

eMPowerME Assessment ELA/Literacy & Mathematics 2017–18 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 2018. Third-year high school students were administered the SAT in April 2018.

eMPowerME is designed to be the measure of Maine’s academic content standards in mathematics and ELA/literacy, 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. They were developed to adhere to the Common Core State Standards (CCSS) for mathematics and ELA.

1.1 PURPOSE OF THE ASSESSMENT SYSTEM

The purpose of Maine’s Comprehensive Assessment System is to provide point-in-time information about the academic achievement and progress of Maine students. eMPowerME is one portion of this system, and provides information for mathematics and ELA/literacy. 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 this assessment and others 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 2018 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 2018 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 detailed description of the administration processes is found in Chapter 4 – Test Administration, and 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. 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 2018 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 2017–2018, the MEA was administered for the third time by Measured Progress 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.

The Maine Essay assessment, developed by Measured Progress specifically for Maine, contains commissioned passages and prompts that had been field-tested in spring 2017. One of these prompts was administered in each grade in spring 2018. The modes of writing and associated learning standards are as follows:

- Grade 3, Informational (W2)
- Grade 4, Informational (W2)
- Grade 5, Opinion (W1)
- Grade 6, Argument (W1)
- Grade 7, Informational (W2)
- Grade 8, Argument (W1)

In 2016–2017, a stand-alone field test of the essay was conducted to identify viable prompts for operational use for the next several years. Following benchmarking and review by Maine DOE, prompts for operational administration in 2017–18 were selected. In 2017–2018, the essay was administered operationally for the first time, within the same test window as mathematics, reading, writing and language.

Beginning this year, the eMPower ME program was enhanced by the addition of Maine-specific item-review committees. Since eMPower’s inception, new items have been reviewed by national item-review committees that have included representation from Maine. In June 2018, new committees comprised solely of Maine educators convened for a three-day meeting in Portland to review the current phase of new item development. This event provided the opportunity for 60 Maine educators to learn more about and become involved in the eMPower item development process. It also provided Measured Progress content developers with the insights of these experienced educators. Feedback collected after the meetings indicated that panelists thought the opportunity was valuable and worthwhile.

CHAPTER 3 TEST DESIGN AND DEVELOPMENT

3.1 TEST SPECIFICATIONS

3.1.1 Criterion-Referenced Test

Items on the eMPower 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 $1\frac{1}{2}$ to $2\frac{1}{2}$ 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.

Approximately 25% of the selected-response and 25% of the constructed-response items found on the spring 2018 eMPowerME operational tests will be released to the public in fall 2018. Additionally, all the essay prompts will be released. These items will be posted on a Website hosted by Measured Progress and linked from the Maine DOE Website. Student response data will also be part of the released item documents. Schools are encouraged to incorporate the use of released items in their instructional activities so that students will be familiar with the types of questions found on the eMPowerME tests.

3.1.3 Description of Test Design

The spring 2018 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 encountered a fraction of the matrix items. Matrix items are not distinguishable to 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 eMPower 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. 2017–18 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. 2017–18 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 2018 eMPowerME reading tests for grades 3–8. All students received 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. 2017–18 eMPowerME: Item Type and Number of Items—
Reading Grade 3**

<i>Common</i>			<i>Matrix</i>			<i>Total per Student</i>		
SR	EBSR	CR	SR	EBSR	CR	SR	EBSR	CR
18	3	4	50	10	10	23	4	5

Reading Grades 4–8

<i>Common</i>			<i>Matrix</i>			<i>Total per Student</i>		
SR	EBSR	CR	SR	EBSR	CR	SR	EBSR	CR
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. 2017–18 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>					
	3	4	5	6	7	8
Key Ideas and Details (reading literature)	34	40	26	19	8	19
Craft and Structure (reading literature)	11	6	28	11	8	19
Integration of Knowledge and Ideas (reading literature)	17	17	9	13	22	0
Key Ideas and Details (reading informational text)	11	17	14	30	22	24
Craft and Structure (reading informational text)	7	9	9	19	24	19
Integration of Knowledge and Ideas (reading informational text)	20	11	14	8	16	19

Table 3-5 shows the reporting categories for reading in the eMPower 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. 2017–18 eMPowerME: Distribution of Raw Score Points Across Reporting Categories by Grade—Reading Grades 3–8

<i>Reporting Category</i>	<i>Grade Tested</i>					
	3	4	5	6	7	8
Comprehension of Literary Text	9	8	8	3	3	5
Analysis & Interpretation of Literary Text	13	14	14	13	11	9
Comprehension of Informational Text	4	6	4	9	11	11
Analysis & Interpretation of Informational Text	9	7	9	12	12	12

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, and instead is comprised of 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. 2017–18 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Test by Grade—Reading Grades 3–8

<i>DOK</i>	<i>Grade</i>					
	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 eMPower writing and language tests include selected-response and evidence-based selected-response items. Grades 3–8 eMPower 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 $\frac{1}{2}$ 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.

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. 2017–18 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 that are found on the 2017–18 eMPower writing and language tests for grades 3–8. All students received 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. 2017–18 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 eMPower standards clusters in writing and language is shown in Table 3-10.

Table 3-10. 2017–18 eMPowerME: Distribution of Emphasis Across Reporting Clusters in Terms of Percentage of Total Test Points by Grade—Writing and Language Grades 3–8

<i>Clusters</i>	<i>Grade Tested</i>					
	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

Table 3-11 shows the reporting categories for writing and language in the eMPower 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. 2017–18 eMPowerME: Reporting Categories and Targeted Possible Raw Score Points by Grade—Writing and Language Grades 3–8

<i>Reporting Category</i>	<i>Grade Tested</i>					
	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	11	10
English Language and Conventions	8	8	8	8	7	8
Total	26	26	26	26	26	26

3.4 ESSAY PROMPTS

In 2018, operational 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 something to write about 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. 2017–18 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

3.4.1 Depth of Knowledge

Each item on the eMPower 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. 2017–18 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. 2017–18 eMPowerME: Depth of Knowledge—
Language Conventions**

Level 1	This level requires the student to use simple spelling or vocabulary and/or 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. 2017–18 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Total Test Points by Grade—Writing & Language Grades 3–8

<i>DOK</i>	<i>Grade</i>					
	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 eMPower 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 2018, 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 eMPower 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 the processes and proficiencies associated with mathematical practices process strands of problem-solving, reasoning and argument, modeling, and patterns and structure embedded into them. Specifically, these are:

- 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 eMPower mathematics tests include selected-response, multi-select selected-response, and constructed-response items. There are two varieties of constructed-response 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 item 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. 2017–18 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 that are found on the 2018 eMPower 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% of the possible score points, and constructed-response items together represent approximately 25% of the possible score points.

**Table 3-17. 2017–18 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	50	5	38	5
4	32	4	50	5	37	5
5	33	4	50	5	38	5
6	36	4	50	5	41	5
7	36	4	50	5	41	5
8	37	4	50	5	42	5

3.5.4 Blueprints

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

Table 3-18. 2017–18 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	31	27	22			
Numbers & Operations in Base Ten and Numbers and Operations–Fractions	31	46	31			
Measurement and Data and Geometry	38	27	47			
Ratios & Proportional Relationships				17	17	
Functions						20
The Number System				25	12	8
Expressions and Equations				25	21	27
Geometry				17	17	25
Statistics and Probability				17	33	20
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 eMPower 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. 2017–18 eMPowerME: Concepts and Procedures Reporting Categories and Possible Raw Score Points by Grade—Mathematics Grades 3–8

Reporting Category	Grade Tested					
	3	4	5	6	7	8
Operations and Algebraic Thinking	14	12	10			
Numbers & Operations in Base Ten Fractions	14	20	14			
Measurement and Data and Geometry	17	12	21			
Ratios & Proportional Relationships				8	8	
Functions						10
Number System				12	6	4
Expressions and Equations				12	10	13
Geometry				8	8	12
Statistics and Probability				8	16	10

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. 2017–18 eMPowerME: Mathematical Processes Reporting Categories and Possible Raw Score Points by Grade—Mathematics Grades 3–8

Reporting Category	3	4	5	6	7	8
Problem Solving & Modeling	15	14	15	18	20	22
Reasoning, Patterns & Structure	21	19	23	24	22	20

3.5.5 Depth of Knowledge

Each item on the eMPower 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. 2017–18 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.
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 thinking 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.

continued

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

Table 3-22. 2017–18 eMPowerME: Depth of Knowledge in Terms of Target Percentage of Test 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 eMPower 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 eMPower mathematics tests and permitted in the second session.

Reference sheets are not provided to students at grades 3–8. To properly assess 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, so 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 CCR standards and, as such, are closely aligned with Maine content standards. Measured Progress 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 Measured Progress

The test developers at Measured Progress 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 eMPower 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 eMPower 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 Measured Progress 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 Measured Progress’s own internal reviews help to refine eMPower items and passages being developed. Measured Progress test developers carefully evaluate these recommendations and apply edits as appropriate.

3.6.6 Item Editing

Measured Progress editors review and edit eMPower 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 eMPower items are appropriately field-tested prior to operational use. eMPower ME assessments employ a matrix design that embeds field test items within each form.

Measured Progress test developers carefully select the items that will appear in the eMPower operational tests. In consultation with Measured Progress psychometricians, test developers consider the following 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 Measured Progress 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) were responsible for the proper administration of the eMPowerME assessments. Manuals were 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 eMPower Maine Help and Support Website at:

<https://maine.onlinehelp.measuredprogress.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 Measured Progress, provided statewide training workshops and statewide test administration Webinars to train and inform school personnel about the eMPowerME testing procedures. Trainings were posted on the eMPower Maine Help and Support Website at:

<https://maine.onlinehelp.measuredprogress.org/training/>

4.3 PARTICIPATION REQUIREMENTS AND DOCUMENTATION

The intent is for all students in grades 3–8 to participate in eMPowerME assessments and for all third-year high school students to 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., hospitalization or a death in the family), 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 Measured Progress so 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 2017–18 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. At all grades, Form 1 of the tests was translated into Braille.

4.4 DOCUMENTATION OF SUPPORTS AND ACCOMMODATIONS

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 2018 with the following supports/accommodations.*

Table 4-1. 2017–18 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	10,054	2,876
	4	9,669	3,299
	5	10,138	3,175
	6	10,252	2,800
	7	10,733	2,590
	8	10,692	2,514
ELA	3	10,036	2,859
	4	9,650	3,282
	5	10,124	3,157
	6	10,241	2,789
	7	10,710	2,579
	8	10,657	2,507

Table 4-1 and Appendix D show the supports and accommodation frequencies observed for the 2018 eMPowerME administration. The *MEA Accessibility Guide*, which includes detailed descriptions of approved supports and accommodations and their proper application, is presented in Appendix E.

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 eMPower Maine Help and Support Website at: <https://maine.onlinehelp.measuredprogress.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 Measured Progress, the number of tests administered to students, and the number of secure test materials that they were returning to Measured Progress. 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 Measured Progress.

4.6 TEST AND ADMINISTRATION IRREGULARITIES

Test sessions invalidated by client request due to testing irregularities in the 2018 administration totaled 44, including 44 students total. The following table breaks down the reasons for invalidating a test session:

Table 4-2. 2017–18 eMPowerME: Test Invalidations by Reason

<i>Invalidation Reason</i>	<i>Number of Students</i>	<i>Number of Sessions</i>
Student Cheating	4 students	4 sessions
TA/Proctor Error	24 students	24 sessions
Wrong Grade	17 students	119 sessions
Wrong Student/SSID/Grade	22 students	53 sessions
TOTAL	67 students	200 sessions

4.7 TEST ADMINISTRATION WINDOW

The operational test administration window was March 19–April 13, 2018.

4.8 SERVICE CENTER

To provide additional support to schools before, during, and after testing, Measured Progress 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 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 then 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 and blank responses were also assigned 0 points.

The hardware elements of the scanners monitor themselves continuously for correct read, and the software that drives these scanners also monitors 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 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 since 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 back 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 all the student's 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 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 controls are all based in Dover, New Hampshire. Table 5-1 presents the locations where 2017–18 Maine test item responses by content area and grade were scored.

Table 5-1. 2017–18 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
	8			x
Essay	4			x
	5			x
	6		x	x
	7	x		x
	8			x

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

Staff Positions

The following staff members were involved with scoring the 2017–18 Maine responses:

- The Scoring Project Manager oversaw communication and coordination of scoring across all scoring sites, and communicated with other departments outside of scoring to ensure timely handoffs to meet deliverables.
- The iScore Operational Manager coordinated technical communication across all scoring sites and managed access to student images based on assignments.
- A Scoring Content Specialist in each content area (mathematics, reading, and essay) ensured consistency of scoring across all scoring sites for all grades tested in that content area.

Scoring Content Specialists also provided read-behind activities (defined in Section 5.2.7) for Scoring Supervisors.

- Numerous Scoring Supervisors, selected from a pool of experienced Scoring Team Leaders for their ability to score accurately and to instruct and train scorers, participated in benchmarking activities for each specific grade and content area. Scoring Supervisors provided read-behind activities (defined in Section 5.2.7) for Scoring Team Leaders at their sites. The ratio of Scoring Supervisors and Scoring Team Leaders to scorers was approximately 1:11.
- Numerous Scoring Team Leaders, selected from a pool of skilled and experienced scorers, provided read-behind activities (defined in Section 5.2.7) for the scorers at their scoring tables.
- Scorers at scoring sites scored operational student responses. Recruitment of scorers is described in Section 5.2.3.

5.2.2 Scorer Recruitment and Qualifications

For scoring the 2017–18 Maine tests, Measured Progress actively sought a diverse scoring pool. The broad range of scorer backgrounds included scientists, business professionals, educators, graduate school students, and retired professionals. Demographic information (e.g., gender, race, educational background) about scorers was electronically captured for reporting.

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. In all cases, potential scorers were required to submit documentation (e.g., résumé and/or transcripts) of their qualifications.

Table 5-2 summarizes the qualifications of the 2017–18 Maine ELA and mathematics scoring leadership and scorers.

Table 5-2. 2017–18 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	21	35	3	65
Scorers	29	109	213	33	384

Scoring Leadership = Scoring Supervisors and Scoring Team Leaders

Scorers were either temporary Measured Progress employees or were secured through temporary employment agencies. All scorers were required to sign a nondisclosure/confidentiality agreement.

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. 2017–18 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 a mathematical practices scale. The point options for this scale were 0–2 points for constructed-response items, and 0–1 points for short-answer items.

Nonscorable Items

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

- Blank: Response was blank (no attempt to respond to the question).
- Unreadable: Response was illegible, too faint to see, or only partially legible/visible. Unreadable responses were extremely rare, since most students completed the test online. Any unreadable paper test books are reviewed by leadership, who review the physical test book, to make all attempts to read and score the student response.
- Wrong Location: Student clearly provided a response to a different question in the wrong answer space. This is only possible on paper-based test books. Any responses marked “wrong location” are reviewed by scoring leadership, and the correct scores for each question are assigned in the system.
- Off Topic: A response that is completely off topic and makes no attempt to answer the question.
- No Score: Any response that cannot be scored for other reasons. This may 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% of all responses were scored by two scorers. Essay responses were scored at a 25% double scored rate.

5.2.4 Scorer Training

Scorer training began with an introduction of the on-site scoring staff and an overview of the purpose and goals of the test, including discussion about the security, confidentiality, and proprietary nature of testing materials, scoring materials, and procedures.

Next, scorers thoroughly reviewed and discussed the scoring guides for each item to be scored. Each item-specific scoring guide included the item itself and score point descriptions.

Following review of an item's scoring guide, Scoring Supervisors led a training on the anchor set. Scorers then applied their training to score a practice set, followed by a group review of this set. At the conclusion of training, each scorer independently took a qualification set to demonstrate that he or she had understood the item training and was able to consistently and accurately apply the scoring standards to student work.

Anchor Set

Scorers first reviewed an anchor set of exemplary responses for an item. This set represents clear examples of each score point.

Responses were read aloud to the room of scorers in descending score order. After announcing the true score of each anchor response, trainers facilitated group discussion of responses in relation to score point descriptions to help scorers internalize the typical characteristics of score points.

This anchor set continued to serve as a reference for scorers as they went on to calibration, scoring, and recalibration activities for that item.

Practice Set

Next, scorers practiced applying the scoring guide and anchors to responses in the practice set. The practice set typically included 8 to 15 student responses designed to help establish both the full score-point range and the range of possible responses within each 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). Responses in the training set were presented in randomized score-point order.

After scorers independently read and scored the practice set responses, trainers would poll scorers or use online training system reports to record their initial range of scores. Trainers then led a group discussion of responses, directing scorers' attention to difficult scoring issues. Throughout the training, trainers modeled how to discuss scores by referring to the anchor set and to scoring guides.

Qualifying Set

After the practice set had been completed, scorers were required to score responses accurately and reliably in qualifying sets. The 10 responses in each qualifying set were selected from an array of responses that clearly illustrated the range of score points for that item as reviewed and approved by scoring leadership.

To be eligible to live-score reading and mathematics items, scorers were required to demonstrate scoring accuracy rates of at least 80% exact and at least 90% exact plus adjacent agreement. For mathematics items, qualification was based on the primary content scoring scale, and not the mathematical practices scale. In other words, scorers were allowed one discrepant score (one score of 10 that was more than 1 score point from the predetermined score), provided they had at least eight exact scores. Essays were not included on the operational test this year, but will return to a 70% exact and 90% exact plus adjacent rate in future years.

Retraining

Scorers who did not pass the first qualifying set were retrained as a group by reviewing their performance with scoring leadership and then scoring a second qualifying set of responses. If they achieved the required accuracy rate on the second qualifying set, they were allowed to score operational responses.

Scorers who did not achieve the required scoring accuracy rates on the second qualifying set were not allowed to score responses for that item. Instead, they either began training on a different item or were dismissed from scoring for that day.

5.2.5 Leadership Training

Scoring Supervisors and select Scoring Team Leaders were trained in a separate training session immediately prior to scorer training. In addition to a discussion of the items and their responses, Scoring Supervisor and Scoring Team Leader training included greater detail on the rationale behind the score points than that covered with regular scorers, in order to better equip Scoring Supervisors and Scoring Team Leaders to handle questions from the scorers.

5.2.6 Monitoring of Scoring Quality Control

Scorers were monitored for continued accuracy and consistency throughout the scoring process, using the following methods and tools (which are defined in this section):

- embedded committee-reviewed responses (CRRs)
- read-behind procedures
- double-blind scoring
- recalibration sets

It should be noted that any scorer whose accuracy rate fell below the expected rate for a particular item and monitoring method was retrained on that item. Upon approval by the Scoring Supervisor or Scoring Content Specialist, the scorer was allowed to resume scoring. Scorers who met or exceeded the expected accuracy rates continued scoring.

Embedded CRRs

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

Embedded CRRs 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. Each scorer received the embedded set in a random order, mixed in with live student images.

Any scorer who fell below the required scoring accuracy rate was retrained before being allowed by the Scoring Supervisor to continue scoring. Once allowed to resume scoring, scoring leadership carefully monitored these scorers by increasing the number of read-behinds (defined next in Read-Behind Scoring Procedures).

Read-Behind Scoring Procedures

Read-behind scoring refers to scoring leadership (usually a Scoring Team Leader) scoring a response after a scorer has already scored the response. The practice was applied to all constructed-response item types.

Responses placed into the read-behind queue were randomly selected by scoring leadership; scorers were not aware which of their responses would be reviewed by their Scoring Team Leader.

The Scoring Team Leader entered his or her score into iScore before being allowed to see the scorer’s score. The Scoring Team Leader then compared the two scores and the score of record was determined as follows:

- If there was exact agreement between the scores, no action was necessary; the regular scorer’s score remained.
- If the scores were adjacent (differed by 1 point), the Scoring Team Leader’s score became the score of record. A significant number of adjacent scores for a scorer triggered an individual scoring consultation with scoring leadership, after which the Scoring Supervisor determined whether or when the scorer could resume scoring.
- If the scores were discrepant (differed by more than 1 point), the Scoring Team Leader’s score became the score of record. This triggered an individual consultation for the scorer with scoring leadership, after which the Scoring Supervisor determined whether or when the scorer could resume scoring on that item.

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

Table 5-4. 2017–18 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

Scoring Team Leaders were tasked with conducting, at a minimum, five read-behinds per scorer per day; however, Scoring Team Leaders routinely performed more read-behinds than the minimum threshold and focused additional attention on scorers who were at the lower end of the acceptable performance threshold.

Scoring Supervisors and Content Specialists have the ability to review the read-behinds conducted by Scoring Team Leaders, to ensure that they are in agreement with the Scoring Team Leaders as an additional level of quality control.

Double-Blind Scoring

Double-blind scoring refers to two scorers independently scoring a response without knowing whether the response was to be double-blind scored. The practice was applied to all constructed-response item types. Table 5-5 shows by which method(s) the responses to both common and equating constructed-response item types for each operational test were scored.

Table 5-5. 2017–18 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%

If there was a discrepancy (a difference greater than one score point) between double-blind scores, the response was placed into an arbitration queue. Arbitration responses were reviewed by scoring leadership (Scoring Team Leader or Scoring Supervisor) without knowledge of the two scorers' scores. Scoring leadership assigned the final score.

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 on that item. Once the scorer was allowed to resume scoring, scoring leadership carefully monitored the scorer's accuracy by increasing the number of read-behinds.

Recalibration Sets

To determine whether scorers were still calibrated to the scoring standard, they were required to take an online recalibration set starting with the second day of scoring each item.

Each recalibration set consisted of five items and could include any possible score points for the item. Every score point did not always appear in each set, to prevent having a predictable score point distribution.

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.

Recalibration sets were employed for all constructed-response items.

Scoring Reports

Measured Progress's electronic scoring software, iScore, generated multiple reports that were used by scoring leadership to measure and monitor scorers for scoring accuracy, consistency, and productivity. These reports were used in conjunction with scoring leadership input of scorer performance to determine if scorers were scoring at acceptable levels of accuracy. When scorers were not accurate, their work for the day was voided and was 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 2017. 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), so, 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. 2017–18 eMPowerME: Summary of Item Difficulty and Discrimination Statistics by Grade

Content Area	Grade	Item Type	Number of Items	<i>p-Value</i>		<i>Discrimination</i>	
				Mean	Standard Deviation	Mean	Standard Deviation
Mathematics	3	ALL	41	0.48	0.21	0.37	0.09
		SR	31	0.56	0.15	0.35	0.07
		CR	10	0.22	0.13	0.46	0.10
	4	ALL	40	0.45	0.20	0.38	0.12
		SR	30	0.53	0.16	0.35	0.10
		CR	10	0.21	0.10	0.50	0.06
	5	ALL	41	0.42	0.16	0.36	0.12
		SR	32	0.46	0.16	0.33	0.10
		CR	9	0.29	0.11	0.49	0.11
	6	ALL	44	0.43	0.19	0.33	0.14
		SR	35	0.49	0.15	0.29	0.10

continued

Content Area	Grade	Item Type	Number of Items	p-Value		Discrimination	
				Mean	Standard Deviation	Mean	Standard Deviation
Mathematics	6	CR	9	0.19	0.14	0.48	0.16
		ALL	44	0.45	0.20	0.38	0.12
	7	SR	33	0.55	0.12	0.35	0.10
		CR	11	0.18	0.10	0.45	0.13
		ALL	45	0.40	0.17	0.33	0.14
	8	SR	35	0.47	0.13	0.28	0.12
		CR	10	0.17	0.10	0.51	0.06
		ALL	48	0.53	0.16	0.39	0.10
ELA	3	SR	38	0.57	0.14	0.36	0.08
		CR	10	0.38	0.17	0.50	0.05
		ALL	49	0.54	0.15	0.37	0.11
	4	SR	39	0.58	0.14	0.35	0.10
		CR	10	0.40	0.13	0.45	0.12
		ALL	49	0.55	0.13	0.38	0.12
	5	SR	39	0.57	0.13	0.35	0.11
		CR	10	0.48	0.14	0.49	0.10
		ALL	49	0.56	0.18	0.37	0.10
	6	SR	39	0.59	0.18	0.35	0.09
		CR	10	0.42	0.13	0.47	0.09
		ALL	49	0.54	0.15	0.38	0.10
	7	SR	39	0.57	0.14	0.35	0.09
		CR	10	0.41	0.09	0.48	0.10
		ALL	49	0.59	0.15	0.37	0.11
	8	SR	39	0.62	0.14	0.35	0.08
		CR	10	0.46	0.15	0.48	0.13

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 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 that 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 2017–18 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 2017–18 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 2017–18 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, non-random 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 non-clustered 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 2017–18 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, so 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. Table 8-11 displays the multidimensional effect size estimates from DETECT for the eMPowerME tests.

All 12 DETECT values indicated either weak or very weak multidimensionality. The DETECT values for ELA tended to be slightly lower than the values for mathematics. 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; however, ELA grade 8 showed moderate separation between selected-response and CR items. In the ELA tests, for each grade there was some evidence suggesting separation of reading and writing in each grade, but there was also evidence of them mixing together.

Table 6-2. 2017–18 eMPowerME: Multidimensional Effect Sizes by Content Area and Grade

Content Area	Grade	<i>Multidimensionality Effect Size</i>		
		2015–16	2016–17	2017–18
ELA	3	0.16	0.17	0.12
	4	0.17	0.20	0.19
	5	0.17	0.16	0.16
	6	0.17	0.15	0.17
	7	0.16	0.15	0.16
	8	0.16	0.18	0.19
	Average	0.17	0.17	0.17
Mathematics	3	0.19	0.27	0.22
	4	0.18	0.20	0.22
	5	0.29	0.28	0.23
	6	0.18	0.12	0.18
	7	0.24	0.30	0.14
	8	0.19	0.17	0.15
	Average	0.21	0.22	0.19

In summary, the dimensionality analyses indicated that all the tests exhibited rejection of the null hypothesis of unidimensionality, but also that the violations of local independence were all weak in magnitude. The violations of local independence did not show strong evidence in ELA or mathematics as being related to the differences between selected-response and constructed-response items. For the ELA tests, there was some evidence of reading and writing being separate dimensions. Still, these violations of local independence were very weak in magnitude and were detectable only because of the large sample sizes. A more in-depth substantive analysis of the results by content experts would be needed to more precisely describe a fuller picture of the multidimensionality in all these tests.

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. 2017–18 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	411577	b/b analysis	removed from equating
	4	124946A	c-parameter	set c = 0
		551343B	a-parameter	a set to initial
	5	400076	b/b analysis	removed from equating
		415252	delta analysis	removed from equating
	6	400092	c-parameter	set c = 0
		400114	b/b analysis	removed from equating
		400411	c-parameter	set c = 0
	7	124360A	delta analysis	removed from equating
		467833	b/b analysis	removed from equating
	8	408795	c-parameter	set c = 0
		409018	a-parameter	a set to initial
		409018	c-parameter	set c = 0.26
		409018	b/b analysis	removed from equating
		414766	delta analysis	removed from equating
ELA	3	128593A	delta analysis	removed from equating
		418629	c-parameter	set c = 0
		459509	c-parameter	set c = 0
		459519	c-parameter	set c = 0
	4	130706A	c-parameter	set c = 0

continued

<i>Content Area</i>	<i>Grade</i>	<i>Item</i>	<i>Reason</i>	<i>Action</i>
ELA	4	130712A	c-parameter	set c = 0
		420785	c-parameter	set c = 0
		421213	c-parameter	set c = 0
		421216	delta analysis	removed from equating
		421799	c-parameter	set c = 0
		421799	b/b analysis	removed from equating
		472577	c-parameter	set c = 0
		476102	b/b analysis	removed from equating
	5	419302	c-parameter	set c = 0
		458560	c-parameter	set c = 0
		458565	c-parameter	set c = 0
		478338	b/b analysis	removed from equating
		478360	delta analysis	removed from equating
	6	129252A	c-parameter	set c = 0
		413439	c-parameter	set c = 0
		413439	b/b analysis	removed from equating
		413445	c-parameter	set c = 0
		419859	c-parameter	set c = 0
		420260	c-parameter	set c = 0
		464586	delta analysis	removed from equating
	7	131166A	b/b analysis	removed from equating
		409979	c-parameter	set c = 0
		416732	a-parameter	a set to initial
		416732	c-parameter	set c = 0
	8	402075	c-parameter	set c = 0
		402111	c-parameter	set c = 0
		420872	c-parameter	set c = 0
		420905	c-parameter	set c = 0
		420970	c-parameter	set c = 0
		461925	c-parameter	set c = 0
		475545	delta analysis	removed from equating
		475555	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 2017–18 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
($P_{i0}^* = 1$ 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

Each essay prompt response is scored on four dimensions, with scores on each dimension ranging from 0 to 4. Inspection of the Pearson correlations among the dimension scores prompted concerns about whether the assumption of local independence was met. To address local dependence, the scores on the four dimensions per essay prompt response were averaged and rounded to the nearest integer. The rounded mean dimension scores were then used for calibration, scoring, and student performance level determinations. In each grade, the operational essay prompt was placed onto the ELA scale via a fixed common item parameter (FCIP) approach. First, with the operational essay prompt excluded from the data, calibration and Stocking-Lord equating was performed in each grade (see Section 2.3) to obtain item parameters that were placed onto the previous year's scale. Second, the item parameters for all items except for the essay prompt were fixed to the values obtained in the first step, and the item parameters for the essay prompt were estimated (based on the rounded mean dimension scores).

7.2 ITEM RESPONSE THEORY RESULTS

The tables in Appendix J give the IRT item parameters of all common items on the 2017–18 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 below.) 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. 2017–18 eMPowerME: Number of Newton Cycles
Required for Convergence**

<i>Content Area</i>	<i>Grade</i>	<i>Cycles</i>
Mathematics	Grade 3	48
	Grade 4	54
	Grade 5	66
	Grade 6	53
	Grade 7	66
	Grade 8	64
ELA	Grade 3	119
	Grade 4	48
	Grade 5	37
	Grade 6	43
	Grade 7	42
	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 2017–18 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 back 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 2017–18 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 2017–18 eMPowerME tests were placed on the 2016–17 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 2016–17 and 2017–18 eMPowerME tests should have the same item parameters. After the item parameters for each 2017–18 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 2017–18 eMPowerME tests’ TCC for the equating items was as close as possible to that of the 2016–17eMPowerME 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 2017–18 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. 2017–18 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	-0.07
	4	1.00	0.01
	5	1.02	-0.01
	6	1.03	-0.13
	7	1.01	-0.04
	8	0.93	0.09
ELA	3	0.93	0.00
	4	0.98	0.08
	5	1.00	0.08
	6	1.03	0.08
	7	1.03	0.16
	8	0.96	0.22

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. 2017–18 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	390
	4	-0.78	0.25	1.28	400	445	460	475	490
	5	-0.78	0.42	1.35	500	544	560	573	590
	6	-0.58	0.42	1.23	600	646	660	671	690
	7	-0.63	0.33	1.35	700	747	760	774	790
	8	-0.41	0.41	1.22	800	849	860	871	890
ELA	3	-0.79	0.07	0.85	300	347	360	371	390
	4	-0.75	-0.02	0.91	400	449	460	474	490
	5	-0.78	-0.03	1.05	500	549	560	576	590
	6	-1.00	0.10	1.12	600	644	660	675	690
	7	-0.91	0.09	1.18	700	745	760	776	790
	8	-1.03	0.06	1.27	800	844	860	878	890

7.5.1 ELA Cut Score Verification and Review

In 2018, Measured Progress 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 Measured Progress 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 was comprised of 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.

Measured Progress 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. Measured Progress 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 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 2017–18 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 2017–18 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. 2017–18 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	14.62345	358.4938
	4	14.12429	456.4972
	5	13.58696	554.3478
	6	13.58696	654.3478
	7	13.85042	755.4017
	8	13.61779	854.4712
ELA	3	14.73839	358.9536
	4	15.05646	460.2258
	5	15.09434	560.3774
	6	14.63415	658.5366
	7	14.68788	758.7515
	8	14.78925	859.157

Appendix N contains raw score to scaled score look-up tables for the 2017–18 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 2017–18 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 description 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 2017–18 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. 2017–18 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	25,860	65	21.35	8.96	0.88	3.06
	4	25,935	65	20.04	9.18	0.89	3.10
	5	26,626	65	20.34	9.16	0.88	3.18
	6	26,104	67	21.66	9.02	0.86	3.33
	7	26,646	67	22.35	9.61	0.89	3.17
	8	26,411	67	19.47	8.82	0.87	3.22
ELA	3	25,790	51	29.59	11.32	0.91	3.45
	4	25,863	50	31.34	11.19	0.90	3.62

continued

Content Area	Grade	Number of Students	Raw Score			Alpha	SEM
			Maximum	Mean	Standard Deviation		
ELA	5	26,562	51	32.47	11.79	0.90	3.68
	6	26,060	54	32.66	11.24	0.90	3.58
	7	26,576	54	31.54	11.71	0.90	3.65
	8	26,327	55	34.48	11.67	0.90	3.67

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 2017–18 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, and 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% of student short constructed-responses and 25% 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. This same information is provided at the item level in Appendix Q.

**Table 8-2. 2017–18 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	5,076	95.71	4.29	0.90	0.14
		4	3	10,084	92.45	7.29	0.86	1.02
		2	5	5,008	86.38	12.00	0.92	1.92
	4	2	2	5,131	96.78	3.22	0.86	0.19
		4	3	10,393	91.50	8.10	0.86	1.61
		2	5	5,262	83.83	13.55	0.91	2.98
	5	2	2	5,211	91.10	8.90	0.79	0.08
		4	3	10,461	87.04	12.53	0.84	1.23
		2	5	5,250	87.92	10.23	0.92	2.38
	6	2	2	5,064	98.76	1.24	0.82	0.06
		4	3	10,190	93.42	6.26	0.90	0.99
		2	5	5,126	84.26	14.20	0.94	1.91
	7	2	2	5,160	97.62	2.38	0.90	0.02
		4	3	10,436	94.13	5.73	0.90	0.80
		2	5	5,276	83.78	14.88	0.92	1.57
	8	2	2	5,151	95.30	4.70	0.78	0.68
		4	3	10,158	85.35	14.24	0.82	0.70
		2	5	5,007	93.57	5.83	0.95	0.72
ELA	3	1	3	2,506	65.08	33.96	0.45	0.96
		3	4	7,014	77.32	21.97	0.69	0.71
		4	5	9,864	64.84	34.06	0.56	10.67
	4	2	3	4,514	78.02	21.36	0.76	0.53
		2	4	5,011	74.92	24.01	0.70	1.06
		4	5	7,140	57.00	40.38	0.54	15.74
	5	2	3	5,133	74.81	24.90	0.71	0.31
		2	4	5,117	72.99	26.34	0.83	0.64
		4	5	9,732	64.03	34.83	0.61	16.28

continued

Content Area	Grade	Number of			Percent		Correlation	Percent of Third Scores
		Items	Score Categories	Included Scores	Exact	Adjacent		
ELA	6	2	3	4,974	70.18	28.51	0.62	1.31
	6	6	5	15,662	53.94	40.86	0.64	13.08
	7	2	3	5,027	74.28	24.95	0.69	0.78
	7	6	5	18,039	59.54	37.92	0.73	14.48
	8	2	3	4,923	76.70	23.12	0.70	0.18
	9	6	5	16,410	64.56	34.29	0.78	6.76

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 the reliability of classification decisions, and results are given.

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 make use of “true scores” in the classical test theory sense. 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 2017–18 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 and populated by 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:

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

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% 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% 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 2017–18 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 *2017–18 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 around 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 this lens provided by the standards, evidence based on test content was extensively described in Chapters 3 and 4. 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 are all components of validity evidence based on test content. As discussed earlier, all eMPowerME questions were reviewed for alignment to specific Maine’s 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 eMPower Maine Help and Support Website at: <https://maine.onlinehelp.measuredprogress.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 consequences 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 consequences 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 other measures of similar constructs, and the extent to which they diverge from measures of different constructs. Relationships among measures of the same or similar constructs can sharpen the meaning of scores and appropriate interpretations by refining the definition of the construct.

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APPENDICES

APPENDIX A—CONTENT STANDARDS

Table A-1. 2016–17 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	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
		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. 2016–17 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	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
		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. 2016–17 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	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
		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. 2016–17 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	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
		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. 2016–17 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	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
		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. 2016–17 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	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.
		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. 2016–17 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. 2016–17 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>
				continued

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].”).
				continued

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
LG	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).
	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
LG	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.
	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>

continued

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. 2016–17 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.	<p>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]”).</p> <p style="text-align: right;">continued</p>

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. 2016–17 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		d. Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. e. Provide a conclusion that follows from the narrated experiences or events.
	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.	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”). 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”).
	Range of Writing	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.	

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.	a. Vary sentence patterns for meaning, reader/listener interest, and style.* b. Maintain consistency in style and tone.*
	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.	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. b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible). 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. 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).
LG	Knowledge of Language	LG.6.5	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.	a. Interpret figures of speech (e.g., personification) in context. b. Use the relationship between particular words (e.g., cause/effect, part/whole, item/category) to better understand each of the words.

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. 2016–17 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
	Research to Build and Present Knowledge	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.	
		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. 2016–17 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>
				continued

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>
	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. 2016-17 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 $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.	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. 2016-17 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 points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	04.G.01.01
		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. 2016-17 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. 2016-17 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. 2016-17 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 $\frac{1}{2}$ 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. 2016-17 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
Expressions & Equations	Work with radicals and integer exponents.	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
		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
	Understand the connections between proportional relationships, lines, and linear equations.	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
		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).	08.EE.03.07.a
		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.	08.G.01.01.b
		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. 2017–18 eMPowerME: Spring 2018 Blueprints—Mathematics Grades 3 and 5

Spring 2018 Operational		Mathematics Grades 3, 5 eMPower +													
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
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												
2	26	8	SR												
2	27	9	SR												
2	28	10	SR												
2	29	11	SR												
2	30	12	SR												

continued

Spring 2018 Operational		Mathematics Grades 3, 5 eMPower +		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	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. 2017–18 eMPowerME: Spring 2018 Blueprints—Mathematics Grade 4

Spring 2018 Operational		Mathematics Grade 4 eMPower +													
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
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												
2	26	8	SR												
2	27	9	SR												
2	28	10	SR												
2	29	11	SR												

continued

Spring 2018 Operational		Mathematics Grade 4 eMPower +													
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	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. 2017–18 eMPowerME: Spring 2018 Blueprints—Mathematics Grades 6 and 7

Spring 2018 Operational		Mathematics Grades 6, 7 eMPower +													
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
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												
2	26	6	SR												
2	27	7	SR												
2	28	8	CR												
2	29	9	SR												
2	30	10	SR												
2	31	11	SR												

continued

Spring 2018 Operational		Mathematics Grades 6, 7 eMPower +													
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	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. 2017–18 eMPowerME: Spring 2018 Blueprints—Mathematics Grade 8

Spring 2018 Operational		Mathematics Grade 8 eMPower +		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												
2	26	6	SR												
2	27	7	SR												
2	28	8	CR												
2	29	9	SR												
2	30	10	SR												

continued

Spring 2018 Operational		Mathematics Grade 8 eMPower +													
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	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. 2017–18 eMPowerME: Spring 2018 Blueprints—Reading

Spring 2018 Operational		Reading eMPower +											
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
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	Single Passage 5 SR 1 EBSR 1 CR										
2	20	11											
2	21	12											
2	22	13											
2	23	14											
2	24	15											
2	25	16											
2	26	17											

Table B-6. 2017–18 eMPowerME: Spring 2018 Blueprints—Writing and Language

Spring 2018 Operational		Writing & Language eMPower +									
Session	Position	Position in Session	Item Type	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7	Form 8
1	1	1	Passage 5 SR 1 EBSR								
1	2	2									
1	3	3									
1	4	4									
1	5	5									
1	6	6	Passage 5 SR 1 EBSR								
1	7	7									
1	8	8									
1	9	9									
1	10	10									
1	11	11	Passage 5 SR 1 EBSR								
2	12	1									
2	13	2									
2	14	3									
2	15	4									
2	16	5	Passage 5 SR 1 EBSR								
2	17	6									
2	18	7									
2	19	8									
2	20	9									
2	21	10	5 SR 1 EBSR								
2	22	11									
2	23	12									

APPENDIX C—PARTICIPATION RATES

**Table C-1. 2017–18 eMPowerME: Summary of Participation
by Demographic Category—Mathematics**

<i>Description</i>	<i>Tested</i>	
	<i>Number</i>	<i>Percent</i>
All Students	78,792	100.00
Male	40,464	51.36
Female	38,318	48.63
Gender Not Reported	10	0.01
Hispanic or Latino	1,829	2.32
Native American	657	0.83
Asian	1,191	1.51
Black or African American	2,819	3.58
Native Hawaiian or Pacific Islander	93	0.12
White (non-Hispanic)	70,068	88.93
Two or More Races (non-Hispanic)	2,125	2.70
Race not reported	10	0.01
Migrant Students		0.00
Migrant: All Other Students	78,792	100.00
Currently receiving LEP services	2,696	3.42
Former LEP student - monitoring year 1	183	0.23
Former LEP student - monitoring year 2	185	0.23
LEP: All Other Students	75,728	96.11
Students with an IEP	14,258	18.10
IEP: All Other Students	64,534	81.90
Plan 504	3,394	4.31
Plan 504: All Other Students	75,398	95.69
SES: All Other Students	42,401	53.81
Students receiving Title 1 Services	6,880	8.73
Title 1: All Other Students	71,912	91.27
Economically Disadvantaged Students	36,391	46.19

**Table C-2. 2017–18 eMPowerME: Summary of Participation
by Demographic Category—ELA**

<i>Description</i>	<i>Tested</i>	
	<i>Number</i>	<i>Percent</i>
All Students	78,609	100.00
Male	40,374	51.36
Female	38,225	48.63
Gender Not Reported	10	0.01
Hispanic or Latino	1,817	2.31
Native American	661	0.84
Asian	1,175	1.49
Black or African American	2,666	3.39
Native Hawaiian or Pacific Islander	91	0.12
White (non-Hispanic)	70,068	89.13
Two or More Races (non-Hispanic)	2,121	2.70
Race not reported	10	0.01
Migrant Students		0.00
Migrant: All Other Students	78,609	100.00
Currently receiving LEP services	2,504	3.19
Former LEP student - monitoring year 1	183	0.23
Former LEP student - monitoring year 2	185	0.24
LEP: All Other Students	75,737	96.35
Students with an IEP	14,264	18.15
IEP: All Other Students	64,345	81.85
Plan 504	3,391	4.31
Plan 504: All Other Students	75,218	95.69
SES: All Other Students	42,347	53.87
Students receiving Title 1 Services	6,887	8.76
Title 1: All Other Students	71,722	91.24
Economically Disadvantaged Students	36,262	46.13

APPENDIX D—ACCOMMODATION FREQUENCIES BY CONTENT AREA

Table D-1. 2017–18 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	914	952	969	880	812	602
AccomTexttoSpeechMAT	966	1,004	1,011	917	849	614
AccomColorContrast	14	15	28	42	31	44
AccomCalculator	0	0	0	0	0	0
AccomNoTools	292	180	166	50	45	22
AccomNE01	602	691	674	535	404	345
AccomNE02	758	823	779	579	477	412
AccomNE03	6	4	2	1	1	2
AccomNE04	1	1	2	0	1	1
AccomNE05	381	285	268	231	150	105
AccomNE06	45	40	71	72	57	76
AccomNE07	7	18	9	33	48	36
AccomNE08	390	391	379	275	230	217
AccomNE09	2,070	2,332	2,365	2,252	2,016	1,936
AccomNE10	2,098	2,422	2,347	2,111	1,871	1,877
AccomNE11	1,405	1,521	1,464	1,348	1,153	1,009
AccomNE12	0	0	1	0	0	0
AccomNE13	0	0	0	0	0	0
AccomNE14	0	0	1	0	0	3
AccomNE15	6	12	8	8	3	6
Accom01	0	1	0	0	0	0

Table D-2. 2017–18 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	912	955	971	881	809	601
AccomTexttoSpeechMAT	962	1,003	1,013	917	845	612
AccomColorContrast	14	15	29	42	31	44
AccomCalculator	0	0	0	0	0	0
AccomNoTools	291	178	166	51	46	21
AccomNE01	602	694	673	537	404	348
AccomNE02	747	815	774	577	474	410
AccomNE03	5	3	3	1	1	2
AccomNE04	3	1	2	0	1	1
AccomNE05	383	285	266	231	148	106
AccomNE06	46	40	71	70	58	75
AccomNE07	4	13	2	29	41	30
AccomNE08	390	386	377	273	229	218
AccomNE09	2,057	2,324	2,352	2,247	2,009	1,935
AccomNE10	2,082	2,415	2,335	2,100	1,864	1,872
AccomNE11	1,403	1,519	1,462	1,349	1,152	1,013
AccomNE12	0	0	1	0	0	0
AccomNE13	0	0	0	0	0	0
AccomNE14	2	0	1	0	0	4
AccomNE15	6	11	8	8	3	6
Accom01	0	1	0	0	0	1

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

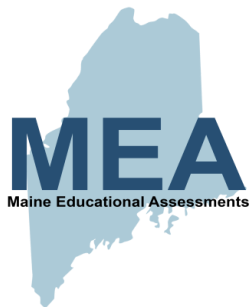
NE-12 Preferential Seating

NE-13 Out of School Setting

NE-14 Braille

NE-15 Color Overlay

APPENDIX E—MEA ACCESSIBILITY GUIDE



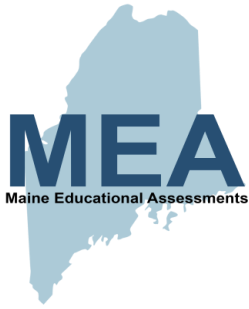
Maine Educational Assessments (MEA) Mathematics and English Language Arts/Literacy

eMPowerME (Grades 3-8)

2018 Accessibility Guide

Universal Tools/Supports/Accommodations Embedded & Non-embedded

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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 Teams.

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: <http://maine.onlinehelp.measuredprogress.org/guides>

If you have any questions or concerns, contact the Measured Progress Service Center at maineservicedesk@measuredprogress.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.

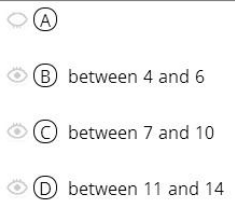






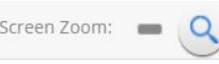

Embedded Universal Tools

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 & Highlight		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
Notepad		A notepad is provided for students to write different notes for different items, meaning it uniquely persists per item. The notepad is resizable, draggable, and displays a timestamp for when the student last edited content.	Yes

Notepad Details:

- The notepad is retained per item. If the student writes notes on Item 1, navigates to Item 2, returns to Item 1, notes will still be there.
- Notes on passages are not viewable for all items pertaining to the passage. They will only appear for the item that they were written on.
- Notes **DO NOT** remain if a test is paused.
- Notes are **NOT** 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.

Answer Masking		The student “hides” possible answer choices (for multiple-choice items only).	Yes
Guideline Tool		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.	Yes
Jump To Item		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.	Yes
Formatting Tools		Students are able to cut, copy, paste, undo, redo, bold, italicize, underline.	Yes
Bookmark/Star Item		Student can bookmark or star  an item as a reminder to return.	Yes
Custom Masking		Provides the ability to mask certain parts of the test interface or question.	Yes
Screen Zoom		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%.	Yes
Reverse Contrast		Inverts all color values in the user interface.	Yes
* Denotes a feature that will be automatically enabled for all students. If Universal Tools are disabled (“Turn Off All Universal Tools”), these six 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 Team)

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 tool, 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.

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 Team)	MATHEMATICS ONLY: Word-to-word translation glossary with NO definitions as determined by <u>Language Acquisition Committee/Team</u> for English Learners (ELs).

ACCOMMODATIONS

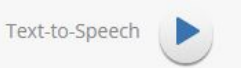

Requiring IEP/504 Documentation

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), IT Coordinator (ITC) 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. <i>NOTE: Speed of TTS is not adjustable. Voice Pac is the voice set as the default on the device the student is using for testing. See Kiosk Installation Guide.</i> <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.
**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.
Braille (IEP/504 documented)	Assessment provided via paper in the braille code (UEB, UEB with Nemeth and/or EBAE/Nemeth) in which the student is most proficient as documented in the IEP/504 plan.
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.

No
Directions

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

NO
Passage

Read Passage 2. Then answer the questions that follow.

No
Directions

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."

NO
Passage

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

NO
Passage

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.

NO
Directions

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

NO
Question

NO
Answer
Choices

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
Answer
Choices

YES
Question

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 G-5. 2015–16 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

Measured Progress Informational Writing Rubric (Grades 6–8)

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 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
	The student response:				
Development & Elaboration of Ideas¹	<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.

