	0.30337	0.21136	0.02672	536846	0.59201	0.02580	-0.38148	0.30264	0.13022	0.03408
553116	1.22937	0.03693	-0.45519	0.24210	0.16151	0.01816	546211	0.62524	0.03083	-0.07459	0.29919	0.19736	0.03110
553122	0.81036	0.03212	0.60762	0.24490	0.13069	0.01404	546209	0.90620	0.02802	0.07935	0.24180	0.08509	0.01450
553120	0.33573	0.01173	-0.07131	0.24323	0.00000	0.00000	546223	0.74201	0.02156	-1.99819	0.25904	0.00000	0.00000
553128	0.45520	0.02903	0.67331	0.31059	0.12076	0.02983	546225	0.59023	0.02293	-0.24203	0.28227	0.08665	0.02684
553130	0.52134	0.02495	0.38755	0.28309	0.08609	0.02429	546213	0.89364	0.03375	-0.11997	0.25896	0.21487	0.02116
130154A	0.48278	0.04490	1.83670	0.28274	0.18662	0.02063	409362	0.98943	0.04338	0.24435	0.25438	0.35588	0.01640
471626	0.80628	0.06262	1.86823	0.26033	0.27279	0.01001	409385	1.07882	0.04207	0.95741	0.23313	0.16793	0.00895
130171A	1.00660	0.03460	-0.70719	0.26293	0.19607	0.02764	409396	0.88351	0.03361	0.27450	0.24904	0.18263	0.01635
130167A	1.61584	0.06066	0.80976	0.22818	0.26996	0.00771	409447	0.98272	0.04618	1.35879	0.23669	0.16122	0.00826
130168A	1.39465	0.04891	0.85415	0.22814	0.18369	0.00758	409472	0.86851	0.03605	0.30402	0.25381	0.23457	0.01728
536933	0.91714	0.03080	-0.78494	0.26721	0.14855	0.02962							

**Table J-20. 2018–19 eMPowerME IRT Parameters for Polytomous Items
ELA Grade 6**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
130173A	0.86582	0.01473	-0.12839	0.22420	0.12563	0.01423	-0.12563	0.01390	0.00000	0.00000	n/a	n/a	n/a	n/a
130184A	0.72272	0.01009	1.99261	0.22804	1.18515	0.01646	-1.18515	0.03567	0.00000	0.00000	n/a	n/a	n/a	n/a
409458	0.56759	0.00872	0.36210	0.22826	0.46931	0.01966	-0.46931	0.01999	0.00000	0.00000	n/a	n/a	n/a	n/a
536931	0.71939	0.01106	-0.27321	0.22591	0.34620	0.01717	-0.34620	0.01598	0.00000	0.00000	n/a	n/a	n/a	n/a

continued

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
546215	0.34781	0.00742	0.41148	0.23963	0.36260	0.03050	-0.36260	0.03080	0.00000	0.00000	n/a	n/a	n/a	n/a
553108	0.58795	0.01216	0.11939	0.22899	0.09877	0.01907	-0.09877	0.01900	0.00000	0.00000	n/a	n/a	n/a	n/a
553134	0.94550	0.00898	1.75294	0.22130	2.48558	0.01465	0.51364	0.01450	-0.90960	0.02729	-2.08962	0.06103	0.00000	0.00000
559986	0.64550	0.01160	-0.26042	0.22824	0.20257	0.01828	-0.20257	0.01764	0.00000	0.00000	n/a	n/a	n/a	n/a
560002	0.81625	0.00860	0.05141	0.22515	1.75920	0.02185	-1.75920	0.01913	0.00000	0.00000	n/a	n/a	n/a	n/a
560004	0.84806	0.00816	1.94190	0.22241	2.47730	0.01506	0.54979	0.01621	-0.92842	0.03069	-2.09867	0.06393	0.00000	0.00000

**Table J-21. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 7**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
552827	0.51872	0.03308	-0.20925	0.37286	0.29704	0.04026	546940	0.94961	0.03429	0.92199	0.24478	0.11402	0.00887
552823	0.87823	0.03722	1.23277	0.24766	0.12406	0.00878	546952	1.48772	0.04505	0.57297	0.23806	0.16559	0.00778
552825	0.49436	0.04199	1.78711	0.28794	0.18619	0.01863	546957	0.98319	0.02863	-0.74041	0.26286	0.09919	0.02109
552831	0.35000	0.02104	0.27383	0.36683	0.09592	0.03494	546959	0.51585	0.01616	-1.30545	0.29734	0.06008	0.02545
552839	0.53157	0.02845	0.05223	0.32402	0.17271	0.03162	537778	0.76807	0.02868	0.01025	0.27057	0.14790	0.01946
552841	0.87201	0.03357	0.14894	0.26468	0.22349	0.01697	537781	0.97516	0.03416	-0.16514	0.26312	0.22299	0.01804
478263	1.08870	0.03649	-1.78083	0.28430	0.12721	0.04141	537742	0.51269	0.01636	-0.26346	0.27579	0.04257	0.01715
478253	0.77378	0.02324	-0.41962	0.26586	0.06916	0.01894	537794	1.34924	0.04980	0.64865	0.24374	0.28226	0.00933
478265	0.74998	0.02988	0.47283	0.26219	0.13868	0.01548	537760	0.90953	0.02829	0.04822	0.25393	0.10365	0.01416
478267	0.99306	0.02862	-0.79951	0.26281	0.09508	0.02138	546829	0.71587	0.02002	-0.42577	0.26242	0.04668	0.01622
478261	0.98365	0.03404	-0.13283	0.26142	0.21579	0.01742	546849	1.26924	0.06161	1.40949	0.24502	0.24626	0.00705
478269	0.57482	0.03288	0.76111	0.28813	0.18679	0.02116	546837	0.51651	0.01635	-0.19539	0.27305	0.04036	0.01624
478277	0.77427	0.01942	-0.41892	0.25325	0.03334	0.01231	546854	0.97392	0.04172	0.93482	0.24993	0.22822	0.01043
478271	0.62469	0.02385	-0.11800	0.28425	0.09283	0.02311	546839	1.18633	0.03682	0.07586	0.24779	0.18641	0.01243
477635	0.60803	0.03488	0.61090	0.29277	0.24581	0.02183	409401	0.58878	0.03162	0.62699	0.28746	0.17777	0.02140
477633	0.49785	0.02320	-0.00843	0.31320	0.09963	0.02886	409409	0.77468	0.02878	0.78242	0.25084	0.08396	0.01113
477655	0.81277	0.03706	0.41133	0.27010	0.28668	0.01679	409464	1.03489	0.04621	1.15926	0.24736	0.22155	0.00893
477651	0.60473	0.02649	-0.30064	0.30845	0.14960	0.03068	409493	0.84055	0.03882	0.81827	0.25844	0.24417	0.01306
477647	0.63340	0.02170	-0.37670	0.28221	0.07564	0.02309	409501	0.93554	0.03514	0.56275	0.25217	0.18865	0.01224
546948	0.34884	0.01214	-1.65027	0.28776	0.00000	0.00000							

**Table J-22. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 7**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
409517	0.52459	0.00941	0.93233	0.24344	0.33885	0.02142	-0.33885	0.02267	0.00000	0.00000	n/a	n/a	n/a	n/a
477645	0.66181	0.01048	0.01196	0.23793	0.32808	0.01802	-0.32808	0.01743	0.00000	0.00000	n/a	n/a	n/a	n/a
477778	1.01889	0.01144	0.36345	0.23334	1.40459	0.01588	-1.40459	0.01671	0.00000	0.00000	n/a	n/a	n/a	n/a
478255	0.68411	0.01018	-0.87846	0.24010	0.55344	0.02172	-0.55344	0.01754	0.00000	0.00000	n/a	n/a	n/a	n/a
478259	1.04310	0.00966	0.93689	0.23104	1.66390	0.01415	0.41327	0.01206	-0.59107	0.01475	-1.48609	0.02283	0.00000	0.00000
546843	0.41914	0.00754	0.62568	0.24642	0.45361	0.02600	-0.45361	0.02681	0.00000	0.00000	n/a	n/a	n/a	n/a
546945	0.57479	0.00771	-0.34718	0.23968	0.77598	0.02250	-0.77598	0.01963	0.00000	0.00000	n/a	n/a	n/a	n/a
552819	0.22774	0.00401	1.36117	0.26735	1.08295	0.04616	-1.08295	0.05002	0.00000	0.00000	n/a	n/a	n/a	n/a
552843	0.82877	0.00980	1.11945	0.23493	1.05502	0.01471	-1.05502	0.02155	0.00000	0.00000	n/a	n/a	n/a	n/a
552846	1.00653	0.01070	1.88944	0.23254	1.69285	0.01257	0.44367	0.01469	-0.58882	0.02364	-1.54770	0.04537	0.00000	0.00000

**Table J-23. 2018–19 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 8**

IREF	Parameters and Measures of Standard Error						IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)		a	SE (a)	b	SE (b)	c	SE (c)
560476	0.99204	0.04154	0.13925	0.28766	0.33532	0.01721	420970	0.63244	0.01439	-0.56076	0.26583	0.00000	0.00000
560487	0.58714	0.01951	-0.59605	0.31077	0.06858	0.02583	420913	0.82111	0.03520	0.94972	0.27373	0.14089	0.01180
560494	0.46402	0.03297	0.92282	0.33990	0.15158	0.02868	553144	0.64136	0.03005	-0.02008	0.32319	0.17806	0.02884
560483	1.15689	0.04836	1.02221	0.26628	0.23430	0.00881	553154	0.46284	0.02223	0.90519	0.30232	0.05267	0.01822
560504	0.52992	0.04701	1.82412	0.30805	0.21432	0.01804	553152	0.98646	0.03692	-0.15770	0.28906	0.25955	0.02024
560500	0.99173	0.03144	-0.38336	0.28386	0.14019	0.02069	553160	0.91253	0.03126	0.09315	0.27999	0.14312	0.01657
420925	0.69060	0.03080	0.44161	0.29522	0.14754	0.01960	553146	1.19158	0.03739	0.03290	0.27046	0.18357	0.01372
420929	0.44256	0.03663	0.96904	0.36281	0.20293	0.03244	538612	0.78908	0.03218	0.26750	0.29021	0.17709	0.01876
420946	0.80453	0.03044	-0.07464	0.29512	0.16181	0.02203	538625	0.81555	0.03963	0.80939	0.28324	0.24610	0.01445
420872	0.56249	0.01372	-0.62416	0.26909	0.00000	0.00000	538616	0.88143	0.03276	-0.96201	0.31899	0.20334	0.03841
420952	0.54675	0.01401	-0.95883	0.27505	0.00000	0.00000	538618	0.85659	0.02639	-1.42284	0.30785	0.09985	0.03637
420905	0.37469	0.01231	1.11800	0.28095	0.00000	0.00000							

continued

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
538635	0.59985	0.02554	0.77256	0.28602	0.06117	0.01552
548440	0.85106	0.06413	1.88364	0.29009	0.28051	0.00933
548458	0.42447	0.02920	-0.05827	0.42685	0.18834	0.04820
548448	0.74092	0.03167	1.14593	0.27242	0.07856	0.01061
548462	1.00998	0.04439	1.03551	0.26974	0.22222	0.00991
548467	0.51508	0.02396	0.10097	0.32911	0.09485	0.02839
402075	0.33370	0.01918	-0.23090	0.42194	0.10559	0.04179
402111	0.55580	0.01602	-1.72053	0.29234	0.00000	0.00000

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
402077	0.92175	0.04465	1.34470	0.27117	0.17955	0.00916
402118	0.79469	0.02484	-0.37100	0.28963	0.07989	0.02126
402116	0.81859	0.02151	-0.97802	0.28523	0.05162	0.02012
546082	1.19646	0.03333	-0.13890	0.26807	0.10753	0.01330
546059	1.18705	0.03947	0.11134	0.27164	0.22303	0.01369
546084	0.94486	0.02425	-1.17153	0.28082	0.04988	0.01964
546080	0.86398	0.03391	-0.03888	0.29394	0.22303	0.02113
546067	1.50247	0.04446	-0.77295	0.27188	0.14784	0.01960

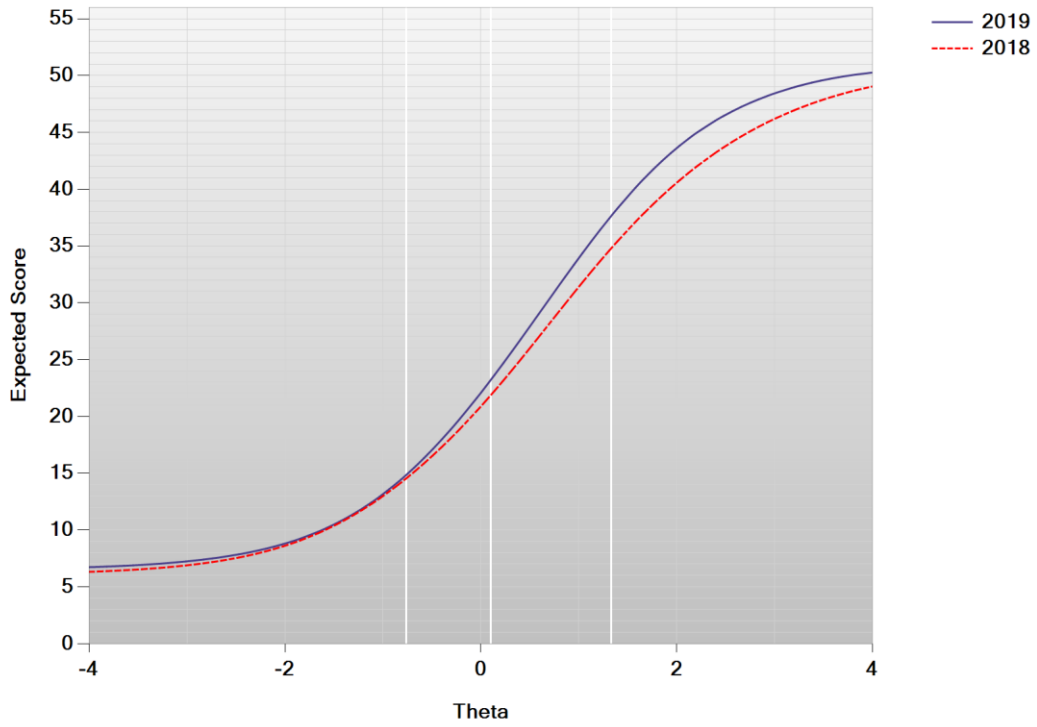
**Table J-24. 2018–19 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 8**

IREF	Parameters and Measures of Standard Error													
	a	SE (a)	b	SE (b)	D0	SE (D0)	D1	SE (D1)	D2	SE (D2)	D3	SE (D3)	D4	SE (D4)
402079	0.67022	0.00971	0.06441	0.25836	0.45776	0.01773	-0.45776	0.01709	0.00000	0.00000	n/a	n/a	n/a	n/a
420986	0.58768	0.01063	-0.04401	0.26145	0.22984	0.01953	-0.22984	0.01909	0.00000	0.00000	n/a	n/a	n/a	n/a
420990	1.19791	0.01129	1.19164	0.25135	1.73071	0.01221	0.47682	0.01100	-0.65999	0.01586	-1.54755	0.02835	0.00000	0.00000
538623	0.21227	0.00564	1.46400	0.29878	0.45881	0.04957	-0.45881	0.05123	0.00000	0.00000	n/a	n/a	n/a	n/a
546057	0.55650	0.00930	0.62797	0.26194	0.37087	0.01997	-0.37087	0.02073	0.00000	0.00000	n/a	n/a	n/a	n/a
553142	0.95372	0.01312	-0.12910	0.25472	0.37008	0.01394	-0.37008	0.01284	0.00000	0.00000	n/a	n/a	n/a	n/a
553166	0.90598	0.01091	1.01471	0.25508	0.84438	0.01344	-0.84438	0.01818	0.00000	0.00000	n/a	n/a	n/a	n/a
560466	0.40449	0.00872	-0.19014	0.26965	0.25896	0.02723	-0.25896	0.02667	0.00000	0.00000	n/a	n/a	n/a	n/a
560508	0.85190	0.00990	0.76249	0.25528	0.90307	0.01440	-0.90307	0.01751	0.00000	0.00000	n/a	n/a	n/a	n/a
560510	1.14006	0.01094	1.26415	0.25182	1.60914	0.01206	0.37499	0.01166	-0.57255	0.01604	-1.41158	0.02693	0.00000	0.00000

APPENDIX K—TEST CHARACTERISTIC CURVES AND TEST INFORMATION FUNCTIONS

Figure K-1. 2018–19 eMPowerME: Mathematics Grade 3 Plots
 Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 3



Test Information Function: Mathematics Grade 3

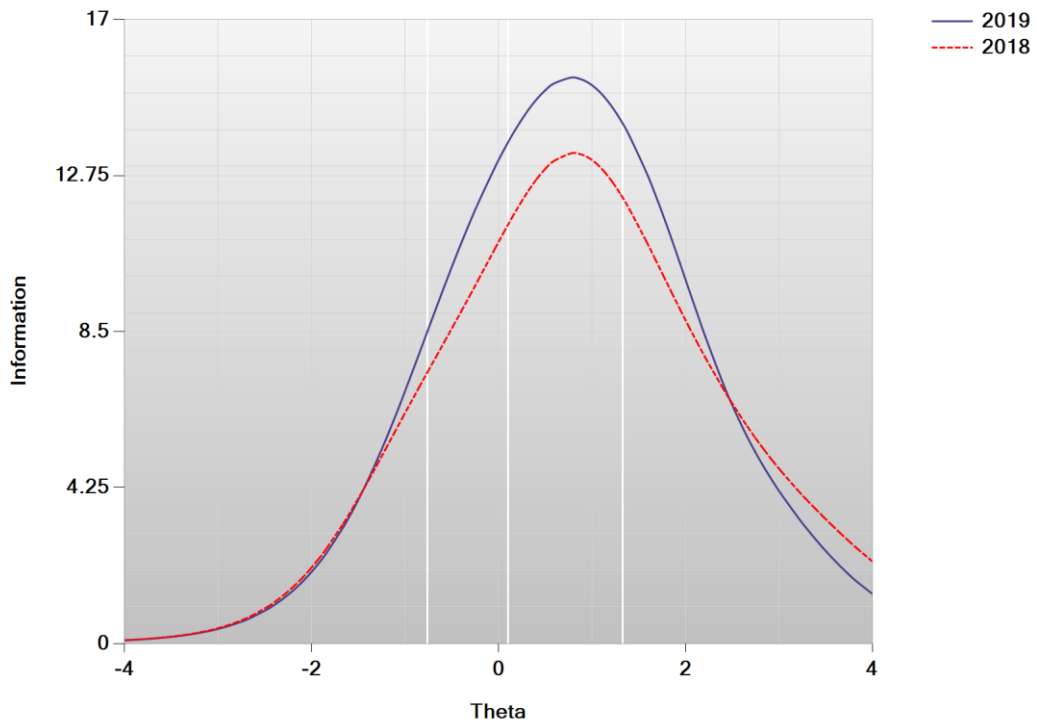
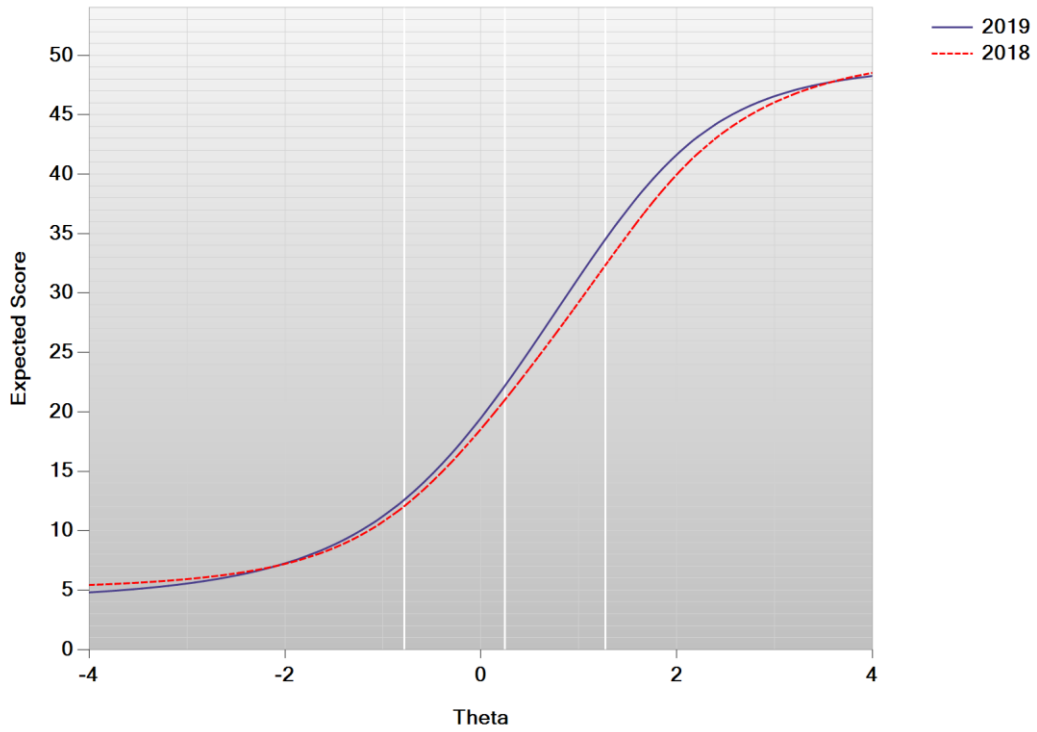


Figure K-2. 2018–19 eMPowerME: Mathematics Grade 4 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 4



Test Information Function: Mathematics Grade 4

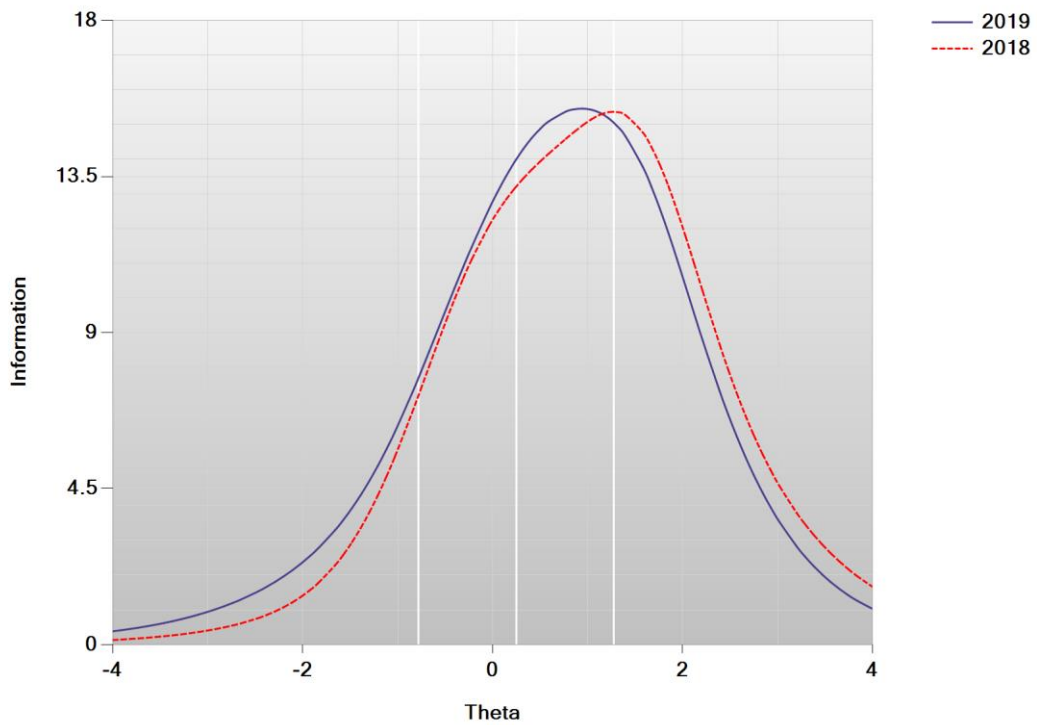
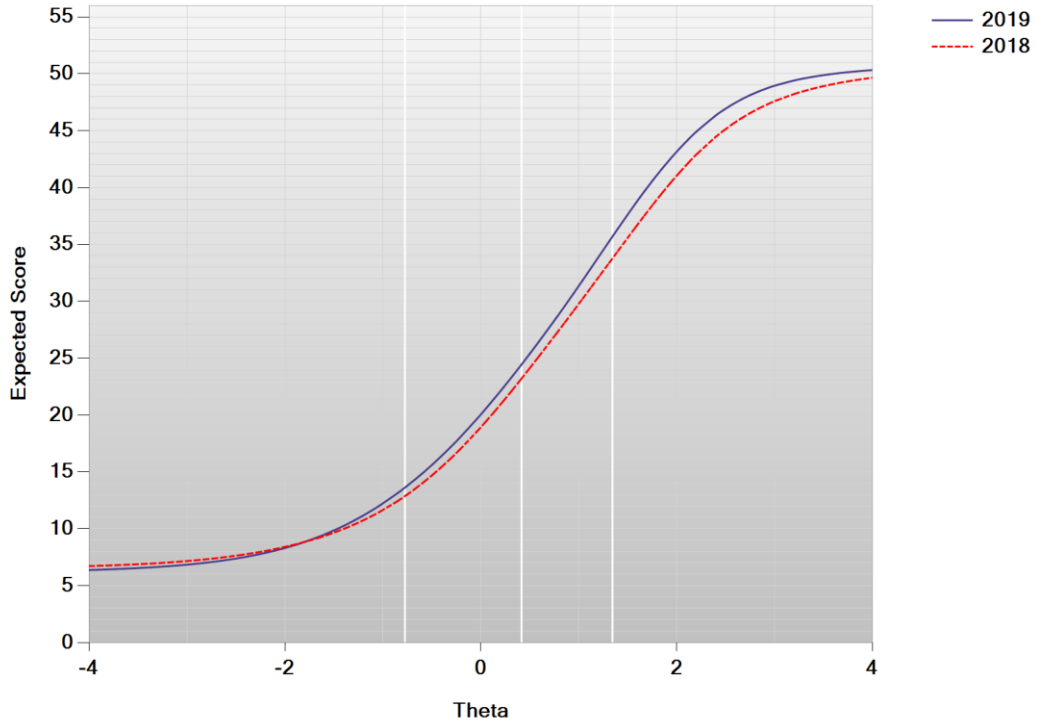


Figure K-3. 2018–19 eMPowerME: Mathematics Grade 5 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 5



Test Information Function: Mathematics Grade 5

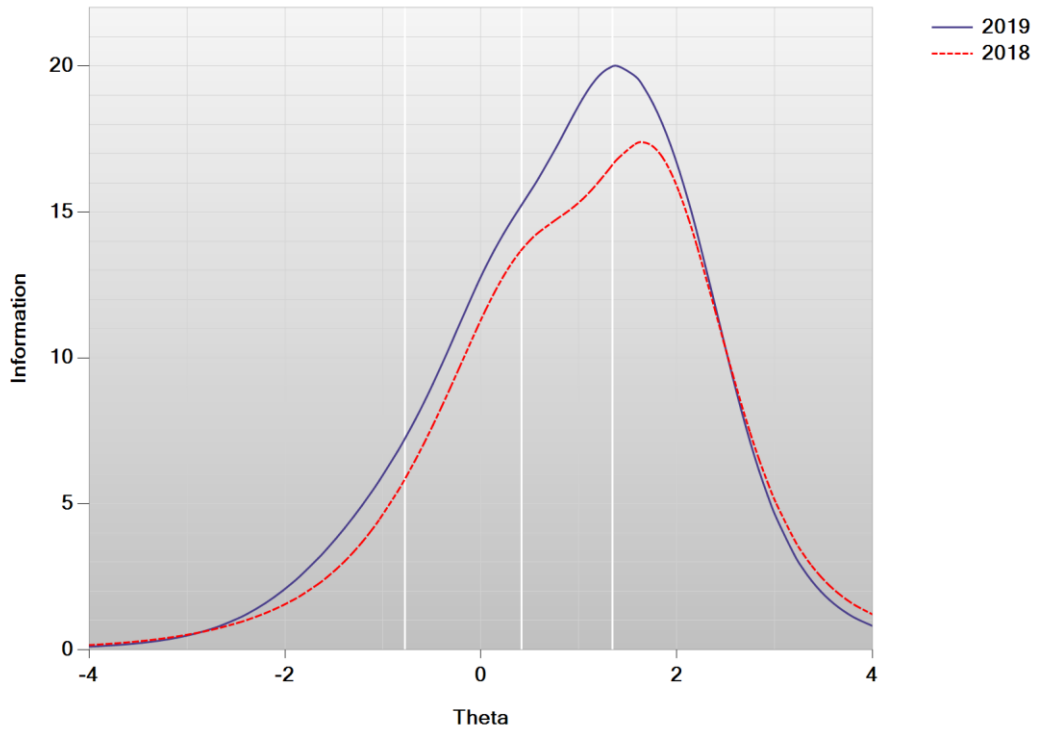
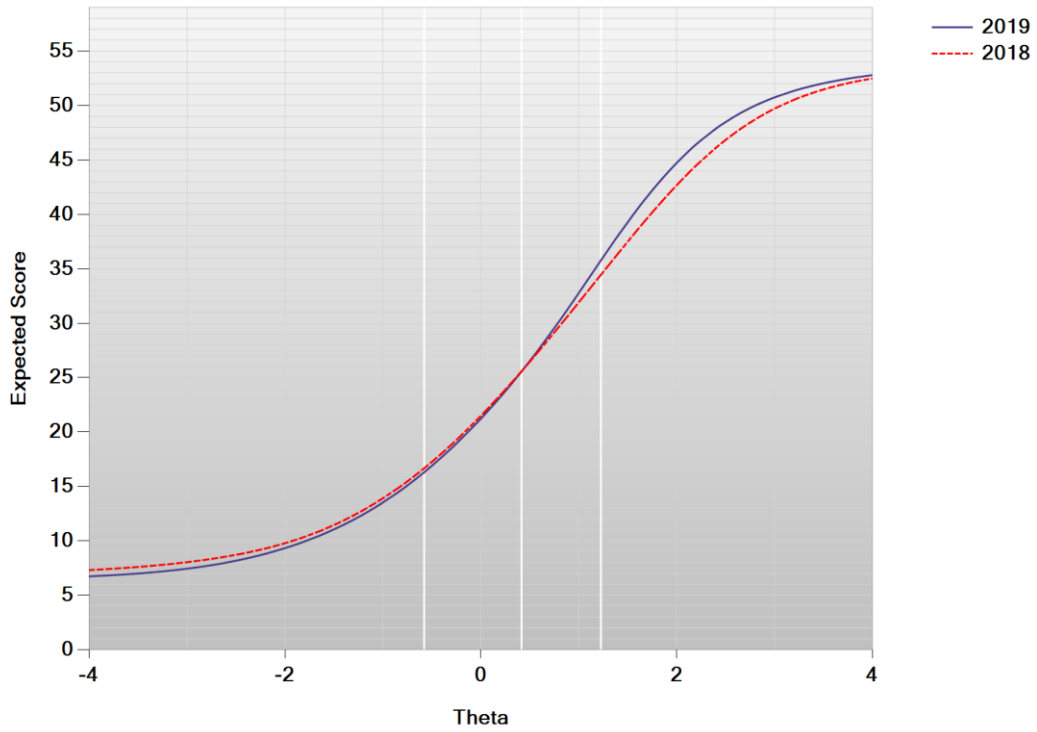


Figure K-4. 2018–19 eMPowerME: Mathematics Grade 6 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 6



Test Information Function: Mathematics Grade 6

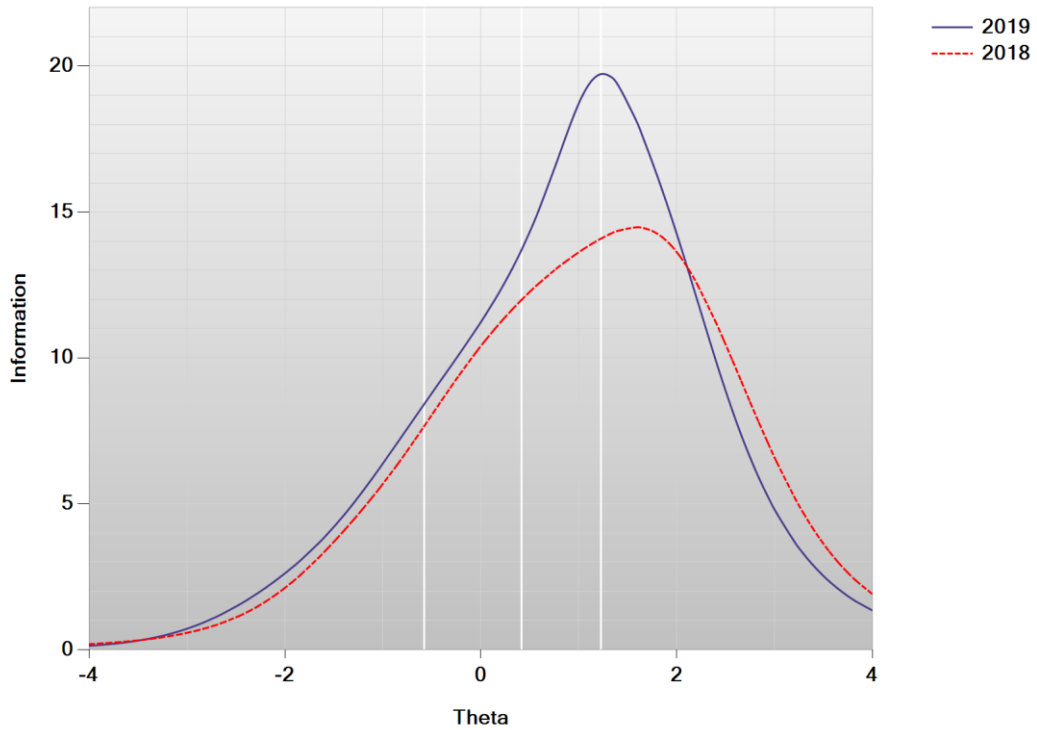
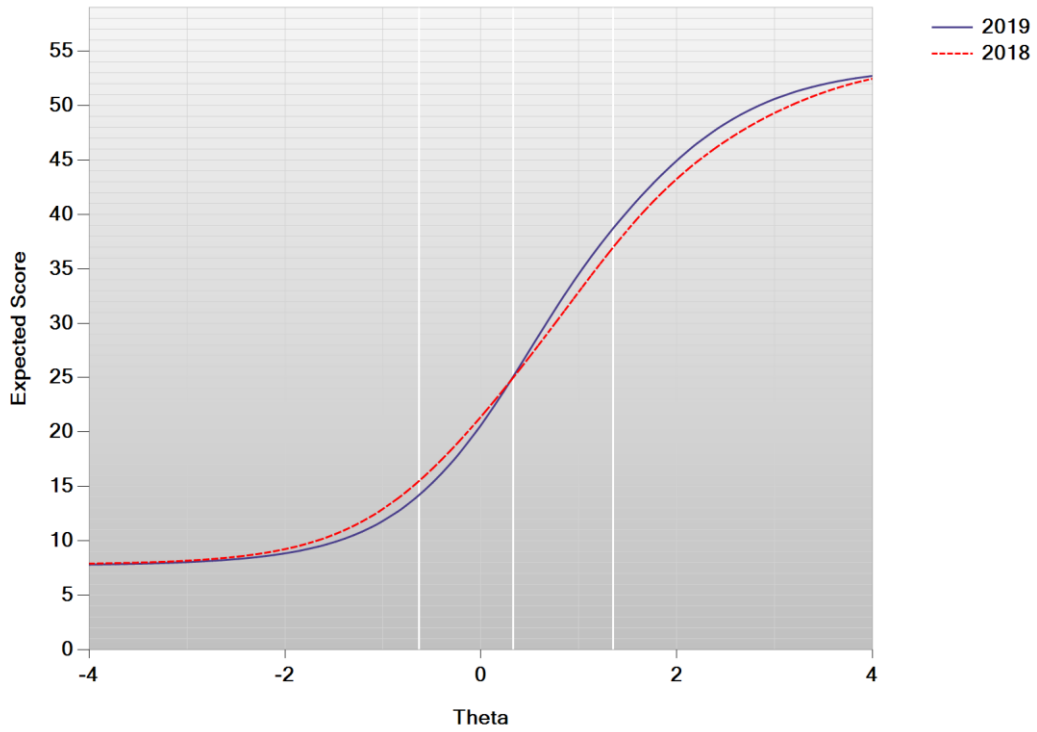


Figure K-5. 2018–19 eMPowerME: Mathematics Grade 7 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 7