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. 2017–18 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	0.51	0	411633	MC	0.79	0.37	0
123976A	MC	0.46	0.32	1	411729	MC	0.43	0.33	0
124364A	MC	0.68	0.43	0	411764	MC	0.38	0.31	0
124366A	MC	0.55	0.41	0	412701	MC	0.31	0.18	1
124395A	MC	0.73	0.39	0	413036	MC	0.46	0.34	0
124531A	MC	0.87	0.33	0	413222	MC	0.54	0.37	0
125052A	MC	0.38	0.35	0	413339	MC	0.65	0.47	0
125120A	MC	0.37	0.42	0	413352	MC	0.49	0.34	0
125219A	MC	0.55	0.43	0	413559	MC	0.55	0.38	0
125260A	MC	0.55	0.28	0	413568	MC	0.43	0.42	0
125282AA	OR	0.10	0.40	2	414589	MC	0.44	0.45	0
125282AB	OR	0.14	0.44	2	462666	MC	0.74	0.37	0
125291A	MC	0.51	0.24	0	464225	OR	0.18	0.24	0
400041	MC	0.43	0.23	0	464499A	OR	0.13	0.55	3
400619	MC	0.72	0.34	0	464499B	OR	0.17	0.52	2
400626	MC	0.43	0.39	0	464512A	OR	0.26	0.59	3
409896	MC	0.50	0.28	0	464512B	OR	0.15	0.52	3
411009	MC	0.69	0.32	0	551311A	OR	0.25	0.40	1
411494	MC	0.81	0.37	0	551311B	OR	0.54	0.42	1
411577	MC	0.62	0.25	0					
411588	MC	0.53	0.20	0					
411623	MC	0.80	0.44	0					

**Table G-2. 2017–18 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>			
124741A	MC	0.52	0.45	0	126501A	MC	0.62	0.48	0
124946A	MC	0.69	0.38	0	126903A	MC	0.77	0.38	0
126060A	MC	0.42	0.28	0					

continued

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
127117A	MC	0.52	0.25	0
127590A	MC	0.32	0.41	0
127591AA	OR	0.10	0.51	1
127591AB	OR	0.18	0.54	1
127595A	MC	0.53	0.35	0
127720A	MC	0.56	0.40	0
400447	MC	0.68	0.42	0
400740	MC	0.28	0.23	0
400748	MC	0.46	0.27	0
400786	MC	0.75	0.14	0
400798	MC	0.32	0.29	0
400903	MC	0.54	0.32	0
405640	MC	0.72	0.42	0
407489	MC	0.71	0.42	0
407491	MC	0.49	0.42	0
407852	MC	0.26	0.28	0
408032	MC	0.72	0.47	0
408054	MC	0.47	0.50	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
411024	MC	0.43	0.30	0
411556	MC	0.63	0.40	0
411676	MC	0.51	0.48	0
411727	MC	0.47	0.25	0
411850	MC	0.35	0.22	0
411858	MC	0.84	0.26	0
413801	MC	0.62	0.50	0
447971A	OR	0.28	0.64	2
447971B	OR	0.10	0.46	2
448378A	OR	0.29	0.52	1
448378B	OR	0.09	0.40	1
462834	OR	0.40	0.50	0
465902	MC	0.28	0.18	0
466047	OR	0.30	0.44	0
476961	MC	0.37	0.20	1
551343A	OR	0.20	0.50	2
551343B	OR	0.18	0.53	2

**Table G-3. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 5**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
124038A	MC	0.36	0.36	0
124390A	MC	0.51	0.45	0
124675A	MC	0.44	0.38	0
124737A	MC	0.58	0.39	0
124943A	MC	0.49	0.30	0
124973A	OR	0.38	0.51	0
125060A	MC	0.56	0.41	0
125061AA	OR	0.26	0.36	2
125061AB	OR	0.38	0.31	2
126058A	MC	0.13	0.12	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
128315A	MC	0.17	0.18	0
400076	MC	0.37	0.17	0
400302	MC	0.35	0.27	0
400715	MC	0.39	0.26	0
400718	MC	0.47	0.51	0
408471	MC	0.43	0.29	0
408484	MC	0.35	0.17	0
410151	MC	0.45	0.26	0
411149	MC	0.50	0.46	0

continued

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
411240	MC	0.43	0.47	0
411976	MC	0.34	0.24	0
412026	MC	0.59	0.51	1
412207A	OR	0.36	0.52	1
412207B	OR	0.29	0.46	1
413850	MC	0.48	0.33	0
413885	MC	0.24	0.28	0
413923	MC	0.44	0.49	0
414837	MC	0.47	0.31	0
414953	MC	0.68	0.43	0
415228A	OR	0.38	0.57	2

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
415228B	OR	0.19	0.55	2
415252	MC	0.75	0.30	0
415312	MC	0.56	0.33	0
464057	MC	0.80	0.35	0
464086	MC	0.45	0.29	0
465792	MC	0.39	0.31	0
478772	MC	0.24	0.26	0
480576	MC	0.53	0.28	0
480578	MC	0.80	0.32	0
551415A	OR	0.33	0.66	2
551415B	OR	0.06	0.45	2

Table G-4. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 6

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
124562A	MC	0.66	0.36	0
125081A	MC	0.32	0.22	0
125464A	MC	0.79	0.37	0
125822A	MC	0.41	0.14	0
125839A	MC	0.67	0.33	0
127738A	MC	0.55	0.41	0
400092	MC	0.69	0.23	0
400096	MC	0.71	0.35	0
400100	MC	0.48	0.16	0
400114	MC	0.44	0.27	0
400189	MC	0.72	0.43	0
400411	MC	0.44	0.22	0
400688	MC	0.45	0.41	0
400695	MC	0.72	0.39	0
406039	MC	0.39	0.32	1
408317	MC	0.32	0.25	0
411834	MC	0.59	0.35	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
412060	MC	0.69	0.28	0
412115	MC	0.50	0.34	0
412144	MC	0.47	0.37	0
412181	MC	0.43	0.08	0
412226	MC	0.26	0.15	0
412273	MC	0.36	0.30	0
412328	MC	0.38	0.32	0
412455	MC	0.32	0.29	0
412531A	OR	0.25	0.65	2
412531B	OR	0.13	0.58	2
413794	MC	0.36	0.39	0
414013	MC	0.48	0.39	0
414069	MC	0.35	0.16	0
414079	MC	0.57	0.39	0
414094	MC	0.32	0.27	0
415153	MC	0.62	0.37	0

continued

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
419562	MC	0.63	0.26	0
445967A	OR	0.44	0.66	1
445967B	OR	0.26	0.62	1
464787	OR	0.11	0.33	0
464828	MC	0.35	0.13	0
464839	MC	0.41	0.20	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
464910	MC	0.33	0.12	0
465321A	OR	0.09	0.42	5
465321B	OR	0.02	0.24	5
551449A	OR	0.32	0.49	1
551449B	OR	0.05	0.32	1

**Table G-5. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
Mathematics Grade 7**

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
123969A	MC	0.46	0.31	0
124351A	MC	0.63	0.46	0
124359A	MC	0.58	0.40	0
124360A	MC	0.72	0.40	0
124361A	MC	0.40	0.48	0
124362AA	OR	0.17	0.57	3
124362AB	OR	0.21	0.54	3
124508A	MC	0.74	0.37	0
124649A	MC	0.66	0.44	0
124652A	MC	0.41	0.19	0
400168	MC	0.62	0.42	0
400873	MC	0.41	0.30	0
400877	MC	0.64	0.44	0
400884	MC	0.38	0.20	0
400951	MC	0.44	0.29	0
400958	MC	0.51	0.40	0
400983	MC	0.77	0.36	0
400990	MC	0.56	0.23	0
408597	MC	0.56	0.40	0
408701	MC	0.43	0.22	0
408770	MC	0.64	0.38	0
408783	MC	0.43	0.18	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
410223	MC	0.51	0.32	0
410251	MC	0.57	0.35	0
412118	MC	0.53	0.35	0
412147	MC	0.45	0.34	0
412193	MC	0.55	0.31	0
412197	MC	0.49	0.49	0
412231	MC	0.37	0.47	0
412244	MC	0.70	0.48	0
412529	MC	0.67	0.47	0
414127	MC	0.37	0.16	0
446604A	OR	0.22	0.57	3
446604B	OR	0.01	0.21	3
446620A	OR	0.38	0.63	1
446620B	OR	0.15	0.46	1
467154	MC	0.71	0.48	0
467828	MC	0.65	0.38	0
467833	MC	0.45	0.17	0
467881	OR	0.13	0.43	0
467883	OR	0.19	0.33	0
467892	OR	0.17	0.36	0
551426A	OR	0.30	0.53	3
551426B	OR	0.04	0.33	3

**Table G-6. 2017–18 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>			
126883A	MC	0.55	0.39	0	413193	MC	0.47	0.44	0
127379A	MC	0.39	0.10	0	413229	MC	0.78	0.29	0
127742A	MC	0.41	0.26	0	413314	MC	0.55	0.47	0
400172	MC	0.63	0.38	0	414203	MC	0.42	0.16	0
400310	MC	0.43	0.22	0	414349	MC	0.31	0.08	0
400345	MC	0.34	0.21	0	414370	MC	0.38	0.18	0
400370	MC	0.39	0.24	0	414766	MC	0.63	0.47	0
400396	MC	0.48	0.11	0	414948	MC	0.49	0.30	0
400771	MC	0.53	0.23	0	447488A	OR	0.06	0.50	6
400985	MC	0.35	0.11	0	447488B	OR	0.07	0.51	6
408524	MC	0.47	0.38	0	465407	OR	0.17	0.45	0
408651	MC	0.30	0.13	0	468384	MC	0.43	0.28	0
408795	MC	0.35	0.20	0	468386	OR	0.21	0.45	0
409018	MC	0.27	0.03	0	468754	MC	0.59	0.39	0
409020	MC	0.45	0.30	0	468821A	OR	0.22	0.56	5
409213	MC	0.32	0.24	0	468821B	OR	0.09	0.47	5
409239	MC	0.77	0.38	0	482018A	OR	0.40	0.52	2
409274	MC	0.41	0.26	0	482018B	OR	0.14	0.42	2
410332	MC	0.45	0.41	0	551332A	OR	0.16	0.62	3
412449	MC	0.68	0.40	0	551332B	OR	0.16	0.55	3
412467	MC	0.54	0.38	0					
412547	MC	0.40	0.32	0					
412693	MC	0.54	0.38	0					
412817	MC	0.31	0.32	0					
412974	MC	0.48	0.38	0					

Table G-7. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 3

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
128591A	MC	0.56	0.40	0
128592A	MC	0.51	0.42	0
128593A	MC	0.82	0.48	0
128594A	MC	0.69	0.38	0
128597A	OR	0.49	0.48	0
128603A	OR	0.24	0.43	2
130312A	MC	0.76	0.51	0
130319A	MC	0.69	0.44	0
130325A	MC	0.42	0.36	0
130326A	OR	0.54	0.56	0
130328A	MC	0.69	0.36	0
410572	OR	0.25	0.54	2
410580	OR	0.12	0.44	4
418618	MC	0.80	0.51	0
418622	MC	0.48	0.37	0
418629	MC	0.55	0.23	0
418639	MC	0.47	0.41	0
418643	MC	0.73	0.40	0
418646	MC	0.71	0.46	0
418652	MC	0.56	0.35	0
418659	MC	0.45	0.36	0
418677	OR	0.39	0.43	0
418699	OR	0.18	0.53	2
421611	MC	0.52	0.39	0
421614	MC	0.50	0.43	0
421623	MC	0.60	0.40	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
421651	MC	0.56	0.36	0
421656	MC	0.46	0.34	0
421661	OR	0.51	0.51	0
421938	MC	0.65	0.34	0
422166	MC	0.42	0.39	0
456712	MC	0.57	0.39	0
456720	MC	0.53	0.38	0
456725	MC	0.74	0.41	0
456727	MC	0.82	0.36	0
456731	MC	0.57	0.24	0
456735	OR	0.55	0.56	0
459507	MC	0.50	0.34	0
459509	MC	0.77	0.30	0
459513	MC	0.39	0.19	0
459515	OR	0.54	0.53	0
459519	MC	0.30	0.11	0
459523	MC	0.54	0.32	0
474429	MC	0.41	0.35	0
474695	MC	0.50	0.33	0
474704	MC	0.49	0.29	0
474706	MC	0.47	0.37	0
474708	MC	0.32	0.22	0

Table G-8. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 4

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
130668A	OR	0.56	0.53	0
130675A	MC	0.56	0.28	0
130704A	MC	0.61	0.48	0
130706A	MC	0.59	0.29	0
130709A	MC	0.72	0.43	0
130710A	MC	0.81	0.34	0
130712A	MC	0.67	0.18	0
130728A	OR	0.17	0.44	4
131512A	MC	0.55	0.32	0
131516A	MC	0.46	0.40	0
131519A	OR	0.57	0.50	0
410868	OR	0.30	0.52	2
420698	MC	0.44	0.29	0
420714	MC	0.59	0.34	0
420723	OR	0.51	0.36	0
420785	MC	0.82	0.33	0
420820	MC	0.53	0.24	0
421210	MC	0.41	0.34	0
421213	MC	0.72	0.32	0
421216	MC	0.32	0.14	0
421318	MC	0.79	0.42	0
421324	MC	0.30	0.25	0
421793	MC	0.61	0.44	0
421799	MC	0.50	0.22	0
421820	MC	0.41	0.34	0
421824	MC	0.61	0.35	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
421828	MC	0.60	0.34	0
421852	OR	0.49	0.43	0
422664	MC	0.70	0.37	
465746	MC	0.49	0.28	0
465748	MC	0.58	0.37	0
465750	MC	0.34	0.18	0
465752	MC	0.42	0.25	0
465754	MC	0.63	0.44	0
465756	OR	0.34	0.35	0
471928	MC	0.57	0.53	0
472568	MC	0.65	0.48	0
472570	MC	0.77	0.41	0
472573	MC	0.42	0.20	0
472575	MC	0.63	0.49	0
472577	MC	0.72	0.32	0
472582	OR	0.43	0.49	0
476097	MC	0.60	0.51	0
476102	OR	0.30	0.22	0
476121	MC	0.73	0.53	0
476151	MC	0.48	0.23	0
476172	OR	0.36	0.63	1
476177	MC	0.76	0.47	0
486800	MC	0.56	0.42	0

Table G-9. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 5

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
129003A	MC	0.57	0.38	0
129009A	MC	0.37	0.26	0
129011A	MC	0.66	0.24	0
129012A	MC	0.58	0.41	0
129015A	OR	0.64	0.42	0
129019A	OR	0.47	0.49	1
131427A	MC	0.40	0.28	0
131429A	MC	0.36	0.12	0
131430A	MC	0.46	0.41	0
131431A	MC	0.62	0.40	0
131437A	MC	0.46	0.27	0
131440A	MC	0.43	0.26	0
131444A	MC	0.69	0.41	
131445A	MC	0.60	0.40	0
131452A	OR	0.69	0.55	0
131484A	OR	0.31	0.46	1
416506	MC	0.69	0.45	0
416518	MC	0.59	0.49	0
416527	OR	0.33	0.55	1
419292	OR	0.63	0.57	0
419298	MC	0.60	0.42	0
419302	MC	0.52	0.18	0
419309	MC	0.50	0.37	0
419311	MC	0.57	0.43	0
419321	MC	0.77	0.40	0
458560	MC	0.66	0.29	0
458563	OR	0.51	0.31	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
458565	MC	0.57	0.28	0
458577	MC	0.83	0.39	0
458584	MC	0.70	0.37	0
458588	MC	0.49	0.31	0
459808	MC	0.53	0.19	0
459811	MC	0.61	0.41	0
459819	MC	0.80	0.42	0
459823	MC	0.64	0.28	0
459830	MC	0.33	0.19	0
460891	OR	0.42	0.43	0
460893	MC	0.48	0.28	0
460897	MC	0.49	0.32	0
460901	MC	0.72	0.39	0
460906	MC	0.45	0.32	0
460910	MC	0.40	0.15	0
478334	MC	0.49	0.47	0
478338	MC	0.54	0.37	0
478350	MC	0.79	0.55	0
478358	OR	0.35	0.67	1
478360	OR	0.48	0.48	0
478364	MC	0.65	0.58	0
478366	MC	0.65	0.43	0

Table G-10. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 6

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
129251A	MC	0.56	0.46	0
129252A	MC	0.66	0.37	0
129254A	MC	0.88	0.43	0
129255A	MC	0.80	0.40	0
129257A	MC	0.89	0.44	0
129258A	OR	0.43	0.31	0
129259A	MC	0.41	0.33	0
129379A	MC	0.50	0.31	0
130154A	MC	0.40	0.19	0
130167A	MC	0.51	0.40	0
130168A	MC	0.45	0.45	0
130171A	MC	0.84	0.40	0
130173A	OR	0.58	0.51	0
130184A	OR	0.26	0.49	1
407603	MC	0.36	0.17	0
407638	MC	0.81	0.45	0
407683	MC	0.83	0.46	0
409362	MC	0.75	0.32	0
409385	MC	0.41	0.40	0
409396	MC	0.61	0.40	0
409447	MC	0.35	0.29	0
409458	OR	0.47	0.40	0
409472	MC	0.59	0.37	0
413439	MC	0.75	0.32	0
413445	MC	0.66	0.33	0
413448	MC	0.54	0.38	0
413454	OR	0.59	0.48	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
413469	OR	0.30	0.58	1
413478	OR	0.30	0.62	1
419841	MC	0.66	0.38	0
419843	MC	0.35	0.35	0
419845	MC	0.61	0.35	0
419847	OR	0.42	0.39	0
419853	MC	0.58	0.26	0
419859	MC	0.80	0.34	0
420260	MC	0.36	0.17	0
420298	OR	0.28	0.49	1
462459	MC	0.50	0.32	0
462461	MC	0.61	0.42	0
462472	MC	0.80	0.39	0
462482	MC	0.73	0.49	0
462484	MC	0.68	0.33	0
464586	MC	0.43	0.39	0
464598	OR	0.58	0.42	0
464600	MC	0.71	0.39	0
464604	MC	0.74	0.39	0
464608	MC	0.18	0.22	0
464610	MC	0.46	0.21	0
471626	MC	0.38	0.15	0

Table G-11. 2017–18 eMPowerME: Item-Level Classical Test Theory Statistics
ELA Grade 7

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
128730A	MC	0.80	0.45	0
128731A	MC	0.59	0.44	0
128753A	MC	0.76	0.46	0
128756A	MC	0.74	0.39	0
128757A	MC	0.61	0.50	0
129219A	MC	0.39	0.27	0
131159A	MC	0.74	0.38	0
131160A	MC	0.47	0.27	0
131161A	MC	0.46	0.37	0
131163A	MC	0.47	0.40	0
131166A	MC	0.36	0.23	0
131168A	OR	0.40	0.55	2
409304	OR	0.37	0.50	1
409315	MC	0.47	0.11	0
409322	MC	0.68	0.37	0
409354	MC	0.48	0.17	0
409364	MC	0.63	0.37	0
409372	MC	0.68	0.38	0
409401	MC	0.52	0.32	0
409409	MC	0.42	0.40	0
409464	MC	0.44	0.31	0
409493	MC	0.47	0.35	0
409501	MC	0.57	0.45	0
409517	OR	0.38	0.41	0
409922	MC	0.65	0.42	0
409929	MC	0.45	0.37	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
409958	MC	0.40	0.23	0
409976	MC	0.71	0.40	0
409979	MC	0.38	0.22	0
416697	MC	0.70	0.38	0
416720	OR	0.44	0.27	0
416732	OR	0.26	0.61	2
416762	MC	0.47	0.34	0
416766	MC	0.74	0.32	0
416774	OR	0.49	0.53	0
416793	OR	0.29	0.59	2
459443	MC	0.30	0.32	0
459447	MC	0.52	0.56	0
459453	MC	0.56	0.33	0
459457	OR	0.40	0.40	0
459459	MC	0.70	0.37	0
459463	MC	0.95	0.28	0
477633	MC	0.60	0.29	0
477635	MC	0.56	0.35	0
477645	OR	0.53	0.44	0
477647	MC	0.66	0.38	0
477651	MC	0.69	0.34	0
477655	MC	0.61	0.37	0
477778	OR	0.50	0.52	1

Table G-12. 2017–18 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>			
130023A	MC	0.73	0.46	0
130024A	MC	0.66	0.44	0
130026A	MC	0.55	0.42	0
130027A	MC	0.46	0.19	0
130080A	OR	0.45	0.59	2
402075	MC	0.59	0.24	1
402077	MC	0.35	0.28	0
402079	OR	0.53	0.44	0
402111	MC	0.84	0.30	0
402116	MC	0.81	0.41	0
402118	MC	0.67	0.44	0
418842	MC	0.58	0.36	0
418854	MC	0.54	0.21	0
418861	OR	0.80	0.50	0
418866	OR	0.33	0.64	3
420376	MC	0.88	0.33	
420389	MC	0.65	0.38	0
420398	MC	0.41	0.27	0
420407	MC	0.49	0.41	0
420455	MC	0.56	0.37	0
420872	MC	0.67	0.36	0
420905	MC	0.39	0.27	0
420913	MC	0.43	0.37	0
420925	MC	0.53	0.39	1
420929	MC	0.49	0.22	0

<i>Item</i>		<i>Difficulty</i>	<i>Discrimination</i>	<i>Percent Omitted</i>
<i>Number</i>	<i>Type</i>			
420946	MC	0.69	0.42	0
420952	MC	0.74	0.32	0
420970	MC	0.69	0.39	0
420986	OR	0.56	0.41	0
420990	OR	0.34	0.64	3
461905	MC	0.49	0.34	1
461913	MC	0.76	0.40	0
461921	MC	0.59	0.22	0
461923	MC	0.86	0.35	0
461925	MC	0.89	0.34	0
461927	OR	0.45	0.44	0
475541	MC	0.51	0.20	0
475543	MC	0.61	0.40	0
475545	MC	0.76	0.49	0
475547	MC	0.49	0.28	0
475555	MC	0.67	0.28	0
475558	OR	0.26	0.22	0
480815	MC	0.66	0.29	0
480828	MC	0.67	0.47	0
480847	MC	0.57	0.36	0
480879	OR	0.50	0.36	0
480914	MC	0.62	0.43	0
480927	MC	0.51	0.41	0
480941	OR	0.41	0.58	2

APPENDIX H—ITEM-LEVEL SCORE POINT DISTRIBUTIONS

Table H-1. 2017–18 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	69.21	30.54			
	125282AA	2	85.43	5.42	7.06		
	125282AB	1	84.25	13.68			
	464225	1	82.22	17.63			
	464499A	4	65.56	18.48	9.45	2.88	1.12
	464499B	2	64.67	31.79	1.19		
	464512A	4	44.94	15.82	23.79	6.74	5.47
	464512B	2	73.28	17.72	6.02		
	551311A	2	50.65	45.92	2.32		
	551311B	1	44.90	54.00			
4	127591AA	2	85.83	5.03	7.84		
	127591AB	1	80.94	17.76			
	447971A	4	38.50	25.77	20.03	5.08	8.22
	447971B	2	79.73	16.05	2.14		
	448378A	2	49.64	39.93	9.39		
	448378B	1	90.12	8.85			
	462834	1	59.90	40.07			
	466047	1	69.68	30.24			
	551343A	4	54.28	19.28	13.41	7.72	2.84
	551343B	2	69.56	19.67	8.39		
5	124973A	1	62.17	37.66			
	125061AA	2	52.30	39.58	6.05		
	125061AB	1	59.76	38.18			
	412207A	4	13.00	52.25	19.06	5.93	8.51
	412207B	2	55.67	28.86	14.30		
	415228A	2	36.79	45.97	15.34		
	415228B	1	78.74	19.37			
	551415A	4	32.82	16.73	34.15	10.36	4.09
	551415B	2	90.61	3.36	4.25		
6	412531A	4	50.93	17.39	14.46	9.83	5.73
	412531B	2	78.11	14.08	6.25		
	445967A	4	18.80	22.48	28.95	18.30	10.41
	445967B	2	57.65	30.85	10.44		
	464787	1	89.00	10.90			
	465321A	2	80.10	12.21	2.85		
	465321B	1	93.58	1.65			
	551449A	2	44.47	46.21	8.72		
	551449B	1	94.60	4.82			
7	124362AA	2	77.33	5.55	14.00		
	124362AB	1	76.35	20.54			
	446604A	4	37.18	43.21	5.83	10.53	0.58
	446604B	2	95.97	1.12	0.27		
	446620A	4	30.31	15.58	25.92	23.85	2.87
	446620B	2	71.01	24.24	3.30		
	467881	1	86.42	13.38			
	467883	1	80.66	19.14			

continued

Grade	Item Number	Total Possible Points	Percent of Students at Score Point				
			0	1	2	3	4
8	467892	1	83.29	16.54			
	551426A	2	40.99	52.39	3.78		
	551426B	1	92.81	4.43			
	447488A	4	81.41	3.04	7.00	1.91	0.36
	447488B	2	81.44	11.28	1.03		
	465407	1	82.56	17.32			
	468386	1	79.17	20.73			
	468821A	2	59.38	26.71	9.11		
	468821B	1	86.09	9.16			
	482018A	2	39.28	37.15	21.48		
8	482018B	1	83.92	14.06			
	551332A	4	63.13	18.42	4.77	6.06	4.58
	551332B	2	68.42	24.41	4.13		

Table H-2. 2017–18 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
3	128597A	2	28.78	44.93	26.12		
	128603A	2	54.00	40.03	4.20		
	130326A	2	35.61	19.67	44.58		
	410572	3	34.53	51.94	9.60	1.73	
	410580	3	64.89	28.24	3.05	0.13	
	418677	2	39.03	42.75	18.05		
	418699	3	46.95	46.89	3.84	0.24	
	421661	2	37.66	22.00	40.06		
	456735	2	35.89	18.49	45.54		
	459515	2	33.42	25.49	40.97		
4	130668A	2	41.00	5.18	53.72		
	130728A	2	69.17	19.94	7.16		
	131519A	2	35.95	15.03	48.99		
	410868	3	21.46	65.44	9.01	2.42	
	420723	2	38.40	22.07	39.50		
	421852	2	41.97	17.51	40.46		
	465756	2	57.29	16.20	26.38		
	472582	3	9.74	57.56	26.44	5.79	
	476102	2	64.26	11.52	24.12		
	476172	2	40.47	44.42	13.87		
5	129015A	2	19.93	32.25	47.81		
	129019A	2	24.27	56.11	18.90		
	131452A	2	28.43	5.21	66.11		
	131484A	2	44.69	45.04	8.87		
	416527	3	36.05	33.89	21.88	6.95	
	419292	2	33.26	6.85	59.48		
	458563	2	35.70	26.25	37.70		
	460891	2	51.65	13.03	35.20		
	478358	3	29.57	41.43	20.57	7.19	
	478360	2	40.34	22.23	37.37		

continued

Grade	Item Number	Total Possible Points	Percent of Students at Score Point				
			0	1	2	3	4
6	129258A	2	40.07	33.39	26.50		
	130173A	2	37.53	7.84	54.58		
	130184A	2	53.00	39.11	6.60		
	409458	2	43.17	20.18	36.59		
	413454	2	22.68	36.90	40.38		
	413469	4	19.92	47.96	25.05	4.76	1.57
	413478	4	25.25	36.59	29.26	5.89	1.57
	419847	2	41.34	34.04	24.58		
	420298	2	54.37	32.58	12.18		
	464598	2	34.55	14.70	50.71		
7	131168A	2	40.75	35.80	21.69		
	409304	2	45.91	32.30	21.29		
	409517	2	55.98	12.43	31.51		
	416720	2	31.08	50.10	18.78		
	416732	4	33.26	33.69	22.41	6.82	1.52
	416774	2	44.70	11.71	43.58		
	416793	4	25.76	38.54	26.14	6.32	1.72
	459457	2	43.69	32.54	23.71		
	477645	2	39.19	15.21	45.55		
	477778	2	15.69	66.32	16.55		
8	130080A	2	25.83	55.32	17.11		
	402079	2	36.40	21.98	41.58		
	418861	2	15.83	8.10	76.05		
	418866	4	20.95	37.09	26.85	8.95	3.12
	420986	2	38.99	9.56	51.41		
	420990	4	15.66	40.92	28.63	8.74	3.13
	461927	2	43.89	21.97	34.09		
	475558	2	68.93	10.51	20.51		
	480879	2	44.79	10.53	44.67		
	480941	2	27.77	56.97	12.83		

APPENDIX I—DIFFERENTIAL ITEM FUNCTIONING RESULTS

**Table I-1. 2017–18 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	31	2	2	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	31	7	7	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-EconDis	EconDis	MC	31	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	31	9	6	3	1	1	0
			OR	10	0	0	0	0	0	0
	White	Black	MC	31	8	5	3	2	2	0
			OR	10	0	0	0	0	0	0
		Hispanic	MC	31	3	2	1	0	0	0
			OR	10	0	0	0	0	0	0
4	Male	Female	MC	30	4	3	1	0	0	0
			OR	10	1	1	0	0	0	0
	No Disability	Disability	MC	30	6	6	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-EconDis	EconDis	MC	30	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	30	8	5	3	3	3	0
			OR	10	0	0	0	0	0	0
	White	Black	MC	30	7	5	2	2	2	0
			OR	10	1	1	0	0	0	0
		Hispanic	MC	30	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
5	Male	Female	MC	32	2	1	1	0	0	0
			OR	9	1	1	0	0	0	0
	No Disability	Disability	MC	32	8	8	0	0	0	0
			OR	9	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	32	0	0	0	0	0	0	
			OR	9	0	0	0	0	0	0	
	Non-LEP	LEP	MC	32	9	8	1	2	2	0	
			OR	9	2	2	0	0	0	0	
	White	Black	MC	32	4	2	2	1	1	0	
			OR	9	3	3	0	0	0	0	
		Hispanic	MC	32	2	1	1	0	0	0	
			OR	9	0	0	0	0	0	0	
6	Male	Female	MC	35	4	3	1	0	0	0	
			OR	9	1	0	1	0	0	0	
	No Disability	Disability	MC	35	7	7	0	0	0	0	
			OR	9	0	0	0	0	0	0	
	Non-EconDis	EconDis	MC	35	0	0	0	0	0	0	
			OR	9	0	0	0	0	0	0	
	Non-LEP	LEP	MC	35	12	10	2	2	2	0	
			OR	9	1	1	0	0	0	0	
	White	Asian	MC	35	6	3	3	0	0	0	
			OR	9	0	0	0	0	0	0	
		Black	MC	35	6	5	1	1	1	0	
			OR	9	1	1	0	0	0	0	
		Hispanic	MC	35	4	2	2	0	0	0	
			OR	9	0	0	0	0	0	0	
	7	Male	Female	MC	33	4	4	0	0	0	0
				OR	11	1	0	1	0	0	0
No Disability		Disability	MC	33	7	7	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	13	7	6	3	3	0	
			OR	11	4	4	0	0	0	0	
White		Black	MC	33	7	5	2	0	0	0	
			OR	11	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
7		Hispanic	MC	33	3	2	1	0	0	0
			OR	11	1	1	0	0	0	0
8	Male	Female	MC	35	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	35	10	8	2	1	1	0
			OR	10	1	1	0	0	0	0
	Non-EconDis	EconDis	MC	35	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	35	8	6	2	4	4	0
			OR	10	1	1	0	0	0	0
	White	Asian	MC	35	6	2	4	1	1	0
			OR	10	1	0	1	0	0	0
		Black	MC	35	6	4	2	1	1	0
			OR	10	1	1	0	0	0	0
		Hispanic	MC	35	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0

**Table I-2. 2017–18 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	38	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	38	4	4	0	0	0	0
			OR	10	1	1	0	0	0	0
	Non-EconDis	EconDis	MC	38	0	0	0	0	0	0
			OR	10	0	0	0	0	0	0
	Non-LEP	LEP	MC	38	8	6	2	3	2	1
			OR	10	1	1	0	0	0	0
	White	Black	MC	38	9	4	5	1	1	0
			OR	10	0	0	0	0	0	0
		Hispanic	MC	38	6	3	3	0	0	0
			OR	10	0	0	0	0	0	0
4	Male	Female	MC	39	3	1	2	0	0	0
			OR	10	2	1	1	0	0	0
	No Disability	Disability	MC	39	7	7	0	0	0	0
			OR	10	2	1	1	1	1	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	8	6	2	3	3	0
			OR	10	2	2	0	0	0	0
	White	Black	MC	39	8	6	2	1	1	0
			OR	10	0	0	0	0	0	0
		Hispanic	MC	39	3	2	1	0	0	0
			OR	10	1	1	0	0	0	0
5	Male	Female	MC	39	1	1	0	0	0	0
			OR	10	0	0	0	0	0	0
	No Disability	Disability	MC	39	6	6	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

continued

Grade	Group		Item Type	Number of Items	Number "Low"			Number "High"			
	Reference	Focal			Total	Favoring		Total	Favoring		
						Reference	Focal		Reference	Focal	
5	Non-LEP	LEP	MC	39	9	7	2	7	6	1	
			OR	10	1	1	0	1	1	0	
	White	Black	MC	39	9	6	3	3	2	1	
			OR	10	1	1	0	0	0	0	
		Hispanic	MC	39	5	5	0	0	0	0	
			OR	10	0	0	0	0	0	0	
6	Male	Female	MC	39	3	2	1	1	1	0	
			OR	10	3	0	3	0	0	0	
	No Disability	Disability	MC	39	2	2	0	1	1	0	
			OR	10	4	4	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	11	8	3	6	5	1	
			OR	10	1	0	1	2	2	0	
		White	Asian	MC	39	8	4	4	4	3	1
				OR	10	4	1	3	1	0	1
	Black		MC	39	7	7	0	2	2	0	
			OR	10	0	0	0	1	1	0	
	Hispanic	MC	39	4	2	2	0	0	0		
		OR	10	0	0	0	0	0	0		
	7	Male	Female	MC	39	6	6	0	0	0	0
				OR	10	2	2	0	0	0	0
No Disability		Disability	MC	39	0	0	0	0	0	0	
			OR	10	0	0	0	0	0	0	
Non-EconDis		EconDis	MC	39	13	8	5	4	4	0	
			OR	10	0	0	0	1	1	0	
Non-LEP		LEP	MC	39	9	7	2	1	0	1	
			OR	10	0	0	0	0	0	0	
		White	Black	MC	39	0	0	0	0	0	0
				OR	10	0	0	0	0	0	0
Hispanic			MC	39	6	6	0	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	4	4	0	0	0	0
			OR	10	5	1	4	0	0	0
	No Disability	Disability	MC	39	7	4	3	0	0	0
			OR	10	5	5	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	5	3	2	7	7	0
			OR	10	1	0	1	1	1	0
	White	Black	MC	39	8	7	1	0	0	0
			OR	10	1	1	0	0	0	0
		Hispanic	MC	39	2	1	1	0	0	0
			OR	10	1	0	1	0	0	0

APPENDIX J—ITEM RESPONSE THEORY CALIBRATION RESULTS

**Table J-1. 2017–18 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)
411623	1.23518	0.03782	-1.03051	0.03616	0.15096	0.02208	413339	1.04502	0.03302	-0.38715	0.03273	0.14824	0.01611
400626	1.11108	0.04484	0.72385	0.02422	0.20850	0.00884	413352	0.79620	0.03840	0.59984	0.04045	0.23160	0.01403
413559	0.65074	0.02551	-0.07437	0.05357	0.09166	0.02036	411764	0.82725	0.04222	1.08064	0.03366	0.19181	0.01039
413568	0.88111	0.03324	0.51477	0.02842	0.12608	0.01111	414589	0.92578	0.03165	0.40871	0.02545	0.10030	0.01034
413222	1.05789	0.04562	0.47169	0.03085	0.29617	0.01128	409896	0.45050	0.02440	0.22400	0.09446	0.09428	0.02795
462666	0.76973	0.02971	-0.87740	0.07283	0.17739	0.03194	411009	0.58009	0.02622	-0.73749	0.10393	0.15131	0.03732
125291A	0.73662	0.04919	1.03863	0.05026	0.34059	0.01369	400041	1.00559	0.06089	1.30158	0.03510	0.31138	0.00852
124531A	0.92713	0.03594	-1.46737	0.08190	0.23522	0.04326	412701	0.62207	0.05486	2.05005	0.07397	0.20196	0.01134
124366A	0.92909	0.03606	0.17973	0.03490	0.20900	0.01408	125260A	0.57115	0.03588	0.43551	0.08244	0.24800	0.02435
411494	0.88123	0.02985	-1.20788	0.06247	0.14161	0.03261	124364A	0.90245	0.03097	-0.47855	0.04387	0.15512	0.02026
411588	0.32300	0.02587	0.32647	0.20362	0.13634	0.04455	411577	0.43248	0.03084	-0.11346	0.17058	0.21005	0.04377
400619	0.79298	0.03627	-0.44220	0.07141	0.31187	0.02580	413036	1.03135	0.04728	0.82225	0.02851	0.25490	0.00958
123976A	0.63848	0.03350	0.63108	0.05187	0.16816	0.01762	551311B	0.67230	0.01449	-0.24456	0.01760	0.00000	0.00000
125052A	1.13078	0.04921	0.98412	0.02414	0.20199	0.00771	125282AB	1.00123	0.02406	1.49616	0.02547	0.00000	0.00000
125219A	0.95180	0.03468	0.13406	0.03220	0.17858	0.01356	464225	0.41206	0.01516	2.34714	0.08164	0.00000	0.00000
124395A	0.87926	0.03323	-0.61175	0.05545	0.21779	0.02446	123876A	0.96751	0.01923	0.67174	0.01566	0.00000	0.00000
411633	0.82462	0.02767	-1.17506	0.06385	0.12363	0.03198							
125120A	0.99648	0.03778	0.78517	0.02347	0.12704	0.00840							
411729	0.99461	0.04655	0.91016	0.02890	0.23672	0.00943							

**Table J-2. 2017–18 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)
125282AA	0.93887	0.02011	1.86364	0.02718	0.24498	0.01869	-0.24498	0.02337	0.00000	0.00000	n/a	n/a	n/a	n/a
464499A	1.05234	0.01339	1.92522	0.01301	1.35458	0.01274	0.46688	0.01637	-0.49176	0.02716	-1.32970	0.04908	0.00000	0.00000
464499B	0.94683	0.01476	1.99546	0.01502	1.41614	0.01391	-1.41614	0.05218	0.00000	0.00000	n/a	n/a	n/a	n/a
464512A	0.97671	0.01053	1.04459	0.01113	1.18014	0.01274	0.61283	0.01300	-0.56241	0.01803	-1.23056	0.02521	0.00000	0.00000

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)
464512B	1.02595	0.01617	1.53909	0.01623	0.60202	0.01411	-0.60202	0.02330	0.00000	0.00000	n/a	n/a	n/a	n/a
551311A	0.60111	0.00831	2.03076	0.01895	2.01864	0.01903	-2.01864	0.05789	0.00000	0.00000	n/a	n/a	n/a	n/a

Table J-3. 2017–18 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)
411858	0.60041	0.02144	-1.77295	0.10439	0.11264	0.04481	400748	0.48382	0.03281	0.80856	0.08639	0.15079	0.02609
124946A	0.68836	0.01551	-0.84692	0.02234	0.00000	0.00000	411850	1.54123	0.08856	1.51011	0.02523	0.27090	0.00570
411727	0.40040	0.02437	0.55614	0.10675	0.08961	0.02924	127590A	1.02220	0.03910	1.04053	0.02237	0.10633	0.00729
127720A	0.76478	0.02995	0.07853	0.04598	0.13807	0.01861	127595A	0.73895	0.03529	0.43744	0.04948	0.21523	0.01768
400798	0.68596	0.03986	1.42362	0.04022	0.13835	0.01154	408032	1.19716	0.03424	-0.57171	0.02884	0.11422	0.01640
407852	1.00740	0.05372	1.61225	0.03224	0.14833	0.00658	127117A	0.55094	0.03995	0.83019	0.08280	0.26857	0.02350
408054	1.13942	0.03535	0.36784	0.02072	0.11379	0.00926	400786	0.25221	0.01715	-1.94551	0.39150	0.17495	0.07077
405640	0.94686	0.03145	-0.60161	0.04538	0.14860	0.02271	400447	0.96892	0.03271	-0.38639	0.04072	0.16536	0.01964
407489	1.19982	0.04405	-0.23301	0.03507	0.30782	0.01617	124741A	1.21866	0.04288	0.40124	0.02316	0.21237	0.01012
407491	0.78345	0.02904	0.30589	0.03595	0.10085	0.01464	411676	0.97590	0.03051	0.17248	0.02599	0.09359	0.01171
126060A	0.57211	0.03591	1.05365	0.05689	0.16187	0.01848	465902	1.24077	0.08298	1.84790	0.03697	0.21651	0.00565
126903A	0.90081	0.03191	-0.82174	0.05823	0.17395	0.02892	400903	0.95059	0.04746	0.74977	0.03609	0.32260	0.01193
476961	0.60016	0.04936	1.73018	0.05969	0.22461	0.01433	448378B	1.10494	0.02963	1.86035	0.02970	0.00000	0.00000
411024	0.50938	0.02965	0.84282	0.06578	0.10279	0.02135	127591AB	1.41645	0.02972	1.16333	0.01467	0.00000	0.00000
400740	0.65823	0.04848	1.94429	0.05731	0.14553	0.01041	462834	0.88464	0.01737	0.41248	0.01461	0.00000	0.00000
411556	0.92291	0.03765	0.09043	0.04209	0.25978	0.01676	466047	0.74919	0.01648	0.88708	0.02045	0.00000	0.00000
126501A	1.14648	0.03537	-0.14795	0.02714	0.15051	0.01370							
413801	1.17336	0.03404	-0.19811	0.02487	0.11762	0.01293							

**Table J-4. 2017–18 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 4**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>													
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>D0</i>	<i>SE (D0)</i>	<i>D1</i>	<i>SE (D1)</i>	<i>D2</i>	<i>SE (D2)</i>	<i>d3</i>	<i>SE(d3)</i>	<i>d4</i>	<i>SE(d4)</i>
127591AA	1.62840	0.03281	1.52516	0.01437	0.16555	0.01230	-0.16555	0.01475	0.00000	0.00000	n/a	n/a	n/a	n/a
447971A	1.09708	0.01135	0.95267	0.00957	1.21645	0.01179	0.34095	0.01201	-0.58474	0.01587	-0.97265	0.01924	0.00000	0.00000
447971B	0.96072	0.01687	2.19129	0.02052	0.85207	0.01608	-0.85207	0.03857	0.00000	0.00000	n/a	n/a	n/a	n/a
448378A	0.80731	0.00996	1.09005	0.01406	1.04664	0.01480	-1.04664	0.02354	0.00000	0.00000	n/a	n/a	n/a	n/a
551343A	0.69025	0.00790	1.80164	0.01628	1.53985	0.01676	0.62324	0.01867	-0.40975	0.02532	-1.75333	0.04637	0.00000	0.00000
551343B	1.12541	0.00000	1.39494	0.01384	0.52319	0.01268	-0.52319	0.01910	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-5. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 5**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>						<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>		<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
464057	0.79998	0.02998	-1.09303	0.07671	0.18698	0.03565	413885	0.77618	0.04279	1.70979	0.03989	0.10669	0.00762
400076	0.29317	0.03151	1.91992	0.14686	0.11292	0.03356	128315A	1.81055	0.11332	1.91879	0.02756	0.13287	0.00363
400718	1.37239	0.04097	0.35307	0.01733	0.14071	0.00788	410151	0.98572	0.05597	1.23203	0.03370	0.31183	0.00895
480576	1.00248	0.05454	0.94393	0.03514	0.37244	0.01006	124675A	0.87536	0.03573	0.69577	0.03028	0.16911	0.01114
480578	0.84222	0.03719	-0.77177	0.07910	0.34894	0.03008	125060A	1.08588	0.04042	0.30184	0.02870	0.24939	0.01168
411149	1.33912	0.04416	0.39044	0.01988	0.20012	0.00875	478772	1.72655	0.09185	1.61992	0.02245	0.17233	0.00437
415252	0.59651	0.02715	-0.95907	0.11798	0.18929	0.04307	415312	0.70984	0.03447	0.35863	0.05448	0.23825	0.01843
124038A	0.93378	0.04094	1.05720	0.02740	0.16653	0.00875	408484	1.72097	0.11278	1.66630	0.02686	0.29020	0.00510
413923	1.02141	0.03042	0.35681	0.02116	0.07989	0.00888	414953	1.08049	0.03545	-0.33525	0.03387	0.20359	0.01634
124943A	0.68176	0.03733	0.74742	0.05121	0.24152	0.01634	400715	0.76881	0.04687	1.38859	0.04057	0.23362	0.01070
124737A	1.11242	0.04375	0.31719	0.03008	0.29886	0.01172	465792	0.99272	0.04926	1.17370	0.02942	0.23560	0.00855
412026	1.16842	0.03139	-0.16597	0.02134	0.08541	0.01067	413850	0.91642	0.04409	0.85531	0.03345	0.26971	0.01093
414837	0.63393	0.03403	0.72761	0.05319	0.18963	0.01748	411976	1.55489	0.08573	1.48659	0.02422	0.25685	0.00544
126058A	1.65067	0.13548	2.32764	0.04614	0.10594	0.00319	415228B	1.30427	0.02648	1.09076	0.01498	0.00000	0.00000
400302	1.12939	0.05963	1.40528	0.02860	0.23359	0.00690	125061AB	0.43577	0.01229	0.71971	0.03042	0.00000	0.00000
464086	0.58716	0.03390	0.82666	0.05814	0.17947	0.01860	124973A	0.90324	0.01737	0.45868	0.01466	0.00000	0.00000
124390A	1.16009	0.03894	0.33142	0.02332	0.18793	0.01009							
411240	1.07466	0.03432	0.48825	0.02120	0.11433	0.00872							
408471	0.55712	0.03305	0.91607	0.05917	0.15602	0.01888							

**Table J-6. 2017–18 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 5**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>													
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>D0</i>	<i>SE (D0)</i>	<i>D1</i>	<i>SE (D1)</i>	<i>D2</i>	<i>SE (D2)</i>	<i>D3</i>	<i>SE (D3)</i>	<i>D4</i>	<i>SE (D4)</i>
125061AA	0.49079	0.00635	1.91540	0.02266	1.69341	0.02238	-1.69341	0.04428	0.00000	0.00000	n/a	n/a	n/a	n/a
412207A	0.80162	0.00731	0.70604	0.01252	2.44181	0.02012	0.03187	0.01533	-0.97623	0.01965	-1.49745	0.02422	0.00000	0.00000
412207B	0.63542	0.00851	1.12555	0.01803	0.83539	0.01792	-0.83539	0.02421	0.00000	0.00000	n/a	n/a	n/a	n/a
415228A	0.95484	0.01100	0.50185	0.01132	0.95737	0.01325	-0.95737	0.01683	0.00000	0.00000	n/a	n/a	n/a	n/a
551415A	1.21452	0.01193	0.78964	0.00852	1.30555	0.01117	0.76571	0.01065	-0.56347	0.01413	-1.50778	0.02367	0.00000	0.00000
551415B	1.47391	0.03480	1.91667	0.02091	0.17845	0.01589	-0.17845	0.01999	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-7. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 6**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>						<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>		<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
400096	0.65418	0.02645	-0.87652	0.08506	0.14965	0.03348	125839A	0.56626	0.02105	-0.83964	0.07995	0.08772	0.02929
414069	0.94021	0.07624	1.84962	0.05437	0.28245	0.00736	419562	0.40854	0.01994	-0.70200	0.13618	0.10346	0.03791
464910	0.89661	0.09316	2.23803	0.08508	0.28068	0.00702	400100	0.91042	0.07919	1.63435	0.05406	0.41161	0.00856
414079	0.85253	0.03562	0.11591	0.04168	0.23642	0.01558	400688	0.66700	0.02211	0.18751	0.03388	0.04292	0.01227
414094	1.07972	0.05731	1.34832	0.02979	0.20759	0.00686	125081A	1.22857	0.07547	1.54674	0.03258	0.24588	0.00606
412328	1.02736	0.04901	1.02965	0.02771	0.22196	0.00822	412181	1.47682	0.15947	1.99178	0.05348	0.40724	0.00543
412060	0.47129	0.02266	-0.99040	0.14121	0.13675	0.04414	408317	0.62471	0.04244	1.53032	0.04966	0.15945	0.01208
400411	0.31037	0.01115	0.32977	0.03754	0.00000	0.00000	411834	0.77947	0.03470	0.04636	0.05076	0.24506	0.01814
412455	1.01239	0.05299	1.31889	0.03041	0.19624	0.00727	415153	0.97593	0.04199	0.09739	0.03954	0.32764	0.01424
412144	0.65403	0.02860	0.32307	0.04689	0.11413	0.01692	412226	0.85109	0.07339	2.15751	0.07223	0.19625	0.00690
412273	0.62272	0.03512	1.07230	0.04361	0.13582	0.01378	412115	0.67307	0.03350	0.40643	0.05217	0.19516	0.01769
127738A	1.19485	0.04626	0.31310	0.02612	0.28178	0.01025	125464A	0.83749	0.02852	-1.20885	0.06401	0.14074	0.03166
464839	0.33363	0.03034	1.22906	0.13418	0.11731	0.03289	400114	0.41502	0.01926	0.43747	0.06978	0.05166	0.01933
406039	0.77340	0.03918	0.97024	0.03527	0.18042	0.01119	400695	0.98555	0.03850	-0.44001	0.04664	0.30442	0.01908
464828	0.65854	0.07315	2.28503	0.10368	0.27549	0.01017	414013	0.66493	0.02451	0.14595	0.04061	0.06681	0.01517
125822A	0.42161	0.05787	2.27662	0.12497	0.27963	0.02106							
124562A	0.73721	0.03315	-0.26510	0.06485	0.25039	0.02312							
400092	0.34747	0.01195	-1.56820	0.05389	0.00000	0.00000							

continued

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
400189	1.02975	0.03373	-0.69270	0.03989	0.18302	0.01971
413794	0.81076	0.03240	0.75516	0.02812	0.09959	0.00981
551449B	1.08185	0.03567	2.19758	0.04461	0.00000	0.00000

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
465321B	1.37589	0.06371	2.57864	0.05995	0.00000	0.00000
464787	0.74253	0.02157	1.97439	0.04555	0.00000	0.00000

**Table J-8. 2017–18 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	1.21599	0.01334	0.91913	0.00939	0.96003	0.01089	0.36536	0.01144	-0.28099	0.01387	-1.04440	0.02064	0.00000	0.00000
412531B	1.42433	0.02332	1.34841	0.01269	0.43729	0.01167	-0.43729	0.01779	0.00000	0.00000	n/a	n/a	n/a	n/a
445967A	1.24754	0.01153	0.11899	0.00792	1.37094	0.01303	0.50582	0.01071	-0.48598	0.01142	-1.39078	0.01595	0.00000	0.00000
445967B	1.25677	0.01644	0.83100	0.01020	0.66972	0.01086	-0.66972	0.01593	0.00000	0.00000	n/a	n/a	n/a	n/a
465321A	0.89368	0.01671	2.14410	0.02480	0.70347	0.01821	-0.70347	0.03620	0.00000	0.00000	n/a	n/a	n/a	n/a
551449A	0.72997	0.00868	0.93179	0.01510	1.28257	0.01624	-1.28257	0.02655	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-9. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 7**

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
124508A	0.74735	0.02783	-0.86613	0.07154	0.15526	0.03116
124652A	0.94953	0.06976	1.62752	0.04373	0.31781	0.00817
467154	1.29171	0.03955	-0.49350	0.02795	0.20007	0.01504
408701	1.13572	0.07157	1.40283	0.03298	0.33245	0.00743
408783	1.72724	0.11258	1.45989	0.02577	0.36213	0.00563
408770	0.83125	0.03406	-0.11701	0.05020	0.24453	0.01927
124360A	0.78556	0.02577	-0.84319	0.05603	0.10638	0.02585
412193	0.78780	0.04194	0.61939	0.04638	0.30926	0.01467
400951	1.07424	0.05592	1.08718	0.02913	0.29607	0.00852
124351A	1.10897	0.03652	-0.15038	0.02995	0.20567	0.01391
414127	1.51267	0.10563	1.64548	0.03119	0.31699	0.00560
400884	0.59754	0.05079	1.72354	0.06179	0.23964	0.01386
412147	0.81857	0.03918	0.80957	0.03502	0.21142	0.01200

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
467833	0.62782	0.06009	1.75113	0.06841	0.33358	0.01343
400168	1.16498	0.04313	0.10080	0.02957	0.29228	0.01232
124359A	0.93215	0.03691	0.19523	0.03635	0.24208	0.01418
400873	1.43008	0.06948	1.12251	0.02244	0.28731	0.00661
408597	0.92110	0.03640	0.21931	0.03604	0.23184	0.01407
124649A	0.82189	0.02240	-0.60691	0.03515	0.05092	0.01573
124361A	1.03577	0.03240	0.52771	0.02021	0.08416	0.00797
412244	1.09693	0.03138	-0.60984	0.03079	0.11172	0.01630
410223	0.65928	0.03459	0.50510	0.05581	0.21361	0.01851
400958	0.79143	0.03097	0.25337	0.03859	0.14857	0.01507
410251	0.87131	0.03918	0.34792	0.04125	0.28413	0.01456

continued

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
400877	1.10954	0.03930	-0.08509	0.03206	0.25939	0.01403
400983	0.87930	0.03536	-0.75327	0.06622	0.28804	0.02766
400990	0.86842	0.05831	1.06706	0.04447	0.41818	0.01120
412231	1.51765	0.05070	0.74498	0.01580	0.14983	0.00606
412197	1.37218	0.04426	0.38537	0.01869	0.18475	0.00826
412118	0.66547	0.03051	0.26520	0.05414	0.16000	0.01930
412529	1.35864	0.04432	-0.20880	0.02554	0.25901	0.01265

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
123969A	0.92754	0.04715	0.95164	0.03253	0.27170	0.01028
467828	0.83361	0.03361	-0.15443	0.05010	0.23674	0.01952
551426B	1.36044	0.04437	2.09010	0.03429	0.00000	0.00000
124362AB	1.28467	0.02602	1.01803	0.01464	0.00000	0.00000
467892	0.70580	0.01850	1.65097	0.03561	0.00000	0.00000
467881	1.00778	0.02429	1.53703	0.02528	0.00000	0.00000
467883	0.59251	0.01640	1.66566	0.04100	0.00000	0.00000

**Table J-10. 2017–18 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)
124362AA	1.54205	0.02779	1.13018	0.01207	0.13049	0.01099	-0.13049	0.01221	0.00000	0.00000	n/a	n/a	n/a	n/a
446604A	0.98559	0.01033	1.59489	0.01090	1.99352	0.01287	0.27564	0.01569	-0.09980	0.01823	-2.16937	0.06860	0.00000	0.00000
446604B	1.40986	0.06255	3.08043	0.06087	0.39097	0.03381	-0.39097	0.07311	0.00000	0.00000	n/a	n/a	n/a	n/a
446620A	1.04408	0.01007	0.66322	0.00957	1.36224	0.01277	0.78520	0.01187	-0.16522	0.01311	-1.98222	0.03094	0.00000	0.00000
446620B	0.78865	0.01197	1.96367	0.01906	1.05130	0.01643	-1.05130	0.03705	0.00000	0.00000	n/a	n/a	n/a	n/a
551426A	0.94075	0.01165	1.17065	0.01252	1.43517	0.01326	-1.43517	0.03002	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-11. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
Mathematics Grade 8**

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
468384	1.85591	0.09686	1.19593	0.01970	0.33330	0.00607
414766	1.37717	0.04302	-0.00810	0.02269	0.19672	0.01234
414370	0.32467	0.02791	1.48491	0.12617	0.08776	0.03080
413229	0.71760	0.02018	-1.14005	0.04837	0.05157	0.02138
409274	0.88382	0.05451	1.32206	0.03632	0.26264	0.01055
410332	1.28482	0.04867	0.71363	0.02088	0.21143	0.00873
409239	1.05766	0.03259	-0.77171	0.04166	0.11866	0.02445
412547	0.98740	0.04939	1.10668	0.02878	0.22153	0.00970
412974	1.06441	0.04338	0.64063	0.02708	0.21973	0.01110

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
413193	1.00329	0.03416	0.44234	0.02483	0.11275	0.01118
468754	1.05592	0.04019	0.20744	0.03278	0.23788	0.01456
400370	0.90661	0.05896	1.46215	0.03755	0.26347	0.00969
400345	0.37226	0.02130	1.42290	0.07191	0.04298	0.01702
400310	0.73340	0.05608	1.47487	0.04891	0.29132	0.01306
412817	1.27451	0.06107	1.34580	0.02326	0.17959	0.00634
400985	1.11236	0.11053	2.13327	0.06545	0.30885	0.00648

continued

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
126883A	0.97172	0.03876	0.35747	0.03371	0.21484	0.01433
412693	0.90938	0.03742	0.36902	0.03662	0.20381	0.01526
412449	1.38543	0.05194	0.05112	0.02812	0.34330	0.01317
400771	0.40996	0.02803	0.31564	0.14262	0.12831	0.03885
408524	0.98992	0.04158	0.68729	0.02871	0.20285	0.01156
127742A	1.05198	0.06315	1.35691	0.03206	0.28744	0.00865
414948	0.66509	0.03654	0.65549	0.05558	0.18819	0.01982
400396	0.30047	0.05115	2.03326	0.22409	0.27743	0.04595
400172	1.02987	0.04012	0.09757	0.03702	0.25775	0.01625
408651	1.17096	0.10658	2.12172	0.05880	0.25567	0.00593
414349	1.61904	0.15544	2.08377	0.04697	0.28299	0.00494
409018	0.12325	0.00000	7.93560	1.33419	0.26000	0.00000

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
409020	0.93249	0.04970	1.03784	0.03296	0.26337	0.01112
408795	0.33471	0.01270	1.25657	0.05154	0.00000	0.00000
414203	0.37175	0.04417	1.66606	0.13033	0.19177	0.03468
127379A	1.29401	0.14035	2.14238	0.06394	0.35892	0.00588
409213	0.94352	0.05935	1.59375	0.03681	0.20960	0.00833
413314	1.05270	0.03051	0.05799	0.02396	0.07555	0.01191
412467	0.91179	0.03773	0.37910	0.03659	0.20786	0.01518
482018B	1.00080	0.02438	1.56516	0.02544	0.00000	0.00000
468821B	1.49008	0.03797	1.62097	0.02024	0.00000	0.00000
465407	0.99086	0.02276	1.37986	0.02219	0.00000	0.00000
468386	0.96292	0.02129	1.22779	0.02031	0.00000	0.00000

**Table J-12. 2017–18 eMPowerME: IRT Parameters for Polytomous Items
Mathematics Grade 8**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>													
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>D0</i>	<i>SE (D0)</i>	<i>D1</i>	<i>SE (D1)</i>	<i>D2</i>	<i>SE (D2)</i>	<i>D3</i>	<i>SE (D3)</i>	<i>D4</i>	<i>SE (D4)</i>
447488A	1.48156	0.02670	2.17764	0.01547	0.76784	0.01281	0.58224	0.01411	-0.22911	0.02560	-1.12097	0.06203	0.00000	0.00000
447488B	1.41728	0.02807	2.14724	0.01703	0.70626	0.01342	-0.70626	0.03861	0.00000	0.00000	n/a	n/a	n/a	n/a
468821A	1.11654	0.01512	1.17437	0.01176	0.63224	0.01163	-0.63224	0.01776	0.00000	0.00000	n/a	n/a	n/a	n/a
482018A	0.92247	0.01109	0.50107	0.01145	0.71611	0.01317	-0.71611	0.01534	0.00000	0.00000	n/a	n/a	n/a	n/a
551332A	1.36886	0.01711	1.36659	0.00974	0.78943	0.01009	0.09353	0.01230	-0.16857	0.01396	-0.71440	0.01987	0.00000	0.00000
551332B	1.09437	0.01601	1.59117	0.01357	0.78383	0.01241	-0.78383	0.02510	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-13. 2017–18 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	0.64159	0.02092	-0.77615	0.06125	0.06723	0.02547	456720	0.85753	0.03749	0.32322	0.03999	0.19872	0.01612
130312A	1.38832	0.04210	-0.66202	0.02918	0.16893	0.01840	456731	0.85187	0.05840	0.91188	0.04664	0.40119	0.01343
422166	0.74407	0.03084	0.55611	0.03433	0.08081	0.01382	474704	0.66989	0.04042	0.68734	0.05581	0.21763	0.01933
130325A	1.06045	0.04639	0.80622	0.02511	0.19914	0.00962	474706	0.96430	0.04242	0.62416	0.02995	0.20723	0.01189
130319A	0.93794	0.03354	-0.42295	0.04659	0.16826	0.02258	474708	0.55201	0.04575	1.62872	0.05780	0.13853	0.01651
418646	1.14817	0.03920	-0.41943	0.03677	0.21740	0.01913	474429	1.30261	0.05673	0.91240	0.02110	0.22565	0.00770
418622	0.61288	0.02443	0.26311	0.04691	0.05702	0.01754	474695	0.99401	0.04729	0.68441	0.03123	0.26338	0.01171
418659	1.62103	0.06686	0.78065	0.01816	0.27118	0.00721	459507	0.69353	0.03517	0.43112	0.05261	0.16457	0.01971
418639	1.04030	0.04030	0.49545	0.02627	0.17682	0.01118	459509	0.56387	0.01565	-1.44221	0.03809	0.00000	0.00000
418629	0.33149	0.01219	-0.35860	0.03460	0.00000	0.00000	459523	0.65524	0.03548	0.32064	0.06540	0.18708	0.02330
418618	1.59575	0.04728	-0.81620	0.02574	0.15194	0.01823	459513	1.09740	0.07400	1.43292	0.03462	0.29560	0.00795
418643	0.77652	0.02248	-0.87381	0.04697	0.06081	0.02241	459519	0.17206	0.01226	2.96064	0.21429	0.00000	0.00000
418652	0.88585	0.04138	0.35886	0.04167	0.25998	0.01592	421611	1.04757	0.04305	0.44140	0.02941	0.23199	0.01217
128594A	0.74069	0.02759	-0.59708	0.06503	0.11482	0.02913	421614	1.06057	0.03993	0.40965	0.02645	0.17991	0.01152
128591A	1.53922	0.06095	0.46387	0.02104	0.32333	0.00900	421623	0.89306	0.03636	0.04899	0.04285	0.20459	0.01812
128593A	1.41364	0.04273	-0.91129	0.03160	0.14660	0.02175	421651	0.60540	0.02377	-0.10242	0.05924	0.07006	0.02242
421938	0.59515	0.02052	-0.58253	0.06348	0.06478	0.02453	421656	0.61103	0.03051	0.49527	0.05412	0.09719	0.02005
128592A	1.03350	0.03989	0.38285	0.02836	0.19100	0.01223							
456727	0.82494	0.02695	-1.30185	0.06807	0.10867	0.03704							
456725	0.97572	0.03800	-0.52405	0.05403	0.25531	0.02519							
456712	1.17845	0.04947	0.39631	0.02873	0.30625	0.01161							

**Table J-14. 2017–18 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)
128597A	0.74930	0.00867	0.08265	0.01362	0.95537	0.01694	-0.95537	0.01731	0.00000	0.00000	n/a	n/a	n/a	n/a
128603A	0.73560	0.00973	1.59934	0.01614	1.34415	0.01597	-1.34415	0.03614	0.00000	0.00000	n/a	n/a	n/a	n/a
130326A	0.93302	0.01303	-0.17157	0.01179	0.35854	0.01360	-0.35854	0.01307	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)
410572	0.96699	0.01034	1.42670	0.01148	1.89058	0.01324	-0.26419	0.01850	-1.62639	0.04212	0.00000	0.00000	n/a	n/a
410580	0.83303	0.01207	2.95668	0.01691	2.21664	0.01523	0.05186	0.03625	-2.26849	0.17046	0.00000	0.00000	n/a	n/a
418677	0.66480	0.00785	0.58468	0.01557	1.03547	0.01756	-1.03547	0.02163	0.00000	0.00000	n/a	n/a	n/a	n/a
418699	0.97688	0.01205	2.23400	0.01221	2.25238	0.01273	-0.22078	0.02817	-2.03160	0.10875	0.00000	0.00000	n/a	n/a
421661	0.80356	0.01125	-0.04280	0.01316	0.42861	0.01509	-0.42861	0.01487	0.00000	0.00000	n/a	n/a	n/a	n/a
456735	0.94258	0.01330	-0.15323	0.01173	0.33511	0.01343	-0.33511	0.01296	0.00000	0.00000	n/a	n/a	n/a	n/a
459515	0.82451	0.01105	-0.12356	0.01276	0.49776	0.01509	-0.49776	0.01455	0.00000	0.00000	n/a	n/a	n/a	n/a
472018	0.80753	0.00851	2.07851	0.01510	3.94182	0.02525	1.00762	0.01780	-1.25667	0.04889	-3.69277	0.24481	0.00000	0.00000

**Table J-15. 2017–18 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)
130710A	0.64869	0.02163	-1.37382	0.08189	0.09452	0.03593	420698	0.49149	0.02887	0.77808	0.07101	0.09673	0.02285
130712A	0.26159	0.01177	-1.61490	0.08231	0.00000	0.00000	420714	0.63361	0.03162	0.11695	0.07283	0.18289	0.02537
130675A	0.43107	0.02155	-0.00808	0.10404	0.08470	0.03017	422664	0.74509	0.03170	-0.40597	0.07164	0.20835	0.02839
130706A	0.40777	0.01232	-0.49845	0.03089	0.00000	0.00000	420785	0.63137	0.01663	-1.59579	0.03840	0.00000	0.00000
130709A	0.87110	0.02982	-0.59104	0.05162	0.14108	0.02455	420820	0.45927	0.03628	0.68077	0.11965	0.21275	0.03252
130704A	1.14814	0.03726	0.01627	0.02732	0.18080	0.01317	421213	0.51664	0.01392	-1.11520	0.03425	0.00000	0.00000
131516A	0.87987	0.03411	0.56305	0.02981	0.13615	0.01215	421210	1.06853	0.04655	0.97228	0.02464	0.20075	0.00888
472577	0.52170	0.01403	-1.15034	0.03464	0.00000	0.00000	421216	0.84656	0.07175	2.04192	0.06245	0.24663	0.00836
131512A	0.56340	0.03008	0.21852	0.08159	0.15067	0.02711	421318	0.92286	0.03275	-0.85992	0.05967	0.18589	0.02988
471928	1.28777	0.03736	0.09290	0.02027	0.12820	0.01023	421324	0.91565	0.05091	1.53099	0.03356	0.16480	0.00803
472568	1.18399	0.03937	-0.08599	0.02932	0.21766	0.01424	421793	0.81125	0.02653	-0.21833	0.04084	0.08553	0.01809
472570	0.81204	0.02702	-0.92673	0.06130	0.11404	0.02989	421824	0.63270	0.02840	-0.13391	0.07377	0.14177	0.02714
472573	0.86272	0.05966	1.49411	0.04166	0.30064	0.01012	421799	0.30249	0.01151	0.09094	0.03528	0.00000	0.00000
472575	1.11615	0.03545	-0.09671	0.02889	0.16368	0.01418	421820	0.78518	0.03652	0.88942	0.03340	0.14868	0.01235
476097	1.00514	0.02712	-0.16954	0.02510	0.05556	0.01188	421828	0.53236	0.01929	-0.31454	0.06483	0.05927	0.02222
476121	1.39526	0.04053	-0.47493	0.02534	0.15999	0.01487	465746	0.57864	0.03635	0.78625	0.06663	0.19585	0.02152
486800	0.81292	0.02965	0.10959	0.03910	0.11752	0.01652	465748	0.70004	0.03090	0.10305	0.05757	0.16147	0.02177
476151	1.31425	0.07469	1.22112	0.02721	0.36246	0.00764	465750	0.50635	0.04940	2.02800	0.07748	0.18365	0.01695
476177	0.96105	0.02426	-0.85382	0.03172	0.04556	0.01575	465752	0.44114	0.02911	0.94588	0.08245	0.09594	0.02494
							465754	0.87850	0.03007	-0.18027	0.04058	0.13005	0.01833

**Table J-16. 2017–18 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 4**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>													
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>D0</i>	<i>SE (D0)</i>	<i>D1</i>	<i>SE (D1)</i>	<i>D2</i>	<i>SE (D2)</i>	<i>D3</i>	<i>SE (D3)</i>	<i>D4</i>	<i>SE(D4)</i>
130668A	0.88907	0.01544	-0.17507	0.01366	0.09911	0.01402	-0.09911	0.01380	0.00000	0.00000	n/a	n/a	n/a	n/a
130728A	0.85497	0.01315	1.65641	0.01782	0.66554	0.01541	-0.66554	0.02485	0.00000	0.00000	n/a	n/a	n/a	n/a
131519A	0.76480	0.01174	-0.18197	0.01446	0.31169	0.01600	-0.31169	0.01538	0.00000	0.00000	n/a	n/a	n/a	n/a
410868	0.92739	0.00949	1.29037	0.01250	2.27800	0.01557	-0.53592	0.01924	-1.74207	0.03759	0.00000	0.00000	n/a	n/a
420723	0.48773	0.00739	0.05144	0.02061	0.61612	0.02318	-0.61612	0.02300	0.00000	0.00000	n/a	n/a	n/a	n/a
421852	0.60227	0.00942	0.09936	0.01725	0.41781	0.01904	-0.41781	0.01901	0.00000	0.00000	n/a	n/a	n/a	n/a
465756	0.46668	0.00800	0.96986	0.02461	0.51256	0.02369	-0.51256	0.02614	0.00000	0.00000	n/a	n/a	n/a	n/a
472228	0.81794	0.00901	1.29885	0.01546	3.60360	0.03631	0.56394	0.01716	-1.24993	0.03014	-2.91762	0.08072	0.00000	0.00000
472582	0.85288	0.00814	0.47866	0.01254	2.34355	0.02185	-0.32370	0.01487	-2.01984	0.02721	0.00000	0.00000	n/a	n/a
476102	0.27069	0.00594	2.00119	0.05183	0.62691	0.04068	-0.62691	0.04525	0.00000	0.00000	n/a	n/a	n/a	n/a
476172	1.25355	0.01501	0.65113	0.00927	0.80375	0.01084	-0.80375	0.01425	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-17. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 5**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>						<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>		<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
129011A	0.34983	0.01698	-0.85287	0.16280	0.09890	0.04054	131437A	0.78843	0.04482	1.11164	0.03903	0.26060	0.01224
129009A	0.64411	0.04118	1.39754	0.04473	0.17958	0.01357	478364	1.36820	0.03616	-0.24335	0.02027	0.10559	0.01102
129003A	0.57903	0.01960	-0.13816	0.05263	0.05287	0.01879	478334	0.94317	0.03041	0.34356	0.02616	0.09879	0.01112
416506	0.76698	0.02271	-0.61792	0.04639	0.06735	0.02087	478350	1.71510	0.05043	-0.66688	0.02222	0.17885	0.01476
416518	1.19125	0.03867	0.14362	0.02531	0.19926	0.01164	478366	0.96072	0.03559	-0.04956	0.04042	0.23558	0.01699
129012A	0.99754	0.03869	0.29087	0.03392	0.25162	0.01350	478338	0.79566	0.03497	0.44853	0.04262	0.20917	0.01571
131427A	0.64629	0.03915	1.23754	0.04465	0.17930	0.01435	458560	0.42209	0.01230	-0.97064	0.03672	0.00000	0.00000
131430A	0.87296	0.03375	0.60679	0.03008	0.14454	0.01179	458577	0.83712	0.02719	-1.26743	0.06784	0.12122	0.03605
131429A	0.56397	0.07033	2.51322	0.12118	0.27450	0.01298	458565	0.37821	0.01161	-0.39515	0.03112	0.00000	0.00000
131431A	0.63648	0.02133	-0.36713	0.05592	0.06713	0.02178	458588	0.63116	0.03488	0.70557	0.05732	0.19617	0.01902
131440A	0.57812	0.03818	1.12995	0.05727	0.19361	0.01818	458584	0.60554	0.02115	-0.74769	0.07476	0.08539	0.02931
131445A	0.69685	0.02717	-0.12272	0.05763	0.12200	0.02266	459808	0.34553	0.03381	0.72881	0.20935	0.19485	0.04612
131444A	0.68268	0.02001	-0.70481	0.05034	0.05778	0.02103	continued						

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
459819	0.97701	0.03609	-0.80928	0.05965	0.25553	0.02876
459823	0.42374	0.01834	-0.58671	0.11487	0.08576	0.03353
459830	0.45049	0.04502	2.06782	0.08014	0.15886	0.01946
459811	0.74376	0.02903	-0.07970	0.05369	0.14722	0.02139
419298	0.80224	0.03074	0.01966	0.04649	0.16471	0.01880
419302	0.24591	0.01073	-0.08497	0.04301	0.00000	0.00000
419309	0.80737	0.03486	0.56101	0.03807	0.18779	0.01423

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
419311	1.03519	0.03804	0.28939	0.03066	0.22554	0.01270
419321	0.75648	0.02431	-0.98190	0.06382	0.09883	0.03024
460893	0.90388	0.04841	1.05130	0.03449	0.29392	0.01082
460906	0.57397	0.02953	0.70377	0.05613	0.11029	0.01925
460897	0.51163	0.02431	0.38968	0.06927	0.07962	0.02257
460910	0.71887	0.06438	1.93612	0.06295	0.30177	0.01074
460901	0.70958	0.02514	-0.71844	0.06897	0.11378	0.02986

**Table J-18. 2017–18 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)
129015A	0.56843	0.00731	-0.69384	0.01834	0.90714	0.02384	-0.90714	0.01958	0.00000	0.00000	n/a	n/a	n/a	n/a
129019A	0.74171	0.00801	0.25133	0.01413	1.30685	0.01790	-1.30685	0.01930	0.00000	0.00000	n/a	n/a	n/a	n/a
131452A	0.99533	0.01679	-0.64248	0.01407	0.10849	0.01382	-0.10849	0.01328	0.00000	0.00000	n/a	n/a	n/a	n/a
131484A	0.70168	0.00827	1.17508	0.01552	1.26723	0.01654	-1.26723	0.02684	0.00000	0.00000	n/a	n/a	n/a	n/a
416527	0.85164	0.00864	0.95586	0.01190	1.38609	0.01451	0.04264	0.01494	-1.42873	0.02499	0.00000	0.00000	n/a	n/a
419292	0.99104	0.01595	-0.42164	0.01295	0.13333	0.01334	-0.13333	0.01287	0.00000	0.00000	n/a	n/a	n/a	n/a
458563	0.39201	0.00561	-0.02860	0.02479	0.88708	0.02843	-0.88708	0.02794	0.00000	0.00000	n/a	n/a	n/a	n/a
460891	0.59725	0.00991	0.45765	0.01806	0.32221	0.01879	-0.32221	0.01945	0.00000	0.00000	n/a	n/a	n/a	n/a
472388	0.90493	0.00946	1.26776	0.01315	3.22914	0.02718	1.25267	0.01515	-1.22831	0.02794	-3.25350	0.10783	0.00000	0.00000
478358	1.22612	0.01240	0.76027	0.00862	1.32711	0.01162	-0.10607	0.01156	-1.22103	0.01839	0.00000	0.00000	n/a	n/a
478360	0.67447	0.00942	0.15761	0.01523	0.50215	0.01722	-0.50215	0.01737	0.00000	0.00000	n/a	n/a	n/a	n/a

Table J-19. 2017–18 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)
407603	0.28398	0.02863	1.95971	0.14247	0.09433	0.03174	464608	0.81986	0.05161	2.10277	0.05247	0.08954	0.00611
407683	1.10190	0.03546	-1.08755	0.04764	0.16672	0.02716	464604	0.73357	0.02917	-0.70615	0.07765	0.18968	0.03154
407638	1.01985	0.03442	-0.90925	0.05140	0.19819	0.02642	464610	0.34353	0.03119	1.07455	0.15342	0.14027	0.03685
413445	0.48204	0.01264	-0.86956	0.03110	0.00000	0.00000	462482	1.04331	0.03208	-0.57408	0.03756	0.14769	0.01888
413439	0.49425	0.01353	-1.44263	0.04105	0.00000	0.00000	462484	0.50368	0.02041	-0.72503	0.10120	0.09597	0.03368
413448	0.60618	0.02374	0.08561	0.05508	0.07789	0.01978	462472	0.72244	0.02157	-1.22404	0.06134	0.07662	0.02790
129251A	0.93143	0.03108	0.15332	0.03115	0.13744	0.01326	462459	0.64196	0.03394	0.67728	0.05416	0.19252	0.01802
129252A	0.53832	0.01311	-0.77569	0.02697	0.00000	0.00000	462461	0.95186	0.03649	0.15680	0.03742	0.24717	0.01480
129254A	1.16909	0.03662	-1.39061	0.04704	0.12795	0.03007	419843	0.90235	0.03888	1.12623	0.02629	0.13613	0.00864
129255A	0.74518	0.02293	-1.19151	0.06333	0.08702	0.02955	419853	0.37701	0.02226	-0.08502	0.15319	0.11249	0.03877
129379A	0.47479	0.02406	0.37430	0.07993	0.08543	0.02450	419845	0.92728	0.04188	0.42226	0.04031	0.32495	0.01391
129257A	1.29063	0.04288	-1.34184	0.04560	0.17509	0.02993	419841	0.59880	0.02006	-0.57000	0.06286	0.06759	0.02342
129259A	0.55883	0.02717	0.80214	0.04921	0.07980	0.01669	419859	0.59153	0.01514	-1.55555	0.03759	0.00000	0.00000
420260	0.23822	0.01112	1.56466	0.07879	0.00000	0.00000	409362	0.62154	0.03129	-0.65675	0.11759	0.26521	0.03888
130154A	0.45241	0.04485	1.77005	0.08106	0.21380	0.02179	409385	1.01038	0.03806	0.83458	0.02346	0.14805	0.00880
471626	0.68869	0.06353	2.02877	0.06862	0.28050	0.01094	409396	0.84240	0.03383	0.13769	0.04413	0.22402	0.01684
130171A	0.87555	0.03193	-1.18410	0.07453	0.19694	0.03691	409447	0.93471	0.04703	1.33508	0.02926	0.18843	0.00843
130167A	1.44148	0.05404	0.67252	0.02007	0.26916	0.00815	409472	0.81946	0.03616	0.30889	0.04592	0.25962	0.01636
130168A	1.22907	0.04182	0.66391	0.01987	0.16753	0.00813							
464600	0.69823	0.02850	-0.56672	0.07769	0.17889	0.03021							
464586	0.84721	0.03398	0.75331	0.02949	0.14047	0.01105							

Table J-20. 2017–18 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)
129258A	0.38613	0.00505	0.61750	0.02563	1.18447	0.02851	-1.18447	0.03144	0.00000	0.00000	n/a	n/a	n/a	n/a
130173A	0.76317	0.01292	-0.29638	0.01560	0.16939	0.01618	-0.16939	0.01572	0.00000	0.00000	n/a	n/a	n/a	n/a
130184A	0.82157	0.01036	1.37902	0.01441	1.11566	0.01477	-1.11566	0.02669	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)
409458	0.52037	0.00793	0.26392	0.01964	0.54433	0.02162	-0.54433	0.02205	0.00000	0.00000	n/a	n/a	n/a	n/a
413454	0.65342	0.00801	-0.37398	0.01576	0.91119	0.02070	-0.91119	0.01786	0.00000	0.00000	n/a	n/a	n/a	n/a
413469	0.99270	0.00937	1.30149	0.01047	2.39841	0.01544	0.49847	0.01332	-0.96766	0.02280	-1.92922	0.04264	0.00000	0.00000
413478	1.06413	0.01012	1.25046	0.00967	2.02370	0.01356	0.66617	0.01224	-0.82912	0.02019	-1.86074	0.04018	0.00000	0.00000
419847	0.47948	0.00613	0.63568	0.02100	1.03229	0.02335	-1.03229	0.02633	0.00000	0.00000	n/a	n/a	n/a	n/a
420298	0.80734	0.01035	1.13117	0.01446	0.82732	0.01494	-0.82732	0.02115	0.00000	0.00000	n/a	n/a	n/a	n/a
464598	0.56695	0.00928	-0.33503	0.01920	0.38118	0.02089	-0.38118	0.01990	0.00000	0.00000	n/a	n/a	n/a	n/a
472297	0.75808	0.00722	1.17904	0.01370	2.41556	0.02063	0.81344	0.01639	-0.79334	0.02245	-2.43566	0.04936	0.00000	0.00000

**Table J-21. 2017–18 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)
131160A	0.50636	0.03366	0.97266	0.08023	0.18439	0.02366	459447	1.24918	0.03480	0.28479	0.01891	0.10557	0.00883
131159A	0.65463	0.02207	-0.89785	0.07406	0.09458	0.03137	459453	0.51956	0.02302	0.05407	0.08111	0.09296	0.02663
131166A	0.50142	0.03978	1.76664	0.06398	0.16995	0.01776	459459	0.65699	0.02642	-0.54526	0.08288	0.14955	0.03254
131163A	0.93870	0.03719	0.74789	0.02962	0.19636	0.01108	409922	0.79044	0.02840	-0.22286	0.05172	0.14657	0.02190
131161A	0.84945	0.03648	0.84263	0.03334	0.19503	0.01193	409929	0.78669	0.03457	0.86721	0.03561	0.17276	0.01266
416697	0.68886	0.02870	-0.42619	0.07926	0.18602	0.03061	409958	0.37804	0.02807	1.35579	0.09872	0.09566	0.02664
416766	0.54228	0.01888	-1.01434	0.08864	0.08526	0.03279	409979	0.28366	0.01110	1.27842	0.05512	0.00000	0.00000
128731A	0.83148	0.02967	0.07654	0.04156	0.14910	0.01728	409976	1.01650	0.04031	-0.07563	0.04466	0.33598	0.01758
129219A	0.91765	0.04832	1.41756	0.03216	0.23549	0.00894	409315	0.59913	0.07126	2.32077	0.09696	0.38912	0.01282
128756A	0.70694	0.02193	-0.85649	0.06000	0.07921	0.02664	409322	0.65244	0.02724	-0.37695	0.08055	0.15975	0.03050
416762	0.74820	0.03604	0.90032	0.04079	0.20487	0.01386	409354	0.51909	0.05064	1.77871	0.07869	0.32250	0.01855
128757A	0.96303	0.02786	-0.10130	0.02979	0.08634	0.01396	409364	0.61950	0.02602	-0.19848	0.07652	0.13356	0.02803
128753A	0.94629	0.02879	-0.73620	0.04470	0.11143	0.02335	409372	0.69743	0.02922	-0.27499	0.07304	0.19008	0.02775
128730A	1.03723	0.03212	-0.88567	0.04514	0.13449	0.02539	409401	0.49850	0.02445	0.33493	0.08197	0.09775	0.02583
477635	0.75530	0.03573	0.53212	0.05012	0.25531	0.01697	409409	0.71117	0.02791	0.76353	0.03466	0.08540	0.01274
477633	0.44373	0.01955	-0.21174	0.10218	0.08385	0.03040	409464	0.81475	0.04105	1.14104	0.03580	0.22917	0.01143
477655	0.83116	0.03653	0.34197	0.04758	0.27849	0.01683	409493	0.91315	0.04078	0.93055	0.03190	0.23601	0.01096
477651	0.57065	0.02370	-0.58557	0.09730	0.12463	0.03533	409501	0.84294	0.02943	0.15372	0.03804	0.13595	0.01588
477647	0.62780	0.02417	-0.40264	0.07447	0.11124	0.02861							
459463	1.31982	0.05455	-1.92050	0.07206	0.21190	0.05577							
459443	0.73791	0.03566	1.48837	0.03306	0.10309	0.00925							

**Table J-22. 2017–18 eMPowerME: IRT Parameters for Polytomous Items
ELA Grade 7**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>													
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>D0</i>	<i>SE (D0)</i>	<i>D1</i>	<i>SE (D1)</i>	<i>D2</i>	<i>SE (D2)</i>	<i>D3</i>	<i>SE (D3)</i>	<i>D4</i>	<i>SE (D4)</i>
131168A	0.86223	0.01040	0.60362	0.01232	0.75323	0.01418	-0.75323	0.01638	0.00000	0.00000	n/a	n/a	n/a	n/a
409304	0.71574	0.00899	0.74146	0.01475	0.76433	0.01628	-0.76433	0.01911	0.00000	0.00000	n/a	n/a	n/a	n/a
409517	0.53430	0.00925	0.75915	0.02095	0.34549	0.02087	-0.34549	0.02201	0.00000	0.00000	n/a	n/a	n/a	n/a
416720	0.33904	0.00369	0.80043	0.02906	2.09912	0.03358	-2.09912	0.03978	0.00000	0.00000	n/a	n/a	n/a	n/a
416732	1.02810	0.00000	1.48316	0.01000	1.85212	0.01274	0.62501	0.01290	-0.63550	0.01989	-1.84163	0.04231	0.00000	0.00000
416774	0.78797	0.01226	0.14530	0.01403	0.24096	0.01516	-0.24096	0.01511	0.00000	0.00000	n/a	n/a	n/a	n/a
416793	0.97149	0.00915	1.39697	0.01036	2.11959	0.01411	0.64796	0.01322	-0.81542	0.02123	-1.95214	0.04213	0.00000	0.00000
459457	0.50017	0.00646	0.80632	0.02029	0.96463	0.02210	-0.96463	0.02557	0.00000	0.00000	n/a	n/a	n/a	n/a
472545	1.00764	0.00910	0.57791	0.01016	2.39840	0.02145	0.78587	0.01293	-0.90214	0.01558	-2.28214	0.03087	0.00000	0.00000
477645	0.61244	0.00965	-0.01774	0.01720	0.36441	0.01889	-0.36441	0.01852	0.00000	0.00000	n/a	n/a	n/a	n/a
477778	0.90291	0.00985	0.16962	0.01271	1.45480	0.01731	-1.45480	0.01741	0.00000	0.00000	n/a	n/a	n/a	n/a

**Table J-23. 2017–18 eMPowerME: IRT Parameters for Dichotomous Items
ELA Grade 8**

<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>						<i>IREF</i>	<i>Parameters and Measures of Standard Error</i>					
	<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>		<i>a</i>	<i>SE (a)</i>	<i>b</i>	<i>SE (b)</i>	<i>c</i>	<i>SE (c)</i>
130024A	0.79456	0.02511	-0.30040	0.04456	0.07621	0.02030	420905	0.39154	0.01251	0.95149	0.03434	0.00000	0.00000
130026A	0.82819	0.03167	0.33535	0.03906	0.14385	0.01638	420970	0.63538	0.01483	-0.64207	0.02369	0.00000	0.00000
130027A	0.55266	0.05088	1.68427	0.07033	0.28967	0.01865	420913	0.84729	0.03618	0.89386	0.03108	0.15328	0.01201
130023A	1.01102	0.03447	-0.39000	0.04412	0.18741	0.02215	480815	0.49311	0.02428	-0.38050	0.12367	0.12693	0.03991
418842	0.65776	0.02985	0.21511	0.06388	0.14647	0.02382	480828	0.93202	0.02987	-0.23263	0.03922	0.11580	0.01915
418854	0.37717	0.03470	0.74709	0.18693	0.20008	0.04408	480847	0.60975	0.02453	0.08590	0.06150	0.08374	0.02302
420925	0.68422	0.02798	0.30239	0.05037	0.10494	0.01972	480927	0.72063	0.02681	0.38163	0.03995	0.07842	0.01613
420929	0.68193	0.04961	1.35346	0.05404	0.31695	0.01538	480914	0.90613	0.03339	0.11776	0.04000	0.17857	0.01756
420946	0.86262	0.03227	-0.20851	0.05177	0.18363	0.02306	461905	0.68532	0.03382	0.70951	0.04954	0.16827	0.01804
420872	0.55584	0.01396	-0.64457	0.02664	0.00000	0.00000	461921	0.37289	0.02719	0.11132	0.19920	0.15722	0.04844
420952	0.56731	0.01967	-0.88118	0.08154	0.08037	0.03127							

continued

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
461923	0.80002	0.02319	-1.40364	0.05613	0.06995	0.02829
461913	0.76905	0.02265	-0.83516	0.05188	0.06880	0.02459
461925	0.85967	0.02228	-1.63904	0.03469	0.00000	0.00000
420389	0.87508	0.03681	0.15859	0.04828	0.25842	0.01913
420398	0.91346	0.04902	1.33793	0.03229	0.23749	0.01002
420376	0.87245	0.02873	-1.44682	0.07266	0.12141	0.04185
420407	1.27792	0.04666	0.71689	0.02140	0.22315	0.00921
420455	0.80276	0.03416	0.41050	0.04431	0.19195	0.01744
402075	0.35185	0.01198	-0.45322	0.03667	0.00000	0.00000

IREF	Parameters and Measures of Standard Error					
	a	SE (a)	b	SE (b)	c	SE (c)
402111	0.59192	0.01682	-1.66755	0.04622	0.00000	0.00000
402077	0.81479	0.04288	1.40455	0.03316	0.16748	0.01034
402118	0.87550	0.03000	-0.20899	0.04493	0.13225	0.02096
402116	0.85770	0.02274	-1.02750	0.04137	0.05252	0.02045
475555	0.43234	0.01289	-0.81374	0.03657	0.00000	0.00000
475541	0.51759	0.04421	1.26221	0.08659	0.27983	0.02398
475543	0.74541	0.03022	0.09361	0.05376	0.14957	0.02176
475545	1.17981	0.03604	-0.50232	0.03457	0.15217	0.01972
475547	0.64868	0.03782	0.92841	0.05543	0.21512	0.01856

**Table J-24. 2017–18 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)
130080A	1.12662	0.01273	0.45486	0.00995	1.01133	0.01262	-1.01133	0.01431	0.00000	0.00000	n/a	n/a	n/a	n/a
402079	0.62532	0.00904	0.07221	0.01637	0.51014	0.01870	-0.51014	0.01818	0.00000	0.00000	n/a	n/a	n/a	n/a
418861	0.96894	0.01681	-0.99716	0.01728	0.21490	0.01670	-0.21490	0.01460	0.00000	0.00000	n/a	n/a	n/a	n/a
418866	1.22985	0.01147	1.04507	0.00824	1.72082	0.01227	0.47235	0.01066	-0.64227	0.01482	-1.55090	0.02621	0.00000	0.00000
420986	0.59786	0.01084	-0.11342	0.01843	0.23010	0.01928	-0.23010	0.01879	0.00000	0.00000	n/a	n/a	n/a	n/a
420990	1.27671	0.01186	0.96638	0.00801	1.85669	0.01291	0.44231	0.01037	-0.71213	0.01452	-1.58688	0.02540	0.00000	0.00000
461927	0.62516	0.00903	0.44578	0.01644	0.51493	0.01815	-0.51493	0.01881	0.00000	0.00000	n/a	n/a	n/a	n/a
472433	1.08978	0.01011	0.24122	0.00973	2.28120	0.02812	0.81896	0.01368	-0.75757	0.01277	-2.34260	0.02628	0.00000	0.00000
475558	0.27533	0.00626	2.57079	0.05874	0.61500	0.04105	-0.61500	0.04673	0.00000	0.00000	n/a	n/a	n/a	n/a
480879	0.49425	0.00932	0.17263	0.02106	0.28725	0.02233	-0.28725	0.02225	0.00000	0.00000	n/a	n/a	n/a	n/a
480941	1.12845	0.01286	0.63397	0.01014	1.07689	0.01230	-1.07689	0.01585	0.00000	0.00000	n/a	n/a	n/a	n/a

APPENDIX K—TEST CHARACTERISTIC CURVES AND TEST INFORMATION FUNCTIONS

Figure K-1. 2017–18 eMPowerME: Mathematics Grade 3 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

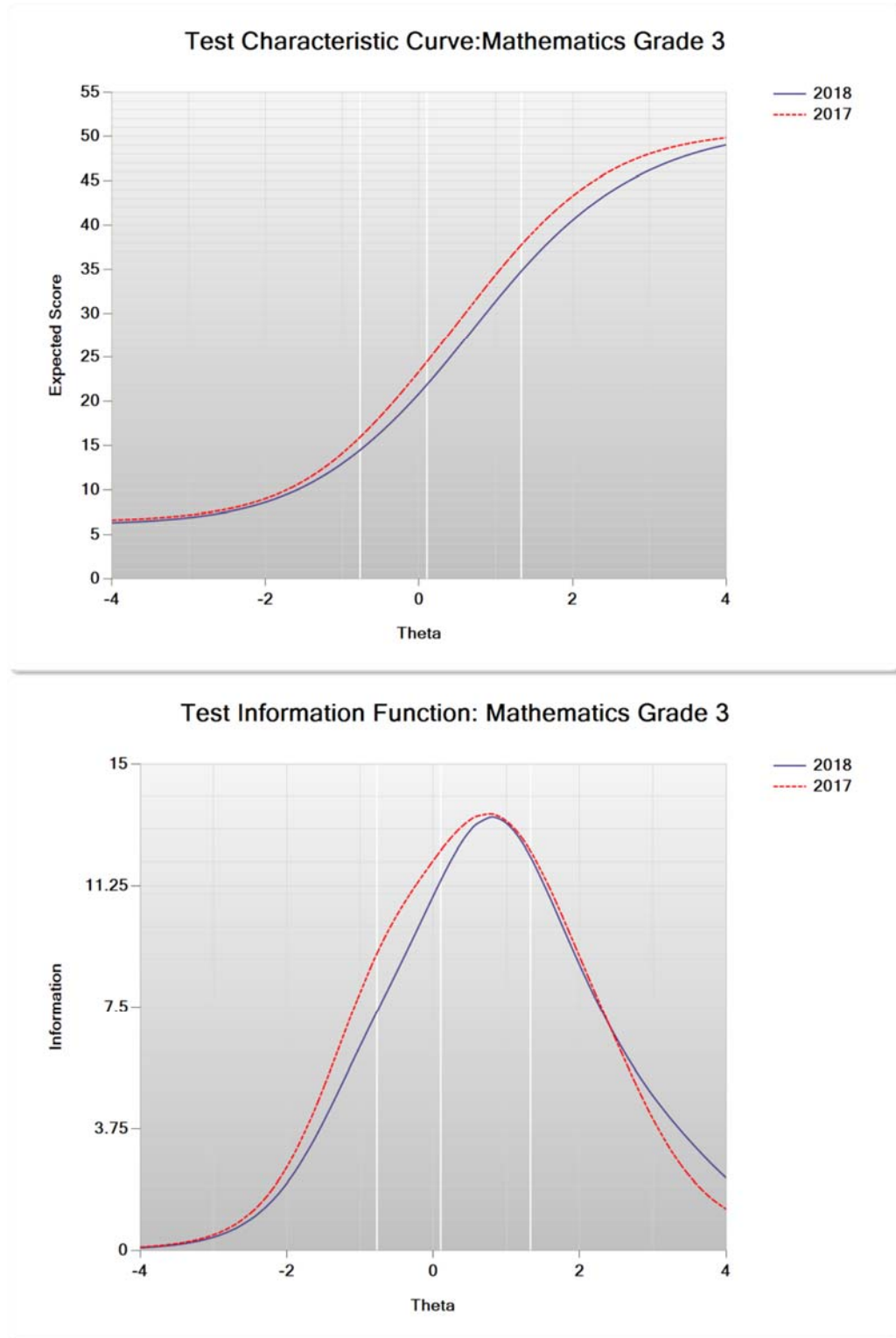


Figure K-2. 2017–18 eMPowerME: Mathematics Grade 4 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

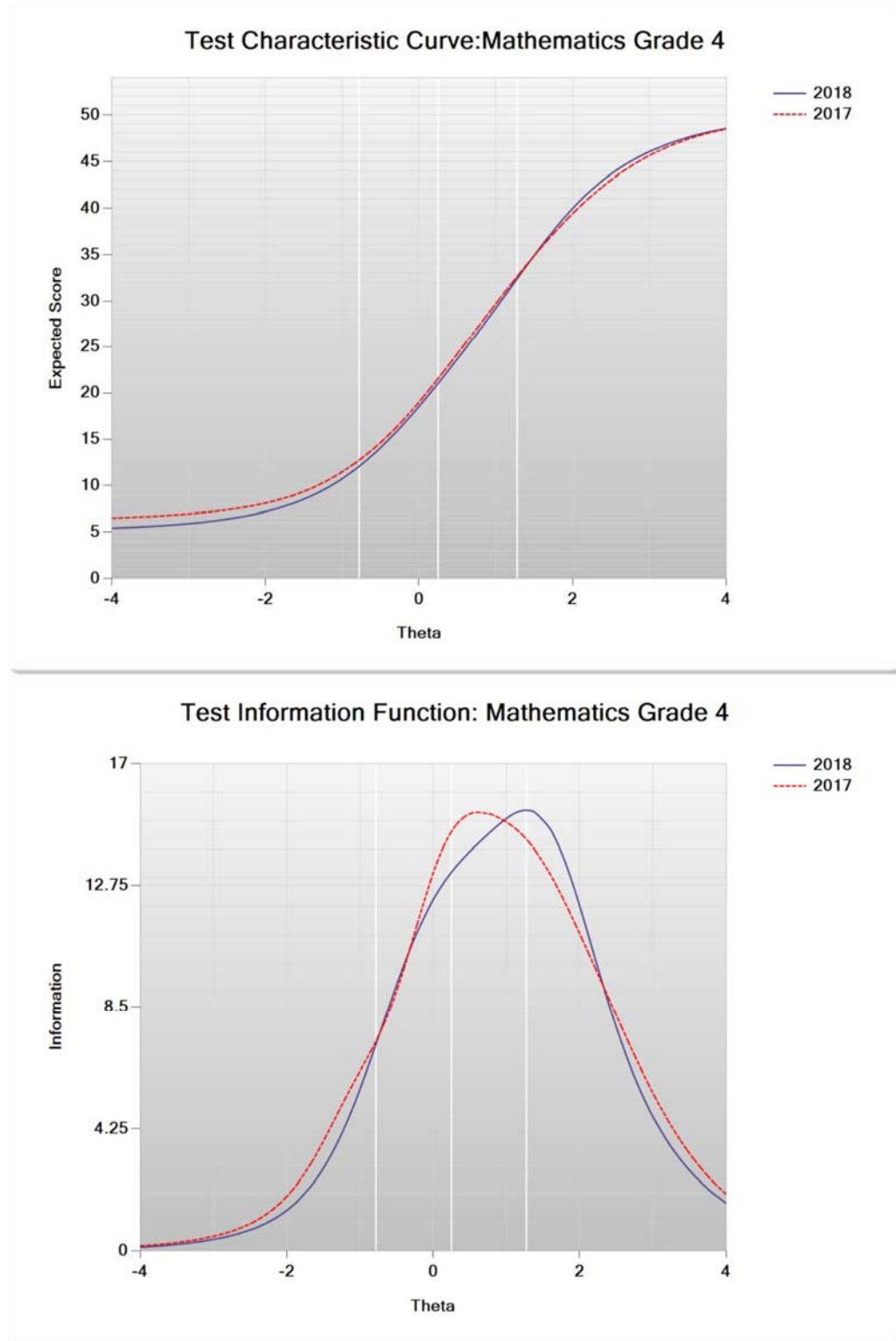


Figure K-3. 2017–18 eMPowerME: Mathematics Grade 5 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

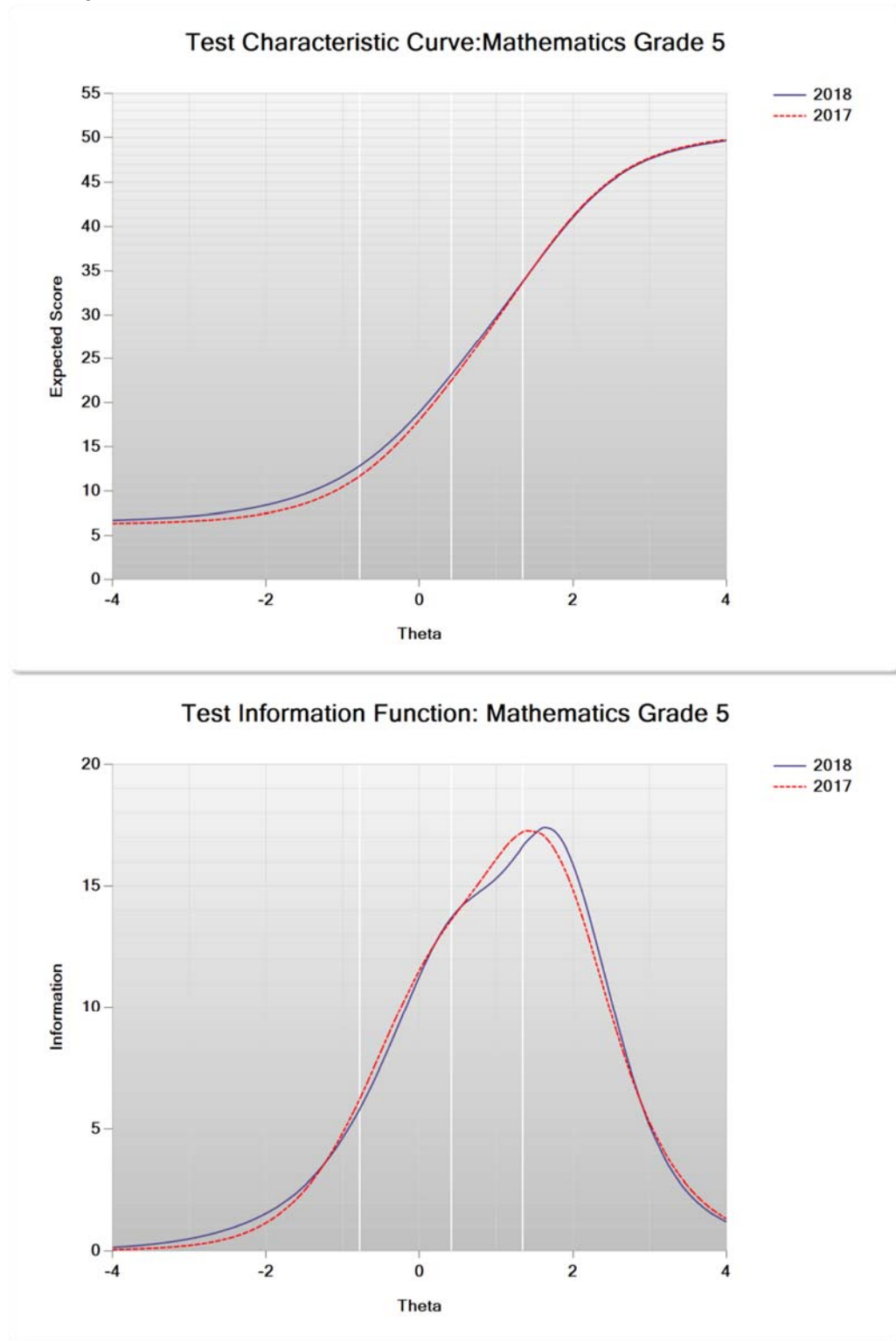


Figure K-4. 2017–18 eMPowerME: Mathematics Grade 6 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