Test Information Function: Mathematics Grade 7

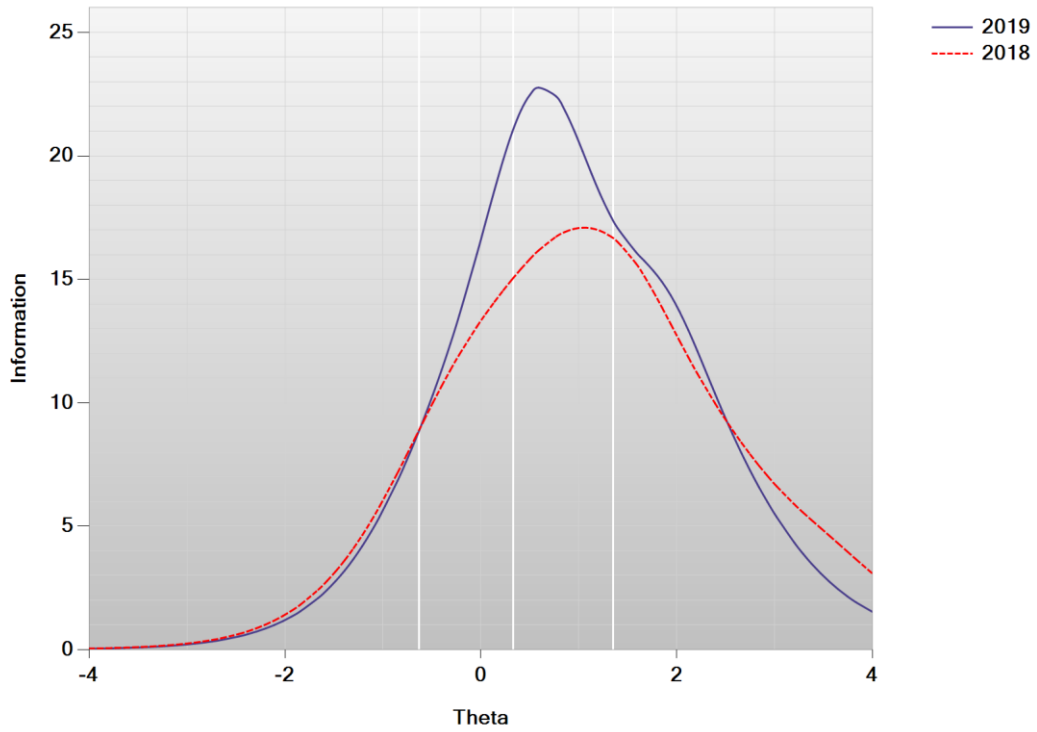
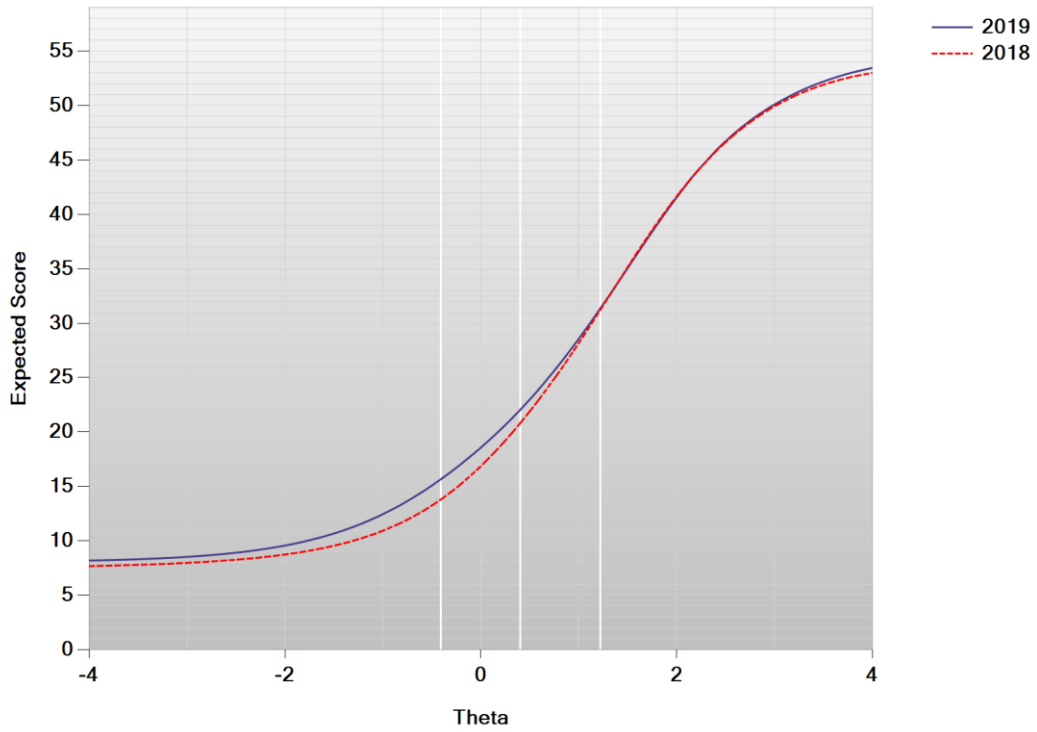


Figure K-6. 2018–19 eMPowerME: Mathematics Grade 8 Plots
 Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: Mathematics Grade 8



Test Information Function: Mathematics Grade 8

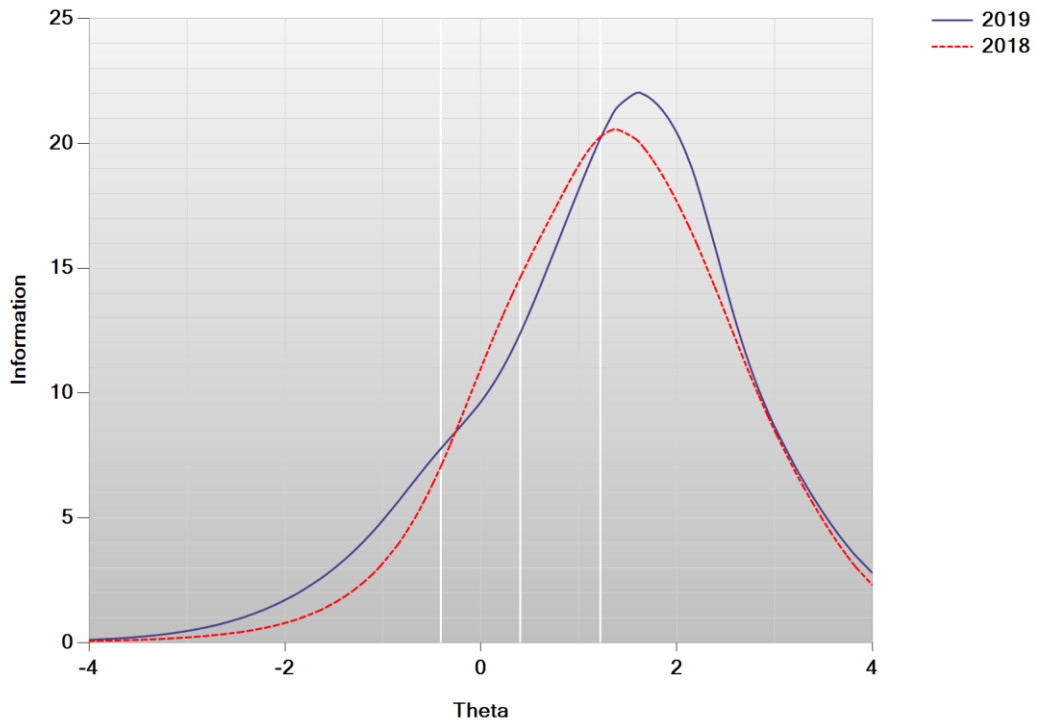
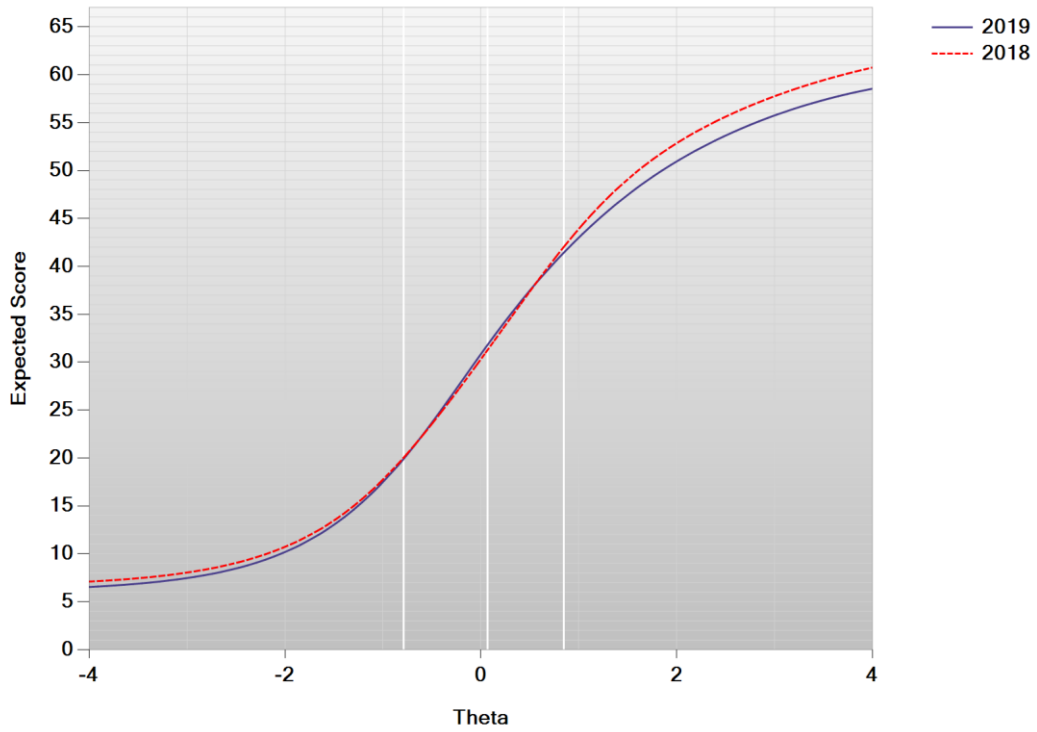


Figure K-7. 2018–19 eMPowerME: ELA Grade 3 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 3



Test Information Function: English Language Arts Grade 3

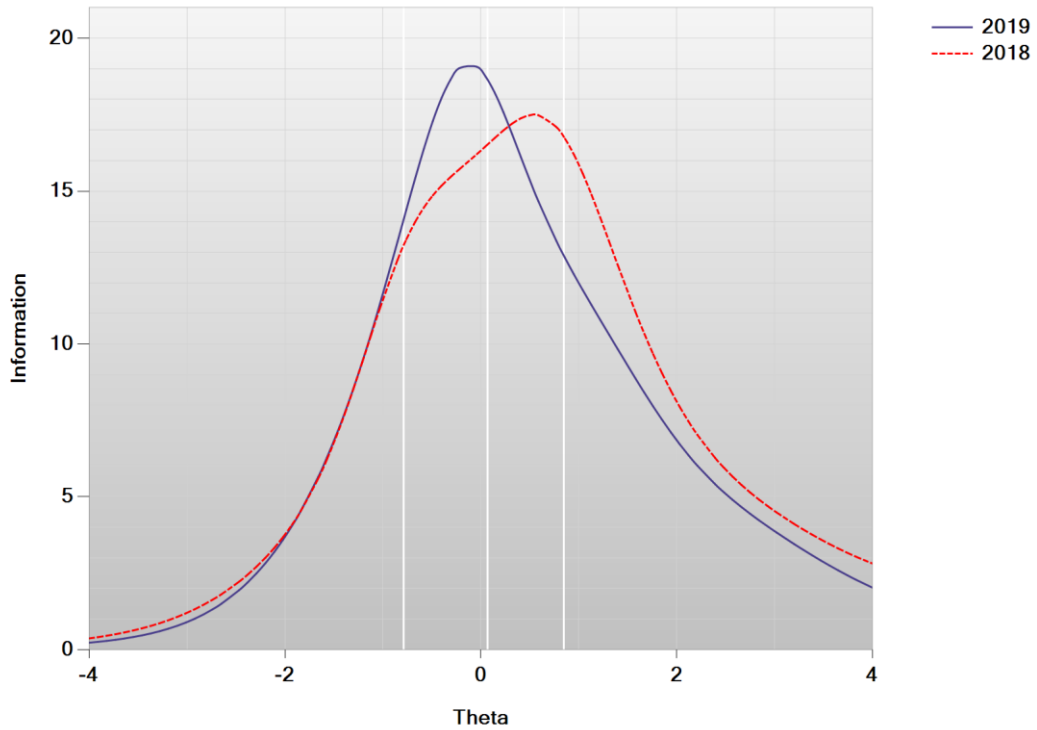
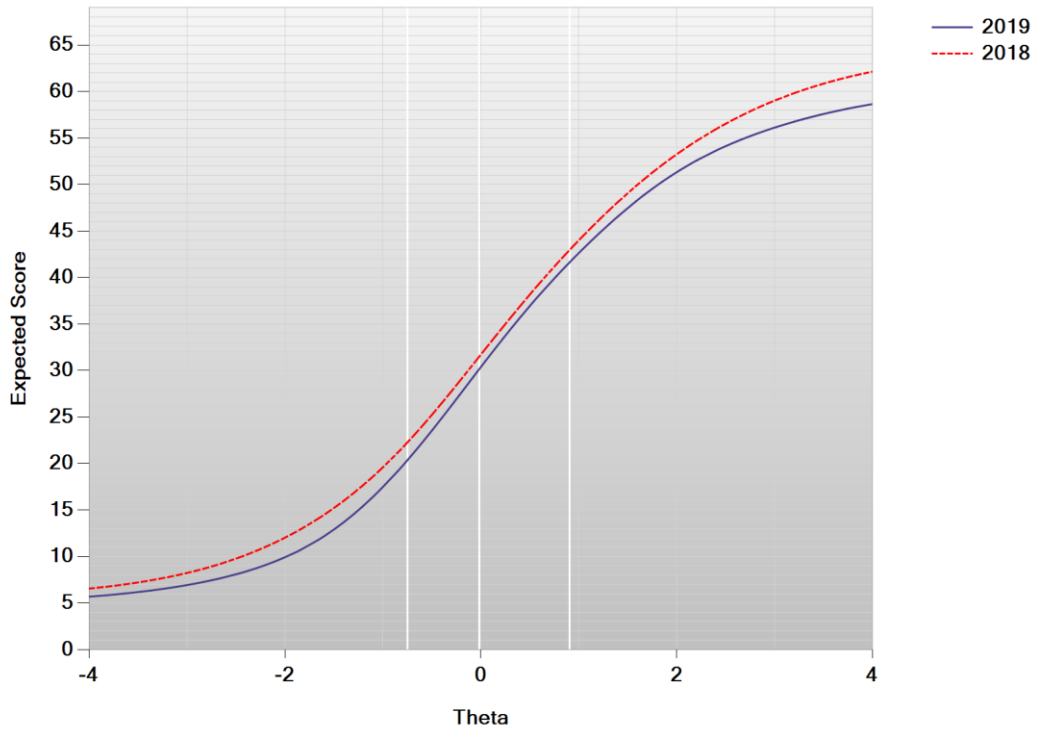


Figure K-8. 2018–19 eMPowerME: ELA Grade 4 Plots
 Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 4



Test Information Function: English Language Arts Grade 4

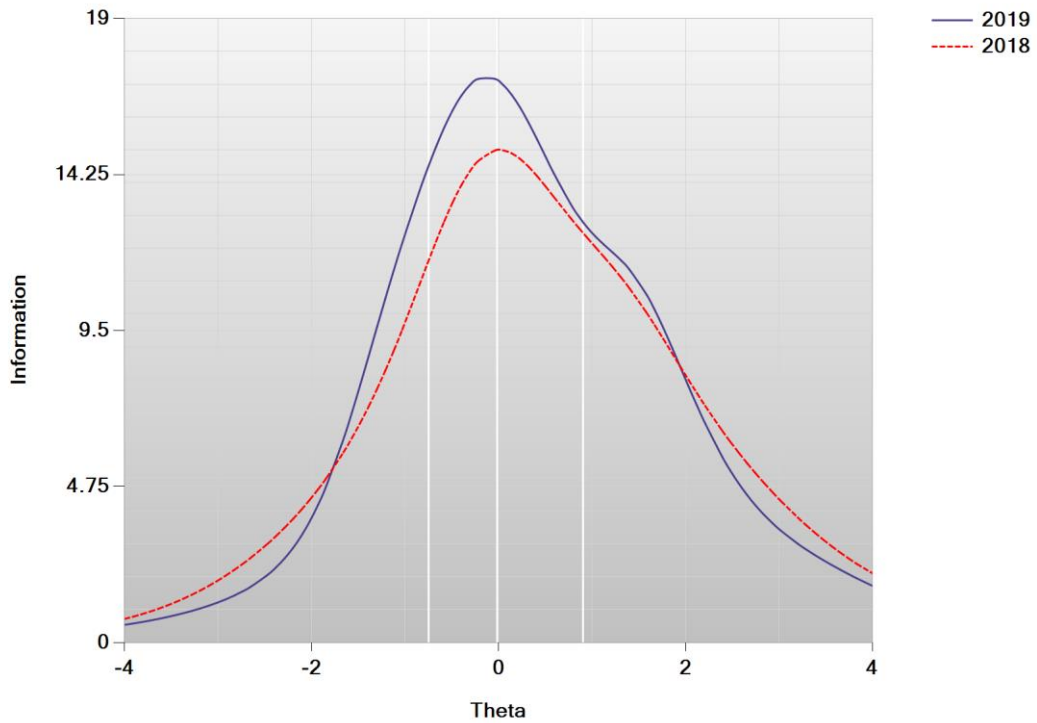
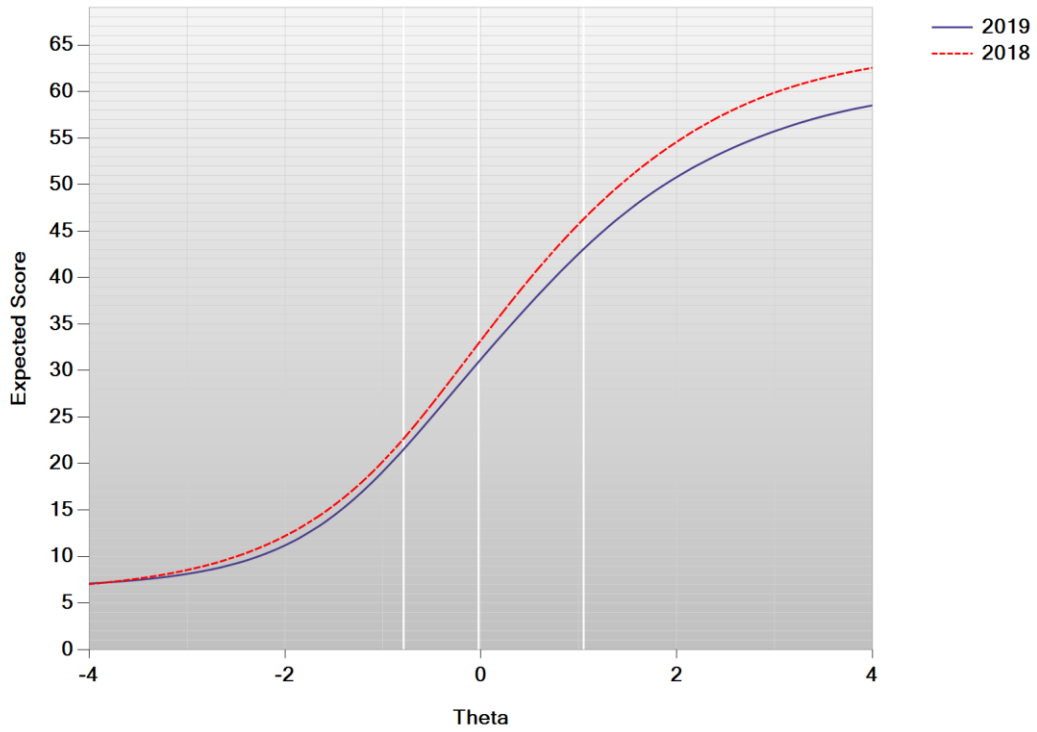


Figure K-9. 2018–19 eMPowerME: ELA Grade 5 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 5



Test Information Function: English Language Arts Grade 5

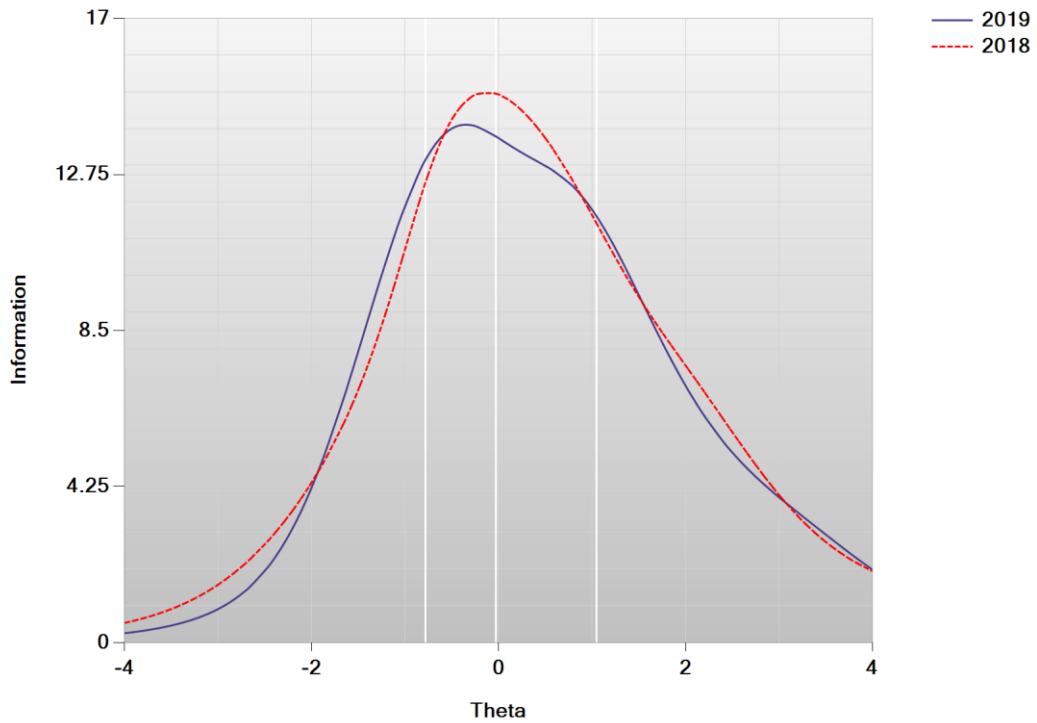
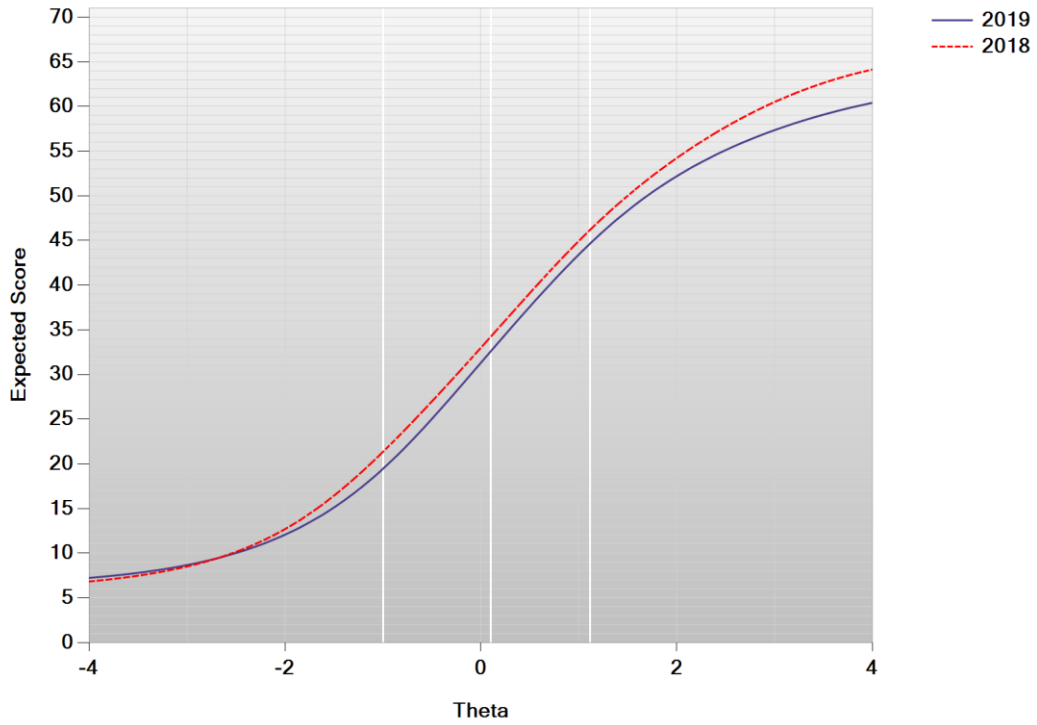


Figure K-10. 2018–19 eMPowerME: ELA Grade 6 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 6



Test Information Function: English Language Arts Grade 6

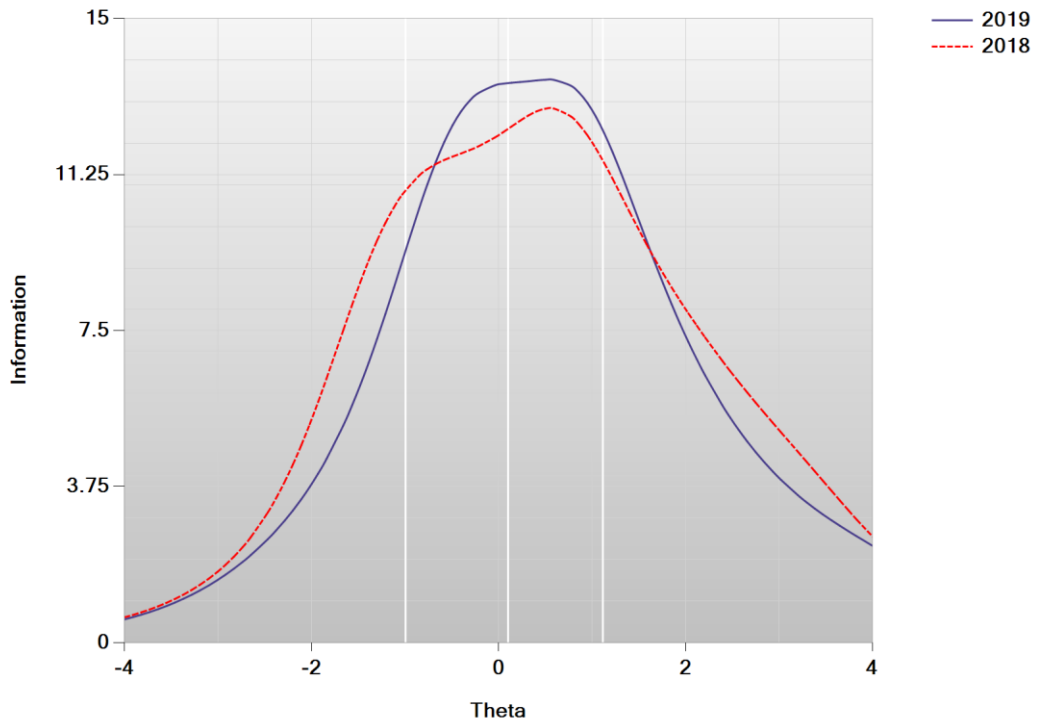
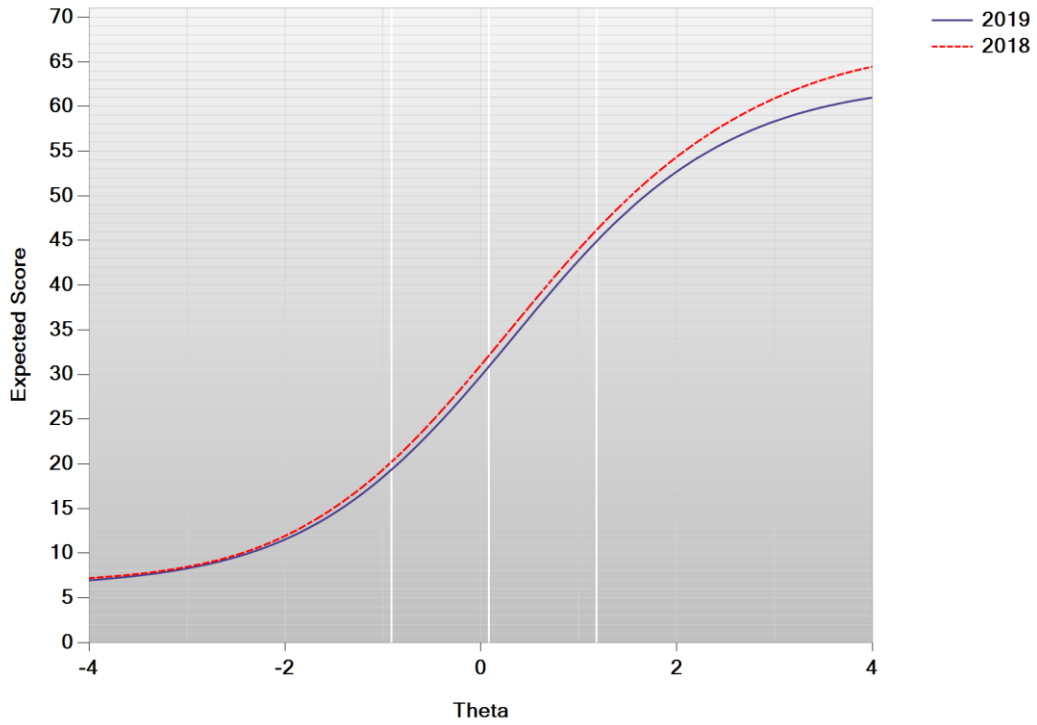


Figure K-11. 2018–19 eMPowerME: ELA Grade 7 Plots
 Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 7



Test Information Function: English Language Arts Grade 7

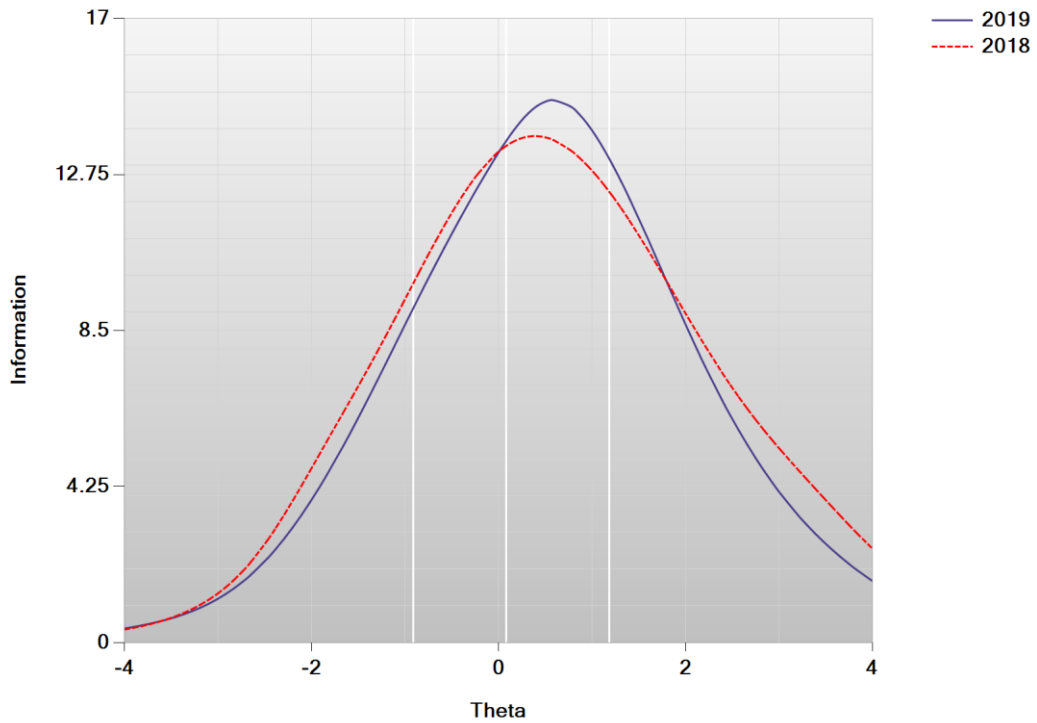
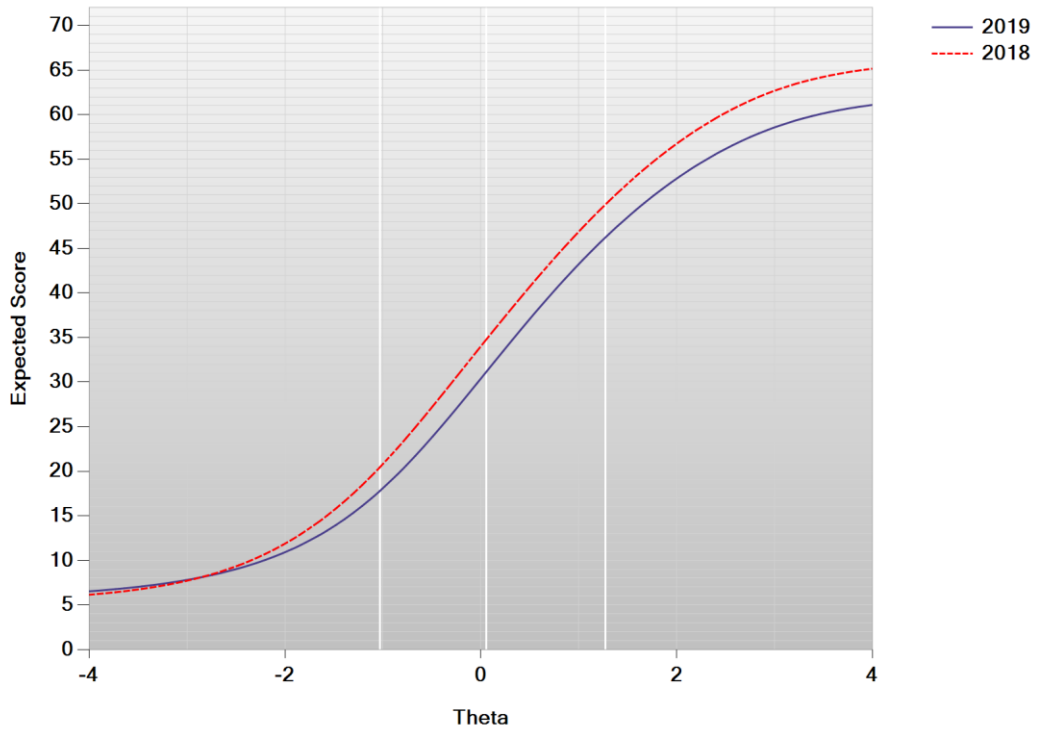
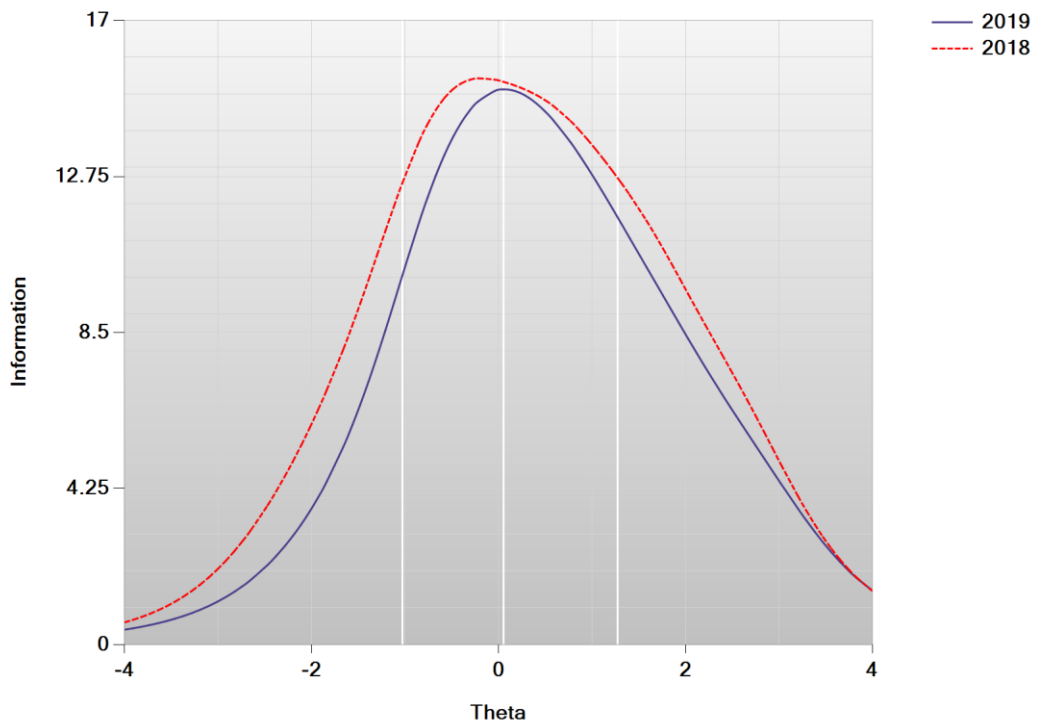


Figure K-12. 2018–19 eMPowerME: ELA Grade 8 Plots
 Top: Test Characteristic Curve Bottom: Test Information Function

Test Characteristic Curve: English Language Arts Grade 8



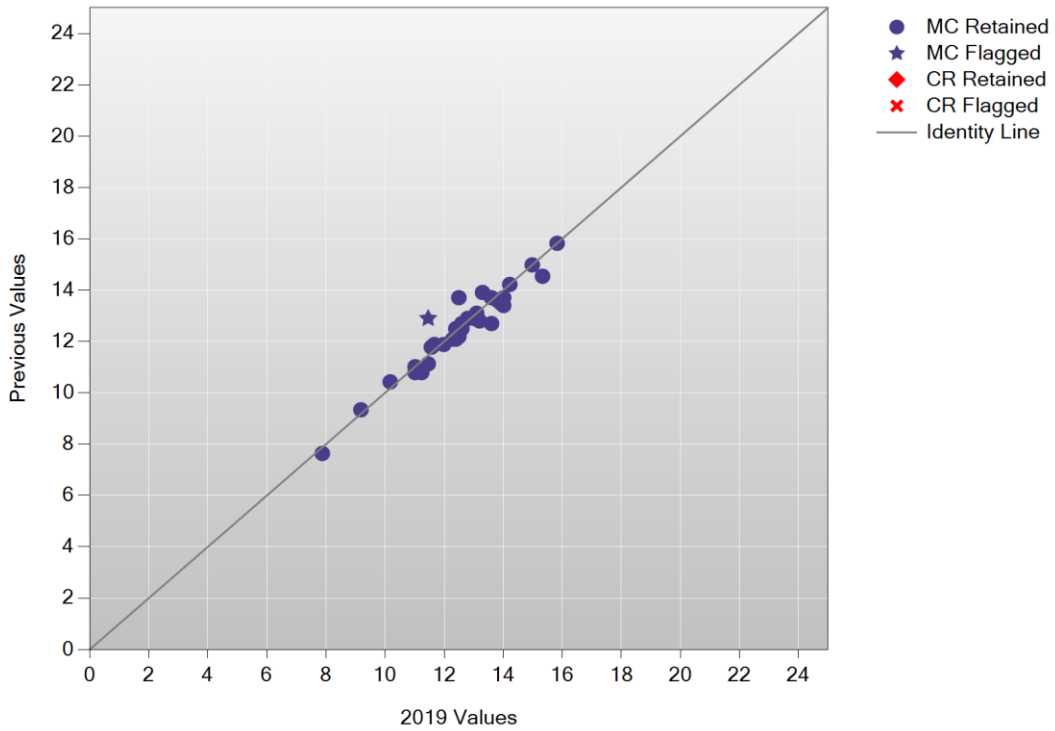
Test Information Function: English Language Arts Grade 8



APPENDIX L—DELTA AND RESCORE ANALYSES

Figure L-1. 2018–19 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 3 Bottom: Grade 4

Delta Plot: Mathematics Grade 3



Delta Plot: Mathematics Grade 4

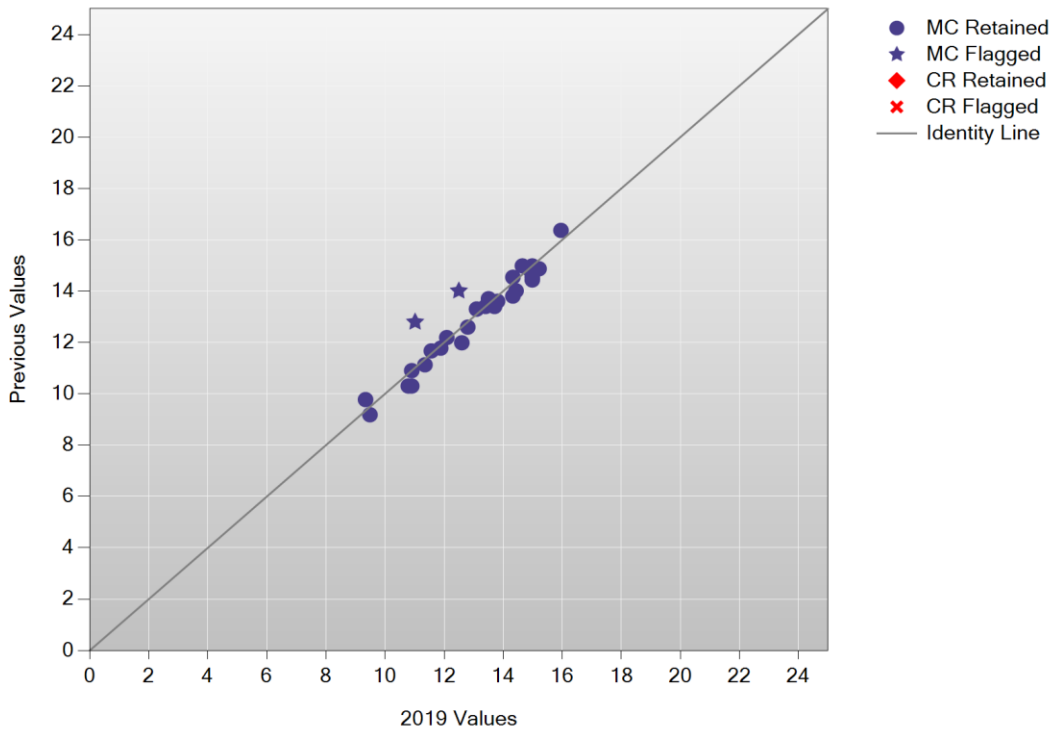
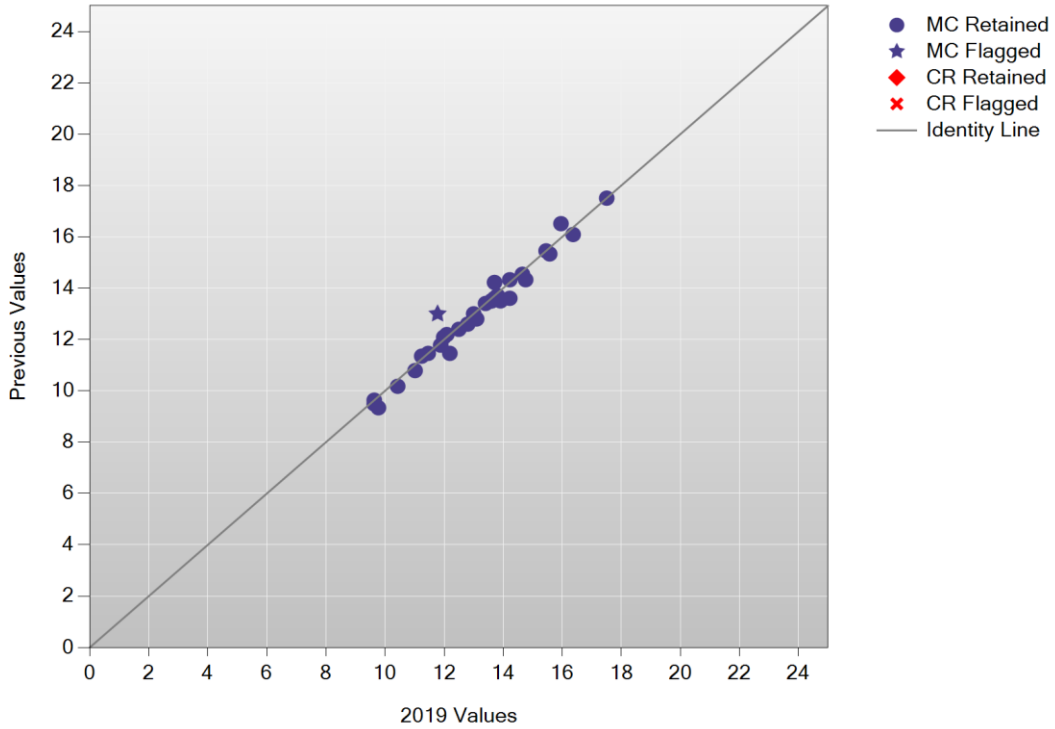


Figure L-2. 2018–19 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 5 Bottom: Grade 6

Delta Plot: Mathematics Grade 5



Delta Plot: Mathematics Grade 6

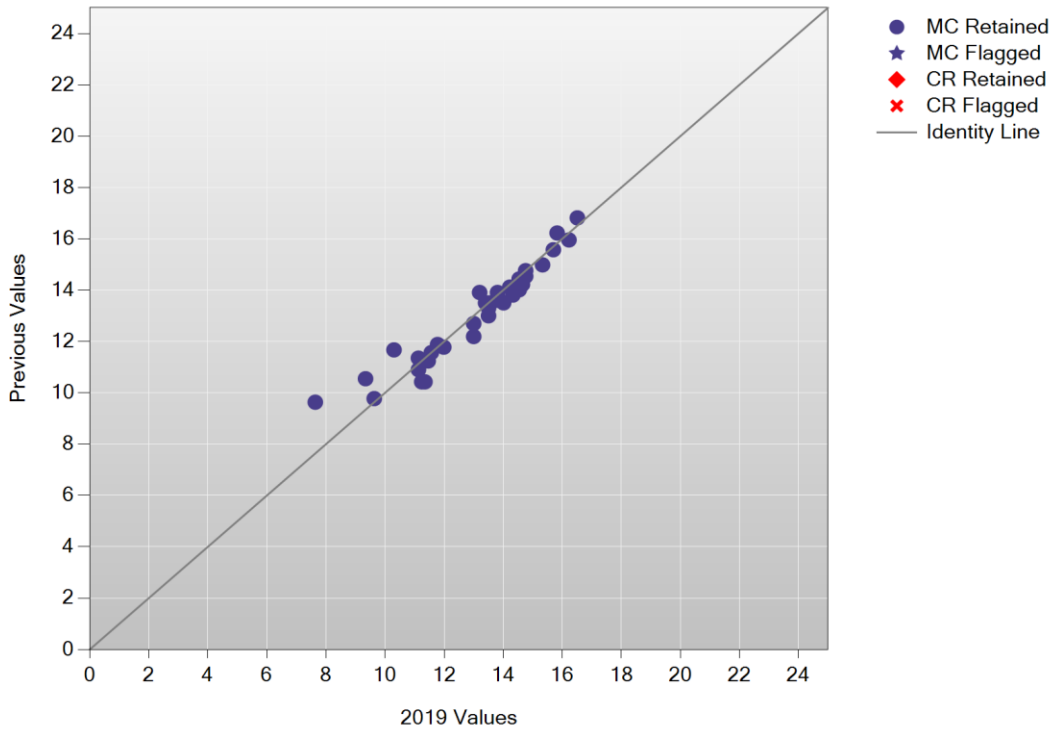
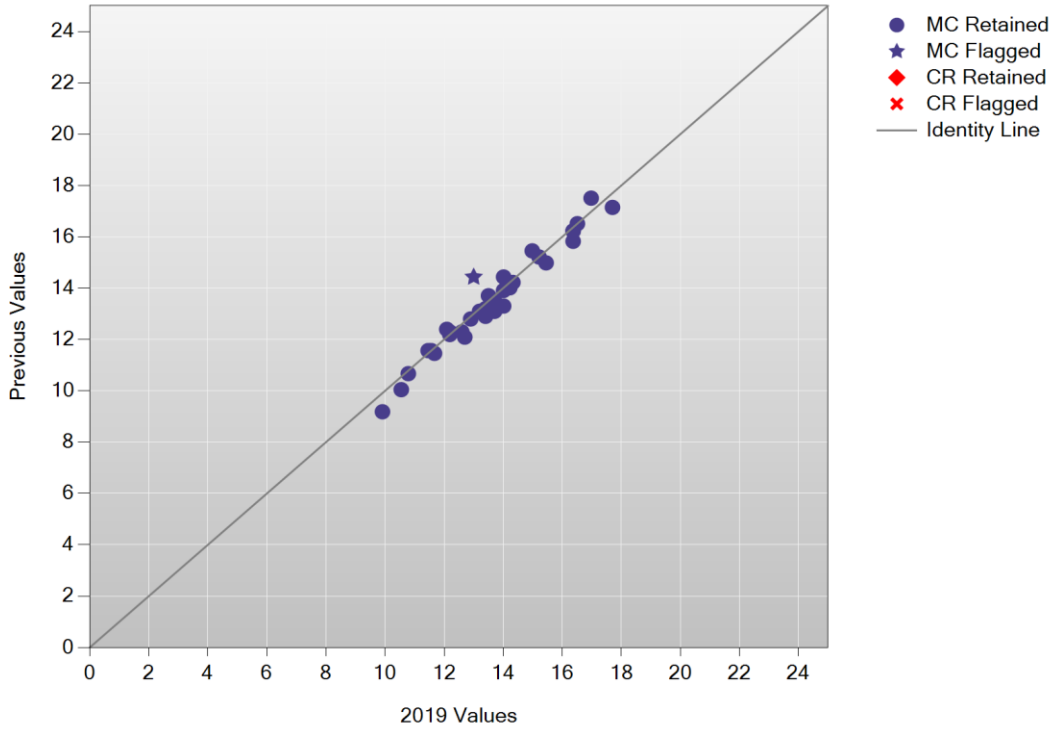


Figure L-3. 2018–19 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 7 Bottom: Grade 8

Delta Plot: Mathematics Grade 7



Delta Plot: Mathematics Grade 8

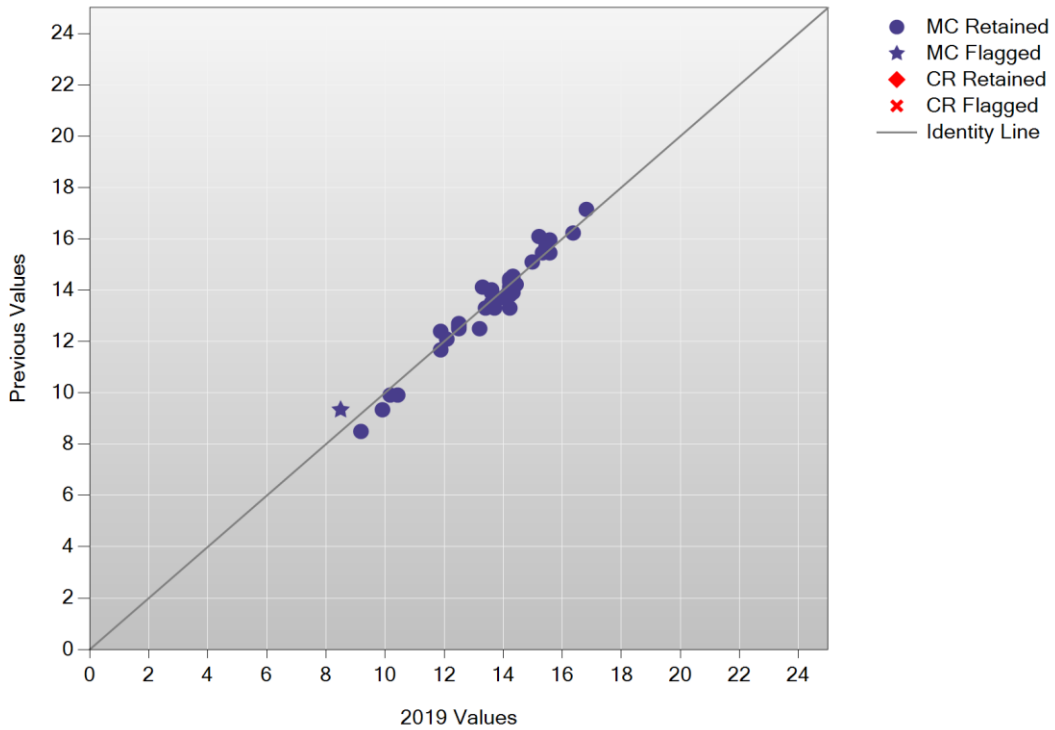
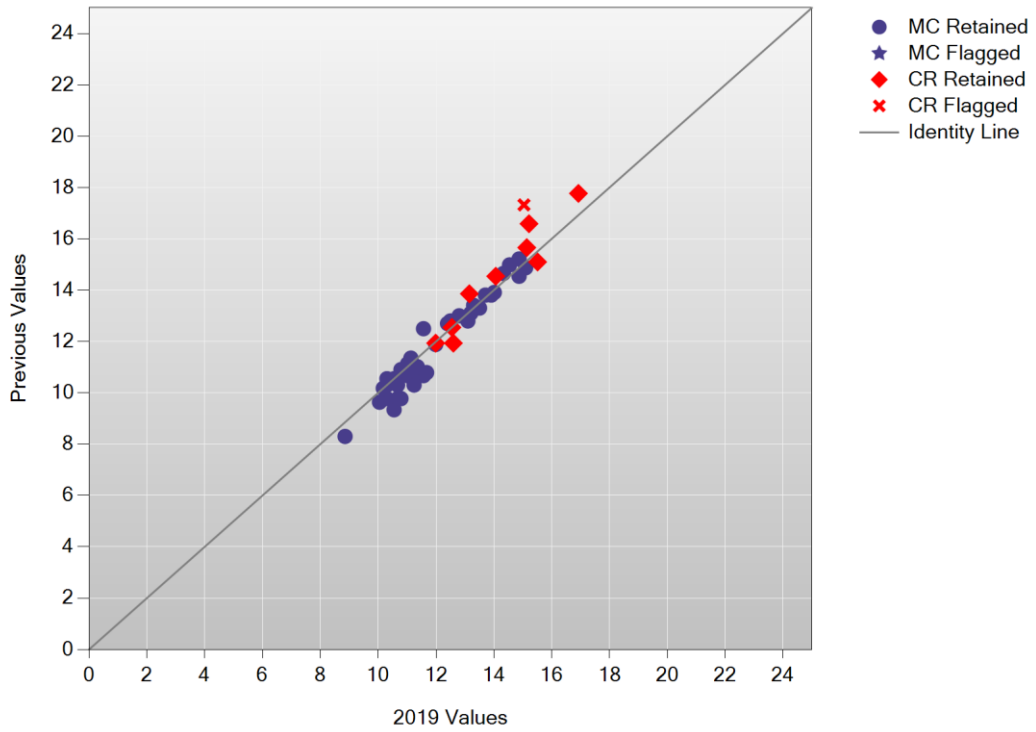


Figure L-4. 2018–19 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 3 Bottom: Grade 4

Delta Plot: English Language Arts Grade 3



Delta Plot: English Language Arts Grade 4

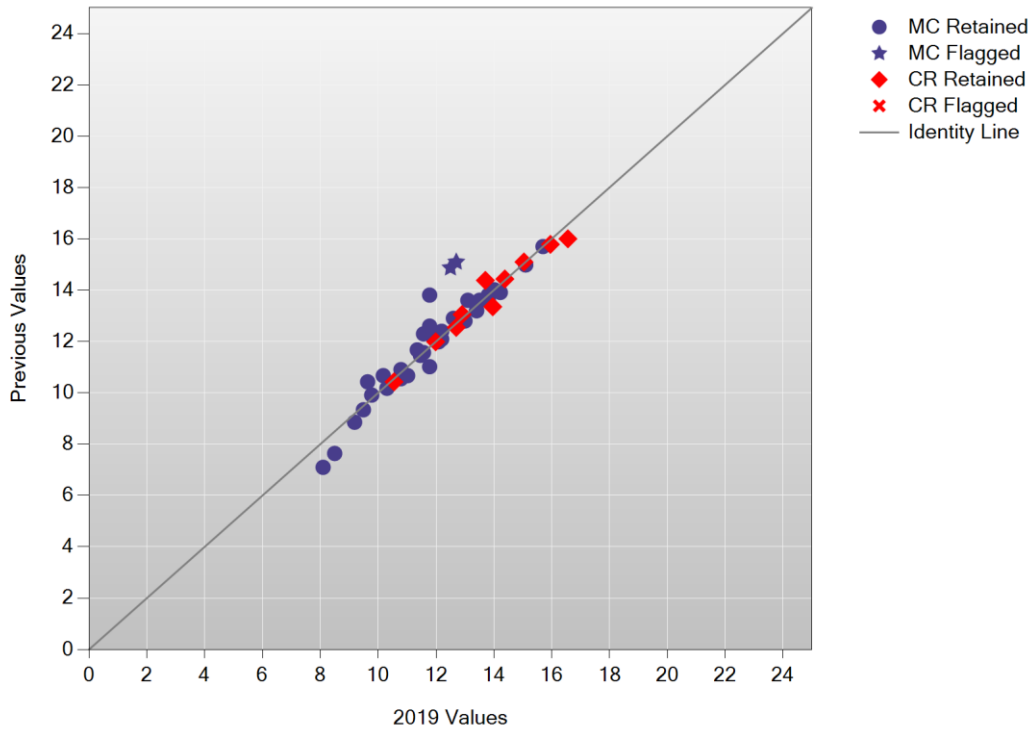
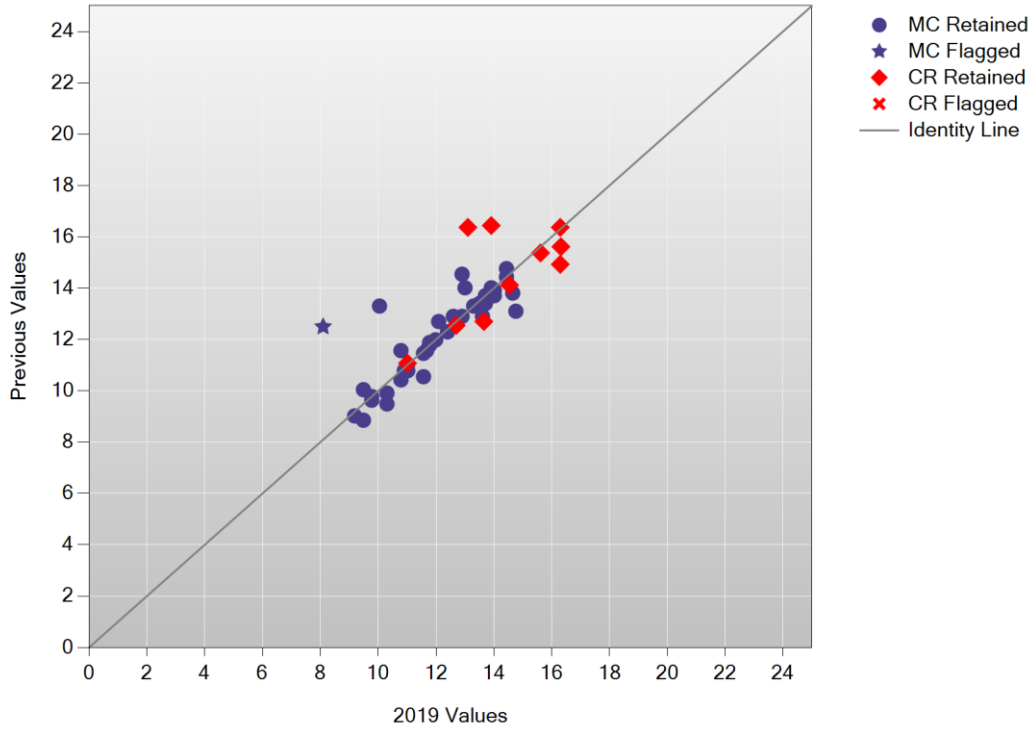


Figure L-5. 2018–19 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 5 Bottom: Grade 6

Delta Plot: English Language Arts Grade 5



Delta Plot: English Language Arts Grade 6

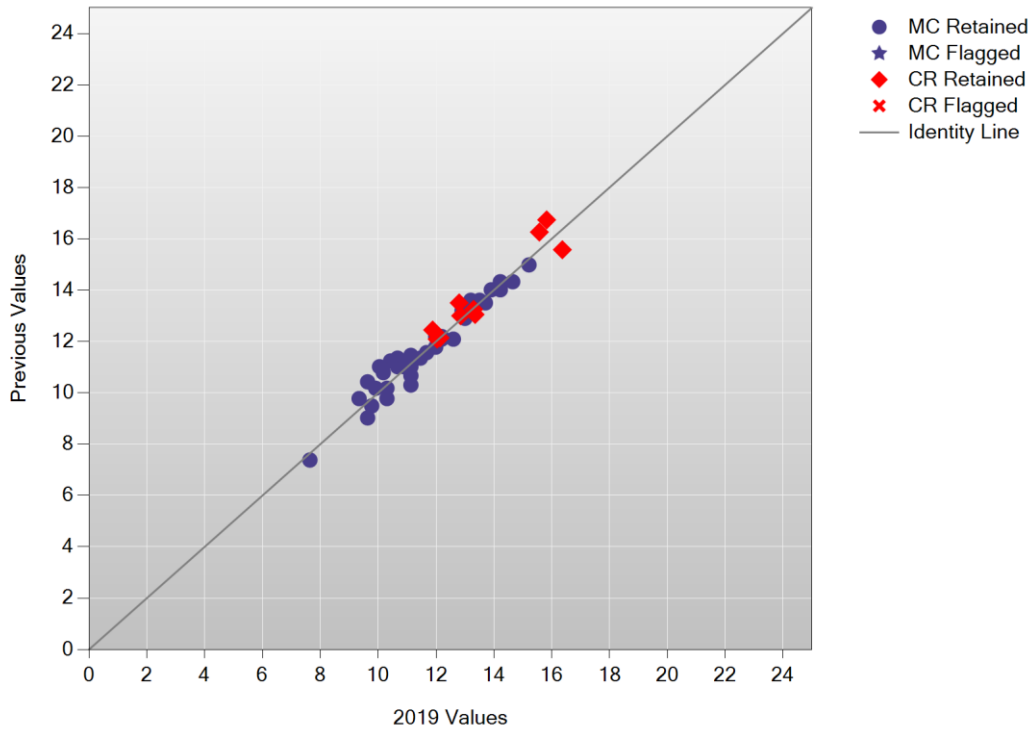
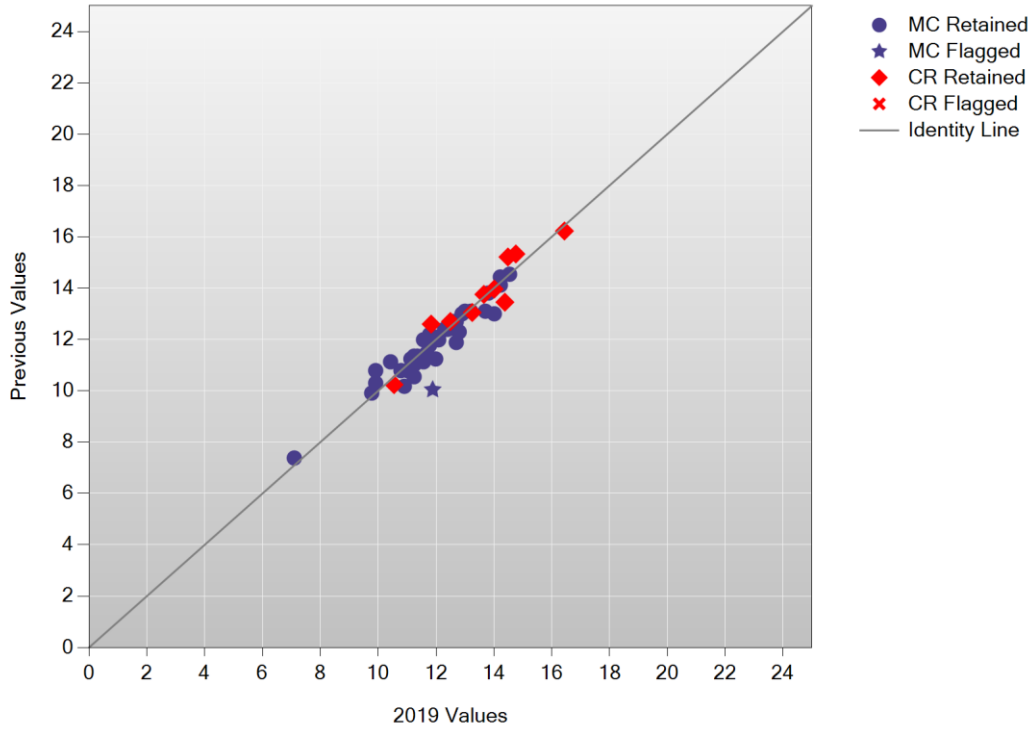


Figure L-6. 2018–19 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 7 Bottom: Grade 8

Delta Plot: English Language Arts Grade 7



Delta Plot: English Language Arts Grade 8

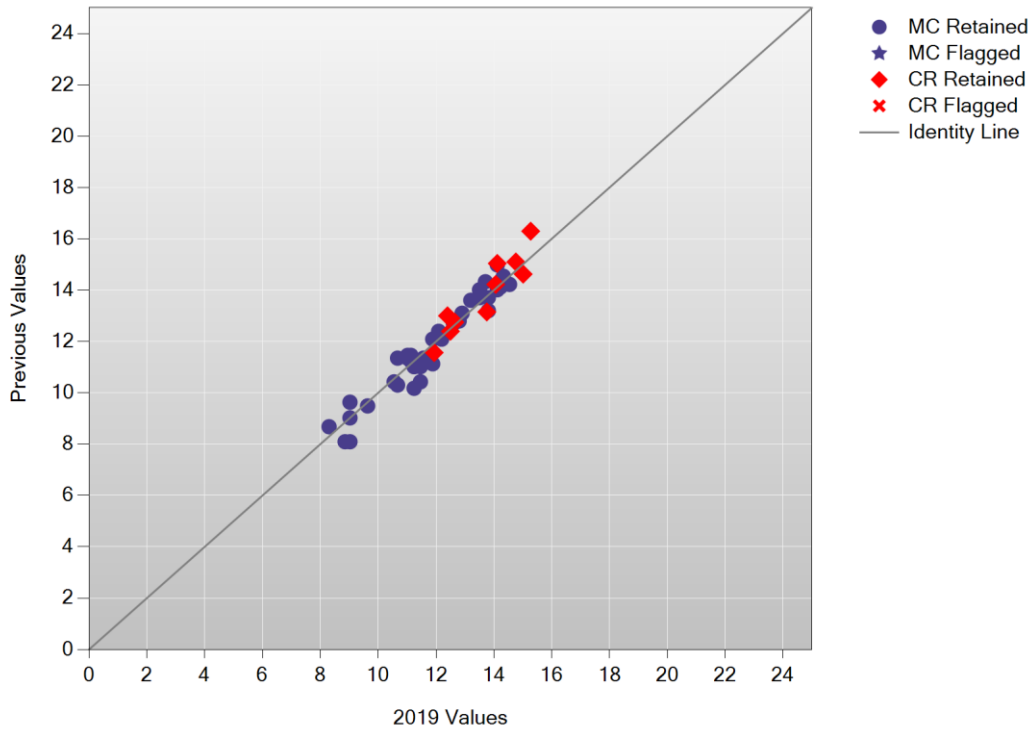


Table L-1. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 3

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
123876A	0.31000	0.31000	14.98340	14.98340	False	-0.63459
123978A	0.51000	0.65000	12.89972	11.45872	True	3.45238
124366A	0.55000	0.56000	12.49735	12.39612	False	-0.52147
125118A	0.58000	0.55000	12.19243	12.49735	False	-0.16481
125137A	0.51000	0.50000	12.89972	13.00000	False	-0.81985
125223A	0.59000	0.56000	12.08982	12.39612	False	-0.15313
125246A	0.41000	0.47000	13.91018	13.30108	False	1.07862
125260A	0.55000	0.54000	12.49735	12.59827	False	-0.78806
125291A	0.51000	0.52000	12.89972	12.79939	False	-0.49417
400041	0.43000	0.44000	13.70550	13.60388	False	-0.43048
401070	0.43000	0.55000	13.70550	12.49735	False	2.82681
411009	0.69000	0.69000	11.01660	11.01660	False	-0.92958
411119	0.61000	0.63000	11.88272	11.67259	False	-0.24659
411577	0.62000	0.64000	11.77808	11.56616	False	-0.24914
411588	0.53000	0.54000	12.69892	12.59827	False	-0.50817
411642	0.53000	0.44000	12.69892	13.60388	False	1.56384
411764	0.38000	0.38000	14.22192	14.22192	False	-0.69122
413036	0.46000	0.40000	13.40173	14.01339	False	0.64817
413163	0.59000	0.57000	12.08982	12.29450	False	-0.45227
414599	0.44000	0.42000	13.60388	13.80757	False	-0.56777
417021	0.82000	0.83000	9.33854	9.18334	False	-0.59750
462345	0.71000	0.69000	10.78646	11.01660	False	-0.28042
462586	0.71000	0.67000	10.78646	11.24035	False	0.37824
462666	0.74000	0.76000	10.42662	10.17479	False	-0.23214
462672	0.68000	0.65000	11.12920	11.45872	False	-0.01337
464204	0.61000	0.60000	11.88272	11.98661	False	-0.73358
464322	0.35000	0.28000	14.54128	15.33137	False	1.08868
532118	0.52000	0.48000	12.79939	13.20061	False	0.07354
532135	0.49000	0.49000	13.10028	13.10028	False	-0.77463
539890	0.43000	0.40000	13.70550	14.01339	False	-0.26861
539899	0.91000	0.90000	7.63698	7.87379	False	-0.02655
557244	0.24000	0.24000	15.82521	15.82521	False	-0.57199
557246	0.45000	0.41000	13.50265	13.91018	False	0.03980

Table L-2. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 4

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
124769A	0.52000	0.69000	12.79939	11.01660	True	3.69802
124781A	0.33000	0.31000	14.75965	14.98340	False	-0.36249
124856A	0.44000	0.42000	13.60388	13.80757	False	-0.39722
124951A	0.46000	0.43000	13.40173	13.70550	False	-0.13624
126341A	0.40000	0.36000	14.01339	14.43384	False	0.15564
126362A	0.46000	0.46000	13.40173	13.40173	False	-0.88992
126501A	0.62000	0.61000	11.77808	11.88272	False	-0.62581
127388A	0.36000	0.31000	14.43384	14.98340	False	0.48239
127466A	0.20000	0.23000	16.36648	15.95539	False	0.21360
127590A	0.32000	0.31000	14.87080	14.98340	False	-0.65069
127597A	0.31000	0.31000	14.98340	14.98340	False	-0.86669
400786	0.75000	0.70000	10.30204	10.90240	False	0.67402
400795	0.70000	0.70000	10.90240	10.90240	False	-0.88277
400798	0.32000	0.32000	14.87080	14.87080	False	-0.86835
400903	0.54000	0.52000	12.59827	12.79939	False	-0.38910
405640	0.75000	0.71000	10.30204	10.78646	False	0.37508
407497	0.40000	0.55000	14.01339	12.49735	True	3.02805
408032	0.68000	0.66000	11.12920	11.35015	False	-0.31642
408054	0.47000	0.49000	13.30108	13.10028	False	-0.37364
411556	0.63000	0.64000	11.67259	11.56616	False	-0.64090
411727	0.47000	0.49000	13.30108	13.10028	False	-0.37364
411832	0.58000	0.59000	12.19243	12.08982	False	-0.64311
413818	0.32000	0.32000	14.87080	14.87080	False	-0.86835
414743	0.42000	0.37000	13.80757	14.32741	False	0.41494
465876	0.31000	0.34000	14.98340	14.64985	False	-0.00666
476868	0.35000	0.37000	14.54128	14.32741	False	-0.32174
532523	0.32000	0.29000	14.87080	15.21354	False	-0.05730
540258	0.79000	0.82000	9.77432	9.33854	False	0.18044
540265	0.43000	0.45000	13.70550	13.50265	False	-0.36242
540312	0.35000	0.31000	14.54128	14.98340	False	0.20377
540326	0.83000	0.81000	9.18334	9.48841	False	-0.07092
560922	0.60000	0.54000	11.98661	12.59827	False	0.67841

Table L-3. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 5

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
124675A	0.44000	0.42000	13.60388	13.80757	False	-0.30609
124737A	0.58000	0.59000	12.19243	12.08982	False	-0.09863
124738A	0.37000	0.33000	14.32741	14.75965	False	0.61230
125071A	0.65000	0.58000	11.45872	12.19243	False	1.56097
125951A	0.50000	0.62000	13.00000	11.77808	True	4.10027
126058A	0.13000	0.13000	17.50556	17.50556	False	-0.81213
400076	0.37000	0.38000	14.32741	14.22192	False	-0.23442
400224	0.46000	0.46000	13.40173	13.40173	False	-0.57175
400639	0.45000	0.41000	13.50265	13.91018	False	0.46171
400711	0.82000	0.79000	9.33854	9.77432	False	0.28282
408459	0.28000	0.26000	15.33137	15.57338	False	-0.04171
408463	0.19000	0.23000	16.51159	15.95539	False	1.32854
410151	0.45000	0.44000	13.50265	13.60388	False	-0.70251
411149	0.50000	0.50000	13.00000	13.00000	False	-0.54413
411240	0.43000	0.42000	13.70550	13.80757	False	-0.68535
411295	0.76000	0.74000	10.17479	10.42662	False	-0.35886
413923	0.44000	0.43000	13.60388	13.70550	False	-0.69408
415312	0.56000	0.55000	12.39612	12.49735	False	-0.77857
464057	0.80000	0.80000	9.63352	9.63352	False	-0.31273
464086	0.45000	0.44000	13.50265	13.60388	False	-0.70251
466529	0.38000	0.43000	14.22192	13.70550	False	1.33476
466686	0.22000	0.20000	16.08877	16.36648	False	0.14604
532486	0.44000	0.38000	13.60388	14.22192	False	1.26880
532490	0.54000	0.52000	12.59827	12.79939	False	-0.38501
532496	0.65000	0.65000	11.45872	11.45872	False	-0.43819
532498	0.62000	0.61000	11.77808	11.88272	False	-0.80807
539177	0.66000	0.67000	11.35015	11.24035	False	-0.01339
539188	0.52000	0.49000	12.79939	13.10028	False	0.00803
539225	0.27000	0.27000	15.45125	15.45125	False	-0.71263
540637	0.81000	0.80000	9.48841	9.63352	False	-0.81170
558689	0.71000	0.69000	10.78646	11.01660	False	-0.39926
558693	0.59000	0.60000	12.08982	11.98661	False	-0.08928
558705	0.35000	0.34000	14.54128	14.64985	False	-0.60322

Table L-4. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 6

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
124799A	0.74000	0.67000	10.42662	11.24035	False	1.61967
125464A	0.79000	0.80000	9.77432	9.63352	False	-0.50585
125837A	0.80000	0.91000	9.63352	7.63698	False	2.96922
125839A	0.67000	0.65000	11.24035	11.45872	False	-0.03681
400114	0.41000	0.48000	13.91018	13.20061	False	1.02399
400238	0.45000	0.46000	13.50265	13.40173	False	-0.55450
400411	0.44000	0.42000	13.60388	13.80757	False	-0.71267
400688	0.45000	0.45000	13.50265	13.50265	False	-0.79789
406039	0.39000	0.38000	14.11728	14.22192	False	-0.88374
410187	0.17000	0.19000	16.81666	16.51159	False	0.83597
412050	0.70000	0.68000	10.90240	11.12920	False	0.07511
412181	0.43000	0.42000	13.70550	13.80757	False	-0.98531
412273	0.36000	0.35000	14.43384	14.54128	False	-0.80471
412393	0.26000	0.25000	15.57338	15.69796	False	-0.53724
412411	0.66000	0.68000	11.35015	11.12920	False	-0.84826
412462	0.61000	0.62000	11.88272	11.77808	False	-0.98445
414069	0.35000	0.33000	14.54128	14.75965	False	-0.93130
415140	0.50000	0.45000	13.00000	13.50265	False	0.17202
415153	0.62000	0.60000	11.77808	11.98661	False	-0.20625
415230	0.21000	0.24000	16.22568	15.82521	False	0.90593
419551	0.74000	0.66000	10.42662	11.35015	False	1.88450
464562	0.53000	0.50000	12.69892	13.00000	False	-0.23257
464839	0.41000	0.42000	13.91018	13.80757	False	-0.43997
464910	0.33000	0.33000	14.75965	14.75965	False	-0.45726
474350	0.58000	0.50000	12.19243	13.00000	False	1.12633
532622	0.64000	0.64000	11.56616	11.56616	False	-0.65180
539595	0.38000	0.34000	14.22192	14.64985	False	-0.33931
539597	0.47000	0.45000	13.30108	13.50265	False	-0.63576
539618	0.40000	0.35000	14.01339	14.54128	False	-0.04169
539622	0.45000	0.40000	13.50265	14.01339	False	0.05534
539643	0.23000	0.21000	15.95539	16.22568	False	-0.78519
539781	0.42000	0.37000	13.80757	14.32741	False	-0.00535
539791	0.63000	0.75000	11.67259	10.30204	False	2.01190
539793	0.73000	0.82000	10.54875	9.33854	False	1.32064
540727	0.37000	0.35000	14.32741	14.54128	False	-0.88420
558385	0.31000	0.28000	14.98340	15.33137	False	-0.73853

Table L-5. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 7

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
124350A	0.36000	0.50000	14.43384	13.00000	True	4.33361
124359A	0.58000	0.58000	12.19243	12.19243	False	-0.39247
124361A	0.40000	0.38000	14.01339	14.22192	False	-0.68439
124504A	0.43000	0.45000	13.70550	13.50265	False	0.13338
124508A	0.77000	0.73000	10.04461	10.54875	False	-0.12866
124648A	0.47000	0.43000	13.30108	13.70550	False	-0.08721
124652A	0.41000	0.40000	13.91018	14.01339	False	-0.95697
400327	0.29000	0.29000	15.21354	15.21354	False	-0.75311
400877	0.64000	0.65000	11.56616	11.45872	False	0.05650
400884	0.38000	0.37000	14.22192	14.32741	False	-1.00213
408770	0.64000	0.64000	11.56616	11.56616	False	-0.31771
408783	0.40000	0.39000	14.01339	14.11728	False	-0.97166
410251	0.57000	0.58000	12.29450	12.19243	False	-0.04915
412048	0.57000	0.54000	12.29450	12.59827	False	-0.55793
412197	0.49000	0.48000	13.10028	13.20061	False	-0.85029
412200	0.56000	0.59000	12.39612	12.08982	False	0.64998
412224	0.59000	0.53000	12.08982	12.69892	False	0.48105
412251	0.72000	0.71000	10.66863	10.78646	False	-0.62093
412263	0.83000	0.78000	9.18334	9.91123	False	0.54779
412395	0.31000	0.27000	14.98340	15.45125	False	0.33453
467173	0.21000	0.20000	16.22568	16.36648	False	-0.65620
467221	0.52000	0.51000	12.79939	12.89972	False	-0.81438
467737	0.49000	0.43000	13.10028	13.70550	False	0.58816
467772	0.27000	0.31000	15.45125	14.98340	False	0.84790
467828	0.65000	0.63000	11.45872	11.67259	False	-0.97077
467844	0.36000	0.40000	14.43384	14.01339	False	0.80426
467858	0.21000	0.20000	16.22568	16.36648	False	-0.65620
467883	0.19000	0.19000	16.51159	16.51159	False	-0.90807
532217	0.13000	0.16000	17.50556	16.97783	False	0.81123
539407	0.51000	0.46000	12.89972	13.40173	False	0.20477
539434	0.49000	0.43000	13.10028	13.70550	False	0.58816
539440	0.48000	0.46000	13.20061	13.40173	False	-0.80723
539442	0.24000	0.20000	15.82521	16.36648	False	0.69074
557940	0.45000	0.43000	13.50265	13.70550	False	-0.76515
557950	0.15000	0.12000	17.14573	17.69995	False	0.89344
557952	0.47000	0.40000	13.30108	14.01339	False	0.98509