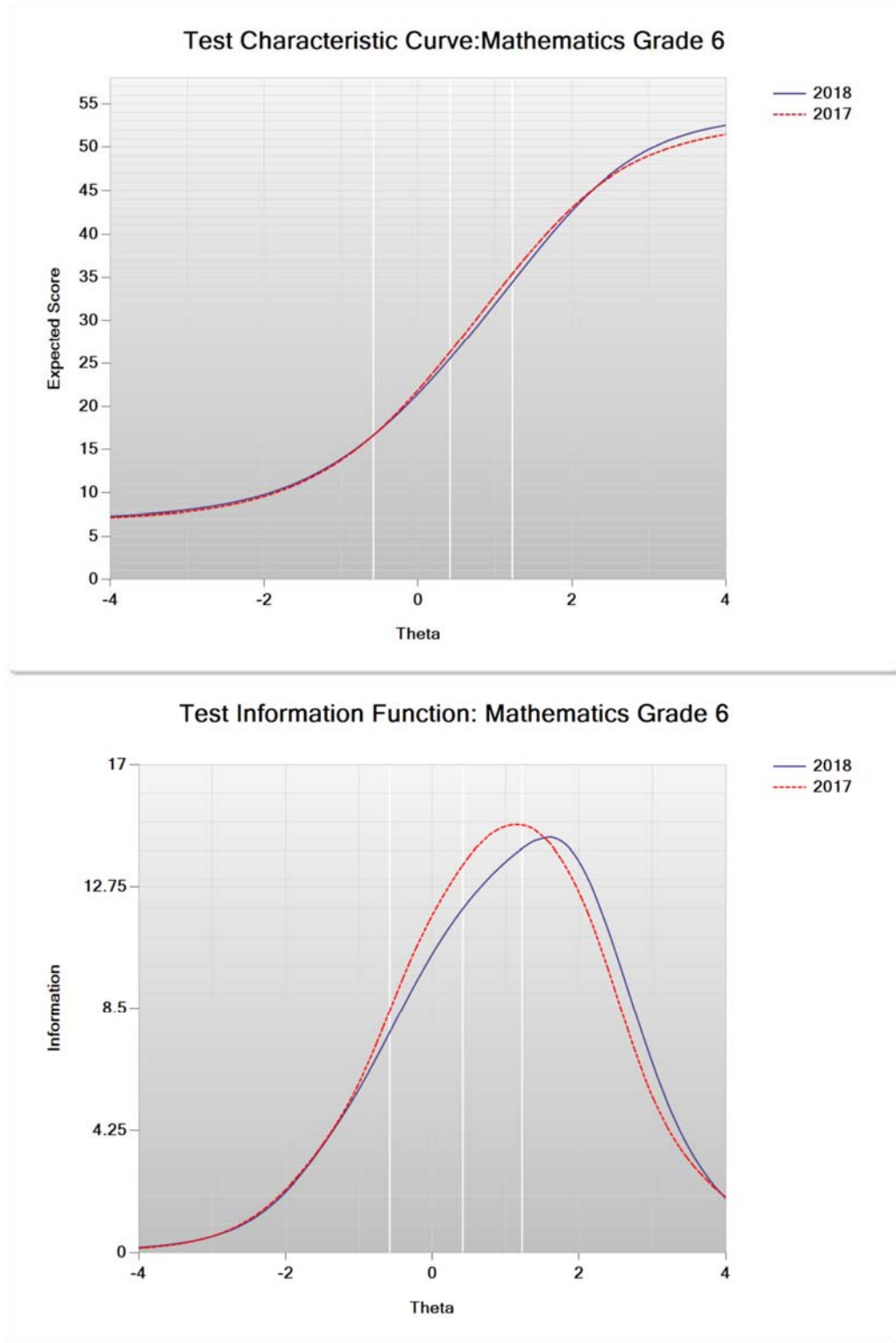


Figure K-5. 2017–18 eMPowerME: Mathematics Grade 7 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

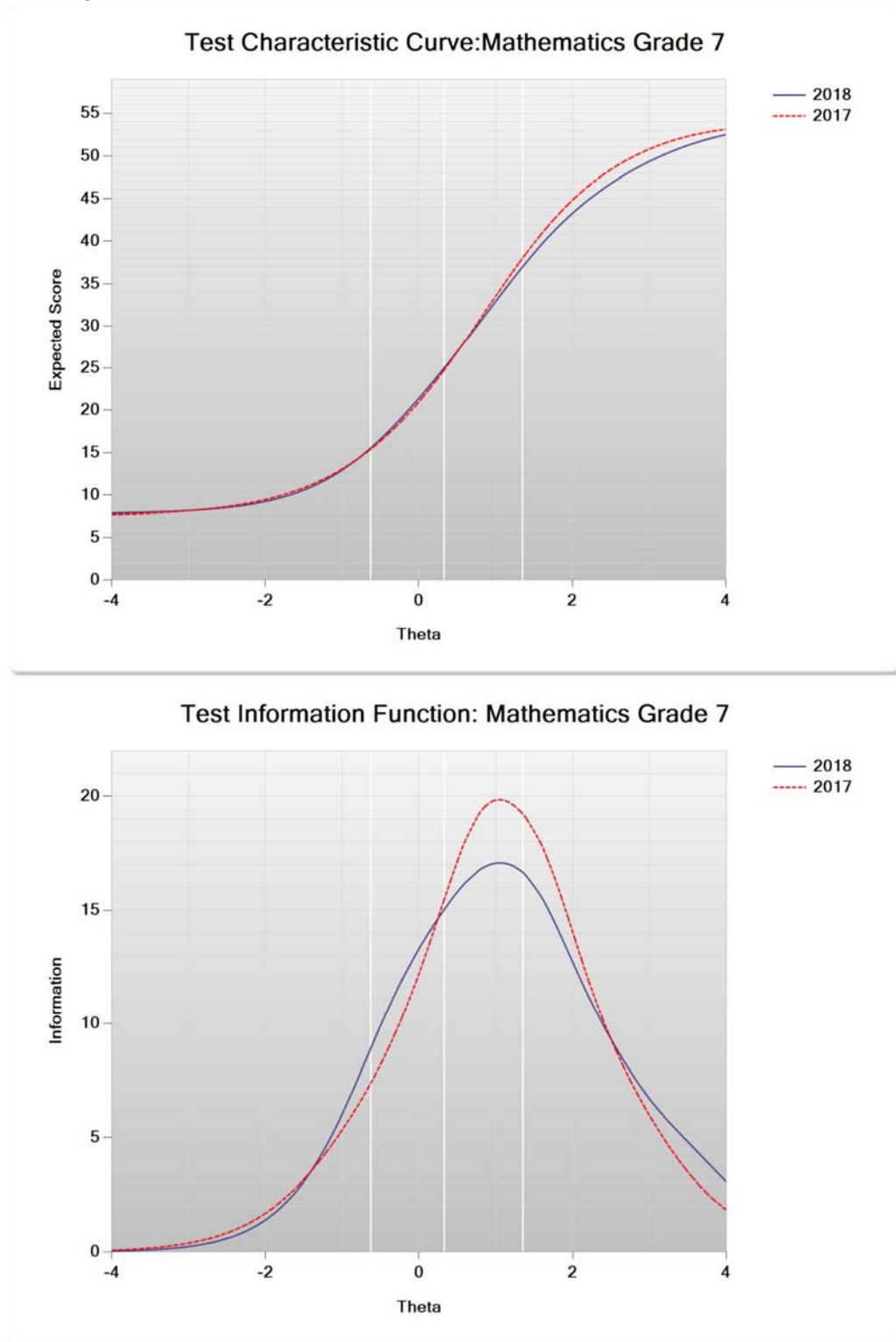


Figure K-6. 2017–18 eMPowerME: Mathematics Grade 8 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

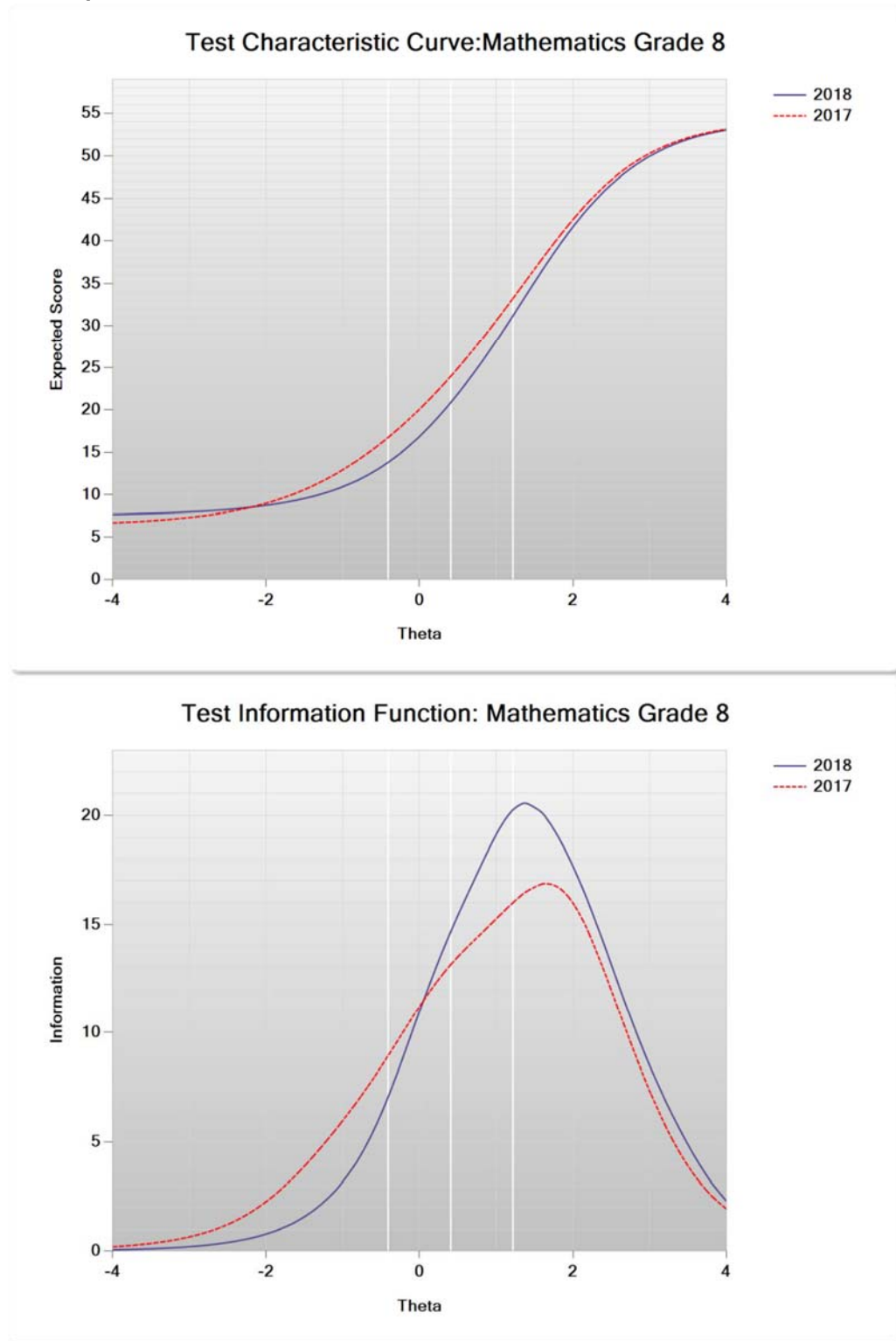


Figure K-7. 2017–18 eMPowerME: ELA Grade 3 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

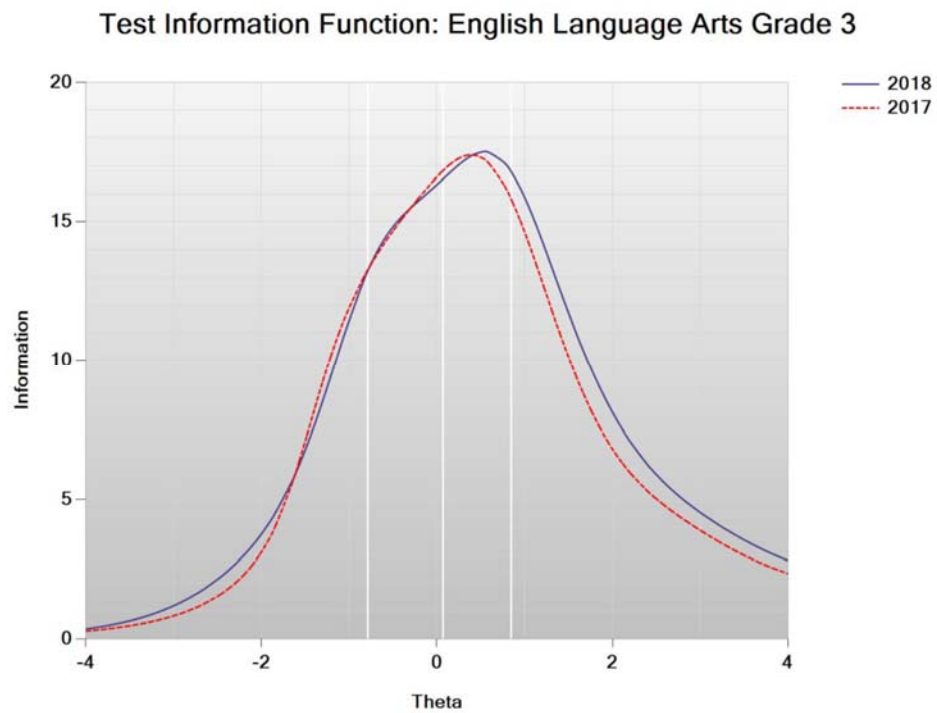
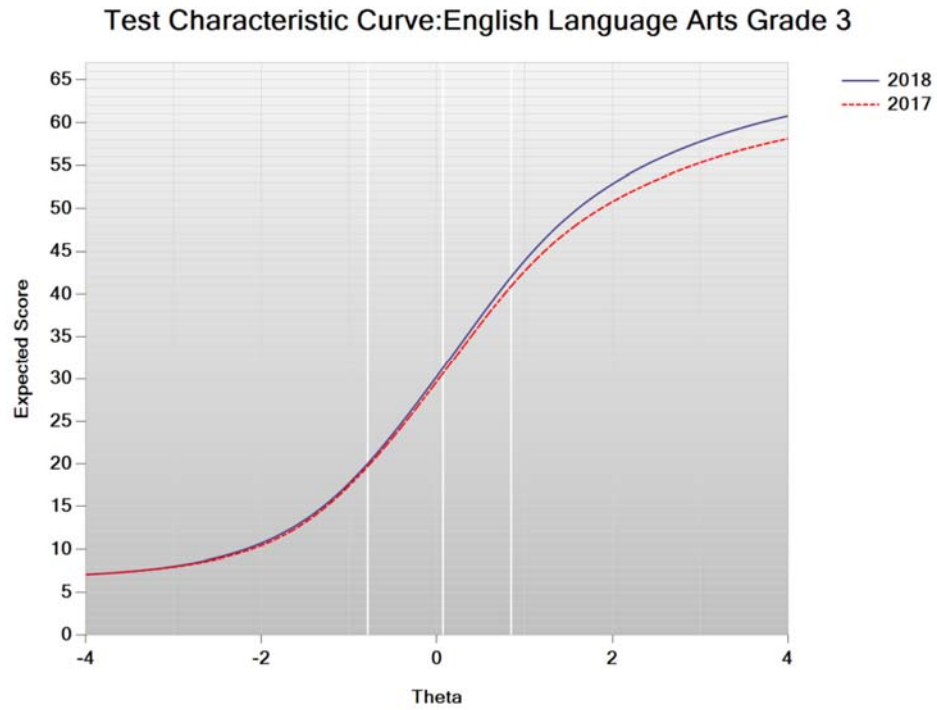


Figure K-8. 2017–18 eMPowerME: ELA Grade 4 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

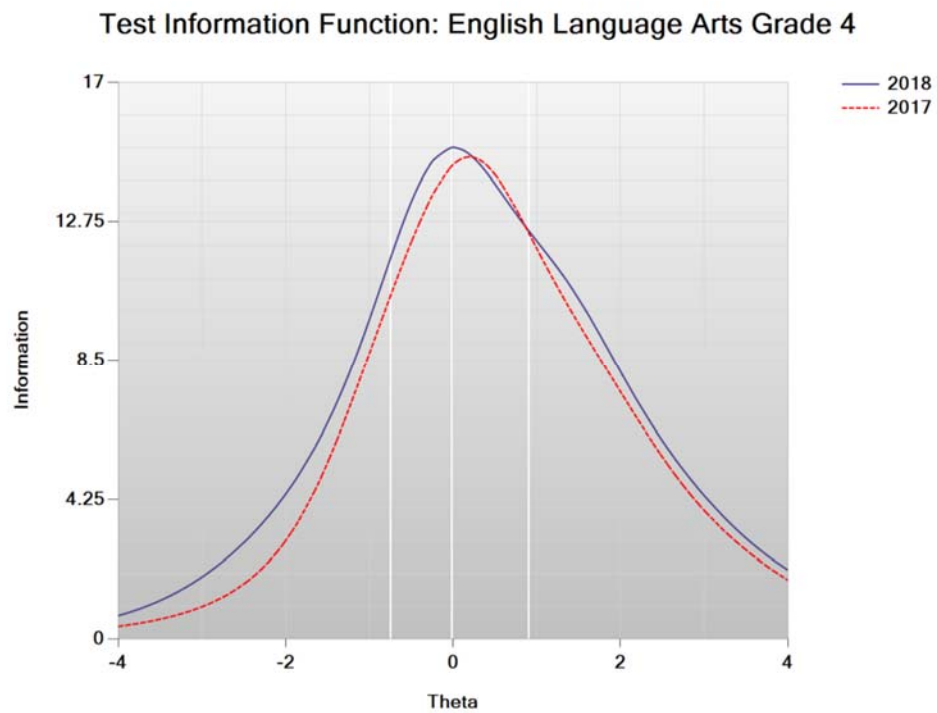
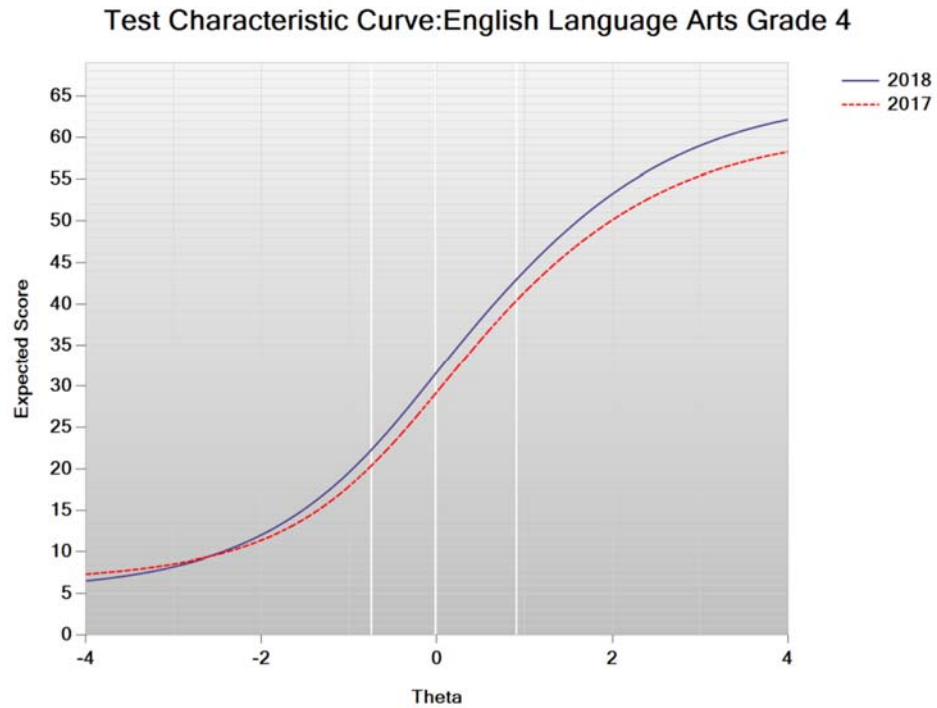


Figure K-9. 2017–18 eMPowerME: ELA Grade 5 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

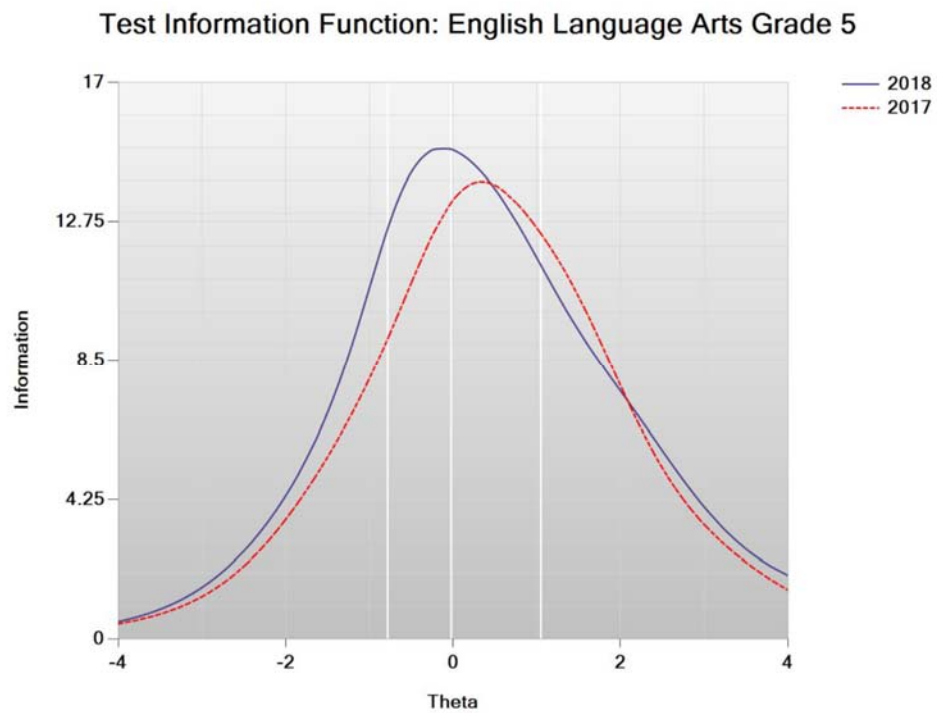
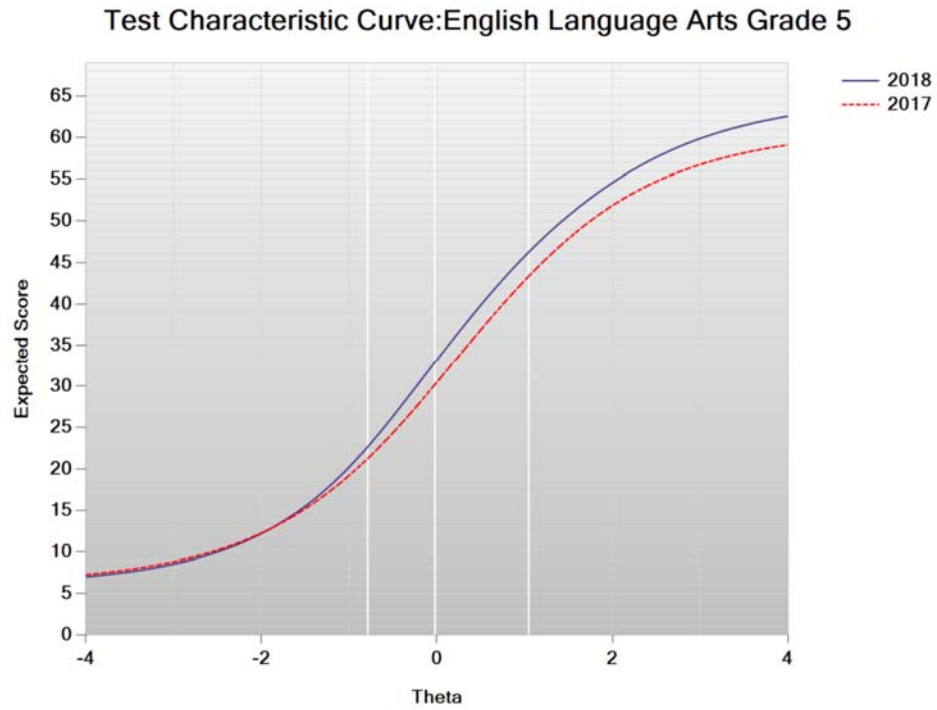


Figure K-10. 2017–18 eMPowerME: ELA Grade 6 Plots
Top: Test Characteristic Curve **Bottom: Test Information Function**

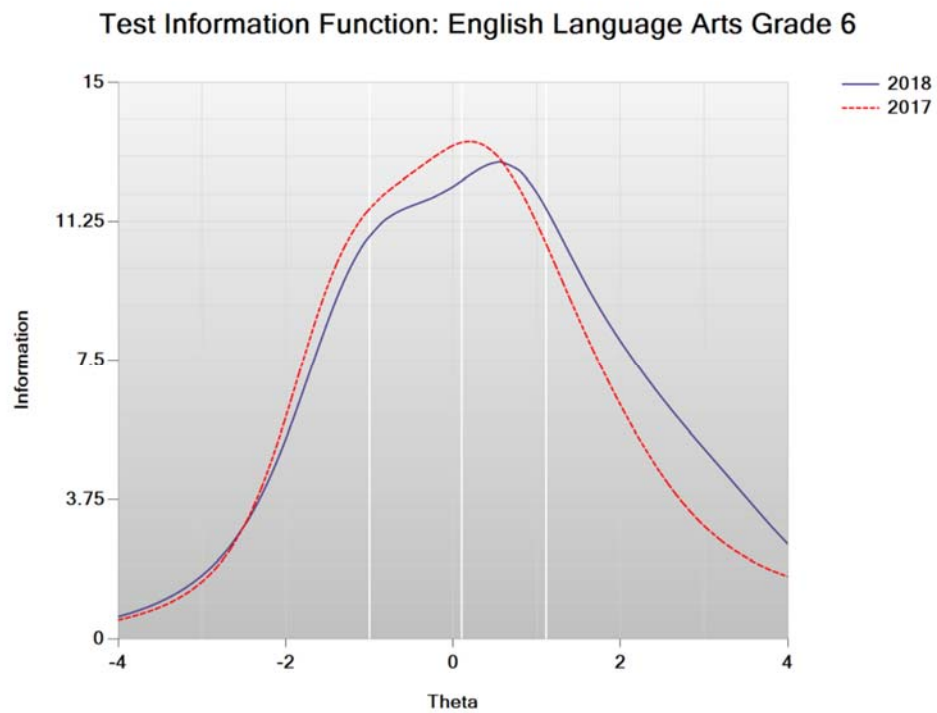
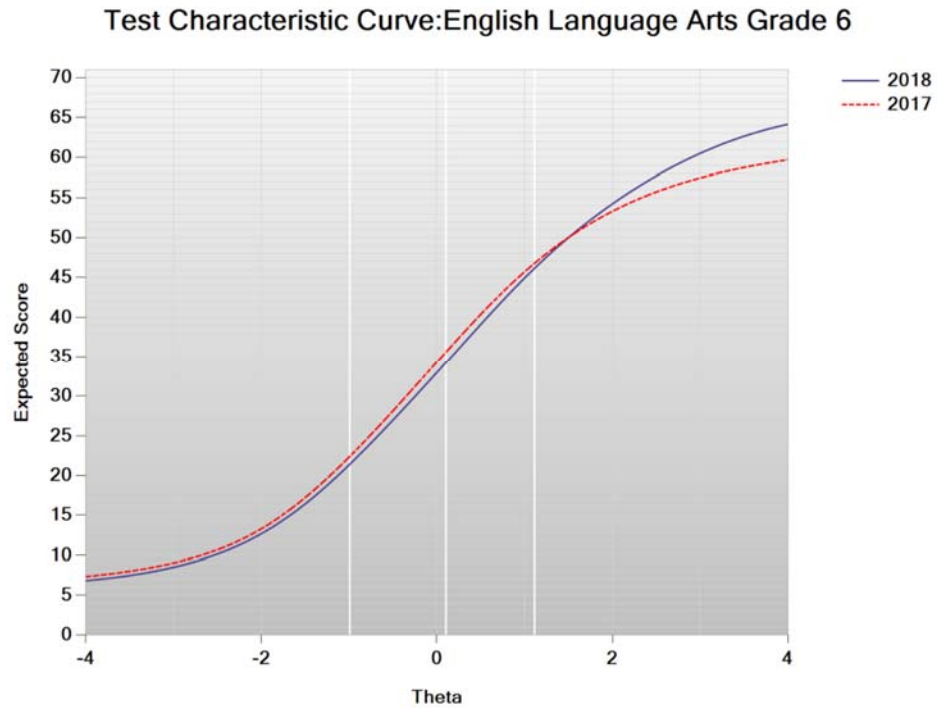


Figure K-11. 2017–18 eMPowerME: ELA Grade 7 Plots
Top: Test Characteristic Curve Bottom: Test Information Function

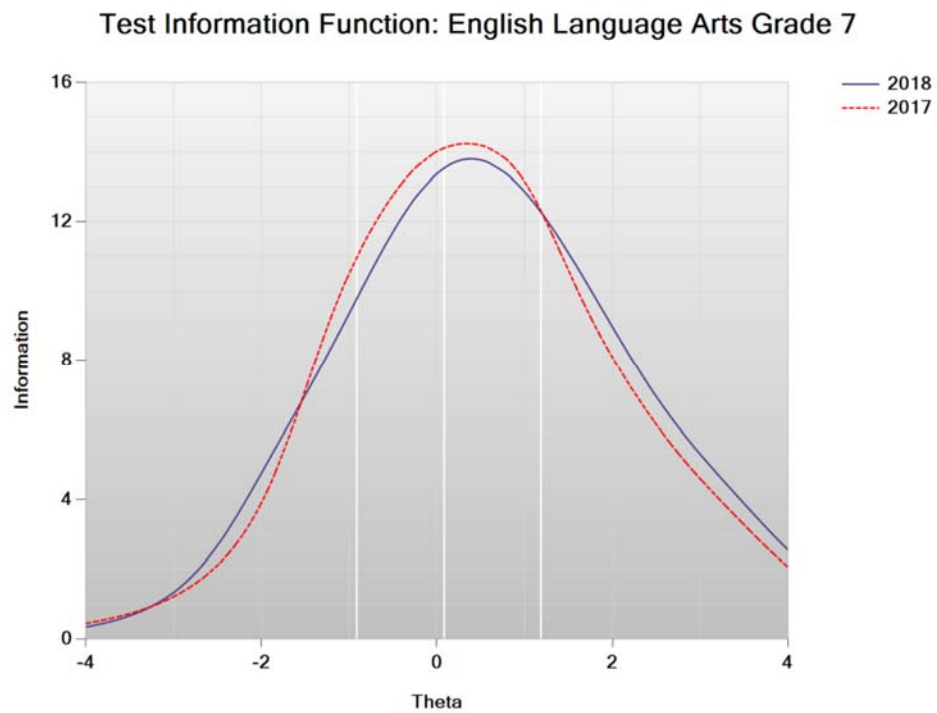
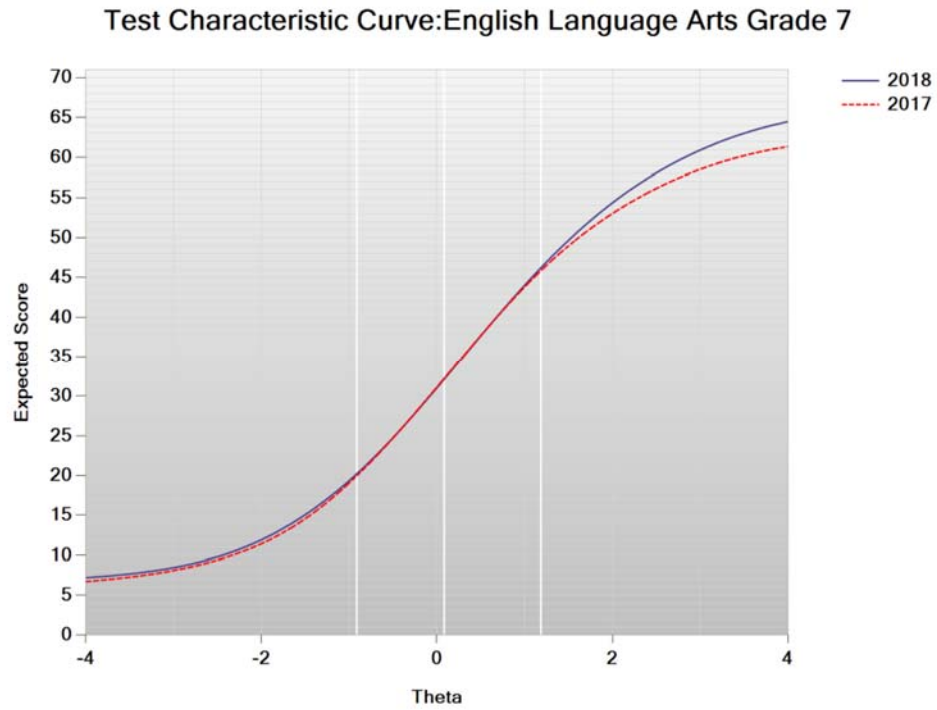
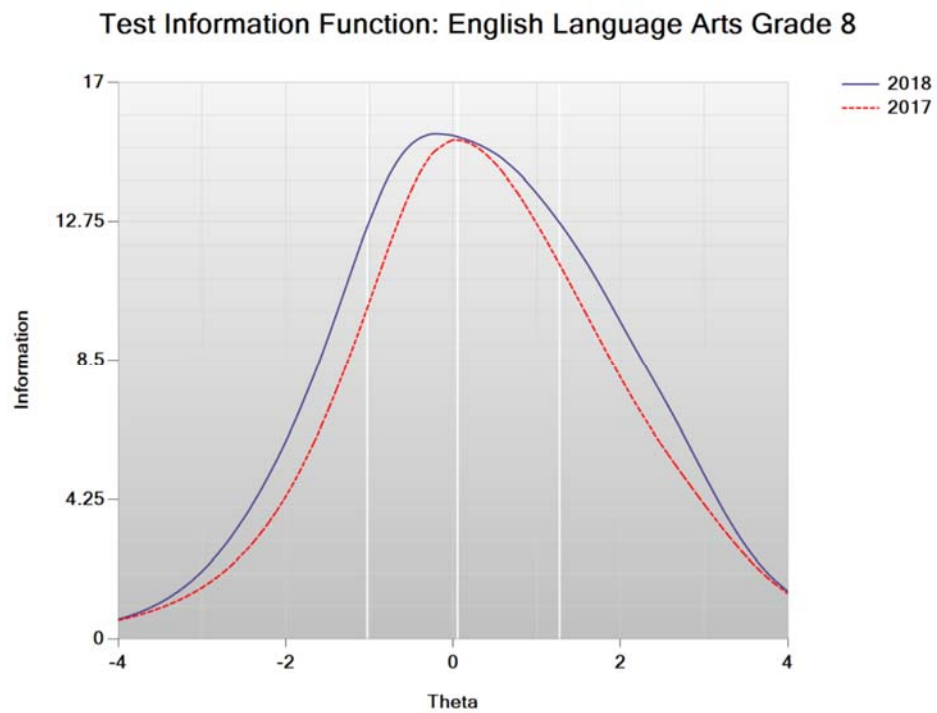
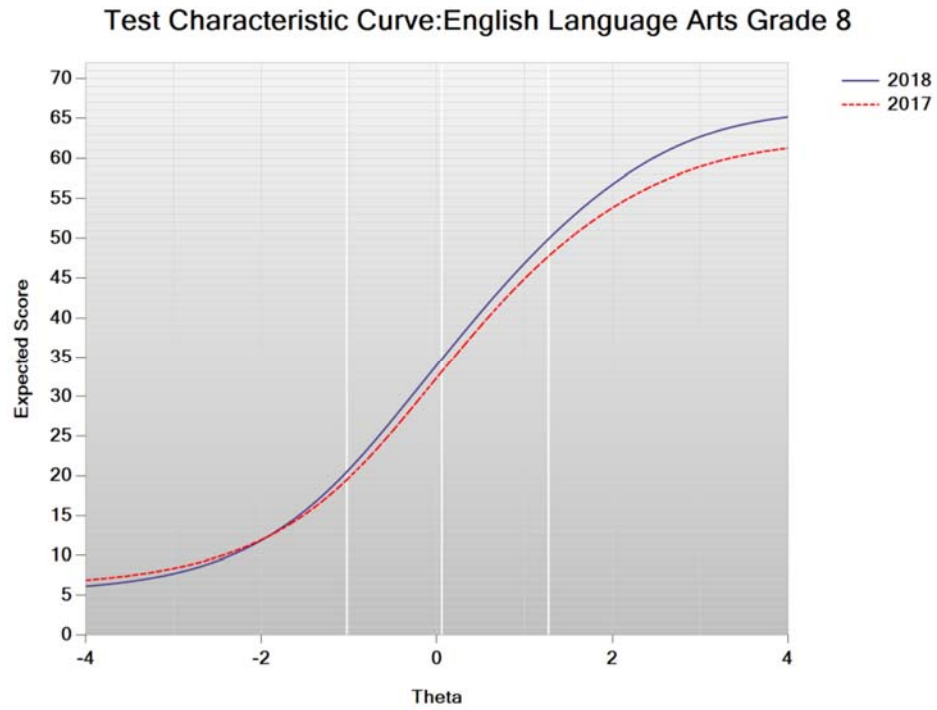


Figure K-12. 2017–18 eMPowerME: ELA Grade 8 Plots
Top: Test Characteristic Curve Bottom: Test Information Function



APPENDIX L—DELTA AND RESCORE ANALYSES

Figure L-1. 2017–18 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 3 Bottom: Grade 4

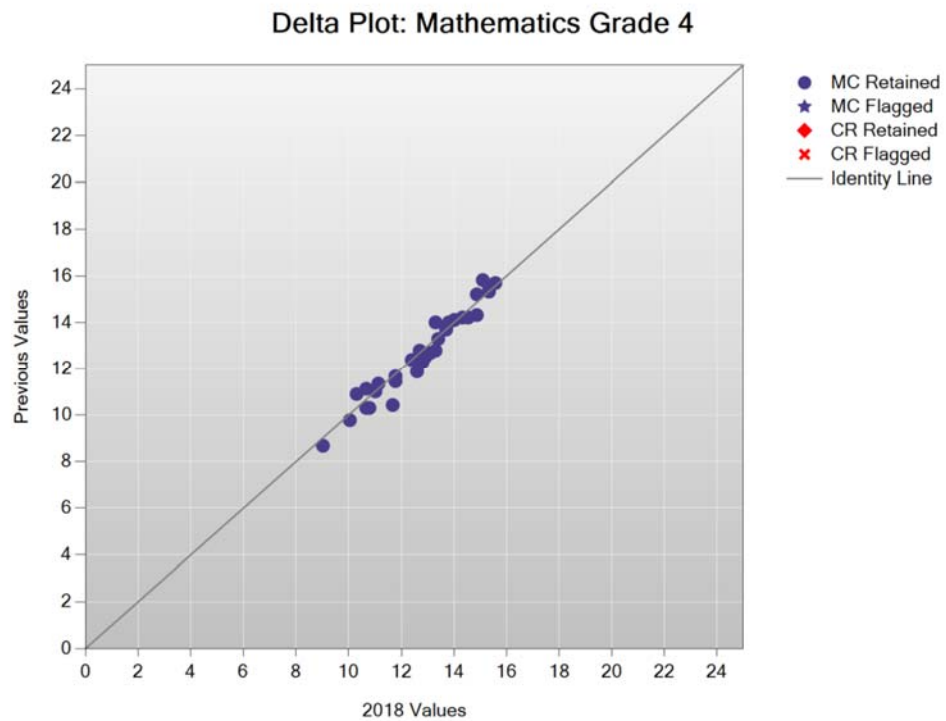
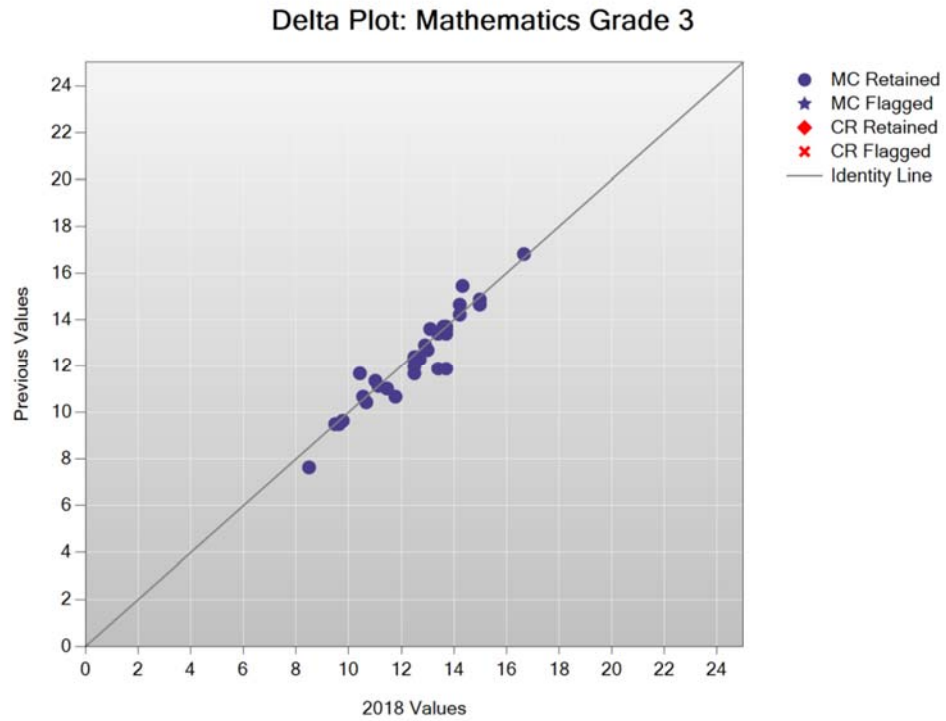


Figure L-2. 2017–18 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 5 Bottom: Grade 6

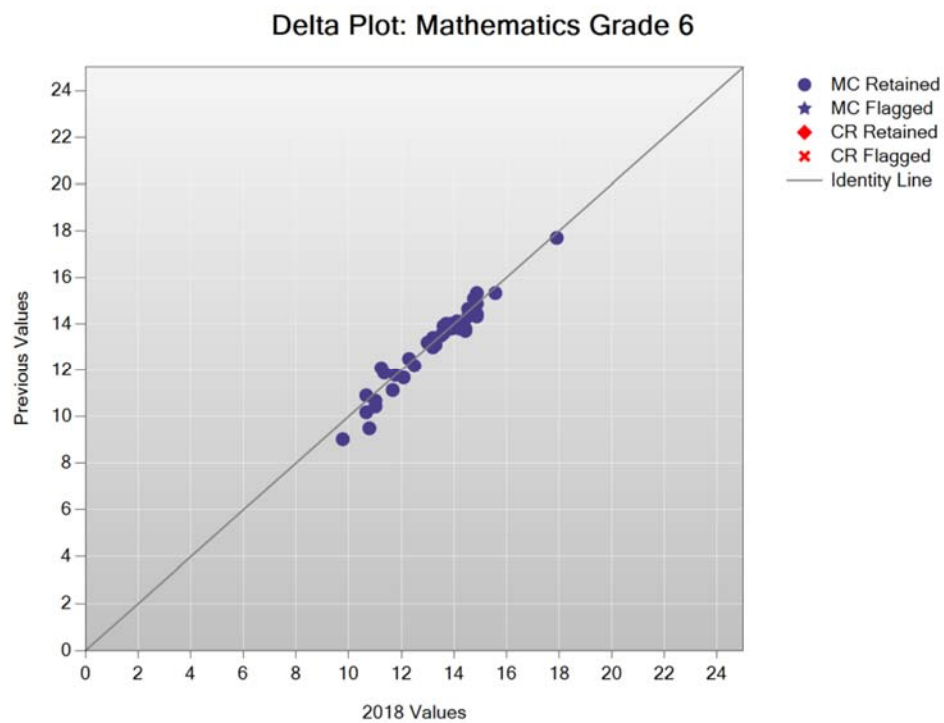
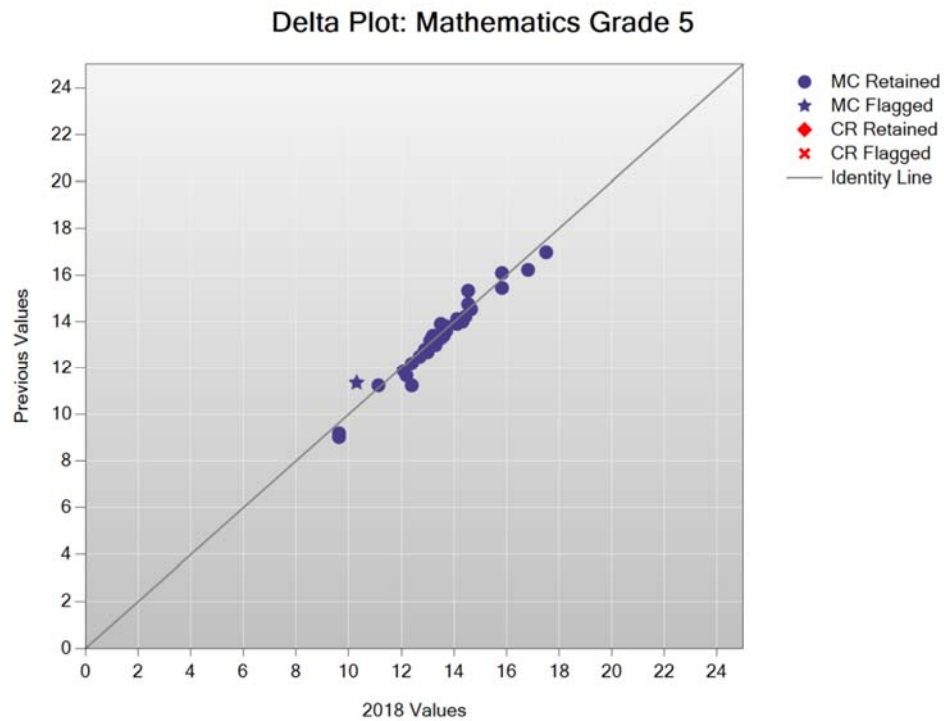


Figure L-3. 2017–18 eMPowerME: Delta Analysis Plots—Mathematics
Top: Grade 7 Bottom: Grade 8

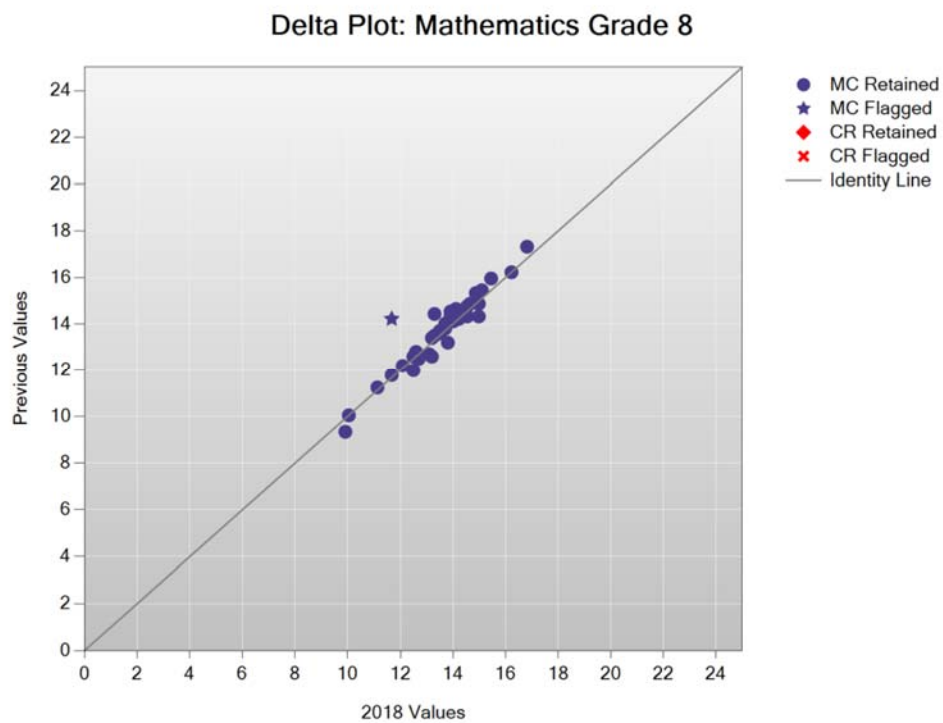
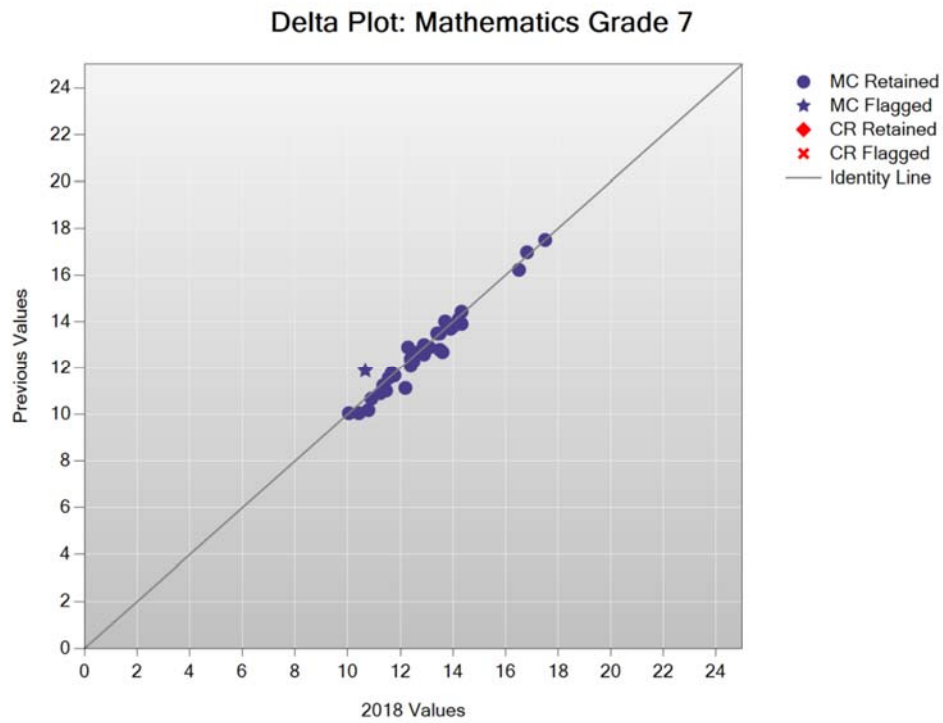
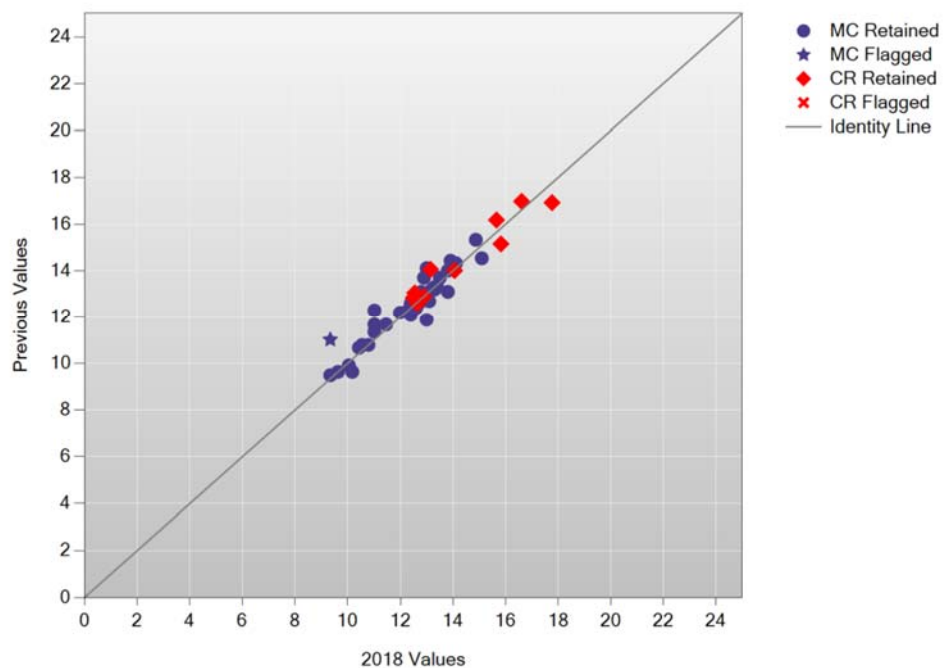