Table L-6. 2018–19 eMPowerME: Delta Analysis Results—Mathematics Grade 8

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
126278A	0.55000	0.48000	12.49735	13.20061	False	1.29162
126281A	0.40000	0.44000	14.01339	13.60388	False	0.37394
126883A	0.55000	0.55000	12.49735	12.49735	False	-0.89101
127152A	0.43000	0.43000	13.70550	13.70550	False	-1.14850
127742A	0.41000	0.44000	13.91018	13.60388	False	-0.00430
127837A	0.78000	0.74000	9.91123	10.42662	False	0.01190
400370	0.39000	0.38000	14.11728	14.22192	False	-0.68452
400985	0.35000	0.37000	14.54128	14.32741	False	-0.49726
408524	0.47000	0.46000	13.30108	13.40173	False	-0.87395
408651	0.30000	0.31000	15.09760	14.98340	False	-1.00233
409018	0.27000	0.26000	15.45125	15.57338	False	-0.33242
409020	0.45000	0.44000	13.50265	13.60388	False	-0.82876
412467	0.54000	0.55000	12.59827	12.49735	False	-0.52120
412575	0.37000	0.38000	14.32741	14.22192	False	-0.87196
412833	0.43000	0.40000	13.70550	14.01339	False	0.01589
413063	0.82000	0.87000	9.33854	8.49444	True	3.05559
413137	0.23000	0.26000	15.95539	15.57338	False	-0.14661
413229	0.78000	0.76000	9.91123	10.17479	False	-0.96467
414834	0.27000	0.28000	15.45125	15.33137	False	-1.05565
414849	0.38000	0.36000	14.22192	14.43384	False	-0.24625
414896	0.47000	0.38000	13.30108	14.22192	False	2.30669
468276	0.82000	0.78000	9.33854	9.91123	False	0.11204
468379	0.47000	0.43000	13.30108	13.70550	False	0.30402
468386	0.21000	0.20000	16.22568	16.36648	False	-0.09497
468707	0.25000	0.27000	15.69796	15.45125	False	-0.61643
468754	0.59000	0.59000	12.08982	12.08982	False	-0.80416
483010	0.63000	0.61000	11.67259	11.88272	False	-0.79646
483259	0.53000	0.55000	12.69892	12.49735	False	-0.15231
532395	0.42000	0.38000	13.80757	14.22192	False	0.45048
540824	0.42000	0.39000	13.80757	14.11728	False	0.04466
540838	0.39000	0.47000	14.11728	13.30108	False	1.92890
540848	0.15000	0.17000	17.14573	16.81666	False	-0.60558
540850	0.36000	0.38000	14.43384	14.22192	False	-0.48194
540876	0.41000	0.37000	13.91018	14.32741	False	0.48353
540892	0.87000	0.83000	8.49444	9.18334	False	0.38282
540915	0.56000	0.61000	12.39612	11.88272	False	1.12149
540951	0.22000	0.29000	16.08877	15.21354	False	1.73767

Table L-7. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 3

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
130312A	0.76000	0.76000	10.17479	10.17479	False	0.31342
130319A	0.69000	0.66000	11.01660	11.35015	False	-0.90893
130325A	0.42000	0.41000	13.80757	13.91018	False	-0.03475
130326A	0.54500	0.54500	12.54785	12.54785	False	-1.09382
130328A	0.69000	0.69000	11.01660	11.01660	False	-0.18578
410572	0.25333	0.29667	15.65615	15.13605	False	-1.04406
410580	0.11667	0.16333	17.76726	16.92340	False	-0.88688
422166	0.42000	0.43000	13.80757	13.70550	False	-0.72683
474429	0.41000	0.40000	13.91018	14.01339	False	0.02814
474695	0.50000	0.52000	13.00000	12.79939	False	-0.68362
474704	0.49000	0.48000	13.10028	13.20061	False	-0.46184
474706	0.47000	0.45000	13.30108	13.50265	False	-0.00049
474708	0.32000	0.30000	14.87080	15.09760	False	1.01571
543241	0.72000	0.69000	10.66863	11.01660	False	-1.06654
543243	0.31000	0.35000	14.98340	14.54128	False	-1.04320
543247	0.71000	0.68000	10.78646	11.12920	False	-1.01432
543249	0.35000	0.39500	14.54128	14.06524	False	-0.66633
543253	0.68000	0.69000	11.12920	11.01660	False	0.12820
543259	0.52000	0.55000	12.79939	12.49735	False	-0.22174
543524	0.30000	0.26500	15.09760	15.51202	False	1.78458
543530	0.61000	0.60000	11.88272	11.98661	False	-1.05067
543532	0.79000	0.72000	9.77432	10.66863	False	0.25049
543534	0.72000	0.64000	10.66863	11.56616	False	0.79169
543542	0.35000	0.32000	14.54128	14.87080	False	1.16758
543546	0.82000	0.73000	9.33854	10.54875	False	1.06018
543555	0.60500	0.60000	11.93476	11.98661	False	-0.90558
543557	0.34000	0.37000	14.64985	14.32741	False	-0.97245
543565	0.79000	0.75000	9.77432	10.30204	False	-0.98905
543571	0.88000	0.85000	8.30005	8.85427	False	-0.44879
543575	0.70000	0.71000	10.90240	10.78646	False	0.27396
543577	0.80000	0.77000	9.63352	10.04461	False	-0.75563
552223	0.60500	0.54000	11.93476	12.59827	False	0.75121
552233	0.79000	0.71000	9.77432	10.78646	False	0.64889
552235	0.75000	0.72000	10.30204	10.66863	False	-1.00158
552247	0.71000	0.63000	10.78646	11.67259	False	0.82300
552251	0.73000	0.75000	10.54875	10.30204	False	0.92584
552255	0.75000	0.67000	10.30204	11.24035	False	0.71217
552261	0.18500	0.29000	16.58589	15.21354	False	1.15188
559821	0.41500	0.48500	13.85881	13.15043	False	0.52397
559830	0.75000	0.75000	10.30204	10.30204	False	0.23796
559835	0.46000	0.47000	13.40173	13.30108	False	-0.96269
559838	0.29000	0.32000	15.21354	14.87080	False	-0.70684
559841	0.73000	0.73000	10.54875	10.54875	False	0.09166

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
559845	0.52000	0.49000	12.79939	13.10028	False	0.03784
559847	0.53000	0.56000	12.69892	12.39612	False	-0.15957
559849	0.46000	0.47000	13.40173	13.30108	False	-0.96269
559851	0.14000	0.30500	17.32128	15.04029	True	3.78810
568986	0.66000	0.68000	11.35015	11.12920	False	0.36349
569376	0.55000	0.64000	12.49735	11.56616	False	2.08472

Table L-8. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 4

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
420698	0.44000	0.42000	13.60388	13.80757	False	-0.08932
420714	0.59000	0.58000	12.08982	12.19243	False	-0.51993
420723	0.49500	0.51000	13.05013	12.89972	False	-0.90849
420785	0.82000	0.81000	9.33854	9.48841	False	-0.81098
420820	0.52000	0.50000	12.79939	13.00000	False	-0.21039
422664	0.72000	0.70000	10.66863	10.90240	False	-0.44316
476097	0.60000	0.59000	11.98661	12.08982	False	-0.53334
476102	0.30000	0.30500	15.09760	15.04029	False	-0.43205
476121	0.73000	0.71000	10.54875	10.78646	False	-0.45182
476151	0.48000	0.46000	13.20061	13.40173	False	-0.15220
476172	0.36000	0.36500	14.43384	14.38050	False	-0.51808
476177	0.76000	0.75000	10.17479	10.30204	False	-0.74009
486800	0.56000	0.58000	12.39612	12.19243	False	-0.70201
543932	0.41000	0.38000	13.91018	14.22192	False	0.18418
543940	0.25000	0.25000	15.69796	15.69796	False	-0.22466
543942	0.46500	0.40500	13.35138	13.96170	False	0.73995
543944	0.91000	0.87000	7.63698	8.49444	False	0.45238
543946	0.31000	0.30000	14.98340	15.09760	False	-0.08338
543950	0.48000	0.46000	13.20061	13.40173	False	-0.15220
544002	0.30000	0.53000	15.09760	12.69892	True	3.58388
544006	0.32000	0.55000	14.87080	12.49735	True	3.56246
544014	0.42000	0.62000	13.80757	11.77808	False	2.98197
544034	0.44000	0.45000	13.60388	13.50265	False	-0.73814
544036	0.72000	0.69000	10.66863	11.01660	False	-0.20016
544453	0.60000	0.60000	11.98661	11.98661	False	-0.75295
544455	0.69000	0.62000	11.01660	11.77808	False	0.72923
544457	0.64000	0.64000	11.56616	11.56616	False	-0.81280
544460	0.65000	0.65000	11.45872	11.45872	False	-0.82809
544476	0.93000	0.89000	7.09684	8.09389	False	0.67252
544483	0.40000	0.40000	14.01339	14.01339	False	-0.46445
552900	0.74000	0.73000	10.42662	10.54875	False	-0.71514
552906	0.51000	0.54000	12.89972	12.59827	False	-0.56568
552908	0.78000	0.79000	9.91123	9.77432	False	-0.49040

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
552910	0.85000	0.83000	8.85427	9.18334	False	-0.49863
552912	0.74000	0.80000	10.42662	9.63352	False	0.83246
552916	0.44000	0.49000	13.60388	13.10028	False	-0.23580
552918	0.52000	0.51000	12.79939	12.89972	False	-0.42376
552922	0.36500	0.43000	14.38050	13.70550	False	0.01837
552924	0.24333	0.23000	15.78248	15.95539	False	0.15528
552927	0.54500	0.53000	12.54785	12.69892	False	-0.35161
552931	0.58000	0.61000	12.19243	11.88272	False	-0.44746
552933	0.70000	0.71000	10.90240	10.78646	False	-0.67612
552938	0.42000	0.42000	13.80757	13.80757	False	-0.49374
552940	0.72000	0.76000	10.66863	10.17479	False	0.16126
552944	0.57000	0.64000	12.29450	11.56616	False	0.42878
552946	0.63000	0.66000	11.67259	11.35015	False	-0.34636
552948	0.54000	0.62000	12.59827	11.77808	False	0.58097
552950	0.31000	0.30000	14.98340	15.09760	False	-0.08338
552956	0.22667	0.18667	15.99948	16.56099	False	1.01303

Table L-9. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 5

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
131427A	0.40000	0.41000	14.01339	13.91018	False	-0.77372
131429A	0.36000	0.36000	14.43384	14.43384	False	-0.66303
131430A	0.46000	0.43000	13.40173	13.70550	False	-0.30808
131431A	0.62000	0.62000	11.77808	11.77808	False	-0.62891
131437A	0.46000	0.45000	13.40173	13.50265	False	-0.53626
131440A	0.43000	0.43000	13.70550	13.70550	False	-0.65367
131444A	0.69000	0.69000	11.01660	11.01660	False	-0.61913
131445A	0.60000	0.60000	11.98661	11.98661	False	-0.63159
131452A	0.68500	0.69000	11.07309	11.01660	False	-0.68340
131484A	0.31500	0.20500	14.92691	16.29557	False	0.87018
459808	0.53000	0.59000	12.69892	12.08982	False	-0.26191
459811	0.61000	0.62000	11.88272	11.77808	False	-0.74797
459819	0.80000	0.79000	9.63352	9.77432	False	-0.44298
459823	0.64000	0.63000	11.56616	11.67259	False	-0.50648
459830	0.33000	0.36000	14.75965	14.43384	False	-0.55409
536024	0.51000	0.54000	12.89972	12.59827	False	-0.60538
536026	0.71000	0.69000	10.78646	11.01660	False	-0.35730
536034	0.54500	0.53000	12.54785	12.69892	False	-0.46886
536040	0.74000	0.71000	10.42662	10.78646	False	-0.20678
536046	0.64000	0.71000	11.56616	10.78646	False	-0.08456
536048	0.47000	0.47000	13.30108	13.30108	False	-0.64848
536061	0.84000	0.83000	9.02217	9.18334	False	-0.41221
536068	0.41000	0.40000	13.91018	14.01339	False	-0.54021

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
536070	0.20000	0.20500	16.36648	16.29557	False	-0.76762
536072	0.65000	0.64000	11.45872	11.56616	False	-0.50394
536076	0.79000	0.79000	9.77432	9.77432	False	-0.60317
536078	0.43000	0.40000	13.70550	14.01339	False	-0.30734
545263	0.71000	0.69000	10.78646	11.01660	False	-0.35730
545265	0.42000	0.34000	13.80757	14.64985	False	0.29245
545273	0.39000	0.35000	14.11728	14.54128	False	-0.18202
545279	0.78000	0.75000	9.91123	10.30204	False	-0.16532
545281	0.51000	0.51000	12.89972	12.89972	False	-0.64332
545283	0.51000	0.44000	12.89972	13.60388	False	0.14875
552537	0.20000	0.49000	16.36648	13.10028	False	2.77405
552544	0.55000	0.89000	12.49735	8.09389	True	4.00358
552552	0.77000	0.81000	10.04461	9.48841	False	-0.35552
552554	0.47000	0.77000	13.30108	10.04461	False	2.72371
552556	0.35000	0.51000	14.54128	12.89972	False	0.92311
552561	0.49000	0.33000	13.10028	14.75965	False	1.22065
552563	0.40000	0.50000	14.01339	13.00000	False	0.20974
552565	0.19500	0.41000	16.43847	13.91018	False	1.94493
552567	0.27667	0.25667	15.37109	15.61462	False	-0.40113
560295	0.53000	0.43500	12.69892	13.65463	False	0.43429
560301	0.81000	0.75000	9.48841	10.30204	False	0.31571
560306	0.71000	0.70000	10.78646	10.90240	False	-0.48576
560314	0.57000	0.56000	12.29450	12.39612	False	-0.52124
560316	0.85000	0.81000	8.85427	9.48841	False	0.12197
560318	0.73000	0.64000	10.54875	11.56616	False	0.53132
560333	0.25667	0.20333	15.61462	16.31910	False	0.11422

Table L-10. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 6

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
130154A	0.40000	0.38000	14.01339	14.22192	False	-0.18250
130167A	0.51000	0.50000	12.89972	13.00000	False	-0.61935
130168A	0.45000	0.43000	13.50265	13.70550	False	-0.21563
130171A	0.84000	0.80000	9.02217	9.63352	False	1.23705
130173A	0.58500	0.58500	12.14119	12.14119	False	-1.01784
130184A	0.26000	0.20000	15.57338	16.36648	False	2.07601
409362	0.75000	0.68000	10.30204	11.12920	False	2.08674
409385	0.40000	0.41000	14.01339	13.91018	False	-1.17930
409396	0.58000	0.58000	12.19243	12.19243	False	-1.01668
409447	0.37000	0.34000	14.32741	14.64985	False	0.25780
409458	0.47500	0.47000	13.25083	13.30108	False	-0.80170
409472	0.58000	0.60000	12.19243	11.98661	False	-0.74800
471626	0.38000	0.38000	14.22192	14.22192	False	-0.97094

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
536840	0.79000	0.75000	9.77432	10.30204	False	0.93596
536842	0.62000	0.60000	11.77808	11.98661	False	-0.23288
536846	0.69000	0.68000	11.01660	11.12920	False	-0.61490
536856	0.37000	0.38000	14.32741	14.22192	False	-1.17770
536858	0.31000	0.29000	14.98340	15.21354	False	-0.07847
536931	0.55500	0.61000	12.44678	11.88272	False	0.60881
536933	0.81000	0.79000	9.48841	9.77432	False	0.00976
536935	0.79000	0.82000	9.77432	9.33854	False	0.18113
536939	0.67000	0.74000	11.24035	10.42662	False	1.58560
536941	0.69000	0.72000	11.01660	10.66863	False	-0.18085
536953	0.74000	0.80000	10.42662	9.63352	False	1.52549
546209	0.59000	0.58000	12.08982	12.19243	False	-0.62875
546211	0.66000	0.65000	11.35015	11.45872	False	-0.62273
546213	0.72000	0.68000	10.66863	11.12920	False	0.70070
546215	0.49500	0.46500	13.05013	13.35138	False	0.14840
546223	0.92000	0.91000	7.37971	7.63698	False	-0.14668
546225	0.64000	0.63000	11.56616	11.67259	False	-0.62604
553108	0.50000	0.51500	13.00000	12.84957	False	-0.97684
553110	0.44000	0.45000	13.60388	13.50265	False	-1.17758
553112	0.45000	0.45000	13.50265	13.50265	False	-0.98715
553114	0.65000	0.68000	11.45872	11.12920	False	-0.26099
553116	0.76000	0.75000	10.17479	10.30204	False	-0.57817
553120	0.59000	0.54000	12.08982	12.59827	False	0.91482
553122	0.44000	0.48000	13.60388	13.20061	False	-0.02884
553128	0.49000	0.49000	13.10028	13.10028	False	-0.99622
553130	0.48000	0.51000	13.20061	12.89972	False	-0.40912
553134	0.20750	0.26000	16.26051	15.57338	False	0.99092
559980	0.71000	0.76000	10.78646	10.17479	False	0.82732
559984	0.69000	0.70000	11.01660	10.90240	False	-1.06994
559986	0.59000	0.59500	12.08982	12.03830	False	-1.21496
559988	0.69000	0.77000	11.01660	10.04461	False	2.19255
559992	0.76000	0.78000	10.17479	9.91123	False	-0.48289
559994	0.66000	0.72000	11.35015	10.66863	False	1.08025
560000	0.69000	0.70000	11.01660	10.90240	False	-1.06994
560002	0.45000	0.52000	13.50265	12.79939	False	1.11445
560004	0.17500	0.24000	16.73836	15.82521	False	1.83980

Table L-11. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 7

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
409401	0.56000	0.53000	12.39612	12.69892	False	-0.38486
409409	0.49000	0.43000	13.10028	13.70550	False	0.49368
409464	0.42000	0.42000	13.80757	13.80757	False	-0.81946
409493	0.57000	0.52000	12.29450	12.79939	False	0.20344
409501	0.61000	0.53000	11.88272	12.69892	False	1.11029
409517	0.45500	0.36500	13.45215	14.38050	False	1.43324
477633	0.60000	0.59000	11.98661	12.08982	False	-0.96478
477635	0.56000	0.57000	12.39612	12.29450	False	-0.52681
477645	0.53000	0.55000	12.69892	12.49735	False	-0.23530
477647	0.66000	0.66000	11.35015	11.35015	False	-0.82481
477651	0.69000	0.67000	11.01660	11.24035	False	-0.61189
477655	0.61000	0.62000	11.88272	11.77808	False	-0.51912
477778	0.49500	0.47500	13.05013	13.25083	False	-0.68341
478253	0.67000	0.68000	11.24035	11.12920	False	-0.50162
478255	0.75500	0.73000	10.23876	10.54875	False	-0.35925
478259	0.29000	0.35500	15.21354	14.48742	False	1.29664
478261	0.71000	0.69000	10.78646	11.01660	False	-0.59280
478263	0.92000	0.93000	7.37971	7.09684	False	-0.01026
478265	0.53000	0.53000	12.69892	12.69892	False	-0.82187
478267	0.78000	0.79000	9.91123	9.77432	False	-0.42952
478269	0.50000	0.51000	13.00000	12.89972	False	-0.52941
478271	0.58000	0.62000	12.19243	11.77808	False	0.38281
478277	0.66000	0.67000	11.35015	11.24035	False	-0.50529
537742	0.77000	0.61000	10.04461	11.88272	True	4.08813
537760	0.67000	0.60000	11.24035	11.98661	False	0.90818
537778	0.65000	0.63000	11.45872	11.67259	False	-0.64161
537781	0.76000	0.70000	10.17479	10.90240	False	0.85621
537794	0.56000	0.56000	12.39612	12.39612	False	-0.82253
546829	0.73000	0.67000	10.54875	11.24035	False	0.75060
546837	0.59000	0.60000	12.08982	11.98661	False	-0.52286
546839	0.68000	0.64000	11.12920	11.56616	False	0.00832
546843	0.42500	0.43500	13.75647	13.65463	False	-0.52321
546849	0.39000	0.38000	14.11728	14.22192	False	-0.96524
546854	0.49000	0.48000	13.10028	13.20061	False	-0.97556
546940	0.50000	0.40000	13.00000	14.01339	False	1.68169
546945	0.54000	0.61500	12.59827	11.83050	False	1.41215
546948	0.68000	0.74000	11.12920	10.42662	False	1.21928
546952	0.49000	0.50000	13.10028	13.00000	False	-0.52919
546957	0.71000	0.78000	10.78646	9.91123	False	1.72095
546959	0.75000	0.78000	10.30204	9.91123	False	0.31020
552819	0.40500	0.40000	13.96170	14.01339	False	-0.96953
552823	0.35000	0.35000	14.54128	14.54128	False	-0.81786
552825	0.36000	0.38000	14.43384	14.22192	False	-0.20142

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
552827	0.71000	0.71000	10.78646	10.78646	False	-0.82604
552831	0.53000	0.54000	12.69892	12.59827	False	-0.52896
552839	0.62000	0.62000	11.77808	11.77808	False	-0.82388
552841	0.60000	0.64000	11.98661	11.56616	False	0.40010
552843	0.28000	0.33000	15.33137	14.75965	False	0.84758
552846	0.21000	0.19500	16.22568	16.43847	False	-0.65514

Table L-12. 2018–19 eMPowerME: Delta Analysis Results—ELA Grade 8

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
402075	0.59000	0.61000	12.08982	11.88272	False	-0.53373
402077	0.35000	0.37000	14.54128	14.32741	False	-1.28798
402079	0.52500	0.53500	12.74917	12.64862	False	-1.19392
402111	0.84000	0.84000	9.02217	9.02217	False	-0.19540
402116	0.81000	0.80000	9.48841	9.63352	False	-0.93354
402118	0.67000	0.68000	11.24035	11.12920	False	-0.59018
420872	0.67000	0.67000	11.24035	11.24035	False	-1.02243
420905	0.39000	0.38000	14.11728	14.22192	False	-0.20733
420913	0.43000	0.42000	13.70550	13.80757	False	-0.37085
420925	0.53000	0.54000	12.69892	12.59827	False	-1.17478
420929	0.49000	0.51000	13.10028	12.89972	False	-0.93592
420946	0.69000	0.65000	11.01660	11.45872	False	-0.05092
420952	0.74000	0.73000	10.42662	10.54875	False	-1.19401
420970	0.69000	0.67000	11.01660	11.24035	False	-0.90019
420986	0.56000	0.55000	12.39612	12.49735	False	-0.86233
420990	0.34250	0.30750	14.62260	15.01180	False	1.08773
538612	0.56000	0.59000	12.39612	12.08982	False	-0.26210
538616	0.80000	0.84000	9.63352	9.02217	False	1.95426
538618	0.86000	0.88000	8.67872	8.30005	False	1.40534
538623	0.38000	0.39500	14.22192	14.06524	False	-1.18464
538625	0.52000	0.52000	12.79939	12.79939	False	-1.10567
538635	0.37000	0.43000	14.32741	13.70550	False	0.24529
546057	0.48500	0.42500	13.15043	13.75647	False	1.38217
546059	0.74000	0.65000	10.42662	11.45872	False	2.02361
546067	0.89000	0.84000	8.09389	9.02217	False	0.75010
546080	0.65000	0.68000	11.45872	11.12920	False	0.17767
546082	0.76000	0.67000	10.17479	11.24035	False	2.05983
546084	0.89000	0.85000	8.09389	8.85427	False	0.09712
548440	0.40000	0.39000	14.01339	14.11728	False	-0.24901
548448	0.38000	0.35000	14.22192	14.54128	False	0.66673
548458	0.66000	0.64000	11.35015	11.56616	False	-0.80589
548462	0.43000	0.45000	13.70550	13.50265	False	-1.15263

continued

<i>Item Number</i>	<i>Difficulty</i>		<i>Delta</i>		<i>Discard</i>	<i>Standardized Difference</i>
	<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
548467	0.59000	0.58000	12.08982	12.19243	False	-0.97118
553142	0.64000	0.60500	11.56616	11.93476	False	-0.13197
553144	0.67000	0.64000	11.24035	11.56616	False	-0.41981
553146	0.67000	0.65000	11.24035	11.45872	False	-0.83768
553152	0.75000	0.72000	10.30204	10.66863	False	-0.61107
553154	0.48000	0.42000	13.20061	13.80757	False	1.40445
553160	0.68000	0.61000	11.12920	11.88272	False	1.20213
553166	0.30000	0.33000	15.09760	14.75965	False	-1.14625
560466	0.50000	0.56000	13.00000	12.39612	False	0.67004
560476	0.66000	0.69000	11.35015	11.01660	False	0.23384
560483	0.40000	0.45000	14.01339	13.50265	False	-0.07000
560487	0.65000	0.69000	11.45872	11.01660	False	0.61560
560494	0.44000	0.48000	13.60388	13.20061	False	-0.33532
560500	0.66000	0.72000	11.35015	10.66863	False	1.58711
560504	0.31000	0.39000	14.98340	14.11728	False	0.95046
560508	0.30500	0.39000	15.04029	14.11728	False	1.15051
560510	0.20500	0.28500	16.29557	15.27221	False	1.07276

**Table L-13. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 3**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
464499A	6	0.47317	0.45854	0.81980	0.88256	-0.01785	False
464499B	6	0.27805	0.29756	0.47046	0.48934	0.04148	False

**Table L-14. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 4**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
447971A	6	1.23415	1.25854	1.30752	1.30101	0.01865	False
447971B	6	0.23902	0.28293	0.49154	0.52202	0.08932	False

**Table L-15. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 5**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
415228A	3	0.73659	0.74146	0.74681	0.73863	0.00653	False
415228B	3	0.19024	0.16098	0.39345	0.36841	-0.07439	False

**Table L-16. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 6**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
412531A	6	1.21463	1.20976	1.29205	1.30230	-0.00378	False
412531B	6	0.35610	0.28780	0.63015	0.58586	-0.10838	False

**Table L-17. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 7**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
446620A	6	1.42439	1.30732	1.29114	1.21195	-0.09067	False
446620B	6	0.31220	0.26341	0.56020	0.48394	-0.08708	False

**Table L-18. 2018–19 eMPowerME: Rescore Analysis Results—
Mathematics Grade 8**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
482018A	3	0.84878	0.90732	0.70123	0.69747	0.08348	False
482018B	3	0.18049	0.13659	0.38553	0.34425	-0.11387	False

**Table L-19. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 3**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
410572	3	0.98039	1.18627	0.70159	0.71893	0.29345	False
410580	3	0.60976	0.58537	0.67439	0.62527	-0.03617	False

**Table L-20. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 4**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
476172	2	0.96517	0.89055	0.72373	0.69135	-0.10311	False

**Table L-21. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 5**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
131484A	2	0.47805	0.36098	0.61497	0.52059	-0.19037	False

**Table L-22. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 6**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
130184A	2	0.80392	0.43627	0.69536	0.58794	-0.52871	True

**Table L-23. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 7**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
477778	2	1.21675	1.06897	0.62324	0.52197	-0.23712	False

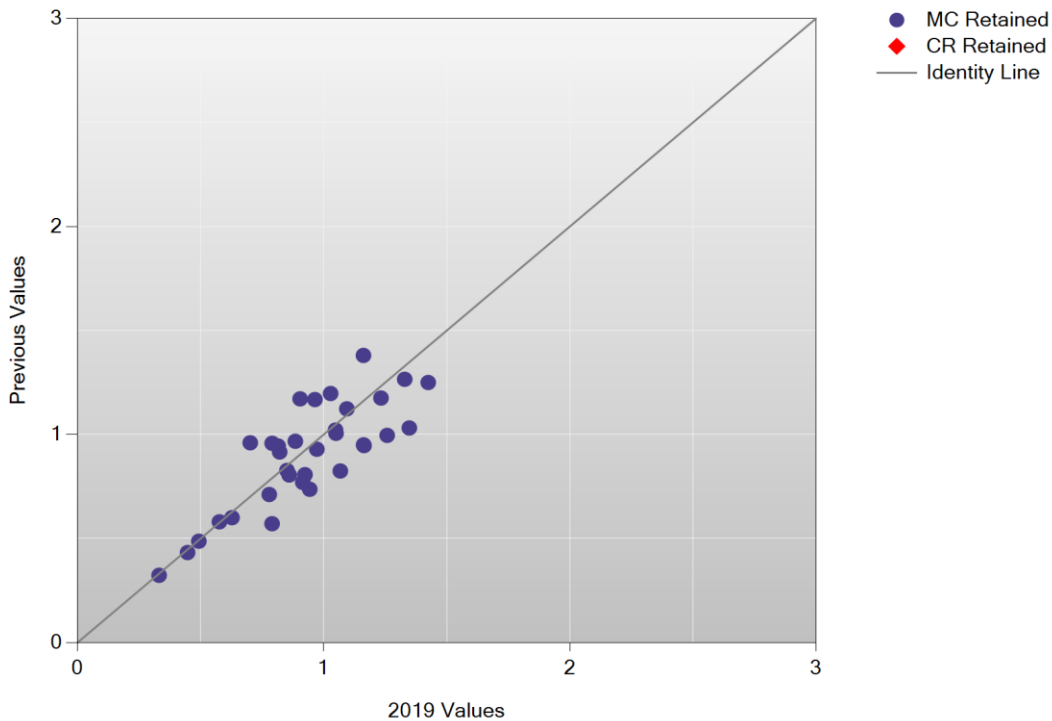
**Table L-24. 2018–19 eMPowerME: Rescore Analysis Results—
ELA Grade 8**

<i>Item Number</i>	<i>Max</i>	<i>Mean</i>		<i>Standard Deviation</i>		<i>Effect Size</i>	<i>Discard</i>
		<i>Old</i>	<i>New</i>	<i>Old</i>	<i>New</i>		
420990	4	2.01463	1.86341	0.94183	1.00532	-0.16056	False

APPENDIX M— α -PLOTS AND b -PLOTS

Figure M-1. 2018–19 eMPowerME: Grade 3 Mathematics Plots
Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 3



B/B Plot: Mathematics Grade 3

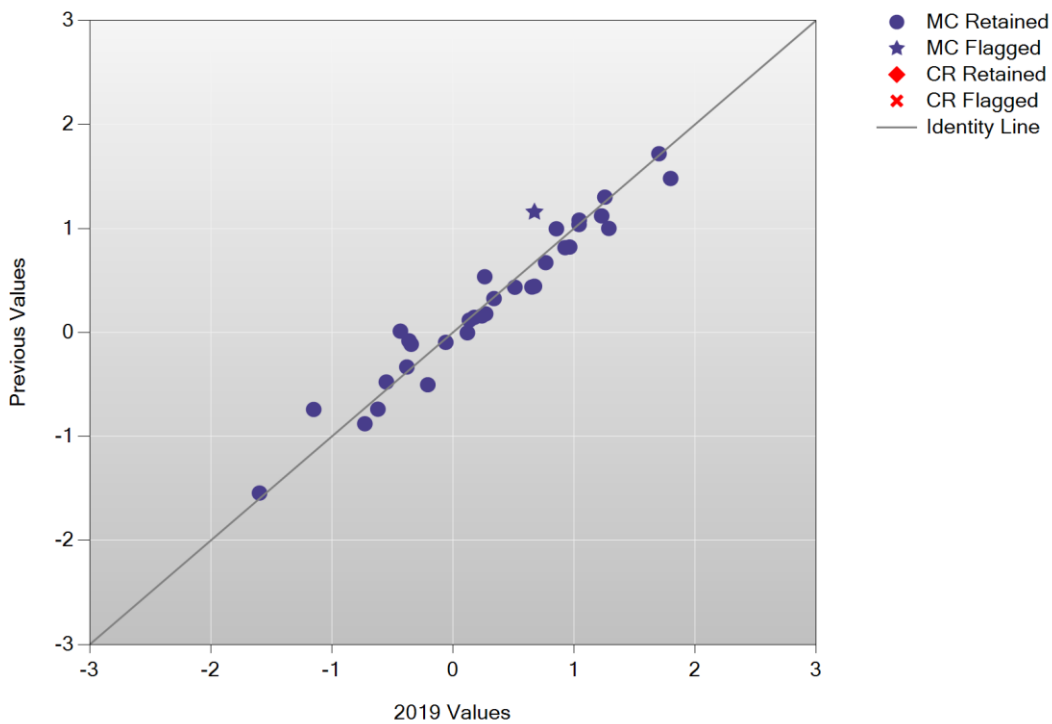
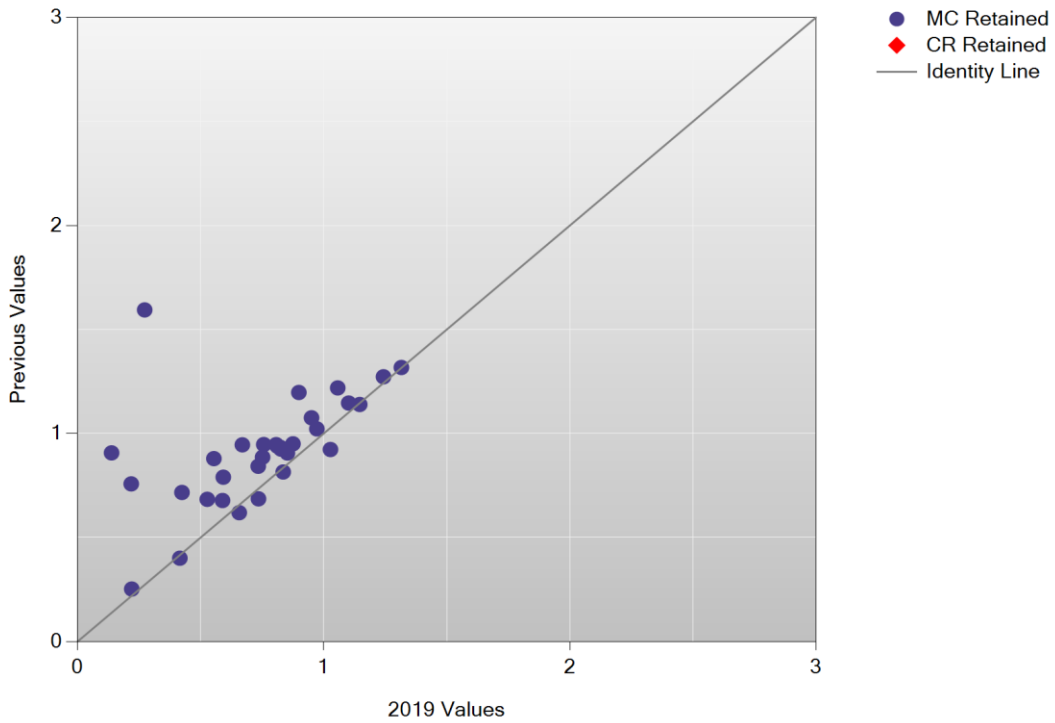


Figure M-2. 2018–19 eMPowerME: Grade 4 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 4



B/B Plot: Mathematics Grade 4

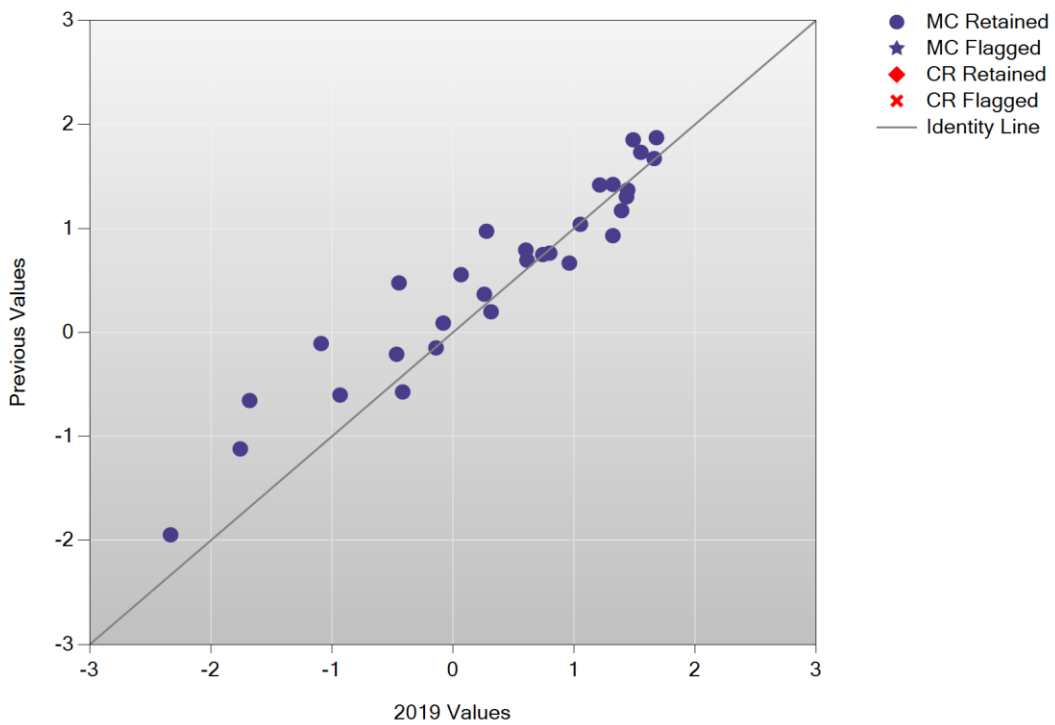
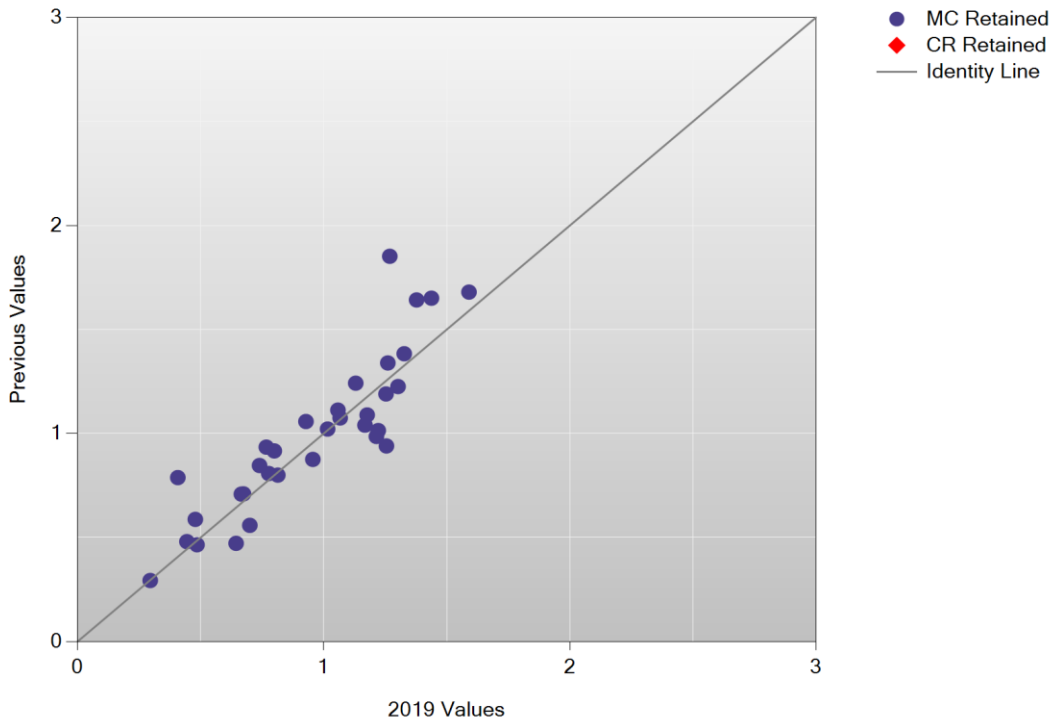


Figure M-3. 2018–19 eMPowerME: Grade 5 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 5



B/B Plot: Mathematics Grade 5

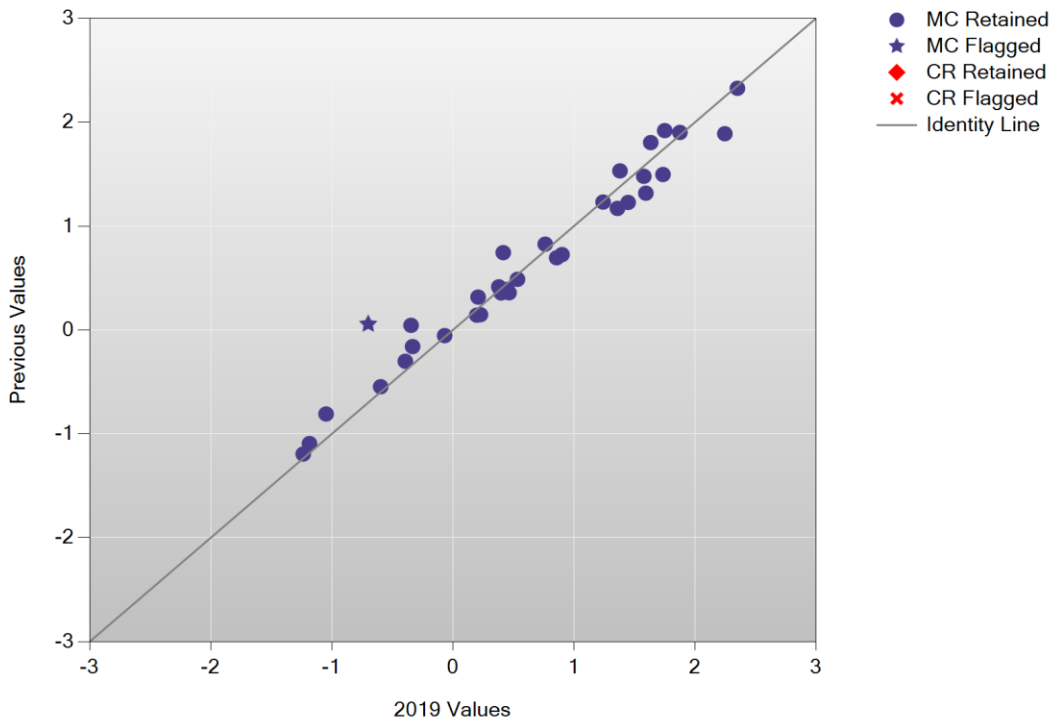
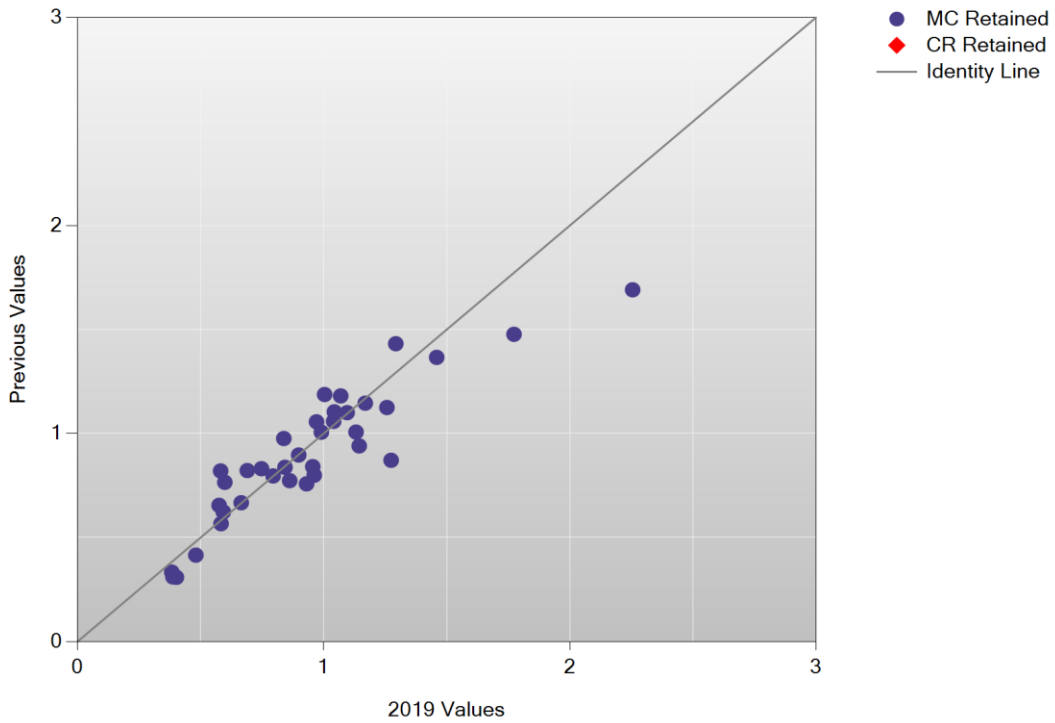


Figure M-4. 2018–19 eMPowerME: Grade 6 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 6



B/B Plot: Mathematics Grade 6

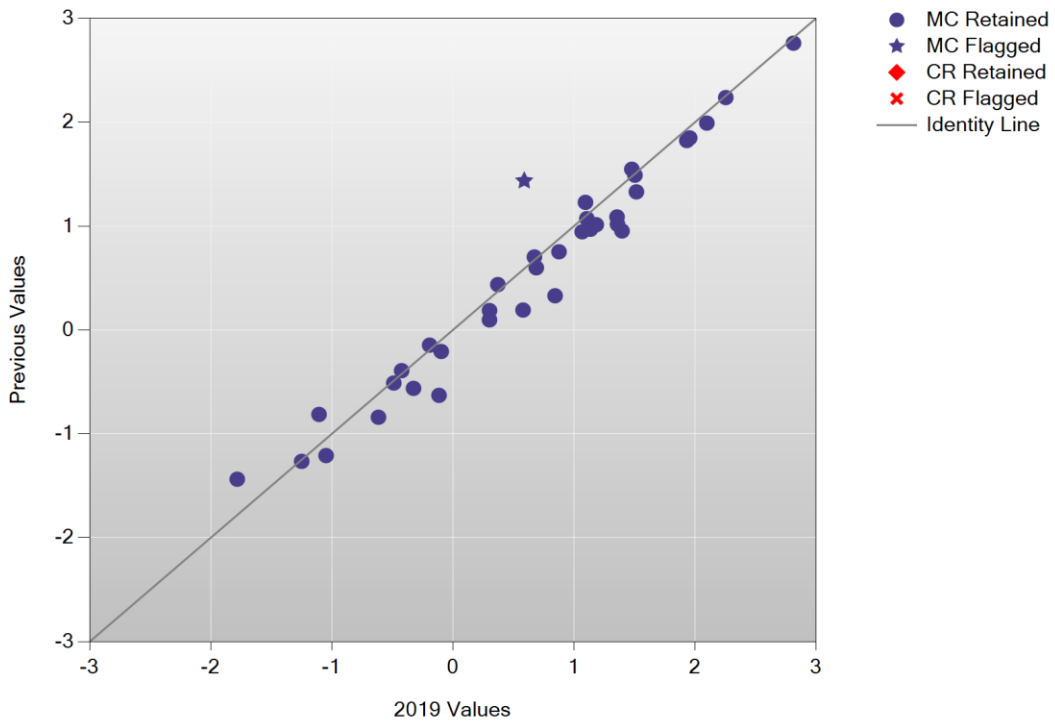
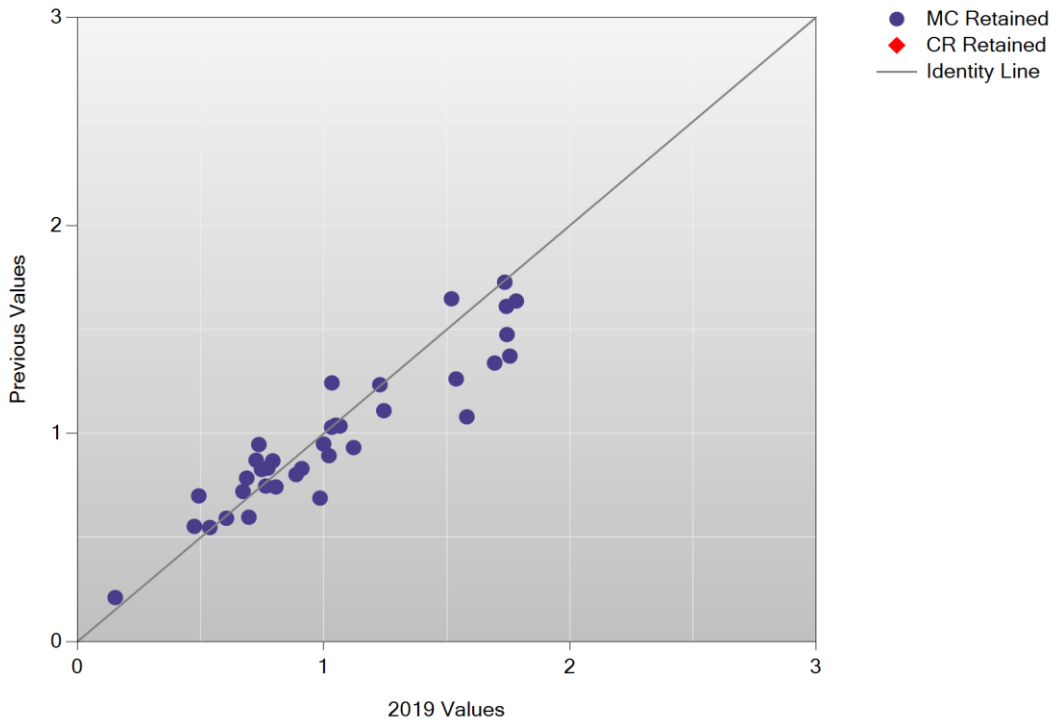


Figure M-5. 2018–19 eMPowerME: Grade 7 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 7



B/B Plot: Mathematics Grade 7

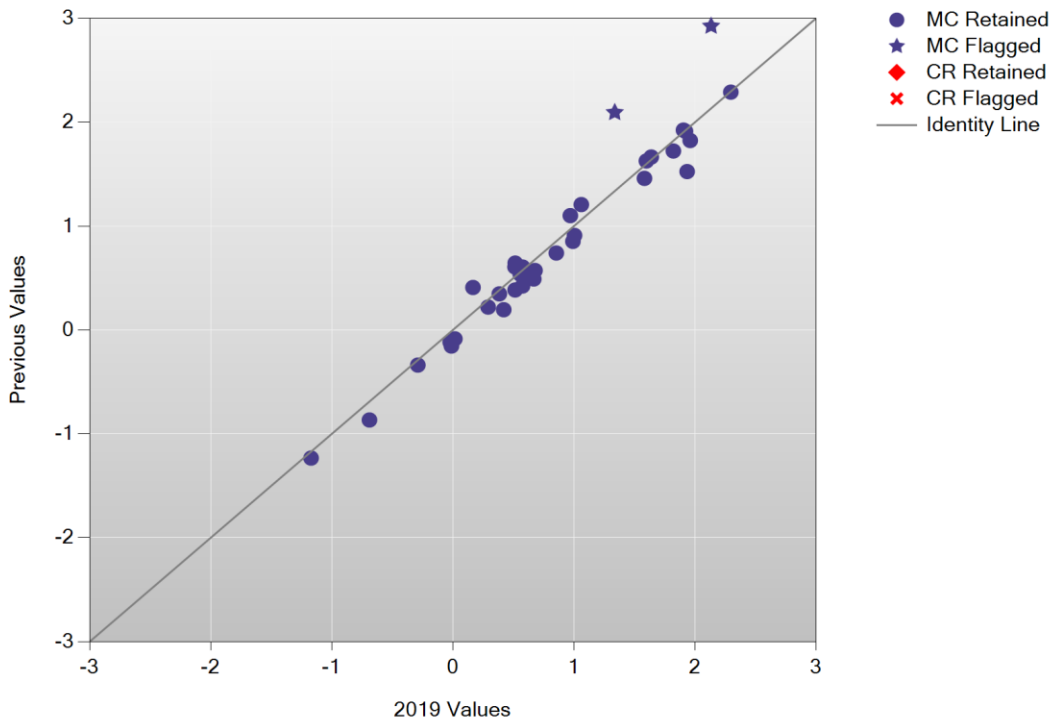
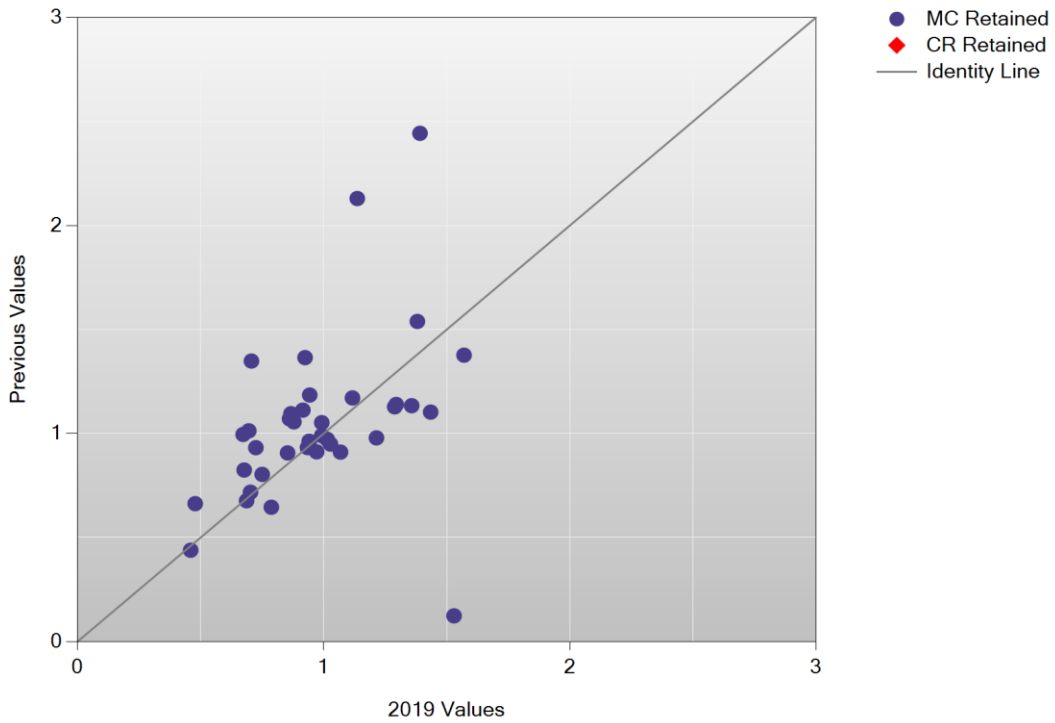


Figure M-6. 2018–19 eMPowerME: Grade 8 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 8



B/B Plot: Mathematics Grade 8

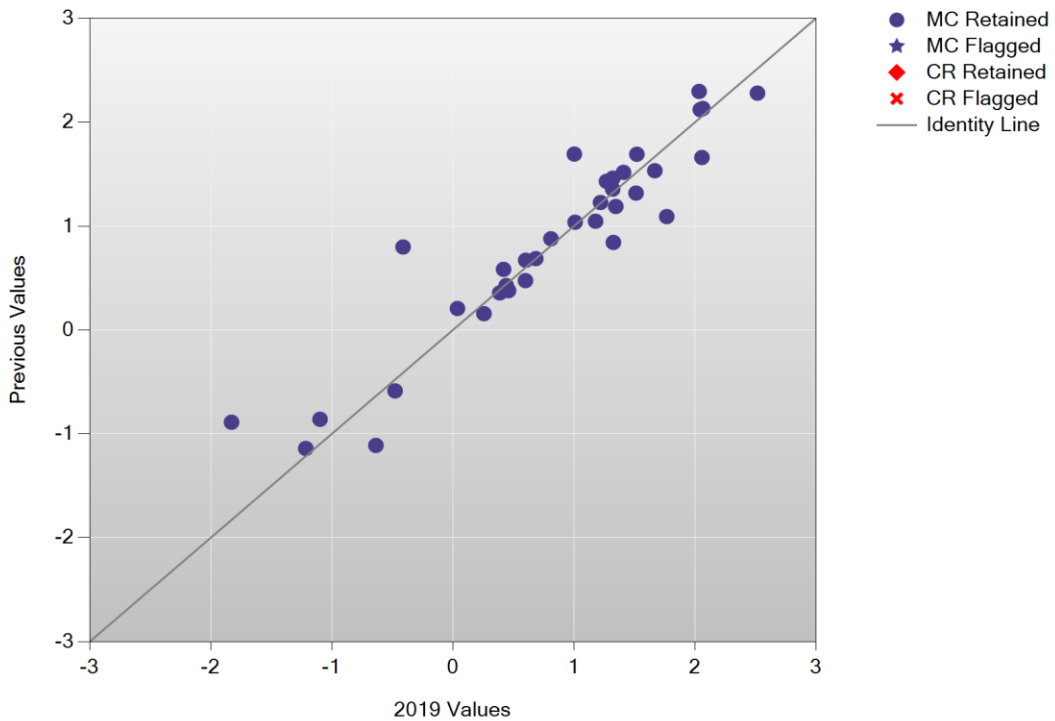
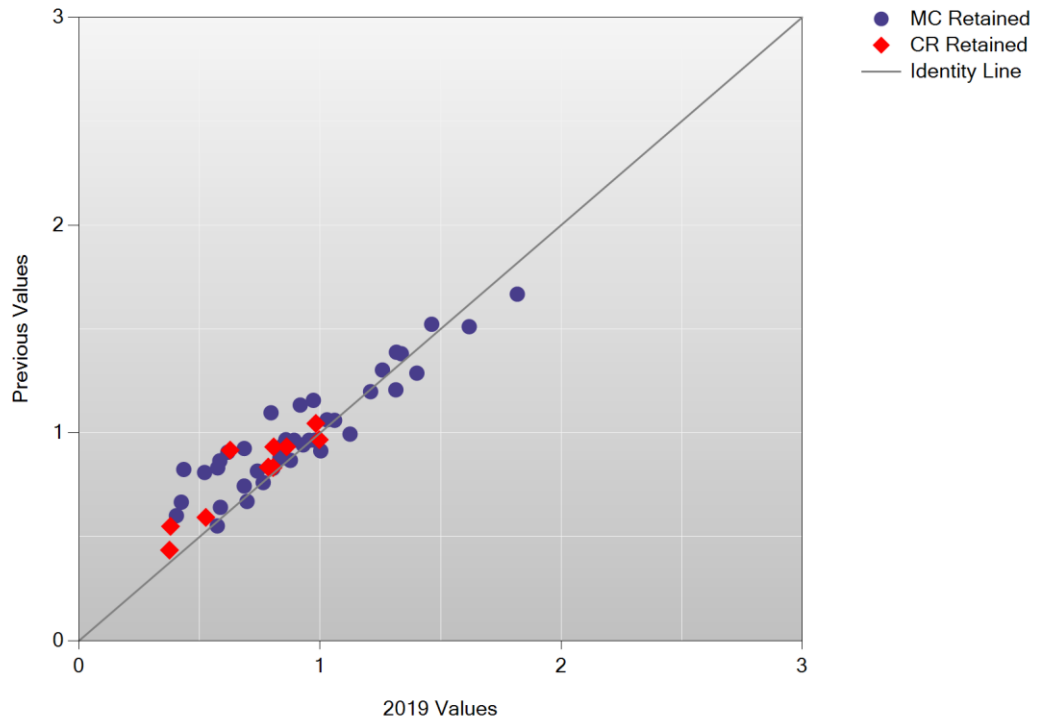


Figure M-7. 2018–19 eMPowerME: Grade 3 ELA Plots
Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 3



B/B Plot: English Language Arts Grade 3

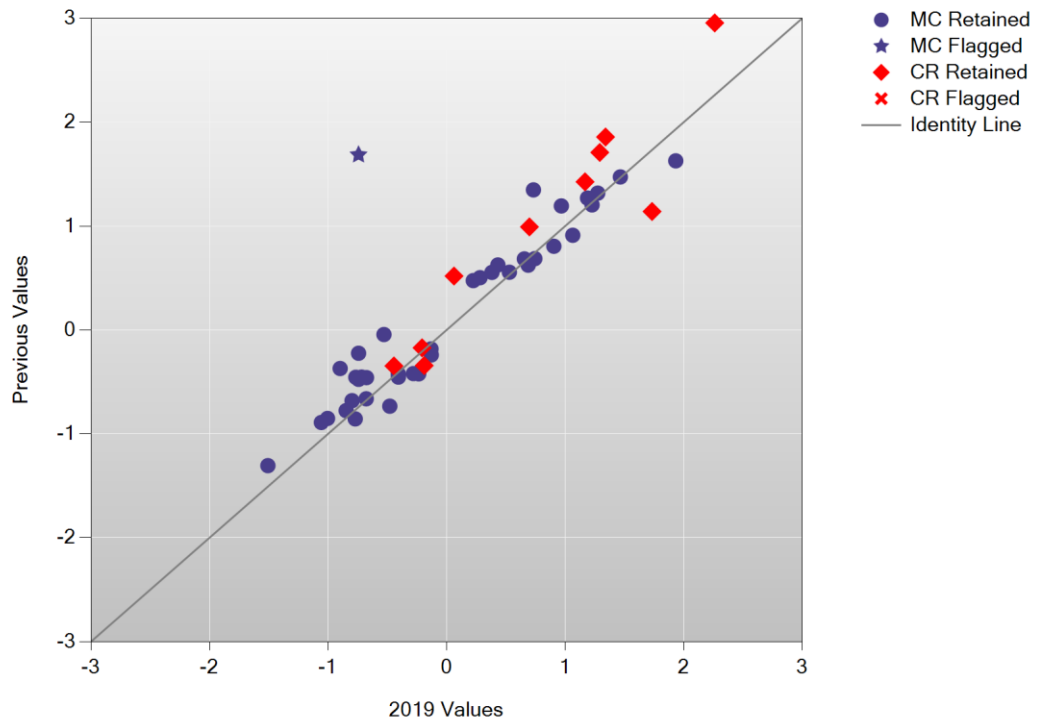
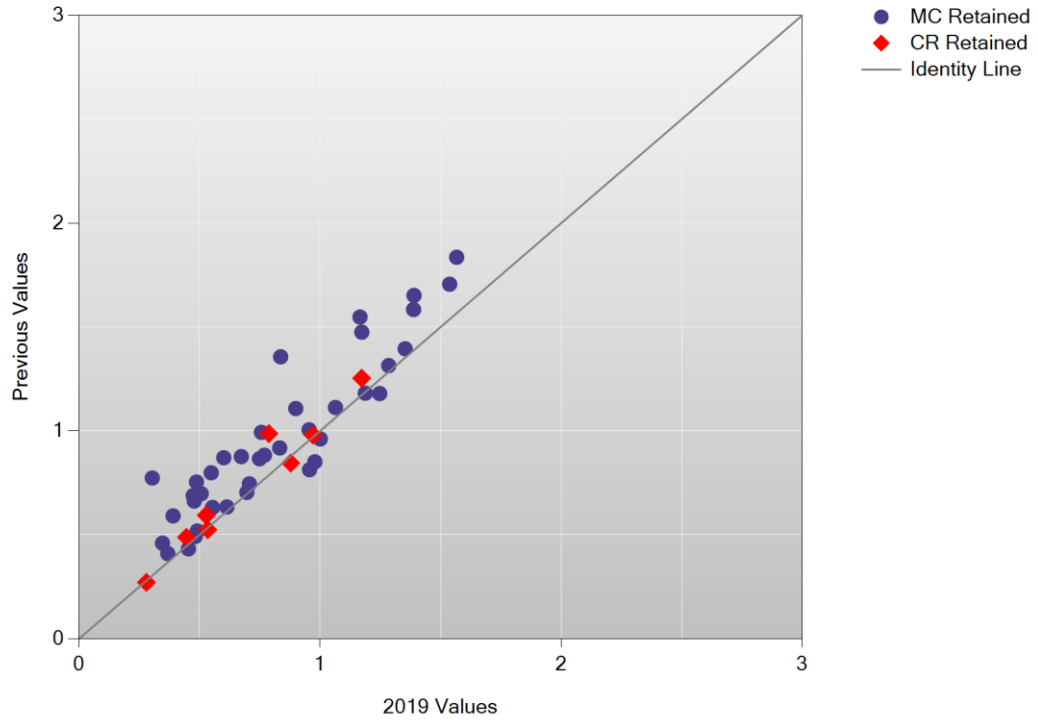


Figure M-8. 2018–19 eMPowerME: Grade 4 ELA Plots
Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 4



B/B Plot: English Language Arts Grade 4

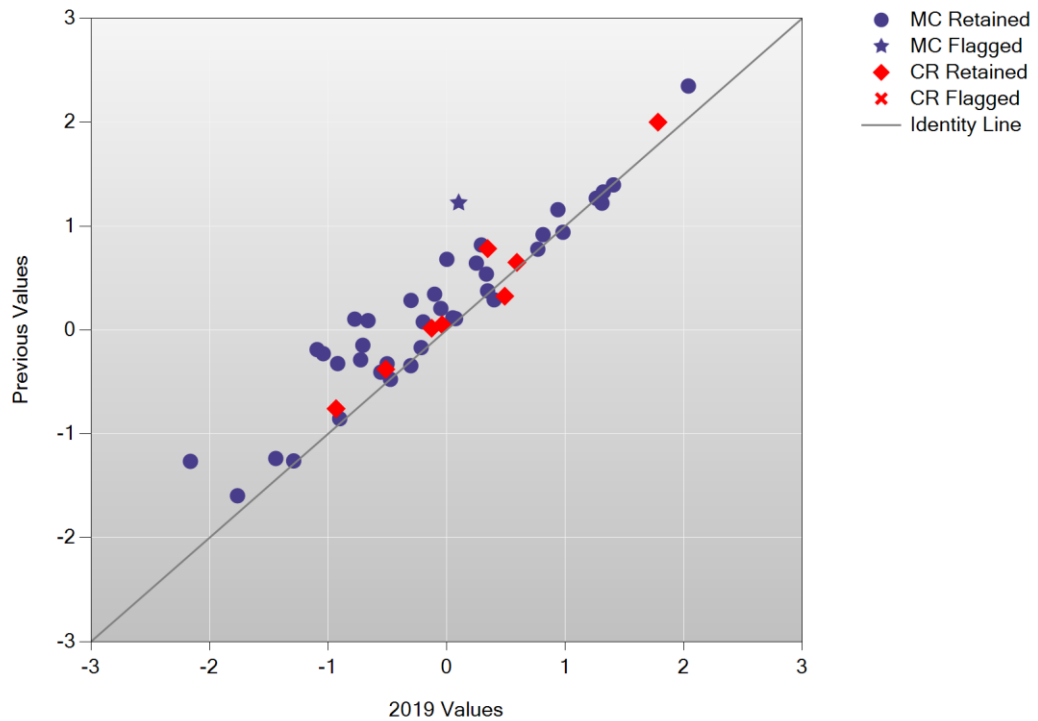
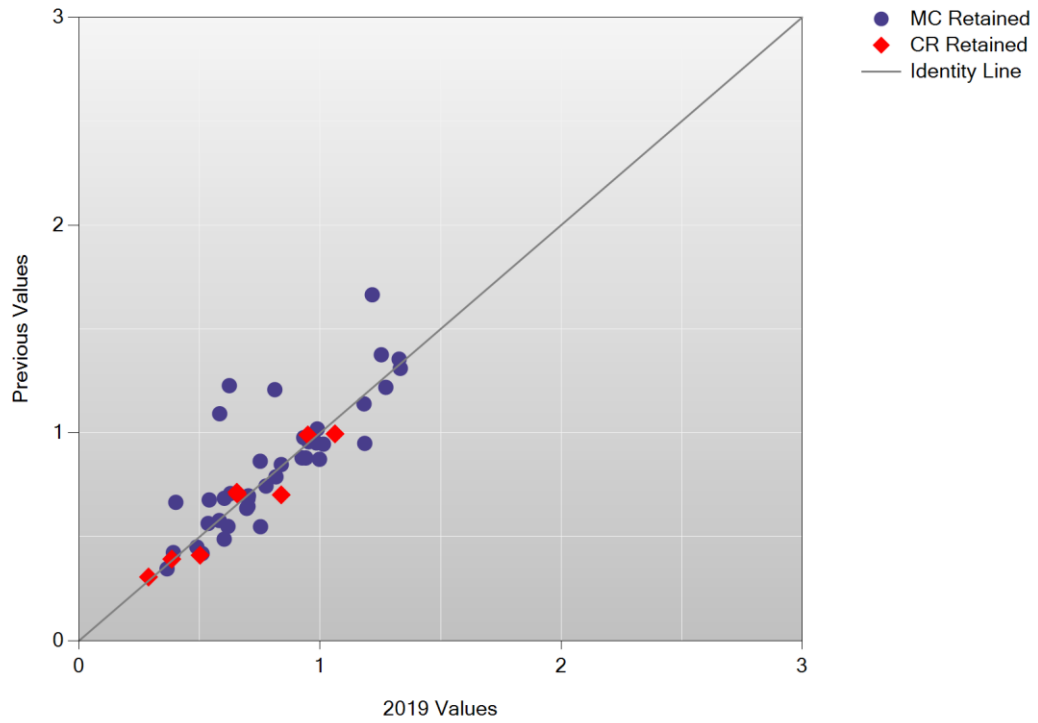


Figure M-9. 2018–19 eMPowerME: Grade 5 ELA Plots
Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 5



B/B Plot: English Language Arts Grade 5

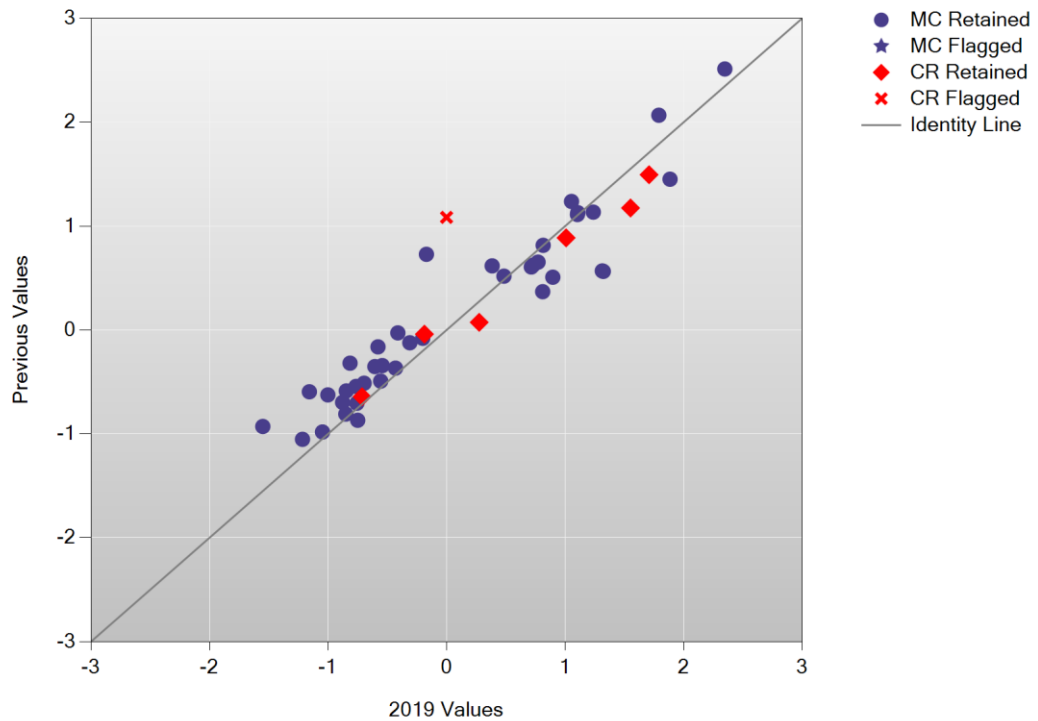
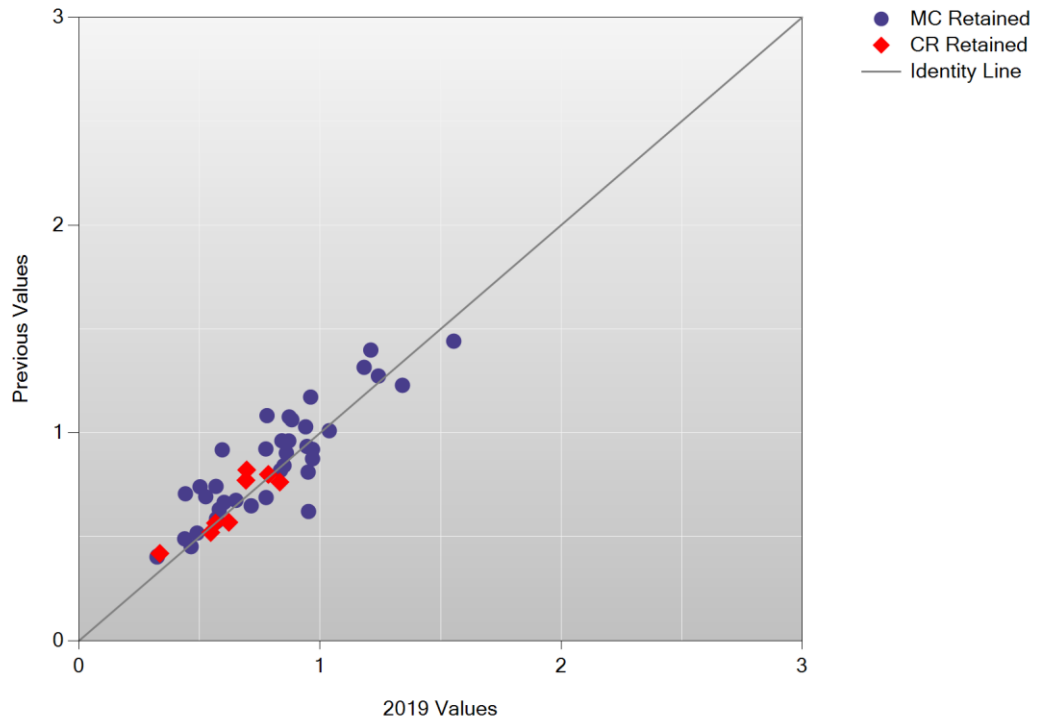


Figure M-10. 2018–19 eMPowerME: Grade 6 ELA Plots
 Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 6



B/B Plot: English Language Arts Grade 6

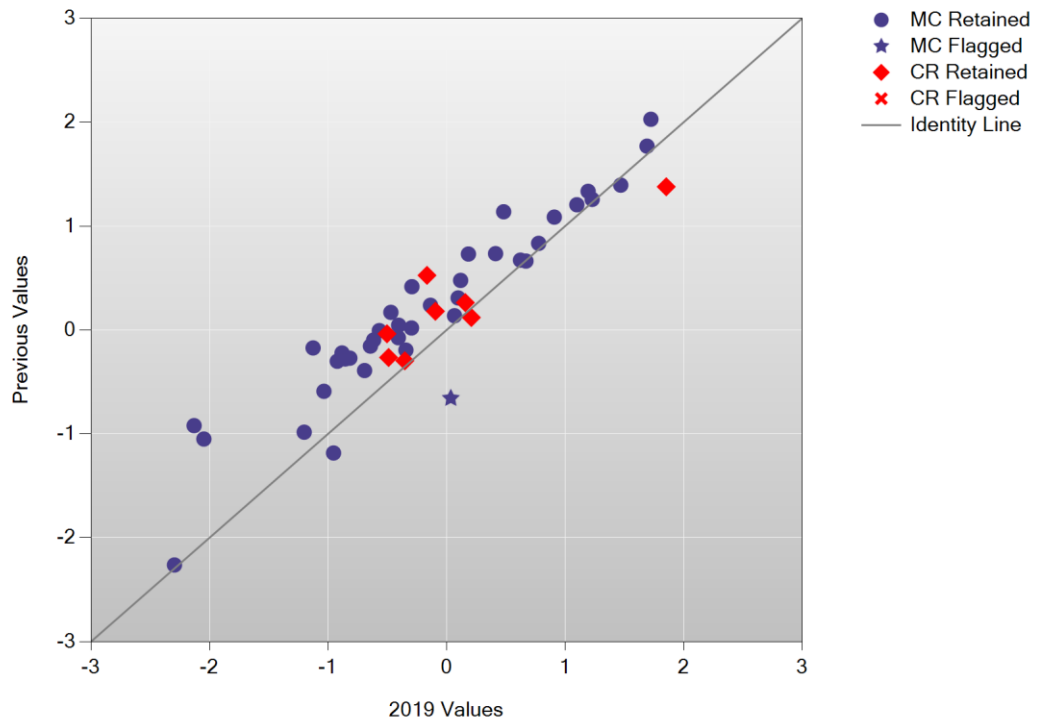
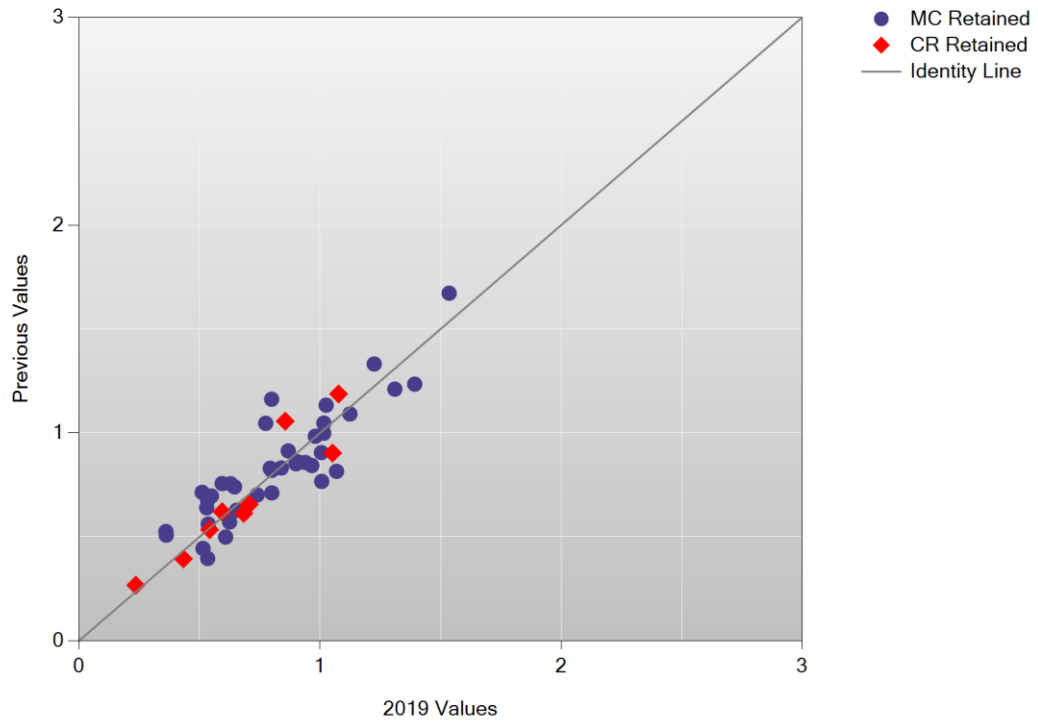