Figure L-4. 2017–18 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 3 Bottom: Grade 4

Delta Plot: English Language Arts Grade 3



Delta Plot: English Language Arts Grade 4

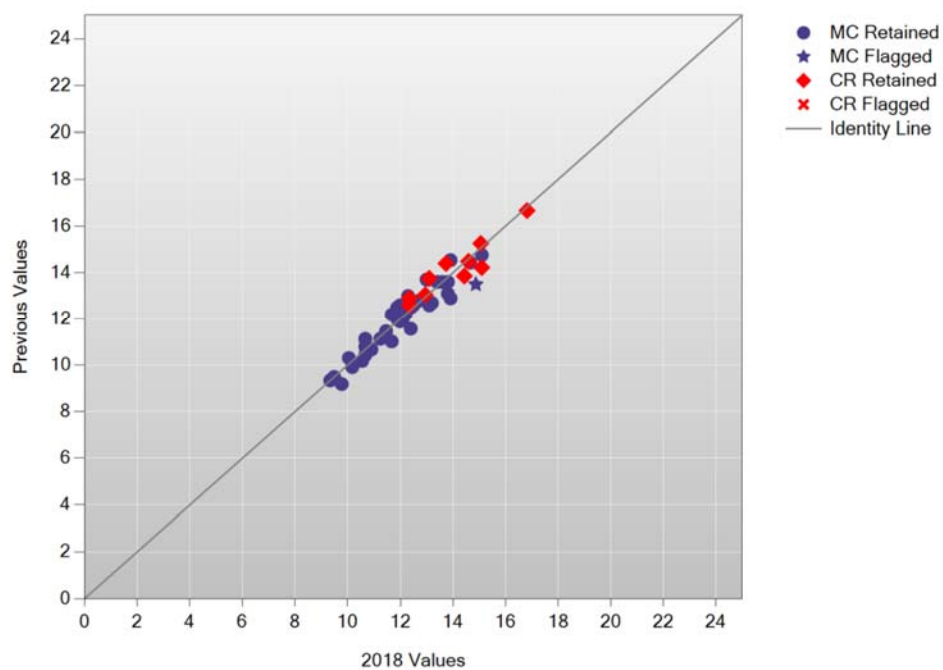


Figure L-5. 2017–18 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 5 Bottom: Grade 6

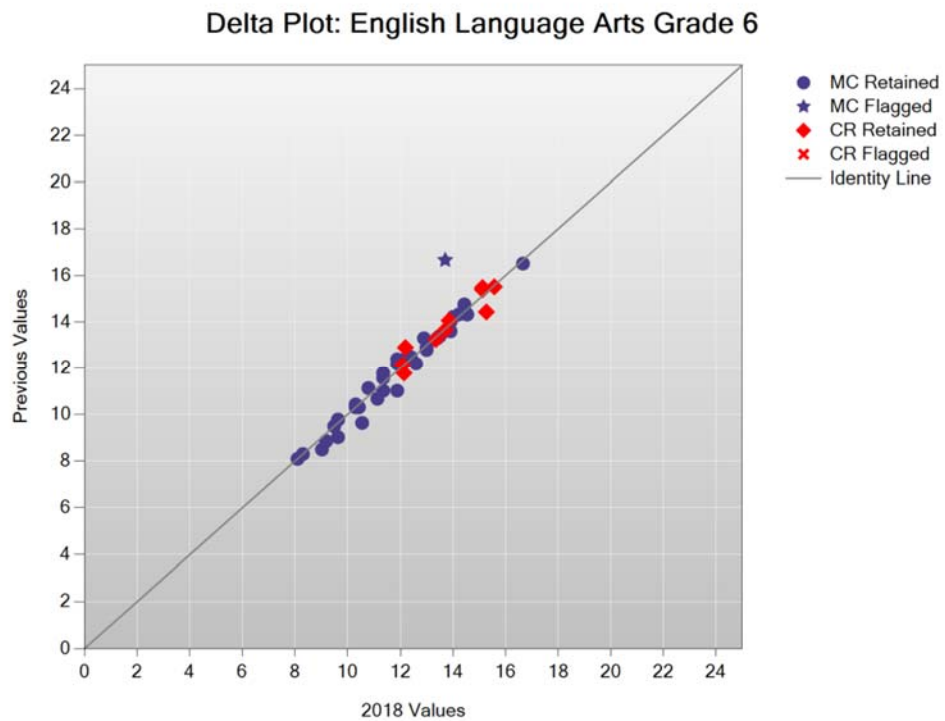
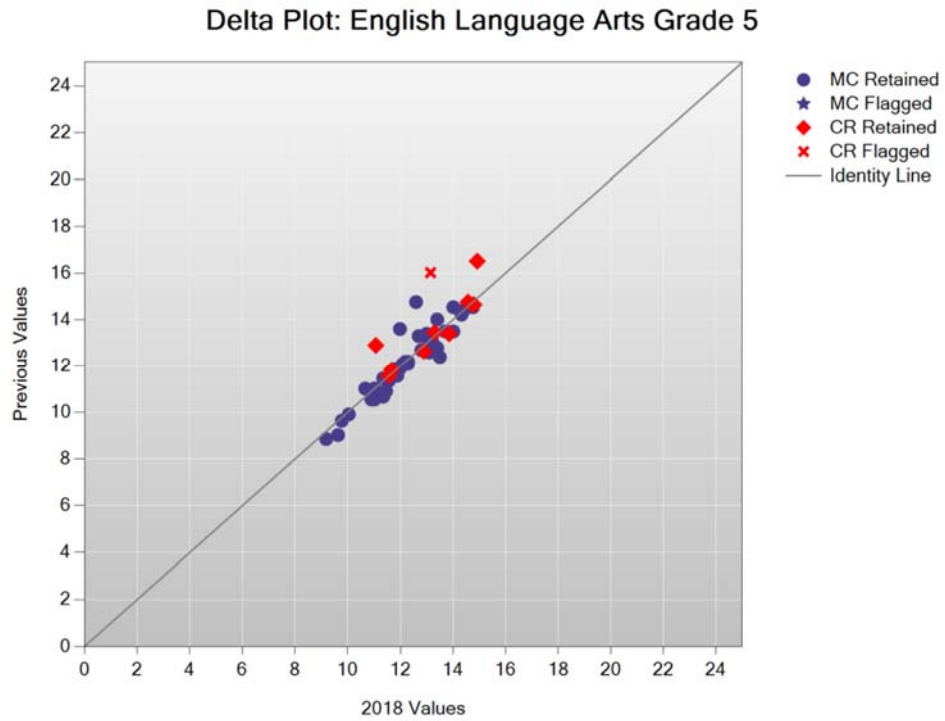


Figure L-6. 2017–18 eMPowerME: Delta Analysis Plots—ELA
Top: Grade 7 Bottom: Grade 8

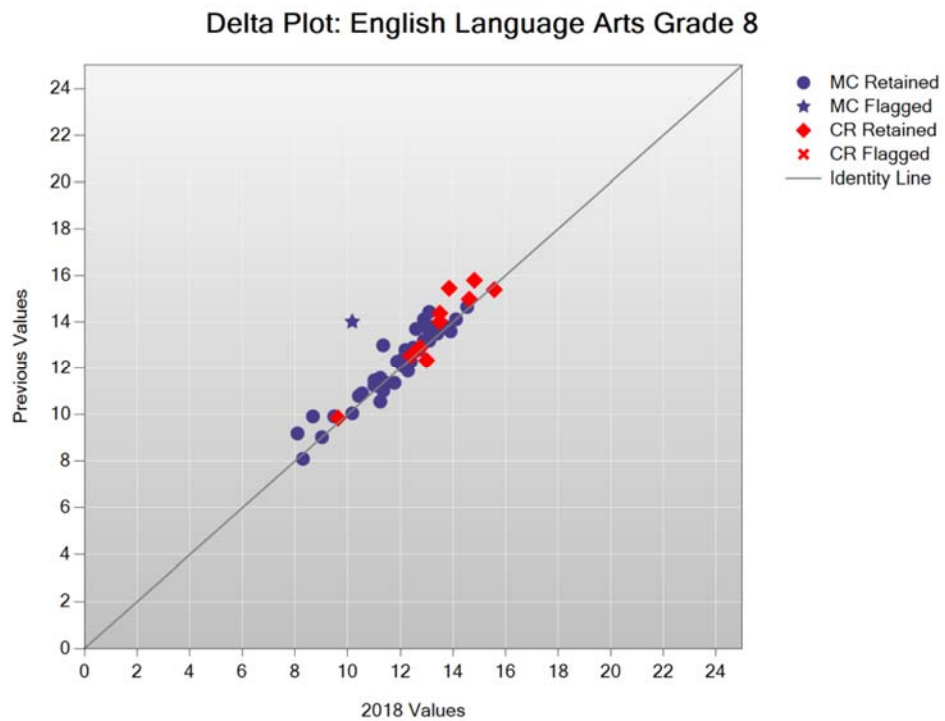
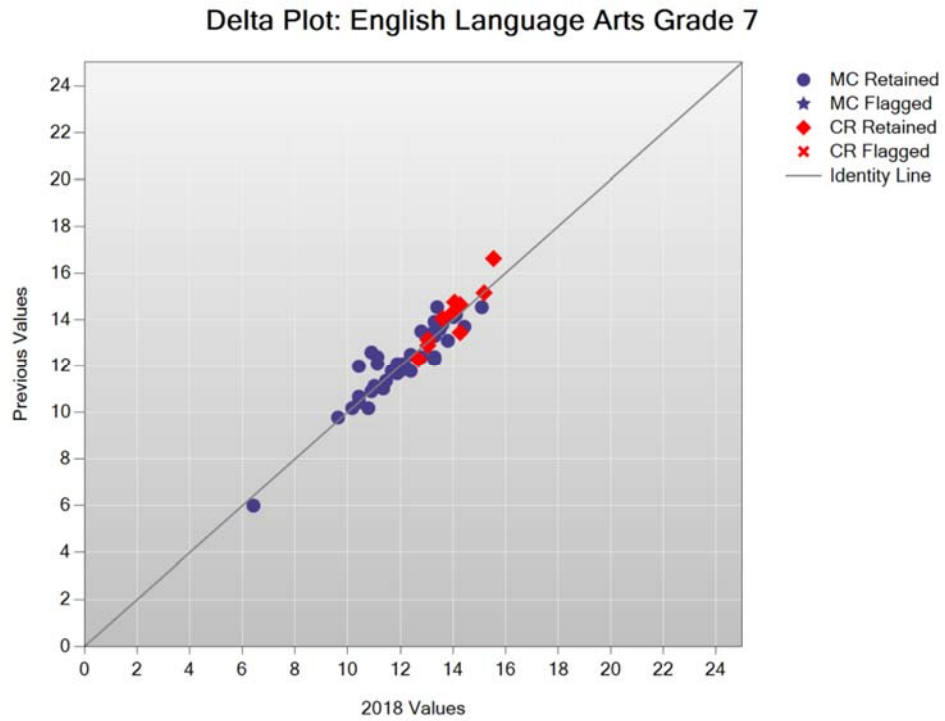


Table L-1. 2017–18 eMPowerME: Delta Analysis Results—Mathematics Grade 3

<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	0.32000	0.31000	14.87080	14.98340	False	-0.65835
123976A	0.46000	0.46000	13.40173	13.40173	False	-0.65356
124364A	0.68000	0.68000	11.12920	11.12920	False	-0.31171
124366A	0.57000	0.55000	12.29450	12.49735	False	-0.83429
124395A	0.72000	0.73000	10.66863	10.54875	False	0.03868
124531A	0.91000	0.87000	7.63698	8.49444	False	-0.00001
125052A	0.34000	0.38000	14.64985	14.22192	False	0.16209
125120A	0.27000	0.37000	15.45125	14.32741	False	1.67329
125219A	0.56000	0.55000	12.39612	12.49735	False	-0.73965
125260A	0.63000	0.55000	11.67259	12.49735	False	0.53041
125291A	0.51000	0.51000	12.89972	12.89972	False	-0.57804
400041	0.46000	0.43000	13.40173	13.70550	False	-0.43112
400619	0.74000	0.72000	10.42662	10.66863	False	-0.77349
400626	0.43000	0.43000	13.70550	13.70550	False	-0.69925
409896	0.53000	0.50000	12.69892	13.00000	False	-0.54313
411009	0.66000	0.69000	11.35015	11.01660	False	0.43715
411494	0.81000	0.81000	9.48841	9.48841	False	-0.06489
411577	0.72000	0.62000	10.66863	11.77808	False	1.04689
411588	0.57000	0.53000	12.29450	12.69892	False	-0.36166
411623	0.81000	0.80000	9.48841	9.63352	False	-0.40512
411633	0.80000	0.79000	9.63352	9.77432	False	-0.41686
411729	0.44000	0.43000	13.60388	13.70550	False	-0.87469
411764	0.38000	0.38000	14.22192	14.22192	False	-0.77694
412701	0.34000	0.31000	14.64985	14.98340	False	-0.17352
413036	0.61000	0.46000	11.88272	13.40173	False	2.18987
413222	0.56000	0.54000	12.39612	12.59827	False	-0.82067
413339	0.69000	0.65000	11.01660	11.45872	False	-0.46549
413352	0.44000	0.49000	13.60388	13.10028	False	0.49687
413559	0.60000	0.55000	11.98661	12.49735	False	-0.15867
413568	0.61000	0.43000	11.88272	13.70550	False	2.90212
414589	0.43000	0.44000	13.70550	13.60388	False	-0.46098
462666	0.63000	0.74000	11.67259	10.42662	False	2.52807
464225	0.17000	0.18000	16.81666	16.66146	False	-0.80335

Table L-2. 2017–18 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>		
124741A	0.57000	0.52000	12.29450	12.79939	False	0.36728
124946A	0.69000	0.69000	11.01660	11.01660	False	-0.27118
126060A	0.40000	0.42000	14.01339	13.80757	False	-0.31137
126501A	0.65000	0.62000	11.45872	11.77808	False	-0.57721
126903A	0.79000	0.77000	9.77432	10.04461	False	-0.96519
127117A	0.53000	0.52000	12.69892	12.79939	False	-1.07431
127590A	0.37000	0.32000	14.32741	14.87080	False	1.07885

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>		
127595A	0.52000	0.53000	12.79939	12.69892	False	-0.37951
127720A	0.56000	0.56000	12.39612	12.39612	False	-0.65368
400447	0.66000	0.68000	11.35015	11.12920	False	0.48518
400740	0.28000	0.28000	15.33137	15.33137	False	-0.73040
400748	0.47000	0.46000	13.30108	13.40173	False	-0.90662
400786	0.70000	0.75000	10.90240	10.30204	False	2.06699
400798	0.29000	0.32000	15.21354	14.87080	False	-0.11807
400903	0.61000	0.54000	11.88272	12.59827	False	1.06244
405640	0.75000	0.72000	10.30204	10.66863	False	-0.71645
407489	0.75000	0.71000	10.30204	10.78646	False	-0.26377
407491	0.53000	0.49000	12.69892	13.10028	False	0.08168
407852	0.25000	0.26000	15.69796	15.57338	False	-1.09055
408032	0.68000	0.72000	11.12920	10.66863	False	1.46706
408054	0.40000	0.47000	14.01339	13.30108	False	1.63452
411024	0.43000	0.43000	13.70550	13.70550	False	-1.01672
411556	0.74000	0.63000	10.42662	11.67259	False	2.69655
411676	0.55000	0.51000	12.49735	12.89972	False	0.02969
411727	0.52000	0.47000	12.79939	13.30108	False	0.49502
411850	0.38000	0.35000	14.22192	14.54128	False	0.18893
411858	0.86000	0.84000	8.67872	9.02217	False	-0.94244
413801	0.63000	0.62000	11.67259	11.77808	False	-0.85834
462834	0.39000	0.40000	14.11728	14.01339	False	-0.73177
465902	0.26000	0.28000	15.57338	15.33137	False	-0.60483
466047	0.24000	0.30000	15.82521	15.09760	False	1.19094
476961	0.38000	0.37000	14.22192	14.32741	False	-0.63273

Table L-3. 2017–18 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>		
124038A	0.38000	0.36000	14.22192	14.43384	False	-0.61539
124390A	0.52000	0.51000	12.79939	12.89972	False	-0.96180
124675A	0.46000	0.44000	13.40173	13.60388	False	-0.69849
124737A	0.63000	0.58000	11.67259	12.19243	False	0.34313
124943A	0.48000	0.49000	13.20061	13.10028	False	-0.26344
124973A	0.40000	0.38000	14.01339	14.22192	False	-0.63973
125060A	0.67000	0.56000	11.24035	12.39612	False	2.60526
126058A	0.16000	0.13000	16.97783	17.50556	False	0.68173
128315A	0.21000	0.17000	16.22568	16.81666	False	0.86523
400076	0.40000	0.37000	14.01339	14.32741	False	-0.26030
400302	0.33000	0.35000	14.75965	14.54128	False	0.06995
400715	0.41000	0.39000	13.91018	14.11728	False	-0.65094
400718	0.50000	0.47000	13.00000	13.30108	False	-0.36611
408471	0.42000	0.43000	13.80757	13.70550	False	-0.29268
408484	0.28000	0.35000	15.33137	14.54128	False	2.09292
410151	0.41000	0.45000	13.91018	13.50265	False	0.80003
411149	0.53000	0.50000	12.69892	13.00000	False	-0.38372
411240	0.44000	0.43000	13.60388	13.70550	False	-1.01344

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>		
411976	0.35000	0.34000	14.54128	14.64985	False	-0.96843
412026	0.61000	0.59000	11.88272	12.08982	False	-0.76949
413850	0.46000	0.48000	13.40173	13.20061	False	0.08730
413885	0.22000	0.24000	16.08877	15.82521	False	0.15479
413923	0.43000	0.44000	13.70550	13.60388	False	-0.28835
414837	0.46000	0.47000	13.40173	13.30108	False	-0.27406
414953	0.67000	0.68000	11.24035	11.12920	False	-0.10996
415252	0.66000	0.75000	11.35015	10.30204	True	3.25379
415312	0.58000	0.56000	12.19243	12.39612	False	-0.76361
464057	0.83000	0.80000	9.18334	9.63352	False	-0.05299
464086	0.47000	0.45000	13.30108	13.50265	False	-0.70645
465792	0.39000	0.39000	14.11728	14.11728	False	-0.67795
478772	0.27000	0.24000	15.45125	15.82521	False	0.03935
480576	0.55000	0.53000	12.49735	12.69892	False	-0.75344
480578	0.84000	0.80000	9.02217	9.63352	False	0.51730

Table L-4. 2017–18 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>		
124562A	0.61000	0.66000	11.88272	11.35015	False	1.73065
125081A	0.28000	0.32000	15.33137	14.87080	False	0.60445
125464A	0.84000	0.79000	9.02217	9.77432	False	0.26930
125822A	0.40000	0.41000	14.01339	13.91018	False	-0.56516
125839A	0.59000	0.67000	12.08982	11.24035	False	2.99838
127738A	0.58000	0.55000	12.19243	12.49735	False	-0.82974
400092	0.74000	0.69000	10.42662	11.01660	False	-0.06812
400096	0.81000	0.71000	9.48841	10.78646	False	2.65048
400100	0.46000	0.48000	13.40173	13.20061	False	-0.01147
400114	0.41000	0.44000	13.91018	13.60388	False	0.30388
400189	0.76000	0.72000	10.17479	10.66863	False	-0.52815
400411	0.44000	0.44000	13.60388	13.60388	False	-0.89603
400688	0.45000	0.45000	13.50265	13.50265	False	-0.87175
400695	0.70000	0.72000	10.90240	10.66863	False	0.72349
406039	0.39000	0.39000	14.11728	14.11728	False	-1.01912
408317	0.36000	0.32000	14.43384	14.87080	False	0.25655
411834	0.63000	0.59000	11.67259	12.08982	False	-0.48751
412060	0.72000	0.69000	10.66863	11.01660	False	-1.01619
412115	0.48000	0.50000	13.20061	13.00000	False	0.03465
412144	0.49000	0.47000	13.10028	13.30108	False	-1.04493
412181	0.40000	0.43000	14.01339	13.70550	False	0.28574
412226	0.28000	0.26000	15.33137	15.57338	False	-0.33867
412273	0.42000	0.36000	13.80757	14.43384	False	0.89335
412328	0.42000	0.38000	13.80757	14.22192	False	0.01239
412455	0.37000	0.32000	14.32741	14.87080	False	0.67344
413794	0.43000	0.36000	13.70550	14.43384	False	1.29322
414013	0.50000	0.48000	13.00000	13.20061	False	-1.06976
414069	0.37000	0.35000	14.32741	14.54128	False	-0.69640

continued

Item Number	Difficulty		Delta		Discard	Standardized Difference
	Old	New	Old	New		
414079	0.55000	0.57000	12.49735	12.29450	False	0.21256
414094	0.32000	0.32000	14.87080	14.87080	False	-1.19979
415153	0.62000	0.62000	11.77808	11.77808	False	-0.45826
419562	0.68000	0.63000	11.12920	11.67259	False	-0.09338
464787	0.12000	0.11000	17.69995	17.90611	False	0.08020
464828	0.34000	0.35000	14.64985	14.54128	False	-0.69547
464839	0.42000	0.41000	13.80757	13.91018	False	-1.28357
464910	0.30000	0.33000	15.09760	14.75965	False	0.15074

Table L-5. 2017–18 eMPowerME: Delta Analysis Results—Mathematics Grade 7

Item Number	Difficulty		Delta		Discard	Standardized Difference
	Old	New	Old	New		
123969A	0.45000	0.46000	13.50265	13.40173	False	-0.23113
124351A	0.62000	0.63000	11.77808	11.67259	False	-0.06481
124359A	0.68000	0.58000	11.12920	12.19243	False	2.24510
124360A	0.61000	0.72000	11.88272	10.66863	True	3.81617
124361A	0.42000	0.40000	13.80757	14.01339	False	-0.53021
124508A	0.77000	0.74000	10.04461	10.42662	False	-0.23979
124649A	0.67000	0.66000	11.24035	11.35015	False	-0.77342
124652A	0.43000	0.41000	13.70550	13.91018	False	-0.54307
400168	0.63000	0.62000	11.67259	11.77808	False	-0.79595
400873	0.42000	0.41000	13.80757	13.91018	False	-0.89237
400877	0.64000	0.64000	11.56616	11.56616	False	-0.41651
400884	0.39000	0.38000	14.11728	14.22192	False	-0.85823
400951	0.53000	0.44000	12.69892	13.60388	False	1.82650
400958	0.50000	0.51000	13.00000	12.89972	False	-0.18956
400983	0.77000	0.77000	10.04461	10.04461	False	-0.28395
400990	0.59000	0.56000	12.08982	12.39612	False	-0.32725
408597	0.56000	0.56000	12.39612	12.39612	False	-0.48882
408701	0.40000	0.43000	14.01339	13.70550	False	0.45068
408770	0.64000	0.64000	11.56616	11.56616	False	-0.41651
408783	0.40000	0.43000	14.01339	13.70550	False	0.45068
410223	0.54000	0.51000	12.59827	12.89972	False	-0.29995
410251	0.51000	0.57000	12.89972	12.29450	False	1.59104
412118	0.53000	0.53000	12.69892	12.69892	False	-0.51520
412147	0.45000	0.45000	13.50265	13.50265	False	-0.58523
412193	0.57000	0.55000	12.29450	12.49735	False	-0.67243
412197	0.51000	0.49000	12.89972	13.10028	False	-0.62777
412231	0.41000	0.37000	13.91018	14.32741	False	0.22060
412244	0.72000	0.70000	10.66863	10.90240	False	-0.70561
412529	0.70000	0.67000	10.90240	11.24035	False	-0.31965
414127	0.36000	0.37000	14.43384	14.32741	False	-0.29292
467154	0.76000	0.71000	10.17479	10.78646	False	0.57745
467828	0.69000	0.65000	11.01660	11.45872	False	0.05583
467833	0.52000	0.45000	12.79939	13.50265	False	1.12750
467881	0.13000	0.13000	17.50556	17.50556	False	-0.93023
467883	0.21000	0.19000	16.22568	16.51159	False	-0.03851
467892	0.16000	0.17000	16.97783	16.81666	False	-0.32245

Table L-6. 2017–18 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>		
126883A	0.60000	0.55000	11.98661	12.49735	False	0.56585
127379A	0.34000	0.39000	14.64985	14.11728	False	0.00000
127742A	0.37000	0.41000	14.32741	13.91018	False	-0.21705
400172	0.62000	0.63000	11.77808	11.67259	False	-0.51168
400310	0.42000	0.43000	13.80757	13.70550	False	-0.56857
400345	0.32000	0.34000	14.87080	14.64985	False	-0.66504
400370	0.38000	0.39000	14.22192	14.11728	False	-0.50255
400396	0.46000	0.48000	13.40173	13.20061	False	-0.56777
400771	0.55000	0.53000	12.49735	12.69892	False	-0.07748
400985	0.37000	0.35000	14.32741	14.54128	False	0.27014
408524	0.36000	0.47000	14.43384	13.30108	False	1.45898
408651	0.27000	0.30000	15.45125	15.09760	False	-0.56322
408795	0.33000	0.35000	14.75965	14.54128	False	-0.67829
409018	0.23000	0.27000	15.95539	15.45125	False	-0.29457
409020	0.43000	0.45000	13.70550	13.50265	False	-0.61654
409213	0.28000	0.32000	15.33137	14.87080	False	-0.28914
409239	0.77000	0.77000	10.04461	10.04461	False	-0.45983
409274	0.35000	0.41000	14.54128	13.91018	False	0.25223
410332	0.44000	0.45000	13.60388	13.50265	False	-0.60202
412449	0.67000	0.68000	11.24035	11.12920	False	-0.40471
412467	0.52000	0.54000	12.79939	12.59827	False	-0.46294
412547	0.39000	0.40000	14.11728	14.01339	False	-0.51896
412693	0.52000	0.54000	12.79939	12.59827	False	-0.46294
412817	0.37000	0.31000	14.32741	14.98340	False	1.31720
412974	0.54000	0.48000	12.59827	13.20061	False	0.88924
413193	0.45000	0.47000	13.50265	13.30108	False	-0.58428
413229	0.82000	0.78000	9.33854	9.91123	False	0.25170
413314	0.54000	0.55000	12.59827	12.49735	False	-0.66527
414203	0.48000	0.42000	13.20061	13.80757	False	1.00499
414349	0.32000	0.31000	14.87080	14.98340	False	0.12489
414370	0.38000	0.38000	14.22192	14.22192	False	-0.25471
414766	0.38000	0.63000	14.22192	11.67259	True	4.85071
414948	0.53000	0.49000	12.69892	13.10028	False	0.43075
465407	0.14000	0.17000	17.32128	16.81666	False	-0.53113
468384	0.40000	0.43000	14.01339	13.70550	False	-0.42135
468386	0.21000	0.21000	16.22568	16.22568	False	0.09400
468754	0.58000	0.59000	12.19243	12.08982	False	-0.59062

Table L-7. 2017–18 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>		
128591A	0.54000	0.56000	12.59827	12.39612	False	-0.92453
128592A	0.43000	0.51000	13.70550	12.89972	False	0.95596
128593A	0.69000	0.82000	11.01660	9.33854	True	3.08629
128594A	0.66000	0.69000	11.35015	11.01660	False	-0.71901
128597A	0.39500	0.48500	14.06524	13.15043	False	1.31751
128603A	0.29500	0.24000	15.15534	15.82521	False	0.83368
130312A	0.80000	0.76000	9.63352	10.17479	False	1.22124
130319A	0.63000	0.69000	11.67259	11.01660	False	0.24866
130325A	0.40000	0.42000	14.01339	13.80757	False	-0.72030
130326A	0.49500	0.54500	13.05013	12.54785	False	-0.00299
130328A	0.57000	0.69000	12.29450	11.01660	False	2.11509
410572	0.21333	0.25333	16.17963	15.65615	False	0.48612
410580	0.16333	0.11667	16.92340	17.76726	False	1.09002
418618	0.80000	0.80000	9.63352	9.63352	False	-0.32908
418622	0.48000	0.48000	13.20061	13.20061	False	-0.81737
418629	0.52000	0.55000	12.79939	12.49735	False	-0.61090
418639	0.47000	0.47000	13.30108	13.30108	False	-0.83113
418643	0.71000	0.73000	10.78646	10.54875	False	-1.07066
418646	0.71000	0.71000	10.78646	10.78646	False	-0.48690
418652	0.58000	0.56000	12.19243	12.39612	False	-0.09593
418659	0.43000	0.45000	13.70550	13.50265	False	-0.77093
418677	0.40000	0.39500	14.01339	14.06524	False	-0.78011
418699	0.16000	0.18333	16.97783	16.61094	False	0.14686
421611	0.49000	0.52000	13.10028	12.79939	False	-0.57298
421614	0.50000	0.50000	13.00000	13.00000	False	-0.78991
421623	0.58000	0.60000	12.19243	11.98661	False	-0.96957
421651	0.59000	0.56000	12.08982	12.39612	False	0.21200
421656	0.47000	0.46000	13.30108	13.40173	False	-0.54283
421661	0.51000	0.51000	12.89972	12.89972	False	-0.77619
421938	0.63000	0.65000	11.67259	11.45872	False	-1.01766
422166	0.49000	0.42000	13.10028	13.80757	False	1.22221
456712	0.57000	0.57000	12.29450	12.29450	False	-0.69334
456720	0.54000	0.53000	12.59827	12.69892	False	-0.44662
456725	0.72000	0.74000	10.66863	10.42662	False	-1.07447
456727	0.81000	0.82000	9.48841	9.33854	False	-0.73849
456731	0.57000	0.57000	12.29450	12.29450	False	-0.69334
456735	0.51500	0.55000	12.84957	12.49735	False	-0.46030
459507	0.61000	0.50000	11.88272	13.00000	False	2.56314
459509	0.78000	0.77000	9.91123	10.04461	False	0.01495
459513	0.37000	0.39000	14.32741	14.11728	False	-0.66493
459515	0.54000	0.53500	12.59827	12.64862	False	-0.59069
459519	0.35000	0.30000	14.54128	15.09760	False	0.59252
459523	0.56000	0.54000	12.39612	12.59827	False	-0.12827
474429	0.36000	0.41000	14.43384	13.91018	False	0.24762
474695	0.39000	0.50000	14.11728	13.00000	False	1.90454
474704	0.53000	0.49000	12.69892	13.10028	False	0.40087
474706	0.48000	0.47000	13.20061	13.30108	False	-0.52962
474708	0.28000	0.32000	15.33137	14.87080	False	0.18979

Table L-8. 2017–18 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>		
130668A	0.54000	0.56500	12.59827	12.34537	False	-0.27116
130675A	0.55000	0.56000	12.49735	12.39612	False	-0.77134
130704A	0.60000	0.61000	11.98661	11.88272	False	-0.79128
130706A	0.60000	0.59000	11.98661	12.08982	False	-0.99209
130709A	0.71000	0.72000	10.78646	10.66863	False	-0.81306
130710A	0.81000	0.81000	9.48841	9.48841	False	-1.18867
130712A	0.68000	0.67000	11.12920	11.24035	False	-0.91819
130728A	0.18000	0.17000	16.66146	16.81666	False	-1.08444
131512A	0.54000	0.55000	12.59827	12.49735	False	-0.76673
131516A	0.44000	0.46000	13.60388	13.40173	False	-0.38032
131519A	0.51000	0.56500	12.89972	12.34537	False	0.72867
410868	0.28667	0.30333	15.25260	15.05935	False	-0.31697
420698	0.44000	0.44000	13.60388	13.60388	False	-1.03943
420714	0.59000	0.59000	12.08982	12.08982	False	-1.12424
420723	0.49500	0.50500	13.05013	12.94987	False	-0.74351
420785	0.82000	0.82000	9.33854	9.33854	False	-1.18028
420820	0.52000	0.53000	12.79939	12.69892	False	-0.75692
421210	0.35000	0.41000	14.54128	13.91018	False	1.07086
421213	0.74000	0.72000	10.42662	10.66863	False	-0.45211
421216	0.45000	0.32000	13.50265	14.87080	True	3.04745
421318	0.83000	0.79000	9.18334	9.77432	False	0.75535
421324	0.33000	0.30000	14.75965	15.09760	False	-0.38203
421793	0.56000	0.61000	12.39612	11.88272	False	0.56691
421799	0.43000	0.50000	13.70550	13.00000	False	1.26661
421820	0.51000	0.41000	12.89972	13.91018	False	1.91493
421824	0.55000	0.61000	12.49735	11.88272	False	0.90265
421828	0.54000	0.60000	12.59827	11.98661	False	0.89860
421852	0.42500	0.49000	13.75647	13.10028	False	1.10872
422664	0.72000	0.70000	10.66863	10.90240	False	-0.49257
465746	0.54000	0.49000	12.59827	13.10028	False	0.27398
465748	0.58000	0.58000	12.19243	12.19243	False	-1.11849
465750	0.36000	0.34000	14.43384	14.64985	False	-0.76135
465752	0.49000	0.42000	13.10028	13.80757	False	0.91522
465754	0.69000	0.63000	11.01660	11.67259	False	0.86464
465756	0.35500	0.34500	14.48742	14.59542	False	-1.11657
471928	0.50000	0.57000	13.00000	12.29450	False	1.22709
472568	0.65000	0.65000	11.45872	11.45872	False	-1.15959
472570	0.75000	0.77000	10.30204	10.04461	False	-0.38501
472573	0.44000	0.42000	13.60388	13.80757	False	-0.75503
472575	0.58000	0.63000	12.19243	11.67259	False	0.57650
472577	0.68000	0.72000	11.12920	10.66863	False	0.32369
472582	0.36333	0.42667	14.39825	13.73947	False	1.15310
476097	0.61000	0.60000	11.88272	11.98661	False	-0.98406
476102	0.38000	0.30000	14.22192	15.09760	False	1.40141
476121	0.76000	0.73000	10.17479	10.54875	False	-0.00779
476151	0.53000	0.48000	12.69892	13.20061	False	0.26731
476172	0.41500	0.36000	13.85881	14.43384	False	0.44145
476177	0.78000	0.76000	9.91123	10.17479	False	-0.35298
486800	0.64000	0.56000	11.56616	12.39612	False	1.40110

Table L-9. 2017–18 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>		
129003A	0.58000	0.57000	12.19243	12.29450	False	-0.67276
129009A	0.38000	0.37000	14.22192	14.32741	False	0.11554
129011A	0.65000	0.66000	11.45872	11.35015	False	-0.48136
129012A	0.58000	0.58000	12.19243	12.19243	False	-0.89434
129015A	0.64000	0.64000	11.56616	11.56616	False	-0.75837
129019A	0.45500	0.47000	13.45215	13.30108	False	-0.73757
131427A	0.35000	0.40000	14.54128	14.01339	False	-0.75722
131429A	0.36000	0.36000	14.43384	14.43384	False	-0.03191
131430A	0.52000	0.46000	12.79939	13.40173	False	0.64671
131431A	0.61000	0.62000	11.88272	11.77808	False	-0.65302
131437A	0.40000	0.46000	14.01339	13.40173	False	-0.37228
131440A	0.45000	0.43000	13.50265	13.70550	False	0.05012
131444A	0.73000	0.69000	10.54875	11.01660	False	-0.51122
131445A	0.44000	0.60000	13.60388	11.98661	False	1.96815
131452A	0.51000	0.68500	12.89972	11.07309	False	2.69356
131484A	0.19000	0.31500	16.51159	14.92691	False	0.77861
416506	0.69000	0.69000	11.01660	11.01660	False	-0.54692
416518	0.59000	0.59000	12.08982	12.08982	False	-0.93382
416527	0.34000	0.32667	14.64985	14.79655	False	0.36963
419292	0.61500	0.63000	11.83050	11.67259	False	-0.51730
419298	0.61000	0.60000	11.88272	11.98661	False	-0.78800
419302	0.53000	0.52000	12.69892	12.79939	False	-0.48138
419309	0.46000	0.50000	13.40173	13.00000	False	-0.59261
419311	0.59000	0.57000	12.08982	12.29450	False	-0.48952
419321	0.78000	0.77000	9.91123	10.04461	False	-0.41114
458560	0.72000	0.66000	10.66863	11.35015	False	-0.00130
458563	0.53500	0.51000	12.64862	12.89972	False	-0.17374
458565	0.58000	0.57000	12.19243	12.29450	False	-0.67276
458577	0.85000	0.83000	8.85427	9.18334	False	-0.42923
458584	0.73000	0.70000	10.54875	10.90240	False	-0.75912
458588	0.54000	0.49000	12.59827	13.10028	False	0.35152
459808	0.47000	0.53000	13.30108	12.69892	False	-0.11882
459811	0.64000	0.61000	11.56616	11.88272	False	-0.44816
459819	0.84000	0.80000	9.02217	9.63352	False	-0.78712
459823	0.66000	0.64000	11.35015	11.56616	False	-0.74952
459830	0.35000	0.33000	14.54128	14.75965	False	0.48344
460891	0.46000	0.41500	13.40173	13.85881	False	0.56312
460893	0.49000	0.48000	13.10028	13.20061	False	-0.32722
460897	0.49000	0.49000	13.10028	13.10028	False	-0.54503
460901	0.69000	0.72000	11.01660	10.66863	False	0.20841
460906	0.56000	0.45000	12.39612	13.50265	False	1.58595
460910	0.45000	0.40000	13.50265	14.01339	False	0.71846
478334	0.50000	0.49000	13.00000	13.10028	False	-0.36594
478338	0.33000	0.54000	14.75965	12.59827	False	2.70456
478350	0.80000	0.79000	9.63352	9.77432	False	-0.32038
478358	0.33000	0.34667	14.75965	14.57734	False	-0.30229
478360	0.22500	0.48500	16.02166	13.15043	True	3.75982
478364	0.70000	0.65000	10.90240	11.45872	False	-0.18311
478366	0.70000	0.65000	10.90240	11.45872	False	-0.18311

Table L-10. 2017–18 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>		
129251A	0.55000	0.56000	12.49735	12.39612	False	-0.64168
129252A	0.64000	0.66000	11.56616	11.35015	False	-0.19212
129254A	0.88000	0.88000	8.30005	8.30005	False	-0.17705
129255A	0.79000	0.80000	9.77432	9.63352	False	-0.07455
129257A	0.89000	0.89000	8.09389	8.09389	False	-0.14168
129258A	0.43500	0.43000	13.65463	13.70550	False	-0.41213
129259A	0.44000	0.41000	13.60388	13.91018	False	0.22404
129379A	0.52000	0.50000	12.79939	13.00000	False	-0.18082
130154A	0.38000	0.40000	14.22192	14.01339	False	-0.66669
130167A	0.47000	0.51000	13.30108	12.89972	False	-0.02190
130168A	0.46000	0.45000	13.40173	13.50265	False	-0.32917
130171A	0.87000	0.84000	8.49444	9.02217	False	-0.09365
130173A	0.62000	0.58500	11.77808	12.14119	False	0.05419
130184A	0.26500	0.26000	15.51202	15.57338	False	-0.06694
407603	0.35000	0.36000	14.54128	14.43384	False	-0.65965
407638	0.81000	0.81000	9.48841	9.48841	False	-0.38095
407683	0.85000	0.83000	8.85427	9.18334	False	-0.53344
409362	0.75000	0.75000	10.30204	10.30204	False	-0.52056
409385	0.40000	0.41000	14.01339	13.91018	False	-0.73953
409396	0.58000	0.61000	12.19243	11.88272	False	-0.06306
409447	0.37000	0.35000	14.32741	14.54128	False	0.11483
409458	0.47500	0.46500	13.25083	13.35138	False	-0.35597
409472	0.58000	0.59000	12.19243	12.08982	False	-0.58588
413439	0.74000	0.75000	10.42662	10.30204	False	-0.22743
413445	0.69000	0.66000	11.01660	11.35015	False	-0.15112
413448	0.58000	0.54000	12.19243	12.59827	False	0.23314
413454	0.58500	0.59000	12.14119	12.08982	False	-0.70643
413469	0.26750	0.29750	15.48157	15.12642	False	-0.51269
413478	0.27500	0.29750	15.39104	15.12642	False	-0.72569
419841	0.62000	0.66000	11.77808	11.35015	False	0.30651
419843	0.37000	0.35000	14.32741	14.54128	False	0.11483
419845	0.56000	0.61000	12.39612	11.88272	False	0.41623
419847	0.39500	0.41500	14.06524	13.85881	False	-0.64510
419853	0.56000	0.58000	12.39612	12.19243	False	-0.36563
419859	0.79000	0.80000	9.77432	9.63352	False	-0.07455
420260	0.33000	0.36000	14.75965	14.43384	False	-0.46287
420298	0.36000	0.28500	14.43384	15.27221	False	1.70968
462459	0.51000	0.50000	12.89972	13.00000	False	-0.41691
462461	0.69000	0.61000	11.01660	11.88272	False	1.19340
462472	0.84000	0.80000	9.02217	9.63352	False	0.20799
462482	0.80000	0.73000	9.63352	10.54875	False	1.08006
462484	0.72000	0.68000	10.66863	11.12920	False	0.10985
464586	0.18000	0.43000	16.66146	13.70550	True	5.85075
464598	0.51000	0.58000	12.89972	12.19243	False	0.81933
464600	0.68000	0.71000	11.12920	10.78646	False	0.20279
464604	0.75000	0.74000	10.30204	10.42662	False	-0.80128
464608	0.19000	0.18000	16.51159	16.66146	False	0.32804
464610	0.47000	0.46000	13.30108	13.40173	False	-0.34709
471626	0.37000	0.38000	14.32741	14.22192	False	-0.69141

Table L-11. 2017–18 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>		
128730A	0.79000	0.80000	9.77432	9.63352	False	-0.64306
128731A	0.59000	0.59000	12.08982	12.08982	False	-0.84791
128753A	0.76000	0.76000	10.17479	10.17479	False	-1.02285
128756A	0.74000	0.74000	10.42662	10.42662	False	-1.00345
128757A	0.63000	0.61000	11.67259	11.88272	False	-0.37601
129219A	0.38000	0.39000	14.22192	14.11728	False	-0.90294
131159A	0.60000	0.74000	11.98661	10.42662	False	2.60059
131160A	0.41000	0.47000	13.91018	13.30108	False	0.10874
131161A	0.35000	0.46000	14.54128	13.40173	False	1.33941
131163A	0.56000	0.47000	12.39612	13.30108	False	1.38100
131166A	0.43000	0.36000	13.70550	14.43384	False	1.07404
131168A	0.33000	0.39500	14.75965	14.06524	False	0.23671
409304	0.34000	0.37500	14.64985	14.27456	False	-0.52890
409315	0.45000	0.47000	13.50265	13.30108	False	-0.84400
409322	0.56000	0.68000	12.39612	11.12920	False	1.84972
409354	0.46000	0.48000	13.40173	13.20061	False	-0.83565
409364	0.62000	0.63000	11.77808	11.67259	False	-0.91631
409372	0.59000	0.68000	12.08982	11.12920	False	1.13364
409401	0.56000	0.52000	12.39612	12.79939	False	0.16121
409409	0.49000	0.42000	13.10028	13.80757	False	0.96628
409464	0.42000	0.44000	13.80757	13.60388	False	-0.86734
409493	0.57000	0.47000	12.29450	13.30108	False	1.61857
409501	0.61000	0.57000	11.88272	12.29450	False	0.13390
409517	0.45500	0.37500	13.45215	14.27456	False	1.27905
409922	0.66000	0.65000	11.35015	11.45872	False	-0.65311
409929	0.44000	0.45000	13.60388	13.50265	False	-0.95243
409958	0.39000	0.40000	14.11728	14.01339	False	-0.91088
409976	0.76000	0.71000	10.17479	10.78646	False	0.46018
409979	0.34000	0.38000	14.64985	14.22192	False	-0.40093
416697	0.54000	0.70000	12.59827	10.90240	False	2.87374
416720	0.39500	0.44000	14.06524	13.60388	False	-0.26496
416732	0.18250	0.26250	16.62352	15.54263	False	1.00205
416762	0.47000	0.47000	13.30108	13.30108	False	-0.73462
416766	0.72000	0.74000	10.66863	10.42662	False	-0.48061
416774	0.48500	0.49500	13.15043	13.05013	False	-0.99257
416793	0.29500	0.29250	15.15534	15.18438	False	-0.49060
459443	0.35000	0.30000	14.54128	15.09760	False	0.73397
459447	0.45000	0.52000	13.50265	12.79939	False	0.37579
459453	0.62000	0.56000	11.77808	12.39612	False	0.62562
459457	0.37000	0.40000	14.32741	14.01339	False	-0.64771
459459	0.70000	0.70000	10.90240	10.90240	False	-0.95896
459463	0.96000	0.95000	5.99726	6.42059	False	-0.38844
477633	0.62000	0.60000	11.77808	11.98661	False	-0.37004
477635	0.55000	0.56000	12.49735	12.39612	False	-0.99393
477645	0.57000	0.53000	12.29450	12.69892	False	0.15451
477647	0.69000	0.66000	11.01660	11.35015	False	-0.13730
477651	0.68000	0.69000	11.12920	11.01660	False	-0.83832
477655	0.59000	0.61000	12.08982	11.88272	False	-0.69842
477778	0.51000	0.49500	12.89972	13.05013	False	-0.40646

Table L-12. 2017–18 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>		
130023A	0.70000	0.73000	10.90240	10.54875	False	-0.79961
130024A	0.50000	0.66000	13.00000	11.35015	False	1.42977
130026A	0.51000	0.55000	12.89972	12.49735	False	-0.87181
130027A	0.45000	0.46000	13.50265	13.40173	False	-0.25315
130080A	0.36500	0.45000	14.38050	13.50265	False	-0.13952
402075	0.59000	0.59000	12.08982	12.08982	False	-0.19434
402077	0.34000	0.35000	14.64985	14.54128	False	-0.16211
402079	0.51000	0.52500	12.89972	12.74917	False	-0.40128
402111	0.84000	0.84000	9.02217	9.02217	False	-0.47607
402116	0.78000	0.81000	9.91123	9.48841	False	-0.57935
402118	0.64000	0.67000	11.56616	11.24035	False	-0.85124
418842	0.52000	0.58000	12.79939	12.19243	False	-0.50050
418854	0.43000	0.54000	13.70550	12.59827	False	0.35107
418861	0.78500	0.80000	9.84323	9.63352	False	-0.79253
418866	0.24250	0.32500	15.79313	14.81505	False	-0.08197
420376	0.89000	0.88000	8.09389	8.30005	False	-0.17609
420389	0.66000	0.65000	11.35015	11.45872	False	-0.05940
420398	0.44000	0.41000	13.60388	13.91018	False	0.51705
420407	0.42000	0.49000	13.80757	13.10028	False	-0.40560
420455	0.57000	0.56000	12.29450	12.39612	False	0.01434
420872	0.67000	0.67000	11.24035	11.24035	False	-0.27235
420905	0.39000	0.39000	14.11728	14.11728	False	-0.00815
420913	0.42000	0.43000	13.80757	13.70550	False	-0.22733
420925	0.52000	0.53000	12.79939	12.69892	False	-0.31690
420929	0.48000	0.49000	13.20061	13.10028	False	-0.27982
420946	0.65000	0.69000	11.45872	11.01660	False	-0.68539
420952	0.71000	0.74000	10.78646	10.42662	False	-0.77739
420970	0.67000	0.69000	11.24035	11.01660	False	-0.69044
420986	0.54500	0.56000	12.54785	12.39612	False	-0.43578
420990	0.31000	0.34250	14.98340	14.62260	False	-0.60278
461905	0.44000	0.49000	13.60388	13.10028	False	-0.76751
461913	0.77000	0.76000	10.04461	10.17479	False	-0.13892
461921	0.56000	0.59000	12.39612	12.08982	False	-0.73855
461923	0.78000	0.86000	9.91123	8.67872	False	0.93360
461925	0.83000	0.89000	9.18334	8.09389	False	0.73315
461927	0.40000	0.45000	14.01339	13.50265	False	-0.79178
475541	0.39000	0.51000	14.11728	12.89972	False	0.51939
475543	0.57000	0.61000	12.29450	11.88272	False	-0.81884
475545	0.40000	0.76000	14.01339	10.17479	True	5.42649
475547	0.36000	0.49000	14.43384	13.10028	False	0.70709
475555	0.65000	0.67000	11.45872	11.24035	False	-0.66034
475558	0.27500	0.26000	15.39104	15.57338	False	0.44954
480815	0.69000	0.66000	11.01660	11.35015	False	0.33035
480828	0.73000	0.67000	10.54875	11.24035	False	0.95642
480847	0.61000	0.57000	11.88272	12.29450	False	0.55607
480879	0.56500	0.50000	12.34537	13.00000	False	1.05234
480914	0.66000	0.62000	11.35015	11.77808	False	0.53734
480927	0.48000	0.51000	13.20061	12.89972	False	-0.65456
480941	0.27000	0.41500	15.45125	13.85881	False	1.09739