Figure M-11. 2018–19 eMPowerME: Grade 7 ELA Plots
 Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 7



B/B Plot: English Language Arts Grade 7

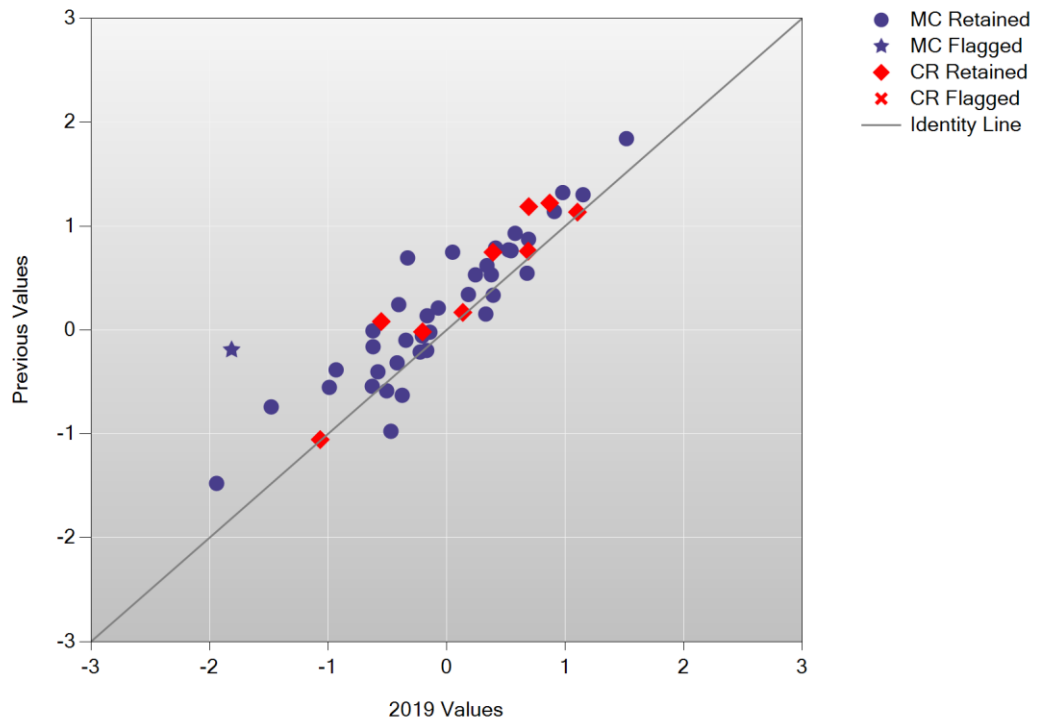
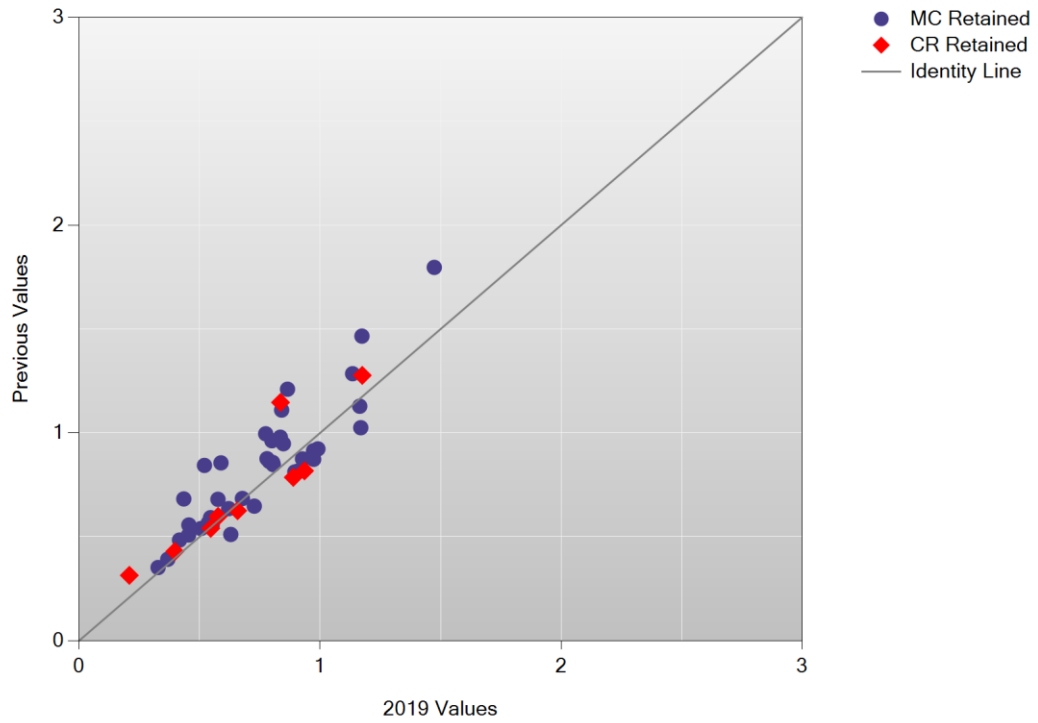
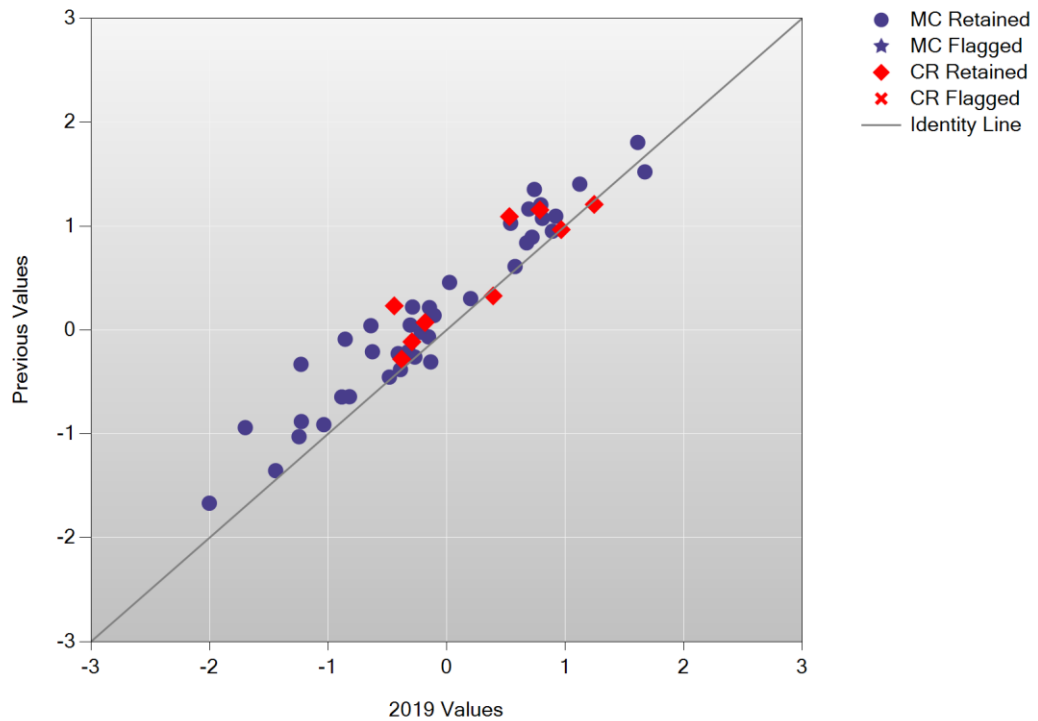


Figure M-12. 2018–19 eMPowerME: Grade 8 ELA Plots
Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 8



B/B Plot: English Language Arts Grade 8



APPENDIX N—RAW TO SCALED SCORE LOOK-UP TABLES

Table N-1. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 3

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	300	10.0	1	300	10.0	1
1	300	10.0	1	300	10.0	1
2	300	10.0	1	300	10.0	1
3	300	10.0	1	300	10.0	1
4	300	10.0	1	300	10.0	1
5	300	10.0	1	300	10.0	1
6	300	10.0	1	300	10.0	1
7	316	10.0	1	310	10.0	1
8	326	10.0	1	324	10.0	1
9	331	9.3	1	330	9.9	1
10	335	7.7	1	335	8.0	1
11	339	6.8	1	338	6.9	1
12	341	6.2	1	341	6.2	1
13	344	5.8	1	344	5.6	1
14	346	5.5	1	346	5.3	1
15	348	5.3	2	348	5.0	2
16	350	5.1	2	349	4.8	2
17	352	4.9	2	351	4.6	2
18	354	4.8	2	353	4.4	2
19	356	4.6	2	354	4.3	2
20	357	4.5	2	356	4.2	2
21	359	4.4	2	357	4.1	2
22	360	4.3	3	358	4.0	2
23	362	4.2	3	359	4.0	2
24	363	4.2	3	361	3.9	3
25	364	4.1	3	362	3.9	3
26	366	4.1	3	363	3.8	3
27	367	4.0	3	365	3.8	3
28	369	4.0	3	366	3.8	3
29	370	4.0	3	367	3.7	3
30	371	4.0	3	368	3.7	3
31	373	4.0	3	370	3.7	3
32	374	4.0	3	371	3.7	3
33	375	4.1	3	372	3.7	3
34	377	4.1	3	373	3.8	3
35	378	4.2	4	374	3.8	3
36	380	4.3	4	376	3.8	3
37	381	4.4	4	377	3.9	3
38	383	4.5	4	378	3.9	4
39	385	4.7	4	380	4.0	4
40	387	4.8	4	381	4.1	4
41	389	5.0	4	383	4.2	4
42	390	5.2	4	385	4.3	4
43	390	5.5	4	387	4.5	4
44	390	5.8	4	389	4.7	4
45	390	6.1	4	390	5.1	4
46	390	6.6	4	390	5.5	4
47	390	7.2	4	390	6.0	4
48	390	8.1	4	390	6.7	4
49	390	9.7	4	390	7.9	4
50	390	9.8	4	390	10.0	4
51	390	9.8	4	390	10.0	4

Table N-2. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 4

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	400	10.0	1	400	10.0	1
1	400	10.0	1	400	10.0	1
2	400	10.0	1	400	10.0	1
3	400	10.0	1	400	10.0	1
4	400	10.0	1	400	10.0	1
5	400	10.0	1	405	10.0	1
6	416	10.0	1	419	10.0	1
7	427	10.0	1	427	9.6	1
8	433	9.4	1	432	8.1	1
9	437	7.6	1	436	7.0	1
10	440	6.5	1	439	6.3	1
11	443	5.8	1	442	5.7	1
12	444	5.3	1	444	5.3	1
13	447	4.9	2	446	5.0	2
14	449	4.7	2	448	4.7	2
15	451	4.5	2	450	4.5	2
16	453	4.3	2	452	4.3	2
17	454	4.2	2	453	4.2	2
18	456	4.1	2	454	4.1	2
19	457	4.0	2	456	4.0	2
20	459	3.9	2	457	3.9	2
21	459	3.9	2	458	3.8	2
22	461	3.8	3	459	3.8	2
23	463	3.8	3	461	3.7	3
24	464	3.8	3	462	3.7	3
25	465	3.7	3	463	3.7	3
26	467	3.7	3	465	3.6	3
27	468	3.7	3	466	3.6	3
28	469	3.7	3	467	3.6	3
29	470	3.6	3	468	3.6	3
30	472	3.6	3	469	3.6	3
31	473	3.6	3	470	3.6	3
32	474	3.6	3	471	3.6	3
33	475	3.6	4	473	3.6	3
34	477	3.6	4	474	3.6	3
35	478	3.6	4	475	3.7	4
36	479	3.7	4	476	3.7	4
37	480	3.7	4	478	3.7	4
38	482	3.8	4	479	3.8	4
39	483	3.9	4	480	3.9	4
40	485	4.1	4	482	4.0	4
41	486	4.3	4	484	4.2	4
42	488	4.5	4	485	4.4	4
43	490	4.8	4	487	4.7	4
44	490	5.2	4	490	5.1	4
45	490	5.8	4	490	5.7	4
46	490	6.5	4	490	6.7	4
47	490	7.6	4	490	8.2	4
48	490	9.3	4	490	10.0	4
49	490	10.0	4	490	10.0	4
50	490	10.0	4	490	10.0	4

Table N-3. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 5

<i>Raw Score</i>	<i>2017–18</i>			<i>2018–19</i>		
	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>
0	500	10.0	1	500	10.0	1
1	500	10.0	1	500	10.0	1
2	500	10.0	1	500	10.0	1
3	500	10.0	1	500	10.0	1
4	500	10.0	1	500	10.0	1
5	500	10.0	1	500	10.0	1
6	500	10.0	1	500	10.0	1
7	510	10.0	1	516	10.0	1
8	524	10.0	1	525	10.0	1
9	531	9.4	1	531	8.1	1
10	535	7.8	1	534	6.9	1
11	539	6.8	1	538	6.2	1
12	542	6.1	1	540	5.7	1
13	544	5.6	2	543	5.3	1
14	546	5.2	2	545	4.9	2
15	548	4.8	2	546	4.7	2
16	550	4.6	2	548	4.4	2
17	551	4.4	2	550	4.2	2
18	553	4.2	2	551	4.1	2
19	554	4.0	2	553	3.9	2
20	556	3.9	2	554	3.8	2
21	557	3.8	2	556	3.7	2
22	558	3.7	2	557	3.6	2
23	559	3.7	2	558	3.6	2
24	561	3.6	3	559	3.5	2
25	562	3.6	3	561	3.5	3
26	563	3.6	3	562	3.4	3
27	565	3.5	3	563	3.4	3
28	566	3.5	3	564	3.3	3
29	567	3.5	3	565	3.3	3
30	568	3.5	3	566	3.2	3
31	569	3.4	3	568	3.2	3
32	571	3.4	3	569	3.1	3
33	572	3.4	3	570	3.1	3
34	573	3.3	4	571	3.1	3
35	574	3.3	4	572	3.0	3
36	575	3.3	4	573	3.0	4
37	576	3.3	4	574	3.0	4
38	578	3.3	4	575	3.1	4
39	579	3.3	4	576	3.1	4
40	580	3.3	4	577	3.1	4
41	581	3.4	4	579	3.2	4
42	583	3.5	4	580	3.2	4
43	584	3.7	4	581	3.3	4
44	586	3.9	4	583	3.4	4
45	588	4.2	4	584	3.6	4
46	590	4.6	4	586	3.9	4
47	590	5.4	4	588	4.3	4
48	590	6.6	4	590	5.0	4
49	590	9.1	4	590	6.4	4
50	590	10.0	4	590	10.0	4
51	590	10.0	4	590	10.0	4

Table N-4. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 6

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	600	10.0	1	600	10.0	1
1	600	10.0	1	600	10.0	1
2	600	10.0	1	600	10.0	1
3	600	10.0	1	600	10.0	1
4	600	10.0	1	600	10.0	1
5	600	10.0	1	600	10.0	1
6	600	10.0	1	600	10.0	1
7	600	10.0	1	607	10.0	1
8	613	10.0	1	619	10.0	1
9	623	10.0	1	626	8.9	1
10	628	8.9	1	630	7.5	1
11	632	7.5	1	634	6.7	1
12	636	6.6	1	637	6.0	1
13	639	6.1	1	640	5.6	1
14	641	5.7	1	642	5.2	1
15	643	5.3	1	644	5.0	1
16	645	5.1	1	645	4.7	1
17	647	4.8	2	648	4.6	2
18	649	4.7	2	649	4.4	2
19	651	4.5	2	651	4.3	2
20	652	4.4	2	653	4.2	2
21	654	4.3	2	654	4.1	2
22	655	4.2	2	655	4.0	2
23	657	4.1	2	657	3.9	2
24	658	4.0	2	658	3.8	2
25	659	4.0	2	659	3.7	2
26	661	3.9	3	661	3.6	3
27	662	3.9	3	662	3.6	3
28	663	3.8	3	663	3.5	3
29	664	3.8	3	664	3.4	3
30	666	3.7	3	665	3.3	3
31	667	3.7	3	666	3.2	3
32	668	3.7	3	667	3.2	3
33	669	3.7	3	668	3.1	3
34	670	3.6	3	669	3.1	3
35	672	3.6	4	670	3.1	3
36	673	3.6	4	671	3.1	4
37	674	3.6	4	672	3.1	4
38	675	3.6	4	673	3.1	4
39	677	3.6	4	674	3.1	4
40	678	3.6	4	676	3.2	4
41	679	3.6	4	677	3.2	4
42	681	3.6	4	678	3.3	4
43	682	3.7	4	679	3.4	4
44	683	3.8	4	680	3.5	4
45	685	3.9	4	682	3.6	4
46	687	4.0	4	683	3.8	4
47	689	4.2	4	685	4.0	4
48	690	4.5	4	687	4.4	4
49	690	4.9	4	690	4.8	4
50	690	5.5	4	690	5.5	4
51	690	6.4	4	690	6.5	4
52	690	8.2	4	690	8.4	4
53	690	9.9	4	690	10.0	4
54	690	9.9	4	690	10.0	4

Table N-5. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 7

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	700	10.0	1	700	10.0	1
1	700	10.0	1	700	10.0	1
2	700	10.0	1	700	10.0	1
3	700	10.0	1	700	10.0	1
4	700	10.0	1	700	10.0	1
5	700	10.0	1	700	10.0	1
6	700	10.0	1	700	10.0	1
7	700	10.0	1	700	10.0	1
8	708	10.0	1	713	10.0	1
9	726	10.0	1	729	10.0	1
10	732	9.0	1	735	8.1	1
11	736	7.3	1	739	6.6	1
12	739	6.3	1	742	5.7	1
13	742	5.6	1	744	5.1	1
14	744	5.1	1	746	4.7	1
15	746	4.8	1	748	4.4	2
16	748	4.5	2	750	4.2	2
17	749	4.3	2	751	3.9	2
18	751	4.2	2	752	3.8	2
19	752	4.0	2	754	3.6	2
20	754	3.9	2	755	3.5	2
21	755	3.8	2	756	3.4	2
22	756	3.8	2	757	3.3	2
23	757	3.7	2	758	3.2	2
24	759	3.6	2	759	3.1	2
25	759	3.6	2	759	3.0	2
26	761	3.5	3	761	3.0	3
27	762	3.5	3	762	2.9	3
28	764	3.4	3	763	2.9	3
29	765	3.4	3	764	2.9	3
30	766	3.4	3	765	2.9	3
31	767	3.4	3	766	2.9	3
32	768	3.4	3	767	2.9	3
33	769	3.4	3	768	3.0	3
34	771	3.4	3	769	3.0	3
35	772	3.4	3	770	3.1	3
36	773	3.4	3	771	3.1	3
37	774	3.4	4	772	3.2	3
38	775	3.4	4	773	3.3	3
39	777	3.5	4	774	3.3	4
40	778	3.5	4	776	3.4	4
41	780	3.6	4	777	3.4	4
42	781	3.7	4	779	3.5	4
43	783	3.8	4	780	3.5	4
44	784	4.0	4	782	3.6	4
45	786	4.2	4	783	3.7	4
46	788	4.4	4	785	3.9	4
47	790	4.6	4	787	4.1	4
48	790	4.9	4	789	4.4	4
49	790	5.2	4	790	4.8	4
50	790	5.6	4	790	5.4	4
51	790	6.2	4	790	6.3	4
52	790	7.1	4	790	8.1	4
53	790	7.9	4	790	10.0	4
54	790	7.9	4	790	10.0	4

Table N-6. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 8

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	800	10.0	1	800	10.0	1
1	800	10.0	1	800	10.0	1
2	800	10.0	1	800	10.0	1
3	800	10.0	1	800	10.0	1
4	800	10.0	1	800	10.0	1
5	800	10.0	1	800	10.0	1
6	800	10.0	1	800	10.0	1
7	800	10.0	1	800	10.0	1
8	815	10.0	1	800	10.0	1
9	830	10.0	1	822	10.0	1
10	837	9.4	1	830	9.1	1
11	841	7.5	1	836	7.5	1
12	844	6.4	1	839	6.5	1
13	847	5.6	1	843	5.8	1
14	849	5.0	2	845	5.4	1
15	851	4.6	2	848	5.0	1
16	853	4.3	2	850	4.8	2
17	855	4.1	2	852	4.6	2
18	856	3.9	2	853	4.5	2
19	858	3.8	2	855	4.3	2
20	859	3.6	2	857	4.2	2
21	860	3.5	3	858	4.0	2
22	861	3.5	3	859	3.9	2
23	863	3.4	3	861	3.7	3
24	864	3.3	3	863	3.6	3
25	865	3.3	3	864	3.5	3
26	866	3.2	3	865	3.4	3
27	867	3.2	3	866	3.3	3
28	868	3.1	3	867	3.2	3
29	869	3.1	3	869	3.2	3
30	870	3.1	3	870	3.1	3
31	870	3.0	3	870	3.0	3
32	872	3.0	4	872	3.0	4
33	873	3.0	4	873	3.0	4
34	874	3.0	4	874	2.9	4
35	875	3.0	4	875	2.9	4
36	876	3.0	4	876	2.9	4
37	877	3.0	4	877	2.9	4
38	878	3.1	4	878	2.9	4
39	879	3.1	4	879	2.9	4
40	880	3.2	4	880	3.0	4
41	881	3.2	4	881	3.0	4
42	882	3.3	4	882	3.0	4
43	883	3.3	4	883	3.1	4
44	885	3.4	4	885	3.2	4
45	886	3.5	4	886	3.3	4
46	887	3.7	4	887	3.5	4
47	889	3.8	4	889	3.7	4
48	890	4.0	4	890	3.9	4
49	890	4.3	4	890	4.2	4
50	890	4.7	4	890	4.6	4
51	890	5.3	4	890	5.1	4
52	890	6.3	4	890	5.8	4
53	890	8.9	4	890	7.1	4
54	890	9.0	4	890	8.2	4
55	890	9.0	4	890	8.2	4

Table N-7. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 3

<i>Raw Score</i>	<i>2017–18</i>			<i>2018–19</i>		
	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>
0	300	10.0	1	300	10.0	1
1	300	10.0	1	300	10.0	1
2	300	10.0	1	300	10.0	1
3	300	10.0	1	300	10.0	1
4	300	10.0	1	300	10.0	1
5	300	10.0	1	300	10.0	1
6	300	10.0	1	300	10.0	1
7	300	10.0	1	309	10.0	1
8	314	10.0	1	319	10.0	1
9	322	10.0	1	325	9.5	1
10	327	8.4	1	329	7.9	1
11	330	7.3	1	332	6.9	1
12	333	6.5	1	335	6.2	1
13	336	5.9	1	337	5.6	1
14	338	5.4	1	339	5.2	1
15	340	5.0	1	340	4.9	1
16	342	4.7	1	342	4.6	1
17	343	4.5	1	344	4.4	1
18	345	4.3	1	345	4.2	1
19	346	4.2	1	346	4.1	1
20	346	4.1	1	347	3.9	2
21	349	4.0	2	349	3.8	2
22	350	3.9	2	350	3.7	2
23	351	3.9	2	351	3.6	2
24	352	3.8	2	352	3.5	2
25	353	3.8	2	353	3.5	2
26	354	3.7	2	354	3.4	2
27	355	3.7	2	355	3.4	2
28	357	3.7	2	356	3.4	2
29	358	3.7	2	357	3.4	2
30	359	3.7	2	358	3.4	2
31	359	3.6	2	359	3.4	2
32	361	3.6	3	360	3.4	3
33	362	3.6	3	361	3.5	3
34	363	3.6	3	362	3.5	3
35	364	3.5	3	363	3.6	3
36	365	3.5	3	365	3.6	3
37	366	3.5	3	366	3.7	3
38	367	3.5	3	367	3.8	3
39	368	3.5	3	368	3.9	3
40	369	3.5	3	370	4.0	3
41	370	3.6	3	370	4.1	3
42	370	3.6	3	372	4.2	4
43	373	3.6	4	374	4.3	4

continued

<i>Raw Score</i>	<i>2017–18</i>			<i>2018–19</i>		
	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>	<i>Scaled Score</i>	<i>Standard Error</i>	<i>Performance Level</i>
44	374	3.7	4	375	4.4	4
45	375	3.8	4	377	4.5	4
46	376	3.9	4	378	4.6	4
47	378	4.0	4	380	4.8	4
48	379	4.1	4	382	4.9	4
49	381	4.3	4	384	5.1	4
50	383	4.5	4	386	5.4	4
51	384	4.7	4	389	5.6	4
52	387	4.9	4	390	5.9	4
53	389	5.2	4	390	6.3	4
54	390	5.5	4	390	6.7	4
55	390	5.8	4	390	7.1	4
56	390	6.2	4	390	7.6	4
57	390	6.6	4	390	8.4	4
58	390	7.0	4	390	9.5	4
59	390	7.5	4	390	10.0	4
60	390	8.2	4	390	10.0	4
61	390	8.8	4	390	10.0	4
62	390	8.8	4	N/A	N/A	N/A
63	390	8.8	4	N/A	N/A	N/A
64	390	8.8	4	N/A	N/A	N/A
65	390	8.8	4	N/A	N/A	N/A

Table N-8. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 4

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	400	10.0	1	400	10.0	1
1	400	10.0	1	400	10.0	1
2	400	10.0	1	400	10.0	1
3	400	10.0	1	400	10.0	1
4	400	10.0	1	400	10.0	1
5	400	10.0	1	400	10.0	1
6	400	10.0	1	405	10.0	1
7	405	10.0	1	416	10.0	1
8	414	10.0	1	422	10.0	1
9	419	9.7	1	427	9.0	1
10	423	8.6	1	430	7.6	1
11	427	7.8	1	433	6.6	1
12	430	7.2	1	436	5.9	1
13	433	6.7	1	438	5.4	1
14	435	6.3	1	440	5.0	1
15	437	5.9	1	441	4.7	1
16	439	5.6	1	443	4.5	1
17	441	5.4	1	444	4.3	1
18	443	5.1	1	446	4.2	1
19	444	4.9	1	447	4.1	1
20	446	4.8	1	448	4.0	1
21	447	4.6	1	450	3.9	2
22	448	4.5	1	451	3.8	2
23	450	4.3	2	452	3.8	2
24	451	4.2	2	453	3.7	2
25	452	4.1	2	454	3.7	2
26	454	4.1	2	455	3.7	2
27	455	4.0	2	457	3.6	2
28	456	4.0	2	458	3.6	2
29	457	3.9	2	459	3.6	2
30	458	3.9	2	459	3.6	2
31	459	3.9	2	461	3.7	3
32	461	3.9	3	462	3.7	3
33	462	3.9	3	463	3.7	3
34	463	3.9	3	464	3.8	3
35	464	3.9	3	465	3.8	3
36	465	4.0	3	467	3.9	3
37	466	4.0	3	468	3.9	3
38	468	4.0	3	469	4.0	3
39	469	4.1	3	470	4.0	3
40	470	4.1	3	472	4.1	3
41	471	4.2	3	473	4.2	3
42	473	4.2	3	474	4.2	4
43	474	4.3	4	476	4.3	4

continued

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
44	475	4.3	4	477	4.3	4
45	477	4.4	4	479	4.4	4
46	478	4.4	4	480	4.4	4
47	480	4.5	4	482	4.5	4
48	481	4.6	4	484	4.6	4
49	483	4.7	4	486	4.7	4
50	484	4.8	4	488	4.9	4
51	486	4.9	4	490	5.2	4
52	488	5.0	4	490	5.6	4
53	490	5.2	4	490	6.0	4
54	490	5.4	4	490	6.6	4
55	490	5.7	4	490	7.2	4
56	490	6.0	4	490	8.0	4
57	490	6.3	4	490	8.9	4
58	490	6.7	4	490	10.0	4
59	490	7.2	4	490	10.0	4
60	490	7.8	4	490	10.0	4
61	490	8.8	4	490	10.0	4
62	490	10.0	4	N/A	N/A	N/A
63	490	10.0	4	N/A	N/A	N/A
64	490	10.0	4	N/A	N/A	N/A
65	490	10.0	4	N/A	N/A	N/A

Table N-9. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 5

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	500	10.0	1	500	10.0	1
1	500	10.0	1	500	10.0	1
2	500	10.0	1	500	10.0	1
3	500	10.0	1	500	10.0	1
4	500	10.0	1	500	10.0	1
5	500	10.0	1	500	10.0	1
6	500	10.0	1	500	10.0	1
7	500	10.0	1	500	10.0	1
8	511	10.0	1	514	10.0	1
9	518	10.0	1	521	10.0	1
10	523	9.2	1	526	9.0	1
11	526	8.1	1	530	7.6	1
12	530	7.4	1	532	6.6	1
13	532	6.8	1	535	6.0	1
14	535	6.3	1	537	5.5	1
15	537	5.9	1	539	5.2	1
16	539	5.6	1	541	4.9	1
17	540	5.3	1	542	4.7	1

continued

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
18	542	5.1	1	544	4.5	1
19	544	4.8	1	545	4.4	1
20	545	4.6	1	546	4.3	1
21	546	4.5	1	548	4.2	1
22	548	4.4	1	549	4.1	2
23	549	4.2	2	550	4.1	2
24	550	4.1	2	552	4.1	2
25	551	4.1	2	553	4.0	2
26	552	4.0	2	554	4.0	2
27	554	4.0	2	555	4.0	2
28	555	3.9	2	556	4.0	2
29	556	3.9	2	558	4.0	2
30	557	3.9	2	559	4.0	2
31	558	3.9	2	560	4.1	3
32	559	3.9	2	561	4.1	3
33	560	3.9	3	563	4.1	3
34	561	3.9	3	564	4.1	3
35	562	3.9	3	565	4.1	3
36	563	4.0	3	566	4.2	3
37	565	4.0	3	568	4.2	3
38	566	4.0	3	569	4.2	3
39	567	4.0	3	570	4.2	3
40	568	4.1	3	572	4.3	3
41	569	4.1	3	573	4.3	3
42	571	4.2	3	575	4.4	3
43	572	4.2	3	575	4.4	3
44	573	4.3	3	578	4.5	4
45	574	4.4	3	579	4.6	4
46	575	4.4	3	581	4.7	4
47	577	4.5	4	583	4.9	4
48	579	4.6	4	585	5.1	4
49	580	4.7	4	587	5.3	4
50	582	4.8	4	589	5.5	4
51	584	5.0	4	590	5.8	4
52	585	5.1	4	590	6.1	4
53	587	5.2	4	590	6.4	4
54	589	5.4	4	590	6.8	4
55	590	5.6	4	590	7.2	4
56	590	5.8	4	590	7.7	4
57	590	6.1	4	590	8.5	4
58	590	6.5	4	590	9.7	4
59	590	6.9	4	590	10.0	4
60	590	7.6	4	590	10.0	4
61	590	8.6	4	590	10.0	4
62	590	9.9	4	N/A	N/A	N/A
63	590	10.0	4	N/A	N/A	N/A
64	590	10.0	4	N/A	N/A	N/A
65	590	10.0	4	N/A	N/A	N/A

Table N-10. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 6

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	600	10.0	1	600	10.0	1
1	600	10.0	1	600	10.0	1
2	600	10.0	1	600	10.0	1
3	600	10.0	1	600	10.0	1
4	600	10.0	1	600	10.0	1
5	600	10.0	1	600	10.0	1
6	600	10.0	1	600	10.0	1
7	602	10.0	1	600	10.0	1
8	611	10.0	1	609	10.0	1
9	617	10.0	1	617	10.0	1
10	621	8.6	1	622	9.4	1
11	625	7.5	1	626	8.3	1
12	628	6.7	1	629	7.5	1
13	630	6.2	1	632	6.9	1
14	632	5.7	1	634	6.4	1
15	634	5.4	1	636	6.0	1
16	636	5.1	1	638	5.6	1
17	638	4.9	1	640	5.3	1
18	639	4.7	1	642	5.1	1
19	641	4.6	1	643	4.9	1
20	642	4.5	1	645	4.7	2
21	643	4.5	1	646	4.5	2
22	645	4.4	2	647	4.4	2
23	646	4.4	2	649	4.3	2
24	647	4.3	2	650	4.2	2
25	649	4.3	2	651	4.2	2
26	650	4.3	2	652	4.1	2
27	651	4.3	2	654	4.1	2
28	652	4.3	2	655	4.0	2
29	654	4.3	2	656	4.0	2
30	655	4.2	2	657	4.0	2
31	656	4.2	2	658	4.0	2
32	657	4.2	2	659	4.0	2
33	659	4.2	2	660	4.0	3
34	659	4.2	2	662	4.0	3
35	661	4.1	3	663	4.0	3
36	662	4.1	3	664	4.0	3
37	663	4.1	3	665	4.0	3
38	665	4.1	3	666	4.0	3
39	666	4.1	3	668	4.0	3
40	667	4.1	3	669	4.0	3
41	668	4.1	3	670	4.0	3
42	669	4.1	3	671	4.0	3
43	671	4.1	3	673	4.1	3

continued

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
44	672	4.2	3	674	4.1	3
45	673	4.2	3	675	4.2	4
46	674	4.3	3	677	4.3	4
47	676	4.4	4	678	4.4	4
48	677	4.4	4	680	4.5	4
49	679	4.5	4	682	4.7	4
50	680	4.6	4	683	4.9	4
51	682	4.8	4	685	5.1	4
52	684	4.9	4	687	5.3	4
53	686	5.0	4	690	5.6	4
54	687	5.1	4	690	5.9	4
55	689	5.3	4	690	6.3	4
56	690	5.4	4	690	6.7	4
57	690	5.6	4	690	7.2	4
58	690	5.8	4	690	7.7	4
59	690	6.0	4	690	8.3	4
60	690	6.3	4	690	9.1	4
61	690	6.7	4	690	9.6	4
62	690	7.1	4	690	9.6	4
63	690	7.8	4	690	9.6	4
64	690	8.9	4	N/A	N/A	N/A
65	690	9.2	4	N/A	N/A	N/A
66	690	9.2	4	N/A	N/A	N/A
67	690	9.2	4	N/A	N/A	N/A

Table N-11. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 7

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	700	10.0	1	700	10.0	1
1	700	10.0	1	700	10.0	1
2	700	10.0	1	700	10.0	1
3	700	10.0	1	700	10.0	1
4	700	10.0	1	700	10.0	1
5	700	10.0	1	700	10.0	1
6	700	10.0	1	700	10.0	1
7	700	10.0	1	701	10.0	1
8	711	10.0	1	712	10.0	1
9	718	10.0	1	719	10.0	1
10	723	8.6	1	724	9.1	1
11	727	7.4	1	728	7.9	1
12	730	6.7	1	731	7.1	1
13	732	6.2	1	733	6.5	1
14	734	5.8	1	736	6.1	1
15	737	5.6	1	738	5.8	1
16	739	5.3	1	740	5.5	1
17	740	5.2	1	742	5.3	1
18	742	5.0	1	743	5.1	1
19	744	4.8	1	744	4.9	1

continued

Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
20	744	4.7	1	746	4.8	2
21	746	4.6	2	748	4.7	2
22	748	4.5	2	749	4.6	2
23	749	4.4	2	750	4.5	2
24	750	4.3	2	752	4.4	2
25	752	4.3	2	753	4.3	2
26	753	4.2	2	754	4.2	2
27	754	4.2	2	755	4.2	2
28	755	4.1	2	757	4.1	2
29	756	4.1	2	758	4.1	2
30	758	4.0	2	759	4.0	2
31	759	4.0	2	760	4.0	3
32	759	4.0	2	761	3.9	3
33	761	4.0	3	762	3.9	3
34	762	4.0	3	763	3.9	3
35	763	4.0	3	765	3.8	3
36	764	4.0	3	766	3.8	3
37	765	4.0	3	767	3.8	3
38	766	4.0	3	768	3.8	3
39	768	4.0	3	769	3.8	3
40	769	4.0	3	770	3.8	3
41	770	4.0	3	771	3.9	3
42	771	4.0	3	772	3.9	3
43	772	4.1	3	774	3.9	3
44	773	4.1	3	775	4.0	3
45	775	4.1	3	776	4.0	4
46	775	4.2	3	778	4.1	4
47	777	4.2	4	779	4.2	4
48	778	4.3	4	780	4.3	4
49	780	4.4	4	782	4.4	4
50	781	4.4	4	783	4.5	4
51	783	4.5	4	785	4.7	4
52	784	4.6	4	787	4.8	4
53	786	4.7	4	789	5.1	4
54	788	4.9	4	790	5.3	4
55	789	5.0	4	790	5.6	4
56	790	5.2	4	790	6.0	4
57	790	5.3	4	790	6.4	4
58	790	5.6	4	790	7.0	4
59	790	5.8	4	790	7.8	4
60	790	6.1	4	790	9.0	4
61	790	6.4	4	790	10.0	4
62	790	6.8	4	790	10.0	4
63	790	7.4	4	790	10.0	4
64	790	8.4	4	N/A	N/A	N/A
65	790	9.2	4	N/A	N/A	N/A
66	790	9.2	4	N/A	N/A	N/A
67	790	9.2	4	N/A	N/A	N/A