**Table L-13. 2017–18 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>		
418699	3	0.52736	0.55721	0.62490	0.57268	0.04777	False

**Table L-14. 2017–18 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>		
130728A	2	0.27041	0.33163	0.55778	0.57932	0.10976	False
410868	3	0.87192	0.93596	0.56582	0.58092	0.11318	False

**Table L-15. 2017–18 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>		
129019A	2	0.87745	0.93627	0.67297	0.68110	0.08741	False
416527	3	1.01961	0.94608	0.91491	0.94271	-0.08037	False

**Table L-16. 2017–18 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>		
420298	2	0.74146	0.58537	0.66161	0.69929	-0.23593	False

**Table L-17. 2017–18 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>		
416793	4	1.26341	1.31707	0.90688	0.91392	0.05917	False

**Table L-18. 2017–18 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	1.74020	1.48039	0.77913	0.63912	-0.33345	False

**Table L-19. 2017–18 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>		
551311A	3	0.55122	0.51707	0.56322	0.53865	-0.06063	False
551311B	3	0.54634	0.52195	0.49907	0.50074	-0.04887	False

**Table L-20. 2017–18 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>		
551343A	6	0.60976	0.63415	0.88777	0.94340	0.02747	False
551343B	6	0.20976	0.35122	0.45364	0.57186	0.31184	False

**Table L-21. 2017–18 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>		
551415A	6	1.22927	1.20488	1.16784	1.15342	-0.02088	False
551415B	6	0.08780	0.07317	0.37324	0.34230	-0.03921	False

**Table L-22. 2017–18 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>		
551449A	3	0.70244	0.71707	0.61377	0.60872	0.02384	False
551449B	3	0.06341	0.04878	0.24430	0.21594	-0.05990	False

**Table L-23. 2017–18 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>		
551332A	6	0.71220	0.69756	1.25639	1.24312	-0.01165	False
551332B	6	0.36585	0.35610	0.60049	0.58997	-0.01625	False

APPENDIX M— α -PLOTS AND b -PLOTS

Figure M-1. 2017–18 eMPowerME: Grade 3 Mathematics Plots
Top: α -Plot Bottom: b -Plot

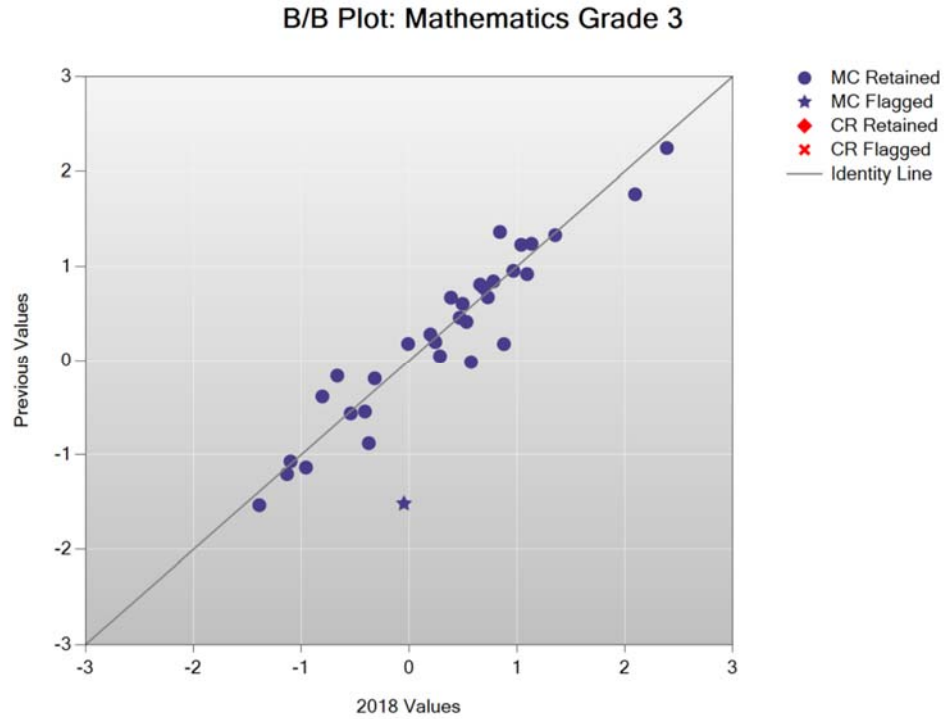
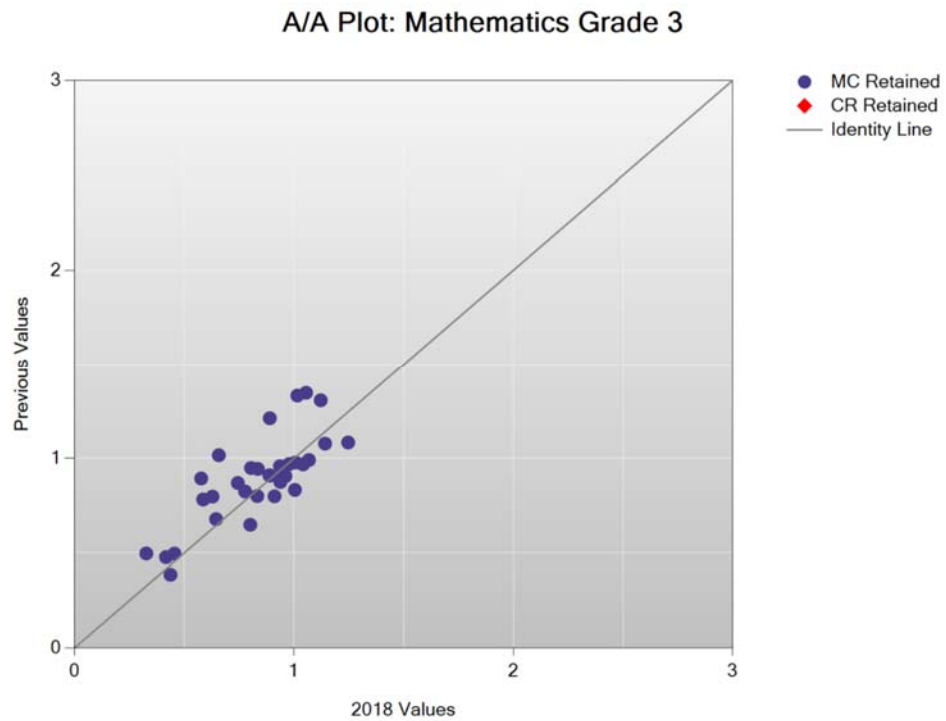
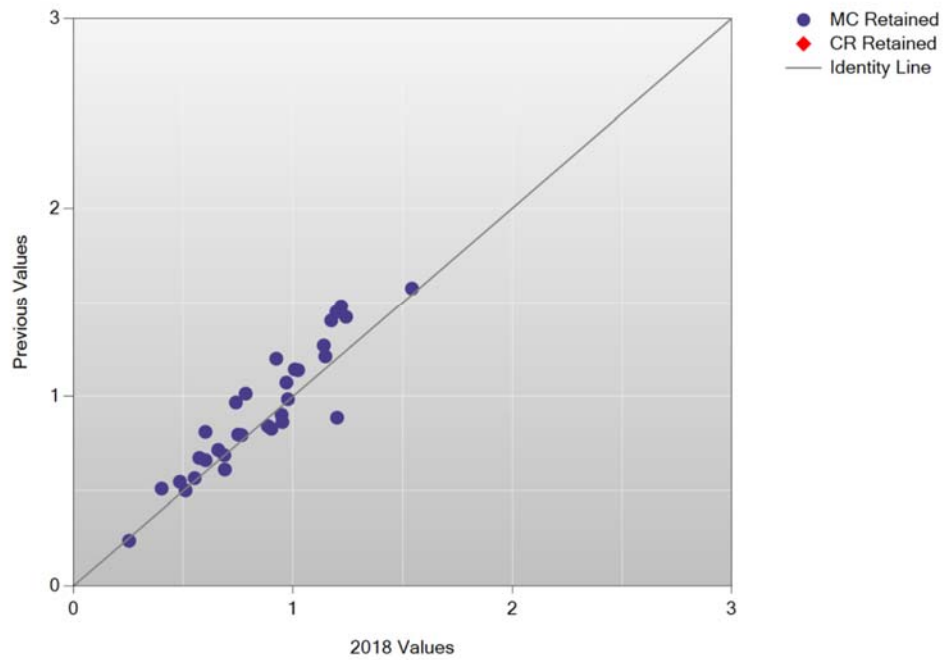


Figure M-2. 2017–18 eMPowerME: Grade 4 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 4



B/B Plot: Mathematics Grade 4

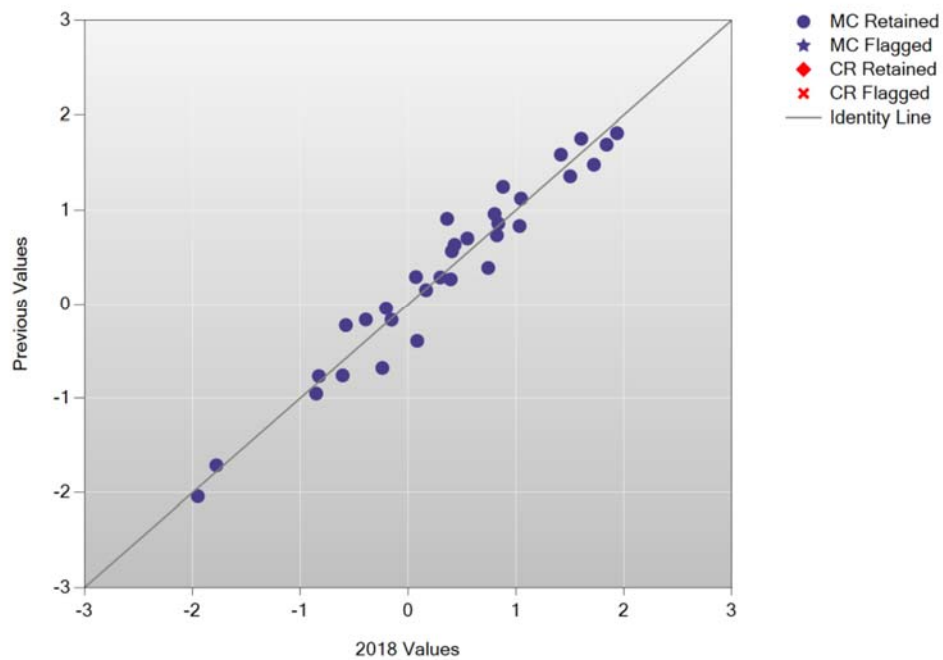
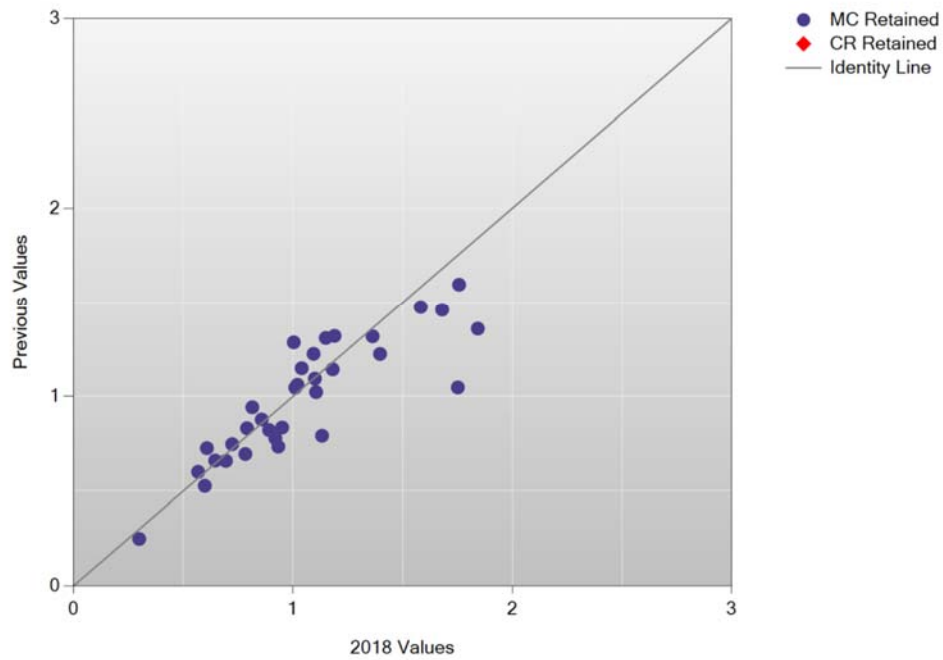


Figure M-3. 2017–18 eMPowerME: Grade 5 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 5



B/B Plot: Mathematics Grade 5

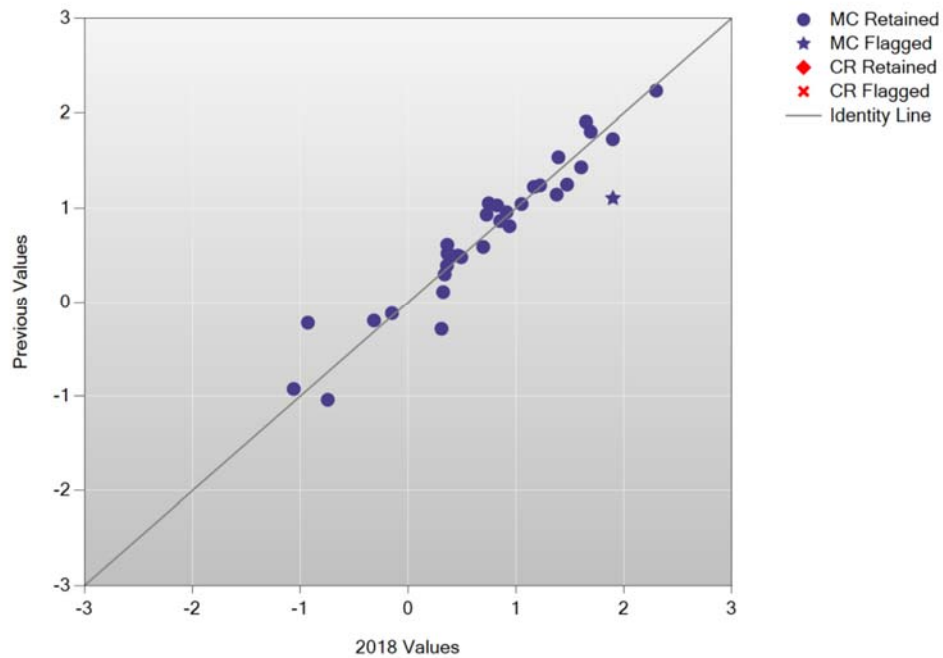
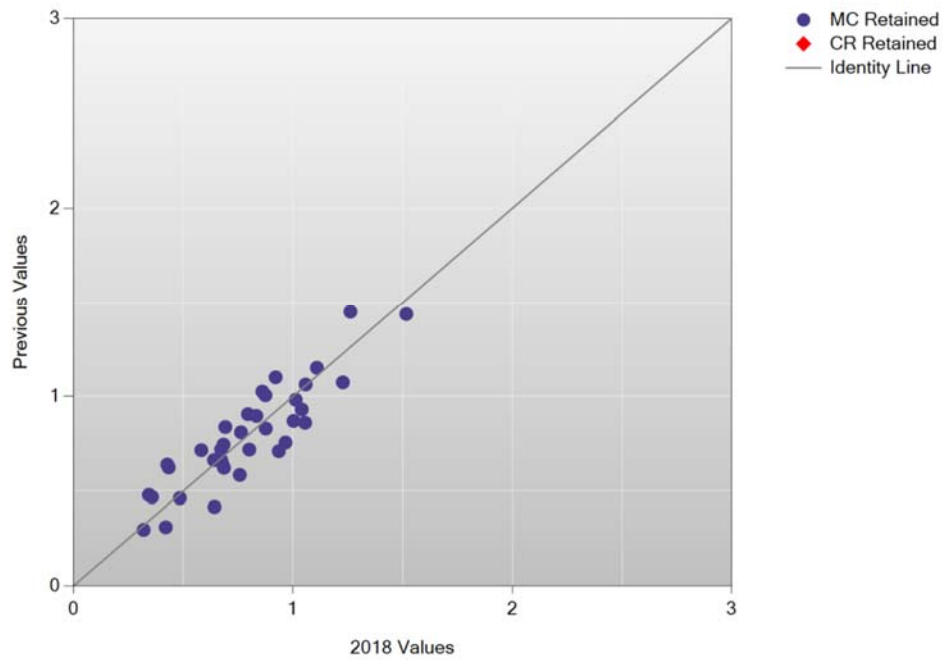


Figure M-4. 2017–18 eMPowerME: Grade 6 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 6



B/B Plot: Mathematics Grade 6

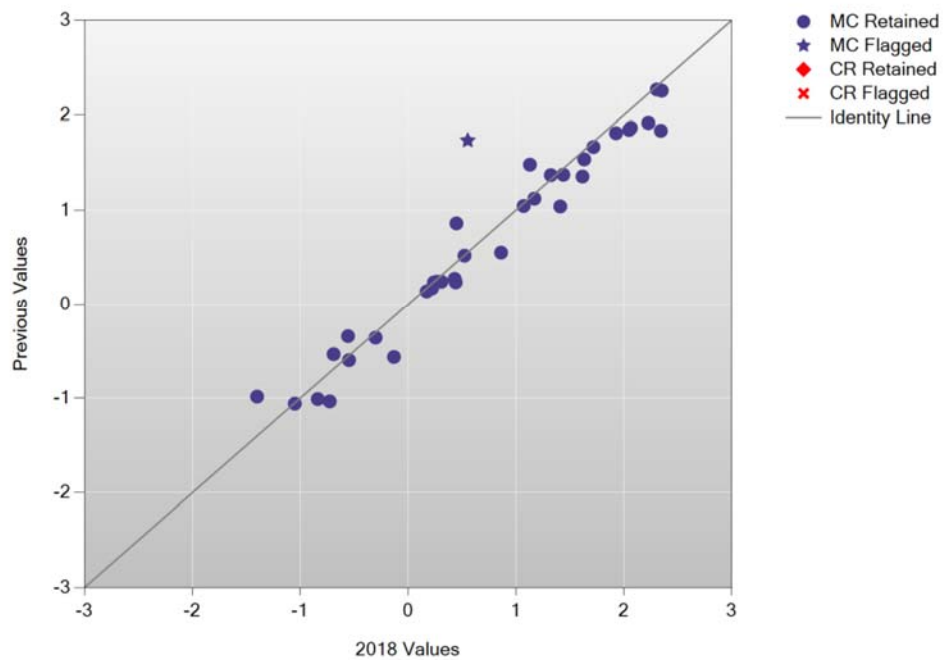
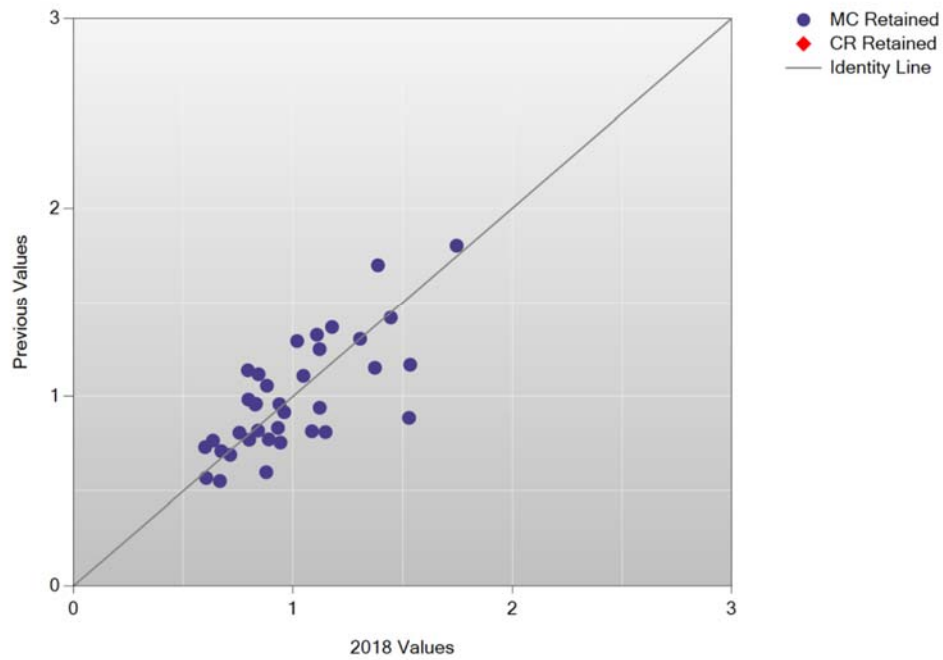


Figure M-5. 2017–18 eMPowerME: Grade 7 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 7



B/B Plot: Mathematics Grade 7

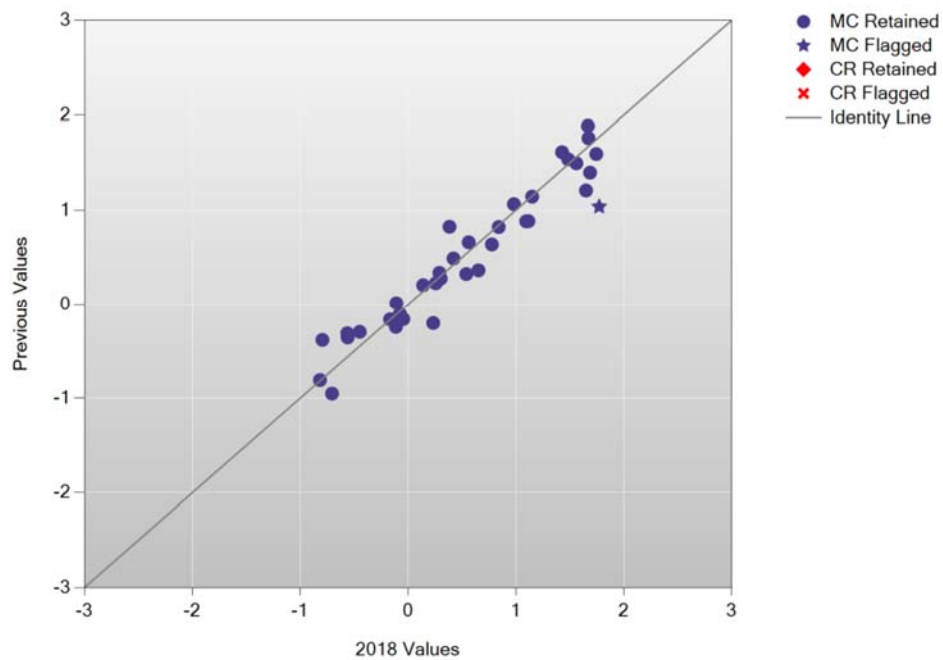
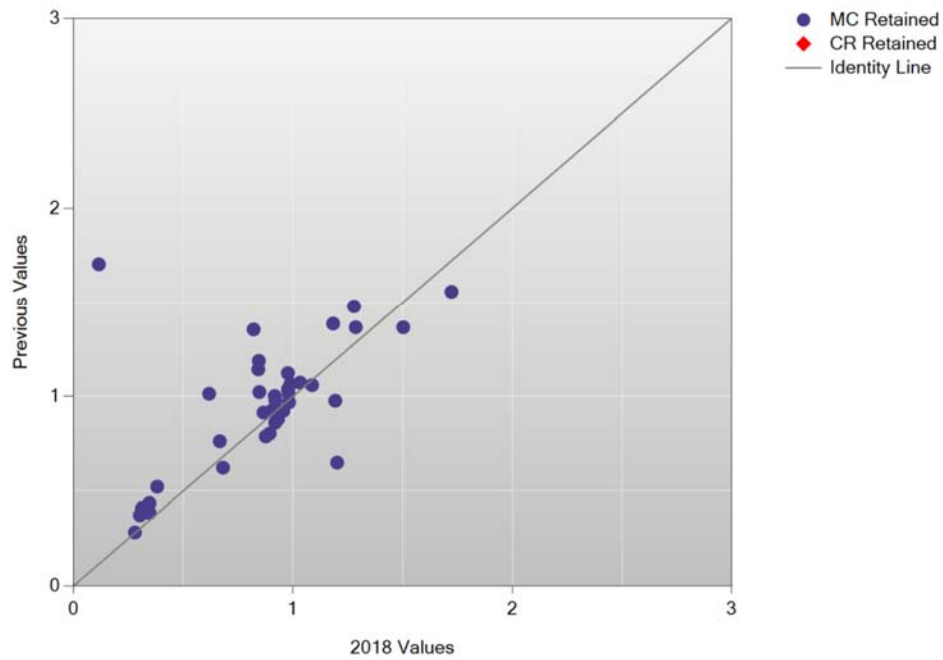


Figure M-6. 2017–18 eMPowerME: Grade 8 Mathematics Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: Mathematics Grade 8



B/B Plot: Mathematics Grade 8

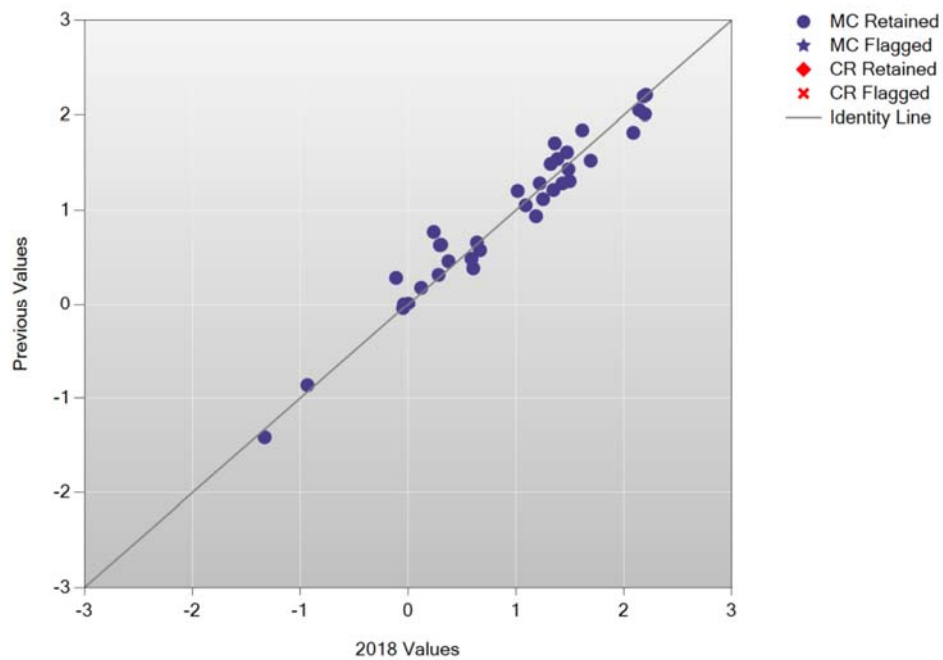
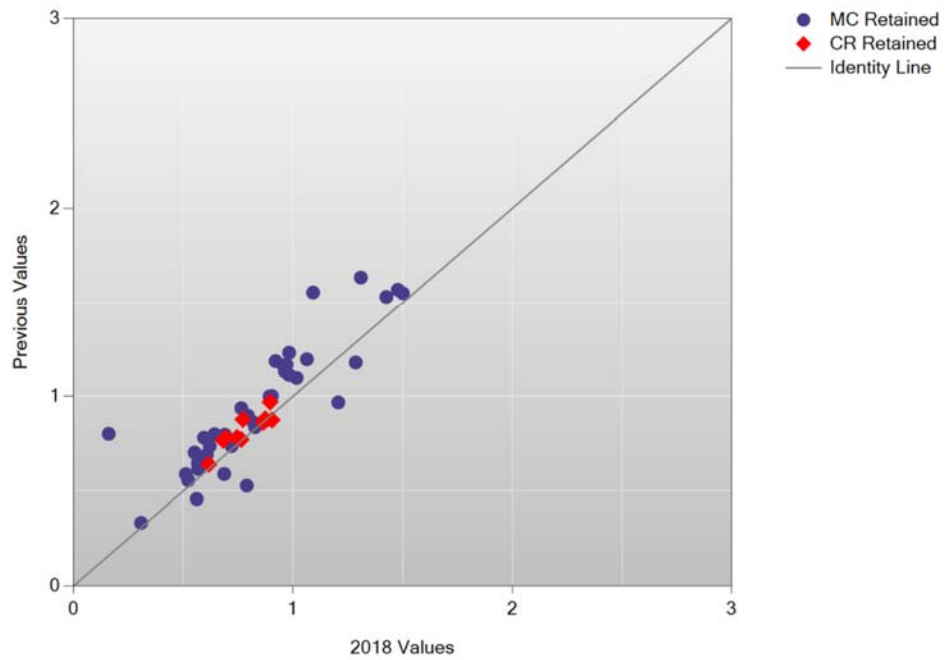


Figure M-7. 2017–18 eMPowerME: Grade 3 ELA Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 3



B/B Plot: English Language Arts Grade 3

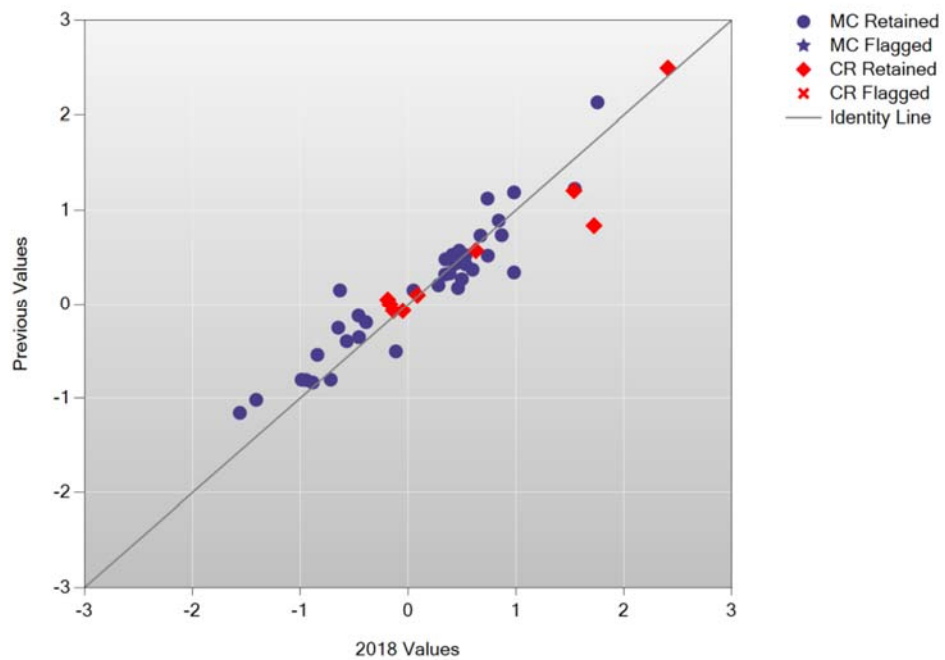
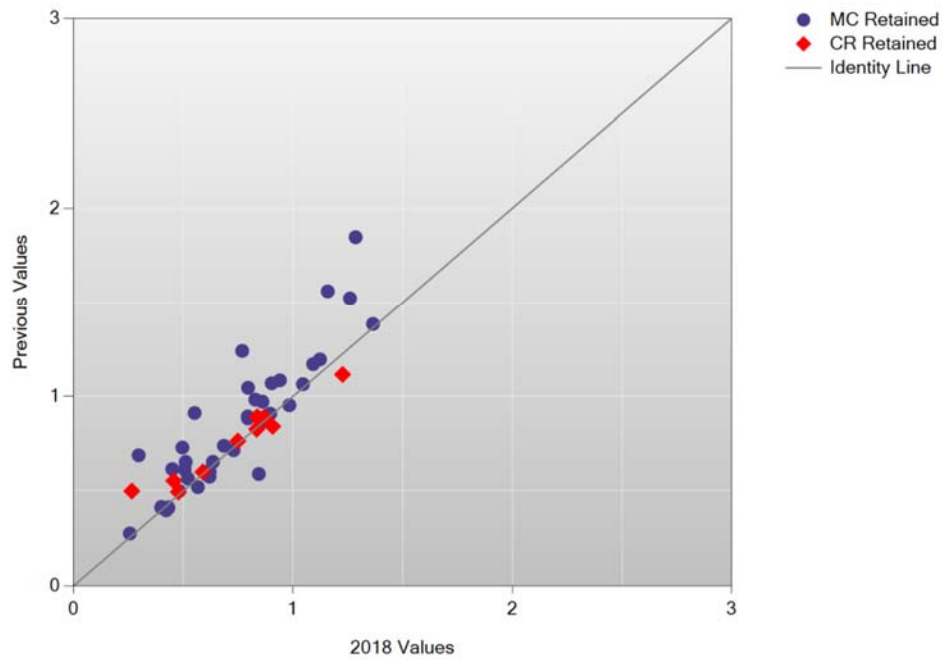


Figure M-8. 2017–18 eMPowerME: Grade 4 ELA Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 4



B/B Plot: English Language Arts Grade 4

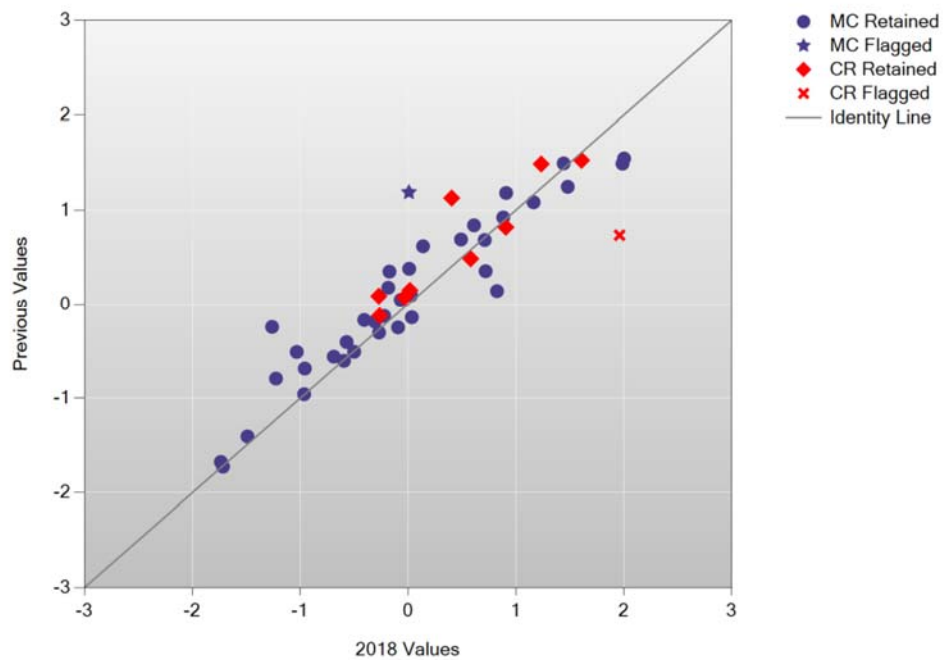
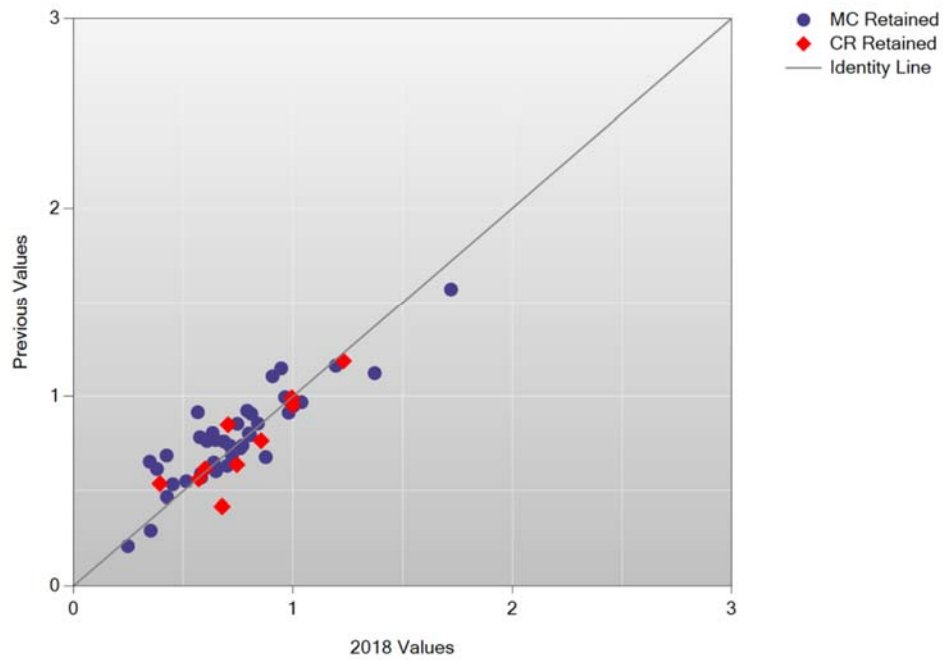


Figure M-9. 2017–18 eMPowerME: Grade 5 ELA Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 5



B/B Plot: English Language Arts Grade 5

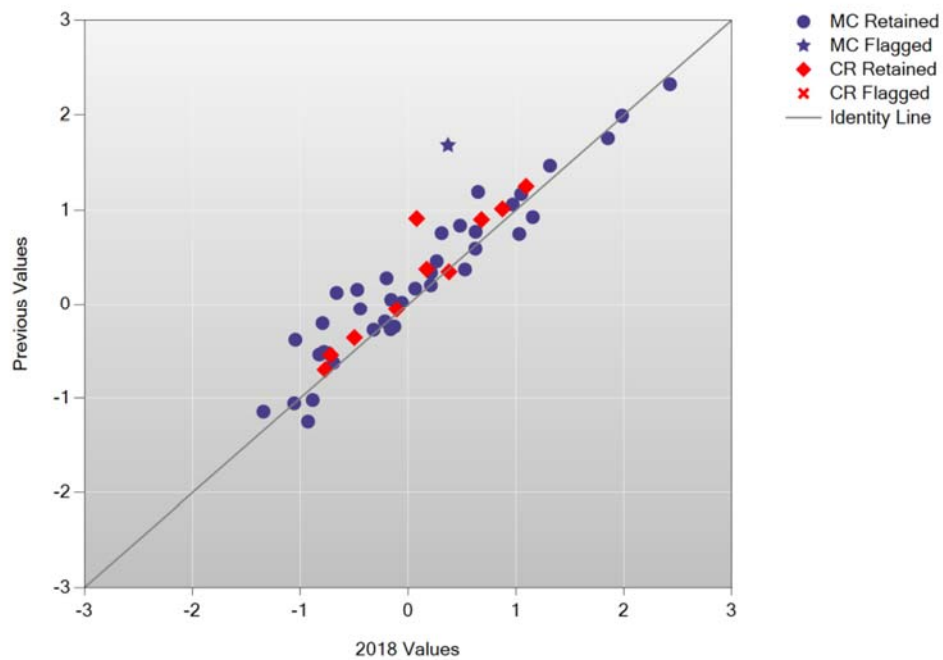
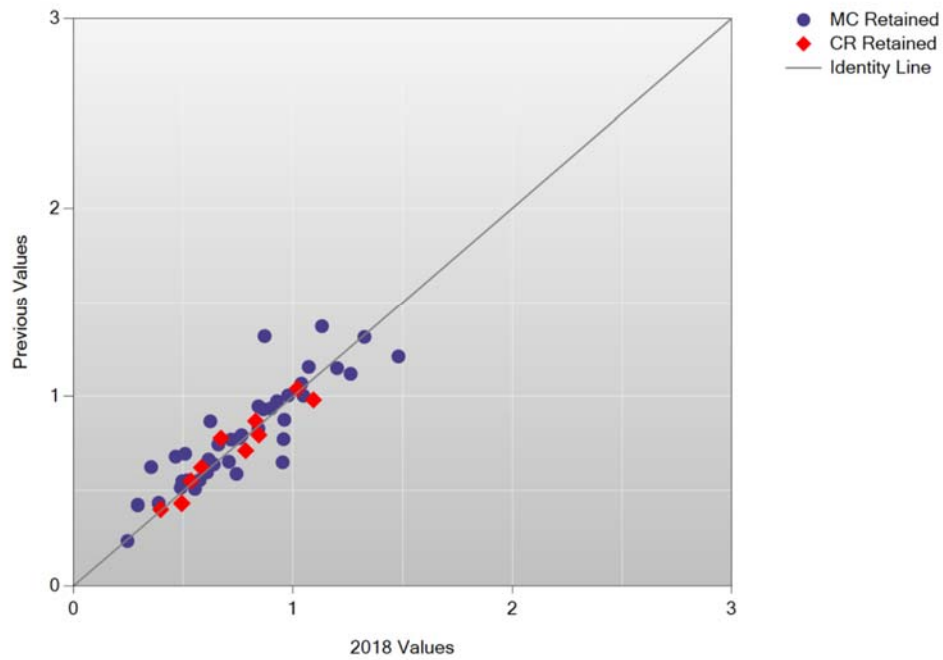


Figure M-10. 2017–18 eMPowerME: Grade 6 ELA Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 6



B/B Plot: English Language Arts Grade 6

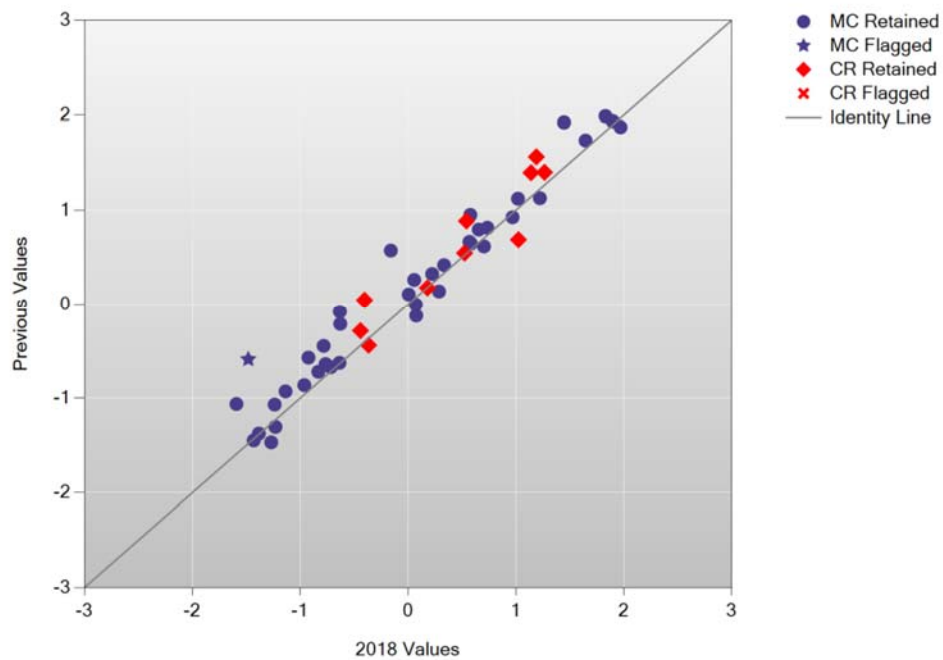
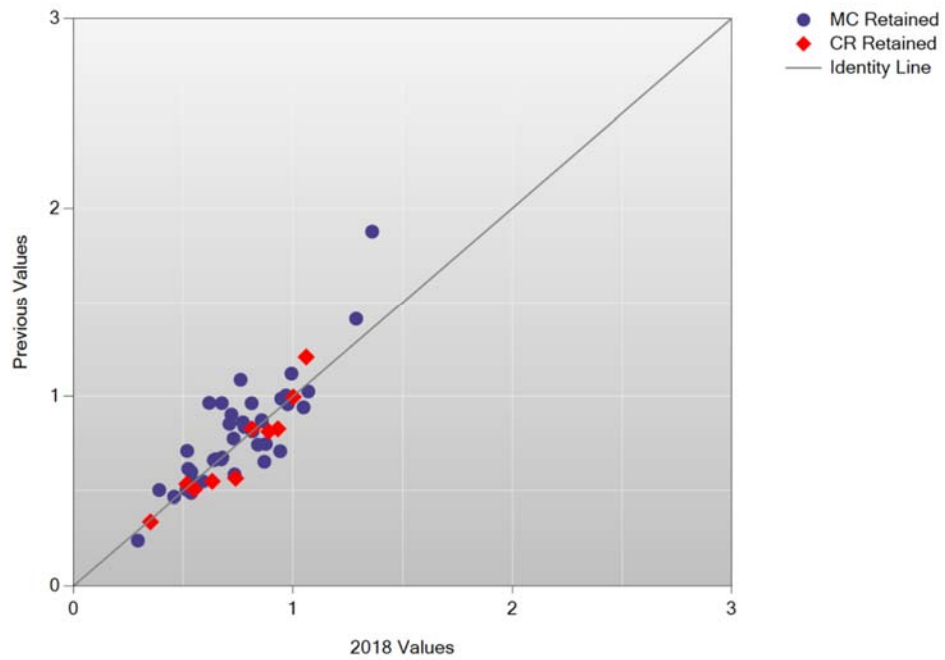


Figure M-11. 2017–18 eMPowerME: Grade 7 ELA Plots

Top: α -Plot Bottom: b -Plot

A/A Plot: English Language Arts Grade 7



B/B Plot: English Language Arts Grade 7

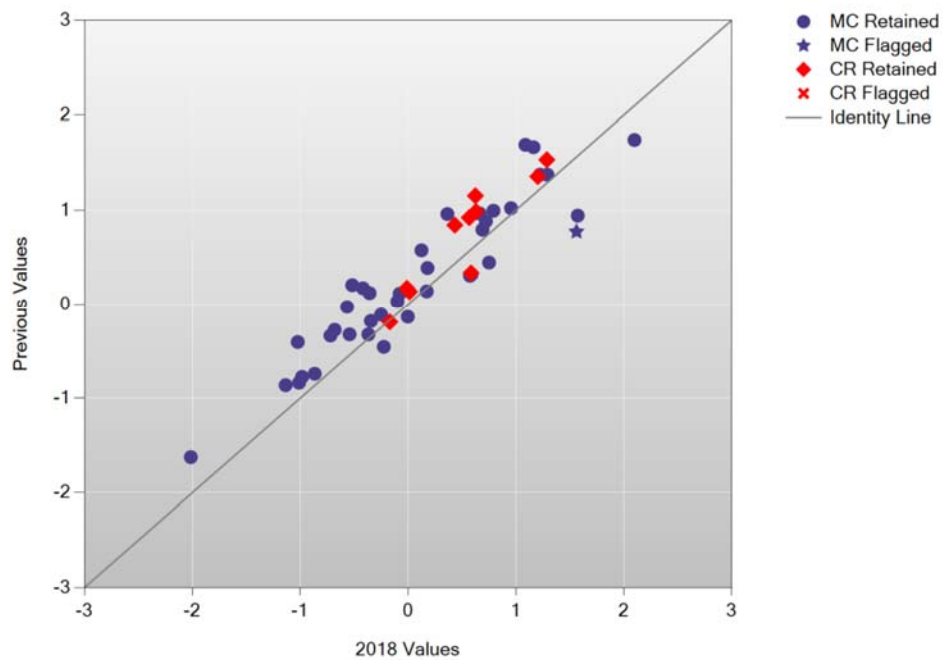
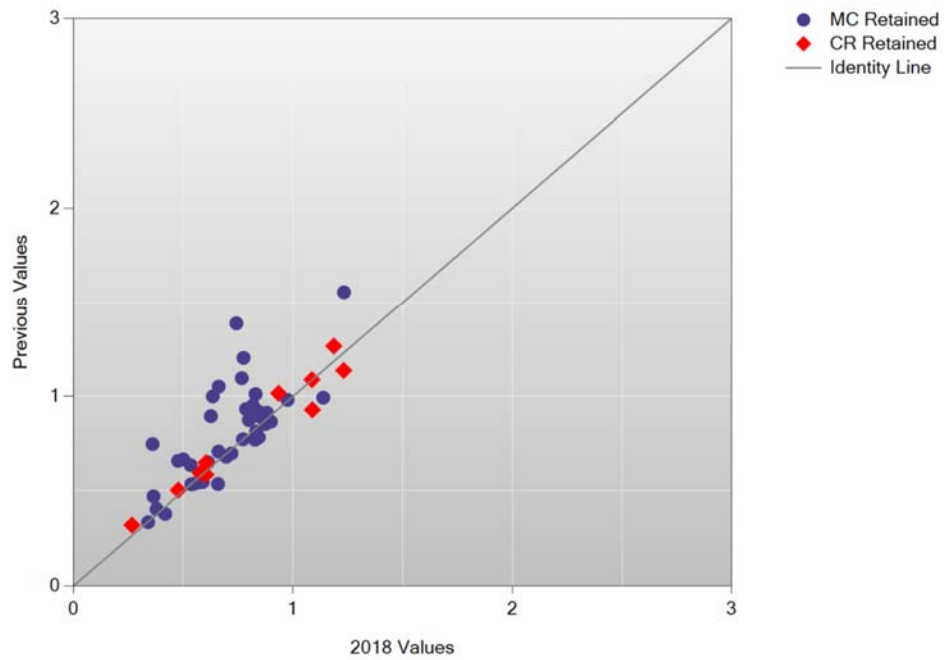