Table N-12. 2018–19 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 8

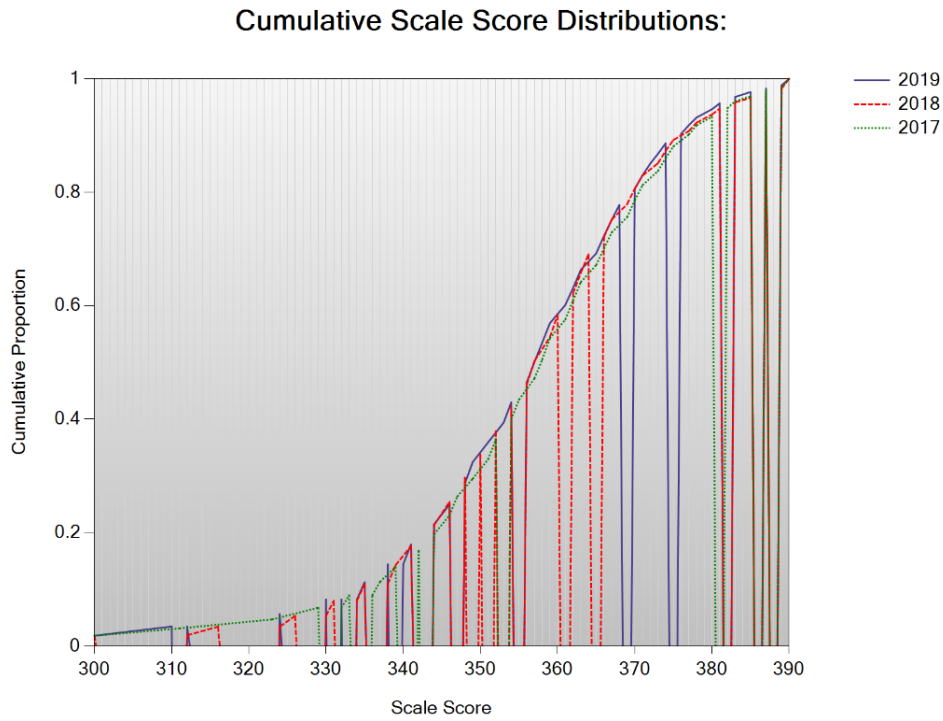
Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
0	800	10.0	1	800	10.0	1
1	800	10.0	1	800	10.0	1
2	800	10.0	1	800	10.0	1
3	800	10.0	1	800	10.0	1
4	800	10.0	1	800	10.0	1
5	800	10.0	1	800	10.0	1
6	800	10.0	1	800	10.0	1
7	810	10.0	1	807	10.0	1
8	816	9.6	1	816	10.0	1
9	821	8.1	1	822	10.0	1
10	824	7.1	1	826	8.7	1
11	827	6.5	1	830	7.6	1
12	830	6.0	1	833	6.8	1
13	832	5.6	1	835	6.2	1
14	834	5.3	1	837	5.8	1
15	836	5.0	1	839	5.4	1
16	838	4.8	1	841	5.1	1
17	839	4.6	1	843	4.8	1
18	841	4.5	1	844	4.6	2
19	842	4.3	1	846	4.5	2
20	843	4.2	1	847	4.3	2
21	845	4.1	2	848	4.2	2
22	846	4.0	2	850	4.1	2
23	847	4.0	2	851	4.0	2
24	848	3.9	2	852	4.0	2
25	849	3.9	2	853	3.9	2
26	850	3.8	2	854	3.9	2
27	852	3.8	2	855	3.9	2
28	853	3.8	2	857	3.8	2
29	854	3.8	2	858	3.8	2
30	855	3.8	2	859	3.8	2
31	856	3.8	2	859	3.8	2
32	857	3.8	2	861	3.8	3
33	858	3.8	2	862	3.8	3
34	859	3.8	2	863	3.8	3
35	860	3.8	3	864	3.8	3
36	861	3.8	3	865	3.9	3
37	862	3.8	3	866	3.9	3
38	864	3.8	3	868	3.9	3
39	865	3.8	3	869	3.9	3
40	866	3.8	3	870	4.0	3
41	867	3.8	3	871	4.0	3
42	868	3.9	3	872	4.1	3
43	869	3.9	3	874	4.1	3

continued

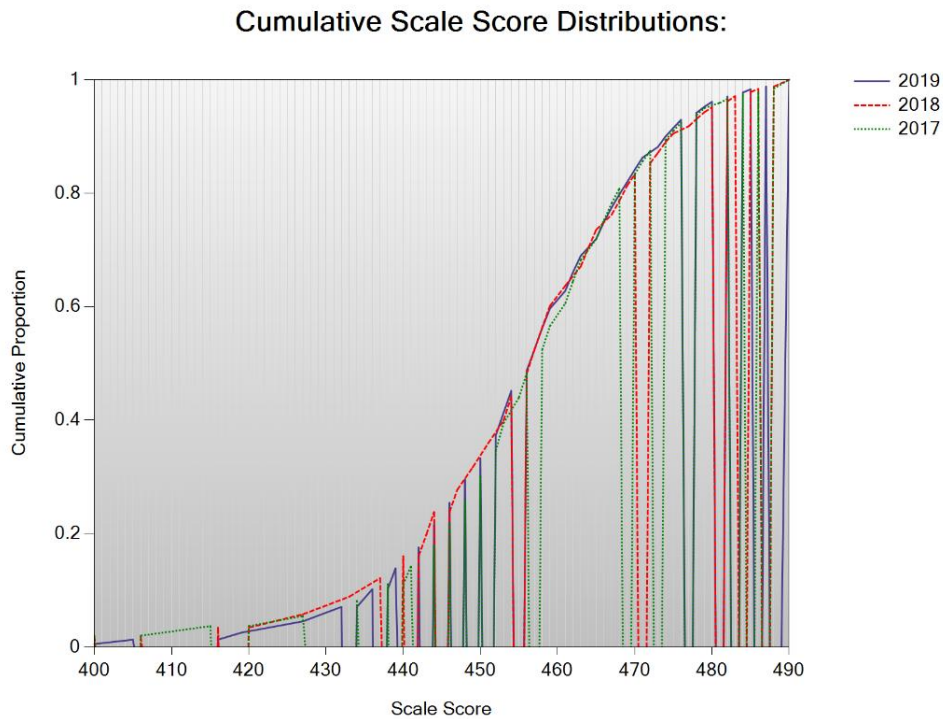
Raw Score	2017–18			2018–19		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
44	870	3.9	3	875	4.2	3
45	872	3.9	3	876	4.2	3
46	873	4.0	3	877	4.3	3
47	874	4.0	3	879	4.4	4
48	875	4.1	3	881	4.5	4
49	877	4.1	3	882	4.6	4
50	878	4.2	4	884	4.7	4
51	879	4.2	4	885	4.8	4
52	881	4.3	4	887	5.0	4
53	882	4.3	4	889	5.1	4
54	884	4.4	4	890	5.3	4
55	886	4.5	4	890	5.5	4
56	887	4.7	4	890	5.8	4
57	889	4.8	4	890	6.1	4
58	890	5.0	4	890	6.6	4
59	890	5.1	4	890	7.4	4
60	890	5.4	4	890	8.7	4
61	890	5.7	4	890	10.0	4
62	890	6.1	4	890	10.0	4
63	890	6.9	4	890	10.0	4
64	890	8.3	4	N/A	N/A	N/A
65	890	10.0	4	N/A	N/A	N/A
66	890	10.0	4	N/A	N/A	N/A
67	890	10.0	4	N/A	N/A	N/A

APPENDIX O—SCALED SCORE DISTRIBUTIONS

**Figure O-1. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 3**

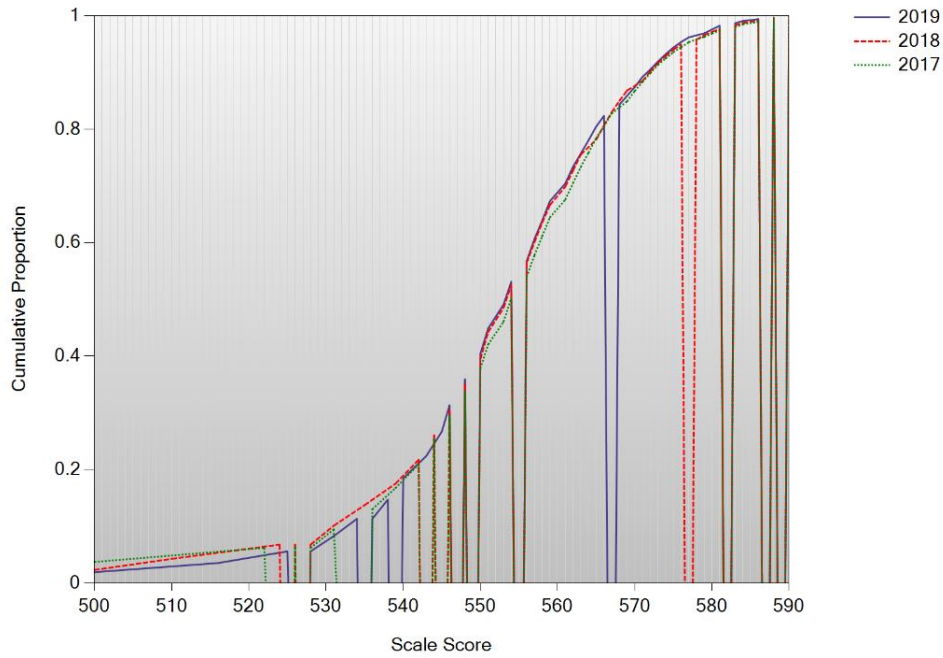


**Figure O-2. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 4**



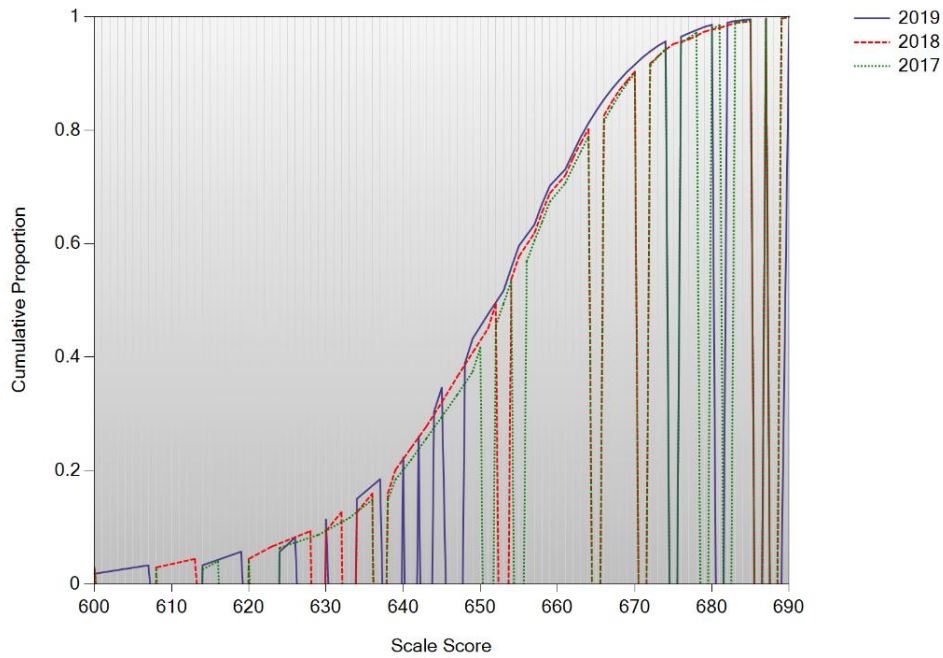
**Figure O-3. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 5**

Cumulative Scale Score Distributions:



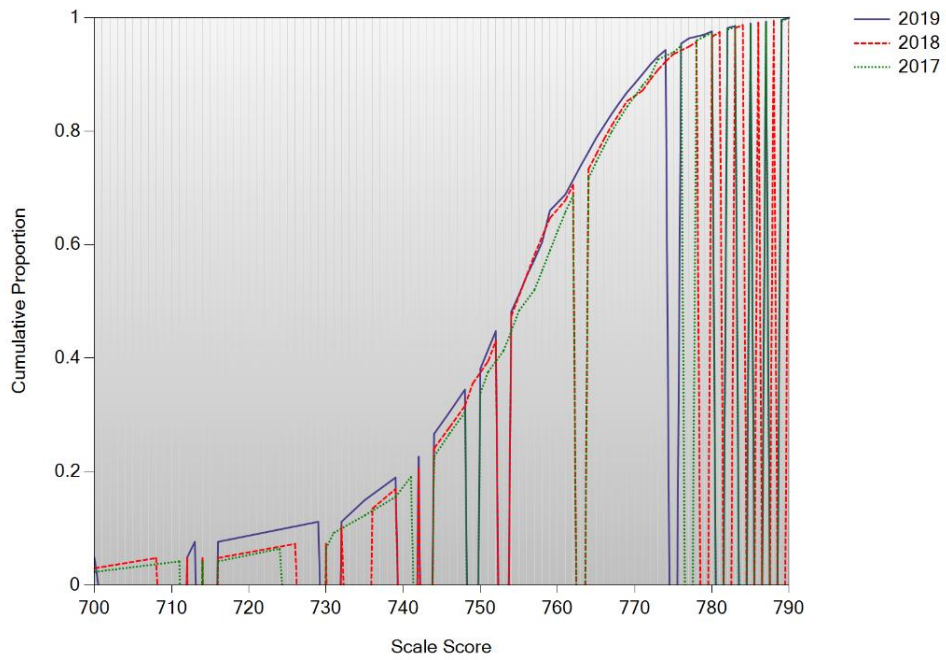
**Figure O-4. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 6**

Cumulative Scale Score Distributions:



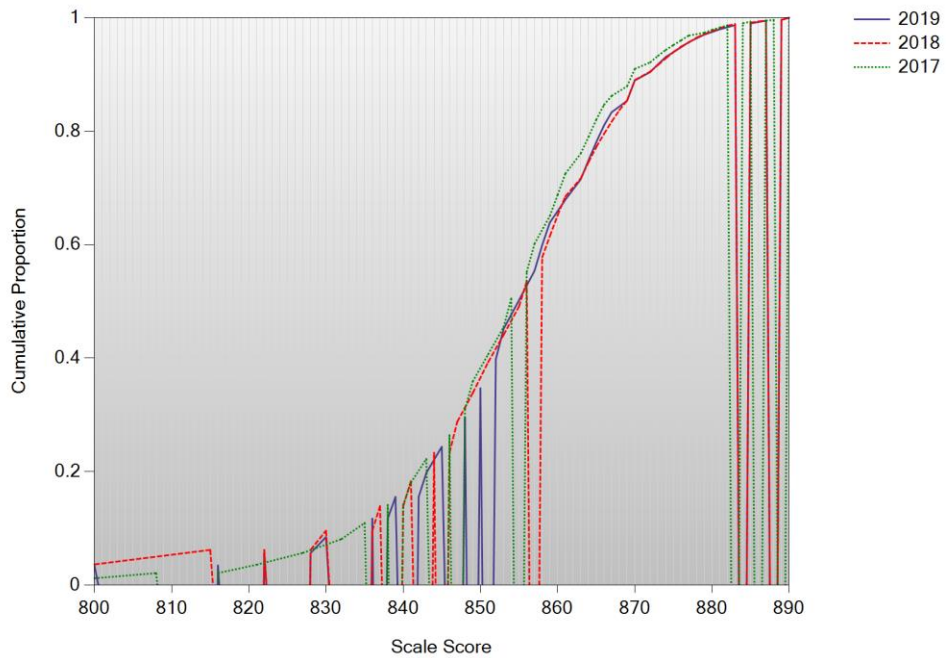
**Figure O-5. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 7**

Cumulative Scale Score Distributions:



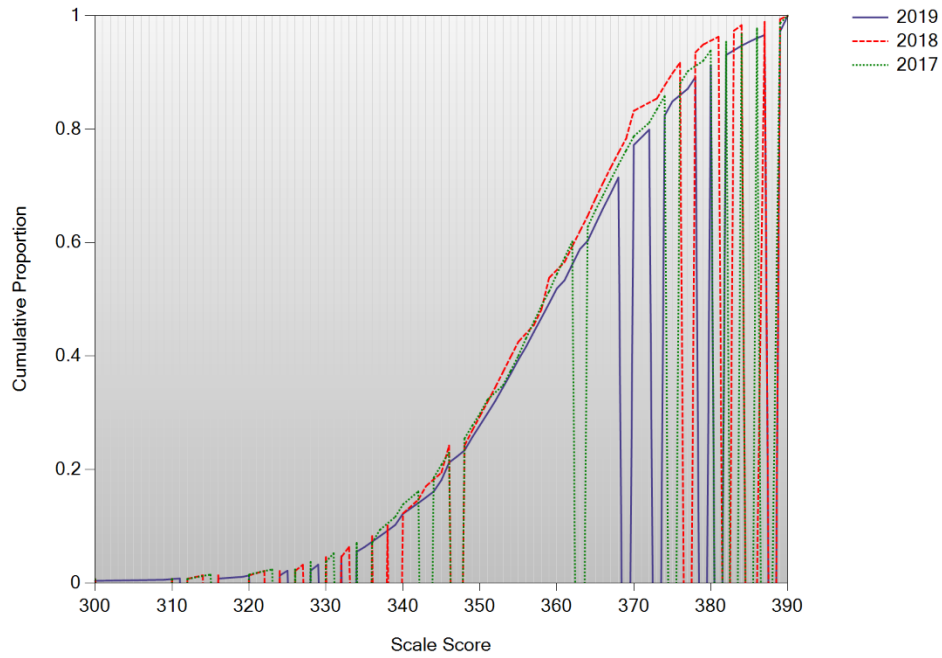
**Figure O-6. 2018–19 eMPowerME: Cumulative Score Distribution
Mathematics Grade 8**

Cumulative Scale Score Distributions:



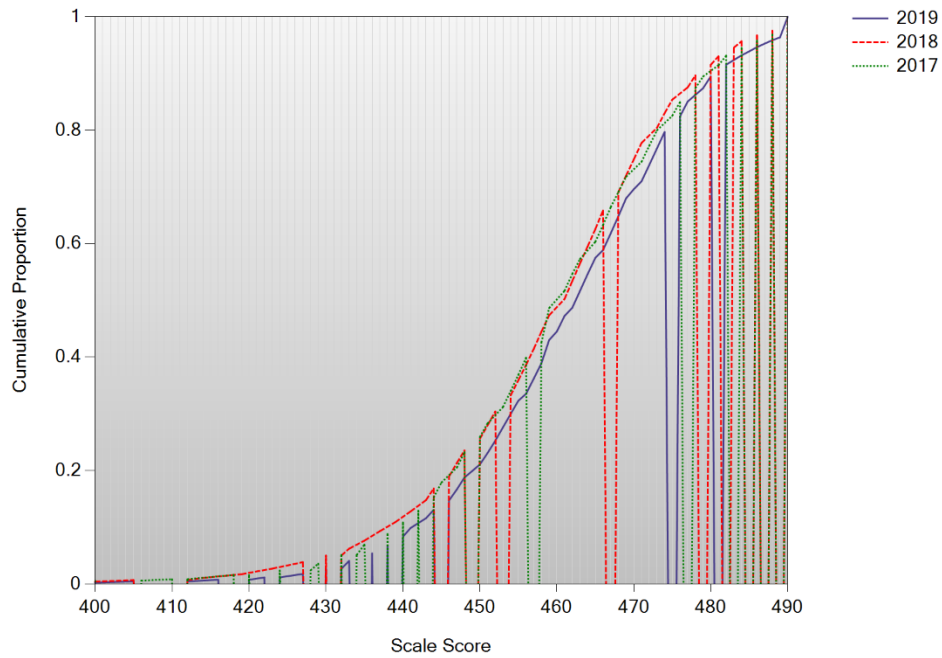
**Figure O-7. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 3**

Cumulative Scale Score Distributions:



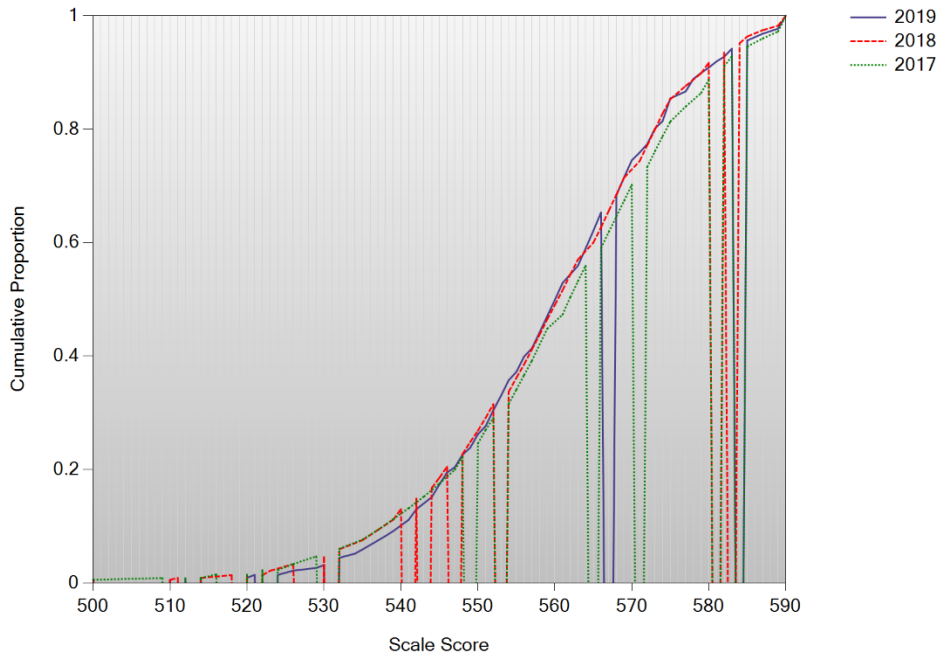
**Figure O-8. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 4**

Cumulative Scale Score Distributions:



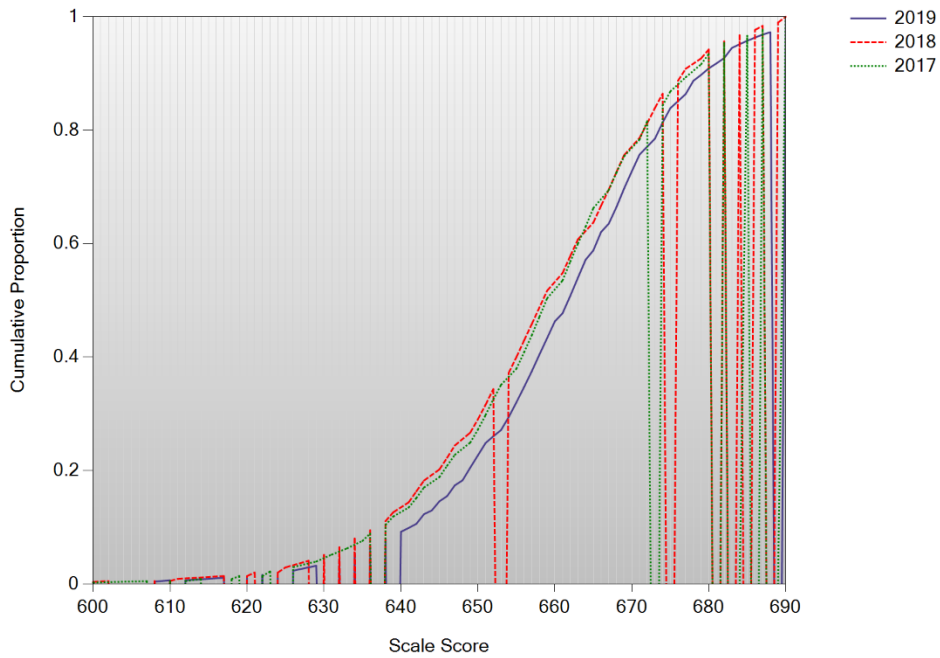
**Figure O-9. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 5**

Cumulative Scale Score Distributions:



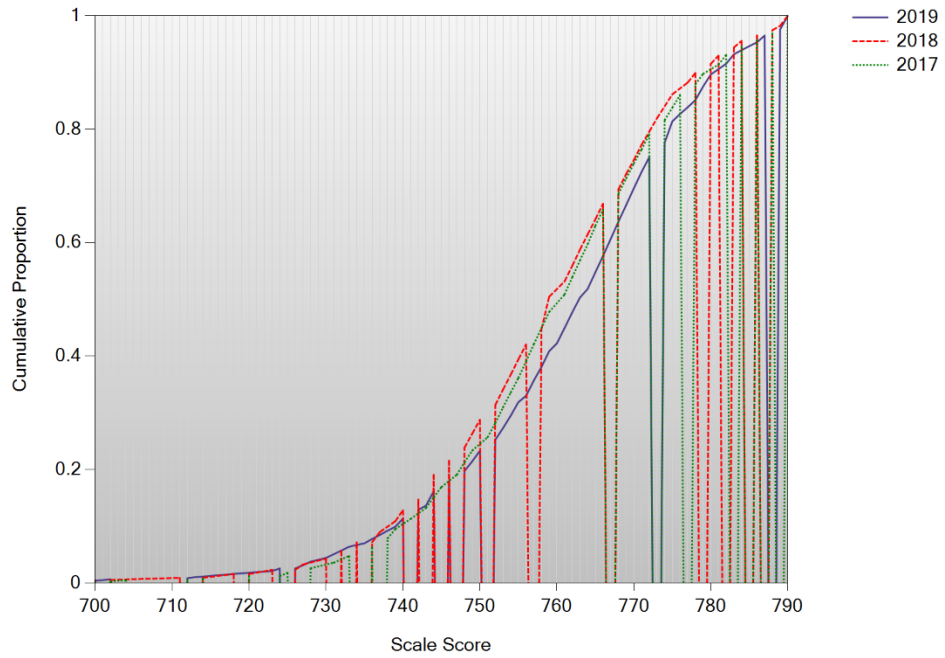
**Figure O-10. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 6**

Cumulative Scale Score Distributions:



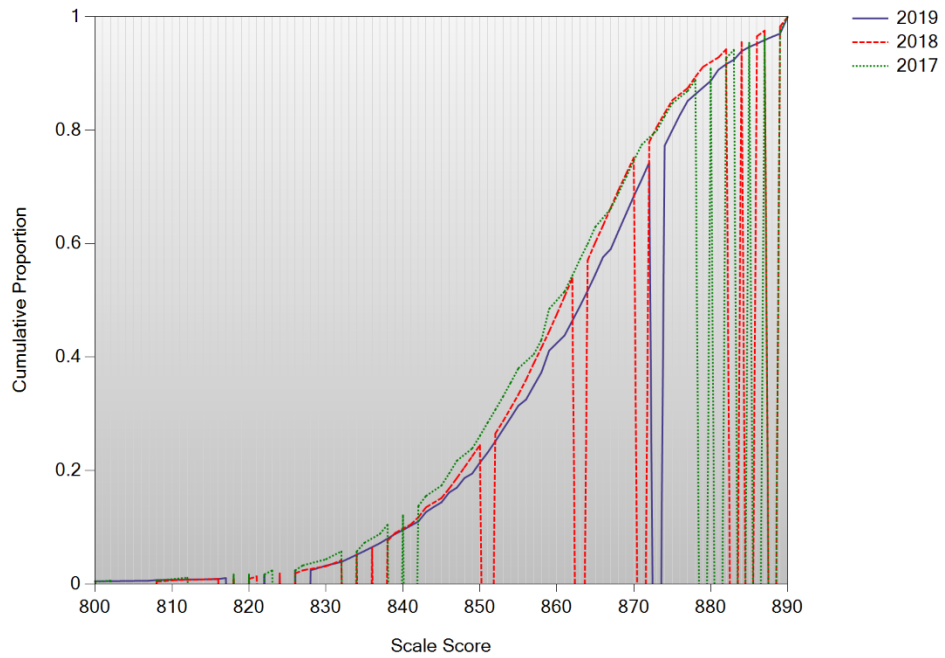
**Figure O-11. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 7**

Cumulative Scale Score Distributions:



**Figure O-12. 2018–19 eMPowerME: Cumulative Score Distribution
ELA Grade 8**

Cumulative Scale Score Distributions:



APPENDIX P—CLASSICAL RELIABILITIES

Table P-1. 2018–19 eMPowerME: Subgroup Reliabilities

Mathematics

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	All Students	24,898	51	22.40	9.77	0.89	3.22
	Male	12,888	51	22.62	9.97	0.90	3.21
	Female	12,004	51	22.17	9.54	0.89	3.22
	Gender Not Reported	6	51				
	Hispanic or Latino	624	51	21.56	9.20	0.88	3.23
	American Indian or Alaskan Native	202	51	19.16	8.39	0.86	3.12
	Asian	316	51	24.47	10.44	0.90	3.28
	Black or African American	1,012	51	17.11	8.27	0.87	3.01
	Native Hawaiian or Pacific Islander	36	51	21.22	8.51	0.85	3.27
	White (non-Hispanic)	21,930	51	22.67	9.76	0.89	3.22
	Two or More Races (non-Hispanic)	772	51	22.41	10.10	0.90	3.18
	Race not reported	6	51				
	Currently receiving EL services	1,026	51	16.04	7.66	0.84	3.02
	Former EL student - monitoring year 1	70	51	25.74	7.89	0.83	3.24
	Former EL student - monitoring year 2	54	51	32.15	8.36	0.85	3.27
	Former EL student - monitoring year 3	0	51				
	Former EL student - monitoring year 4	0	51				
	LEP: All Other Students	23,748	51	22.64	9.76	0.89	3.22
	Students with an IEP	4,826	51	16.13	8.51	0.87	3.06
	IEP: All Other Students	20,072	51	23.91	9.45	0.88	3.24
	Economically Disadvantaged Students	11,834	51	19.47	8.95	0.88	3.15
	SES: All Other Students	13,064	51	25.06	9.72	0.89	3.25
	Migrant Students	20	51	22.80	8.43	0.84	3.42
	Migrant: All Other Students	24,878	51	22.40	9.77	0.89	3.22
	Students receiving Title 1 ELA Services	2,894	51	18.10	8.23	0.86	3.11
	Title 1: All Other Students	22,004	51	22.97	9.82	0.89	3.23
	Students receiving Title 1 Math Services	1,328	51	17.14	7.94	0.85	3.08
	Title 1: All Other Students	23,570	51	22.70	9.78	0.89	3.22
	Plan 504	868	51	21.99	9.25	0.88	3.24
	Plan 504: All Other Students	24,030	51	22.42	9.79	0.89	3.22
	All Students	25,962	50	20.99	9.47	0.88	3.29
	Male	13,240	50	21.34	9.72	0.89	3.29
Female	12,716	50	20.63	9.19	0.87	3.28	
Gender Not Reported	6	50					
Hispanic or Latino	604	50	18.73	9.28	0.88	3.22	
American Indian or Alaskan Native	252	50	18.37	9.33	0.89	3.16	
Asian	332	50	25.63	10.30	0.89	3.39	
Black or African American	1,080	50	15.57	7.96	0.85	3.06	
Native Hawaiian or Pacific Islander	40	50	21.35	8.44	0.83	3.44	
White (non-Hispanic)	22,840	50	21.30	9.43	0.88	3.29	
Two or More Races (non-Hispanic)	808	50	20.10	9.43	0.88	3.24	
Race not reported	6	50					
Currently receiving EL services	1,040	50	14.08	6.96	0.81	3.01	
Former EL student - monitoring year 1	126	50	25.71	8.24	0.83	3.36	
Former EL student - monitoring year 2	68	50	26.50	7.61	0.80	3.41	

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
4	Former EL student - monitoring year 3	14	50	35.43	9.64	0.90	3.03
	Former EL student - monitoring year 4	2	50				
	LEP: All Other Students	24,712	50	21.24	9.45	0.88	3.29
	Students with an IEP	5,104	50	13.90	7.17	0.83	2.97
	IEP: All Other Students	20,858	50	22.73	9.15	0.87	3.32
	Economically Disadvantaged Students	12,448	50	17.80	8.40	0.86	3.17
	SES: All Other Students	13,514	50	23.94	9.44	0.87	3.34
	Migrant Students	24	50	17.25	9.58	0.89	3.24
	Migrant: All Other Students	25,938	50	21.00	9.47	0.88	3.29
	Students receiving Title 1 ELA Services	2,782	50	16.78	7.60	0.83	3.13
	Title 1: All Other Students	23,180	50	21.50	9.55	0.88	3.30
	Students receiving Title 1 Math Services	1,278	50	16.08	7.35	0.82	3.11
	Title 1: All Other Students	24,684	50	21.25	9.50	0.88	3.29
	Plan 504	1,082	50	21.90	9.25	0.87	3.29
	Plan 504: All Other Students	24,880	50	20.95	9.48	0.88	3.29
	All Students	26,146	51	21.25	9.41	0.88	3.24
	Male	13,530	51	21.22	9.70	0.89	3.23
	Female	12,614	51	21.27	9.09	0.87	3.24
	Gender Not Reported	2	51				
	5	Hispanic or Latino	612	51	18.92	8.90	0.87
American Indian or Alaskan Native		238	51	17.85	8.08	0.85	3.11
Asian		364	51	26.79	11.36	0.92	3.31
Black or African American		950	51	15.04	7.04	0.82	2.99
Native Hawaiian or Pacific Islander		24	51	21.42	9.28	0.87	3.36
White (non-Hispanic)		23,154	51	21.54	9.37	0.88	3.24
Two or More Races (non-Hispanic)		802	51	20.38	9.07	0.87	3.23
Race not reported		2	51				
Currently receiving EL services		794	51	12.91	5.40	0.72	2.86
Former EL student - monitoring year 1		322	51	22.48	8.17	0.84	3.26
Former EL student - monitoring year 2		76	51	23.68	6.80	0.76	3.35
Former EL student - monitoring year 3		26	51	30.46	7.67	0.85	2.98
Former EL student - monitoring year 4		8	51				
LEP: All Other Students		24,920	51	21.47	9.40	0.88	3.24
Students with an IEP		5,144	51	13.88	6.64	0.80	2.98
IEP: All Other Students		21,002	51	23.05	9.11	0.87	3.26
Economically Disadvantaged Students		12,322	51	17.99	8.10	0.85	3.15
SES: All Other Students		13,824	51	24.15	9.55	0.88	3.27
Migrant Students		22	51	20.73	11.19	0.91	3.28
Migrant: All Other Students		26,124	51	21.25	9.41	0.88	3.24
Students receiving Title 1 ELA Services	2,650	51	17.48	7.27	0.81	3.14	
Title 1: All Other Students	23,496	51	21.67	9.53	0.88	3.24	
Students receiving Title 1 Math Services	1,206	51	16.92	7.06	0.80	3.13	
Title 1: All Other Students	24,940	51	21.46	9.46	0.88	3.24	
Plan 504	1,194	51	20.45	8.68	0.86	3.20	
Plan 504: All Other Students	24,952	51	21.28	9.44	0.88	3.24	

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
6	All Students	26,640	54	21.26	9.26	0.87	3.28
	Male	13,570	54	21.09	9.31	0.88	3.24
	Female	13,064	54	21.44	9.20	0.87	3.31
	Gender Not Reported	6	54				
	Hispanic or Latino	688	54	18.45	8.52	0.86	3.18
	American Indian or Alaskan Native	226	54	17.56	7.39	0.82	3.11
	Asian	386	54	24.34	10.96	0.91	3.35
	Black or African American	1,036	54	15.17	7.74	0.85	3.04
	Native Hawaiian or Pacific Islander	30	54	17.93	7.54	0.82	3.19
	White (non-Hispanic)	23,468	54	21.63	9.19	0.87	3.29
	Two or More Races (non-Hispanic)	800	54	20.53	9.53	0.88	3.26
	Race not reported	6	54				
	Currently receiving EL services	696	54	11.51	4.95	0.69	2.77
	Former EL student - monitoring year 1	226	54	18.07	6.04	0.73	3.13
	Former EL student - monitoring year 2	148	54	21.38	8.14	0.84	3.28
	Former EL student - monitoring year 3	146	54	23.48	8.31	0.84	3.29
	Former EL student - monitoring year 4	18	54	27.89	8.37	0.84	3.35
	LEP: All Other Students	25,406	54	21.54	9.23	0.87	3.29
	Students with an IEP	5,070	54	13.74	6.46	0.79	2.92
	IEP: All Other Students	21,570	54	23.03	8.92	0.86	3.32
	Economically Disadvantaged Students	12,292	54	18.26	8.14	0.85	3.16
	SES: All Other Students	14,348	54	23.83	9.38	0.87	3.35
	Migrant Students	18	54	13.00	4.42	0.63	2.70
	Migrant: All Other Students	26,622	54	21.27	9.26	0.87	3.28
	Students receiving Title 1 ELA Services	1,920	54	17.39	6.94	0.80	3.11
	Title 1: All Other Students	24,720	54	21.56	9.35	0.88	3.29
	Students receiving Title 1 Math Services	816	54	17.21	6.85	0.80	3.10
	Title 1: All Other Students	25,824	54	21.39	9.29	0.88	3.28
	Plan 504	1,336	54	21.00	8.82	0.86	3.25
	Plan 504: All Other Students	25,304	54	21.27	9.28	0.88	3.28
7	All Students	26,126	54	21.56	10.28	0.89	3.36
	Male	13,346	54	21.60	10.57	0.90	3.33
	Female	12,776	54	21.51	9.96	0.88	3.38
	Gender Not Reported	4	54				
	Hispanic or Latino	624	54	19.15	9.23	0.87	3.37
	American Indian or Alaskan Native	166	54	17.04	7.46	0.81	3.25
	Asian	420	54	25.26	10.70	0.90	3.40
	Black or African American	882	54	14.15	7.61	0.84	3.08
	Native Hawaiian or Pacific Islander	18	54	24.56	14.42	0.95	3.20
	White (non-Hispanic)	23,358	54	21.87	10.25	0.89	3.36
	Two or More Races (non-Hispanic)	654	54	21.29	10.87	0.91	3.34
	Race not reported	4	54				
	Currently receiving EL services	634	54	11.62	5.67	0.75	2.84
	Former EL student - monitoring year 1	48	54	17.46	7.61	0.82	3.21
	Former EL student - monitoring year 2	172	54	16.66	6.52	0.75	3.28
	Former EL student - monitoring year 3	78	54	23.33	10.55	0.90	3.29
	Former EL student - monitoring year 4	114	54	25.86	10.07	0.89	3.39