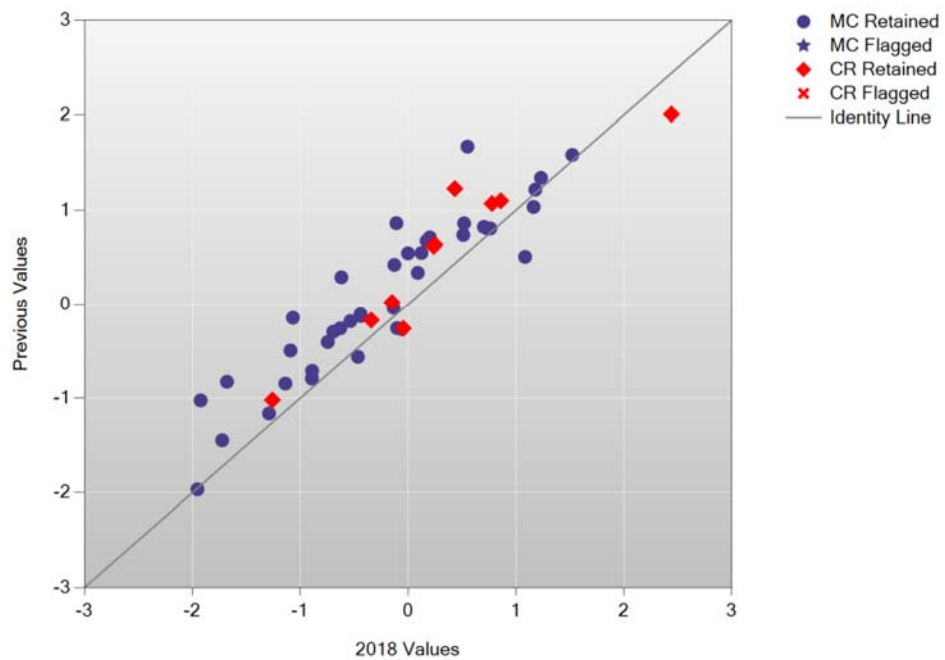
Figure M-12. 2017–18 eMPowerME: Grade 8 ELA Plots

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. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 3

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	316	10.0	1	311	10.0	1
8	326	10.0	1	323	10.0	1
9	331	9.3	1	329	9.2	1
10	335	7.7	1	333	7.5	1
11	339	6.8	1	337	6.6	1
12	341	6.2	1	339	5.9	1
13	344	5.8	1	342	5.5	1
14	346	5.5	1	344	5.2	1
15	348	5.3	2	346	5.0	1
16	350	5.1	2	347	4.8	2
17	352	4.9	2	349	4.7	2
18	354	4.8	2	351	4.6	2
19	356	4.6	2	352	4.5	2
20	357	4.5	2	354	4.4	2
21	359	4.4	2	355	4.3	2
22	360	4.3	3	357	4.3	2
23	362	4.2	3	358	4.2	2
24	363	4.2	3	359	4.2	2
25	364	4.1	3	361	4.1	3
26	366	4.1	3	362	4.1	3
27	367	4.0	3	363	4.1	3
28	369	4.0	3	365	4.0	3
29	370	4.0	3	366	4.0	3
30	371	4.0	3	367	4.0	3
31	373	4.0	3	369	4.0	3
32	374	4.0	3	370	4.0	3
33	375	4.1	3	371	4.0	3
34	377	4.1	3	373	4.0	3
35	378	4.2	4	374	4.0	3
36	380	4.3	4	375	4.1	3
37	381	4.4	4	377	4.1	3
38	383	4.5	4	378	4.2	4
39	385	4.7	4	380	4.3	4
40	387	4.8	4	382	4.4	4
41	389	5.0	4	383	4.5	4
42	390	5.2	4	385	4.6	4
43	390	5.5	4	387	4.8	4
44	390	5.8	4	389	5.0	4
45	390	6.1	4	390	5.3	4
46	390	6.6	4	390	5.7	4
47	390	7.2	4	390	6.3	4
48	390	8.1	4	390	7.2	4
49	390	9.7	4	390	9.1	4
50	390	9.8	4	390	10.0	4
51	390	9.8	4	390	10.0	4

Table N-2. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 4

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	416	10.0	1	400	10.0	1
7	427	10.0	1	415	10.0	1
8	433	9.4	1	427	10.0	1
9	437	7.6	1	434	7.8	1
10	440	6.5	1	438	6.5	1
11	443	5.8	1	441	5.9	1
12	444	5.3	1	444	5.5	1
13	447	4.9	2	446	5.2	2
14	449	4.7	2	448	4.9	2
15	451	4.5	2	450	4.6	2
16	453	4.3	2	452	4.4	2
17	454	4.2	2	453	4.2	2
18	456	4.1	2	455	4.0	2
19	457	4.0	2	456	3.9	2
20	459	3.9	2	458	3.8	2
21	459	3.9	2	459	3.7	2
22	461	3.8	3	461	3.7	3
23	463	3.8	3	462	3.6	3
24	464	3.8	3	463	3.6	3
25	465	3.7	3	465	3.6	3
26	467	3.7	3	466	3.6	3
27	468	3.7	3	467	3.6	3
28	469	3.7	3	468	3.6	3
29	470	3.6	3	470	3.6	3
30	472	3.6	3	471	3.7	3
31	473	3.6	3	472	3.7	3
32	474	3.6	3	474	3.7	3
33	475	3.6	4	475	3.7	4
34	477	3.6	4	476	3.8	4
35	478	3.6	4	478	3.8	4
36	479	3.7	4	479	3.9	4
37	480	3.7	4	481	4.0	4
38	482	3.8	4	482	4.1	4
39	483	3.9	4	484	4.2	4
40	485	4.1	4	486	4.3	4
41	486	4.3	4	488	4.5	4
42	488	4.5	4	490	4.7	4
43	490	4.8	4	490	4.9	4
44	490	5.2	4	490	5.2	4
45	490	5.8	4	490	5.7	4
46	490	6.5	4	490	6.3	4
47	490	7.6	4	490	7.2	4
48	490	9.3	4	490	8.8	4
49	490	10.0	4	490	10.0	4
50	490	10.0	4	490	10.0	4

Table N-3. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 5

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	522	10.0	1
8	524	10.0	1	531	10.0	1
9	531	9.4	1	536	7.8	1
10	535	7.8	1	539	6.6	1
11	539	6.8	1	542	5.8	1
12	542	6.1	1	544	5.3	2
13	544	5.6	2	546	4.9	2
14	546	5.2	2	548	4.6	2
15	548	4.8	2	550	4.4	2
16	550	4.6	2	551	4.3	2
17	551	4.4	2	553	4.1	2
18	553	4.2	2	554	4.0	2
19	554	4.0	2	556	3.9	2
20	556	3.9	2	557	3.8	2
21	557	3.8	2	558	3.8	2
22	558	3.7	2	559	3.7	2
23	559	3.7	2	561	3.7	3
24	561	3.6	3	562	3.6	3
25	562	3.6	3	563	3.6	3
26	563	3.6	3	564	3.5	3
27	565	3.5	3	565	3.5	3
28	566	3.5	3	566	3.4	3
29	567	3.5	3	567	3.4	3
30	568	3.5	3	569	3.4	3
31	569	3.4	3	570	3.3	3
32	571	3.4	3	571	3.3	3
33	572	3.4	3	572	3.3	3
34	573	3.3	4	573	3.3	4
35	574	3.3	4	574	3.3	4
36	575	3.3	4	575	3.3	4
37	576	3.3	4	576	3.3	4
38	578	3.3	4	577	3.3	4
39	579	3.3	4	579	3.4	4
40	580	3.3	4	580	3.4	4
41	581	3.4	4	581	3.5	4
42	583	3.5	4	583	3.6	4
43	584	3.7	4	584	3.8	4
44	586	3.9	4	586	4.0	4
45	588	4.2	4	588	4.3	4
46	590	4.6	4	590	4.7	4
47	590	5.4	4	590	5.3	4
48	590	6.6	4	590	6.3	4
49	590	9.1	4	590	8.2	4
50	590	10.0	4	590	10.0	4
51	590	10.0	4	590	10.0	4
52	N/A	N/A	N/A	N/A	N/A	N/A

Table N-4. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 6

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	600	10.0	1
8	613	10.0	1	616	10.0	1
9	623	10.0	1	624	10.0	1
10	628	8.9	1	629	8.4	1
11	632	7.5	1	633	7.3	1
12	636	6.6	1	636	6.5	1
13	639	6.1	1	639	5.9	1
14	641	5.7	1	641	5.5	1
15	643	5.3	1	643	5.1	1
16	645	5.1	1	645	4.8	1
17	647	4.8	2	647	4.6	2
18	649	4.7	2	649	4.4	2
19	651	4.5	2	650	4.3	2
20	652	4.4	2	652	4.1	2
21	654	4.3	2	653	4.0	2
22	655	4.2	2	654	4.0	2
23	657	4.1	2	656	3.9	2
24	658	4.0	2	657	3.8	2
25	659	4.0	2	658	3.8	2
26	661	3.9	3	659	3.7	2
27	662	3.9	3	661	3.7	3
28	663	3.8	3	662	3.6	3
29	664	3.8	3	663	3.6	3
30	666	3.7	3	664	3.6	3
31	667	3.7	3	666	3.6	3
32	668	3.7	3	667	3.5	3
33	669	3.7	3	668	3.5	3
34	670	3.6	3	669	3.5	3
35	672	3.6	4	670	3.5	3
36	673	3.6	4	672	3.5	4
37	674	3.6	4	673	3.5	4
38	675	3.6	4	674	3.6	4
39	677	3.6	4	676	3.6	4
40	678	3.6	4	677	3.6	4
41	679	3.6	4	678	3.7	4
42	681	3.6	4	680	3.7	4
43	682	3.7	4	681	3.8	4
44	683	3.8	4	683	3.9	4
45	685	3.9	4	685	4.1	4
46	687	4.0	4	687	4.3	4
47	689	4.2	4	689	4.7	4
48	690	4.5	4	690	5.1	4
49	690	4.9	4	690	5.8	4
50	690	5.5	4	690	6.9	4
51	690	6.4	4	690	8.5	4
52	690	8.2	4	690	9.8	4
53	690	9.9	4	690	9.8	4
54	690	9.9	4	690	9.8	4

Table N-5. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 7

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	711	10.0	1
9	726	10.0	1	724	10.0	1
10	732	9.0	1	731	9.2	1
11	736	7.3	1	735	7.6	1
12	739	6.3	1	739	6.6	1
13	742	5.6	1	741	6.0	1
14	744	5.1	1	744	5.6	1
15	746	4.8	1	746	5.2	1
16	748	4.5	2	748	4.9	2
17	749	4.3	2	750	4.7	2
18	751	4.2	2	751	4.5	2
19	752	4.0	2	753	4.3	2
20	754	3.9	2	754	4.1	2
21	755	3.8	2	755	4.0	2
22	756	3.8	2	757	3.8	2
23	757	3.7	2	758	3.7	2
24	759	3.6	2	759	3.6	2
25	759	3.6	2	760	3.5	3
26	761	3.5	3	761	3.4	3
27	762	3.5	3	762	3.3	3
28	764	3.4	3	764	3.3	3
29	765	3.4	3	765	3.2	3
30	766	3.4	3	766	3.2	3
31	767	3.4	3	767	3.1	3
32	768	3.4	3	768	3.1	3
33	769	3.4	3	769	3.1	3
34	771	3.4	3	770	3.1	3
35	772	3.4	3	771	3.1	3
36	773	3.4	3	772	3.1	3
37	774	3.4	4	773	3.1	3
38	775	3.4	4	773	3.2	3
39	777	3.5	4	775	3.2	4
40	778	3.5	4	776	3.2	4
41	780	3.6	4	778	3.3	4
42	781	3.7	4	779	3.4	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	5.2	4
51	790	6.2	4	790	5.8	4
52	790	7.1	4	790	6.9	4
53	790	7.9	4	790	9.5	4
54	790	7.9	4	790	10.0	4

Table N-6. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—Mathematics Grade 8

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	808	10.0	1
8	815	10.0	1	821	10.0	1
9	830	10.0	1	827	9.0	1
10	837	9.4	1	832	7.5	1
11	841	7.5	1	835	6.6	1
12	844	6.4	1	838	6.0	1
13	847	5.6	1	841	5.5	1
14	849	5.0	2	843	5.2	1
15	851	4.6	2	846	4.9	1
16	853	4.3	2	848	4.7	1
17	855	4.1	2	849	4.5	2
18	856	3.9	2	851	4.3	2
19	858	3.8	2	853	4.2	2
20	859	3.6	2	854	4.1	2
21	860	3.5	3	856	4.0	2
22	861	3.5	3	857	3.9	2
23	863	3.4	3	859	3.8	2
24	864	3.3	3	860	3.8	3
25	865	3.3	3	861	3.7	3
26	866	3.2	3	863	3.7	3
27	867	3.2	3	864	3.6	3
28	868	3.1	3	865	3.6	3
29	869	3.1	3	866	3.5	3
30	870	3.1	3	867	3.5	3
31	870	3.0	3	869	3.5	3
32	872	3.0	4	870	3.4	3
33	873	3.0	4	870	3.4	3
34	874	3.0	4	872	3.4	4
35	875	3.0	4	873	3.4	4
36	876	3.0	4	874	3.3	4
37	877	3.0	4	875	3.3	4
38	878	3.1	4	876	3.3	4
39	879	3.1	4	877	3.3	4
40	880	3.2	4	879	3.3	4
41	881	3.2	4	880	3.3	4
42	882	3.3	4	881	3.4	4
43	883	3.3	4	882	3.4	4
44	885	3.4	4	884	3.5	4
45	886	3.5	4	885	3.6	4
46	887	3.7	4	887	3.7	4
47	889	3.8	4	888	3.9	4
48	890	4.0	4	890	4.1	4
49	890	4.3	4	890	4.4	4
50	890	4.7	4	890	4.9	4
51	890	5.3	4	890	5.5	4
52	890	6.3	4	890	6.7	4
53	890	8.9	4	890	9.2	4
54	890	9.0	4	890	9.8	4
55	890	9.0	4	890	9.8	4

Table N-7. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 3

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	300	10.0	1
8	314	10.0	1	315	10.0	1
9	322	10.0	1	323	10.0	1
10	327	8.4	1	328	9.1	1
11	330	7.3	1	331	7.5	1
12	333	6.5	1	334	6.4	1
13	336	5.9	1	337	5.6	1
14	338	5.4	1	339	5.1	1
15	340	5.0	1	340	4.7	1
16	342	4.7	1	342	4.5	1
17	343	4.5	1	344	4.3	1
18	345	4.3	1	345	4.2	1
19	346	4.2	1	346	4.1	1
20	346	4.1	1	348	4.0	2
21	349	4.0	2	349	4.0	2
22	350	3.9	2	350	3.9	2
23	351	3.9	2	351	3.9	2
24	352	3.8	2	353	3.8	2
25	353	3.8	2	354	3.8	2
26	354	3.7	2	355	3.7	2
27	355	3.7	2	356	3.7	2
28	357	3.7	2	357	3.7	2
29	358	3.7	2	358	3.6	2
30	359	3.7	2	359	3.6	2
31	359	3.6	2	360	3.6	3
32	361	3.6	3	361	3.6	3
33	362	3.6	3	362	3.5	3
34	363	3.6	3	364	3.5	3
35	364	3.5	3	365	3.5	3
36	365	3.5	3	366	3.5	3
37	366	3.5	3	367	3.5	3
38	367	3.5	3	368	3.6	3
39	368	3.5	3	369	3.6	3
40	369	3.5	3	370	3.7	3
41	370	3.6	3	372	3.7	4
42	370	3.6	3	373	3.8	4
43	373	3.6	4	374	3.9	4
44	374	3.7	4	376	4.0	4
45	375	3.8	4	377	4.2	4
46	376	3.9	4	379	4.3	4
47	378	4.0	4	380	4.5	4
48	379	4.1	4	382	4.8	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	5.7	4
52	387	4.9	4	390	6.1	4
53	389	5.2	4	390	6.5	4
54	390	5.5	4	390	6.9	4
55	390	5.8	4	390	7.3	4

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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>
56	390	6.2	4	390	7.9	4
57	390	6.6	4	390	8.6	4
58	390	7.0	4	390	9.5	4
59	390	7.5	4	390	9.6	4
60	390	8.2	4	390	9.6	4
61	390	8.8	4	390	9.6	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. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 4

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	400	10.0	1
7	405	10.0	1	400	10.0	1
8	414	10.0	1	410	10.0	1
9	419	9.7	1	418	10.0	1
10	423	8.6	1	424	10.0	1
11	427	7.8	1	429	9.2	1
12	430	7.2	1	432	8.0	1
13	433	6.7	1	435	7.2	1
14	435	6.3	1	438	6.5	1
15	437	5.9	1	440	6.0	1
16	439	5.6	1	442	5.6	1
17	441	5.4	1	444	5.3	1
18	443	5.1	1	445	5.1	1
19	444	4.9	1	447	4.9	1
20	446	4.8	1	448	4.7	1
21	447	4.6	1	450	4.6	2
22	448	4.5	1	451	4.4	2
23	450	4.3	2	453	4.3	2
24	451	4.2	2	454	4.2	2
25	452	4.1	2	455	4.2	2
26	454	4.1	2	456	4.1	2
27	455	4.0	2	458	4.0	2
28	456	4.0	2	459	4.0	2
29	457	3.9	2	459	4.0	2
30	458	3.9	2	461	3.9	3
31	459	3.9	2	462	3.9	3
32	461	3.9	3	463	3.9	3
33	462	3.9	3	465	3.9	3
34	463	3.9	3	466	3.9	3
35	464	3.9	3	467	4.0	3
36	465	4.0	3	468	4.0	3
37	466	4.0	3	469	4.1	3
38	468	4.0	3	471	4.1	3
39	469	4.1	3	472	4.2	3
40	470	4.1	3	473	4.2	3
41	471	4.2	3	475	4.3	4
42	473	4.2	3	476	4.4	4
43	474	4.3	4	478	4.5	4
44	475	4.3	4	479	4.6	4
45	477	4.4	4	481	4.7	4
46	478	4.4	4	482	4.8	4
47	480	4.5	4	484	5.0	4
48	481	4.6	4	486	5.1	4
49	483	4.7	4	488	5.3	4
50	484	4.8	4	490	5.5	4
51	486	4.9	4	490	5.7	4
52	488	5.0	4	490	6.0	4
53	490	5.2	4	490	6.3	4
54	490	5.4	4	490	6.8	4
55	490	5.7	4	490	7.3	4

Raw Score	2017–18			2016–17		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
56	490	6.0	4	490	8.0	4
57	490	6.3	4	490	9.0	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. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 5

Raw Score	2017–18			2016–17		
	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	509	10.0	1
9	518	10.0	1	516	10.0	1
10	523	9.2	1	522	10.0	1
11	526	8.1	1	526	9.1	1
12	530	7.4	1	529	8.1	1
13	532	6.8	1	532	7.4	1
14	535	6.3	1	535	6.9	1
15	537	5.9	1	537	6.5	1
16	539	5.6	1	539	6.1	1
17	540	5.3	1	541	5.9	1
18	542	5.1	1	543	5.6	1
19	544	4.8	1	545	5.4	1
20	545	4.6	1	547	5.2	1
21	546	4.5	1	548	5.0	1
22	548	4.4	1	550	4.9	2
23	549	4.2	2	551	4.7	2
24	550	4.1	2	552	4.6	2
25	551	4.1	2	554	4.5	2
26	552	4.0	2	555	4.4	2
27	554	4.0	2	556	4.3	2
28	555	3.9	2	557	4.3	2
29	556	3.9	2	559	4.2	2
30	557	3.9	2	559	4.1	2
31	558	3.9	2	561	4.1	3
32	559	3.9	2	562	4.1	3
33	560	3.9	3	563	4.1	3
34	561	3.9	3	564	4.0	3
35	562	3.9	3	566	4.0	3
36	563	4.0	3	567	4.0	3
37	565	4.0	3	568	4.1	3
38	566	4.0	3	569	4.1	3
39	567	4.0	3	570	4.1	3

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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>
40	568	4.1	3	572	4.1	3
41	569	4.1	3	573	4.2	3
42	571	4.2	3	574	4.2	3
43	572	4.2	3	575	4.3	3
44	573	4.3	3	577	4.3	4
45	574	4.4	3	579	4.4	4
46	575	4.4	3	580	4.5	4
47	577	4.5	4	582	4.6	4
48	579	4.6	4	583	4.7	4
49	580	4.7	4	585	4.8	4
50	582	4.8	4	587	5.0	4
51	584	5.0	4	589	5.2	4
52	585	5.1	4	590	5.5	4
53	587	5.2	4	590	5.8	4
54	589	5.4	4	590	6.2	4
55	590	5.6	4	590	6.8	4
56	590	5.8	4	590	7.4	4
57	590	6.1	4	590	8.3	4
58	590	6.5	4	590	9.6	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. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 6

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	607	10.0	1
9	617	10.0	1	614	10.0	1
10	621	8.6	1	619	9.6	1
11	625	7.5	1	623	8.0	1
12	628	6.7	1	626	6.9	1
13	630	6.2	1	629	6.2	1
14	632	5.7	1	631	5.7	1
15	634	5.4	1	633	5.3	1
16	636	5.1	1	635	5.0	1
17	638	4.9	1	636	4.8	1
18	639	4.7	1	638	4.6	1
19	641	4.6	1	639	4.5	1
20	642	4.5	1	641	4.4	1
21	643	4.5	1	642	4.4	1
22	645	4.4	2	643	4.3	1
23	646	4.4	2	645	4.3	2
24	647	4.3	2	646	4.2	2
25	649	4.3	2	647	4.2	2
26	650	4.3	2	649	4.2	2
27	651	4.3	2	650	4.2	2
28	652	4.3	2	651	4.1	2
29	654	4.3	2	652	4.1	2
30	655	4.2	2	653	4.1	2
31	656	4.2	2	655	4.1	2
32	657	4.2	2	656	4.1	2
33	659	4.2	2	657	4.0	2
34	659	4.2	2	658	4.0	2
35	661	4.1	3	659	4.0	2
36	662	4.1	3	661	4.0	3
37	663	4.1	3	662	4.0	3
38	665	4.1	3	663	4.0	3
39	666	4.1	3	664	4.0	3
40	667	4.1	3	665	4.0	3
41	668	4.1	3	667	4.1	3
42	669	4.1	3	668	4.1	3
43	671	4.1	3	669	4.2	3
44	672	4.2	3	671	4.2	3
45	673	4.2	3	672	4.3	3
46	674	4.3	3	674	4.4	3
47	676	4.4	4	675	4.5	4
48	677	4.4	4	677	4.6	4
49	679	4.5	4	679	4.8	4
50	680	4.6	4	680	5.0	4
51	682	4.8	4	682	5.2	4
52	684	4.9	4	685	5.4	4
53	686	5.0	4	687	5.7	4
54	687	5.1	4	690	6.1	4
55	689	5.3	4	690	6.6	4

Raw Score	2017–18			2016–17		
	Scaled Score	Standard Error	Performance Level	Scaled Score	Standard Error	Performance Level
56	690	5.4	4	690	7.2	4
57	690	5.6	4	690	8.0	4
58	690	5.8	4	690	9.0	4
59	690	6.0	4	690	10.0	4
60	690	6.3	4	690	10.0	4
61	690	6.7	4	690	10.0	4
62	690	7.1	4	690	10.0	4
63	690	7.8	4	690	10.0	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. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 7

Raw Score	2017–18			2016–17		
	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	704	10.0	1
8	711	10.0	1	714	10.0	1
9	718	10.0	1	720	10.0	1
10	723	8.6	1	725	9.1	1
11	727	7.4	1	728	7.9	1
12	730	6.7	1	731	6.9	1
13	732	6.2	1	733	6.3	1
14	734	5.8	1	736	5.7	1
15	737	5.6	1	738	5.3	1
16	739	5.3	1	739	5.1	1
17	740	5.2	1	741	4.8	1
18	742	5.0	1	743	4.7	1
19	744	4.8	1	744	4.5	1
20	744	4.7	1	745	4.4	2
21	746	4.6	2	747	4.3	2
22	748	4.5	2	748	4.3	2
23	749	4.4	2	749	4.2	2
24	750	4.3	2	751	4.1	2
25	752	4.3	2	752	4.1	2
26	753	4.2	2	753	4.1	2
27	754	4.2	2	754	4.0	2
28	755	4.1	2	755	4.0	2
29	756	4.1	2	756	4.0	2
30	758	4.0	2	757	3.9	2
31	759	4.0	2	759	3.9	2
32	759	4.0	2	759	3.9	2
33	761	4.0	3	761	3.9	3
34	762	4.0	3	762	3.9	3
35	763	4.0	3	763	3.9	3
36	764	4.0	3	764	3.9	3
37	765	4.0	3	765	3.9	3

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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>
38	766	4.0	3	766	3.9	3
39	768	4.0	3	768	3.9	3
40	769	4.0	3	769	3.9	3
41	770	4.0	3	770	3.9	3
42	771	4.0	3	771	4.0	3
43	772	4.1	3	772	4.0	3
44	773	4.1	3	774	4.1	3
45	775	4.1	3	775	4.1	3
46	775	4.2	3	776	4.2	4
47	777	4.2	4	778	4.3	4
48	778	4.3	4	779	4.4	4
49	780	4.4	4	781	4.5	4
50	781	4.4	4	782	4.7	4
51	783	4.5	4	784	4.8	4
52	784	4.6	4	786	5.0	4
53	786	4.7	4	788	5.2	4
54	788	4.9	4	790	5.4	4
55	789	5.0	4	790	5.6	4
56	790	5.2	4	790	5.9	4
57	790	5.3	4	790	6.2	4
58	790	5.6	4	790	6.6	4
59	790	5.8	4	790	7.1	4
60	790	6.1	4	790	7.9	4
61	790	6.4	4	790	9.3	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

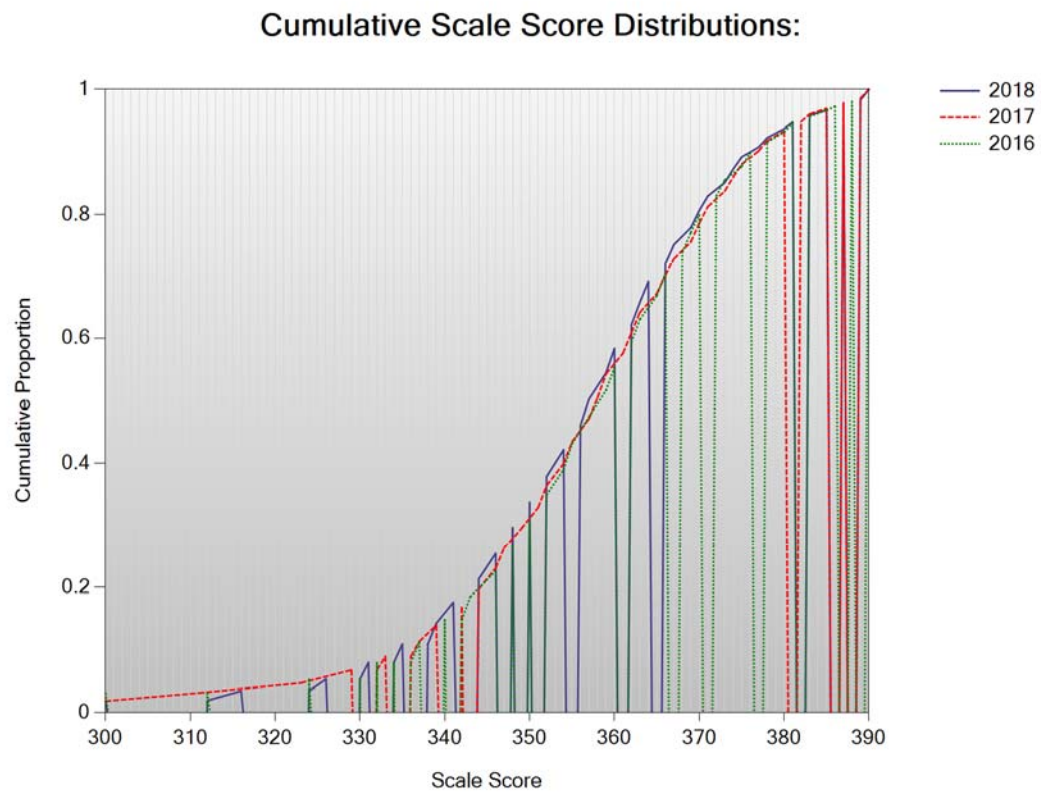
Table N-12. 2017–18 eMPowerME: Raw to Scaled Score Correspondence—ELA Grade 8

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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	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	802	10.0	1
8	816	9.6	1	812	10.0	1
9	821	8.1	1	818	10.0	1
10	824	7.1	1	823	8.9	1
11	827	6.5	1	827	7.8	1
12	830	6.0	1	830	7.1	1
13	832	5.6	1	832	6.5	1
14	834	5.3	1	835	6.0	1
15	836	5.0	1	837	5.7	1
16	838	4.8	1	838	5.4	1
17	839	4.6	1	840	5.1	1
18	841	4.5	1	842	4.9	1
19	842	4.3	1	843	4.7	1
20	843	4.2	1	845	4.6	2
21	845	4.1	2	846	4.4	2
22	846	4.0	2	847	4.3	2
23	847	4.0	2	849	4.2	2
24	848	3.9	2	850	4.1	2
25	849	3.9	2	851	4.0	2
26	850	3.8	2	852	4.0	2
27	852	3.8	2	853	3.9	2
28	853	3.8	2	854	3.9	2
29	854	3.8	2	855	3.8	2
30	855	3.8	2	857	3.8	2
31	856	3.8	2	858	3.8	2
32	857	3.8	2	859	3.8	2
33	858	3.8	2	859	3.8	2
34	859	3.8	2	861	3.8	3
35	860	3.8	3	862	3.8	3
36	861	3.8	3	863	3.8	3
37	862	3.8	3	864	3.8	3
38	864	3.8	3	865	3.9	3
39	865	3.8	3	867	3.9	3
40	866	3.8	3	868	3.9	3
41	867	3.8	3	869	3.9	3
42	868	3.9	3	870	4.0	3
43	869	3.9	3	871	4.0	3
44	870	3.9	3	873	4.1	3
45	872	3.9	3	874	4.2	3
46	873	4.0	3	875	4.2	3
47	874	4.0	3	877	4.3	3
48	875	4.1	3	878	4.4	4
49	877	4.1	3	880	4.5	4
50	878	4.2	4	882	4.6	4
51	879	4.2	4	883	4.7	4
52	881	4.3	4	885	4.9	4
53	882	4.3	4	887	5.1	4
54	884	4.4	4	889	5.3	4

<i>Raw Score</i>	<i>2017–18</i>			<i>2016–17</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>
55	886	4.5	4	890	5.5	4
56	887	4.7	4	890	5.8	4
57	889	4.8	4	890	6.2	4
58	890	5.0	4	890	6.6	4
59	890	5.1	4	890	7.3	4
60	890	5.4	4	890	8.6	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

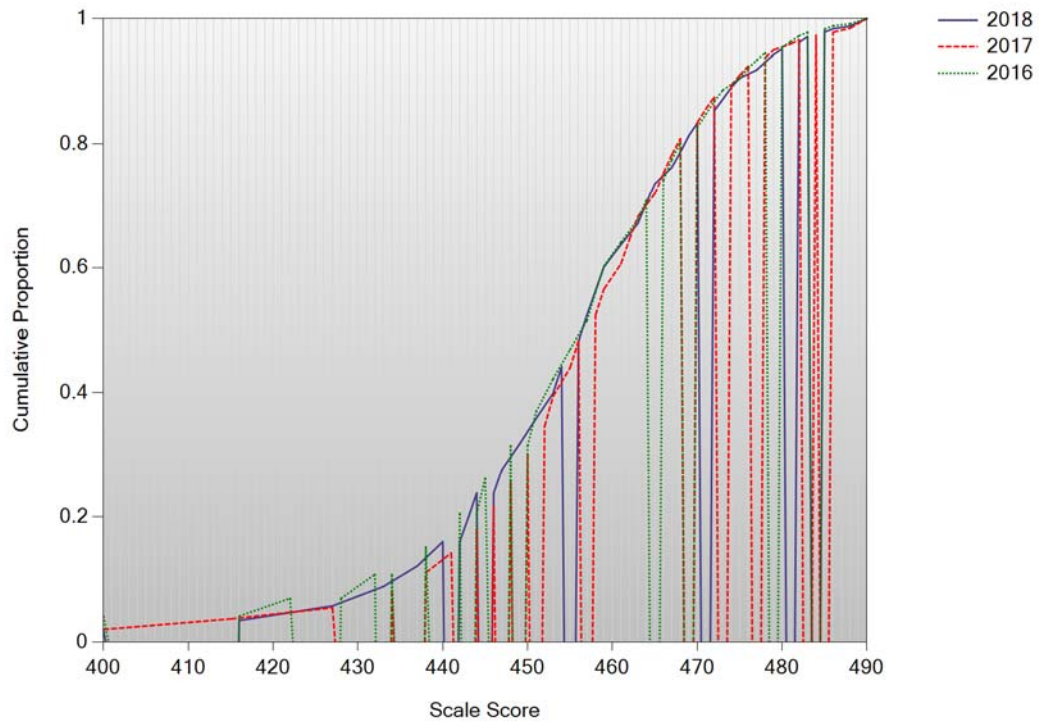
APPENDIX O—SCALED SCORE DISTRIBUTIONS

**Figure O-1. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 3**



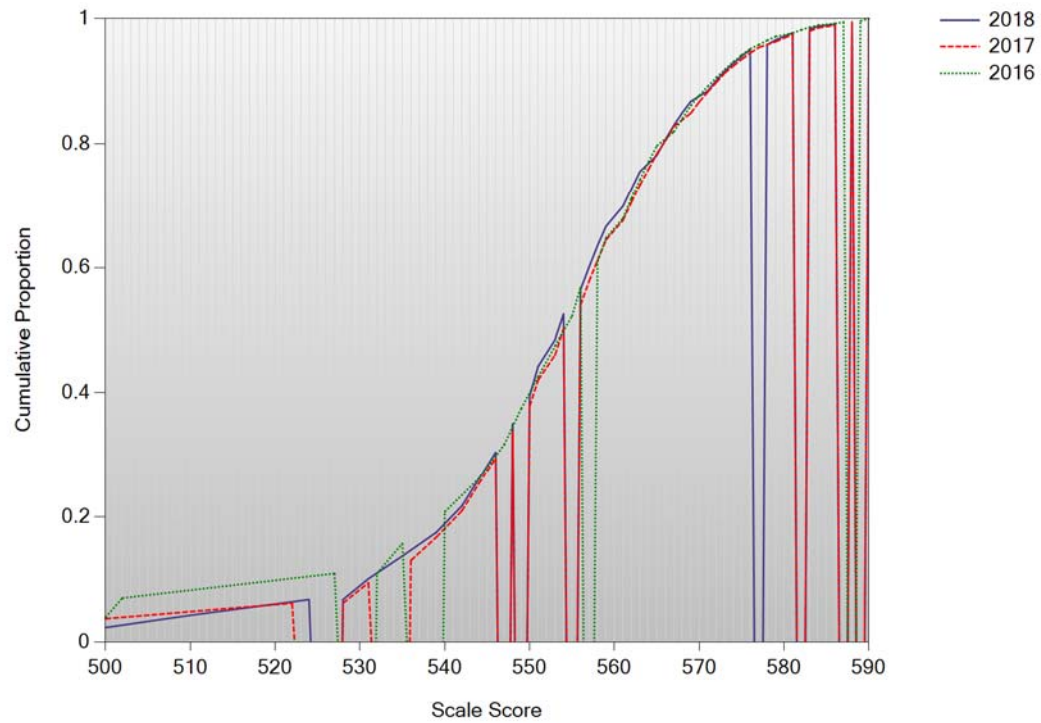
**Figure O-2. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 4**

Cumulative Scale Score Distributions:



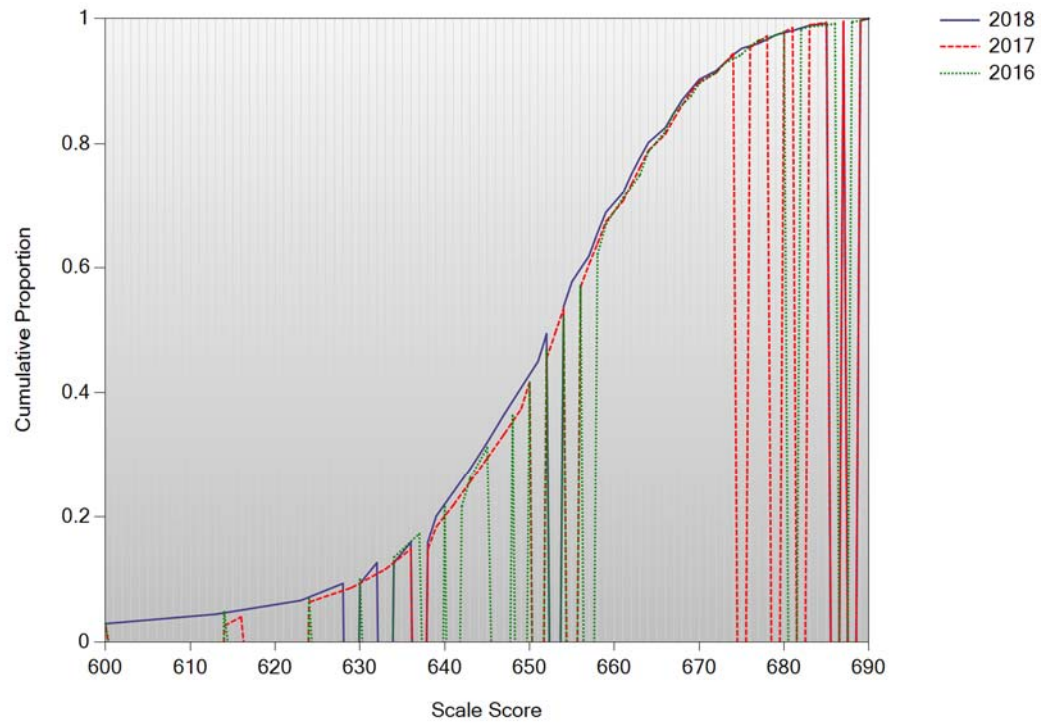
**Figure O-3. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 5**

Cumulative Scale Score Distributions:



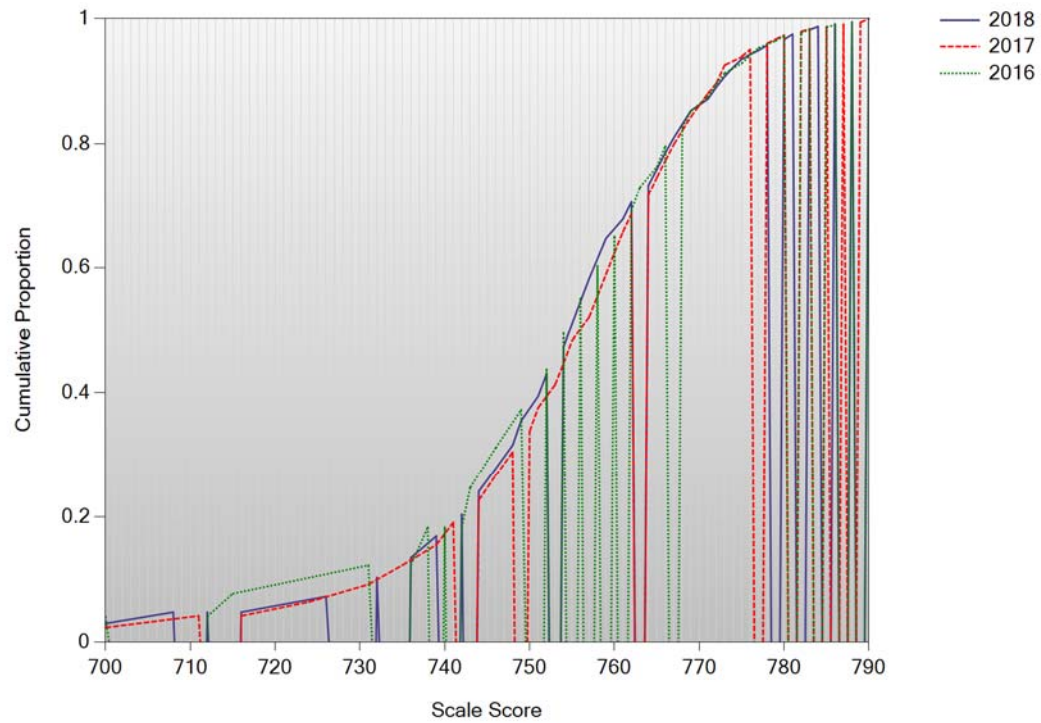
**Figure O-4. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 6**

Cumulative Scale Score Distributions:



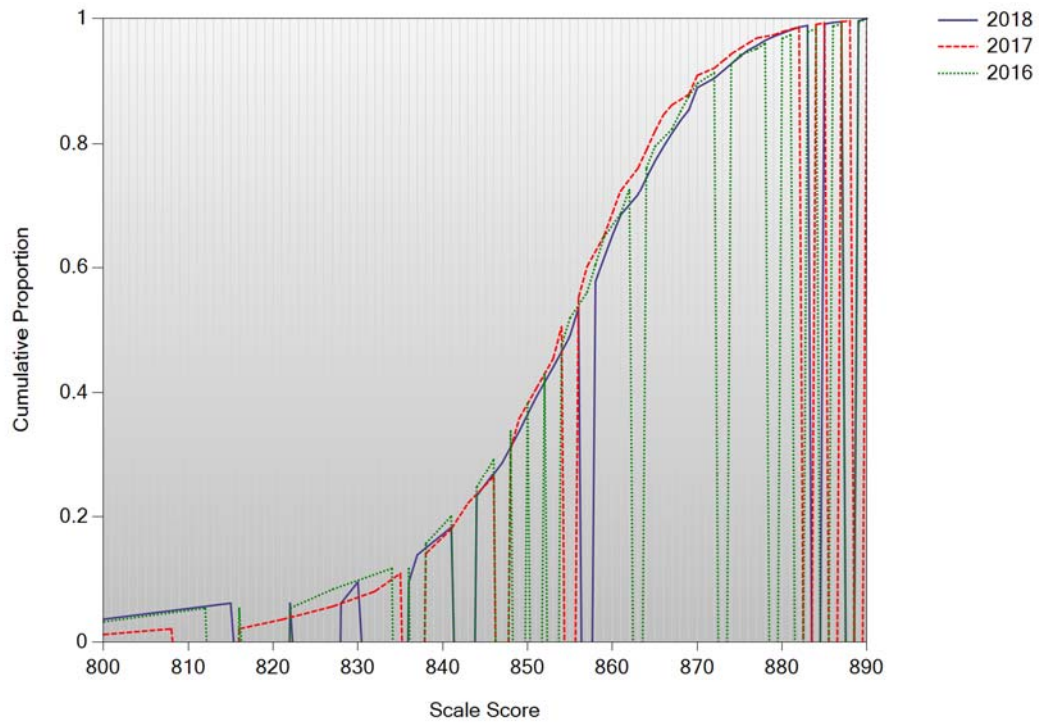
**Figure O-5. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 7**

Cumulative Scale Score Distributions:



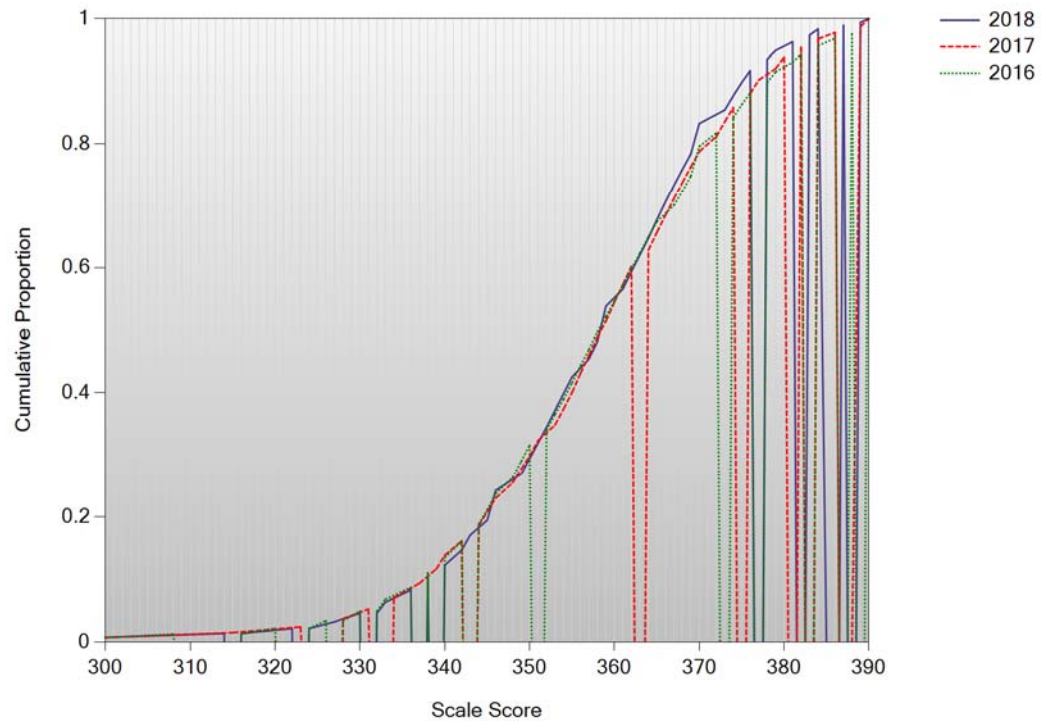
**Figure O-6. 2017–18 eMPowerME: Cumulative Score Distribution
Mathematics Grade 8**

Cumulative Scale Score Distributions:



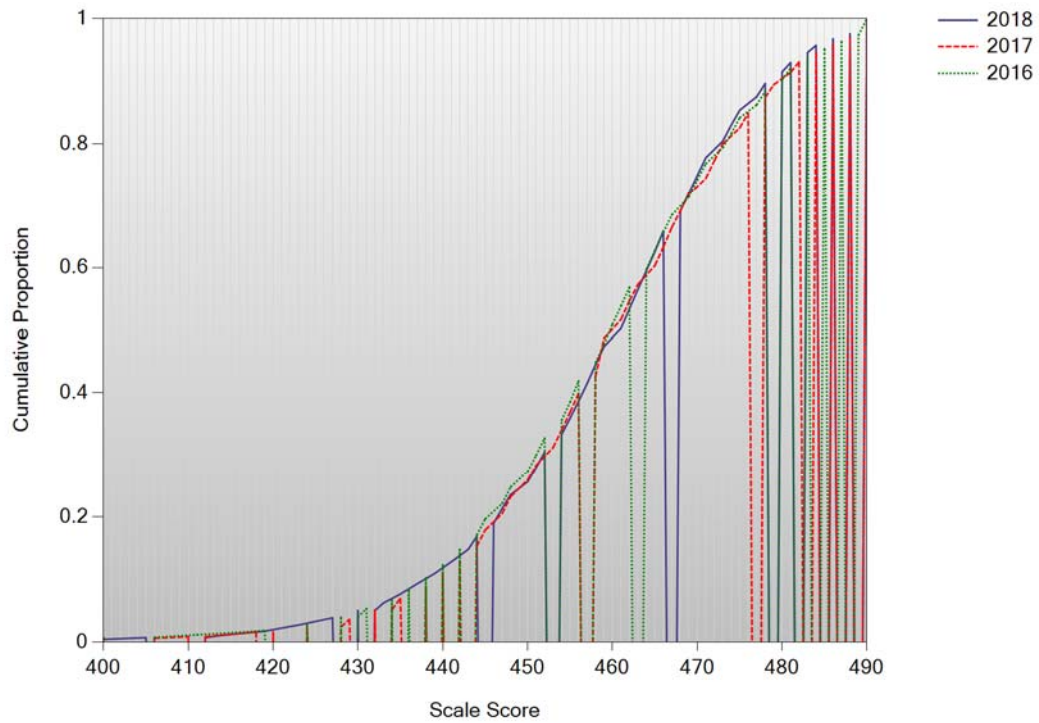
**Figure O-7. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 3**

Cumulative Scale Score Distributions:



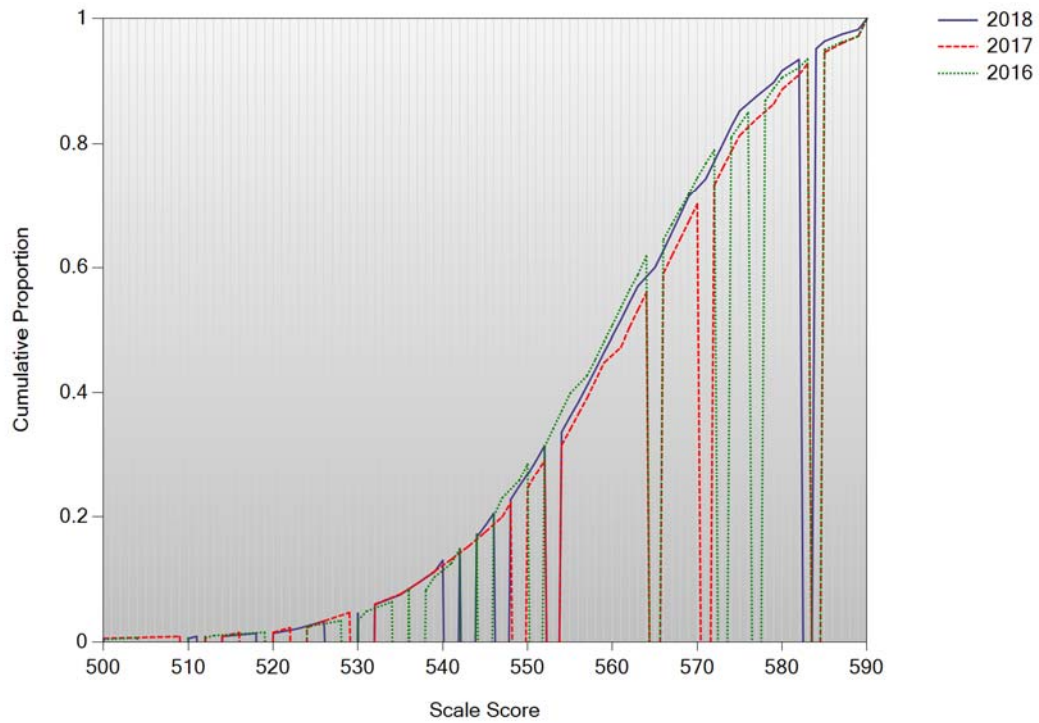
**Figure O-8. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 4**

Cumulative Scale Score Distributions:



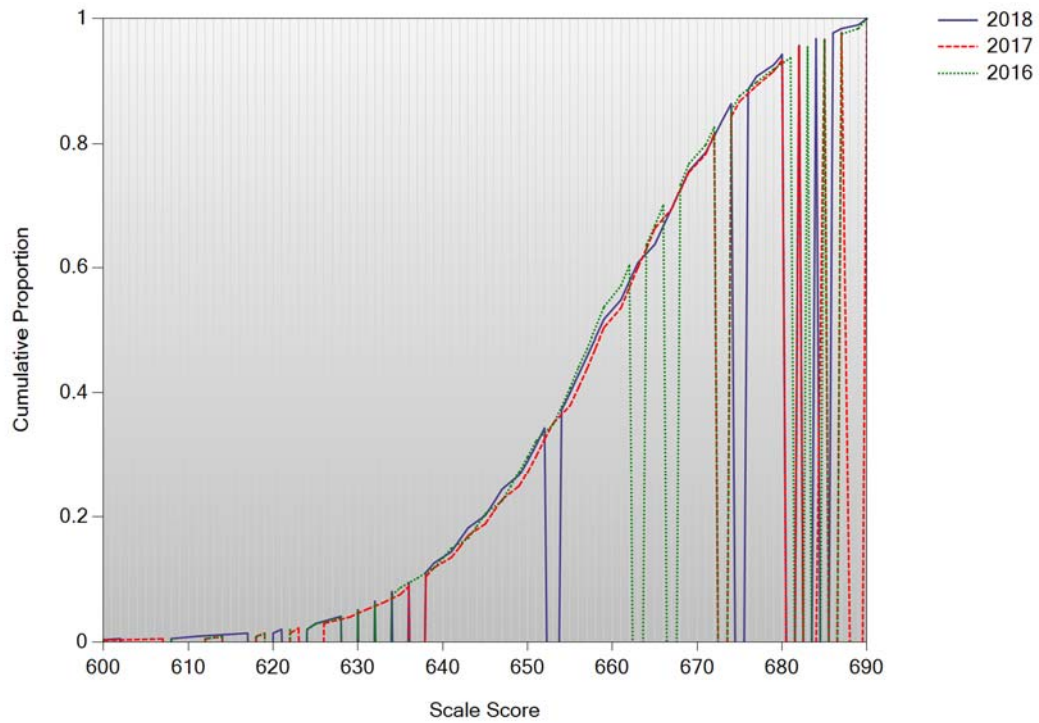
**Figure O-9. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 5**

Cumulative Scale Score Distributions:



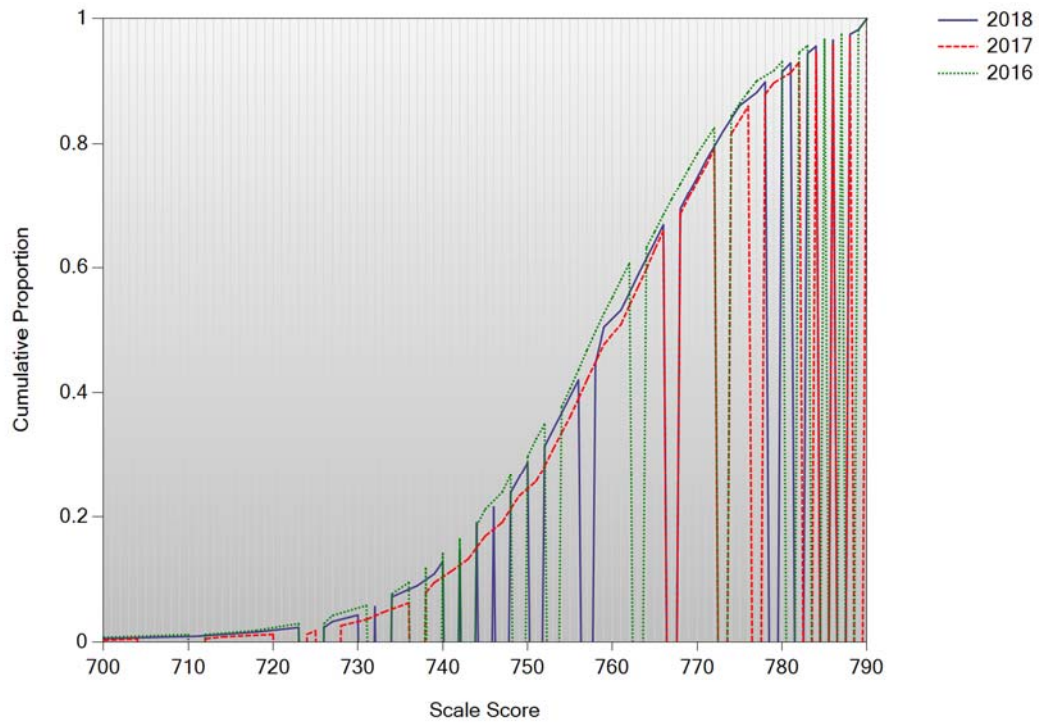
**Figure O-10. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 6**

Cumulative Scale Score Distributions:



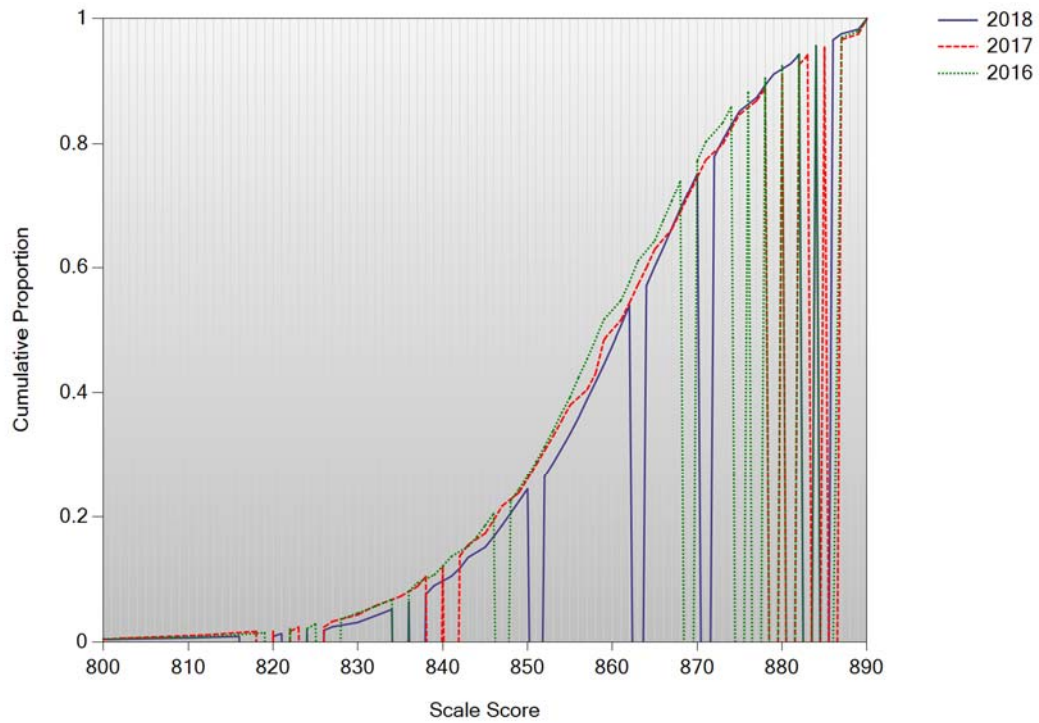
**Figure O-11. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 7**

Cumulative Scale Score Distributions:



**Figure O-12. 2017–18 eMPowerME: Cumulative Score Distribution
ELA Grade 8**

Cumulative Scale Score Distributions:



APPENDIX P—CLASSICAL RELIABILITIES

Table P-1. 2017–18 eMPowerME: Subgroup Reliabilities

Mathematics

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	All Students	25860		21.35	8.96	0.88	3.06
	Male	13220		21.53	9.14	0.89	3.05
	Female	12638		21.16	8.77	0.88	3.07
	Gender Not Reported	2					
	Hispanic or Latino	592		18.91	8.90	0.89	3.01
	American Indian or Alaskan Native	230		19.37	8.93	0.88	3.03
	Asian	352		25.47	9.21	0.88	3.12
	Black or African American	1030		16.43	7.97	0.87	2.89
	Native Hawaiian or Pacific Islander	44		21.45	9.97	0.91	3.04
	White (non-Hispanic)	22820		21.61	8.92	0.88	3.06
	Two or More Races (non-Hispanic)	790		20.73	8.76	0.88	3.04
	Race not reported	2					
	Currently receiving LEP services	1114		16.37	7.99	0.87	2.91
	Former LEP student - monitoring year 1	28		24.21	7.24	0.83	2.99
	Former LEP student - monitoring year 2	14		33.43	6.35	0.78	2.98
	LEP: All Other Students	24704		21.56	8.94	0.88	3.06
	Students with an IEP	4702		15.29	7.32	0.84	2.90
	IEP: All Other Students	21158		22.69	8.74	0.88	3.08
	Economically Disadvantaged Students	12566		18.59	8.15	0.87	2.99
	SES: All Other Students	13294		23.95	8.92	0.88	3.10
	Migrant Students	0					
	Migrant: All Other Students	25860		21.35	8.96	0.88	3.06
	Students Receiving Title 1 Services	2906		16.85	6.95	0.82	2.95
	Title 1: All Other Students	22954		21.92	9.03	0.88	3.07
	Plan 504	794		21.77	8.59	0.87	3.04
	Plan 504: All Other Students	25066		21.33	8.97	0.88	3.06
4	All Students	25935		20.04	9.18	0.89	3.10
	Male	13383		20.26	9.36	0.89	3.10
	Female	12550		19.81	8.97	0.88	3.10
	Gender Not Reported	2					
	Hispanic or Latino	628		17.77	8.74	0.88	3.02
	American Indian or Alaskan Native	226		16.59	7.97	0.86	3.03
	Asian	354		24.72	10.78	0.91	3.22
	Black or African American	900		14.21	7.62	0.86	2.86
	Native Hawaiian or Pacific Islander	24		20.25	9.75	0.90	3.01
	White (non-Hispanic)	22995		20.30	9.12	0.88	3.11
	Two or More Races (non-Hispanic)	806		19.75	9.00	0.88	3.07
	Race not reported	2					
	Currently receiving LEP services	1076		14.31	7.89	0.87	2.87
	Former LEP student - monitoring year 1	58		22.62	8.82	0.87	3.14
	Former LEP student - monitoring year 2	30		27.73	8.28	0.86	3.09
	LEP: All Other Students	24771		20.28	9.14	0.88	3.11
	Students with an IEP	4874		13.06	6.89	0.84	2.79
	IEP: All Other Students	21061		21.66	8.88	0.87	3.15
	Economically Disadvantaged Students	12567		17.01	8.06	0.86	2.98

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
4	SES: All Other Students	13368		22.90	9.25	0.88	3.18
	Migrant Students	0					
	Migrant: All Other Students	25935		20.04	9.18	0.89	3.10
	Students Receiving Title 1 Services	2998		15.25	6.62	0.81	2.90
	Title 1: All Other Students	22937		20.67	9.28	0.89	3.12
	Plan 504	888		19.83	8.81	0.88	3.08
	Plan 504: All Other Students	25047		20.05	9.19	0.89	3.10
5	All Students	26626		20.34	9.16	0.88	3.18
	Male	13604		20.48	9.43	0.89	3.17
	Female	13018		20.19	8.86	0.87	3.18
	Gender Not Reported	4					
	Hispanic or Latino	672		17.76	7.88	0.84	3.12
	American Indian or Alaskan Native	214		17.56	6.76	0.78	3.18
	Asian	394		23.61	10.25	0.90	3.22
	Black or African American	1014		14.59	7.61	0.85	2.98
	Native Hawaiian or Pacific Islander	34		19.24	10.44	0.92	3.01
	White (non-Hispanic)	23472		20.67	9.13	0.88	3.18
	Two or More Races (non-Hispanic)	822		19.26	9.36	0.89	3.15
	Race not reported	4					
	Currently receiving LEP services	940		12.99	6.23	0.78	2.92
	Former LEP student - monitoring year 1	104		22.60	8.65	0.86	3.20
	Former LEP student - monitoring year 2	152		23.11	8.56	0.86	3.25
	LEP: All Other Students	25430		20.58	9.14	0.88	3.18
	Students with an IEP	4946		13.49	6.59	0.80	2.95
	IEP: All Other Students	21680		21.90	8.94	0.87	3.20
	Economically Disadvantaged Students	12580		17.29	7.86	0.84	3.10
	SES: All Other Students	14046		23.07	9.37	0.88	3.21
	Migrant Students	0					
	Migrant: All Other Students	26626		20.34	9.16	0.88	3.18
	Students Receiving Title 1 Services	2722		15.83	6.48	0.78	3.05
	Title 1: All Other Students	23904		20.85	9.28	0.88	3.19
	Plan 504	1066		20.56	9.19	0.88	3.16
	Plan 504: All Other Students	25560		20.33	9.16	0.88	3.18
6	All Students	26104		21.66	9.02	0.86	3.33
	Male	13352		21.29	9.25	0.87	3.31
	Female	12750		22.05	8.75	0.85	3.34
	Gender Not Reported	2					
	Hispanic or Latino	646		19.76	8.22	0.84	3.27
	American Indian or Alaskan Native	182		17.21	7.84	0.84	3.16
	Asian	442		24.09	9.73	0.88	3.37
	Black or African American	886		15.36	6.90	0.80	3.09
	Native Hawaiian or Pacific Islander	20		25.50	13.20	0.93	3.39
	White (non-Hispanic)	23252		21.95	8.98	0.86	3.33
	Two or More Races (non-Hispanic)	674		21.39	9.49	0.88	3.33
	Race not reported	2					
	Currently receiving LEP services	760		12.99	5.15	0.68	2.93
	Former LEP student - monitoring year 1	88		19.55	6.38	0.73	3.29
	Former LEP student - monitoring year 2	84		24.95	8.22	0.84	3.31

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
6	LEP: All Other Students	25172		21.92	8.99	0.86	3.33
	Students with an IEP	4856		14.08	6.28	0.77	3.01
	IEP: All Other Students	21248		23.39	8.65	0.85	3.36
	Economically Disadvantaged Students	11956		18.29	7.77	0.83	3.22
	SES: All Other Students	14148		24.51	9.02	0.86	3.38
	Migrant Students	0					
	Migrant: All Other Students	26104		21.66	9.02	0.86	3.33
	Students Receiving Title 1 Services	1928		17.20	6.39	0.76	3.15
	Title 1: All Other Students	24176		22.02	9.10	0.87	3.34
	Plan 504	1210		21.44	8.45	0.85	3.32
	Plan 504: All Other Students	24894		21.67	9.04	0.86	3.33
	All Students	26646		22.35	9.61	0.89	3.17
	Male	13662		22.21	9.76	0.90	3.15
	Female	12982		22.49	9.45	0.89	3.18
7	Gender Not Reported	2					
	Hispanic or Latino	586		19.74	8.92	0.88	3.11
	American Indian or Alaskan Native	244		18.36	8.87	0.88	3.06
	Asian	412		25.22	10.93	0.91	3.23
	Black or African American	906		15.83	7.93	0.85	3.05
	Native Hawaiian or Pacific Islander	32		24.00	9.66	0.88	3.28
	White (non-Hispanic)	23906		22.67	9.56	0.89	3.17
	Two or More Races (non-Hispanic)	558		21.18	9.51	0.89	3.18
	Race not reported	2					
	Currently receiving LEP services	784		13.41	6.22	0.79	2.88
	Former LEP student - monitoring year 1	40		20.90	9.45	0.89	3.11
	Former LEP student - monitoring year 2	68		21.88	7.07	0.79	3.22
	LEP: All Other Students	25754		22.62	9.57	0.89	3.17
	Students with an IEP	4638		13.79	6.29	0.78	2.94
	IEP: All Other Students	22008		24.15	9.21	0.88	3.18
	Economically Disadvantaged Students	12070		18.68	8.21	0.85	3.13
	SES: All Other Students	14576		25.38	9.63	0.89	3.17
	Migrant Students	0					
	Migrant: All Other Students	26646		22.35	9.61	0.89	3.17
	Students Receiving Title 1 Services	1790		17.59	7.24	0.82	3.09
	Title 1: All Other Students	24856		22.69	9.67	0.89	3.17
	Plan 504	1344		22.25	9.07	0.88	3.19
	Plan 504: All Other Students	25302		22.35	9.64	0.89	3.17
	All Students	26411		19.47	8.82	0.87	3.22
	Male	13708		19.34	9.03	0.87	3.21
	Female	12699		19.61	8.59	0.86	3.22
	Gender Not Reported	4					
	Hispanic or Latino	534		17.81	8.76	0.87	3.16
	American Indian or Alaskan Native	218		15.61	7.00	0.82	2.97
	Asian	428		22.79	10.21	0.89	3.41
	Black or African American	902		14.45	6.56	0.80	2.95
	Native Hawaiian or Pacific Islander	32		21.13	9.04	0.89	3.02
	White (non-Hispanic)	23693		19.68	8.79	0.87	3.22
	Two or More Races (non-Hispanic)	600		19.36	9.26	0.88	3.21

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
8	Race not reported	4					
	Currently receiving LEP services	718		12.45	5.65	0.74	2.86
	Former LEP student - monitoring year 1	48		17.79	6.99	0.79	3.22
	Former LEP student - monitoring year 2	22		21.91	8.24	0.84	3.32
	LEP: All Other Students	25623		19.67	8.82	0.87	3.22
	Students with an IEP	4500		12.33	5.44	0.73	2.85
	IEP: All Other Students	21911		20.94	8.66	0.86	3.27
	Economically Disadvantaged Students	11044		16.20	7.18	0.82	3.07
	SES: All Other Students	15367		21.82	9.13	0.87	3.30
	Migrant Students	0					
	Migrant: All Other Students	26411		19.47	8.82	0.87	3.22
	Students Receiving Title 1 Services	1416		15.28	6.67	0.79	3.04
	Title 1: All Other Students	24995		19.71	8.87	0.87	3.22
	Plan 504	1486		19.07	8.36	0.85	3.20
	Plan 504: All Other Students	24925		19.49	8.85	0.87	3.22

Table P-2. 2017–18 eMPowerME: Subgroup Reliabilities
ELA

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
3	All Students	25790		29.59	11.32	0.91	3.45
	Male	13178		28.29	11.22	0.91	3.44
	Female	12610		30.96	11.26	0.91	3.45
	Gender Not Reported	2					
	Hispanic or Latino	586		27.26	11.81	0.91	3.45
	American Indian or Alaskan Native	236		26.64	10.91	0.90	3.49
	Asian	346		33.34	10.74	0.90	3.42
	Black or African American	986		23.38	10.68	0.90	3.43
	Native Hawaiian or Pacific Islander	44		29.23	12.19	0.92	3.34
	White (non-Hispanic)	22806		29.91	11.25	0.91	3.44
	Two or More Races (non-Hispanic)	784		29.28	11.12	0.90	3.44
	Race not reported	2					
	Currently receiving LEP services	1056		22.55	10.08	0.88	3.46
	Former LEP student - monitoring year 1	28		36.00	8.14	0.84	3.26
	Former LEP student - monitoring year 2	14		42.43	8.37	0.89	2.76
	LEP: All Other Students	24692		29.88	11.27	0.91	3.44
	Students with an IEP	4690		20.05	9.43	0.87	3.40
	IEP: All Other Students	21100		31.71	10.58	0.89	3.44
	Economically Disadvantaged Students	12526		26.01	10.72	0.89	3.48
	SES: All Other Students	13264		32.97	10.81	0.90	3.40
	Migrant Students	0					
	Migrant: All Other Students	25790		29.59	11.32	0.91	3.45
	Students Receiving Title 1 Services	2906		23.58	9.31	0.86	3.50
	Title 1: All Other Students	22884		30.35	11.32	0.91	3.44
	Plan 504	796		29.78	10.70	0.90	3.45
	Plan 504: All Other Students	24994		29.59	11.34	0.91	3.45
4	All Students	25863		31.34	11.19	0.90	3.62
	Male	13351		29.98	11.14	0.90	3.60
	Female	12512		32.80	11.06	0.89	3.63
	Gender Not Reported	0					
	Hispanic or Latino	628		29.26	11.51	0.90	3.62
	American Indian or Alaskan Native	224		27.28	11.18	0.90	3.60
	Asian	350		33.97	11.58	0.90	3.61
	Black or African American	832		24.74	10.86	0.89	3.58
	Native Hawaiian or Pacific Islander	20		36.30	10.15	0.88	3.54
	White (non-Hispanic)	23003		31.62	11.13	0.89	3.62
	Two or More Races (non-Hispanic)	806		31.73	10.41	0.88	3.66
	Race not reported	0					
	Currently receiving LEP services	996		23.42	10.16	0.88	3.57
	Former LEP student - monitoring year 1	58		34.93	7.05	0.74	3.62
	Former LEP student - monitoring year 2	30		41.73	7.24	0.78	3.36
	LEP: All Other Students	24779		31.64	11.12	0.89	3.62
	Students with an IEP	4884		20.87	9.56	0.87	3.49
	IEP: All Other Students	20979		33.78	10.08	0.87	3.63
	Economically Disadvantaged Students	12513		27.93	10.79	0.89	3.63
	SES: All Other Students	13350		34.54	10.60	0.88	3.60

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
4	Migrant Students	0					
	Migrant: All Other Students	25863		31.34	11.19	0.90	3.62
	Students Receiving Title 1 Services	2996		25.78	9.30	0.85	3.65
	Title 1: All Other Students	22867		32.07	11.21	0.90	3.61
	Plan 504	888		31.50	10.38	0.88	3.61
	Plan 504: All Other Students	24975		31.34	11.22	0.90	3.62
5	All Students	26562		32.47	11.79	0.90	3.68
	Male	13572		30.58	11.53	0.90	3.67
	Female	12986		34.45	11.73	0.90	3.68
	Gender Not Reported	4					
	Hispanic or Latino	662		30.35	11.46	0.89	3.75
	American Indian or Alaskan Native	214		28.22	10.35	0.87	3.77
	Asian	388		34.38	12.90	0.92	3.65
	Black or African American	958		25.95	11.36	0.90	3.68
	Native Hawaiian or Pacific Islander	34		27.47	14.74	0.94	3.57
	White (non-Hispanic)	23480		32.85	11.70	0.90	3.68
	Two or More Races (non-Hispanic)	822		31.55	12.05	0.91	3.70
	Race not reported	4					
	Currently receiving LEP services	862		21.26	9.55	0.86	3.62
	Former LEP student - monitoring year 1	104		37.69	8.13	0.80	3.64
	Former LEP student - monitoring year 2	152		37.92	8.56	0.81	3.70
	LEP: All Other Students	25444		32.80	11.69	0.90	3.68
	Students with an IEP	4944		21.09	9.61	0.86	3.60
	IEP: All Other Students	21618		35.07	10.64	0.88	3.67
	Economically Disadvantaged Students	12542		28.61	11.46	0.90	3.70
	SES: All Other Students	14020		35.93	10.98	0.89	3.64
6	Migrant Students	0					
	Migrant: All Other Students	26562		32.47	11.79	0.90	3.68
	Students Receiving Title 1 Services	2728		26.66	10.27	0.87	3.74
	Title 1: All Other Students	23834		33.14	11.77	0.90	3.67
	Plan 504	1068		32.80	10.96	0.89	3.66
	Plan 504: All Other Students	25494		32.46	11.82	0.90	3.68
	All Students	26060		32.66	11.24	0.90	3.58
	Male	13334		30.81	11.36	0.90	3.54
	Female	12724		34.60	10.78	0.89	3.59
	Gender Not Reported	2					
	Hispanic or Latino	642		31.60	11.00	0.89	3.62
	American Indian or Alaskan Native	184		27.28	10.73	0.89	3.58
	Asian	436		34.39	11.26	0.90	3.65
	Black or African American	848		24.69	10.01	0.87	3.60
	Native Hawaiian or Pacific Islander	20		37.90	10.24	0.89	3.38
	White (non-Hispanic)	23250		33.01	11.16	0.90	3.57
	Two or More Races (non-Hispanic)	678		31.81	11.63	0.91	3.58
	Race not reported	2					
	Currently receiving LEP services	714		20.73	8.18	0.81	3.53
	Former LEP student - monitoring year 1	88		32.09	7.19	0.74	3.68
	Former LEP student - monitoring year 2	84		34.67	8.74	0.82	3.67
	LEP: All Other Students	25174		32.99	11.15	0.90	3.58

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
6	Students with an IEP	4860		21.73	9.40	0.86	3.50
	IEP: All Other Students	21200		35.16	10.07	0.87	3.57
	Economically Disadvantaged Students	11922		28.49	10.74	0.89	3.60
	SES: All Other Students	14138		36.17	10.42	0.88	3.54
	Migrant Students	0					
	Migrant: All Other Students	26060		32.66	11.24	0.90	3.58
	Students Receiving Title 1 Services	1934		27.83	9.94	0.87	3.62
	Title 1: All Other Students	24126		33.04	11.25	0.90	3.58
	Plan 504	1210		32.39	9.98	0.87	3.58
7	Plan 504: All Other Students	24850		32.67	11.30	0.90	3.58
	All Students	26576		31.54	11.71	0.90	3.65
	Male	13626		29.51	11.57	0.90	3.61
	Female	12948		33.68	11.47	0.90	3.67
	Gender Not Reported	2					
	Hispanic or Latino	584		29.30	11.08	0.89	3.68
	American Indian or Alaskan Native	246		26.19	11.06	0.89	3.61
	Asian	406		34.48	11.83	0.91	3.64
	Black or African American	852		24.90	11.19	0.90	3.59
	Native Hawaiian or Pacific Islander	32		34.25	10.89	0.90	3.52
	White (non-Hispanic)	23900		31.85	11.66	0.90	3.65
	Two or More Races (non-Hispanic)	554		31.20	11.50	0.90	3.66
	Race not reported	2					
	Currently receiving LEP services	722		19.65	8.48	0.83	3.46
	Former LEP student - monitoring year 1	40		31.95	10.56	0.88	3.67
	Former LEP student - monitoring year 2	68		32.26	9.02	0.83	3.73
	LEP: All Other Students	25746		31.88	11.62	0.90	3.66
	Students with an IEP	4632		20.20	8.69	0.84	3.46
	IEP: All Other Students	21944		33.94	10.82	0.89	3.67
	Economically Disadvantaged Students	12012		27.09	10.76	0.89	3.63
	SES: All Other Students	14564		35.22	11.17	0.89	3.64
	Migrant Students	0					
	Migrant: All Other Students	26576		31.54	11.71	0.90	3.65
	Students Receiving Title 1 Services	1794		25.57	9.70	0.86	3.62
	Title 1: All Other Students	24782		31.98	11.72	0.90	3.65
	Plan 504	1340		31.70	10.66	0.88	3.66
	Plan 504: All Other Students	25236		31.54	11.76	0.90	3.65
8	All Students	26327		34.48	11.67	0.90	3.67
	Male	13672		32.35	11.70	0.90	3.62
	Female	12651		36.79	11.20	0.89	3.68
	Gender Not Reported	4					
	Hispanic or Latino	528		32.70	12.56	0.92	3.65
	American Indian or Alaskan Native	218		29.80	9.62	0.86	3.64
	Asian	424		38.31	12.67	0.92	3.62
	Black or African American	856		27.25	11.62	0.90	3.67
	Native Hawaiian or Pacific Islander	32		36.25	10.26	0.88	3.62
	White (non-Hispanic)	23667		34.75	11.55	0.90	3.67
	Two or More Races (non-Hispanic)	598		34.70	11.74	0.90	3.68
	Race not reported	4					

continued

Grade	Description	Number of Students	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
8	Currently receiving LEP services	658		23.51	10.08	0.87	3.63
	Former LEP student - monitoring year 1	48		35.54	9.61	0.85	3.74
	Former LEP student - monitoring year 2	22		39.27	8.17	0.83	3.40
	LEP: All Other Students	25599		34.76	11.58	0.90	3.67
	Students with an IEP	4504		23.01	9.96	0.87	3.59
	IEP: All Other Students	21823		36.85	10.54	0.88	3.65
	Economically Disadvantaged Students	10994		30.23	11.30	0.89	3.68
	SES: All Other Students	15333		37.53	10.96	0.89	3.63
	Migrant Students	0					
	Migrant: All Other Students	26327		34.48	11.67	0.90	3.67
	Students Receiving Title 1 Services	1416		28.07	10.58	0.88	3.68
	Title 1: All Other Students	24911		34.85	11.63	0.90	3.66
	Plan 504	1480		34.41	11.00	0.89	3.66
	Plan 504: All Other Students	24847		34.49	11.71	0.90	3.67

**Table P-3. 2017–18 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	15	17	7.35	2.67	0.69	1.48
	Mathematical Processes	34	36	15.80	5.76	0.85	2.21
	Numbers & Operations - Base 10 & Fractions	11	14	5.41	2.24	0.67	1.28
	Numbers, Operations & Algebraic Thinking	22	28	10.44	4.20	0.81	1.82
	Operations & Algebraic Thinking	11	14	5.03	2.42	0.70	1.33
	Problem-Solving & Modeling	15	15	8.26	3.04	0.74	1.56
	Reasoning, Patterns & Structure	19	21	7.53	3.20	0.75	1.60
4	Geometry, Measurement & Data	11	12	4.80	2.16	0.61	1.35
	Mathematical Processes	31	33	13.85	5.36	0.85	2.09
	Numbers & Operations - Base 10 & Fractions	16	20	7.79	3.11	0.77	1.49
	Numbers, Operations & Algebraic Thinking	25	32	11.69	4.68	0.84	1.88
	Operations & Algebraic Thinking	9	12	3.91	1.97	0.64	1.18
	Problem-Solving & Modeling	14	14	7.20	2.88	0.73	1.50
	Reasoning, Patterns & Structure	17	19	6.66	2.95	0.75	1.49
5	Geometry, Measurement & Data	14	21	4.90	2.27	0.69	1.27
	Mathematical Processes	36	38	14.93	6.18	0.85	2.37
	Numbers & Operations - Base 10 & Fractions	14	14	5.94	3.25	0.75	1.63
	Numbers, Operations & Algebraic Thinking	23	24	10.15	4.50	0.81	1.96
	Operations & Algebraic Thinking	9	10	4.21	1.74	0.58	1.12
	Problem-Solving & Modeling	14	15	5.64	2.62	0.68	1.49
	Reasoning, Patterns & Structure	22	23	9.29	4.04	0.79	1.86
6	Expressions & Equations	9	12	4.54	1.85	0.60	1.17
	Geometry	7	8	3.26	1.43	0.52	1.00
	Geometry, Statistics & Probability	14	16	5.58	2.25	0.62	1.39
	Mathematical Processes	40	42	17.25	5.96	0.82	2.50
	Number System	9	12	3.34	1.72	0.57	1.13
	Numbers, Operations & Algebraic Thinking	26	32	11.67	4.34	0.79	1.97
	Problem-Solving & Modeling	17	18	6.48	2.56	0.61	1.59
	Ratio & Proportional Relationship	8	8	3.80	1.75	0.44	1.30
	Reasoning, Patterns & Structure	23	24	10.78	4.02	0.76	1.97
	Statistics & Probability	7	8	2.32	1.37	0.44	1.02
7	Expressions & Equations	9	10	4.16	1.85	0.63	1.12
	Geometry	7	8	2.42	1.49	0.57	0.98
	Geometry, Statistics & Probability	17	24	6.32	2.89	0.77	1.39
	Mathematical Processes	40	42	18.45	6.93	0.87	2.53
	Number System	6	6	3.65	1.59	0.56	1.05
	Numbers, Operations & Algebraic Thinking	23	24	12.14	4.54	0.81	1.97
	Problem-Solving & Modeling	18	20	8.11	3.20	0.71	1.73
	Ratio & Proportional Relationship	8	8	4.33	1.91	0.55	1.28

continued

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
7	Reasoning, Patterns & Structure	22	22	10.35	4.22	0.80	1.86
	Statistics & Probability	10	16	3.90	1.86	0.67	1.06
8	Expressions & Equations	10	13	4.27	1.82	0.53	1.25
	Functions	9	10	3.57	1.77	0.54	1.20
	Geometry	9	12	3.14	1.64	0.45	1.22
	Geometry, Statistics & Probability	18	22	7.28	3.10	0.72	1.63
	Mathematical Processes	40	42	16.48	6.02	0.82	2.53
	Number System	4	4	1.53	1.06	0.35	0.85
	Numbers, Operations & Algebraic Thinking	23	27	9.37	3.67	0.74	1.86
	Problem-Solving & Modeling	21	22	8.87	3.56	0.71	1.93
	Reasoning, Patterns & Structure	19	20	7.61	3.04	0.69	1.70
	Statistics & Probability	9	10	4.14	1.99	0.68	1.13

**Table P-4. 2017–18 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	7	9	3.79	1.88	0.58	1.22
	Analysis & Interpretation of Literary Text	7	13	4.61	2.32	0.67	1.33
	Command of Conventions	7	13	4.31	2.32	0.67	1.33
	Comprehension of Informational Text	3	4	2.30	1.14	0.47	0.83
	Comprehension of Literary Text	8	9	5.21	2.37	0.67	1.37
	Direct Writing/Essay	7	13	4.31	2.32	0.67	1.33
	English language and conventions	8	8	4.65	1.84	0.52	1.27
	Language Use & Vocabulary	7	13	4.31	2.32	0.67	1.33
	Reading	25	35	15.91	6.51	0.86	2.42
	Revising Expository/Informational Text	7	8	3.55	1.96	0.51	1.37
	Revising Narrative Text	8	10	5.48	2.66	0.66	1.55
	Writing & Language	23	26	13.69	5.46	0.80	2.44
4	Analysis & Interpretation of Informational Text	5	7	3.85	1.58	0.56	1.05
	Analysis & Interpretation of Literary Text	9	14	6.31	3.17	0.75	1.57
	Command of Conventions	9	14	5.45	2.81	0.75	1.39
	Comprehension of Informational Text	5	6	3.32	1.77	0.53	1.21
	Comprehension of Literary Text	7	8	4.43	1.79	0.43	1.35
	Direct Writing/Essay	9	14	5.45	2.81	0.75	1.39
	English language and conventions	8	8	4.71	1.90	0.60	1.20
	Language Use & Vocabulary	9	14	5.45	2.81	0.75	1.39
	Reading	26	35	17.91	6.90	0.85	2.63
	Revising Expository/Informational Text	7	8	3.46	1.81	0.42	1.38
	Revising Narrative Text	8	10	5.27	2.43	0.55	1.63
	Writing & Language	23	26	13.43	4.96	0.75	2.46

continued

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			Maximum	Mean	Standard Deviation		
5	Analysis & Interpretation of Informational Text	6	9	4.34	2.25	0.66	1.30
	Analysis & Interpretation of Literary Text	9	14	7.11	3.46	0.76	1.71
	Command of Conventions	9	14	5.96	2.58	0.76	1.27
	Comprehension of Informational Text	3	4	2.31	1.11	0.22	0.98
	Comprehension of Literary Text	8	8	4.00	1.93	0.56	1.28
	Direct Writing/Essay	9	14	5.96	2.58	0.76	1.27
	English language and conventions	8	8	4.89	1.98	0.62	1.22
	Language Use & Vocabulary	9	14	5.96	2.58	0.76	1.27
	Reading	26	35	17.76	7.30	0.86	2.71
	Revising Expository/Informational Text	8	10	5.22	2.26	0.49	1.62
	Revising Narrative Text	7	8	4.59	2.03	0.53	1.39
	Writing & Language	23	26	14.71	5.15	0.77	2.47
6	Analysis & Interpretation of Informational Text	8	12	5.06	2.66	0.60	1.68
	Analysis & Interpretation of Literary Text	7	13	5.50	2.47	0.65	1.46
	Command of Conventions	7	13	5.75	3.65	0.65	2.16
	Comprehension of Informational Text	9	9	5.66	1.98	0.63	1.21
	Comprehension of Literary Text	2	3	2.01	0.95	0.34	0.77
	Direct Writing/Essay	7	13	5.75	3.65	0.65	2.16
	English language and conventions	8	8	5.16	1.86	0.59	1.20
	Language Use & Vocabulary	7	13	5.75	3.65	0.65	2.16
	Reading	26	37	18.23	6.69	0.84	2.66
	Revising Argument Text	7	8	4.60	2.06	0.58	1.34
	Revising Expository/Informational Text	8	10	4.67	2.33	0.55	1.56
	Writing & Language	23	26	14.43	5.24	0.79	2.38
7	Analysis & Interpretation of Informational Text	8	12	6.02	2.63	0.64	1.58
	Analysis & Interpretation of Literary Text	7	11	4.58	2.42	0.62	1.49
	Command of Conventions	7	11	6.86	3.58	0.62	2.20
	Comprehension of Informational Text	9	11	6.36	2.66	0.68	1.50
	Comprehension of Literary Text	2	3	1.35	0.91	0.23	0.80
	Direct Writing/Essay	7	11	6.86	3.58	0.62	2.20
	English language and conventions	7	7	3.72	1.50	0.39	1.17
	Language Use & Vocabulary	7	11	6.86	3.58	0.62	2.20
	Reading	26	37	18.31	7.20	0.85	2.76
	Revising Argument Text	9	11	5.51	2.54	0.63	1.55
	Revising Expository/Informational Text	7	8	4.01	2.13	0.59	1.36
	Writing & Language	23	26	13.24	5.17	0.79	2.38
8	Analysis & Interpretation of Informational Text	8	12	5.71	2.67	0.60	1.69
	Analysis & Interpretation of Literary Text	6	9	4.07	2.02	0.57	1.32
	Command of Conventions	6	9	8.13	3.34	0.57	2.19
	Comprehension of Informational Text	8	11	6.41	2.61	0.72	1.39
	Comprehension of Literary Text	4	5	3.03	1.50	0.41	1.15
	Direct Writing/Essay	6	9	8.13	3.34	0.57	2.19

continued

Grade	Reporting Category	Number of Items	Raw Score			Alpha	Standard Error
			<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>		
	English language and conventions	8	8	5.56	1.80	0.58	1.16
	Language Use & Vocabulary	6	9	8.13	3.34	0.57	2.19
	Reading	26	37	19.21	7.41	0.86	2.80
	Revising Argument Text	8	10	5.13	2.22	0.51	1.55
	Revising Expository/Informational Text	7	8	4.57	1.95	0.54	1.32
	Writing & Language	23	26	15.27	4.98	0.78	2.34

APPENDIX Q—INTERRATER AGREEMENT

**Table Q-1. 2017–18 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	125282AA	3	2517	96.58	3.18	0.93	0.24
	125282AB	2	2517	95.23	4.77	0.79	0.24
	464499A	5	2517	89.31	9.69	0.90	0.99
	464499B	3	2517	93.52	6.48	0.87	0.99
	464512A	5	2491	83.42	14.33	0.91	2.85
	464512B	3	2491	86.63	12.61	0.76	2.85
	551311A	3	2559	93.01	6.96	0.88	0.04
	551311B	2	2559	96.17	3.83	0.92	0.04
4	127591AA	3	2565	95.32	4.29	0.90	0.39
	127591AB	2	2565	97.74	2.26	0.92	0.39
	447971A	5	2521	85.44	11.94	0.92	2.58
	447971B	3	2521	89.61	10.15	0.72	2.58
	448378A	3	2566	95.79	4.21	0.95	0.00
	448378B	2	2566	95.83	4.17	0.75	0.00
	551343A	5	2741	82.34	15.03	0.90	3.36
	551343B	3	2741	85.66	13.43	0.78	3.36
5	125061AA	3	2596	81.51	18.45	0.75	0.04
	125061AB	2	2596	87.33	12.67	0.74	0.04
	412207A	5	2628	83.83	13.09	0.87	3.73
	412207B	3	2628	85.96	12.90	0.83	3.73
	415228A	3	2615	84.55	15.33	0.84	0.11
	415228B	2	2615	94.84	5.16	0.84	0.11
	551415A	5	2622	92.03	7.36	0.96	1.03
	551415B	3	2622	96.07	3.51	0.88	1.03
6	412531A	5	2551	83.30	14.86	0.93	2.59
	412531B	3	2551	91.38	7.80	0.82	2.59
	445967A	5	2575	85.20	13.55	0.94	1.24
	445967B	3	2575	88.70	10.95	0.86	1.24
	465321A	3	2467	97.08	2.80	0.92	0.12
	465321B	2	2467	99.23	0.77	0.76	0.12
	551449A	3	2597	96.61	3.39	0.96	0.00
	551449B	2	2597	98.31	1.69	0.83	0.00
7	124362AA	3	2580	96.16	3.80	0.96	0.04
	124362AB	2	2580	98.10	1.90	0.94	0.04
	446604A	5	2589	93.05	6.57	0.96	0.58
	446604B	3	2589	98.80	1.00	0.58	0.58
	446620A	5	2687	74.84	22.89	0.89	2.53
	446620B	3	2687	85.67	13.99	0.72	2.53
	551426A	3	2580	96.20	3.80	0.94	0.00
	551426B	2	2580	97.13	2.87	0.69	0.00
8	447488A	5	2460	95.57	3.94	0.94	0.53
	447488B	3	2460	96.95	3.01	0.89	0.53
	468821A	3	2568	78.78	20.64	0.75	0.58
	468821B	2	2568	95.33	4.67	0.75	0.58
	482018A	3	2583	78.13	21.10	0.80	0.77

continued

Grade	Item	Number of		Percent		Correlation	Percent of Third Scores
		Score Categories	Responses Scored Twice	Exact	Adjacent		
8	482018B	2	2583	95.28	4.72	0.81	0.77
	551332A	5	2547	91.64	7.66	0.95	0.90
	551332B	3	2547	88.10	11.70	0.80	0.90

**Table Q-2. 2017–18 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	128603A	3	2506	65.08	33.96	0.45	0.96
	410572	4	2378	78.89	20.40	0.74	0.71
	410580	4	2327	71.81	27.03	0.53	1.16
	418699	4	2309	81.25	18.49	0.71	0.26
	472018A	5	2466	61.84	36.62	0.57	10.67
	472018B	5	2466	63.63	35.28	0.56	10.67
	472018C	5	2466	65.98	33.17	0.53	10.67
	472018D	5	2466	67.92	31.18	0.50	10.67
4	130728A	3	2110	80.09	19.48	0.75	0.43
	410868	4	2503	79.86	19.22	0.70	1.00
	472228A	5	1785	55.46	41.51	0.51	15.74
	472228B	5	1785	54.62	42.63	0.53	15.74
	472228C	5	1785	59.38	38.21	0.55	15.74
	472228D	5	1785	58.54	39.16	0.55	15.74
	472582	4	2508	69.98	28.79	0.65	1.12
	476172	3	2404	76.21	23.00	0.73	0.62
5	129019A	3	2573	73.18	26.70	0.67	0.12
	131484A	3	2560	76.45	23.09	0.71	0.51
	416527	4	2571	72.77	26.57	0.83	0.62
	472388A	5	2433	71.06	28.48	0.58	16.28
	472388B	5	2433	63.26	35.76	0.63	16.28
	472388C	5	2433	61.08	37.36	0.60	16.28
	472388D	5	2433	60.71	37.73	0.61	16.28
	478358	4	2546	73.21	26.12	0.82	0.67
6	130184A	3	2448	67.73	30.84	0.54	1.43
	413469	5	2612	63.86	34.72	0.72	1.42
	413478	5	2486	61.95	35.36	0.74	2.70
	420298	3	2526	72.57	26.25	0.69	1.19
	472297A	5	2641	59.86	36.12	0.56	18.40
	472297B	5	2641	46.23	46.04	0.60	18.40
	472297C	5	2641	46.76	46.04	0.61	18.40
	472297D	5	2641	45.55	46.46	0.60	18.40
7	131168A	3	2495	69.54	28.98	0.71	1.48
	416732	5	2461	56.24	37.06	0.66	6.70
	416793	5	2526	58.16	38.99	0.72	2.81
	472545A	5	3263	62.46	35.95	0.71	18.20
	472545B	5	3263	60.68	37.54	0.73	18.20
	472545C	5	3263	59.39	38.86	0.72	18.20

continued

Grade	Item	Number of		Percent		Correlation	Percent of Third Scores
		Score Categories	Responses Scored Twice	Exact	Adjacent		
	472545D	5	3263	59.18	39.14	0.72	18.20
	477778	3	2532	78.95	20.97	0.64	0.08
	130080A	3	2492	76.12	23.52	0.70	0.36
	418866	5	2413	63.16	34.48	0.78	2.15
	420990	5	2421	66.50	32.59	0.78	0.87
8	472433A	5	2894	68.38	30.93	0.72	8.95
	472433B	5	2894	62.99	35.90	0.74	8.95
	472433C	5	2894	63.51	35.56	0.75	8.95
	472433D	5	2894	62.89	36.04	0.75	8.95
	480941	3	2431	77.29	22.71	0.70	0.00

APPENDIX R—ACHIEVEMENT LEVEL SCORE DISTRIBUTIONS

**Table R-1. 2017–18 eMPowerME: Achievement Level Distributions
by Grade—Mathematics**

<i>Grade</i>	<i>Performance Level</i>	<i>Percent in Level</i>	
		<i>2017–18</i>	<i>2016–17</i>
3	4	9.23	9.84
	3	36.35	35.94
	2	29.01	31.20
	1	25.41	23.03
4	4	10.97	10.64
	3	28.92	32.83
	2	36.33	38.81
	1	23.78	17.73
5	4	9.86	10.16
	3	23.53	25.41
	2	44.91	43.51
	1	21.70	20.91
6	4	9.67	10.06
	3	21.45	22.56
	2	36.87	37.93
	1	32.01	29.45
7	4	9.19	7.37
	3	26.14	33.73
	2	36.89	32.24
	1	27.77	26.66
8	4	10.99	9.02
	3	27.53	25.94
	2	32.74	34.10
	1	28.75	30.94

**Table R-2. 2017–18 eMPowerME: Achievement Level Distributions
by Grade—ELA**

<i>Grade</i>	<i>Performance Level</i>	<i>Percent in Level</i>	
		<i>2017–18</i>	<i>2016–17</i>
3	4	16.76	21.25
	3	29.44	27.32
	2	29.58	28.44
	1	24.22	22.98
4	4	19.59	20.03
	3	33.05	31.33
	2	23.83	25.43
	1	23.53	23.21
5	4	14.72	18.66
	3	38.85	36.54
	2	23.72	22.59
	1	22.72	22.21
6	4	13.58	15.66
	3	34.72	33.98

continued

<i>Grade</i>	<i>Performance Level</i>	<i>Percent in Level</i>	
		<i>2017–18</i>	<i>2016–17</i>
6	2	33.48	33.36
	1	18.22	17.00
7	4	13.86	16.22
	3	35.68	36.01
	2	31.40	32.68
	1	19.05	15.09
8	4	12.58	13.08
	3	42.90	38.44
	2	31.02	32.97
	1	13.50	15.51

APPENDIX S—DECISION ACCURACY AND CONSISTENCY RESULTS

Table S-1. 2017–18 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 (0.65)	0.5	0.82 (0.77)	0.65 (0.50)	0.76 (0.68)	0.77 (0.64)
	4	0.75 (0.65)	0.52	0.82 (0.77)	0.73 (0.59)	0.70 (0.63)	0.79 (0.68)
	5	0.74 (0.63)	0.48	0.76 (0.78)	0.78 (0.60)	0.63 (0.55)	0.77 (0.66)
	6	0.71 (0.61)	0.45	0.81 (0.79)	0.68 (0.52)	0.59 (0.46)	0.73 (0.65)
	7	0.73 (0.63)	0.49	0.80 (0.80)	0.72 (0.52)	0.67 (0.59)	0.76 (0.68)
	8	0.68 (0.58)	0.42	0.77 (0.80)	0.63 (0.44)	0.63 (0.46)	0.68 (0.69)
ELA	3	0.76 (0.67)	0.55	0.86 (0.79)	0.69 (0.60)	0.72 (0.58)	0.80 (0.76)
	4	0.75 (0.65)	0.53	0.84 (0.78)	0.62 (0.49)	0.72 (0.62)	0.83 (0.75)
	5	0.75 (0.66)	0.53	0.84 (0.78)	0.62 (0.49)	0.77 (0.68)	0.79 (0.72)
	6	0.77 (0.68)	0.55	0.83 (0.75)	0.74 (0.63)	0.76 (0.66)	0.80 (0.71)
	7	0.77 (0.68)	0.55	0.83 (0.76)	0.72 (0.60)	0.76 (0.68)	0.81 (0.71)
	8	0.79 (0.70)	0.57	0.82 (0.73)	0.75 (0.64)	0.80 (0.74)	0.81 (0.69)

**Table S-2. 2017–18 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)	<i>False</i>		Accuracy (consistency)	<i>False</i>		Accuracy (consistency)	<i>False</i>	
			<i>Positive</i>	<i>Negative</i>		<i>Positive</i>	<i>Negative</i>		<i>Positive</i>	<i>Negative</i>
Mathematics	3	0.91 (0.87)	0.04	0.05	0.88 (0.84)	0.06	0.06	0.95 (0.93)	0.03	0.02
	4	0.91 (0.88)	0.04	0.04	0.89 (0.84)	0.05	0.06	0.95 (0.92)	0.03	0.02
	5	0.91 (0.86)	0.06	0.04	0.88 (0.83)	0.05	0.06	0.95 (0.92)	0.03	0.02
	6	0.88 (0.84)	0.06	0.05	0.87 (0.83)	0.06	0.06	0.94 (0.91)	0.03	0.02
	7	0.90 (0.86)	0.06	0.04	0.88 (0.83)	0.05	0.07	0.95 (0.93)	0.03	0.02
	8	0.89 (0.84)	0.07	0.04	0.85 (0.80)	0.07	0.07	0.93 (0.90)	0.03	0.04
ELA	3	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03
	4	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03
	5	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03
	6	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03
	7	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03
	8	0.93 (0.90)	0.03	0.04	0.90 (0.86)	0.05	0.05	0.93 (0.90)	0.03	0.03

APPENDIX T—COMMITTEE MEMBERSHIP

Table T-1. 2017–18 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



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