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error	
			Maximum	Mean	Standard Deviation			
7	LEP: All Other Students	25,080	54	21.82	10.25	0.89	3.36	
	Students with an IEP	4,902	54	12.92	6.66	0.80	3.00	
	IEP: All Other Students	21,224	54	23.55	9.93	0.88	3.38	
	Economically Disadvantaged Students	11,642	54	17.71	8.79	0.86	3.28	
	SES: All Other Students	14,484	54	24.65	10.34	0.89	3.37	
	Migrant Students	14	54	12.00	8.91	0.90	2.88	
	Migrant: All Other Students	26,112	54	21.56	10.27	0.89	3.36	
	Students receiving Title 1 ELA Services	1,442	54	16.50	7.84	0.83	3.24	
	Title 1: All Other Students	24,684	54	21.85	10.32	0.89	3.36	
	Students receiving Title 1 Math Services	396	54	17.31	8.35	0.85	3.27	
	Title 1: All Other Students	25,730	54	21.62	10.29	0.89	3.36	
	Plan 504	1,536	54	21.27	10.03	0.89	3.36	
	Plan 504: All Other Students	24,590	54	21.57	10.29	0.89	3.36	
	8	All Students	26,482	55	20.69	8.33	0.86	3.11
		Male	13,636	55	20.29	8.54	0.87	3.09
Female		12,840	55	21.11	8.09	0.85	3.13	
Gender Not Reported		6	55					
Hispanic or Latino		590	55	18.91	8.26	0.86	3.09	
American Indian or Alaskan Native		234	55	17.15	7.27	0.83	3.03	
Asian		408	55	24.72	9.69	0.89	3.23	
Black or African American		920	55	15.77	6.60	0.80	2.98	
Native Hawaiian or Pacific Islander		22	55	23.27	7.61	0.83	3.17	
White (non-Hispanic)		23,734	55	20.90	8.30	0.86	3.11	
Two or More Races (non-Hispanic)		568	55	20.12	8.21	0.86	3.07	
Race not reported		6	55					
Currently receiving EL services		644	55	13.15	5.03	0.67	2.88	
Former EL student - monitoring year 1		94	55	19.15	5.45	0.69	3.02	
Former EL student - monitoring year 2		94	55	18.15	6.85	0.80	3.08	
Former EL student - monitoring year 3		64	55	20.53	6.77	0.80	3.05	
Former EL student - monitoring year 4		82	55	21.54	6.71	0.79	3.05	
LEP: All Other Students		25,504	55	20.89	8.33	0.86	3.11	
Students with an IEP		4,638	55	13.88	5.36	0.71	2.91	
IEP: All Other Students		21,844	55	22.13	8.13	0.85	3.13	
Economically Disadvantaged Students		11,428	55	17.65	6.90	0.81	3.03	
SES: All Other Students	15,054	55	22.99	8.59	0.87	3.15		
Migrant Students	16	55	14.25	4.49	0.61	2.80		
Migrant: All Other Students	26,466	55	20.69	8.33	0.86	3.11		
Students receiving Title 1 ELA Services	1,532	55	16.72	5.68	0.72	2.99		
Title 1: All Other Students	24,950	55	20.93	8.41	0.86	3.12		
Students receiving Title 1 Math Services	342	55	17.56	5.69	0.72	3.00		
Title 1: All Other Students	26,140	55	20.73	8.36	0.86	3.11		
Plan 504	1,774	55	20.07	7.61	0.84	3.06		
Plan 504: All Other Students	24,708	55	20.73	8.38	0.86	3.11		

Table P-2. 2018–19 eMPowerME: Subgroup Reliabilities

ELA

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	All Students	24,788	61	31.89	12.30	0.91	3.62
	Male	12,826	61	30.33	12.11	0.91	3.61
	Female	11,958	61	33.55	12.28	0.91	3.62
	Gender Not Reported	4	61				
	Hispanic or Latino	616	61	31.45	11.93	0.91	3.63
	American Indian or Alaskan Native	202	61	28.81	11.37	0.90	3.67
	Asian	308	61	35.06	11.61	0.90	3.60
	Black or African American	926	61	25.77	11.95	0.91	3.64
	Native Hawaiian or Pacific Islander	36	61	32.44	11.90	0.91	3.66
	White (non-Hispanic)	21,928	61	32.11	12.25	0.91	3.62
	Two or More Races (non-Hispanic)	768	61	32.62	12.64	0.92	3.59
	Race not reported	4	61				
	Currently receiving EL services	920	61	23.41	10.55	0.88	3.64
	Former EL student - monitoring year 1	70	61	38.66	9.30	0.85	3.54
	Former EL student - monitoring year 2	54	61	41.70	8.62	0.82	3.69
	Former EL student - monitoring year 3	0	61				
	Former EL student - monitoring year 4	0	61				
	EL: All Other Students	23,744	61	32.17	12.25	0.91	3.62
	Students with an IEP	4,824	61	22.33	10.92	0.89	3.55
	IEP: All Other Students	19,964	61	34.19	11.47	0.90	3.62
	Economically Disadvantaged Students	11,744	61	28.16	11.78	0.90	3.64
	SES: All Other Students	13,044	61	35.24	11.78	0.91	3.58
	Migrant Students	20	61	26.20	12.33	0.92	3.55
	Migrant: All Other Students	24,768	61	31.89	12.30	0.91	3.62
	Students receiving Title 1 ELA Services	2,896	61	25.56	10.79	0.89	3.64
	Title 1: All Other Students	21,892	61	32.72	12.24	0.91	3.61
	Students receiving Title 1 Math Services	1,326	61	26.25	10.77	0.88	3.65
	Title 1: All Other Students	23,462	61	32.20	12.30	0.91	3.61
	Plan 504	870	61	32.03	11.86	0.91	3.62
	Plan 504: All Other Students	23,918	61	31.88	12.31	0.91	3.62
	All Students	25,866	61	32.56	11.87	0.90	3.70
	Male	13,196	61	31.11	11.86	0.90	3.69
Female	12,664	61	34.07	11.70	0.90	3.70	
Gender Not Reported	6	61					
Hispanic or Latino	592	61	30.12	12.29	0.91	3.70	
American Indian or Alaskan Native	254	61	28.82	11.71	0.90	3.65	
Asian	328	61	36.23	12.18	0.91	3.73	
Black or African American	1,004	61	26.11	12.15	0.91	3.65	
Native Hawaiian or Pacific Islander	40	61	33.15	12.19	0.91	3.64	
White (non-Hispanic)	22,836	61	32.92	11.76	0.90	3.70	
Two or More Races (non-Hispanic)	806	61	31.84	11.48	0.90	3.72	
Race not reported	6	61					
Currently receiving EL services	944	61	22.79	10.37	0.88	3.60	
Former EL student - monitoring year 1	126	61	38.90	7.48	0.77	3.62	
Former EL student - monitoring year 2	68	61	39.85	8.52	0.82	3.61	
Former EL student - monitoring year 3	14	61	49.43	7.29	0.79	3.31	

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
4	Former EL student - monitoring year 4	2	61				
	EL: All Other Students	24,712	61	32.87	11.78	0.90	3.70
	Students with an IEP	5,102	61	22.01	10.24	0.88	3.58
	IEP: All Other Students	20,764	61	35.15	10.76	0.88	3.70
	Economically Disadvantaged Students	12,378	61	28.94	11.53	0.90	3.70
	SES: All Other Students	13,488	61	35.88	11.19	0.89	3.68
	Migrant Students	22	61	29.55	13.89	0.93	3.64
	Migrant: All Other Students	25,844	61	32.56	11.87	0.90	3.70
	Students receiving Title 1 ELA Services	2,782	61	26.63	10.35	0.87	3.72
	Title 1: All Other Students	23,084	61	33.27	11.84	0.90	3.69
	Students receiving Title 1 Math Services	1,280	61	27.40	10.06	0.86	3.74
	Title 1: All Other Students	24,586	61	32.83	11.90	0.90	3.69
	Plan 504	1,086	61	33.22	11.01	0.89	3.72
	Plan 504: All Other Students	24,780	61	32.53	11.91	0.90	3.70
	All Students	26,076	61	31.97	11.39	0.89	3.71
	Male	13,484	61	30.25	11.21	0.89	3.68
	Female	12,590	61	33.81	11.31	0.89	3.73
	Gender Not Reported	2	61				
	Hispanic or Latino	608	61	29.68	11.37	0.89	3.74
	American Indian or Alaskan Native	238	61	27.69	11.68	0.90	3.66
	Asian	352	61	34.74	12.06	0.90	3.77
Black or African American	896	61	24.40	10.87	0.88	3.72	
Native Hawaiian or Pacific Islander	24	61	33.58	9.91	0.86	3.70	
White (non-Hispanic)	23,152	61	32.32	11.31	0.89	3.71	
Two or More Races (non-Hispanic)	804	61	31.97	10.68	0.88	3.74	
Race not reported	2	61					
Currently receiving EL services	720	61	19.10	7.73	0.78	3.60	
Former EL student - monitoring year 1	322	61	33.21	8.54	0.80	3.84	
Former EL student - monitoring year 2	76	61	36.26	7.00	0.72	3.69	
Former EL student - monitoring year 3	26	61	44.00	4.72	0.49	3.38	
Former EL student - monitoring year 4	8	61					
EL: All Other Students	24,924	61	32.29	11.30	0.89	3.71	
Students with an IEP	5,146	61	21.13	9.14	0.85	3.58	
IEP: All Other Students	20,930	61	34.63	10.26	0.87	3.72	
Economically Disadvantaged Students	12,276	61	28.22	10.86	0.88	3.72	
SES: All Other Students	13,800	61	35.31	10.80	0.88	3.69	
Migrant Students	22	61	31.18	14.19	0.93	3.68	
Migrant: All Other Students	26,054	61	31.97	11.39	0.89	3.71	
Students receiving Title 1 ELA Services	2,652	61	27.36	10.01	0.86	3.74	
Title 1: All Other Students	23,424	61	32.49	11.42	0.89	3.71	
Students receiving Title 1 Math Services	1,206	61	27.63	9.68	0.85	3.77	
Title 1: All Other Students	24,870	61	32.18	11.43	0.89	3.71	
Plan 504	1,196	61	30.91	10.23	0.87	3.70	
Plan 504: All Other Students	24,880	61	32.02	11.45	0.89	3.71	
All Students	26,590	63	35.11	11.85	0.89	3.85	
Male	13,562	63	33.40	11.91	0.90	3.79	
Female	13,024	63	36.89	11.51	0.89	3.88	
Gender Not Reported	4	63					

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
6	Hispanic or Latino	682	63	32.15	11.75	0.89	3.91
	American Indian or Alaskan Native	226	63	30.17	11.34	0.88	3.86
	Asian	382	63	37.36	12.82	0.91	3.88
	Black or African American	990	63	26.90	11.29	0.89	3.81
	Native Hawaiian or Pacific Islander	30	63	31.33	12.13	0.91	3.66
	White (non-Hispanic)	23,474	63	35.59	11.68	0.89	3.85
	Two or More Races (non-Hispanic)	802	63	34.26	12.59	0.91	3.86
	Race not reported	4	63				
	Currently receiving EL services	636	63	19.65	8.02	0.80	3.63
	Former EL student - monitoring year 1	226	63	31.73	8.23	0.77	3.92
	Former EL student - monitoring year 2	148	63	35.64	8.86	0.80	3.97
	Former EL student - monitoring year 3	146	63	40.04	8.48	0.79	3.88
	Former EL student - monitoring year 4	18	63	47.44	8.10	0.81	3.49
	EL: All Other Students	25,416	63	35.48	11.72	0.89	3.85
	Students with an IEP	5,084	63	23.66	10.11	0.86	3.72
	IEP: All Other Students	21,506	63	37.82	10.54	0.87	3.84
	Economically Disadvantaged Students	12,248	63	31.15	11.55	0.89	3.86
	SES: All Other Students	14,342	63	38.49	11.02	0.88	3.82
	Migrant Students	16	63	27.00	7.93	0.80	3.59
	Migrant: All Other Students	26,574	63	35.11	11.85	0.89	3.85
	Students receiving Title 1 ELA Services	1,924	63	30.07	9.99	0.85	3.91
	Title 1: All Other Students	24,666	63	35.50	11.89	0.90	3.85
	Students receiving Title 1 Math Services	820	63	30.71	10.16	0.85	3.88
	Title 1: All Other Students	25,770	63	35.25	11.87	0.89	3.85
	Plan 504	1,334	63	35.32	11.16	0.88	3.81
	Plan 504: All Other Students	25,256	63	35.10	11.88	0.89	3.86
	All Students	26,086	63	34.73	12.61	0.91	3.87
	Male	13,338	63	32.31	12.71	0.91	3.80
	Female	12,744	63	37.26	11.99	0.90	3.89
	Gender Not Reported	4	63				
Hispanic or Latino	620	63	32.62	12.68	0.90	3.94	
American Indian or Alaskan Native	166	63	29.28	12.30	0.91	3.78	
Asian	418	63	38.24	12.21	0.90	3.90	
Black or African American	834	63	26.45	11.74	0.89	3.81	
Native Hawaiian or Pacific Islander	18	63	36.56	12.15	0.89	3.94	
White (non-Hispanic)	23,364	63	35.07	12.51	0.90	3.87	
Two or More Races (non-Hispanic)	662	63	34.29	13.06	0.91	3.86	
Race not reported	4	63					
Currently receiving EL services	584	63	19.42	9.20	0.84	3.67	
Former EL student - monitoring year 1	46	63	33.61	8.96	0.82	3.85	
Former EL student - monitoring year 2	170	63	31.21	9.17	0.81	3.95	
Former EL student - monitoring year 3	78	63	39.15	9.41	0.83	3.87	
Former EL student - monitoring year 4	114	63	40.86	9.76	0.85	3.82	
EL: All Other Students	25,094	63	35.07	12.49	0.90	3.87	
Students with an IEP	4,898	63	21.91	10.15	0.87	3.70	
IEP: All Other Students	21,188	63	37.70	11.19	0.88	3.86	
Economically Disadvantaged Students	11,604	63	30.06	12.06	0.90	3.86	
SES: All Other Students	14,482	63	38.48	11.76	0.89	3.85	

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
7	Migrant Students	14	63	21.43	11.43	0.91	3.50
	Migrant: All Other Students	26,072	63	34.74	12.61	0.91	3.87
	Students receiving Title 1 ELA Services	1,448	63	28.84	11.64	0.89	3.86
	Title 1: All Other Students	24,638	63	35.08	12.58	0.91	3.87
	Students receiving Title 1 Math Services	396	63	30.48	12.26	0.90	3.90
	Title 1: All Other Students	25,690	63	34.80	12.60	0.91	3.87
	Plan 504	1,538	63	33.83	11.95	0.90	3.84
	Plan 504: All Other Students	24,548	63	34.79	12.65	0.91	3.87
	All Students	26,456	63	34.92	12.64	0.90	3.97
	Male	13,614	63	32.22	12.60	0.90	3.90
	Female	12,838	63	37.78	12.03	0.89	3.99
	Gender Not Reported	4	63				
	Hispanic or Latino	578	63	33.27	12.74	0.90	4.02
	American Indian or Alaskan Native	230	63	29.46	11.98	0.89	3.92
Asian	396	63	39.98	12.58	0.90	4.02	
Black or African American	870	63	28.46	12.31	0.90	3.93	
Native Hawaiian or Pacific Islander	22	63	40.36	10.36	0.88	3.64	
White (non-Hispanic)	23,784	63	35.17	12.56	0.90	3.97	
Two or More Races (non-Hispanic)	572	63	34.36	12.56	0.90	3.95	
Race not reported	4	63					
8	Currently receiving EL services	580	63	21.55	9.45	0.84	3.78
	Former EL student - monitoring year 1	94	63	33.53	9.08	0.81	3.95
	Former EL student - monitoring year 2	94	63	33.85	10.96	0.86	4.04
	Former EL student - monitoring year 3	64	63	39.00	9.42	0.83	3.94
	Former EL student - monitoring year 4	82	63	38.83	9.45	0.82	4.04
	EL: All Other Students	25,542	63	35.21	12.56	0.90	3.97
	Students with an IEP	4,654	63	22.50	9.97	0.86	3.72
	IEP: All Other Students	21,802	63	37.57	11.51	0.88	3.97
	Economically Disadvantaged Students	11,398	63	30.41	12.06	0.89	3.94
	SES: All Other Students	15,058	63	38.33	11.97	0.89	3.96
	Migrant Students	16	63	23.25	12.07	0.90	3.80
	Migrant: All Other Students	26,440	63	34.92	12.63	0.90	3.97
	Students receiving Title 1 ELA Services	1,538	63	28.92	11.05	0.87	3.96
	Title 1: All Other Students	24,918	63	35.29	12.63	0.90	3.97
Students receiving Title 1 Math Services	340	63	30.45	10.76	0.86	4.01	
Title 1: All Other Students	26,116	63	34.97	12.65	0.90	3.97	
Plan 504	1,774	63	34.33	11.70	0.89	3.96	
Plan 504: All Other Students	24,682	63	34.96	12.70	0.90	3.97	

**Table P-3. 2018–19 eMPowerME: Reliabilities
by Reporting Category—Mathematics**

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	Geometry, Measurement & Data	13	14	6.92	2.95	0.66	1.72
	Mathematical Processes	34	36	17.09	6.90	0.86	2.61
	Numbers & Operations - Base 10 & Fractions	12	15	6.28	3.03	0.71	1.64
	Numbers, Operations & Algebraic Thinking	24	31	14.00	6.29	0.84	2.55
	Operations & Algebraic Thinking	12	16	7.72	3.78	0.74	1.94
	Problem-Solving & Modeling	15	15	8.44	3.38	0.75	1.68
	Reasoning, Patterns & Structure	19	21	8.66	4.01	0.75	2.00
4	Geometry, Measurement & Data	13	16	7.20	3.26	0.63	1.99
	Mathematical Processes	35	37	16.21	6.68	0.84	2.65
	Numbers & Operations - Base 10 & Fractions	13	16	6.71	3.40	0.68	1.91
	Numbers, Operations & Algebraic Thinking	23	28	12.45	5.56	0.81	2.45
	Operations & Algebraic Thinking	10	12	5.74	2.65	0.66	1.55
	Problem-Solving & Modeling	16	16	7.43	3.08	0.66	1.79
	Reasoning, Patterns & Structure	19	21	8.78	4.13	0.78	1.94
5	Geometry, Measurement & Data	14	18	7.05	3.33	0.68	1.89
	Mathematical Processes	35	37	16.52	6.79	0.85	2.66
	Numbers & Operations - Base 10 & Fractions	14	14	6.67	3.07	0.72	1.63
	Numbers, Operations & Algebraic Thinking	23	27	13.03	5.42	0.80	2.44
	Operations & Algebraic Thinking	9	13	6.36	2.89	0.61	1.81
	Problem-Solving & Modeling	13	14	6.14	2.78	0.68	1.57
	Reasoning, Patterns & Structure	22	23	10.38	4.49	0.77	2.15
6	Expressions & Equations	9	12	5.06	2.49	0.55	1.68
	Geometry	7	8	2.49	1.81	0.57	1.19
	Geometry, Statistics & Probability	14	16	5.37	2.87	0.65	1.70
	Mathematical Processes	40	42	18.48	7.08	0.84	2.82
	Number System	9	12	4.89	2.50	0.57	1.64
	Numbers, Operations & Algebraic Thinking	26	32	14.73	5.91	0.80	2.63
	Problem-Solving & Modeling	20	21	9.12	3.78	0.73	1.96
	Ratio & Proportional Relationship	8	8	4.77	1.89	0.58	1.22
	Reasoning, Patterns & Structure	20	21	9.36	3.82	0.72	2.03
	Statistics & Probability	7	8	2.88	1.59	0.43	1.20
7	Expressions & Equations	9	12	4.99	2.60	0.59	1.66
	Geometry	7	8	2.58	1.81	0.44	1.36
	Geometry, Statistics & Probability	17	22	8.70	4.34	0.72	2.30
	Mathematical Processes	40	42	17.07	7.42	0.86	2.79
	Number System	6	6	2.58	1.60	0.58	1.04
	Numbers, Operations & Algebraic Thinking	23	26	11.57	5.32	0.81	2.30
	Problem-Solving & Modeling	19	20	8.06	3.68	0.72	1.96
	Ratio & Proportional Relationship	8	8	4.00	1.95	0.60	1.23
	Reasoning, Patterns & Structure	21	22	9.01	4.23	0.78	1.98
	Statistics & Probability	10	14	6.12	3.03	0.63	1.85
8	Expressions & Equations	10	13	4.36	2.54	0.63	1.55
	Functions	9	10	5.21	2.07	0.55	1.39
	Geometry	9	10	4.53	1.97	0.51	1.38

continued

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
8	Geometry, Statistics & Probability	18	22	8.63	3.62	0.70	1.98
	Mathematical Processes	41	43	17.87	6.57	0.82	2.81
	Number System	4	4	1.43	1.07	0.28	0.91
	Numbers, Operations & Algebraic Thinking	23	27	11.01	4.61	0.75	2.28
	Problem-Solving & Modeling	20	21	9.21	3.34	0.65	1.98
	Reasoning, Patterns & Structure	21	22	8.66	3.80	0.72	2.00
	Statistics & Probability	9	12	4.10	2.15	0.56	1.43

**Table P-4. 2018–19 eMPowerME: Reliabilities
by Reporting Category—ELA**

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	Analysis & Interpretation of Informational Text	6	7.00	3.07	1.59	0.46	1.17
	Analysis & Interpretation of Literary Text	8	14.00	5.78	2.95	0.75	1.47
	Command of Conventions	8	14.00	3.79	2.33	0.75	1.16
	Comprehension of Informational Text	4	5.00	2.93	1.47	0.47	1.07
	Comprehension of Literary Text	8	9.00	5.42	2.54	0.73	1.32
	Direct Writing/Essay	8	14.00	3.79	2.33	0.75	1.16
	English language and conventions	8	8.00	5.58	2.08	0.72	1.10
	Language Use & Vocabulary	8	14.00	3.79	2.33	0.75	1.16
	Reading	26	35.00	17.19	7.24	0.88	2.56
	Revising Expository/Informational Text	7	8.00	3.90	2.02	0.54	1.37
	Revising Narrative Text	8	10.00	4.51	2.26	0.50	1.60
Writing & Language	23	26.00	13.99	5.33	0.80	2.38	
4	Analysis & Interpretation of Informational Text	3	5.00	1.96	1.08	0.34	0.88
	Analysis & Interpretation of Literary Text	10	13.00	5.87	3.03	0.77	1.45
	Command of Conventions	10	13.00	4.39	2.86	0.77	1.37
	Comprehension of Informational Text	6	8.00	5.00	2.01	0.60	1.27
	Comprehension of Literary Text	7	9.00	4.86	2.35	0.59	1.50
	Direct Writing/Essay	10	13.00	4.39	2.86	0.77	1.37
	English language and conventions	8	8.00	5.69	1.89	0.66	1.11
	Language Use & Vocabulary	10	13.00	4.39	2.86	0.77	1.37
	Reading	26	35.00	17.69	7.13	0.87	2.60
	Revising Expository/Informational Text	7	8.00	4.44	2.05	0.53	1.40
	Revising Narrative Text	8	10.00	4.11	2.27	0.48	1.64
Writing & Language	23	26.00	14.25	5.08	0.77	2.45	
5	Analysis & Interpretation of Informational Text	6	9.00	3.88	1.94	0.47	1.42
	Analysis & Interpretation of Literary Text	8	12.00	5.43	2.63	0.68	1.49
	Command of Conventions	8	12.00	5.79	2.88	0.68	1.63
	Comprehension of Informational Text	3	4.00	2.48	0.96	0.44	0.72
	Comprehension of Literary Text	9	10.00	5.27	2.38	0.59	1.52
	Direct Writing/Essay	8	12.00	5.79	2.88	0.68	1.63
	English language and conventions	8	8.00	5.85	1.95	0.68	1.10
	Language Use & Vocabulary	8	12.00	5.79	2.88	0.68	1.63

continued

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
5	Reading	26	35.00	17.06	6.55	0.84	2.65
	Revising Expository/Informational Text	8	10.00	3.81	2.19	0.52	1.52
	Revising Narrative Text	7	8.00	4.34	2.02	0.51	1.42
	Writing & Language	23	26.00	13.99	5.04	0.78	2.36
6	Analysis & Interpretation of Informational Text	9	14.00	5.87	2.74	0.63	1.66
	Analysis & Interpretation of Literary Text	6	11.00	5.35	2.22	0.61	1.39
	Command of Conventions	6	11.00	6.99	3.10	0.61	1.94
	Comprehension of Informational Text	8	9.00	4.59	2.23	0.55	1.50
	Comprehension of Literary Text	3	3.00	2.25	0.86	0.38	0.68
	Direct Writing/Essay	6	11.00	6.99	3.10	0.61	1.94
	English language and conventions	8	8.00	5.40	1.75	0.57	1.15
	Language Use & Vocabulary	6	11.00	6.99	3.10	0.61	1.94
	Reading	26	37.00	18.07	6.61	0.83	2.74
	Revising Argument Text	7	8.00	3.96	2.01	0.54	1.36
	Revising Expository/Informational Text	8	10.00	6.30	2.51	0.61	1.56
	Writing & Language	23	26.00	15.67	5.26	0.79	2.38
7	Analysis & Interpretation of Informational Text	8	12.00	6.51	2.79	0.65	1.64
	Analysis & Interpretation of Literary Text	6	10.00	3.78	2.07	0.58	1.35
	Command of Conventions	6	10.00	6.52	3.20	0.58	2.08
	Comprehension of Informational Text	9	11.00	6.90	2.55	0.68	1.44
	Comprehension of Literary Text	3	4.00	1.69	1.18	0.17	1.07
	Direct Writing/Essay	6	10.00	6.52	3.20	0.58	2.08
	English language and conventions	8	8.00	4.92	1.92	0.59	1.23
	Language Use & Vocabulary	6	10.00	6.52	3.20	0.58	2.08
	Reading	26	37.00	18.87	7.04	0.84	2.79
	Revising Argument Text	8	10.00	5.39	2.53	0.63	1.54
	Revising Expository/Informational Text	7	8.00	3.95	2.18	0.61	1.37
	Writing & Language	23	26.00	14.26	5.69	0.82	2.40
8	Analysis & Interpretation of Informational Text	11	18.00	8.17	4.00	0.74	2.04
	Analysis & Interpretation of Literary Text	6	9.00	3.89	2.03	0.56	1.35
	Command of Conventions	6	9.00	7.02	3.29	0.56	2.19
	Comprehension of Informational Text	5	5.00	3.17	1.38	0.52	0.95
	Comprehension of Literary Text	4	5.00	2.98	1.52	0.42	1.16
	Direct Writing/Essay	6	9.00	7.02	3.29	0.56	2.19
	English language and conventions	8	8.00	5.87	1.79	0.62	1.10
	Language Use & Vocabulary	6	9.00	7.02	3.29	0.56	2.19
	Reading	26	37.00	18.21	7.52	0.85	2.87
	Revising Argument Text	8	10.00	5.14	2.49	0.57	1.63
	Revising Expository/Informational Text	7	8.00	4.23	1.90	0.51	1.34
	Writing & Language	23	26.00	15.24	5.17	0.79	2.39

APPENDIX Q—INTERRATER AGREEMENT

**Table Q-1. 2018–19 eMPowerME: Item-Level Interrater Agreement Statistics—
Mathematics**

Grade	Item	Number of		Percent		Correlation	Percent of Third Scores
		Score Categories	Responses Scored Twice	Exact	Adjacent		
3	411111A	3	2,451	92.29	7.63	0.93	0.08
	411111B	2	2,451	84.86	15.14	0.69	0.08
	464499A	5	2,479	84.11	13.80	0.86	2.18
	464499B	3	2,479	92.98	6.86	0.85	2.18
	532101A	5	2,552	76.18	20.34	0.90	5.05
	532101B	3	2,552	79.58	19.36	0.78	5.05
	557268A	3	2,468	93.92	5.88	0.94	0.20
	557268B	2	2,468	92.79	7.21	0.72	0.20
4	126345A	3	2,609	93.29	6.48	0.94	0.23
	126345B	2	2,609	96.24	3.76	0.91	0.23
	411997A	3	2,588	83.00	16.62	0.81	0.39
	411997B	2	2,588	86.55	13.45	0.69	0.39
	447971A	5	2,635	89.53	9.34	0.95	1.33
	447971B	3	2,635	91.04	8.77	0.81	1.33
	448543A	5	2,576	88.43	11.02	0.97	0.85
	448543B	3	2,576	93.48	6.21	0.93	0.85
5	415228A	3	2,572	84.37	15.55	0.84	0.08
	415228B	2	2,572	94.05	5.95	0.79	0.08
	415320A	5	2,555	91.19	8.38	0.96	0.43
	415320B	3	2,555	95.62	4.34	0.91	0.43
	532475A	3	2,587	97.87	2.13	0.97	0.00
	532475B	2	2,587	94.63	5.37	0.74	0.00
	532484A	5	2,626	87.55	11.01	0.95	4.04
	532484B	3	2,626	91.20	6.17	0.90	4.04
6	412531A	5	2,595	83.78	14.95	0.93	1.66
	412531B	3	2,595	89.94	9.63	0.82	1.66
	532604A	3	2,597	94.99	4.77	0.90	0.23
	532604B	2	2,597	97.54	2.46	0.67	0.23
	539624A	5	2,682	79.98	16.74	0.88	3.91
	539624B	3	2,682	87.51	11.74	0.89	3.91
	558418A	3	2,601	97.27	2.69	0.96	0.04
	558418B	2	2,601	91.93	8.07	0.71	0.04
7	406243A	3	2,567	94.47	4.75	0.95	0.78
	406243B	2	2,567	93.03	6.97	0.85	0.78
	412636A	3	2,517	95.99	3.73	0.97	0.28
	412636B	2	2,517	90.70	9.30	0.78	0.28
	446620A	5	2,706	77.24	20.44	0.90	2.55
	446620B	3	2,706	88.99	10.75	0.75	2.55
	532211A	5	2,535	85.72	13.65	0.94	1.54
	532211B	3	2,535	83.27	15.82	0.76	1.54
8	406526A	3	2,598	93.61	6.39	0.91	0.00
	406526B	2	2,598	90.38	9.62	0.63	0.00
	410287A	5	2,587	78.55	20.26	0.79	1.20
	410287B	3	2,587	94.47	5.53	0.89	1.20
	447438A	5	2,484	93.52	6.00	0.95	0.52
	447438B	3	2,484	97.26	2.66	0.89	0.52
	482018A	3	2,590	80.93	18.76	0.78	0.31
	482018B	2	2,590	94.98	5.02	0.81	0.31

**Table Q-2. 2018–19 eMPowerME: Item-Level Interrater Agreement Statistics—
ELA**

Grade	Item	Number of		Percent		Correlation	Percent of Third Scores
		Score Categories	Responses Scored Twice	Exact	Adjacent		
3	410572	4	2,317	77.26	21.80	0.72	0.95
	410580	4	2,234	70.19	28.42	0.62	1.25
	472096A	5	1,870	70.00	29.63	0.45	12.94
	472096B	5	1,870	61.07	37.86	0.51	12.94
	472096C	5	1,870	61.23	37.59	0.50	12.94
	472096D	5	1,870	60.21	38.34	0.51	12.94
	552261	3	2,278	74.50	25.24	0.62	0.26
	559851	3	2,331	79.67	20.29	0.72	0.04
4	476172	3	2,432	74.96	24.47	0.72	0.58
	531116A	5	1,454	60.11	39.20	0.57	11.97
	531116B	5	1,454	56.26	43.12	0.57	11.97
	531116C	5	1,454	55.02	43.47	0.53	11.97
	531116D	5	1,454	54.54	44.02	0.55	11.97
	552922	3	2,490	76.87	22.17	0.74	0.96
	552924	4	2,489	72.92	26.64	0.71	0.40
	552956	4	2,439	69.66	28.29	0.65	1.97
5	131484A	3	2,444	74.30	24.71	0.61	0.98
	472220A	5	1,920	67.86	31.46	0.60	11.77
	472220B	5	1,920	61.04	37.66	0.64	11.77
	472220C	5	1,920	61.46	37.24	0.66	11.77
	472220D	5	1,920	60.31	38.49	0.65	11.77
	552565	3	2,514	75.42	23.35	0.62	1.23
	552567	4	2,550	66.31	32.12	0.61	1.61
	560333	4	2,453	65.72	32.16	0.63	2.12
6	130184A	3	2,541	75.68	23.61	0.61	0.71
	472261A	5	2,319	65.85	33.20	0.64	14.70
	472261B	5	2,319	59.90	38.68	0.64	14.70
	472261C	5	2,319	58.78	39.76	0.67	14.70
	472261D	5	2,319	58.73	39.46	0.67	14.70
	553134	5	2,577	69.97	28.44	0.73	1.59
	560002	3	2,617	80.82	18.99	0.60	0.19
	560004	5	2,692	65.79	32.32	0.72	1.89
7	472511A	5	3,402	65.31	33.51	0.65	12.26
	472511B	5	3,402	59.20	38.27	0.70	12.26
	472511C	5	3,402	60.41	37.48	0.67	12.26
	472511D	5	3,402	60.32	37.68	0.66	12.26
	477778	3	2,469	77.93	22.03	0.61	0.04
	478259	5	2,434	56.45	39.56	0.78	3.99
	552843	3	2,449	71.05	28.05	0.65	0.90
	552846	5	2,437	64.22	33.32	0.75	2.46
8	420990	5	2,366	61.41	36.64	0.76	1.94
	531148A	5	2,444	61.46	36.29	0.58	20.38
	531148B	5	2,444	52.95	43.13	0.62	20.38
	531148C	5	2,444	53.36	42.59	0.63	20.38
	531148D	5	2,444	53.60	42.35	0.62	20.38
	553166	3	2,396	67.82	29.09	0.59	3.09
	560508	3	2,503	72.35	26.93	0.72	0.72
	560510	5	2,406	63.13	33.58	0.78	3.28

APPENDIX R—ACHIEVEMENT LEVEL SCORE DISTRIBUTIONS

Table R-1. 2018–19 eMPowerME: Achievement Level Distributions by Grade—Mathematics

Grade	Performance Level	Percent in Level	
		2018–19	2017–18
3	4	8.19	9.23
	3	34.93	36.35
	2	31.94	29.01
	1	24.95	25.41
4	4	9.98	10.97
	3	30.38	28.92
	2	38.09	36.33
	1	21.54	23.78
5	4	9.49	9.86
	3	23.22	23.53
	2	44.90	44.91
	1	22.39	21.70
6	4	8.46	9.67
	3	21.34	21.45
	2	35.60	36.87
	1	34.60	32.01
7	4	6.84	9.19
	3	27.18	26.14
	2	35.52	36.89
	1	30.46	27.77
8	4	11.06	10.99
	3	25.04	27.53
	2	34.43	32.74
	1	29.47	28.75

**Table R-2. 2018–19 eMPowerME: Achievement Level Distributions
by Grade—ELA**

Grade	Performance Level	Percent in Level	
		2018–19	2017–18
3	4	22.79	16.76
	3	27.91	29.44
	2	28.09	29.58
	1	21.22	24.22
4	4	23.24	19.59
	3	33.77	33.05
	2	24.22	23.83
	1	18.77	23.53
5	4	14.57	14.72
	3	38.41	38.85
	2	24.43	23.72
	1	22.59	22.72
6	4	18.67	13.58
	3	37.98	34.72
	2	31.06	33.48
	1	12.29	18.22
7	4	18.64	13.86
	3	40.51	35.68
	2	24.70	31.40
	1	16.16	19.05
8	4	14.84	12.58
	3	44.03	42.90
	2	28.46	31.02
	1	12.67	13.50

APPENDIX S—DECISION ACCURACY AND CONSISTENCY RESULTS

Table S-1. 2018–19 eMPowerME: Summary of Decision Accuracy (and Consistency) Results by Content Area and Grade—Overall and Conditional on Performance Level

Content Area	Grade	Overall	Kappa	Conditional on Level			
				Substantially Below Proficient	Partially Proficient	Proficient	Proficient with Distinction
Mathematics	3	0.74 (0.66)	0.51	0.84 (0.77)	0.76 (0.66)	0.67 (0.62)	1.00 (0.28)
	4	0.76 (0.67)	0.53	0.83 (0.74)	0.78 (0.70)	0.69 (0.61)	0.76 (0.58)
	5	0.73 (0.66)	0.51	0.83 (0.75)	0.84 (0.76)	0.54 (0.49)	1.00 (0.48)
	6	0.72 (0.64)	0.49	0.89 (0.83)	0.75 (0.64)	0.52 (0.46)	1.00 (0.31)
	7	0.72 (0.70)	0.57	0.89 (0.83)	0.77 (0.64)	0.56 (0.59)	1.00 (0.82)
	8	0.67 (0.60)	0.45	0.87 (0.80)	0.74 (0.61)	0.49 (0.46)	1.00 (0.43)
ELA	3	0.76 (0.67)	0.56	0.84 (0.76)	0.71 (0.61)	0.70 (0.60)	0.84 (0.76)
	4	0.77 (0.68)	0.57	0.83 (0.74)	0.69 (0.58)	0.74 (0.65)	0.86 (0.78)
	5	0.77 (0.68)	0.55	0.84 (0.75)	0.66 (0.55)	0.79 (0.72)	0.81 (0.68)
	6	0.78 (0.69)	0.56	0.81 (0.70)	0.77 (0.68)	0.76 (0.68)	0.82 (0.71)
	7	0.78 (0.69)	0.57	0.86 (0.77)	0.72 (0.61)	0.78 (0.71)	0.80 (0.70)
	8	0.80 (0.71)	0.58	0.82 (0.71)	0.77 (0.68)	0.81 (0.75)	0.80 (0.67)

Table S-2. 2018–19 eMPowerME: Summary of Decision Accuracy (and Consistency) Results by Content Area and Grade—Conditional on Cutpoint

Content Area	Grade	<i>Substantially Below Proficient / Partially Proficient</i>			<i>Partially Proficient / Proficient</i>			<i>Proficient / Proficient with Distinction</i>		
		Accuracy (consistency)	False		Accuracy (consistency)	False		Accuracy (consistency)	False	
			Positive	Negative		Positive	Negative		Positive	Negative
Mathematics	3	0.93 (0.89)	0.04	0.03	0.89 (0.85)	0.03	0.07	0.92 (0.90)	0.08	0.00
	4	0.93 (0.89)	0.04	0.04	0.90 (0.85)	0.04	0.06	0.94 (0.91)	0.05	0.02
	5	0.93 (0.90)	0.04	0.03	0.89 (0.85)	0.03	0.07	0.90 (0.90)	0.10	0.00
	6	0.92 (0.89)	0.04	0.04	0.89 (0.84)	0.04	0.08	0.92 (0.90)	0.08	0.00
	7	0.94 (0.91)	0.03	0.03	0.85 (0.80)	0.03	0.12	0.93 (0.98)	0.07	0.00
	8	0.93 (0.90)	0.04	0.04	0.85 (0.80)	0.03	0.12	0.89 (0.88)	0.11	0.00
ELA	3	0.93 (0.90)	0.03	0.03	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.04	0.04
	4	0.93 (0.91)	0.03	0.03	0.91 (0.87)	0.04	0.05	0.93 (0.90)	0.04	0.03
	5	0.93 (0.90)	0.04	0.04	0.90 (0.86)	0.05	0.05	0.94 (0.91)	0.03	0.03
	6	0.95 (0.93)	0.02	0.03	0.90 (0.86)	0.05	0.05	0.92 (0.89)	0.04	0.03
	7	0.95 (0.93)	0.02	0.03	0.91 (0.88)	0.04	0.04	0.92 (0.88)	0.04	0.04
	8	0.95 (0.93)	0.02	0.02	0.91 (0.87)	0.04	0.05	0.94 (0.91)	0.04	0.03

APPENDIX T—COMMITTEE MEMBERSHIP

Table T-1. 2018–19 eMPowerME: Technical Advisory Committee Members

Brian Gong	Executive Director of Center for Assessment, NCIEA
Nathan Dadey	Postdoctoral Fellow, NCIEA
Martha Thurlow	Director, National Center on Educational Outcomes
Betsy Webb	Superintendent, Bangor Public Schools
April Zenisky	Research Associate Professor, Department of Educational Policy, Research & Administration, University of Massachusetts Amherst